Melbourne Airport Pavement Maintenance Program 2 (MAPMP 2): Preliminary Documentation for Assessment under the EPBC Act

EPBC 2023/09257

3 SEPTEMBER 2024

Australia Pacific Airports (Melbourne) Pty Ltd

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File name:	035-22-003_EPBC Preliminary_Documentation_MAPMP2_Rev 1

Document Control

Version	Internal reviewer	Date issued
REV 0	Amelia Donato	23/05/2024
Rev 1	Amelia Donato	03/09/2024

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Glossary

ABC	Airport Building Controller
AEO	Airport Environment Officer
AGL	Airfield ground lighting
Airports Act	Airports Act 1996 (Cth)
APAM	Australia Pacific Airports (Melbourne) Pty Ltd
ASC NEPM	National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended in 2013)
ATI	Aerodrome Technical Inspection
BEC	Bajwa EnviroConsult Pty Ltd
CASA	Civil Aviation Safety Authority
CEMP	Construction Environmental Management Plan
CHMP	Cultural Heritage Management Plan
DAWE	Department of Agriculture, Water and the Environment
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DEECA	Department of Energy, Environment and Climate Action
DITRDCA	Department of Infrastructure, Transport, Regional Development, Communications and the Arts
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities
EMP	Environmental Management Plan
EMS	Environmental Management System
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Cth)
ESD	Ecologically sustainability development
ESG Strategy	Environment, Social and Governance Strategy
EVC	Ecological Vegetation Class
FFG Act	Flora and Fauna Guarantee Act 1988 (Vic)
GSM	Golden Sun Moth
LET	Local Employment Target
M3R	Melbourne Airport's Third Runway
MAPMP 2	Melbourne Airport Pavement Maintenance Program 2
MDP	Major Development Plan
MNES	Matters of National Environmental Significance
MOS	Manual of Standards

NTGVVP	Natural Temperate Grassland of the Victorian Volcanic Plain
OMP	Offset Management Plan
PFAS	Per- and polyfluoroalkyl substances
PFAS NEMP	PFAS National Environmental Management Plan
PIR	Pavement Inspection Report
PMP	Pavement Management Plan
PSI	Preliminary Site Investigation
SLL	Stripes Legless Lizard
TEC	Threatened ecological community
TSSC	Threatened Species Scientific Committee
VPP	Victoria Planning Provisions
VQA	Vegetation Quality Assessment

1. Introduction

Bajwa EnviroConsult Pty Ltd (BEC) has been engaged by Australia Pacific Airports (Melbourne) Pty Ltd (APAM) to prepare this Preliminary Documentation in support of *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) approval for the Melbourne Airport Pavement Maintenance Program 2 (MAPMP 2) (EPBC 2023/09257).

This Preliminary Documentation has been prepared with consideration to further information requested by the Department of Climate Change, Energy, the Environment and Water (DCCEEW) in their letter dated 9 October 2023 and further information requested via email 23 May 2024 (refer Appendix A).

Appendix B includes tables outlining how each item in the DCCEEW requests for information has been addressed within this document.

2. Regulatory framework

Melbourne Airport is located on Commonwealth land and as such is subject to Commonwealth legislation, primarily the *Airports Act 1996* (Airports Act) and the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The relevant regulatory requirements, planning frameworks and policy documents for the project are outlined below.

2.1. Airports Act

The Airports Act is administered by the Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA) and is the primary Commonwealth legislation applicable to Melbourne Airport.

Section 89(1) of the Airports Act classifies certain types of airport development as 'major airport developments' for which an airport lessee company is required to seek approval through a Major Development Plan (MDP). These developments include:

(m) a development of a kind that is likely to have significant environmental or ecological impact; or

(n) a development which affects an area identified as environmentally significant in the environment strategy;

Given that the project involves maintenance of existing infrastructure, and does not constitute a development, an MDP is not required.

Section 98(1) of the Airports Act sets out certain building activities which must not be carried out unless an approval has been obtained under the *Airports (Building Control) Regulations 1996*. These activities include:

(c) undertaking, constructing or altering earthworks (whether or not in relation to buildings or other structures);

(d) undertaking, constructing or altering engineering works, electrical works or hydraulic works (whether or not in relation to buildings or other structures);

(e) demolishing, destroying, dismantling or removing:

(i) buildings or other structures; or

(ii) earthworks; or

(iii) engineering works; or

(iv) electrical works; or …

The relevant requirements of the *Airports (Building Control) Regulations 1996* are further discussed in Section 2.1.1.

2.1.1. Airports (Building Control) Regulations 1996

The project is subject to airport lessee consent from APAM and a building approval from the appointed Airport Building Controller (ABC) as required under the *Airports (Building Control) Regulations 1996*.

The building approval cannot be issued by the ABC without written consent from APAM, confirming that the project is consistent with:

- The Melbourne Airport Master Plan
- Airport Environment Strategy
- Planning objectives for the airport

2.1.2. Airports (Environment Protection) Regulations 1997

The *Airports (Environment Protection) Regulations 1997* cover the full range of airport environmental management matters. While an approval is not required for the project under these regulations, they impose obligations relating to the management of the environment across the airport site and require assessment, monitoring and reporting in relation to biodiversity, heritage, air, water and soil pollution, and noise levels.

2.1.3. Melbourne Airport Master Plan

In line with the Airports Act, APAM must submit a draft master plan for approval by the Commonwealth Infrastructure Minister every 5 years. The purpose of the master plan is to provide detailed plans for the continued development of the airport over the next five years. These plans must align with the master plan's 20-year strategic direction for the airport that considers the changes needed to aviation facilities, ground transport, utilities infrastructure, non-aviation development and environmental measures.

The current Melbourne Airport Master Plan 2022 sets out land use requirements for the different precincts across the airport. In particular, for the Airside Operations Precinct (where the project is located), the following objectives are of relevance to the project:

- *To provide for safe, secure and efficient airfield activities including the landing, take-off, taxiing and parking of aircraft*
- *To accommodate the provision of aircraft navigation aids … and other facilities essential for safe and efficient aircraft operations.*
- *To provide for the safe and secure operation of the airport*

The Melbourne Airport Master Plan 2022 also includes the current Airport Environment Strategy, which identifies environmental objectives and targets to be achieved alongside implementation of the airport development plan. These objectives and targets have been taken into account when conducting relevant environmental assessments for the project and identifying suitable mitigation measures.

2.2. EPBC Act

The EPBC Act includes triggers for formal assessment associated with impacts to Matters of National Environmental Significance (MNES) and actions on, or impacting upon, Commonwealth

land. On the basis of potential for significant impacts on MNES, APAM submitted an EPBC referral (EPBC 2023/09257) in relation to the proposed action on 17 April 2023.

On 28 August 2023 the delegate of the Minister for the Environment determined that the proposed action is likely to have a significant impact on the following matters protected under Part 3 of the EPBC Act:

- Listed threatened species and communities (section 18 and section 18A)
- Commonwealth land (sections 26 and 27A)

It was determined that the proposed action would be assessed by preliminary documentation.

3. Description of the action

3.1. Reason for the proposed action

Every year APAM is required to undertake an Aerodrome Technical Inspection (ATI) of the airfield pavement. From the ATI a number of outputs are generated:

1. An annual Pavement Inspection Report (PIR) is issued to the Civil Aviation Safety Authority (CASA) in order to meet their requirements.
2. A Pavement Management Plan (PMP) is developed which considers the condition of the airfield pavement and sets out a recommended plan for capital works to maintain and repair pavement over the next 1, 3 and 10 years.
3. Data and information are also gathered during the ATI to inform the Airfield Asset Management Plan.

These three documents are produced to meet planning and maintenance requirements and to meet APAM's regulatory obligations.

The 2021 PMP included a recommendation for the works that should be undertaken in the short and medium term (1-3 years) based on the following:

a) The physical condition of the pavement (rated 1 to 7, 1 being 'failed' and 7 being 'very good'); and,
b) The pavement hierarchy e.g. works required to one of the runways is higher in priority than works required to a taxiway or apron.

APAM has reviewed the PMP, given consideration to the recommendations, considered access to those areas that require attention and how that may impact on airport operations yet still achieve the CASA regulated obligations. That exercise has determined the scope of works for this project, being reconstruction of Taxiway Alpha (between Taxiways Juliet and Kilo).

Much of these pavement areas are original (circa 1970) construction from the airports inception and are, in some areas, beyond end-of-life assets (being rated 1 out of 7).

Relevant excerpts of the 2021 PMP which provide justification for the project are included in Appendix C.

3.2. Project description

The project is referred to as the Melbourne Airport Pavement Maintenance Program 2 (MAPMP 2). It should be noted that stage 1 of the overall program has already been completed, which comprised pavement repair works with no impact on surrounding vegetation.

The project will involve the demolition of existing taxiway and services infrastructure, regrading of the taxiway and shoulder areas, installation of electrical, communications and stormwater services (including connection with existing services) and reconstruction of the taxiway (including shoulders). The proposed construction activities associated with each stage (pre-construction, construction, and operations) are summarised below.

Existing infrastructure and ecological values within and adjacent to the project area are shown in Figure 1. The overall project layout, including project location, land use type, key infrastructure and stormwater management is provided in Figure 2.

The project area is approximately 7.28 hectares. Within that, the expected disturbance footprint (including for earthworks, site access and laydown) is estimated to be 4.62 hectares, as shown in Figure 2. A buffer of 10 m in all directions has been applied for all new services, pits, and earthworks batters. This is sufficient to allow for construction activities, and no disturbance outside of these buffers is proposed

3.2.1. Pre-construction

The selected contractor will look to establish their site compound and work laydown areas as part of their pre-construction activities. The location of the site compound is still to be determined but will likely be located on the southern side airside Gate 22, on landside. Access to this location will be via Operations Road.

3.2.2. Construction

During construction, the following activities will be undertaken:

- Demolition of the existing Taxiway Alpha (between taxiways Juliet and Kilo)
- Subgrade preparation
- Bulk earthworks to build up the subgrade by approximately 1.3m in the centre section of the taxiway to improve the overall longitudinal geometry
- Pavement construction (concrete slabs and asphalt shoulders)
- Airfield ground lighting (AGL) installation
- Drainage installation
- Line marking
- Landscaping (limited to stabilisation and make good of disturbed grass areas)

The design plans for earthworks, taxiway surfacing and surface water management are detailed in the design documentation in Appendix D. The proposed new drainage infrastructure will connect into the existing stormwater management network within the airfield, and is not expected to increase the total volume of stormwater collected via the network.

The excavation techniques to be used during construction include:

- Excavation of soil, subgrade and former asphalt using a 35T excavator and an 8-13T excavator.
- Trenching using a 3-5T excavator.
- Non-destructive digging via water jetting.
- Pavement coring via attachment on a skid-steer.

The project will comprise a mix of cut and fill earthworks as follows:

- Filling across the project area from 0.1 to 1.8 m above the current ground level.
- Cutting in selected parts of the project area ranging from 0.1 to 0.5 m below ground level (bgl).

Design plans showing the depth of earthworks across the project area are included in the design documentation in Appendix D. An investigation into the potential for groundwater to be encountered during these earthworks was conducted and is summarized in Section 6.10.5.

3.2.3. Operations

During project operations, the following construction activities will likely be undertaken:

- Maintenance of the pavement, including asphalt patching and joint sealing.

Following the completion of the project, APAM will undertake routine maintenance of the live and operational taxiway.

3.2.4. Construction program

The construction works are scheduled to take place between December 2024 and September 2025 (10 months). Post-construction, there will be a 1-month commissioning and handover process which will take place in October 2025, before the area becomes operational in November 2025.

Figure 1 Existing conditions

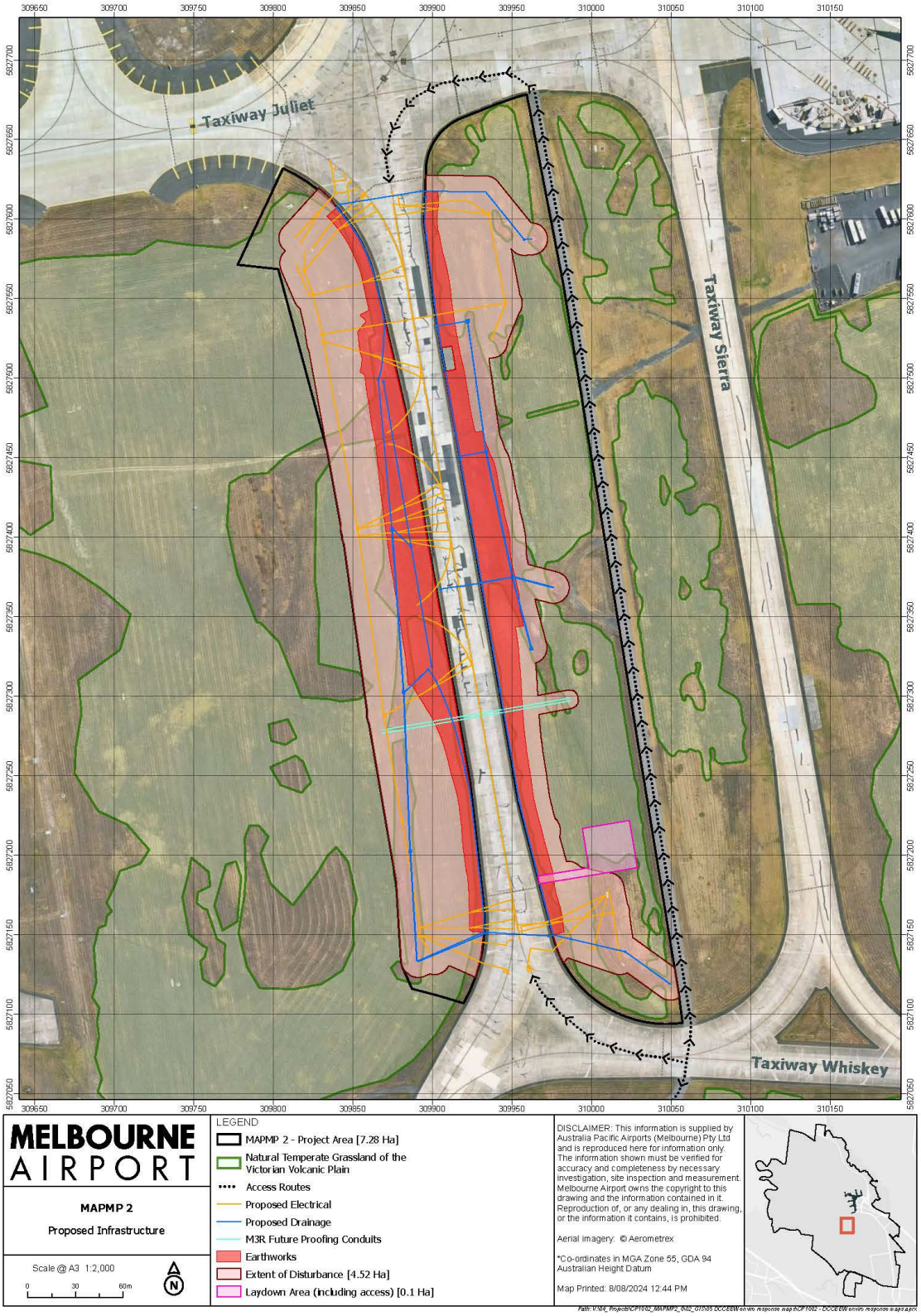

Figure 2 Location of proposed action

4. Habitat assessments

4.1. Records of listed flora and fauna species

A review of the potential for listed threatened flora and fauna species to be within 10 km of the project area was completed to evaluate the likelihood and potential impacts associated with the proposed action. The review utilised the Protected Matters Search Tool (DCCEEW; accessed on 20 November 2023) and the Victorian Biodiversity Atlas (accessed on 20 November 2023).

The review found a total of 62 flora species (21 flora species of National significance and 41 flora species of State significance), 80 fauna species (43 fauna species of National significance and 37 fauna species of State significance) and 26 migratory species potentially located within 10 km of the project area, with the likelihood of occurrence within the project area for the majority of the species rated as negligible to low (including all species of national significance).

A summary of the threatened flora and fauna species with a medium or high potential to occur within the project area, including rationale and the need for additional surveys is provided in Table 1 below. It is noted that extensive surveys for listed threatened species and ecological communities were conducted between 2019 and 2021 to inform the MDP for Melbourne Airport's Third Runway (M3R); these have been referred to when considering the need for targeted surveys. The full list of threatened flora and fauna species, including details on the most recent records, habitat descriptions and likelihood rankings is provided in Appendix E.

Table 1 Summary of listed threatened flora and fauna species

Common name	Scientific name	Likely occurrence in project area	Habitat description	Rationale for likelihood ranking	Targeted survey needed?
Potential threatened Flora Species – State Significance (FFG Act)					
Austral Crane's-bill	*Geranium solanderi* var. *solanderi s.s.*	Medium	Grasslands or grassy woodlands where hydrology is not a limiting factor.	Recent records nearby <20 yrs. Suitable habitat onsite and can be present in disturbed grasslands and grassy woodlands.	No. Targeted surveys for FFG Act listed flora species were not considered necessary. The vegetation surveys undertaken for the M3R project are sufficient to detect these species if present within the MAPMP 2 project area.
Large Flower Crane's-bill	*Geranium* sp. *1*	Medium	The habitat requirements of this species are poorly known.		
Pale Flower Crane's-bill	*Geranium* sp. *3*	Medium	Grasslands and dry woodlands.		
Potential threatened Fauna Species – National Significance (EPBC Act)					
Gang-gang Cockatoo	*Callocephalon fimbriatum*	Medium	Southern Vic to Eastern NSW. Forests and woodlands from coast to alpine areas. Autumn-winter dispersal from highlands to lower elevations. Forages in eucalypts, acacias and some exotic garden trees and shrubs.	Species likely to utilise the woodland patches north of the project area, which may result in flights over the project area at times.	No. The species was listed after field assessments were conducted and is assumed to be present within the Melbourne Airport area. Targeted surveys for the species are unlikely to produce additional information to assist with current understanding of the species' use of the project area.
White-throated Needle Tail	*Hirundapus caudacutus*	High	An almost exclusively aerial species within Australia, occurring over most types of habitat, particularly wooded areas.	It is likely that the species utilises the airspace at Melbourne Airport with the woodland providing preferable habitat for the species. There is an incidental record of the species from 2010 (Birdlife Australia) over Sky Road in Melbourne Airport and other records surrounding the Airport.	No. The species is assumed present. Targeted surveys for the species are unlikely to produce additional information to assist with current understanding of the species' use of the Melbourne Airport area.
Grey-headed Flying Fox	*Pteropus poliocephalus*	Medium	Rainforest, wet and dry sclerophyll forest, woodland and urban areas.	Species likely to utilise flowing trees adjacent to the project area, which may result in flights over the project area at times.	No. The species is known to use habitat in the Melbourne Airport area. Targeted surveys for the species are unlikely to produce additional information to assist with current understanding of the species' use of the project area.
Potential threatened Fauna Species - State Significance (FFG Act)					
Little Eagle	*Hieraaetus morphnoides*	Medium	Woodland and open areas. Rabbits are a key component of their diet. Nesting occurs in mature trees in open woodland or riparian vegetation.	Suitable habitat present in the broader local area and the species may forage over the project area.	No. Targeted surveys for FFG Act listed fauna species was not considered necessary. The extensive targeted fauna and vegetation surveys undertaken for the M3R project were considered likely to identify many of these species if present. For example, 17 Tussock Skink individuals were recorded from tile grids within the broader Melbourne Airport area. Other FFG Act listed fauna may utilise habitat present within the project area on occasions but are unlikely to be resident within the project area.
Black Falcon	*Falco subniger*	Medium	Woodlands, open country and around terrestrial wetlands areas, including rivers and creeks. Primarily occurs in arid and semi-arid zones in the north, north-west and west of Victoria.	Area adjacent to runways is highly managed to prevent prey (rabbits, rodents etc) and scare cannon guns are used to prevent bird activity in the area. However, suitable habitat present in the broader local area and the species may forage over the project area occasionally.	
Tussock Skink	*Pseudemoia pagenstrecheri*	High	On the ground in a range of grasslands or sparse grassy woodlands from alps to coast.	Seventeen Tussock Skink were captured and recorded in the broader Melbourne Airport area during the Striped Legless Lizard (SLL) tile surveys conducted for the M3R project. Although no tile surveys were completed within the project area,	

Common name	Scientific name	Likely occurrence in project area	Habitat description	Rationale for likelihood ranking	Targeted survey needed?
				suitable habitat for Tussock Skink is present within grassland throughout the project area.	
Potential threatened Migratory Fauna Species					
Fork-Tailed Swift	*Fork-tailed Swift*	High	NA – Migratory Species	Project area is within core range for the species (DoE 2015). No records from within Melbourne Airport, however there are several from surrounding areas such as Sunbury, Greenvale and Yuroke from the past 10 years.	No. The species is assumed present. Targeted surveys for the species are unlikely to produce additional information to assist with current understanding of the species use of the project area and the project's impacts.
Latham's Snipe	*Gallinago hardwickii*	High	NA – Migratory Species	Species recorded along Maribyrnong River flats Ascot Vale 2007, and the nearby Jacana Wetlands regularly (Birdata, Birdlife Australia).	No. The species is assumed present. Targeted surveys for the species are unlikely to produce additional information to assist with current understanding of the species use of the project area and the project's impacts.
Rufous Fantail	*Rhipidura Rufifrons*	High	NA – Migratory Species	Project area is within core range for the species (DoE 2015). Species was recorded in the Grey Box Woodland in 2009.	No. The species is assumed present. Targeted surveys for the species are unlikely to produce additional information to assist with current understanding of the species use of the project area and the project's impacts.
Satin Flycatcher	*Myiaara cyanoleuca*	High	NA – Migratory Species	Project area is within core range for the species (DoE 2015). Species recorded in Woodlands Historic Park in 2007, 2013 and 2015 (Birddata, Birdlife Australia).	No. The species is assumed present. Targeted surveys for the species are unlikely to produce additional information to assist with current understanding of the species use of the project area or the project's impacts.
White-throated Needle Tail	See above under 'Potential threatened Fauna Species – National Significance (EPBC Act)'				

4.2. Landscape context

The Melbourne Airport estate is located in Melbourne's northern suburbs. Native vegetation has been cleared or become degraded on most land within 5 kilometres of the Airport area, either due to agricultural activities (mostly livestock grazing) or industrial and residential development.

Nearby waterways (Deep Creek, Jacksons Creek, Arundel Creek, Maribyrnong River and Moonee Ponds Creek) provide the most intact dispersal corridors for fauna. The largest and most intact areas of native vegetation outside the Airport area but within the local area, are Woodlands Historic Park to the north-east and Organ Pipes National Park to the west.

4.3. Summary of habitat assessments and targeted surveys for threatened species

4.3.1. EPBC Act listed species

Several EPBC Act listed species were considered to have a medium to high likelihood of occurring within the project area or have been previously recorded in the local area.

It is noted that while the Striped Legless Lizard, Golden Sun Moth and Victorian Grassland Earless Dragon were assigned a “low” likelihood of occurring in the project area, additional detail and survey information has been included in this Preliminary Documentation in response to DCCEEW’s request for information (dated 9 October 2023 and 23 May 2024).

EPBC Act listed species for which targeted surveys have been undertaken during previous assessments include:

- Striped Legless Lizard (SLL)
- Golden Sun Moth (GSM)

The targeted surveys completed for these species were undertaken as part of investigations to assess potential impacts resulting from the proposed M3R project. While these surveys were not completed specifically for the MAPMP 2 project, the scope of the targeted surveys and investigations included the footprint of the MAPMP 2 project area and were considered sufficient to determine whether these species were present within the project area and, if so, the extent to which they used the project area.

A summary of the habitat surveys for SLL and GSM under the relevant sub-headings below (page 20 onwards). Detailed habitat survey assessment methods for each species are provided in Appendix G, and the survey outcomes (including survey data) are included within the M3R Ecology Technical Report in Appendix M.

Targeted surveys for other threatened species of national significance were not considered necessary, based on the following:

- **Gang-Gang Cockatoo:** The species was listed after field assessments were conducted and is assumed to be present within the project area. Targeted surveys for the species are unlikely to produce additional information to assist with current understanding of the species’ use of the project area.
- **White-throated Needle Tail:** The species is assumed present. Targeted surveys for the species are unlikely to produce additional information to assist with current understanding of the species’ use of the project area.

- **Grey-headed Flying Fox:** The species is known to use habitat in the project area. Targeted surveys for the species are unlikely to produce additional information to assist with current understanding of the species' use of the project area.

Victorian Grassland Earless Dragon

The Victorian Grassland Earless Dragon (VGED) was initially assigned a "negligible" likelihood of occurring in the project area as it was considered to be locally extinct (as outlined in Appendix E). It is noted that the rediscovery of the VGED near Bacchus Marsh means the project area falls within the VGED projected distribution in DCCEEW's species profile and threats database. As such the likelihood of this species occurring in the project area may be considered "low".

There are a number of known threats to the VGED that have historically occurred, or currently occur, at Melbourne Airport. This includes the following:

- Prior to airport development the project area and surrounds were subject to agricultural practices including ploughing and intense grazing. During the development of Melbourne Airport in the late 1960s the entire project area was significantly disturbed. This included bulk earthworks and complete disturbance of all pre-existing grassed areas and removal of rocks and boulders, particularly within the operational airfield and terminal development areas (see historical aerial imagery in Appendix N).
- Native vegetation at Melbourne Airport has been cleared or become degraded on most land within 5 km of the airport estate, either due to agricultural activities (mostly livestock grazing) or industrial and residential development.
- The Airside Operations Precinct (within which the project area is located) is surrounded by various roadways, carparks and other industrial developments to the north and south, as well as waterways to the west and east, which are considered to resulted in significant physical barriers, inhibiting the VGED recolonizing within Melbourne Airport.
- The project area is within the operational airfield of Melbourne Airport which is now a highly modified and managed environment with regular and ongoing maintenance activities occurring in the project area including weed management, mowing and slashing and herbicide treatment.

These threats are all consistent with the known threats to VGED outlined in the *Conservation Advice for Tympanocryptis pinguicolla (Victorian grassland earless dragon* (DCCEEW 2023). Based on the number of threats to the VGED present at Melbourne Airport and particularly within the project area, the likelihood of the VGED recolonising within the project area is considered negligible. As a result, the need for any further targeted surveys or management measures was not considered necessary.

Striped Legless Lizard

While potentially suitable SLL habitat is recorded within the Melbourne Airport estate, no sightings of the SLL have been recorded within the entirety of the Melbourne Airport estate (including the MAPMP 2 project area) during numerous targeted surveys completed over the last 20 years. This was despite the substantial survey effort within suitable habitat areas during the period when known nearby populations were observed to be active.

There has been a substantial survey effort for SLL at Melbourne Airport to date, including the following:

- Biosis 2002: A total of 52 pit fall traps surveyed in the southeast portion of Melbourne Airport. No SLL were recorded.
- GAGIN 2009: A total of two tile grids surveyed in the southern portion of Melbourne Airport. No SLL were recorded.
- Biosis 2013: A total of 15 tile grids surveyed in the southeast and western portions of Melbourne Airport. No SLL were recorded.
- Biosis 2014: A total of 25 tile grids surveyed in the southern and western portions of Melbourne Airport. No SLL were recorded.

An overview of the location of previous SLL surveys completed at the airport prior to the M3R surveys is provided in Appendix H.

Between September and December 2019, a total of 62 tile grids and 52 pit fall traps were surveyed over approximately 840 hectares of potential habitat (airside and landside) with no record of the species being detected. Each tile was checked 15 times in total over weekly intervals during periods where nearby known populations of SLL were observed to be active.

With records of the species within 5 km south of Melbourne Airport, and recently recorded within 5 km north of Melbourne Airport it is probable that potential habitat at Melbourne Airport would have once been colonised by the species. It is possible that the bulk earth works required to establish the airfield at Melbourne Airport rendered that particular area unsuitable for the species. It is also possible that the long history of the land utilised for farming purposes including pasture improvement, cropping, stocking, and recently small block farming (Barbiston Road area) have caused a local extinction of the species in the area, or even that the species was never historically present within the area.

It is therefore considered unlikely that the species is present within the project area and the Melbourne Airport estate as a whole.

Golden Sun Moth

During ecological site assessments of Melbourne Airport between 2010 and 2019 it was determined that suitable habitat for GSM was present within the northern portion of the airport.

The following surveys were completed at Melbourne Airport between 2010 and 2018:

- GAGIN 2010: A selected area in the southern portion of Melbourne Airport was surveyed at least once during the GSM flight season. No GSM were recorded.
- Biosis 2013/14: Selected areas in the eastern, northern and western portions of Melbourne Airport were surveyed on four occasions during the GSM flight season. No GSM were recorded.
- Biosis 2018: Selected areas in the northern and southern portions of Melbourne Airport were surveyed at least once during the GSM flight season. GSM were recorded in the northern portion only, between Sunbury Road and Moonee Ponds Creek.

An overview of the location of previous GSM surveys completed at the airport prior to the M3R surveys is provided in Appendix H.

Previous surveys on Melbourne Airport land west of Sunbury Road failed to detect GSM, but due to the presence of suitable habitat and in response to feedback from the Commonwealth, targeted surveys for this species were completed for the M3R project. Four surveys were conducted in December 2019 on days of appropriate weather conditions and were undertaken in accordance with the Commonwealth survey guidelines (DEWHA 2009).

Targeted surveys for GSM in 2019 confirmed the presence of this species in the northern-most area of the M3R project footprint only, where the GSM habitat is bounded by Sunbury Road to the north, the Grey Box Woodland to the south and east and an existing access track to the west. The area west of the GSM habitat is bounded by a pasture improved paddock (Phalaris dominated).

It is noted that GSM have been detected in the northern-most area of the Melbourne Airport estate and suitable habitat was confirmed to be present in the form of native and introduced grass species within Melbourne Airport. However, these areas were located along the far northern boundary of the airport, more than 2 km away from the project area. In addition, while suitable GSM habitat may be present in the vicinity of Melbourne Airport, conservation advice for the GSM (DAWE 2021), suggests that the species are unlikely to recolonise in areas that have undergone significant modification. Noting that the most recent surveys completed for the GSM were undertaken in 2019, it was considered very unlikely that the surrounding populations of GSM will recolonise or be dispersed within the project area based on the following:

- The location of the project area is in a heavily fragmented landscape, with aviation infrastructure and commercial development areas surrounding the project site.
- Current management practices associated with the airport (e.g. disturbance from intensive mowing and use of insecticide in some areas) are likely to have rendered potential habitat located within Melbourne Airport and specifically the project area, unsuitable for this species.

Based on the above considerations, additional surveys for the GSM were not considered necessary in the context of the project. GSM habitat present within Melbourne Airport is shown in Figure 3 below.

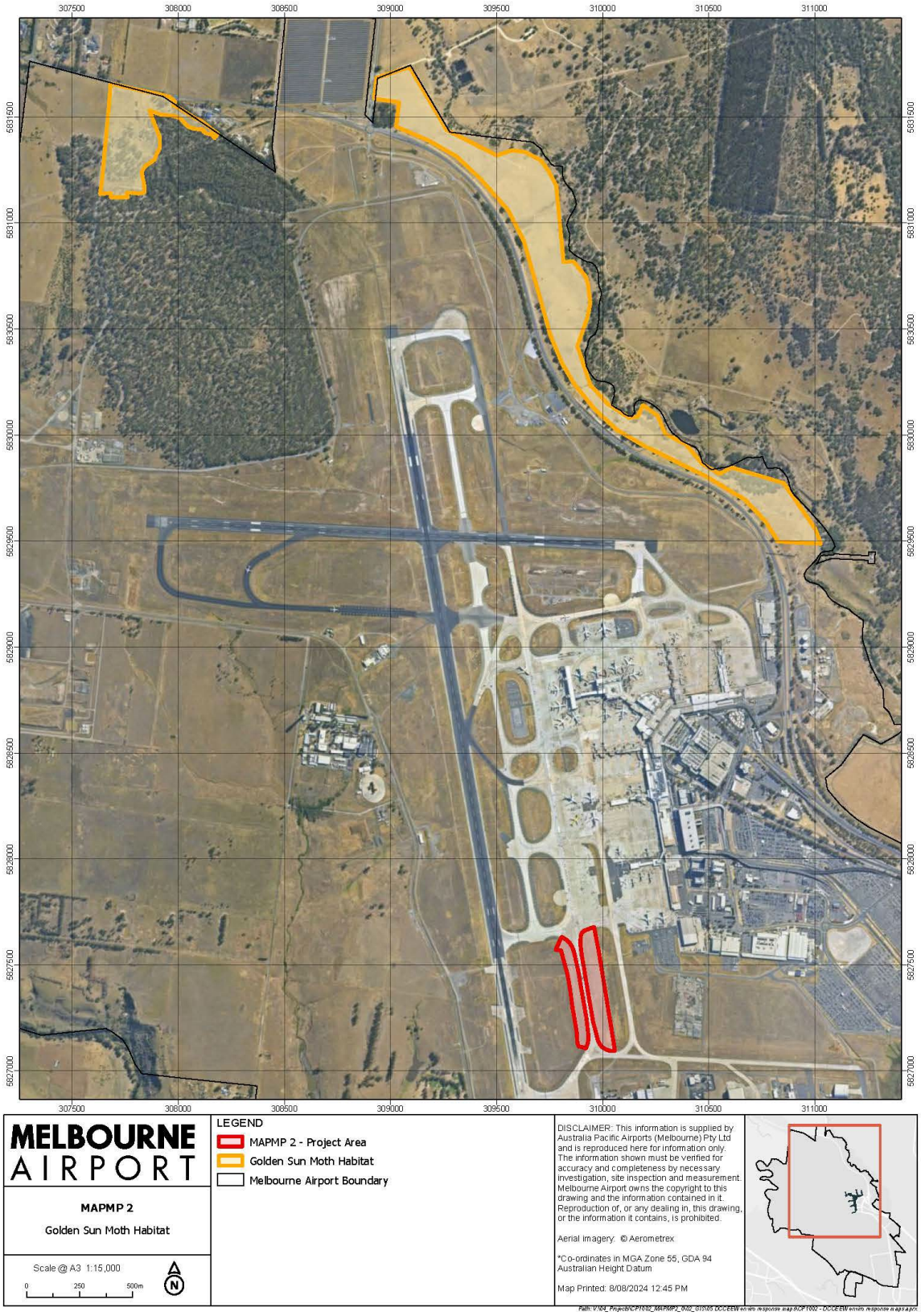

Figure 3 Golden Sun Moth Habitat – Melbourne Airport

4.3.2. FFG Act listed species

Several FFG Act listed species were considered to have a medium to high likelihood of occurring within the project area or have been previously recorded in the local area. These include:

Threatened flora species

- Austral Crane's-bill
- Large Flower Crane's-bill
- Pale Flower Crane's-bill

Threatened fauna species

- Little Eagle
- Black Falcon
- Tussock Skink

Targeted surveys for these FFG Act listed flora and fauna species were not considered necessary. The extensive targeted fauna and vegetation surveys undertaken for the M3R project were considered sufficient to have identified these species if they were present within the project area or Melbourne Airport more broadly. For example, 17 Tussock Skink individuals were recorded from tile grids within the broader Melbourne Airport area during extensive surveys as part of the proposed M3R project. While potentially suitable habitat for other FFG Act listed fauna may be present within the project area, it is considered highly unlikely that this habitat would be utilised or recolonised by these species, given the following:

- No other FFG Act listed species have been identified in previous surveys completed within the project area or across Melbourne Airport.
- Suitable habitat within the project area is subject to ongoing maintenance and modification as part of maintenance activities, including weed management, mowing and slashing.

4.4. Summary of targeted surveys for threatened ecological communities

4.4.1. Desktop assessment

A desktop assessment was conducted which identified the presence of Natural Temperate Grassland of the Victorian Volcanic Plain (NTGVVP) within the project area. A field assessment of the extent and quality of the NTGVVP threatened ecological community (TEC) was recommended and undertaken, as detailed in Section 4.4.2 below.

4.4.2. Field assessment

All field data for NTGVVP within the project area was collected in February 2020, October 2020 and October 2021 by qualified ecologists of Biosis as part of the M3R project.

A field checklist (refer Appendix F) was used to identify the presence or absence of NTGVVP in areas mapped as suitable EVCs (i.e. Heavier-soils Plains Grassland).

The checklist was based on the key diagnostic characteristics and condition thresholds outlined in the listing advice for the TEC (TSSC 2008). Where the listing advice was unclear, further clarity was

sought from the NTGVVP Information Sheet (DSEWPaC 2011) and, if required, guidance provided by DCCEEW (and its predecessors).

The approach to completing the field checklist is outlined in Table 2. The percentage cover of native flora within each grassland patch was estimated by reference to predefined cover charts. Where cover estimates were close to the condition threshold, gridded one-by-one metre quadrats (square frames) were used to objectively sample plant cover within the grassland patch and confirm the veracity of cover estimates.

For the purposes of assessing minimum contiguous size thresholds, the 'grassland patch' was taken to be the area of contiguous grassland that otherwise met all other key diagnostic characteristics and condition thresholds for the TEC – rather than the (generally larger) Heavier-soils Plains Grassland patch.

In addition, the 'native vegetation remnant' was taken to be the contiguous area of native vegetation, whether or not belonging to more than one EVC. DCCEEW (formally DAWE) has confirmed that this interpretation is correct and upholds the intention of the listing advice (J. Vranjic, DAWE, pers. comm., March 2020).

Table 2 Approach for identifying the NTGVVP community

Criteria	Condition Thresholds	Method used to test patch against threshold
Location	With limited exceptions, the grassland patch must be associated with Quaternary basalt soils within the Victorian Volcanic Plain bioregion.	The position of the grassland patch relative to modelled geological and bioregional boundaries was reviewed. Surface soil texture observations were made during vegetation mapping on site.
Perennial native flora cover	Native flora must make up ≥50% of total vegetation cover, excluding introduced annuals, within the grassland patch.	The percentage cover of native flora within each grassland patch was estimated with reference to cover charts and, if required, 1x1 m quadrats.
Dominant grass genera	Grasses in the genera *Themeda*, *Rytidosperma*, *Austrostipa* and/or *Poa* make up ≥50% of total native species cover.	The percentage cover of the four key native grass genera within each grassland patch was estimated with reference to cover charts and, if required, 1x1 m quadrats.
Weediness	For grassland patches where *Themeda*, *Rytidosperma*, *Austrostipa* and/or *Poa* are the dominant native genera, one of the following thresholds must be met: *Themeda*, *Rytidosperma*, *Austrostipa* and/or *Poa* must also make up ≥50% of total perennial tussock cover or Perennial non-grass weeds must be <30% of total vegetation cover.	The percentage cover of the four key native grass genera and perennial non-grass weeds within each grassland patch was estimated with reference to cover charts and, if required, 1x1 m quadrats.

Criteria	Condition Thresholds	Method used to test patch against threshold
Native forb cover	For grassland patches where *Themeda*, *Rytidosperma*, *Austrostipa* and/or *Poa* are not the dominant native species, native forbs must make up ≥50% of total vegetation cover during spring-summer (September to February).	The percentage cover of native forbs within each grassland patch was estimated with reference to cover charts and, if required, 1x1 m quadrats.
Patch size	For a native vegetation remnant ≤1 ha, the grassland patch must be ≥0.05 ha and the crown cover of shrubs/ trees >1 m tall must be ≤5%. For a native vegetation remnant >1 ha, the grassland patch must be ≥0.5 ha and there must be <2 mature trees per ha.	Contiguous native vegetation remnants and grassland patches were mapped to determine size and areas. Minor physical barriers were aggregated based on ecological function (e.g. fauna movement prospects, seed/genetic dispersal, water and nutrient cycling, recruitment and regeneration). Mature trees were counted and the crown cover of shrubs/trees >1 m estimated with the assistance of recent aerial imagery (i.e. from the past 6 months), where required.

To determine and properly assess the impact on NTGVVP, the quality of native vegetation was assessed using the Vegetation Quality Assessment (VQA habitat hectare) method (DSE, 2004c).

DCCEEW has previously endorsed the 'habitat hectare' method as appropriate for assessing the condition of TECs such as NTGVVP. This method is further explained in Appendix F.

4.4.3. Outcomes

One EPBC Act listed TEC was recorded in the project area and will be impacted by the project. A summary of the survey findings is presented below.

General observations

The project area covers approximately 7.28 hectares and contains 6.35 hectares of Plains Grassland. The remaining vegetated area (approximately 0.93 hectares) supports predominantly introduced vegetation, with the main species being Chilean Needle Grass *Nassella neesiana* and Serrated Tussock *Nassella trichotoma*. Plains Grassland is synonymous with the Western (Basalt) Plains Grasslands Community, which is listed as threatened under the FFG Act. The Western (Basalt) Plains Grasslands Community is therefore present in all areas mapped as Plains Grassland.

Some areas of Plains Grassland within the project area meet the diagnostic criteria and condition thresholds for Natural Temperate Grassland of the Victorian Volcanic Plain (NTGVVP), an ecological community listed as critically endangered under the EPBC Act. These areas tend to have lower perennial weed covers and a higher proportion of native grasses that are characteristic of NTGVVP, including the following species:

- Bristly Wallaby-grass *Rytidosperma setaceum*
- Common Wallaby-grass *Rytidosperma caespitosum*
- Brown-back Wallaby-grass *Rytidosperma duttonianum*

- Leafy Wallaby-grass *Rytidosperma bipartitum s.s.*

In total, the project area supports 4.73 hectares of NTGVVP.

Other native grasses that are present (but not necessarily characteristic of NTGVVP) include Windmill Grass *Chloris truncata* and Silky Blue-grass *Dichanthium sericeum* subsp. *sericeum*. Scattered herbs and shrubs also persist, including Common Woodruff *Asperula conferta*, Berry Saltbush *Atriplex semibaccata* and Small Loosestrife *Lythrum hyssopifolia*. Weed covers within NTGVVP range from 30% to 40% and are dominated by high threat weeds such Chilean Needle Grass, Serrated Tussock, Toowoomba Canary-grass *Phalaris aquatica* and Cocksfoot *Dactylis glomerata*.

Herbaceous weed species include Hairy Hawkbit *Leontodon saxatilis* subsp. *saxatilis*, Buck's-horn Plantain *Plantago coronopus*, Artichoke Thistle *Cynara cardunculus* subsp. *flavescens* and Clovers *Trifolium* spp.

Habitat zones

A summary of the habitat zones that were surveyed and identified within the project area is provided in Table 3 below.

Table 3 Summary of habitat zones within the project area

Habitat Zone	Survey Date	Ecological Vegetation Class	Threatened Ecological Community (Federal)	Threatened Ecological Community (State)	Area within project area (ha)
188	16/10/2021	132 Plains Grassland		Western (Basalt) Plains Grasslands Community	0.669898
188a	16/10/2021	132 Plains Grassland	Natural Temperate Grassland of the Victorian Volcanic Plain	Western (Basalt) Plains Grasslands Community	1.8972098
202	31/10/2020	132 Plains Grassland		Western (Basalt) Plains Grasslands Community	0.902175
202a	31/10/2020	132 Plains Grassland	Natural Temperate Grassland of the Victorian Volcanic Plain	Western (Basalt) Plains Grasslands Community	2.835405
204	03/02/2020	132 Plains Grassland		Western (Basalt) Plains Grasslands Community	0.010126
204a	03/02/2020	132 Plains Grassland		Western (Basalt) Plains Grasslands Community	0.033261

Condition of NTGVVP

Table 4 presents the VQA data captured for the habitat zones that qualify as NTGVVP within the project area. The weighted average habitat score for NTGVVP within the project area is 38 out of 100.

Table 4 VQA scores for NTGVVP habitat zones within the project area

Site and Habitat Zone ID			188A	202A
EVC #: Name			EVC 132 - Plains Grassland	EVC 132 - Plains Grassland
		Max Score	Score	Score
Site Condition	Large Old Trees	10	NA	NA
	Canopy Cover	5	NA	NA
	Lack of Weeds	15	4	4
	Understorey	25	5	10
	Recruitment	10	6	6
	Organic Matter	5	4	4
	Logs	5	NA	NA
	Total Site Score		19	24
	EVC standardiser (x 75/55)		1.36	1.36
	Adjusted Site Score		**25.91**	**32.73**
Landscape Value	Patch Size	10	6	2
	Neighbourhood	10	4	3
	Distance to Core	5	1	1
	Total Landscape Score		**11**	**6**
HABITAT SCORE		100	36.91	38.73

4.5. Review of adequacy of surveys

In general, the adopted survey methods used to identify and quantify threatened species and ecological communities within the project area were considered sufficient to ensure all species with a medium to high potential to occur within the project area were surveyed and registered.

For vegetation surveys, native vegetation was identified and mapped utilising the EVC classification system. These areas were then reviewed to confirm whether they satisfy the criteria for a TEC under the EPBC Act. In order to assess the presence and quality of the NTGVVP TEC a checklist was developed that relied on the diagnostic characteristics and condition thresholds outlined in the listing advice (TSSC 2008). Where the listing advice was unclear, further clarity was

sought from the Natural Temperate Grassland Information Sheet (DSEWPaC 2011a) and, if required, from guidance provided by DCCEEW (and its predecessors).

The vegetation survey checklist and survey methods were developed and undertaken in accordance and consultation with the following guidelines:

- DELWP 2016. The Victorian wetland classification framework 2014, Victorian Government Department of Environment, Land, Water and Planning, East Melbourne.
- DELWP 2020. NatureKit. Victorian Government Department of Environment, Land, Water and Planning, Melbourne.
- DoE 2013. Matter of National Environmental Significance: Significant Impact Guidelines 1.1. Environment Protection and Biodiversity Conservation Act 1999. Australian Government Department of the Environment, Canberra
- DSE 2004a. EVC/Bioregion Benchmark for Vegetation Quality Assessment: Central Victorian Uplands Bioregion. Victorian Government Department of Sustainability and Environment, Melbourne.
- DSE 2004b. EVC/Bioregion Benchmark for Vegetation Quality Assessment: Victorian Volcanic Plain Bioregion. Victorian Government Department of Sustainability and Environment, Melbourne.
- DSE 2004c. Native Vegetation: Sustaining a living landscape. Vegetation Quality Assessment Manual – Guidelines for applying the Habitat hectares scoring method. Version 1.3, Victorian Government Department of Sustainability and Environment. Melbourne, Victoria.
- DSEWPaC 2011a. Nationally Threatened Ecological Communities of the Victorian Volcanic Plain: Natural Temperate Grassland & Grassy Eucalypt Woodland A guide to the identification, assessment and management of nationally threatened ecological communities. Australian Government Department of Sustainability, Environment, Water, Population & Communities, Canberra.
- DSEWPaC 2012a. Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy. October 2012. Australian Government Department of Sustainability, Environment, Water, Population and Communities. Canberra.
- TSSC 2008. Commonwealth Listing Advice on Natural Temperate Grassland of the Victorian Volcanic Plain. Threatened Species Scientific Committee, Australian Government Department of the Environment, Water, Heritage and the Arts. Canberra. Available from: http://www.environment.gov.au/biodiversity/threatened/communities/pubs/42-listing-advice.pdf. In effect under the EPBC Act from 21-Jun-2008

Targeted fauna surveys were developed taking into account previous assessments completed at the airport and in the local area to determine the adequacy of the surveys completed and whether additional data was required. Where additional surveys were determined to be warranted, consideration was then given to the species in question, to ensure surveys were completed at the in the correct potential habitat areas at the correct time of year and during times of the day where the species was considered to be most active. The targeted fauna surveys were developed and undertaken in accordance and consultation with the following guidelines:

- DEWHA 2009. Significant impact guidelines for the critically endangered golden sun moth (Synemon plana). Australian Government Department of the Environment, Water, Heritage and the Arts. Canberra.
- DoE 2011. Environment Protection and Biodiversity Conservation Act 1999 referral guidelines for the vulnerable striped legless lizard, Dema impar. Australian Government Department of the Environment. Canberra.
- DSEWPaC 2011b. Environment Protection and Biodiversity Conservation Act 1999 referral guidelines for the vulnerable striped legless lizard, Delma impar. Australian Government Department of Sustainability, Environment, Water, Population & Communities, Canberra.

5. Impacts to listed threatened species and communities

5.1. Nature, likelihood and severity of impacts

Impacts associated with the proposed action have been determined based on the design and construction details provided in Section 3 and shown in Figure 2.

Direct and indirect impacts to listed threatened species and ecological communities are discussed below. There are no unknown or unpredictable impacts associated with the proposed action.

5.1.1. Direct impacts

Threatened species

No direct impacts to threatened species are expected, as there is no suitable habitat within the project area.

Ecological communities

The project will result in the direct, permanent removal of 2.85 hectares of NTGVVP with a quality of 4 out of 10 (refer to Section 4.5.3 for further details of NTGVVP quality assessment). Figure 4 shows the areas of NTGVVP which will be impacted, and the adjacent patches which will be avoided.

Permanent impacts are associated with the removal of native vegetation for the purpose of construction, in particular bulk earthworks, access routes, stockpiling and laydown areas and excavation of trenches for services.

As discussed in Section 3.2, the expected disturbance areas (including for earth works and site access and laydown) are estimated to be 4.62 hectares and a minimum buffer of 10 m has been applied between the disturbance area and outer boundary of the disturbance footprint. As a conservative measure, it is assumed that all NTGVVP present within the disturbance footprint will be permanently impacted.

5.1.2. Indirect impacts

Threatened species

The Gang-gang Cockatoo *Callocephalon fimbriatum*, White-throated Needletail *Hirundapus caudacutus*, and Grey-headed Flying-fox *Pteropus poliocephalus* are likely to utilise woodland patches north of the project area, which may result in flights over the project area at times. Indirect impacts are possible, but not expected for this project. Indirect impacts to these species associated with the project may include:

- **Noise** - Noise from excavation activities will occur during construction hours only. All construction noise will be managed in accordance with a project-specific construction environmental management plan (CEMP). Although it is noted that construction noise will be significantly less than current aircraft noise associated with the existing airport operations, the CEMP will detail best-practice construction noise mitigation measures to be implemented in order to mitigate any potential indirect impacts from noise. The minimum required noise mitigation measures are outlined in Section 8.2.
- **Dust** - Construction activities, in particular earthworks and soil management, have the potential to generate dust emissions. Dust emissions will be managed in accordance

with the project-specific CEMP. The minimum required dust mitigation measures are outlined in Section 8.2.

Ecological communities

The proposed works will physically isolate one small area of identified NTGVVP from the broader patch (shown in purple in Figure 4), which will be less than the threshold size for NTGVVP of 0.05 hectares. As such this area of 0.006 hectares is considered an indirect loss. Other remaining patches are all greater than 0.05 hectares in size, as shown in Figure 4.

No facilitated impacts to NTGVVP are expected.

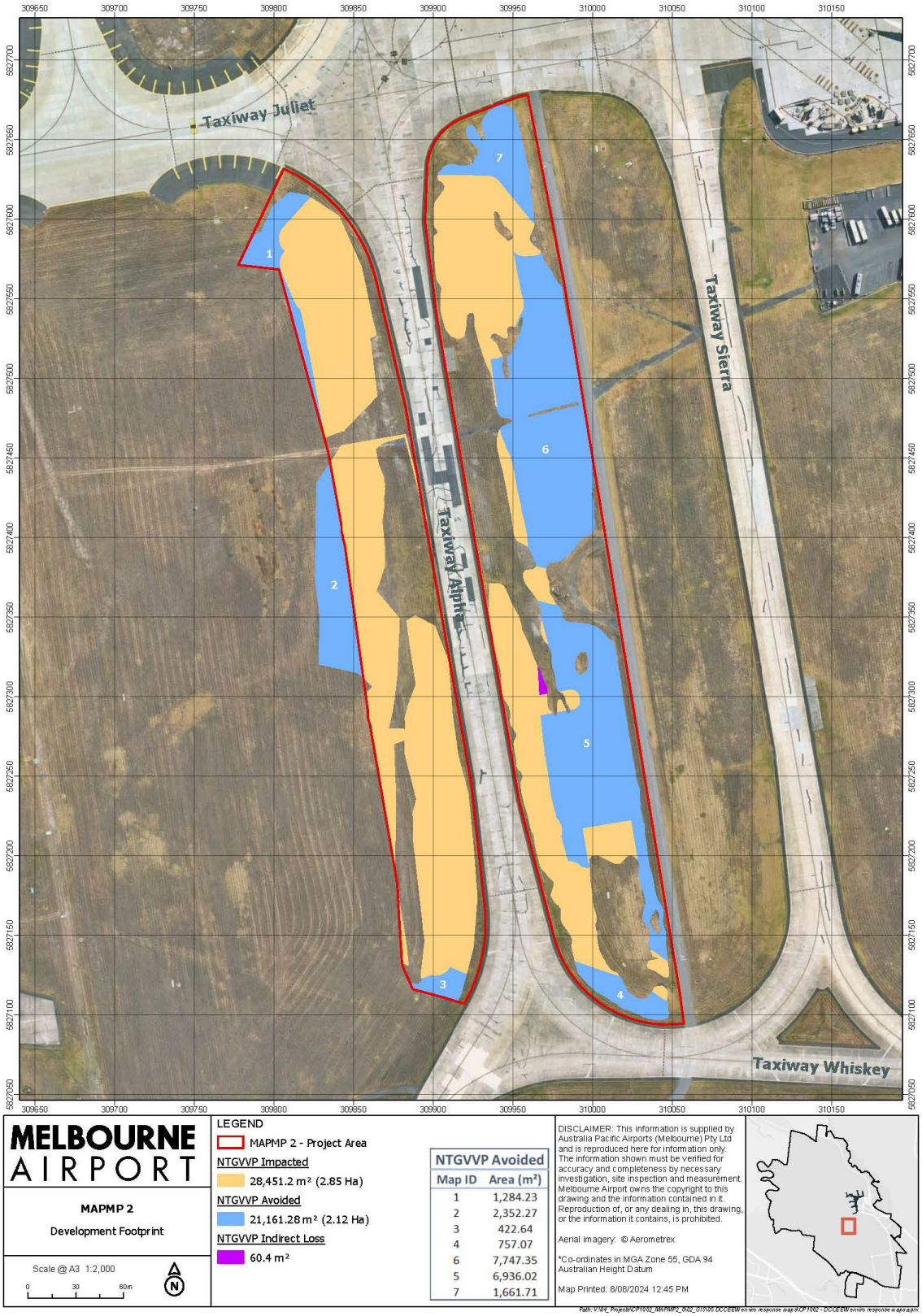

Figure 4 Project impact area

5.2. Significance of impacts

The likelihood of the proposed action having a significant impact on listed threatened species and ecological communities has been assessed in accordance with:

- Matters of National Environmental Significance: *Significant impact guidelines 1.1*, EPBC Act 1999 (DoE 2013).

MNES relevant to the project are summarised in Table 5. A detailed assessment against the significant impact guidelines for NTGVVP is provided in Table 6.

Overall, it is considered possible that the proposed action will result in a significant impact on NTGVVP.

Table 5 Assessment of relevant MNES

MNES	Project specifics	Assessment against significant impact guidelines
EPBC Act listed species	21 flora species and 43 fauna species listed under the EPBC Act have been recorded or predicted to occur within 10km of the project area. The likelihood of these species occurring in the project area is assessed in Appendix E and summarised in Section 4.1.	Threatened flora species predicted to occur within the project area are considered to have a negligible to low likelihood of occurrence. The project is therefore unlikely to constitute a significant impact on these species. For fauna species with a medium or higher likelihood of occurrence, an assessment of potential for significant impact is outlined below: • The Gang-gang Cockatoo *Callocephalon fimbriatum*, White-throated Needletail *Hirundapus caudacutus* and Grey-headed Flying-fox *Pteropus poliocephalus* are likely to utilise woodland patches north of the project area, which may result in flights over the project area at times. No suitable habitat occurs within the project area, therefore the project is unlikely to constitute a significant impact on these species.
EPBC Act listed ecological communities	The following EPBC Act listed ecological community is present within the project area: • Natural Temperate Grassland of the Victorian Volcanic Plain (NTGVVP)	The project will result in the direct, permanent removal of 2.85 hectares of NTGVVP, and indirect loss of 0.006 hectares of NTGVVP. No additional facilitated impacts to NTGVVP are expected.

MNES	Project specifics	Assessment against significant impact guidelines
		A detailed assessment against the *Significant impact guidelines 1.1* for NTGVVP is presented in Table 6.
Migratory species	26 migratory species have been recorded or predicted to occur within 10km of the project area. The likelihood of these species occurring in the project area is assessed in Appendix E and summarised in Section 4.1.	While some of these species may use the project area on occasion, it does not provide important habitat for an ecologically significant proportion of any of these species. As such, the project is unlikely to constitute a significant impact on migratory species.

Table 6 Significant impact assessment for NTGVVP

Significant impact criteria (critically endangered / endangered community)	Likelihood of significant impact	Justification
Reduce the extent of an ecological community	**Possible**	It is inherently difficult to estimate the extent of treeless threatened ecological communities (TECs) at landscape scales. Nevertheless, it is generally accepted that NTGVVP has declined in extent by more than 98% since European arrival in Victoria (TSSC 2008). In the early 2000s, it was estimated that 5,000 hectares of NTGVVP remained (Barlow and Ross, 2002). If anything, the extent of this TEC is likely to be less now. Removal of 2.856 hectares of NTGVVP from the project area (including direct removal of 2.85 hectares of and indirect loss of 0.006 hectares) amounts to removal of approximately 0.06% of the estimated remaining extent of this TEC, near the eastern limit of the TEC's distribution. In the context of the historical decline in NTGVVP, this impact could be considered significant.
Fragment or increase fragmentation of an ecological community	**Unlikely**	It is estimated that more than 95% of known patches of NTGVVP are less than 10 hectares in size, as a result of fragmentation by clearing and modification of the TEC over time (TSSC 2008). The project would impact the margins of a number of patches of NTGVVP generally associated with broader areas of grassland greater than 10 hectares in size. The project is therefore considered unlikely to cause any significant fragmentation of a TEC.

Significant impact criteria (critically endangered / endangered community)	Likelihood of significant impact	Justification
Adversely affect habitat critical to the survival of an ecological community	Unlikely	Melbourne Airport supports a broader area of grassland covering approximately 270 hectares. The project would result in permanent removal of 2.85 hectares of this grassland and therefore adversely affect about 1.06% of NTGVVP within the airport estate. Given the broader context, this is considered unlikely to have a significant impact on the ability of this TEC to persist in the airport or in the broader context. However, given that less than 2% of the TEC is estimated to still exist, most areas that continue to support the TEC are likely to be considered critical habitat, particularly if those areas support moderate to high quality examples of the TEC. While no formal Recovery Plan has been prepared or adopted for this TEC and no critical habitats have been formerly identified by the Australian Government, where possible APAM is enacting a number of priority recovery and threat abatement actions outlined in the Approved Conservation Advice for the NTGVVP dated 29 May 2008. APAM is committed to undertaking the following actions for NTGVVP offset sites which it secures, both on and off airport: • Monitoring for key threats and minimising adverse impacts from changed land uses. • Protecting remnants of NTGVVP communities via the establishment and management of offset sites • Establishment and implementation of weed management plans to remove key weed species and ensuring chemicals are applied in a manner that does not adversely impact the ecological community. • Preventing trampling and excessive grazing on offset sites and development of appropriate fire management regimes.
Modify or destroy abiotic factors necessary for an ecological community's survival, including reduction of groundwater levels, or substantial alteration of	Unlikely	Project construction activities are unlikely to result in long term disturbance to soil, topography and hydrology necessary for persistence of the TEC across the project area.

Significant impact criteria (critically endangered / endangered community)	Likelihood of significant impact	Justification
surface water drainage patterns		
Cause a substantial change in the species composition of an occurrence of an ecological community, including a decline or loss of functionally important species, for example through regular burning or flora and fauna harvesting	**Unlikely**	Decline of NTGVVP typically involves the sequential loss of the following functionally important species or floristic groups: loss of warm-season grasses (e.g. Kangaroo Grass), followed by decline in native forb diversity, followed by loss of cool-season grasses (e.g. Tussock Grass, Wallaby Grass and Spear Grass). Permanent removal of 2.85 hectares of NTGVVP within the project area would be unlikely result in loss of functionally important species from the broader occurrence of the TEC. Any NTGVVP that persists or regenerates within the project area has a reduced species richness and is subject to the same intensive management regimes (e.g. mowing) post-construction, thereby resulting in a similar reduced flora and fauna assemblages as to any other existing areas of NTGVVP within the airport grounds.
Cause a substantial reduction in the quality or integrity of an occurrence of an ecological community, including but not limited to: • Assisting invasive species establishment • Causing regular mobilisation of fertilisers, herbicides or other chemicals or pollutants into the ecological community which kill or inhibit the growth of species in the ecological community.	**Possible but less likely with proposed mitigation**	Construction of the project will result in opportunities for the invasion of highly invasive weeds. However the disturbed topsoil (i.e. the top 5 cm of soil) is proposed to be reinstated as topsoil and this is expected to mitigate the potential for weed invasion by maximising the opportunity for native grasses to re-establish. In addition, a project-specific Construction Environmental Management Plan (CEMP) will be developed which will incorporate measures for weed control, erosion control and surface water management to ensure the native vegetation surrounding the impact area is protected from indirect and consequential impacts. The CEMP will meet minimum requirements of the Melbourne Airport EMP and Melbourne Airport PFAS Management Framework.
Interfere with the recovery of an ecological community	**Unlikely**	The action of clearing 1.06% of the estimated remaining area of this TEC within the airport ground and 0.06% more broadly, even at the eastern edge of the TEC's distribution, is not considered likely to interfere with priority recovery and threat abatement actions.

Significant impact criteria (critically endangered / endangered community)	Likelihood of significant impact	Justification
		Note that current and ongoing management of NTGVVP within airport grounds is unlikely to contribute to the recovery of this TEC in general. No formal Recovery Plan has been prepared or adopted for this TEC however as noted above, APAM is committed to undertaking actions in line with the Approved Conservation Advice (29 May 2008) for NTGVVP offset sites which it secures, both on and off airport.

5.3. Likely duration of direct and indirect impacts to MNES

The action will not be repeated, and the identified impacts will occur during the construction period only. The construction of the works is expected to take 9 months, with 1 month of commissioning post-construction before the upgraded infrastructure becomes operational.

6. Impacts to the environment of Commonwealth land

For actions on or adjacent to Commonwealth land, impacts to the whole of environment must be considered, regardless of whether any MNES are present. This section assessed the likelihood of the proposed action having a significant impact on the environment on Commonwealth land and has been assessed in accordance with:

- Actions on, or impacting upon, Commonwealth land, and actions by commonwealth agencies: *Significant impact guidelines 1.2*, EPBC Act 1999 (DSEWPaC 2013)

Overall, it is considered that the proposed action would not result in a significant impact on Commonwealth land, the key reasons being:

- The proposed action is located fully within the operational airside boundary of Melbourne Airport which is a highly modified environment which has undergone extensive landscape alteration in the past. The proposed works are adjacent to existing runway and taxiway infrastructure and therefore will not substantially alter natural landscape features.
- While soils in the project area are likely to contain low levels of contaminants including per-and poly-fluoroalkyl substances (PFAS), the scale, intensity and duration of excavation works is not considered to be significant.
- It is unlikely that the expected impact on native vegetation would result in medium to large scale clearing of native vegetation that would constitute a significant impact to the environment as a whole on Commonwealth land.
- There are no known cultural heritage values located within the project area.

6.1. Impacts on landscapes and soils

Table 7 provides an assessment against the relevant criteria for impacts on landscapes and soils.

Table 7 Assessment of impacts on landscapes and soils

Criteria	Assessment
Is there a real chance or possibility that the action will:	
Substantially alter natural landscape features	No. The proposed action is located fully within the operational airside boundary of Melbourne Airport, being a highly modified environment which has undergone extensive landscape alteration in the past. The proposed action involves the upgrade of existing taxiway infrastructure and therefore will not substantially alter natural landscape features.
Cause subsidence, instability or substantial erosion, or	No. The proposed action is located on flat ground surrounded by existing infrastructure, it is unlikely to cause subsidence, instability or substantial erosion.
Involve medium or large-scale excavation of soil or mineral?	No. Although some excavation will be required for the works, no excavation considered as medium or large-scale would be required.

6.2. Impacts on coastal landscapes and process

Table 8 provides an assessment against the relevant criteria for impacts on coastal landscapes and process.

Table 8 Assessment of impacts on coastal landscapes and process

Criteria	Assessment
Is there a real chance or possibility that the action will:	
Alter coastal processes, including wave action, sediment movement or accretion, or water circulation patterns	**No.** The proposed action is not located within the vicinity of coastal environments and no works within aquatic environments are proposed.
Permanently alter tidal patterns, water flows or water quality in estuaries	
Reduce biological diversity or change species composition in estuaries, or	
Extract large volumes of sand or substantially destabilise sand dunes?	

6.3. Impacts on ocean forms, ocean processes and ocean life

Table 9 provides an assessment against the relevant criteria for impacts on ocean forms, ocean processes and ocean life.

Table 9 Assessment of impacts on ocean forms, ocean processes and ocean life

Criteria	Assessment
Is there a real chance or possibility that the action will:	
Reduce biological diversity or change species composition on reefs, seamounts or in other sensitive marine environments	**No.** The proposed action is not located within the vicinity of coastal (i.e. marine) environments and no works within aquatic environments are proposed.
Alter water circulation patterns by modification of existing landforms or the addition of artificial reefs or the other large structures	
Substantially damage or modify large areas of the seafloor or ocean habitat, such as sea grass	
Release oil, fuel or other toxic substances into the marine environment in sufficient quantity to kill larger marine animals or alter ecosystem processes, or	
Release large quantities of sewage or other waste into the marine environment?	

6.4. Impacts on water resources

Table 10 provides an assessment against the relevant criteria for impacts on water resources.

Table 10 Assessment of impacts on water resources

Criteria	Assessment
Is there a real chance or possibility that the action will:	
Measurably reduce the quantity, quality or availability of surface or ground water	**No.** It is highly unlikely that any change to surface or ground water would occur as a result of the proposed action.
Channelise, divert or impound rivers or creeks or substantially alter drainage patterns, or measurably alter water table levels?	**No.** The proposed action is highly unlikely to have any impact to rivers, creeks, drainage patterns or water table levels.

6.5. Pollutants, chemicals, and toxic substances

Table 11 provides an assessment against the relevant criteria for impacts from pollutants, chemicals and toxic substances.

Table 11 Assessment of impacts from pollutants, chemicals and toxic substances

Criteria	Assessment
Is there a real chance or possibility that the action will:	
Generate smoke, fumes, chemicals, nutrients, or other pollutants which will substantially reduce local air quality or water quality	**No**. Fumes from vehicles and machinery will not exceed normal background levels and will therefore not substantially reduce local air, soil or water quality.
Result in the release, leakage, spillage or explosion of flammable, explosive, toxic, radioactive, carcinogenic, or mutagenic substances, through use, storage, transport, or disposal	**No**. No pollutants or chemicals will be used during construction. Refuelling of vehicles and equipment will occur off-site where possible. The CEMP will outline the protocols for refuelling and include contingencies in the event of an accidental release of fuel from construction vehicles and equipment while operating (i.e. spill response procedures). The CEMP will meet minimum requirements of the Melbourne Airport EMP.
Increase atmospheric concentrations of gases which will contribute to the greenhouse effect or ozone damage, or substantially disturb contaminated or acid-sulphate soils?	**No**. While soils in the project area are likely to contain low levels of contaminants including PFAS, the scale, intensity and duration of excavation works is not considered to be significant. Spoil management procedures, including specific requirements for the management of PFAS-impacted soils, will be included in the project CEMP. The CEMP will meet

Criteria	Assessment
	minimum requirements of the Melbourne Airport EMP and Melbourne Airport PFAS Management Framework.

6.6. Impacts on plants

Table 12 provides an assessment against the relevant criteria for impacts on plants.

Table 12 Assessment of impacts on plants

Criteria	Assessment
Is there a real chance or possibility that the action will:	
Involve medium or large-scale native vegetation clearance	No. Commonwealth land at Melbourne Airport is approximately 2,665 hectares in size of which 650 hectares contains native vegetation of varying qualities, patch sizes and EVCs. Approximately 410 hectares of this native vegetation is Plains Grassland EVC of which approximately 270 hectares is comprised of the NTGVVP ecological community. The proposed action will result in clearing and disturbance of Plains Grassland EVC which corresponds to the Victorian FFG Act listed Western (Basalt) Plains Grasslands Community. Parts of the Plains Grassland vegetation in the project area satisfy the criteria for NTGVVP ecological community. The proposed action will result in permanent removal of 4.09 hectares of Plains Grassland EVC of which 2.85 hectares is NTGVVP. Further, there will be an indirect loss of 0.006 hectares of Plains Grassland which is also NTGVVP. This amounts to approximately 0.6% of the total native vegetation and 1.06% of the total NTGVVP within Melbourne Airport. This is considered to be small-scale vegetation clearance only. In addition to the clearing and disturbance being considered small-scale it is also important to consider the location and quality of the vegetation to be impacted. The native vegetation is located adjacent to taxiways. It is subject to regular mowing and impacts from the existing infrastructure and associated land uses. The vegetation proposed for removal and disturbance has previously been removed or impacted from the original installation of the taxiways and the construction of other airfield infrastructure and has since recolonised the project area. It is unlikely that the clearing of native vegetation as described above would result in medium to large scale clearing of native vegetation that would result in a significant impact to the environment as a whole on Commonwealth land.

Criteria	Assessment
Involve any clearance of any vegetation containing a listed threatened species which is likely to result in a long-term decline in a population or which threatens the viability of the species	No. The vegetation clearance required will not result in the long-term decline in a population of a threatened species or threaten the viability of the species. There are no known listed threatened species within the study area.
Introduce potentially invasive species	No. The potential introduction of invasive species will be addressed by adopting a vehicle and machinery hygiene procedure, to ensure all vehicles and machinery that arrive at the project area are free of soil and other material that may contain weed propagules The project-specific CEMP will incorporate measures for weed control, erosion control and surface water management to ensure the native vegetation surrounding the impact area is protected from indirect and consequential impacts. The CEMP will meet minimum requirements of the Melbourne Airport EMP and Melbourne Airport PFAS Management Framework.
Involve the use of chemicals which substantially stunt the growth of native vegetation or	No. There will be no use of chemicals which will impact plants.
Involve large-scale controlled burning or any controlled burning in sensitive areas, including areas which contain listed threatened species?	No. The proposed action does not include burning.

6.7. Impacts on animals

Table 13 provides an assessment against the relevant criteria for impacts on animals.

Table 13 Assessment of impacts on animals

Criteria	Assessment
Is there a real chance or possibility that the action will:	
Cause a long-term decrease in, or threaten the viability of, a native animal population or populations, through death, injury or other harm to individuals	No. The disturbance from the proposed action is expected to have a low-negligible impact on native species through disturbance during construction. The proposed action will not fragment or substantially reduce habitat for native species. EPBC Act listed fauna species with a medium or higher likelihood of occurrence within the project area, including The Gang-gang Cockatoo *Callocephalon fimbriatum*, White-throated Needletail *Hirundapus caudacutus*, Swift Parrot
Displace or substantially limit the movement or dispersal of native animal populations	

Criteria	Assessment
Substantially reduce or fragment available habitat for native species	*Lathamus discolor*, and Grey-headed Flying-fox *Pteropus poliocephalus* are unlikely to utilise the habitat within the project area. The likelihood of listed species being within the project area is considered low. As detailed in Section 4.3.2 a number of FFG Act listed species were considered to have a medium to high likelihood of occurring within the project area or have been previously recorded in the local area. Indirect impacts to these species associated with the project have the potential to occur. Of the FFG Act listed threatened species that are known or likely to be affected by the project, Tussock Skink (listed as endangered under the FFG Act) has the potential to be most affected. It is difficult to quantify the precise impact on the population of Tussock Skink, as very little population data exists for Melbourne Airport and surrounds, however it can be inferred that the proportion of habitat removed is unlikely to have a significant impact on the local population of Tussock Skink. The area of good quality habitat (Plains Grassland) is approximately 541.56 hectares across the broader Melbourne Airport estate. The permanent removal of 4.09 hectares of Plains Grassland from the project area constitutes approximately 0.76% of total available habitat, which is not considered to be a significant reduction. Mitigation measures will be implemented during construction of the project with the aim of avoiding or minimising any possible impacts on FFG Act listed species. These include: • Minimising the removal of native vegetation wherever possible (e.g reducing the extents of the project area). • Implementation of exclusion zones to protect species adjacent to the project area. • Implementation of noise and dust control procedures. • Ensuring that all employees and contractors complete environmental inductions prior to undertaking works within the project area so they are aware of the protected and vulnerable species located in and around the project area. Noting that some of the FFG Act listed species have the potential to interact with airspace nearby the project, there is potential for indirect impacts via noise from the construction works. As any noise impacts during construction of the project will be significantly less than that of the current airport operations (aircraft landing and taking off), indirect impacts via noise are possible, but not considered likely. In the event observations during the project indicate that risks
Reduce or fragment available habitat for listed threatened species, which is likely to displace a population, result in a long-term decline in a population, or threaten the viability of the species	

Criteria	Assessment
	to aerial species may be realised, additional control measures will be designed and implemented as needed. Further details on proposed mitigation measures are provided in Section 8.
Introduce exotic species which will substantially reduce habitat or resources for native species, or	No. The proposed works will not result in the introduction of exotic fauna species.
Undertake large-scale controlled burning or any controlled burning in areas containing listed threatened species?	No. The proposed impact does not include burning.

6.8. Impacts on people and communities

Table 14 provides an assessment against the relevant criteria for impacts on people and communities.

Table 14 Assessment of impacts on people and communities

Criteria	Assessment
Is there a real chance or possibility that the action will:	
Substantially increase demand for, or reduce the availability of, community services or infrastructure which have direct or indirect impacts on the environment, including water supply, power supply, roads, waste disposal, and housing	No. There are no people or communities that will be adversely affected by the proposed project.
Affect the health, safety, welfare, or quality of life of the members of a community, through factors such as noise, odours, fumes, smoke, or other pollutants	
Cause physical dislocation of individuals or communities, or	
Substantially change or diminish cultural identity, social organisation, or community resources?	

6.9. Impacts on heritage

Table 15 provides an assessment against the relevant criteria for impacts on heritage.

Table 15 Assessment of impacts on heritage

Criteria	Assessment
Is there a real chance or possibility that the action will:	
Permanently destroy, remove or alter the fabric of a heritage place?	**No.** There are no known cultural heritage values located within the study area. The project area is subject to a Cultural Heritage Management Plan (CHMP), which was developed for the Melbourne Airport Runway Development Program (CHMP 12774) and subsequently approved by the Wurundjeri Woiwurrung Cultural Heritage Aboriginal Corporation, the Registered Aboriginal Party (RAP) for the area. Requirements of CHMP 12774 will be followed and will be incorporated into the project CEMP.
Involve extension, renovation, or substantial alteration of a heritage place in a manner which is inconsistent with the heritage values of the place?	**No.** The works do not involve extensions or renovations. No heritage structures will be impacted by the proposed works.
Involve the erection of buildings or other structures adjacent to, or within important site lines of a heritage place which are inconsistent with the heritage values of the place?	**No.** The proposed works are not expected to further alter the already modified landscape surrounding project area.
Substantially diminish the heritage value of a heritage place for a community or group for which it is significant?	**No.** The works will not substantially diminish the heritage values of places in the project area.
Substantially alter the setting of a heritage place in a manner which is inconsistent with the heritage values of the place?	**No.** The proposed works will not substantially alter the setting of any heritage places.
Substantially restrict or inhibit the existing use of a heritage place as a cultural or ceremonial site?	**No.** The works will not restrict or inhibit access to any Aboriginal or historical cultural heritage values used as a cultural or ceremonial site.

6.10. Site contamination

A targeted preliminary soil sampling program was undertaken to assist in the characterisation of soil and pavement materials within the project area. In addition to this soil assessment, one groundwater monitoring bore was installed in order to assess the potential for perched water to interact with the pavements at shallow depths (<2m below ground surface). While not directly within the project area, the primary objective of the monitoring bore was to monitor the perched water or groundwater level throughout a full seasonal year to understand cyclic change of water levels underlying the site (should water exist).

A copy of the Targeted Environmental Site Assessment Report is provided in Appendix I and is summarised in Section 6.10.1 to Section 6.10.6 below. It is noted that the report covers a broader

area than the project area, as it was also used to inform other projects within the Melbourne Airport estate.

6.10.1. Site history review

Melbourne Airport has been operating as an airport since the 1960s. Historical operations at Melbourne Airport have generally included:

- Passenger and cargo aviation which includes fuel storage and handling.
- Fire training and the storage and use of firefighting foam.
- Tenant-operated maintenance facilities for vehicles and aircraft.
- Water run-off from vehicle-related activities including aircraft maintenance and car park facilities.
- General airport operation, construction, maintenance, and landscaping, including the use and disposal of pesticides and herbicides, solvents and paints, batteries, and asbestos-containing materials within existing buildings, fuels and cleaning chemicals.

It is noted that Taxiway Alpha is used for transiting planes from the main runway to the boarding terminals and is not associated with the storage of fuels or fire training. No evidence of fuel spills, foam use or storage of chemicals was observed in this areas from the NearMap imagery. and fatigued slabs, particularly over the middle third of the taxiway length, are in a very poor condition. The slabs are showing some cracking and breaks from NearMap imagery reviewed between 2009-2022. Several of the cracks have been repaired with asphalt and in some locations the existing repair is in poor condition and has some vegetation growing within them.

6.10.2. Soil investigation

Soil investigation works were completed between 23 and 31 January 2023. The relevant investigation locations that fall within the project area include the following:

- Six (6) test pit locations (TP4 - TP09) excavated to depths of 2.0 m.
- Seven (7) borehole locations (BH02 - BH08) progressed to a depth of 2.0 m.
- Soil samples were typically collected near surface, at 0.2 m, 0.5 m, 1.0 m and 2.0 m depth.
- Two soil samples collected from each soil bore and test pit location were analysed for a range of potential contaminants of concern in accordance with EPA Publication 1828.2 and EPA Publication IWRG702.

6.10.3. Groundwater investigation

Groundwater investigation works were completed between 23 January and 3 February 2023 and comprised the following:

- Extension of one soil bore (BH2) to a depth of 3.2 m to allow for installation and construction of a groundwater monitoring well.
- While it was proposed that the groundwater monitoring well would be sampled as part of the investigation, following installation the well was found to be dry. As a result, the well was not sampled during the fieldworks completed.

6.10.4. Results of the soil and groundwater investigation

Beneath the taxiway pavements the general soil profile consisted of:

- A shallow geological layer comprising fill / reworked natural soil to a depth of approximately 0.2-0.5 metres below ground level (mbgl). The fill / reworked natural soil consisted of primarily of sand, sandy clay, and clay.
- The underlying natural soil consisted primarily of clay with some traces of silt and sand observed (0.5-2.0 mbgl).
- There were no observations of foreign material, such as fragments of concrete, metal or bricks or visual signs of contamination (staining or odours).

The laboratory analysis results for soil showed:

- The pH of soil samples ranged between 6.1 and 8.5 consistent with the classification of 'non-aggressive' (AS2159 2009 Piling – Design and Installation, Table 6.4.2 pH >5.5).
- Results for all contaminants of concern were below the adopted assessment criteria for human health and land dependent ecosystems.
- No asbestos was observed during the collection of the samples.
- While concentrations of barium exceeded the site specific *Airports (Environment Protection) Regulations 1997* criteria in multiple samples, barium is considered to be a product of basalt weathering and is naturally common in volcanic derived soils. As a result, concentrations of barium exceeding the *Airports (Environment Protection) Regulations 1997* criteria were considered to be an indicator of regional geological conditions and not a source of contamination.
- Concentrations of PFAS compounds were reported below the upper limits outlined in the PFAS National Environmental Management Plan (PFAS NEMP) (HEPA 2020) for Ecological indirect exposure criteria (0.01mg/kg) and the upper limits for Management Level 1 in accordance with the Melbourne Airport PFAS Management Framework.
- Due to detectable concentrations of PFOS and PFHxS above EPA Victoria's waste designation guidelines (Victoria Government Gazette, 2023) this soil is classified as "fill material – PFAS impacted soil" for offsite disposal purposes.

As noted in Section 6.10.3 above, the groundwater monitoring bore installed was dry and as a result no samples or laboratory analytical results were required as part of the assessment.

6.10.5. Potential for interaction with groundwater

As discussed above, the groundwater monitoring bore installed to a depth of 3.2 m was designed to confirm the presence of any perched water that may interact with the pavement upgrade works.

During two monitoring events completed on 29 January and 3 February 2023, it was confirmed that the bore was dry, suggesting that there was no perched water in the vicinity of the project area. While the two monitoring events were completed in the drier months of the year (summer period) and bore BH2 was located adjacent to the project area, it was considered in close enough proximity to provide adequate information on the presence or absence of perched water in the vicinity of the project area.

Based on the proposed depth of earthworks associated with the project (0.1-0.5 m bgl) and the lack of water identified in the groundwater bore installed adjacent to the project area, it was considered unlikely that groundwater would be encountered during the project construction works.

6.10.6. Conclusions

- No soil staining or visual evidence of contamination (including asbestos) was observed in the soil profile during the intrusive drilling and the soil sampling completed within the project area.
- With the exception of barium, all samples collected from sample locations within the project area showed concentrations of contaminants of concern below the adopted assessment criteria. Concentrations of barium were considered to be representative of background concentrations in the underlying geology at Melbourne Airport and were not considered to be a result of contamination within the project area.
- The pH of soil samples collected within the project are ranged between 6.1 and 8.5 consistent with the classification of 'non-aggressive' (AS2159 2009 Piling – Design and Installation, Table 6.4.2 pH >5.5).
- Concentrations of PFAS compounds were below the upper limits outlined in the PFAS NEMP (HEPA 2020) for Ecological indirect exposure criteria (0.01mg/kg) and were below the upper limits for Management Level 1 in accordance with the Melbourne Airport PFAS Management Framework, for all samples collected within the project area.
- It was considered unlikely that groundwater would be encountered during the project, as no groundwater was encountered in the vicinity of the project area to a depth of 3.2 m below ground level.
- Based on the results of the soil and groundwater investigation, the project area was considered suitable for the proposed development and was considered unlikely to result in significant impacts to surrounding environment (soil and groundwater).

7. Cumulative impacts

7.1. Residual impacts of the proposed action

The proposed action involves maintenance and upgrade of existing infrastructure, which is required to comply with CASA standards. As such, the proposed action cannot be avoided. In the early stages of design, the project design was revised to minimise the removal of native grasses as much as possible, which resulted in impacts to approximately 1 hectare of NTGVVP being avoided.

Residual significant impacts on MNES associated with the proposed action are discussed in Section 9.1. Residual impacts will be offset in accordance with the EPBC Act Environmental Offsets Policy (DSEWPaC, 2012a), as per the proposed offset strategy outlined in Section 9.2.

It is noted that there is some overlap with the impact area for the proposed action and the future M3R disturbance footprint, as shown in Figure 5. The M3R MDP is currently in assessment, and approval is expected to be issued by the Minister for Infrastructure, Transport and Regional Development in 2024. Construction works in the portion of M3R which overlaps with the MAPMP 2 project are expected to commence in 2030, by which time the MAPMP 2 project is scheduled to be completed.

7.2. Potential for cumulative impacts

The proposed action is not expected to result in any cumulative impacts on the resilience of threatened species and ecological communities in the airport, and on overall habitat quality and availability.

It is noted that most grassland within the airfield is highly modified and species-poor, having recolonised land that has previously been subject to earthworks as part of the original construction of the airport in the 1960s. Once construction works associated with the proposed action are complete, disturbed areas will be reinstated and re-vegetated, and routine maintenance within the airfield will continue as per current operations (i.e. regular mowing, management of weeds and pest animals).

7.3. Potential for existing pressures and threats to be exacerbated

The proposed action is not likely to exacerbate existing pressures and threats to threatened species and ecological communities in the airport. Once the project is completed, there will be no change to existing airfield operations.

Figure 5 Future developments

8. Avoidance, mitigation and management measures

8.1. Avoidance measures

The key measure for reducing impacts on ecological values associated with the proposed action is to minimise the removal of native vegetation wherever possible (given the location and scale of the project, complete avoidance of impacts to ecological values is not possible).

During the preliminary design phase, potential impacts to approximately 1 hectare of NTGVVP were able to be avoided. Further refinement of the project design and construction methodologies has resulted in an additional 2.12 hectares of NTGVVP being avoided. This represents a greater than 50% reduction in the initial predicted impact on NTGVVP within the project area.

8.2. Construction phase management and mitigation measures

A Construction Environment Management Plan (CEMP) will be developed to outline the appropriate environmental goals and objectives with respect to the project. It will ensure the environmental management procedures included are consistent with the *Environmental Management Plan Guidelines* (DoE, 2014), the Melbourne Airport Environmental Management Plan (APAM 2021), and the Melbourne Airport PFAS Management Framework (APAM 2022).

The CEMP will capture all stages of the project and ensure adequate environmental controls are in place to address all potential risks and impacts that may arise during the project works.

The CEMP will document all processes and management strategies to minimise and/or prevent impacts on ecological values. Implementation of the CEMP will limit impacts to the project area, and all downstream impacts will be considered negligible. The CEMP will include detail on the following mitigation and management strategies:

- Protection of EPBC Act listed communities (NTGVVP) and other areas of native vegetation that are to be retained adjacent to, and within the project area. Exclusion fencing will be erected to protect these areas and identified with appropriate signage such as 'Environmental Protection Area' or 'No-go zone' at regular intervals along the fence line. Access to and from the project area will be restricted to the disturbance footprint identified in Section 3.2. Traversing native and introduced grasslands outside of this disturbance footprint will be strictly prohibited. As outlined in Section 3.2, sufficient buffers have been allowed for to ensure that all construction works can be conducted within the disturbance footprint, without encroaching on 'No-go zones'. This approach has been adopted most recently for the Taxiway Zulu and northern compound project at Melbourne Airport (EPBC 2016/7837) and was successfully implemented. Refer to Figure 6 which provides examples of exclusion fencing and signage.
- Locating all material stockpiles, vehicle parking and machinery storage within the development footprint, and not in areas of retained native vegetation.
- Ensuring that all employees and contractors complete environmental inductions prior to undertaking works within the project area.
- Implementation of strict hygiene protocols that reduces the risk of establishment of novel and/or high threat weeds or disease. High threat weeds are already established within the project area. The establishment of new high threat weeds, introduction of

disease or spread of existing weeds from or around the project area will be mitigated through vehicle washdown procedures incorporated into the CEMP.

- Measures to be implemented to prevent and manage potential mobilisation of contaminants, such as appropriate sediment fencing downslope of stockpiles and stabilisation of temporary stockpiles.
- Measures to be implemented in managing the offsite disposal (if unexpected contamination is unearthed) of soil excavated during project construction works, including sampling requirements, likely areas of contaminated soil and disposal requirements.
- Noise control measures will include (but are not limited to) noise suppression devices, scheduled work times and traffic management.
- Dust control measures will include (but are not limited to) stockpile management, and the use of water carts and sprays to suppress dust as required.
- Requirements for vehicle and onsite personal hygiene regarding minimising the potential for transportation of PFAS and other potential contaminants offsite.
- Sediment and erosion control procedures.
- Refuelling and spill response procedures.
- Requirement to comply with the conditions of CHMP 12774.

Figure 6 Examples of exclusion fencing and signage

8.3. Post-construction rehabilitation and adaptive management

Post-construction rehabilitation of the project area will focus on establishing an erosion resistant ground condition. This will require a program of revegetation, erosion control, and targeted weed management.

8.4. Summary of avoidance, mitigation and management measures

A summary of the proposed avoidance, mitigation and management measures is presented in Table 16.

Table 16 Summary of avoidance, mitigation and management measures

Measure	Objectives	Responsibility	Timing	Ongoing management and monitoring	Framework
Development and implementation of CEMP	Avoid and/or minimise construction-related risks to environmental values	Contractor	APAM Environment and Sustainability team to approve and reviewed by Airport Environment Officer prior to the commencement of the action	As defined in the CEMP	• Environmental Management Plan Guidelines (DoE 2014) • Melbourne Airport Environmental Management Plan (APAM 2021) • Melbourne Airport PFAS Management Framework (APAM 2022).
Post-construction rehabilitation	Management of weeds, sediment and erosion	Contractor	Until disturbance footprint has been stabilised in accordance with the Melbourne Airport EMP and project design requirements.	As per Section 8.3	• Environmental Management Plan Guidelines (DoE 2014) • Melbourne Airport Environmental Management Plan (APAM 2021)

9. Offsets

9.1. Likelihood of residual significant impacts on MNES

The significant impact assessments presented in Section 5.2 and Section 6 detail the extent of impacts to threatened species, ecological communities, listed migratory species and relevant ecological features on Commonwealth land resulting from the proposed action.

With reference to the significant impact assessments:

- it is considered possible that the proposed action will result in a significant impact to the NTGVVP TEC, and
- it is considered that the proposed action would not result in a significant impact on Commonwealth land.

Residual significant impacts have been identified as the permanent removal of NTGVVP within the project area.

9.2. Proposed offset strategy

APAM is committed to securing a direct offset to compensate for the permanent removal of 2.856 hectares of NTGVVP within the project area, in accordance with the EPBC Act *Environmental Offsets Policy* (DSEWPaC 2012a).

APAM has identified an offset site near Foxhow, Victoria which will be suitable to provide the required offset and is currently engaging with the landowner to secure the offset.

Consideration of EPBC Act *Environmental Offsets Policy* requirements for the offset site is provided in Table 17.

Table 17 Consideration of EPBC Act Environmental Offsets Policy Requirements

Reference	Requirement	Assessment
7.1	Suitable offsets must deliver an overall conservation outcome that improves or maintains the viability of the protected matter	The offset site has been selected as it meets the key attributes of the protected matter to be impacted by the project, and the quality of the NTGVVP present at the offset site exceeds the quality of NTGVVP within the impact area. The overall conservation outcome of the offset site will be improved through site management actions including but not limited to: ▪ Exclusion of commercial agricultural practices and other inappropriate land uses ▪ Pest control ▪ Elimination of key weed species in line with management targets Without protection and management as an offset site, the quality of the NTGVVP would decline in the future.

Reference	Requirement	Assessment
7.2	Suitable offsets must be built around direct offsets but may include other compensatory measures	APAM proposes to offset 100% of the residual significant impact associated with the project.
7.2.1	Tenure for direct offsets	The offset site will require active conservation management (and improvements) for the first 10 years, after which the offset area is to be managed and maintained as a conservation area in perpetuity. It is noted that the proposed offset site has already experienced a decline of 87.81% over six years in the extent of NTGVVP within the site. There were no changes to the use of the site, nor the existing management practices that would have led to this decline in NTGVVP. This decline is almost exclusively a result of increased weed cover across the site resulting in areas previously mapped as NTGVVP now being entirely made up of introduced vegetation. Without protection and management as an offset site, the quality of the NTGVVP within the offset site is expected to decline within 10 years to such a point that it would no longer meet the condition thresholds for NTGVVP (i.e. the community will be functionally lost). Refer to Table 21 for further details.
7.2.3	Impacting on existing EPBC Act offsets	The proposed action will not impact on existing EPBC Act offset.
7.3	Suitable offsets must be in proportion to the level of statutory protection that applies to the protected matter	These requirements have been assessed using the Offset assessment guide calculator (refer Section 9.2.3 and Appendix J).
7.4	Suitable offsets must be of a size and scale proportionate to the residual impacts on the protected matter	
7.5	Suitable offsets must effectively account for and manage the risks of the offset not succeeding	In line with the EPBC Act *Environmental Offsets Policy*, direct offsets are considered to present a lower risk than other compensatory measures. The Offset Management Plan (OMP) for the offset site will include adaptive management measures, as well as routine monitoring and evaluation of the effectiveness of management measures to support success of the offset.

Reference	Requirement	Assessment
7.6	Suitable offsets must be additional to what is already required, determined by law or planning regulations or agreed to under other schemes or programs	The procurement of the offset site is in addition to any requirements by law, planning regulations and has not been agreed to as a part of any other scheme or program.
7.6.1	Links with state and territory approval processes	Not applicable as Melbourne Airport is situated on Commonwealth land. Refer to Section 2 which outlines the relevant regulatory framework.
7.7	Suitable offsets must be efficient, effective, timely, transparent, scientifically robust and reasonable	The approximate timeline for securing the offset site and commencement of management actions is provided in Table 22 below. The offset site has been assessed and it's potential to deliver the outcomes required to sufficiently offset residual significant impacts from the project is outlined in Table 21.
7.8	Suitable offsets must have transparent governance arrangements including being able to be readily measured, monitored, audited and enforced	The OMP will detail these aspects and will be submitted to DCCEEW for review.

The Offsets Assessment Guide for the offset site is included in Appendix J. Justification for the inputs to the calculator is provided below.

9.2.1. Habitat quality scoring system for NTGVVP

As detailed in Section 4.5.3, VQA data was collected for all patches of NTGVVP in the project area.

The assessment used was the Victorian Department of Energy, Environment and Climate Action (DEECA) VQA method, underpinning the 'habitat hectares' concept (DSE 2004c). Native vegetation was defined in accordance with the 'Guidelines for the removal, destruction or lopping of native vegetation' (DELWP 2017).

'Habitat hectares' is Victoria's standard metric to quantify native vegetation losses and gains for regulatory approvals and biodiversity offsets. It gives habitats a score out of 100: a site condition score out of 75 plus a landscape context score out of 25. When expressed as a decimal (i.e. divided by 100 for a score out of 1), the VQA score can then be multiplied by the area of the vegetation (in hectares) to calculate the number of habitat hectares in a patch of vegetation.

This method is a good surrogate for habitat quality because it considers important structural and functional elements. These include the density of large trees, understorey complexity, plant species richness, weediness, plant recruitment and coarse woody debris. It also considers the physical connectivity of native vegetation in the landscape (e.g. patch size,

configuration and continuity). VQA scores are readily converted to habitat scores out of 10 for use in the Offsets Assessment Guide (Table 18).

A total weighted average VQA score (out of 100) was determined for NTGVVP within the project area. The weighting was based on the area that each patch contributed to the total area of the TEC within the project area.

The weighted-average VQA score was then divided by 10 (for a score out of 10), and the score was rounded to the nearest whole number for entry in the Offsets Assessment Guide (Table 19). Rounding was completed as the final step, after a VQA score out of 100 had been determined.

Table 18 Habitat quality scoring system for NTGVVP

Parameter[1]	Scoring system
Site condition (max. 7.5 points)	• Lack of weed cover and proportion of weed cover due to high threat weeds contribute up to 20.45/100 to the VQA score (2/10 to the habitat quality score). • Percentage cover of recruitment area (i.e. recruitment opportunity, scaled according to herb species diversity, contributes up to 13.64/100 to the VQA score (1.4/10 to the habitat quality score). • Cover of organic litter, scaled to dominant litter type (native/non-native) and relative to the EVC benchmark, contributes up to 6.82/100 to the VQA score (0.7/10 to the habitat quality score). • Number of species and the cover and diversity of plant lifeforms, relative to the relevant EVC benchmark, contribute up to 34.09/100 to the VQA score (3.4/10 to the habitat quality score).
Site context (max. 2.5 points)	• Size of the patch of native vegetation within which the TEC is located contributes up to 10/100 to the VQA score (1/10 to the habitat quality score). • Amount and configuration of native vegetation within the neighbourhood, within a radius of up to 5 km, contributes up to 10/100 to the VQA score (1/10 to the habitat quality score). • Distance to the nearest core area of native vegetation (areas of native vegetation >50 ha) contributes up to 5/100 to the VQA score (0.5/10 to the habitat quality score).

[1] Through prior consultation with DCCEEW for the M3R project, species stocking rate does not contribute to the habitat quality for TECs. It is therefore not allocated a weighting within this scoring system.

Table 19 Conversion of VQA scores to habitat quality score for the Offsets Assessment Guide

Vegetation Quality Assessment score (/100)	Raw score for Offsets Assessment Guide (/10)	Rounded Score for Offsets Assessment Guide (/10)
0 to <5	0 to <0.5	0
≥5 to <15	≥0.5 to <1.5	1
≥15 to <25	≥1.5 to <2.5	2
≥25 to <35	≥2.5 to <3.5	3
≥35 to <45	≥3.5 to <4.5	4
≥45 to <55	≥4.5 to <5.5	5
≥55 to <65	≥5.5 to <6.5	6
≥65 to <75	≥6.5 to <7.5	7
≥75 to <85	≥7.5 to <8.5	8
≥85 to <95	≥8.5 to <9.5	9

9.2.2. Impact area

The impact area includes 2.856 hectares of NTGVVP with a weighted average VQA score of 38.00/100 (habitat quality score of 4/10). The impact calculator inputs into the Offsets Assessment Guide are shown in Table 20.

Table 20 Impact calculator inputs into the Offsets Assessment Guide

Parameter	Input	Justification for input
Annual probability of extinction	6.8%	The annual probability of extinction for NTGVVP, a critically endangered ecological community, is 6.8% based on IUCN category definitions. This % is set by DCCEEW guidance.
Area of habitat	2.856 hectares	A total of 2.85 hectares of NTGVVP is mapped within the MAPMP 2 disturbance footprint. There will also be an indirect loss of 0.006 hectares of NTGVVP (refer Section 5.1).
Quality	4/10	All field data for NTGVVP within the project area was collected in February 2020, October 2020 and October 2021 by qualified ecologists of Biosis as part of the M3R project (refer Section 4.4.3). The weighted average VQA score of all NTGVVP within the project area is 38.00/100, which converts to a habitat quality score of 4/10. This score is made up of the following components: • A weighted average site condition score of 30.00/75 (3.0/7.5 made up of the following weighted average VQA component scores: lack of weeds score of 5.45/20.45; recruitment score of

Parameter	Input	Justification for input
		8.18/13.64; organic litter score of 5.45/6.82; and understorey score of 10.90/34.09 • A weighted average **site context** score of 8.00/25 (0.8/2.5), made up of the following weighted average VQA component scores: patch size score of 3.60/10; neighbourhood score of 3.40/10; and, distance to core score of 1.00/5.
Total quantum of impact	1.14 adjusted hectares	This value is set by the Offsets Assessment Guide and represents the value of the NTGVVP within the impact area, expressed in adjusted hectares. The absolute area (in hectares) has been adjusted to account for the quality of the NTGVVP.

9.2.3. Offset site

A baseline survey of the offset site has been completed, and the results of the survey used to inform the Offsets Assessment Guide. It is noted that the offset site supports a total of 25.72 hectares of NTGVVP. Only a portion of this (8.17 hectares) will be required to offset 100% of the residual significant impact associated with the project.

The offset calculator inputs into the Offsets Assessment Guide are shown in Table 21.

Table 21 Offset assessment guide inputs for offset site

Parameter	Input	Justification for input
Risk-related time horizon	20 years	The offset site will require active conservation management (and improvements) for the first 10 years, after which the offset area is to be managed and maintained as a conservation area in perpetuity. However, 20 years is the maximum value that can be entered into the Offsets Assessment Guide.
Start area	8.17 hectares	This represents the portion of the offset site which will be required to offset 100% of the residual significant impact associated with the project.
Risk of loss (%) without offset	0%	As advised by DCCEEW with reference to *Guidance for deriving 'Risk of Loss' estimates when evaluating biodiversity offset proposals under the EPBC Act* (Maseyk et al. 2017).
Risk of loss (%) with offset	0%	As above for risk of loss without offset.
Confidence in result – risk of loss	90%	A 90% confidence reflects that there is a high degree of confidence that there is no (0%) risk of loss of the NTGVVP at the offset site, with or without an offset in place.
Time until ecological benefit	10 years	A measurable improvement in habitat quality will be achieved after 10 years of management in accordance with the OMP.

Parameter	Input	Justification for input
Start quality (/10)	5	Biosis assessed the baseline quality of the NTGVVP at the offset site in January 2024, using the VQA method (DSE 2004). The weighted average quality score of the NTGVVP was 52.65/100, which rounds to 5/10. The score was made up of the following components: • A weighted average **site condition** score of 44.41/75 (4.4/7.5), made up of the following weighted average VQA component scores: lack of weeds score of 5.92/20.45; recruitment score of 7.98/13.64; organic litter score of 4.09/6.82; and, understorey score of 26.43/34.09. • A weighted average **site context** score of 8.24/25 (0.8/2.5), made up of the following weighted average VQA component scores: patch size score of 4.24/10; neighbourhood score of 1.00/10; and, distance to core score of 3.00/5.
Future quality without offset (/10)	3	An initial survey of the offset site was conducted in January 2018 to determine presence of NTGVVP. At that time 210.48 hectares of NTGVVP was recorded. Ecologists revisited the site in October and December 2023 to complete further preliminary surveys. These surveys confirmed only 26.98 hectares of NTGVVP remained on site. This represents a decline of 87.81% over six years in the extent of the ecological community. There were no changes to the use of the site, nor the existing management practices that would have led to this decline in NTGVVP. This decline is almost exclusively a result of increased weed cover across the site resulting in areas previously mapped as NTGVVP now being entirely made up of introduced vegetation. Without protection and management as an offset site, the quality of the NTGVVP within the offset site is expected to decline within 10 years to such a point that it would no longer meet the condition thresholds for NTGVVP (i.e. the community will be functionally lost). This type of change has been observed to occur rapidly (in as little as 2 years) in other NTGVVP patches observed in the vicinity of Melbourne Airport when basic biomass management ceases to be undertaken. For example, in December 2019, Biosis assessed one area of grassland located closer to the airport. This grassland was being regularly slashed and met the condition thresholds for NTGVVP, with perennial weeds comprising 20% of total perennial vegetation cover (15% absolute cover). When the same botanists returned in October 2021, after almost 2 years of reduced biomass management, the cover of perennial weeds had increased to approximately 50% of total perennial vegetation cover across large areas. Importantly, many of the perennial weed species that can bring about this change are not listed as noxious weeds and there is no legal obligation for landowners to control them. This includes Tall Fescue *Festuca arundinacea*, Water Couch *Paspalum*

Parameter	Input	Justification for input
		distichum, Toowoomba Canary-grass *Phalaris aquatica*, Ribwort *Plantago lanceolata* and Flatweed *Hypochaeris radicata*. One of these weed species (Flatweed *Hypochaeris radicata*) was noted as having a high cover across the proposed offset site during the baseline survey.
Future quality with offset (/10)	6	It is anticipated that through intensive control of weeds, pest animals and biomass as part of implementation of the OMP, the weighted average VQA score NTGVVP within the offset site would increase by at least 10 points, resulting in a habitat quality score which rounds to 6/10.
Confidence in result – raw gain	90%	An 90% confidence in the result reflects that there is a high level of confidence that the landowner would have the support, guidance and resources to intensively manage, maintain and improve the NTGVVP at the offset site, bringing about the 1-point improvement over 10 years.

9.3. Offset Management Plan

An Offset Management Plan (OMP) is under preparation for the offset site and a draft will be provided to DCCEEW for review once complete.

9.4. Offset Site Timeline

An overview of the process to secure the offset site and the approximate timeline for this is provided in Table 22 in accordance with guidance provided to APAM by Trust for Nature.

Table 22 Approximate process and timeline for securing offset site

Action	Approx. timing
Site assessment of proposed offset site and preparation of offset management plan (OMP)	July 2024
Review of OMP by landowner	August 2024
Draft OMP submitted to DCCEEW	September 2024
Sign MoU with landowner	October 2024
Review of OMP by Trust for Nature (TFN)/preparation of site plan	August/September 2024
TFN site visit	November 2024
TFN Stage 1 approval	December 2024
Finalise OMP	December 2024
Prepare and review credit trading agreement (CTA)	January 2025
Draft deed for offset site	January 2025

Action	Approx. timing
EPBC approval of project and final OMP	January 2025
Execute CTA	April 2025
Payment for offset via CTA	May 2025
Finalise and sign deed	June 2025
TFN stage 2 approval of deed	July 2025
Ministerial submission and review by DEECA	July-August 2025
Approval by Minister	September - October 2025
Deed registration on title	October-November 2025
Landowner begins implementation of OMP	Immediately following registration on title

10. Ecologically sustainability development (ESD)

Section 3(1)(b) of the EPBC Act states that an object of the Act is 'to promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources'. Section 3A of the EPBC Act sets out the principles of ESD. Table 23 lists these principles, and outlined how they have been considered and addressed in relation to the proposed action.

More broadly, APAM has an Environment, Social and Governance Strategy (ESG Strategy) which includes a commitment to driving initiatives such as reducing carbon emissions and waste, and sustainable procurement. These initiatives have been embedded in the action plans within the Airport Environment Strategy, and progress is tracked annually.

With regard to ESD, The Melbourne Airport Planning and Urban Design Strategy (2015) provides a framework to encourage the adoption of ESD principles and initiatives in Melbourne Airport projects. The incorporation of ESD principles into asset management and operational practices at the airport drives efficiencies in resource use, minimises environmental impacts, and maximises commercial returns.

APAM recognises the need to achieve a balance between future development and its environmental impacts. The mitigation of environmental impacts will be addressed by the integration of ESD principles into design guidelines, construction management, and the operation and maintenance of buildings and infrastructure.

APAM has developed several initiatives and design principles aimed at mitigating environmental impacts and improving the efficiency of resources in development projects. For example, the *Contractor Guide to Working at Melbourne Airport* provides direction for incorporating ESD principles into the design and fit-out of Melbourne Airport developments. The guide recognises the importance of environmentally sensitive design and construction practices to achieve high-performance operations that are efficient and effective, and fit for purpose. This includes the use of environmentally sustainable materials, and improved energy and water efficiency.

Table 23 How the principles of ESD have been addressed

ESD principle	Project details
Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations	Considerations relating to impact on the environment are discussed in Sections 5 to 7. Economic and social aspects are discussed in Section 11. Other than management of offsets for the residual significant impact to NTGVVP, there are not expected to be any long-term economic, environmental, social and equitable considerations in relation to the proposed action.
If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation	N/A - There are not considered to be any areas where lack of full scientific certainty has prevented the assessment of impacts and development of avoidance, mitigation and management measures for this project.

ESD principle	Project details
The principle of inter-generational equity – that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations	As discussed in Section 7.1, the proposed action involves maintenance and upgrade of existing infrastructure, which is required to comply with CASA standards. As such, the proposed action cannot be avoided. Through an iterative design process, the project design and construction methodologies have been revised in order to avoid 3.12 hectares of NTGVVP. This represents a greater than 50% reduction in the initial predicted impact on NTGVVP within the project area. Residual significant impacts will be offset in accordance with the EPBC Act Environmental Offsets Policy (DSEWPaC 2012a), as per the proposed offset strategy outlined in Section 9.2. APAM has a broader approach to the conservation of biological diversity and ecological integrity across the airport as a whole, as outlined in the Airport's Environment Strategy. The Environment Strategy is detailed in the Melbourne Airport Master Plan 2022, and implementation of the strategy is reviewed regularly by the AEO.
The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision making	
Improved valuation, pricing and incentive mechanisms should be promoted.	One of the most common underlying goals or concepts of sustainability is economic efficiency, including improved valuation of the environment. Consideration is given to environmental factors in the valuation of assets and services associated with Melbourne Airport projects. Sustainable initiatives such as the use of recycled material and a reduction in carbon emissions during in construction and operation are incentivised, as well as encouraging additional solutions from contractors to provide their own responses to potential environmental problems. These principles reflect the idea that if the real value of natural resources is incorporated into the cost of using those resources during construction and development, it is more likely that resources will be used in a sustainable manner adequately managed and not wasted.

11.Economic and social matters

11.1. Public consultation

Generally, the use and development of the project area for airfield activities is outlined in the Melbourne Airport Master Plan 2022, which was subject to public exhibition for 70 business days. During this time, APAM engaged the community with a program including the following activities:

- an online platform enabling the community to engage with the project team, seek information and provide feedback
- community drop-in events, information sessions and listening posts
- digital engagement, media, editorial and social media.

It is noted that the proposed action is required for the upgrade or replacement of existing and aging infrastructure within the Melbourne Airport, which is in accordance with the Melbourne Airport Master Plan. Further details of APAM's broader community engagement process can be found in Part A3, Section 3.3, pp 51-54 of the Melbourne Airport Master Plan 2022 (APAM 2022b).

11.2. Consultation with Indigenous stakeholders

The project area is subject to a Cultural Heritage Management Plan (CHMP), which was developed for the Melbourne Airport Runway Development Program (CHMP 12774) and subsequently approved by the Wurundjeri Woiwurrung Cultural Heritage Aboriginal Corporation, the Registered Aboriginal Party (RAP) for the area. Consultation with the RAP was undertaken as part of the development of the CHMP, and requirements for future consultation and engagement with the RAP are identified in the plan. Due to the sensitive nature of information included in the CHMP, a copy of this document will not be made publicly available.

A copy of CHMP 12774 is included in Appendix K.

11.3. Projected economic costs and benefits

High-level estimates indicate that the total construction cost of the project will be approximately $26.5M, with the overall project cost being approximately $42M.

Whilst the main drivers of the project are compliance with CASA standards and replacement of end-of-life assets, a key benefit of the project is that there will be less ongoing maintenance of the taxiway. As an estimate, maintenance costs for ongoing use of the existing pavement would be in the order of $20K per year. Maintenance costs are expected to be negligible once the new taxiway is constructed, and the use of materials and resources for ongoing maintenance will also be negligible.

11.4. Employment opportunities expected to be generated by the project

As part of Melbourne Airport's ESG Strategy, the project will require all tenderers to adhere to a new 'Local Employment Target' (LET). The LET demonstrates Melbourne Airport's commitment to local industry and employment opportunities with its contractors and service providers and will require all companies to have a local employment target of 5% in Victoria throughout the total estimated labour hours to deliver the project.

This project will create employment opportunities in excess of 50 people split across various fields including: engineering design, consulting, quantity surveying, legal, administration, operations and maintenance, and construction/contracting.

12. Environmental record of the person proposing to take the action

12.1. History of responsible environmental management

APAM has a satisfactory record of responsible environment management.

There is no history of proceedings against APAM with regard to protection of the environment or the conservation and sustainable use of natural resources.

The project will be undertaken in accordance with APAM's Environmental Management Framework, as described in Section 12.2 below.

12.2. Environmental Management Framework

APAM has an Environmental Management Framework designed to ensure that processes for continuous improvement and ongoing monitoring of compliance are embedded in the way it works. The airport's Environment Strategy is part of the Environmental Management Framework and one of the key mechanisms for ensuring commitments made in Melbourne Airport's Environment and Sustainability Policy are met (refer Appendix L).

- More generally, Melbourne Airport operates within a framework of corporate governance, goals and values. These are reflected in the environmental management principles outlined in the Environment and Sustainability Policy. The Environmental Management Framework enables Melbourne Airport to effectively manage and adapt to environmental risks, and continually improve environmental management practices and performance.

Under the framework, environmental compliance is internally monitored and reviewed on an ongoing basis. Compliance is also externally (and annually) formally reviewed by the Airport Environment Officer (AEO), on behalf of DITRDCA.

Central to the framework is Melbourne Airport's Environmental Management System (EMS) which has been in operation since 2004 and is certified against the current EMS standard (ISO14001:2015). The EMS consists of the policies, plans, procedures and activities that together form a system to manage the environmental aspects of the airport and enable compliance with environmental legislation. Internal and external audits of the EMS are undertaken regularly to assess the compliance of operational systems.

The proposed action will be undertaken in line with APAM's existing Environment and Sustainability Policy and Environmental Management Framework as described above.

More details on APAM's Environmental Management Framework can be found in Section 14.3, pages 228-232 of the Melbourne Airport Master Plan 2022 (APAM 2022b).

13.Conclusions

The project referred to as the Melbourne Airport Pavement Maintenance Program 2 (MAPMP 2) will comprise a total project area of 7.28 hectares located entirely within the Melbourne Airport estate. The MAPMP 2 project will involve the demolition of existing taxiway and services infrastructure, including the taxiway and shoulder areas, installation of electrical, communications and stormwater services and reconstruction of the taxiway, which is required in order for APAM to meet relevant CASA standards.

The project area contains 6.35 hectares of Plains Grassland, of which 4.73 hectares meets the diagnostic criteria and condition thresholds to be considered Natural Temperate Grassland of the Victorian Volcanic Plain (NTGVVP). The remaining vegetated area of the project (approximately 0.93 hectares) supports predominantly introduced vegetation.

A review of the potential for listed threatened flora and fauna species to be within 10 km of the project area was completed to evaluate the likelihood and potential impacts associated with the proposed action. Based on this review, several EPBC Act listed species were considered to have a medium to high likelihood of occurring within the project area, specifically:

- Gang-gang Cockatoo *Callocephalon fimbriatum*
- White-throated Needletail *Hirundapus caudacutus*
- Grey-headed Flying-fox *Pteropus poliocephalus*

The review also identified FFG Act listed threatened species that are known or likely to be affected by the project.

The likelihood of the proposed action having a significant impact on listed threatened species and ecological communities and/or the environment on Commonwealth land was assessed in accordance with:

- Matters of National Environmental Significance: *Significant impact guidelines 1.1*, EPBC Act 1999 (DoE 2013).
- Actions on, or impacting upon, Commonwealth land, and actions by commonwealth agencies: *Significant impact guidelines 1.2*, EPBC Act 1999 (DSEWPaC 2013)

Taking the outcomes of the above assessments into account, the project was considered environmentally acceptable to be undertaken for the purpose of satisfying APAM's planning, maintenance and regulatory obligations based on the following:

- Threatened flora species predicted to occur within the project area are considered to have a negligible to low likelihood of occurrence. The project is therefore unlikely to constitute a significant impact on these species. For fauna species with a medium or higher likelihood of occurrence (Gang-gang Cockatoo *Callocephalon fimbriatum*, White-throated Needletail *Hirundapus caudacutus* and Grey-headed Flying-fox *Pteropus poliocephalus*), no suitable habitat occurs within the project area, therefore the project is unlikely to constitute a significant impact on these species.
- While the project area supports an approximate total of 4.73 hectares of NTGVVP, proposed management measures included in this Preliminary Documentation will limit the impacts of the project to the permanent removal of 4.09 hectares of Plains Grassland EVC of which 2.85 hectares is NTGVVP. The Melbourne Airport estate

supports a broader area of grassland covering approximately 270 hectares. The project would result in permanent removal of 2.85 hectares of this grassland and therefore adversely affect about 1.06% of NTGVVP within the airport estate.

- Indirect impacts to threatened species were considered to be limited to noise from excavation activities during construction only, which will be less than aircraft noise from operations. The proposed works will physically isolate one small area of identified NTGVVP from the broader patch, which will be less than the threshold size for NTGVVP of 0.05 hectares. As such this area of 0.006 hectares is considered an indirect loss.
- Based upon the removal of 2.856 hectares of NTGVVP from the project area (including direct removal of 2.85 hectares of and indirect loss of 0.006 hectares), is considered possible that the proposed action will result in a significant impact to the NTGVVP TEC.
- The proposed action would not result in a significant impact on Commonwealth land, the key reasons being:
  - The proposed action is located fully within the operational airside boundary of Melbourne Airport which is a highly modified environment that has undergone extensive landscape alteration in the past. The proposed works are adjacent to existing runway and taxiway infrastructure and therefore will not substantially alter natural landscape features.
  - While soils in the project area are likely to contain low levels of contaminants including per-and poly-fluoroalkyl substances (PFAS), the scale, intensity and duration of excavation works is not considered to be significant.
  - It is unlikely that the expected impact on native vegetation would result in medium to large scale clearing of native vegetation that would constitute a significant impact to the environment as a whole on Commonwealth land.
  - There are no known cultural heritage values located within the project area.
- A Construction Environment Management Plan (CEMP) will be developed to outline the appropriate environmental goals and objectives with respect to the project. The CEMP will document all processes and management strategies to minimise and/or prevent impacts on ecological values. Implementation of the CEMP will limit impacts to the project area, and all downstream impacts will be considered negligible.
- APAM is committed to securing a direct offset to compensate for the permanent removal of 2.856 hectares of NTGVVP within the project area, in accordance with the EPBC Act *Environmental Offsets Policy* (DSEWPaC 2012a). APAM has identified an offset site which will be suitable to provide the required offset, and is currently engaging with the landowner to secure the offset.

With regard to Ecologically Sustainable Development, APAM has a broader approach to the conservation of biological diversity and ecological integrity across the airport as a whole, as outlined in the Airport's Environment Strategy. Specifically, APAM has developed several initiatives and design principles aimed at mitigating environmental impacts and improving the efficiency of resources in development projects. APAM will ensure the actions associated with the MAPMP 2 project are undertaken with consideration of the key principles associated with the promotion of Ecologically Sustainable Development as follows:

- While the proposed action cannot be avoided, through an iterative design process, the project design and construction methodologies have been revised in order to avoid

3.12 hectares of NTGVVP. This represents a greater than 50% reduction in the initial predicted impact on NTGVVP within the project area.

- Long-term economic, environmental, social and equitable considerations will comprise the establishment and ongoing management of offsets designed to mitigate the residual impacts of NTGVVP loss associated with the project. The offset site will be managed in accordance with the EPBC Act Environmental Offsets Policy (DSEWPaC, 2012b).
- While significant efforts have been made to minimise impacts associated with the project, APAM also has a broader approach to the conservation of biological diversity and ecological integrity across the airport as a whole, as outlined in the Airport's Environment Strategy. This project will be undertaken in accordance with the broader airport approach and Environmental Strategy.
- Sustainable initiatives such as the use of recycled material and a reduction in carbon emissions during in construction and operation will be incentivised as part of this project, as well as encouraging additional solutions from contractors to provide their own responses to potential environmental problems. These principles are designed to reflect the idea that if the real value of natural resources is incorporated into the cost of using those resources during construction and development, it is more likely that resources will be used in a sustainable manner adequately managed and not wasted.

Based on the information summarised above, the historical record of APAM with regard to environmentally responsible initiatives and Ecologically Sustainable Development and the fact that the proposed action is unable to be avoided due to APAMs regulatory obligations, the MAPMP 2 project is considered suitable to be approved for development.

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15.Limitations

This document has been prepared for the sole and exclusive use of APAM and for a specific purpose as expressly stated in the document. This document is subject to, and issued in accordance with, the provisions of the contract between BEC and APAM. No other party should rely on or use this document without the prior written consent of BEC. While care has been taken in gathering the information and preparing the document, BEC undertakes no duty, and disclaims all responsibility and liability, to any third party who may rely upon or use this document.

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Appendices

Appendix A

DCCEEW request for information

Australian Government
Department of Climate Change, Energy, the Environment and Water

EPBC ref: 2023/09527

Rachael Young
Senior Environment & Sustainability Advisor
Australia Pacific Airports (Melbourne) Pty Limited
[redacted]

Further information required for preliminary documentation for Melbourne Airport Pavement Maintenance Program 2

Dear Rachael,

I am writing to you about your proposal to upgrade two existing taxiways at Melbourne Airport that will involve the replacement of existing infrastructure, the re-grading of the taxiway and shoulder areas, and the installation of new services and connection with existing services.

On 29 August 2023, a delegate of the Minister for the Environment and Water decided that the proposed action is a controlled action and that it will be assessed by preliminary documentation. Further information is required to assess the relevant impacts of the proposed action.

I now request, under s95A(2) of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), further information as outlined in the attached.

Details on the assessment process for the project and the responsibilities of the proponent are set out in the EPBC Act — Environment Assessment process fact sheet. Further information on the referral and assessment process can be found on the department's website.

If you have any questions about the assessment process or the further information required, please contact the project manager Alistair Gray, by email to alistair.gray@dcceew.gov.au and quote the EPBC reference number shown at the beginning of this letter.

Yours sincerely

Darryl Barbour
Director
Victoria Assessments
Environment Assessments (Vic and Tas) and Post Approvals
9 October 2023

Additional information required for assessment by preliminary documentation

Melbourne Airport Pavement Maintenance Program 2, Tullamarine, Victoria (EPBC 2023/09257)

On 28 August 2023 the delegate of the Minister for the Environment determined the above project is likely to have a significant impact on the following matters protected under Part 3 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act):

- Listed threatened species and communities (section 18 and section 18A)
- Commonwealth land (sections 26 and 27A)

It has been determined that the proposed action will be assessed by preliminary documentation. The preliminary documentation must address the matters set out below (1 to 10) and follow the content, style and formatting requirements set out in Appendix A. Noting that you have provided some of these elements of information within the original referral document, we are asking that this information be compiled with the further information into a preliminary document that informs the assessment.

Preliminary documentation for the proposal will include:

- relevant information contained in the original referral.
- in the referral documentation some of these documents are referenced but not provided as attachments, please provide them in the Preliminary document. For example, survey for the Golden Sun Moth for M3R is mentioned in the Victorian ecology report (Att. A3, p.11-12), but not provided.
- further information as requested below
- information provided by you on the impacts of the action and the strategies you propose to avoid, mitigate and offset those impacts (as described below); and
- any other relevant information on the matters protected by the EPBC Act.

The preliminary documentation should be sufficient to allow the Minister (or delegate) to make an informed decision on whether to approve, under Part 9 of the EPBC Act, the taking of the action for the purposes of each controlling provision.

1. DESCRIPTION OF THE ACTION

Information required	
1.1	The location, boundaries and size (in hectares) of the proposed action area and the proposed disturbance footprint (if greater than the area of the proposed action). Include mapping and coordinates as per the *Guide to providing maps and boundary data for EPBC Act Projects* (*https://www.dcceew.gov.au/sites/default/files/documents/epbca-maps-data-guidelines.pdf*). Mapping should include any adjoining areas which may be directly or indirectly impacted by the proposal, including nearby vegetation, as well as listed species habitat.

1.2	A description of all components of the project and how they relate to the broader maintenance and operations at Melbourne Airport, including the anticipated timing and duration (including start and completion dates) of each component of the project including: i. The proposed construction activities associated with each stage (pre-construction, construction, and operations) ii. The excavation techniques to be used during the proposed works iii. The plans for earth works and road surfacing iv. The surface water management designs.
1.3	A description of the operational requirements of the action including any anticipated ongoing maintenance works and the construction environmental management plan.
1.4	An indicative layout plan for the proposed action, including the location and type of land use, key infrastructure, and stormwater. Include mapping and coordinates for each of the above maps as per the *Guide to providing maps and boundary data for EPBC Act Projects (https://www.dcceew.gov.au/sites/default/files/documents/epbca-maps-data-guidelines.pdf)*.
1.5	The referral documentation mentions that the proposed action will include Maintenance and widening of Taxiways Alpha and Sierra. The preliminary documentation should confirm or amend these with the mapping identifying the layout and location within the proposed action area.

2. Habitat Assessments

Habitat assessments must be informed by desktop and field surveys (in accordance with departmental guidelines or as defined by best practice surveys), and with reference to relevant departmental documents (e.g., approved Conservation Advice, Recovery Plans, draft referral guidelines and Listing Advice, and SPRAT Database), including published research and other relevant sources.

Information required: Habitat Assessments	
2.1.1	Provide a recently updated summary of the habitat assessment for listed threatened species and communities in the proposed action area and the disturbance footprint that includes a summary of patches of **species habitat** and **buffer zones**, as described in Appendix C.
2.1.2	Identify and describe records of the listed threatened species and ecological communities in the broader region. All known records must be supported by an appropriate source (i.e., Commonwealth and State databases, published research,

	publicly available survey reports, etc.), the year of the record and a description of the habitat in which the record was identified.
2.1.3	Provide detailed mapping of suitable habitat within, adjacent to and downstream of the proposed action and project area for all listed threatened species and communities, which: • is specific to the habitat assessment undertaken for each listed threatened species and ecological community; • includes an overlay of the project disturbance footprint and the proposed action layout (from 1.1); • includes known records of individuals derived from the desktop analysis (from 2.1.1 and 2.1.2) and any additional field surveys; and • is provided separately as attachments in PDF and **Shapefile(s)** (Appendix C).
2.1.4	Results of targeted surveys to confirm the presence, status and extent of listed threatened species and communities within the proposed action and project area, undertaken in accordance with the guidance outlined in the Species Profile and Threats Database, if applicable.
2.1.5	An assessment of the adequacy of any surveys undertaken (including survey effort and timing). In particular, the extent to which these surveys were appropriate for the listed species or community and undertaken in accordance with relevant departmental survey guidelines.
2.1.6	An assessment of the landscape (airport wide) context of threatened species habitat and ecological communities including connectivity between patches of habitat or ecological community, condition, sizes of patches, and approximate size of threatened species populations (if present) to inform a consideration of cumulative impacts across the airport.

3. Relevant impacts

Based on the information provided in your referral, and other available information, the Department of Climate Change, Energy, Environment and Water considers that the listed species and communities identified below may be significantly impacted by the proposed action.

Listed threatened species and communities:

- Natural Temperate Grassland of the Victorian Volcanic Plain (NTGVVP) – Critically Endangered
- Golden Sun Moth *Synemon plana* - Vulnerable

- Striped Legless Lizard *Delma impar* - Vulnerable

It is the proponent's responsibility to be aware of any changes to the distribution of listed threatened species, and information available in the Species Profile and Threats (SPRAT) Database. The proponent must ensure that a recent Protected Matters Search Tool (PMST) report has been generated and considered before finalising the draft preliminary documentation.

3.1 Listed threatened Species and Communities

Information required: General information on impacts	
3.1.1	Consideration of impacts must include direct, indirect and facilitated impacts occurring as a result of the action, including consideration of the nature, likelihood and severity of the impacts.
3.1.2	An assessment of the impacts of habitat fragmentation in the proposed action area and surrounding areas, including consideration of species' movement patterns. Include consideration of the landscape context, connectivity with other patches of habitat and information on the long-term viability of local populations if the proposed action was to proceed.
3.1.3	An assessment of the likely duration of direct and indirect impacts to MNES as a result of the proposed action.
3.1.4	A discussion of whether the impacts are likely to be repeated, for example as part of maintenance.
3.1.5	A discussion of whether any impacts are likely to be unknown, unpredictable or irreversible.
3.1.6	Justification, with supporting evidence, on how the proposed action will not be inconsistent with relevant conservation advice, recovery plans or threat abatement plans.

Information required: Species specific information	
Golden Sun Moth *Synemon plana* - Vulnerable	
3.1.7	Provide mapping which includes an overlay of the project footprint and known records and habitat of Golden Sun Moth (GSM) derived from desktop analysis and field surveys.
3.1.8	Results from targeted surveys to confirm the status and extent of GSM within and adjacent to the area of the proposed action and the project area, undertaken in

	accordance with the survey guidelines outlined in the *Significant impact guidelines for the critically endangered golden sun moth* (Synemon plana).
3.1.9	The total area (in hectares) and quality of habitat to be impacted with details on whether any impacts are likely to be unknown, unpredictable or irreversible, and the science informing these areas and impacts.
3.1.10	Provide the scientific reasoning for how the extent of potential habitat for the GSM was derived.
Striped Legless Lizard *Delma impar* – Vulnerable	
3.1.11	Provide mapping which includes an overlay of the project footprint and known records and habitat of Striped Legless Lizard (SLL) derived from desktop analysis and field surveys.
3.1.12	Results from targeted surveys to confirm the status and extent of SLL within and adjacent to the area of the proposed action and the project area, undertaken in accordance with the survey guidelines in *Survey guidelines for Australia's threatened reptiles*.
3.1.13	The total area (in hectares) and quality of habitat to be impacted with details on whether any impacts are likely to be unknown, unpredictable or irreversible, and the science informing these areas and impacts.
3.1.14	Provide the scientific reasoning for how the extent of potential habitat for the Striped Legless Lizard was derived.
3.1.15	An assessment of the adequacy of any surveys undertaken (including survey effort, timing and accordance with department's relevant scientific and policy guidance).
Natural Temperate Grassland of the Victorian Volcanic Plain – Critically Endangered	
3.1.16	Assessment of all habitat's specific features available in the proposed action area as per the habitat described in the *Approved Conservation Advice for Natural Temperate Grassland of the Victorian Volcanic Plain*.
3.1.17	Provide the scientific reasoning for how the extent of Natural Temperate Grassland of the Victorian Volcanic Plain (NTGVVP) is derived.
3.1.18	The total area (in hectares) and quality of NTGVVP to be impacted, with details on whether any impacts are likely to be unknown, unpredictable or irreversible and the science informing these areas and impacts.
3.1.19	Substantiated evidence that 'no-go zones' and buffer zones would protect areas of NTGVVP outside the area of the proposed action.

3.2 The Environment of Commonwealth Land

Based on the information provided in your referral, and other available information, the Department of Climate Change, Energy, Environment and Water considers that the proposed action is likely to have a significant impact on the environment of Commonwealth land.

Information required: Impacts to the environment of Commonwealth land	
3.2.1	For actions impacting on Commonwealth land, the preliminary documentation will need to identify and evaluate impacts to the environment as described under section 526 of the EPBC Act (Appendix C).
3.2.2	Information regarding characterisation of site contamination. This should be in the form of a preliminary site investigation (PSI) and, if considered necessary, a detailed site investigation (DSI), undertaken in accordance with National Environment Protection (Assessment of Site Contamination) 1999 ("the ASC NEPM"), the PFAS National Environmental Management Plan 2.0 (as amended from time to time), and the National Water Quality Management Strategy (NWQMS). The assessments should include but not be limited to: • site history, physical setting, and site conditions. • a conceptual site model (CSM) regarding contamination sources, receptors and exposure pathways between those sources and receptors. • characterisation of chemical contamination at the proposed action site. • analytical results of laboratory analysis should also be provided in an ESdat compatible format. Information and data regarding the proposed works, with emphasis on those with the potential to disturb and/or remobilise contamination. This should include, but not be limited to, the following: • the locations and depths of any earthworks, including whether groundwater is expected to be intersected. • the expected volumes of potential contaminated materials, if any, to be produced including soil, water and hardstand material, and the fate of such material. • the expected duration of excavations / bare earth being exposed. • assessment of environmental suitability of any fill material proposed to be imported onto the site. Mitigation measures and management protocols proposed to be implemented to protect the environment during the proposed action. This should include, but not be limited to, the following: • measures to prevent and / or manage any potential for mobilisation of PFAS and other contaminants. • known / likely trenching operations, stockpile sites, laydown / cleared areas, access areas, disturbed soil areas, etc.

	• a commitment to ensuring that the vehicle hygiene, risk-based management, on-site stockpiling, storage and containment, transport of PFAS contaminated materials is consistent with the guidance in the PFAS NEMP 2.0 (HEPA 2020: 46-60), as updated from time to time. Further, consideration could be given to the need for: • a Construction Environmental Management plan (CEMP), including an unexpected finds protocol (UFP). • Airport Environment Officer (AEO) review of Melbourne Airport's PFAS Management Framework.

3.3 Cumulative impacts

The preliminary documentation should identify and address cumulative impacts where potential project impacts are in addition to existing impacts of other activities, known potential future expansions or developments by the proponent and other proponents in the airport are approved or where development applications have been submitted. Cumulative impacts must be considered in terms of the potential overall consequence or magnitude of impacts on each of the MNES.

Information required	
3.3.1	Review and analysis of residual impacts of the proposed action, and of other known proposals where there may be a spatial or temporal overlap.
3.3.2	Consideration of the potential for cumulative impacts on the resilience of any threatened species and ecological communities in the airport, and on overall habitat quality and availability.
3.3.3	Discussion of the potential for existing pressures and threats to be exacerbated by the project.

4. AVOIDANCE, MITIGATION AND MANAGEMENT MEASURES

Background

Avoidance and mitigation measures are the primary methods of eliminating and reducing significant impacts on MNES. Where possible and practicable, it is best to avoid impacts. If impacts cannot be avoided, then they should be minimised or mitigated as much as possible. Avoidance and mitigation measures must be investigated thoroughly as a part of the assessment and be supported by evidence to demonstrate likely success.

Management commitments by the person proposing to take the action must be clearly distinguished from recommendations or statements of best practice made by the document author or other technical expert.

The SPRAT Database, and associated statutory documents, may provide relevant mitigation measures for listed threatened species and ecological communities and listed migratory species.

The department notes the referral includes a description of the proposed avoidance, mitigation and management measures to be implemented by the proponent during the construction, operation and maintenance stages of the proposed action.

Information required	
4.1	A detailed summary of measures proposed to be undertaken by the proponent to avoid, mitigate and manage relevant impacts of the proposed action. This should include for each measure: i. A statement of the objectives, ongoing management and monitoring, locations and timing ii. The party responsible iii. The policy basis, for instance, consideration of the *PFAS National Environment Management Plan 2.0*
4.2	The proposed measures must be based on best available practices, appropriate standards, evidence of success for other similar actions and supported by published scientific evidence.
4.3	All proposed measures to manage impacts must be drafted to meet the 'S.M.A.R.T' principle: • S – Specific (what and how) • M – Measurable (baseline information, number/value, auditable) • A – Achievable (timeframe, money, personnel) • R – Relevant (conservation advice, recovery plans, threat abatement plans) • T – Time-bound (specific timeframe to complete)
4.4	The details of the vegetation and species habitat to be retained and an associated map showing the retained vegetation and habitat. The information and mapping must include the location and quantification of the total area of retained vegetation and species habitat when acting in combination with past, present, and reasonably foreseeable projects at the Airport.

5. OFFSETS

Background

Environmental offsets are measures that compensate for the residual significant impacts of an action on the environment. Offsets provide environmental benefits to counterbalance the impacts that remain after consideration of avoidance and mitigation measures. It is important

to consider environmental offsets early in the assessment process. Correspondence with the department regarding offsetting is highly encouraged. The department's *EPBC Act Environmental Offsets Policy* (2012) (Offsets Policy) is available at: www.environment.gov.au/epbc/publications/epbc-act-environmental-offsets-policy.

Information required	
5.1	An assessment of the likelihood of residual significant impacts occurring on relevant MNES, after avoidance, mitigation and management measures have been applied.
5.2	If residual impacts are likely to be significant, please provide details of an offset strategy proposed to be implemented to compensate for the residual significant impacts of the project.
5.3	Where offset area/s have been nominated for the residual significant impacts, provide an Offset Management Plan (OMP) as an appendix to the PD. You may wish to propose an advanced offset for the project plus the cumulative impacts of reasonably foreseeable projects across the airport. The OMP must meet the information requirements set out in Appendix B, and must be prepared by a suitably qualified ecologist and in accordance with the department's *Environmental Management Plan Guidelines* (2014), available at: www.environment.gov.au/epbc/publications/environmental-management-plan-guidelines.

6. ECOLOGICALLY SUSTAINABLE DEVELOPMENT (ESD)

Information required	
6.1	A description of how the proposed action meets the principles of ESD, as defined in section 3A of the EPBC Act. The following principles are ***principles of ecologically sustainable development***: • decision making processes should effectively integrate both long term and short term economic, environmental, social and equitable considerations. • if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. • the principle of inter-generational equity—that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations. • the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision making. • improved valuation, pricing and incentive mechanisms should be promoted.

7. ECONOMIC AND SOCIAL MATTERS

Information required	
7.1	An analysis of the economic and social impacts of the action, both positive and negative.
7.2	Details of any public consultation activities undertaken and their outcomes.
7.3	Details of any consultation with Indigenous stakeholders. **Indigenous engagement** Identify existing or potential native title rights and interests, including any areas and objects that are of particular significance to Indigenous peoples and communities, possibly impacted by the proposed action and the potential for managing those impacts. Describe any Indigenous consultation that has been undertaken, or will be undertaken, in relation to the proposed action and their outcomes. The department considers that best practice consultation, in accordance with the Interim Engaging with First Nations People and Communities on Assessments and Approvals under the Environment Protection and Biodiversity Conservation Act 1999 (dcceew.gov.au) includes: • identifying and acknowledging all relevant affected Indigenous peoples and communities. • committing to early engagement. • building trust through early and ongoing communication for the duration of the project, including approvals, implementation and future management. • setting appropriate timeframes for consultation; and • demonstrating cultural awareness. Describe any state requirements for approval or conditions that apply, or that the proponent reasonably believes are likely to apply, to the proposed action with regards to Indigenous peoples and communities.
7.4	Projected economic costs and benefits of the project, including the basis for their estimate through cost/benefit analysis or similar studies.
7.5	Employment opportunities expected to be generated by the project (including construction and operational phases).

8. ENVIRONMENTAL RECORD OF THE PERSON PROPOSING TO TAKE THE ACTION

Information required	
Include details of any past or present proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against:	
8.1	The person proposing to take the action;
8.2	For an action for which a person has applied for a permit, the person making the application;
8.3	If the person is a body corporate—the history of its executive officers in relation to environmental matters; and
8.4	If the person is a body corporate that is a subsidiary of another body or company (the parent body)—the history in relation to environmental matters of the parent body and its executive officers.

9. CONCLUSION

Please provide an overall conclusion as to the environmental acceptability of the proposal with regards to the objects and requirements of the EPBC Act including the principles of Ecologically Sustainable Development (ESD). You may wish to include a statement as to whether or not the controlled action should be approved and may recommend conditions pertaining to an approval. This should include justification for undertaking the proposed action in the manner proposed.

10. INFORMATION SOURCES

The preliminary documentation must state for the information provided, the following:

a) The source and currency (date) of the information.

b) How the reliability of the information was tested.

c) The uncertainties (if any) in the information.

d) The guidelines, plans and/or policies considered.

APPENDIX A: Preliminary documentation content, style and formatting requirements

A1. Content requirements	
A1.1	Be a stand-alone document containing sufficient information to avoid the need to search out previous or supplementary reports.
A1.2	Enable interested stakeholders and the Minister to easily understand the consequences of the project on matters of national environmental significance (MNES).
A1.3	Be written so that any conclusions reached can be independently assessed. Include all key claims, findings, proposals and undertakings in the main document.
A1.4	Refer to all relevant standards, policies and other guidance material published by the department. Any instances where published guidance is not followed must be justified. Where no Commonwealth standards exist, state government and industry standards may be useful.
A1.5	Include the names, roles and qualifications (where relevant) of all persons involved in preparing the preliminary documentation.
A1.6	Include a copy of this request for information and a cross-reference table indicating where the information fulfilling this request is included in the preliminary documentation (e.g., Section 4.2.2 and Appendix A, Chapter 2.1).
A1.7	The preliminary documentation must state the following for all information provided: • The source and date of the information. • How the reliability of the information was tested. • The uncertainties (if any) in the information. • The guidelines, plans, and/or policies considered.
A2. Format and style requirements	
A2.1	Be in a suitable format to be published in hardcopy (A4 or A3 size, with maps and diagrams in A4 or A3 size and in colour) and published in electronic format (e.g., MSWord or PDF) on the internet.
A2.2	Include detailed technical information, studies or investigations necessary to support the information in the stand-alone document as appendices.
A2.3	Be objective, clear, succinct, avoid technical jargon and, where appropriate, be supported by maps, plans, diagrams, data or other descriptive detail.

A2.4	Reference all sources using the Harvard standard of referencing. Ensure that other supporting documents (e.g., academic studies, regulatory standards) are publicly accessible, with electronic links provided where possible.
A2.5	Redact the contact details of departmental officers.
A2.6	Not contain any commercial in confidence markings. If the preliminary documentation contains sensitive information, please discuss this with the assessment officer.
A3. Ecological data provision	
A3.1	The preliminary documentation must include an appendix of occurrence records (both sightings and evidence of presence) for all listed threatened and migratory species identified during field surveys for the proposed action. This data may be used by the department to update the relevant species distribution models that underpin the publicly available Protected Matters Search Tool (PMST).
A3.2	The species occurrence records must be provided in accordance with the department's *Guidelines for biological survey and mapped data* (2018) using the species observation data template provided with this request for additional information. Sensitive ecological data must be identified and treated in accordance with the department's *Sensitive Ecological Data – Access and Management Policy V1.0* (2016) or subsequent revision.

APPENDIX B: Information Requirements for EPBC Act Offset Proposals

B1. Minimum Requirements for a draft Offset Area Management Plan:	
B1.1	Specific, committal and measurable environmental outcomes which detail the nature of the conservation gain to be achieved for relevant MNES, including the creation, restoration and revegetation of habitat in the proposed offset area/s.
B1.2	Details, with supporting evidence, to demonstrate how the environmental offset/s compensate for residual significant impacts of the proposed action on relevant MNES, and/or their habitat, in accordance with the principles of the Offsets Policy and all requirements of the Offsets Assessment Guide including: • time over which loss is averted (max. 20 years). • time until ecological benefit. • risk of loss (%) without offset. • risk of loss (%) with offset; and • confidence in result (%).
B1.3	A description of the offset area/s, including location, size, condition, environmental values present, ongoing threats and surrounding land uses.
B1.4	Baseline data and other supporting evidence that documents the presence of the relevant MNES, and the quality of their habitat within the offset area/s.
B1.5	An assessment of the site habitat quality for the offset area/s
B1.6	Details of how the offset area/s will provide connectivity with other habitats and biodiversity corridors and/or will contribute to a larger strategic offset for the relevant MNES.
B1.7	Maps and shapefiles to clearly define the location and boundaries of the offset area/s, accompanied by the offset attributes (e.g., physical address of the offset area/s, coordinates of the boundary points in decimal degrees, the relevant MNES that the environmental offset/s compensates for, and the size of the environmental offset/s in hectares).
B1.8	Specific offset completion criteria derived from the site habitat quality to demonstrate the improvement in the quality of habitat in the offset area/s over a 20-year period.
B1.9	Details of the management actions, and timeframes for implementation, to be carried out to meet the offset completion criteria.
B1.10	Interim milestones that set targets at 5-yearly intervals for progress towards achieving the offset completion criteria.

B1.11	Details of the nature, timing and frequency of monitoring to inform progress against achieving the 5-yearly interim milestones (the frequency of monitoring must be sufficient to track progress towards each set of milestones, and sufficient to determine whether the offset area/s are likely to achieve those milestones in adequate time to implement all necessary corrective actions).
B1.12	Proposed timing for the submission of monitoring reports which provide evidence demonstrating whether the interim milestones have been achieved.
B1.13	Timing for the implementation of tangible, on-ground corrective actions to be implemented if monitoring activities indicate the interim milestones have not been achieved.
B1.14	Risk analysis and a risk management and mitigation strategy for all risks to the successful implementation of the OAMP and timely achievement of the offset completion criteria, including a rating of all initial and post-mitigation residual risks in accordance with a risk assessment matrix.
B1.15	Evidence of how the management actions and corrective actions take into account relevant approved conservation advice and are consistent with relevant recovery plans and threat abatement plans.
B1.16	Details and execution timing of the mechanism to legally secure the proposed offset area/s, such that legal security remains in force over the offset area/s for at least 20 years to provide enduring protection for the offset area/s against development incompatible with conservation.
B1.17	All proposed management actions, monitoring approach and corrective actions must be written using committed language (e.g., 'will' and 'must').
B1.18	Justification of how the offset/s meet the *EPBC Act Environmental Offsets Policy*.

APPENDIX C: Definitions to be considered in preparing Preliminary Documentation

Buffer zones

A buffer zone is an area adjacent to a patch of an ecological community or species habitat that is important for protecting the integrity of the ecological community or species habitat. The purpose of a buffer zone is to minimise the risk of indirect impact by physically separating the patch from direct impacts and by identifying it to land managers. For instance, a buffer zone will help protect the root zone of edge trees and other components of the ecological community from spray drift (fertiliser, pesticide or herbicide sprayed in adjacent land), weed invasion, polluted water runoff and other damage. The best buffer zones are typically comprised of native vegetation.

The Department may not consider that a retained patch of an ecological community or species habitat has been effectively avoided if the design of a development does not include a buffer zone. In these cases, the Department will generally consider the outer edge of the patch or species habitat (typically up to 30 m) to have been impacted or partially impacted, requiring an appropriate offset.

Defining patches of a community or species habitat

A patch is a discrete and mostly continuous area of an ecological community or species habitat, as defined by the key diagnostics, but can include small-scale variations, gaps and disturbances that do not significantly alter the overall function of the patch. Permanent structures, such as roads and buildings, are typically excluded from a patch, although a patch may be considered continuous across or around them.

When it comes to defining a patch of an ecological community or species habitat allowances are made for 'breaks' between areas that meet the key diagnostics (e.g., a narrow strip of other native vegetation along a watercourse). The size of break that can be included within a patch without altering its overall function varies for different ecological communities and species – further guidance on a specific community may be provided in a conservation advice, policy statement or similar.

Variation in structure, quality or condition of vegetation across a patch of an ecological community or species habitat does not necessarily mean it should be split into multiple patches. For example, woodland communities often incorporate areas of derived native grassland, which should generally be considered as part of the same patch or for aquatic organism's waterbodies, drainage lines or tributaries within a catchment whether ephemeral or permanent that form a connected ecological habitat. Average quality across the largest area that meets the key diagnostics should be used in determining the overall condition of the ecological community. Where the average condition falls below the minimum condition thresholds for a patch as a whole, the largest area or areas that meet minimum condition thresholds should be identified as the patch or patches of the nationally listed ecological community.

Disturbance footprint

Means the area that is proposed to be directly and indirectly impacted by this proposed action, including buffer areas.

Environment

Means:

(a) ecosystems and their constituent parts, including people and communities; and

(b) natural and physical resources; and

(c) the qualities and characteristics of locations, places and areas; and

(d) heritage values of places; and

(e) the social, economic and cultural aspects of a thing mentioned in paragraph (a), (b), (c) or (d).

Proposed action area

Means the area bounded by the boundary of the airport lease.

Shapefile(s)

Shapefile(s) means locations and attribute information about the Action provided in an Esri shapefile format. Shapefiles must contain '.shp', '.shx', '.dbf' and a '. prj' file that specifies the

projection/geographic coordinate system used. Shapefiles must also include an '.xml' metadata file that describes the shapefile for discovery and identification purposes.

From: [redacted]
To: [redacted]
Cc: [redacted]

Subject: FW: PD RFI Document & Letter: 2023-09527 Melbourne Airport Pavement Maintenance Program 2 [SEC=OFFICIAL]
Date: Tuesday, 2 July 2024 3:15:06 PM
Attachments: image001.png
image019.png
image020.png
image021.png
image022.png
image023.png
image002.png
2023-09527 - PD V1 DCCEEW Draft comments.xlsx

Hello Rachael

Thank you for the submission of your response to the department's request for Preliminary Documentation for EPBC 2023/09527.

Alistair is currently on leave, so in the interests of progressing the project I am responding on his behalf.

The department has reviewed the document. Please find the departments comments on the PD for your review and action. Please respond to the requests / comments in due course through amendments to the draft PD document.

Please don't hesitate to contact me if you require clarification on any of the matters listed or wish to meet to discuss the matters as highlighted once you have had the chance to work through.

Kind regards
Cath

[redacted]
Assistant Director

Nature Positive Regulation Division | Environment Assessments (Vic,Tas) and Post Approvals Branch | VicTas Assessments
Kuarna Country, 60 King William Street, Adelaide SA, GPO Box 3090 ACT 2601
Department of Climate Change, Energy, the Environment and Water
[redacted]

DCCEEW.gov.au ABN 63 573 932 849

We acknowledge the Traditional Owners of Country throughout Australia and recognise their continuing connection to land, waters and culture. We pay our respects to their Elders past and present.

From: Rachael Young <[redacted]au>
Sent: Friday, May 24, 2024 4:12 PM
To: Gray, Alistair <[redacted]>

Cc: [redacted]

Subject: RE: PD RFI Document & Letter: 2023-09527 Melbourne Airport Pavement Maintenance Program 2 [SEC=OFFICIAL]

Hi Alistair,

I'm pleased to submit our response to the Preliminary Documentation RFI for 2023-09527. You can access the relevant documents here – 2023-09527 RFI response 20240524

Please note the link will only be accessible to the recipients of this email. If you have any questions please don't hesitate to reach out.

Cheers.

Rachael Young
Senior Environment & Sustainability Advisor
Melbourne and Launceston Airports

Wurundjeri Country (Melbourne Airport)

[redacted]
Locked Bag 16, Tullamarine, VIC 3043
melbourneairport.com.au

From: Gray, Alistair <[redacted]>
Sent: Thursday, October 12, 2023 12:23 PM
To: Rachael Young <[redacted]>
Cc: [redacted]
Subject: PD RFI Document & Letter: 2023-09527 Melbourne Airport Pavement Maintenance Program 2 [SEC=OFFICIAL]

Hi Rachael,

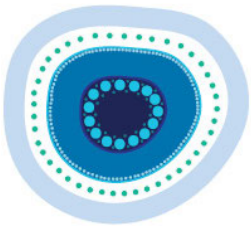
Please find the Preliminary Documentation Request for further information attached to this email.

As discussed with Arvid at yesterday's catch-up, this RFI is more detailed than you would generally anticipate. Please note that further discussions in general about the right level of information to put into a referral may be useful,

Kind regards,

Alistair Gray (He/Him)
Assessment Officer
Nature Positive Regulation Division| Environment Assessments (Vic, Tas) & Post Approvals Branch | Victoria Assessments
Department of Climate Change, Energy, the Environment and Water
E [redacted]
Ngunnawal Country, John Gorton Building, King Edward Terrace, Parkes, ACT 2600 Australia
GPO Box 3090, Canberra, ACT, 2601

DCCEEW.gov.au ABN 63 573 932 849
Acknowledgement of Country



We acknowledge the Traditional Owners of country throughout Australia and recognise their continuing connection to land, waters and culture. We pay our respects to their Elders past and present.

Preliminary Documentation Draft Review - DCCEEW Victoria Assessments
2023/09527 Melbourne Airport Pavement Maintenance Program 2

Comment #	Section of Document	DCCEEW Reviewer comment PD version dated 23 May 2024
1	Page 175, Appendix G	The Draft PD notes that the Victorian Grassland Earless Dragon has a negligible chance of occurrence because it is considered locally extinct. The department notes the rediscovery of the Victorian Grassland Earless Dragon near Bacchus Marsh, and that the proposed action area falls inside the projected distribution in the department's SPRAT. The department's view (or request) is that further consideration of this species should be included in the PD, which may include targeted surveys in line with the current best-practice presence/absence targeted survey guidelines for Victorian Grassland Earless Dragon - Tympanocryptis pinguicolla, Critically Endangered or other justification as to why further consideration is not required. The results of these targeted surveys should be included in Appendix G with the results for SLL and GSM surveys.
2	Page 34-35	The Draft PD states that there are no formal recovery plans generated by the Australian Government for the NTGVVP TEC. While it is true there is no Recovery Plan, the Draft PD should refer to the Approved Conservation advice, signed by the minister on 29 May 2008, available at: https://www.environment.gov.au/biodiversity/threatened/communities/pubs/42-conservation-advice.pdf . This Document outlines key Priority Recovery and Threat Abatement Actions for NTGVVP, and lists further information for guidance and resources on this ecological community.
3	Page 54 - table 20	Risk of loss should be entered as per the *How to use the Offsets assessment guide:* "An estimated risk of loss is entered in the guide for both the business as usual (i.e. without offset) and with offset scenarios. The difference between these figures is the level of averted loss provided by the proposed offset." Currently, the PD says the risk of loss with and without offsets is both 0%. This is incorrect because without offset, there would be an uncompensated-for residual loss of NTGVVP. Ensure that the difference between the Risk of loss without and with offset reflects the offset. This document is available at: <https://www.dcceew.gov.au/sites/default/files/documents/offsets-how-use.pdf>. More justification for offset calculations is required, including: o How habitat quality before and after offset implementation were calculated with reference to species habitat requirements, and how those requirements have been taken into account when scoring habitat quality. You may find the following useful in scoring habitat quality - <https://www.dcceew.gov.au/sites/default/files/documents/offsets-how-use.pdf>. o How time until ecological benefit was calculated. o For the purposes of the offset calculator we consider that the species' historic decline is relevant information that needs to be considered and therefore an annual probability of extinction of 0.2% is suitable. o How confidence in results was calculated. Please note, a confidence in result of 5% represents a high risk offset that is unlikely to be achievable or acceptable. Please consider revising your offset measures to something that is achievable. Confidence in results should take into account adaptive management programs used to monitor and manage the success of offsets succeeding. o Risk of loss – Please refer to https://www.dcceew.gov.au/environment/epbc/approvals/offsets/guidance/offsets-assessment-guide for how the department considers risk of loss.
4	Page 30; 63	The department notes that the airport's operations do already involve a level of noise. The PD draft has not covered whether the proposed construction activities will create noise and dust impacts outside the normal operations of the airport.
5	Throughout PD draft.	Any time the PD discusses detailed data from the Appendices, ensure that the data is explained clearly in laypersons terms. The high level of technical detail included in the attachments and appendices to the PD regarding water run off and soil composition supports the PD well, but the PD needs to adequately explain this data for the general public in accessible laypersons' language for viewing in the public comment period.
6		The PD notes that Appendix D and/or Appendix I outline the location and dept of earthworks including any interaction with groundwater. Please ensure this is adequately explained and clear to the layperson.
7	Page 22	For the GSM, the last surveys were 2019. These surveys are now 5 years old which the department considers outdated. The department suggests that updated surveys may need to be conducted, and are happy to discuss further.
8	Referring to the data in Appendix E	For the FFG listed species listed as medium/high likelihood of occurrence, add further justification for why there will be no further impacts - e.g. geranium sp, black falcon, little eagle.

9	Throughout PD draft.	Ensure there is more justification on how impacts will be addressed to the aerial and ground dwelling species mentioned. For one example, given that the Tussock Skink has been surveyed in targeted surveys in the area of the project, the PD should include specific mitigation and management measures to reduce the likelihood of impacts to the species.
10	9.2 and 9.3 of the PD and throughout.	The department notes that the OMP has not been provided. The Offset must be secured, and the OMP finalised before the direction to publish can be delivered to the proponent.
11	Appendix E; throughout	Given that historic soil disturbance and earthworks are often used in the PD as a rationale for the likelihood of lower impacts to state and nationally listed species (see Appendix E for some examples), the department requires more evidence to prove the soil disturbance took place. Although past disturbance does provide ***context*** to the state of the habitat, past disturbance should not be used as a ***justification*** for impacts.
12	Throughout PD draft.	Maps mostly adhere to the DCCEEW Mapping guidelines, including the coordinates reference system. However, maps must include the mapping coordinates. Please refer to the DCCEEW Guide to mapping: https://www.dcceew.gov.au/environment/environmental-information-data/information-policy/maps-and-boundary-data-for-epbc-act-projects
13	Appendix B	The PD RFI requested the location and d*epth* of earthworks be included in the PD. Appendix B states that section 6.10 and Appendix I of the PD meets these information requirements. Information on the depths of the works is lacking from the PD; More information on the depth of the proposed earthworks is required.

Appendix B

Table of responses

2022-09286 Additional information required for assessment by preliminary documentation

Item	Information Required	APAM response 23 May 2024
1.1	The location, boundaries and size (in hectares) of the proposed action area and the proposed disturbance footprint (if greater than the area of the proposed action). Include mapping and coordinates as per the *Guide to providing maps and boundary data for EPBC Act Projects* (https://www.dcceew.gov.au/sites/default/files/documents/epbca-maps-data-guidelines.pdf). Mapping should include any adjoining areas which may be directly or indirectly impacted by the proposal, including nearby vegetation, as well as listed species habitat.	Addressed in Section 3.2 and Figure 2 of the Preliminary Documentation.
1.2	A description of all components of the project and how they relate to the broader maintenance and operations at Melbourne Airport, including the anticipated timing and duration (including start and completion dates) of each component of the project including: The proposed construction activities associated with each stage (pre-construction, construction, and operations) The excavation techniques to be used during the proposed works The plan for earth works and road surfacing The surface water management designs.	Addressed in Section 3.2 of the Preliminary Documentation.
1.3	A description of the operational requirements of the action including any anticipated ongoing maintenance works and the construction environmental management plan.	Addressed in Section 3.2.3 of the Preliminary Documentation.
1.4	An indicative layout plan for the proposed action, including the location and type of land use, key infrastructure, and stormwater. Include mapping and coordinates for each of the above maps as per the *Guide to providing maps and boundary data for EPBC Act Projects* (https://www.dcceew.gov.au/sites/default/files/documents/epbca-maps-data-guidelines.pdf).	Existing infrastructure is shown in Figure 1 of the Preliminary Documentation. The location and layout of the proposed action is shown in Figure 2 of the Preliminary Documentation.
1.5	The referral documentation mentions that the proposed action will include Maintenance and widening of Taxiways Alpha and Sierra. The preliminary documentation should confirm or amend these with the mapping identifying the layout and location within the proposed action area.	As per Item 1.4 above. Note that works for Taxiway Sierra no longer form part of the proposed action.
2.1.1	Provide a recently updated summary of the habitat assessment for listed threatened species and communities in the proposed action area and the disturbance footprint that includes a summary of patches of species habitat and buffer zones, as described in Appendix C.	Summary of habitat assessments for listed threatened species and communities is addressed in Sections 4.3 and 4.4 of the Preliminary Documentation. Project impacts and the incorporation of buffer zones is addressed in Section 5.1.
2.1.2	Identify and describe records of the listed threatened species and ecological communities in the broader region. All known records must be supported by an appropriate source (i.e., Commonwealth and State databases, published research, publicly available survey reports, etc.), the year of the record and a description of the habitat in which the record was identified.	Addressed in Section 4.1 and Appendix E of the Preliminary Documentation.

Item	Information Required	APAM response 23 May 2024
2.1.3	Provide detailed mapping of suitable habitat within, adjacent to and downstream of the proposed action and project area for all listed threatened species and communities, which: • is specific to the habitat assessment undertaken for each listed threatened species and ecological community; • includes an overlay of the project disturbance footprint and the proposed action layout (from 1.1); • includes known records of individuals derived from the desktop analysis (from 2.1.1 and 2.1.2) and any additional field surveys; and • is provided separately as attachments in PDF and Shapefile(s) (Appendix C).	Addressed in Section 5.1 and Figure 4 of the Preliminary Documentation. Shapefiles have been provided separately.
2.1.4	Results of targeted surveys to confirm the presence, status and extent of listed threatened species and communities within the proposed action and project area, undertaken in accordance with the guidance outlined in the Species Profile and Threats Database, if applicable.	Addressed in Sections 4.3 and 4.4 of the Preliminary Documentation.
2.1.5	An assessment of the adequacy of any surveys undertaken (including survey effort and timing). In particular, the extent to which these surveys were appropriate for the listed species or community and undertaken in accordance with relevant departmental survey guidelines.	Addressed in Section 4.5 of the Preliminary Documentation.
2.1.6	An assessment of the landscape (airport wide) context of threatened species habitat and ecological communities including connectivity between patches of habitat or ecological community, condition, sizes of patches, and approximate size of threatened species populations (if present) to inform a consideration of cumulative impacts across the airport.	Landscape context is discussed in Section 4.2 of the Preliminary Documentation. Overlap of the impact area with future projects is discussed in Section 7.1 and the potential for cumulative impacts is discussed in Section 7.2 of the Preliminary Documentation.
3.1.1	Consideration of impacts must include direct, indirect and facilitated impacts occurring as a result of the action, including consideration of the nature, likelihood and severity of the impacts	Impacts to listed threatened species and communities are discussed in Section 5 of the Preliminary Documentation.
3.1.2	An assessment of the impacts of habitat fragmentation in the proposed action area and surrounding areas, including consideration of species' movement patterns. Include consideration of the landscape context, connectivity with other patches of habitat and information on the long-term viability of local populations if the proposed action was to proceed.	Addressed in Section 5, Table 6 of the Preliminary Documentation.
3.1.3	An assessment of the likely duration of direct and indirect impacts to MNES as a result of the proposed action.	Addressed in Section 5.3 of the Preliminary Documentation.
3.1.4	A discussion of whether the impacts are likely to be repeated, for example as part of maintenance.	Section 5.3 of the Preliminary Documentation clarifies that the action will not be repeated.

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3.1.5	A discussion of whether any impacts are likely to be unknown, unpredictable or irreversible.	Addressed in Section 5.1 of the Preliminary Documentation.
3.1.6	Justification, with supporting evidence, on how the proposed action will not be inconsistent with relevant conservation advice, recovery plans or threat abatement plans.	Addressed in Section 5, Table 6 of the Preliminary Documentation.
3.1.7	Provide mapping which includes an overlay of the project footprint and known records and habitat of Golden Sun Moth (GSM) derived from desktop analysis and field surveys.	Addressed in Section 4.3.2 and Figure 3 of the Preliminary Documentation.
3.1.8	Results from targeted surveys to confirm the status and extent of GSM within and adjacent to the area of the proposed action and the project area, undertaken in accordance with the survey guidelines outlined in the Significant impact guidelines for the critically endangered golden sun moth (Synemon plana).	Addressed in Section 4.3.2 of the Preliminary Documentation.
3.1.9	The total area (in hectares) and quality of habitat to be impacted with details on whether any impacts are likely to be unknown, unpredictable or irreversible, and the science informing these areas and impacts.	The proposed action will not impact on any GSM habitat. This is clarified in Section 4.3.2 of the Preliminary Documentation.
3.1.10	Provide the scientific reasoning for how the extent of potential habitat for the GSM was derived.	Addressed in Sections 4.3.2, 4.5 and Appendix G of the Preliminary Documentation.
3.1.11	Provide mapping which includes an overlay of the project footprint and known records and habitat of Striped Legless Lizard (SLL) derived from desktop analysis and field surveys.	N/A – there is no identified SLL habitat within Melbourne Airport. This is discussed in Section 4.3.1 of the Preliminary Documentation.
3.1.12	Results from targeted surveys to confirm the status and extent of SLL within and adjacent to the area of the proposed action and the project area, undertaken in accordance with the survey guidelines in Survey guidelines for Australia's threatened reptiles.	Addressed in Section 4.3.1 of the Preliminary Documentation.
3.1.13	The total area (in hectares) and quality of habitat to be impacted with details on whether any impacts are likely to be unknown, unpredictable or irreversible, and the science informing these areas and impacts.	N/A – there is no identified SLL habitat within Melbourne Airport. This is clarified in Section 4.3.1 of the Preliminary Documentation.
3.1.14	Provide the scientific reasoning for how the extent of potential habitat for the Striped Legless Lizard was derived	Addressed in Sections 4.3.1, 4.5 and Appendix G of the Preliminary Documentation.
3.1.15	An assessment of the adequacy of any surveys undertaken (including survey effort, timing and accordance with department's relevant scientific and policy guidance).	Addressed in Section 4.5 of the Preliminary Documentation.
3.1.16	Assessment of all habitat's specific features available in the proposed action area as per the habitat described in the Approved Conservation Advice for Natural Temperate Grassland of the Victorian Volcanic Plain.	Addressed in Section 4.4 of the Preliminary Documentation.

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3.1.17	Provide the scientific reasoning for how the extent of Natural Temperate Grassland of the Victorian Volcanic Plain (NTGVVP) is derived.	Addressed in Sections 4.4, 4.5 and Appendix F of the Preliminary Documentation.
3.1.18	The total area (in hectares) and quality of NTGVVP to be impacted, with details on whether any impacts are likely to be unknown, unpredictable or irreversible and the science informing these areas and impacts	Addressed in Section 5.1 of the Preliminary Documentation.
3.1.19	Substantiated evidence that 'no-go zones' and buffer zones would protect areas of NTGVVP outside the area of the proposed action.	Addressed in Section 8.1 of the Preliminary Documentation.
3.2.1	For actions impacting on Commonwealth land, the preliminary documentation will need to identify and evaluate impacts to the environment as described under section 526 of the EPBC Act (Appendix C).	Addressed in Section 6 of the Preliminary Documentation.
3.2.2	Information regarding characterisation of site contamination. This should be in the form of a preliminary site investigation (PSI) and, if considered necessary, a detailed site investigation (DSI), undertaken in accordance with National Environment Protection (Assessment of Site Contamination) 1999 ("the ASC NEPM"), the PFAS National Environmental Management Plan 2.0 (as amended from time to time), and the National Water Quality Management Strategy (NWQMS). The assessments should include but not be limited to: • site history, physical setting, and site conditions. • a conceptual site model (CSM) regarding contamination sources, receptors and exposure pathways between those sources and receptors. • characterisation of chemical contamination at the proposed action site. • analytical results of laboratory analysis should also be provided in an ESdat compatible format. • Information and data regarding the proposed works, with emphasis on those with the potential to disturb and/or remobilise contamination. This should include, but not be limited to, the following: • the locations and depths of any earthworks, including whether groundwater is expected to be intersected. • the expected volumes of potential contaminated materials, if any, to be produced including soil, water and hardstand material, and the fate of such material. • the expected duration of excavations / bare earth being exposed. • assessment of environmental suitability of any fill material proposed to be imported onto the site. • Mitigation measures and management protocols proposed to be implemented to protect the environment during the proposed action. This should include, but not be limited to, the following: • measures to prevent and / or manage any potential for mobilisation of PFAS and other contaminants. • known / likely trenching operations, stockpile sites, laydown / cleared areas, access areas, disturbed soil areas, etc. • a commitment to ensuring that the vehicle hygiene, risk-based management, on-site stockpiling, storage and containment, transport of PFAS contaminated materials is consistent with the guidance in the PFAS NEMP 2.0 (HEPA 2020: 46-60), as updated from time to time. Further, consideration could be given to the need for:	Addressed in Section 6.10 and Appendix I of the Preliminary Documentation. Associated analytical results have been provided separately in ESdat format.

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	• a Construction Environmental Management plan (CEMP), including an unexpected finds protocol (UFP). • Airport Environment Officer (AEO) review of Melbourne Airport's PFAS Management Framework.	
3.3.1	Review and analysis of residual impacts of the proposed action, and of other known proposals where there may be a spatial or temporal overlap.	Addressed in Section 7.1 of the Preliminary Documentation.
3.3.2	Consideration of the potential for cumulative impacts on the resilience of any threatened species and ecological communities in the airport, and on overall habitat quality and availability.	Addressed in Section 7.2 of the Preliminary Documentation.
3.3.3	Discussion of the potential for existing pressures and threats to be exacerbated by the project.	Addressed in Section 7.3 of the Preliminary Documentation.
4.1	A detailed summary of measures proposed to be undertaken by the proponent to avoid, mitigate and manage relevant impacts of the proposed action. This should include for each measure: • A statement of the objectives, ongoing management and monitoring, locations and timing • The party responsible • The policy basis, for instance, consideration of the PFAS National Environment Management Plan 2.0	Addressed in Section 8 of the Preliminary Documentation.
4.2	The proposed measures must be based on best available practices, appropriate standards, evidence of success for other similar actions and supported by published scientific evidence	Noted.
4.3	All proposed measures to manage impacts must be drafted to meet the 'S.M.A.R.T' principle: • S – Specific (what and how) • M – Measurable (baseline information, number/value, auditable) • A – Achievable (timeframe, money, personnel) • R – Relevant (conservation advice, recovery plans, threat abatement plans) • T – Time-bound (specific timeframe to complete)	Noted.
4.4	The details of the vegetation and species habitat to be retained and an associated map showing the retained vegetation and habitat. The information and mapping must include the location and quantification of the total area of retained vegetation and species habitat when acting in combination with past, present, and reasonably foreseeable projects at the Airport.	Addressed in Section 5.1 and Figure 4 of the Preliminary Documentation. Note that overlap with the M3R project is shown in Figure 6 (Section 7), however it is noted that M3R is subject to a separate referral / MDP and quantification of retained vegetation after completion of M3R is not addressed here.
5.1	An assessment of the likelihood of residual significant impacts occurring on relevant MNES, after avoidance, mitigation and management measures have been applied.	Addressed in Section 9.1 of the Preliminary Documentation.

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5.2	If residual impacts are likely to be significant, please provide details of an offset strategy proposed to be implemented to compensate for the residual significant impacts of the project.	Addressed in Section 9.2 of the Preliminary Documentation.
5.3	Where offset area/s have been nominated for the residual significant impacts, provide an Offset Management Plan (OMP) as an appendix to the PD. You may wish to propose an advanced offset for the project plus the cumulative impacts of reasonably foreseeable projects across the airport. The OMP must meet the information requirements set out in Appendix B, and must be prepared by a suitably qualified ecologist and in accordance with the department's Environmental Management Plan Guidelines (2014), available at: www.environment.gov.au/epbc/publications/environmental-management-plan-guidelines.	As outlined in Section 9.3 of the Preliminary Documentation, the OMP is under preparation and a draft will be provided to DCCEEW for review once complete.
6.1	A description of how the proposed action meets the principles of ESD, as defined in section 3A of the EPBC Act. The following principles are principles of ecologically sustainable development: • decision making processes should effectively integrate both long term and short term economic, environmental, social and equitable considerations. • if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. • the principle of inter-generational equity—that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations. • the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision making. • improved valuation, pricing and incentive mechanisms should be promoted.	Addressed in Section 10 of the Preliminary Documentation.
7.1	An analysis of the economic and social impacts of the action, both positive and negative.	Addressed in Section 11 of the Preliminary Documentation.
7.2	Details of any public consultation activities undertaken and their outcomes	Addressed in Section 11.1 of the Preliminary Documentation.
7.3	Details of any consultation with Indigenous stakeholders. **Indigenous engagement** Identify existing or potential native title rights and interests, including any areas and objects that are of particular significance to Indigenous peoples and communities, possibly impacted by the proposed action and the potential for managing those impacts. Describe any Indigenous consultation that has been undertaken, or will be undertaken, in relation to the proposed action and their outcomes. The department considers that best practice consultation, in accordance with the Interim Engaging with First Nations People and Communities on Assessments and Approvals under the Environment Protection and Biodiversity Conservation Act 1999 (dcceew.gov.au) includes: • identifying and acknowledging all relevant affected Indigenous peoples and communities. • committing to early engagement.	Addressed in Section 11.2 of the Preliminary Documentation.

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	• building trust through early and ongoing communication for the duration of the project, including approvals, implementation and future management. • setting appropriate timeframes for consultation; and • demonstrating cultural awareness. Describe any state requirements for approval or conditions that apply, or that the proponent reasonably believes are likely to apply, to the proposed action with regards to Indigenous peoples and communities.	
7.4	Projected economic costs and benefits of the project, including the basis for their estimate through cost/benefit analysis or similar studies.	Addressed in Section 11.3 of the Preliminary Documentation.
7.5	Employment opportunities expected to be generated by the project (including construction and operational phases).	Addressed in Section 11.4 of the Preliminary Documentation.
8.1	Include details of any past or present proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against: The person proposing to take the action;	Addressed in Section 12 of the Preliminary Documentation.
8.2	For an action for which a person has applied for a permit, the person making the application;	
8.3	If the person is a body corporate—the history of its executive officers in relation to environmental matters; and	
8.4	If the person is a body corporate that is a subsidiary of another body or company (the parent body)—the history in relation to environmental matters of the parent body and its executive officers	
9	Please provide an overall conclusion as to the environmental acceptability of the proposal with regards to the objects and requirements of the EPBC Act including the principles of Ecologically Sustainable Development (ESD). You may wish to include a statement as to whether or not the controlled action should be approved and may recommend conditions pertaining to an approval. This should include justification for undertaking the proposed action in the manner proposed.	Addressed in Section 13 of the Preliminary Documentation.

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2023/09527 Melbourne Airport Pavement Maintenance Program 2

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1	Page 175, Appendix G	The Draft PD notes that the Victorian Grassland Earless Dragon has a negligible chance of occurrence because it is considered locally extinct. The department notes the rediscovery of the Victorian Grassland Earless Dragon near Bacchus Marsh, and that the proposed action area falls inside the projected distribution in the department's SPRAT. The department's view (or request) is that further consideration of this species should be included in the PD, which may include targeted surveys in line with the current best-practice presence/absence targeted survey guidelines for Victorian Grassland Earless Dragon - Tympanocryptis pinguicolla, Critically Endangered or other justification as to why further consideration is not required. The results of these targeted surveys should be included in Appendix G with the results for SLL and GSM surveys.	Added text to Section 4.3.1 which includes a summary of threats to the VGED and jutification to why the likelihood of occurance is considered low.
2	Page 34-35	The Draft PD states that there are no formal recovery plans generated by the Australian Government for the NTGVVP TEC. While it is true there is no Recovery Plan, the Draft PD should refer to the Approved Conservation advice, signed by the minister on 29 May 2008, available at: https://www.environment.gov.au/biodiversity/threatened/communities/pubs/42-conservation-advice.pdf . This Document outlines key Priority Recovery and Threat Abatement Actions for NTGVVP, and lists further information for guidance and resources on this ecological community.	Added reference to Table 6, Section 5.2.
3	Page 54 - table 20	Risk of loss should be entered as per the *How to use the Offsets assessment guide:* "An estimated risk of loss is entered in the guide for both the business as usual (i.e. without offset) and with offset scenarios. The difference between these figures is the level of averted loss provided by the proposed offset." Currently, the PD says the risk of loss with and without offsets is both 0%. This is incorrect because without offset, there would be an uncompensated-for residual loss of NTGVVP. Ensure that the difference between the Risk of loss without and with offset reflects the offset. This document is available at: <https://www.dcceew.gov.au/sites/default/files/documents/offsets-how-use.pdf>. More justification for offset calculations is required, including: oHow habitat quality before and after offset implementation were calculated with reference to species habitat requirements, and how those requirements have been taken into account when scoring habitat quality. You may find the following useful in scoring habitat quality - <https://www.dcceew.gov.au/sites/default/files/documents/offsets-how-use.pdf>. oHow time until ecological benefit was calculated. oFor the purposes of the offset calculator we consider that the species' historic decline is relevant information that needs to be considered and therefore an annual probability of extinction of 0.2% is suitable. oHow confidence in results was calculated. Please note, a confidence in result of 5%	Added timeline section 9.4 with overview of process and approx timing.
4	Page 30; 63	The department notes that the airport's operations do already involve a level of noise. The PD draft has not covered whether the proposed construction activities will create noise and dust impacts outside the normal operations of the airport.	Added noise and dust subheadings under Section 5.1.2 and added dust and noise procedures to Section 8.2
5	Throughout PD draft.	Any time the PD discusses detailed data from the Appendices, ensure that the data is explained clearly in laypersons terms. The high level of technical detail included in the attachments and appendices to the PD regarding water run off and soil composition supports the PD well, but the PD needs to adequately explain this data for the general public in accessible laypersons' language for viewing in the public comment period.	Section 6.10 - Added in a more detailed summary.
6		The PD notes that Appendix D and/or Appendix I outline the location and dept of earthworks including any interaction with groundwater. Please ensure this is adequately explained and clear to the layperson.	Added to Section 3.2.2 and 6.10.5
7	Page 22	For the GSM, the last surveys were 2019. These surveys are now 5 years old which the department considers outdated. The department suggests that updated surveys may need to be conducted, and are happy to discuss further.	Added further justification to Section 4.3.1, added M3R report as Appendix M (not to be made publicly available)
8	Referring to the data in Appendix E	For the FFG listed species listed as medium/high likelihood of occurrence, add further justification for why there will be no further impacts - e.g. geranium sp, black falcon, little eagle.	Added section 4.3.2 to specifically address FFG Act listed species
9	Throughout PD draft.	Ensure there is more justification on how impacts will be addressed to the aerial and ground dwelling species mentioned. For one example, given that the Tussock Skink has been surveyed in targeted surveys in the area of the project, the PD should include specific mitigation and management measures to reduce the likelihood of impacts to the species.	Added text to Section 6.7, Table 13
10	9.2 and 9.3 of the PD and throughout.	The department notes that the OMP has not been provided. The Offset must be secured, and the OMP finalised before the direction to publish can be delivered to the proponent.	Added section 9.4
11	Appendix E; throughout	Given that historic soil disturbance and earthworks are often used in the PD as a rationale for the likelihood of lower impacts to state and nationally listed species (see Appendix E for some examples), the department requires more evidence to prove the soil disturbance took place. Although past disturbance does provide ***context*** to the state of the habitat, past disturbance should not be used as a ***justification*** for impacts.	Added as Appendix N
12	Throughout PD draft.	Maps mostly adhere to the DCCEEW Mapping guidelines, including the coordinates reference system. However, maps must include the mapping coordinates. Please refer to the DCCEEW Guide to mapping: https://www.dcceew.gov.au/environment/environmental-information-data/information-policy/maps-and-boundary-data-for-epbc-act-projects	Updated all figures within PD
13	Appendix B	The PD RFI requested the location and d*epth* of earthworks be included in the PD. Appendix B states that section 6.10 and Appendix I of the PD meets these information requirements. Information on the depths of the works is lacking from the PD; More information on the depth of the proposed earthworks is required.	Added to Section 3.2.2

Appendix C

2021 PMP excerpts

PMP Excerpt - Taxiway Alpha (b/w Kilo & Juliet)

Tuesday, 27 June 2023 3:42 PM

4.1 Airfield Condition Rating

For the 2021 visual pavement inspection, AECOM adopted a 1 to 7 Condition Rating System which is based on the Australian Department of Defence Airfield Pavement Condition Rating System published in their Airfield Pavement Maintenance Manual (APMM).

Table 11 below and Appendix E (plan) shows the relative condition rating for all airfield areas at Melbourne Airport. Refer to the 2021 Melbourne Airport ATI PIR (Final) for further details on the Airfield Pavement Condition Rating System (APCRS) and Appendix B. In addition, Table 12 summarises the airfield pavement areas in 'poor to fair' condition (rating 3 out of 7).

Note, the condition ratings presented represent the rating given to the total area as defined. Smaller area's within the defined total area may have a different condition rating than one given to the total area.

Airfield Location	PCR	Airfield Location	PCR
RWY 09-27 (BTW 09 THR & N)	5	TWY T (BTW V & A)	5
RWY 09-27 (BTW N & 27 THR)	4	TWY T (INT WITH Q)[1]	5
RWY 27 THR (RWY 27 THR)[1]	4	TWY T (INT WITH S)[1]	4
RWY 16 THR (RWY 16 THR)[1]	4	TWY U (BTW A & S)	6
RWY 34 THR (RWY 34 THR)[1]	4	TWY U (BTW V & A)	6
RWY 16-34 (RWY 16-34)	3	TWY V (BTW C & RWY 09-27)	7
TWY A (BTW B & RWY 09-27)	4	TWY V (BTW E & F)	7
TWY A (BTW E & RWY 09-27)[1]	3	TWY V (BTW F & G)	6
TWY A (BTW G & X)	7	TWY V (BTW G & J)	7
TWY A (BTW K & J)[1]	3	TWY V (BTW RWY 09-27 & E)	7

5.0 Prioritisation of Works - Airfield Pavement Hierarchy

In collaboration with APAM, AECOM have produced a priority plan for separate trafficable sections of the airfield pavement network shown in Figure 8 and summarised in Table 14. This is based on the importance of pavement areas to Melbourne Airport's overall airfield operations.

The airfield pavement hierarchy has been relied upon in developing the recommendations for priority airfield pavement works in conjunction with the overall condition of the pavement. This is further developed in Section 5.1 below.

Table 14 MAP-MP Airfield Pavement Hierarchy

Hierarchy Rating 1	Hierarchy Rating 2	Hierarchy Rating 3	Hierarchy Rating 4
Runway 16-34	Taxiway A	Taxiway E (West of Runway 16-34)	Taxiway W

Table 15 Recommended Priorities for Airfield Pavement Areas

Prioritisation (PCR x H)	Primary Airfield Area	Location	Existing Pavement Type	Pavement Hierarchy (H)	Pavement Condition Rating (PCR)
3	**RWY 16-34**	RWY 16-34	**Asphalt**	1	3
4	**RWY 09-27**	BTW N & 27 THR	**Asphalt**	1	4
4	**RWY 16 THR**	RWY 16 THR	**Concrete**	1	4
4	**RWY 27 THR**	RWY 27 THR	**Concrete**	1	4
4	**RWY 34 THR**	RWY 34 THR	**Concrete**	1	4
5	**RWY 09-27**	BTW 09 THR & N	**Asphalt**	1	5
6	**TWY A**	BTW K & J	**Concrete**	2	3
6	**TWY G**	BTW RWY 16-34 & V	**Asphalt**	2	3

4.2 2021 'Hot Spot' Assessment

As part of the 2021 ATI process, AECOM undertook a detailed inspection and preliminary scoping of 'Hot Spot' areas to inform the 2021 PMP and subsequent recommendations for FY 2023 scope of works.

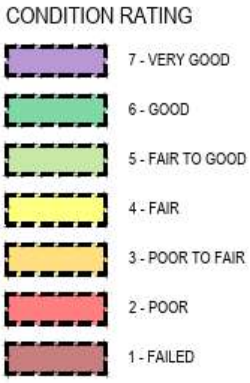

Table 13 2021 'Hot Spot' Area Assessment – Preliminary Slab Numbers

Primary Airfield Area	Location	1	2	3	4	5	6	7	Grand Total
PIER C	C1-C3-C7-C9-C11-C12 BAYS	0	0	13	244	246	0	0	503
PIER C Total		**0**	**0**	**13**	**244**	**246**	**0**	**0**	**503**
PIER D	D12 BAY	0	2	0	1	33	0	28	64
	D9-D10-D11 BAYS	0	1	13	145	753	0	0	912
PIER D Total		**0**	**3**	**13**	**146**	**786**	**0**	**28**	**976**
RWY 16 THR	RWY 16 THR	0	0	2	106	427	19	12	566
RWY 16 THR Total		**0**	**0**	**2**	**106**	**427**	**19**	**12**	**566**
RWY 27 THR	RWY 27 THR	0	0	10	39	46	13	0	108
RWY 27 THR Total		**0**	**0**	**10**	**39**	**46**	**13**	**0**	**108**
RWY 34 THR	RWY 34 THR	0	15	30	196	428	18	7	694
RWY 34 THR Total		**0**	**15**	**30**	**196**	**428**	**18**	**7**	**694**
TLN Q	TLN Q	0	0	9	51	333	0	0	393
TLN Q Total		**0**	**0**	**9**	**51**	**333**	**0**	**0**	**393**
TWY A	BTW E & RWY 09-27	0	11	35	25	27	0	0	98
	BTW K & J	1	33	34	71	122	1	0	262

This drawing is used/distributed and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001:2000

AECOM

CONSULTANT

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PROJECT

MELBOURNE AIRPORT
MAPMP - CP18104
PAVEMENT MAINTENANCE PLAN

CLIENT

[redacted]

SCALE

N.T.S

NOT FOR CONSTRUCTION

PROJECT MANAGEMENT INITIALS

DESIGNED BY	CHECKED	APPROVED

PROJECT DATA

DATUM		RUNWAY

ISSUE/REVISION

A	25.10.2021	DRAFT - 2021 PMP
NO	DATE	DESCRIPTION

PROJECT NUMBER

60585728

SHEET TITLE

MELBOURNE AIRPORT
2021 PMP - HOT SPOT ASSESSMENT
CONTION RATING PLAN SHEET 7

SHEET NUMBER

60585728-SHT-2021-PMP-0107

Appendix D

Design documentation

ISO A1 594mm x 841mm

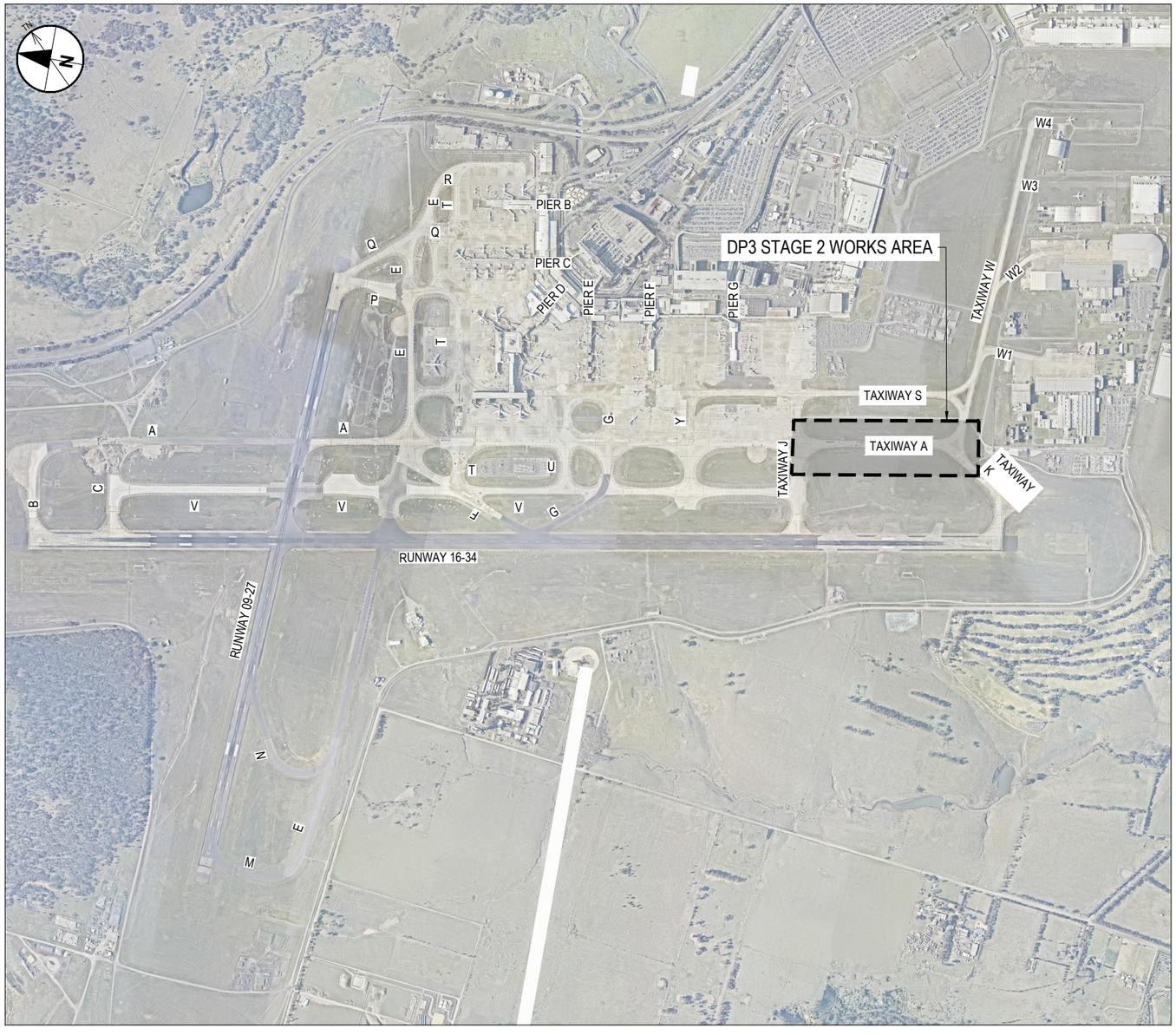
MAPMP2 - MELBOURNE AIRPORT
DESIGN PACKAGE 3 - STAGE 2

DRAWING LIST

DRAWING NUMBER	DRAWING TITLE
60705085-SHT-03_2-10-0001	COVER SHEET
60705085-SHT-03_2-10-0003	NOTES
60705085-SHT-03_2-10-0004	LEGEND
60705085-SHT-03_2-10-0005	KEY PLAN
60705085-SHT-03_2-30-1001	EXISTING CONDITIONS AND UTILITIES PLAN - SHEET 1
60705085-SHT-03_2-30-1002	EXISTING CONDITIONS AND UTILITIES PLAN - SHEET 2
60705085-SHT-03_2-40-1001	DEMOLITION AND SITE CLEARANCE PLAN - SHEET 1
60705085-SHT-03_2-40-1002	DEMOLITION AND SITE CLEARANCE PLAN - SHEET 2
60705085-SHT-03_2-60-1001	ALIGNMENT GEOMETRY PLAN - SHEET 1
60705085-SHT-03_2-60-1002	ALIGNMENT GEOMETRY PLAN - SHEET 2
60705085-SHT-03_2-60-1101	ALIGNMENT SCHEDULES
60705085-SHT-03_2-60-2001	GRADING TOPOGRAPHICAL PLAN - SHEET 1
60705085-SHT-03_2-60-2002	GRADING TOPOGRAPHICAL PLAN - SHEET 2
60705085-SHT-03_2-60-2101	FUTURE M3R GRADING PLAN - SHEET 1
60705085-SHT-03_2-60-2102	FUTURE M3R GRADING PLAN- SHEET 2
60705085-SHT-03_2-60-3001	GRADING ISOPACHYTES PLAN - SHEET 1
60705085-SHT-03_2-60-3002	GRADING ISOPACHYTES PLAN - SHEET 2
60705085-SHT-03_2-60-4001	GRADING LONG SECTIONS - SHEET 1
60705085-SHT-03_2-60-4002	GRADING LONG SECTIONS - SHEET 2
60705085-SHT-03_2-60-4003	GRADING LONG SECTIONS - SHEET 3
60705085-SHT-03_2-60-4004	GRADING LONG SECTIONS - SHEET 4
60705085-SHT-03_2-60-5001	GRADING CROSS SECTIONS - SHEET 1
60705085-SHT-03_2-60-5002	GRADING CROSS SECTIONS - SHEET 2
60705085-SHT-03_2-60-5003	GRADING CROSS SECTIONS - SHEET 3
60705085-SHT-03_2-60-5004	GRADING CROSS SECTIONS - SHEET 4
60705085-SHT-03_2-60-5005	GRADING CROSS SECTIONS - SHEET 5
60705085-SHT-03_2-60-5006	GRADING CROSS SECTIONS - SHEET 6
60705085-SHT-03_2-70-1001	GEOTECHNICAL INVESTIGATIONS
60705085-SHT-03_2-80-1001	PAVEMENT PLAN - SHEET 1
60705085-SHT-03_2-80-1002	PAVEMENT PLAN - SHEET 2
60705085-SHT-03_2-80-1003	PAVEMENT PLAN - SHEET 3
60705085-SHT-03_2-80-2001	PAVEMENT TYPICAL SECTIONS - SHEET 1
60705085-SHT-03_2-80-2002	PAVEMENT TYPICAL SECTIONS - SHEET 2
60705085-SHT-03_2-80-5001	PAVEMENT DETAILS - SHEET 1
60705085-SHT-03_2-80-5002	PAVEMENT DETAILS - SHEET 2
60705085-SHT-03_2-80-5003	PAVEMENT DETAILS - SHEET 3
60705085-SHT-03_2-80-5004	PAVEMENT DETAILS - SHEET 4
60705085-SHT-03_2-80-5005	PAVEMENT DETAILS - SHEET 5
60705085-SHT-03_2-90-1001	COMBINED UTILITIES AND SERVICES PLAN - SHEET 1
60705085-SHT-03_2-90-1002	COMBINED UTILITIES AND SERVICES PLAN - SHEET 2
60705085-SHT-03_2-90-1003	SAFEGUARDED M3R UTILITIES PLAN - SHEET 1
60705085-SHT-03_2-90-1004	SAFEGUARDED M3R UTILITIES PLAN - SHEET 2
60705085-SHT-03_2-90-2001	UTILITIES AND SERVICES - TYPICAL SECTIONS
60705085-SHT-03_2-90-5001	UTILITIES AND SERVICES - TYPICAL DETAILS
60705085-SHT-03_2-100-1001	AGL AND SIGNAGE PLAN - SHEET 1
60705085-SHT-03_2-100-1002	AGL AND SIGNAGE PLAN - SHEET 2

DRAWING LIST

DRAWING NUMBER	DRAWING TITLE
60705085-SHT-03_2-100-4001	AGL SCHEDULES - SHEET 1
60705085-SHT-03_2-100-4002	AGL SCHEDULES - SHEET 2
60705085-SHT-03_2-100-4003	AGL SCHEDULES - SHEET 3
60705085-SHT-03_2-100-5001	AGL DETAILS - SHEET 1
60705085-SHT-03_2-100-5002	AGL DETAILS - SHEET 2
60705085-SHT-03_2-100-5003	AGL DETAILS - SHEET 3
60705085-SHT-03_2-100-5004	AGL DETAILS - SHEET 4
60705085-SHT-03_2-100-5005	AGL DETAILS - SHEET 5
60705085-SHT-03_2-100-5006	AGL DETAILS - SHEET 6
60705085-SHT-03_2-100-5007	AGL DETAILS - SHEET 7
60705085-SHT-03_2-100-5008	AGL DETAILS - SHEET 8
60705085-SHT-03_2-100-5009	AGL DETAILS - SHEET 9
60705085-SHT-03_2-100-6001	AGL PRIMARY CIRCUIT PLAN - ER406
60705085-SHT-03_2-100-6002	AGL PRIMARY CIRCUIT PLAN - ER409
60705085-SHT-03_2-100-6003	AGL PRIMARY CIRCUIT PLAN - ER410
60705085-SHT-03_2-100-6004	AGL PRIMARY CIRCUIT PLAN - ER411
60705085-SHT-03_2-100-6005	AGL PRIMARY CIRCUIT PLAN - ER413
60705085-SHT-03_2-100-6006	AGL PRIMARY CIRCUIT PLAN - ER414
60705085-SHT-03_2-100-6007	AGL PRIMARY CIRCUIT PLAN - ER415
60705085-SHT-03_2-100-6008	AGL PRIMARY CIRCUIT PLAN - ER420
60705085-SHT-03_2-100-6009	AGL PRIMARY CIRCUIT PLAN - ER421
60705085-SHT-03_2-100-6010	AGL PRIMARY CIRCUIT PLAN - ER427
60705085-SHT-03_2-100-6011	AGL PRIMARY CIRCUIT PLAN - ER475
60705085-SHT-03_2-110-1001	LINE MARKING AND SIGNAGE PLAN - SHEET 1
60705085-SHT-03_2-110-1002	LINE MARKING AND SIGNAGE PLAN - SHEET 2
60705085-SHT-03_2-110-1003	LINE MARKING AND SIGNAGE PLAN - SHEET 3
60705085-SHT-03_2-110-1004	LINE MARKING AND SIGNAGE PLAN - SHEET 4
60705085-SHT-03_2-110-4001	LINE MARKING SCHEDULES
60705085-SHT-03_2-110-5001	LINE MARKING DETAILS - SHEET 1
60705085-SHT-03_2-110-5002	TYPICAL MAGS FOUNDATION
60705085-SHT-03_2-110-5003	LINE MARKING DETAILS - SHEET 2
60705085-SHT-03_2-130-1001	STORMWATER DRAINAGE AND HYDRAULICS PLAN - SHEET 1
60705085-SHT-03_2-130-1002	STORMWATER DRAINAGE AND HYDRAULICS PLAN - SHEET 2
60705085-SHT-03_2-130-3001	STORMWATER DRAINAGE AND HYDRAULICS LONG SECTIONS - SHEET 1
60705085-SHT-03_2-130-3002	STORMWATER DRAINAGE AND HYDRAULICS LONG SECTIONS - SHEET 2
60705085-SHT-03_2-130-4001	STORMWATER DRAINAGE AND HYDRAULICS SCHEDULES - SHEET 1
60705085-SHT-03_2-130-4002	STORMWATER DRAINAGE AND HYDRAULICS SCHEDULES - SHEET 2
60705085-SHT-03_2-130-5001	STORMWATER DRAINAGE AND HYDRAULICS DETAILS - SHEET 1
60705085-SHT-03_2-130-5002	STORMWATER DRAINAGE AND HYDRAULICS DETAILS - SHEET 2
60705085-SHT-03_2-130-5003	STORMWATER DRAINAGE AND HYDRAULICS DETAILS - SHEET 3
60705085-SHT-03_2-150-1001	CONSTRUCTION STAGING PLAN
60705085-SKE-03_2-10-0001	ROAD SAFETY ASSESSMENT - PROPOSED CONDITIONS SKETCH



This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001.

AECOM

CONSULTANT

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PROJECT

MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

SCALE V 0 100 200 300 400 500m
1 : 20000 (A3) 1 : 10000 (A1)

REGISTRATION

CJ

PROJECT MANAGEMENT INITIALS

CJ	GT	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

I/R	DATE	DESCRIPTION
C	08.05.2024	ISSUED FOR TENDER
B	03.11.2023	ISSUED FOR TENDER
A	22.08.2023	DRAFT - TENDER DESIGN

NOT FOR CONSTRUCTION

PROJECT NUMBER

60705085

SHEET TITLE

MAPMP2
DESIGN PACKAGE 3 - STAGE 2
COVER SHEET

SHEET NUMBER

60705085-SHT-03_2-10-0001

Last saved by: JARVISC(2024-05-09) Last Plotted: 2024-05-09
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ISO A1 594mm x 841mm

GENERAL NOTES

1. ALL THE MATERIALS AND TREATMENTS MUST COMPLY WITH THE REQUIREMENTS OF THE TECHNICAL SPECIFICATIONS
2. ALL DIMENSION IN METRES UNLESS NOTED OTHERWISE.
3. THE LOCATION AND EXTENT OF WORKS ARE TO BE AGREED ON SITE WITH THE CONTRACT ADMINISTRATOR.
4. THE LOCATIONS AND EXTENT OF WORKS ARE TO BE CONFIRMED ON SITE BY THE CONTRACTOR PRIOR TO ARRANGING ANY AREA CLOSURES.
5. CARE SHOULD BE TAKEN TO PROTECT ALL EXISTING AGL, LINE MARKINGS, PAVEMENTS AND SERVICES.
6. CONTRACTOR MUST NOT TRAFFIC SOFT SURFACES / GRASS WITHOUT WRITTEN PERMISSION FROM THE PRINCIPAL OR CONTRACT ADMINISTRATOR.

EXISTING SERVICES NOTES

1. EXISTING SERVICES SHOWN HAVE BEEN OBTAINED FROM MAPBASE DATA PROVIDED BY THE PRINCIPAL ON 22 JULY 2022. MAPBASE DATA WAS PROVIDED IN DIGITAL FORMAT AND HAS NOT BEEN VERIFIED BY SITE SURVEY.
2. ALL EXISTING SERVICES SHALL BE PROTECTED IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATION.
3. PERMITS TO EXCAVATE ARE TO BE OBTAINED FROM THE PRINCIPAL PRIOR TO COMMENCEMENT OF WORK. CONTRACTOR TO ASSUME THAT EXISTING AIRSIDE SERVICES AND CABLES ARE NEITHER MECHANICALLY PROTECTED NOR MARKED WITH TAPE.
4. CONTRACTOR TO ENSURE ALL ELECTRICAL CABLES ARE ISOLATED PRIOR TO WORKS.
5. THE POSITION OF SERVICES INDICATED ON THESE DRAWINGS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL NOT BE RELIEVED FROM LIABILITY FOR ANY DAMAGE CAUSED BY REASON OF THE ACTUAL POSITION BEING DIFFERENT TO THOSE INDICATED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE PRECISELY THE SERVICES BEFORE COMMENCEMENT OF THE WORKS WITHIN THE WORKS VICINITY.
6. THE SERVICES INDICATED IN THIS DRAWING MAY NOT BE THE ONLY SERVICES PRESENT IN THE AREA. UNRECORDED SERVICES MAY BE ENCOUNTERED AT ANY POSITION OR DEPTH.
7. ALL EXISTING SERVICES SHALL BE PROTECTED BY THE CONTRACTOR. IF SERVICES IMPACT THE WORKS, THE CONTRACTOR IS TO IMMEDIATELY NOTIFY THE CONTRACT ADMINISTRATOR. THE CONTRACTOR IS REQUIRED TO DOCUMENT A PROPOSED COURSE OF ACTION, IN ORDER TO MINIMISE IMPACTS TO THE PROJECT TIME AND COSTS.

DEMOLITION NOTES

1. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
2. FOR EXISTING SERVICES INFORMATION INCLUDING LEGEND REFER TO DRAWING 60705085-SHT-03_2-10-0004 AND 60705085-SHT-03_2-30-1001 TO 03-1002.
3. FOR PAVEMENT LAYOUT PLAN REFER TO DRAWING 60705085-SHT-03_2-80-1001 TO 80-1003.
4. FOR AGL LAYOUT PLAN REFER TO DRAWING 60705085-SHT-03_2-100-1001 AND 100-1002.
5. FOR LINE MARKING & SIGNAGE LAYOUT PLAN REFER TO DRAWING 60705085-SHT-03_2-110-1001 AND 110-1002.
6. TIMING OF DEMOLITION OF OPERATIONAL FACILITIES WILL BE SUBJECT TO AGREEMENT WITH THE PRINCIPAL AND THE APPROVED ASSOCIATED METHOD OF WORKS PLAN (MOWP).
7. ALL DEMOLITION MUST BE UNDERTAKEN IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION.
8. ANY DEMOLITION THAT AFFECTS EXISTING SERVICES THAT ARE REQUIRED FOR OPERATIONS MUST HAVE IN PLACE TEMPORARY SERVICES AGREED WITH THE PRINCIPAL.
9. ALL TEMPORARY SERVICES DESIGN IS TO BE UNDERTAKEN BY THE CONTRACTOR.
10. ADDITIONAL EXISTING FEATURES NOT SHOWN BY THE DATA PROVIDED BY THE PRINCIPAL OR REQUIRED BY THE EXTENT OF WORKS MAY REQUIRE DEMOLITION WORKS. THE CONTRACTOR SHALL MAKE ALLOWANCE FOR ALL DEMOLITION WORKS AND TEMPORARY WORKS.
11. THE CONTRACTOR IS TO ALLOW WITHIN THEIR PROGRAM , FOR THE REMOVAL/DEMOLITION AS IT RELATES TO THE STAGING AND SEQUENCING OF THE WORKS AND MINIMISE IMPACT TO OPERATIONS.
12. DEMOLITION OF TEMPORARY WORKS ASSOCIATED WITH THE STAGING ARE NOT SHOWN, THE CONTRACTOR IS TO MAKE ALLOWANCE IN ACCORDANCE WITH STAGING PLANS.
13. THE CONTRACTOR MUST CONSULT WITH THE PRINCIPAL AND ALL RELEVANT EXISTING SERVICE ASSET OWNERS AND OBTAIN APPROVAL PRIOR TO ANY WORKS BEING UNDERTAKEN IN THE VICINITY OF THE ASSET.
14. THE CONTRACTOR MUST SUBMIT WORK METHOD STATEMENTS OUTLINING PROPOSED PROCEDURE TO EXPOSE AND PROTECT ALL SERVICES, A MINIMUM 14 DAYS PRIOR TO COMMENCEMENT OF THE WORKS. ALL EXISTING SERVICES SHALL BE IDENTIFIED AND EXPOSED USING HAND TOOLS AND/OR APPROVED SPECIALIST EXCAVATION TECHNIQUES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
15. PERMIT TO EXCAVATE ARE TO BE OBTAINED PRIOR TO COMMENCEMENT OF THE WORKS. THE CONTRACTOR IS TO ASSUME THAT EXISTING SERVICES AND CABLES ARE NEITHER MECHANICALLY PROTECTED OR MARKED WITH TAPE.

PAVEMENT NOTES

1. SLAB CONSTRUCTION SEQUENCING TO BE AGREED WITH THE PRINCIPAL AND THE CONTRACT ADMINISTRATOR PRIOR TO THE COMMENCEMENT OF THE WORKS.
2. EXISTING SLABS SHALL NOT BE DAMAGED BY THE CONTRACTOR. THE CONTRACTOR SHALL PROTECT EXISTING SERVICES AND PAVEMENT THROUGHOUT THE DURATION OF THE WORKS AND DOCUMENT CONDITION ON ADJOINING EXISTING PAVEMENTS, WHICH MUST INCLUDE PHOTOGRAPHS OF ANY EXISTING DAMAGE, PRIOR TO WORKS COMMENCING. ALL DAMAGE CAUSED BY THE CONTRACTOR SHALL BE RECTIFIED BY THE CONTRACTOR AT NO COST AND TO THE SATISFACTION OF THE PRINCIPAL.
3. THE CONTRACTOR IS TO ENSURE NEW SLAB LEVELS AND GRADES MATCH THE DESIGN LEVELS AND TIE IN FLUSH TO EXISTING PAVEMENTS.
4. THE EXTENT OF DIFFERENTIALLY SETTLED SLABS AT THE TIE- IN TO EXISTING PAVEMENTS SHALL BE CONFIRMED ON SITE PRIOR TO THE COMMENCEMENT OF ANY WORKS.
5. AFTER SAW CUTTING ALL LAITANCE SHALL BE REMOVED FROM ALL CONCRETE SURFACES TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR.
6. ALL ROUGHNESS TO THE FACE OF EXISTING SLAB JOINTS SHALL BE MADE SMOOTH WITH APPROVED GROUT PRIOR TO THE FACE OF THE EXISTING SLAB JOINT BEFORE PLACEMENT OF ABLEFLEX.
7. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CONTRACT ADMINISTRATOR IN ALL SITUATIONS WHERE JOINT DETAILS SHOWN ARE AT VARIANCE WITH THE JOIN SEALANT MANUFACTURERS RECOMMENDATIONS AND SHALL NOT COMMENCE JOINTING UNTIL COMBINED AGREEMENT ON JOINT DETAILS IS REACHED. UNLESS STATED OTHERWISE BY MANUFACTURER'S RECOMMENDATIONS, THICKNESS OF SEALANT IN THE JOINT OR BACKING RODS SHALL BE AS PER DETAILS.
8. PORTLAND CEMENT CONCRETE SLAB TO ACHIEVE A MINIMUM FLEXURAL STRENGTH IN ACCORDANCE WITH THE SPECIFICATION.
9. CONCRETE JOINTS TO BE SEALED AS DETAILED ON DRAWINGS.
10. ALL EXCAVATIONS ARE TO BE KEPT DRY. THE CONTRACTOR IS TO ALLOW FOR CONTINUOUS DEWATERING INCLUDING CONSTRUCTION OF TEMPORARY SUMPS IN EACH STAGE, PUMPING TO AGREED LOCATIONS AND MONITORING.
11. CONSTRUCTION SHALL NOT PROCEED IF THERE IS LIKELY TO BE SIGNIFICANT RAIN DURING THE PHYSICAL WORKS PERIOD. PLACEMENT OF THE CONCRETE MUST NOT PROCEED WHERE HEAT, COLD, WIND, RAIN, LOW HUMIDITY, PLANT AND EQUIPMENT DEFECTS, INADEQUATE LABOUR OR ANY OTHER REASON WILL PREVENT SATISFACTORY PLACEMENT AND DINISHING OF THE CONCRETE AS PER THE REQUIREMENTS OF THE SPECIFICATIONS.
12. ALL DEMOLISHED CONCRETE AND EXCAVATED SUBBASE MATERIAL SHALL BE CONSIDERED PFAS CONTAMINATED AND STOCKPILED/CONTAINED ON SITE TO MELBOURNE AIRPORT REQUIREMENTS. NO DEMOLISHED/EXCAVATED MATERIALS TO LEAVE SITE WITHOUT MELBOURNE AIRPORT APPROVAL.
13. IF ANY SLAB IS DOWELLED ON MORE THAN 3 SIDES, THE SLAB MUST BE REINFORCED ACROSS THE ENTIRE SLAB. REINFORCEMENT TO BE AS PER THE TYPICAL DETAIL FOR IRREGULAR PCC SLABS. (B)

SUBSURFACE DRAINAGE NOTES

1. SUBSURFACE DRAINAGE PIPES SHALL BE 150DIA UPVC SLOTTED PIPES WITH MIN. LONGITUDINAL GRADE OF 1:200 U.N.O.
2. JOINTS SHALL BE SOLVENT GLUE WELDED.
3. SLOTS SHALL BE 1mm WIDTH AT 10mm CENTRES EVERY 150mm ALTERNATING AT 2 AND 10 O'CLOCK POSITIONS.
4. FLUSHOUT RISERS SHALL BE USED AT THE START OF SUBSURFACE DRAINAGE RUNS AS WELL AS AT A MAXIMUM SPACING OF 120m AS SHOWN ON THE PLANS.
5. SUBSURFACE DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF TECHNICAL SPECIFICATIONS.
6. DEPTHS OF SUBSURFACE DRAINAGE PIPES AND RISERS MAY EXCEED 1.5m. THE CONTRACTOR TO ALLOW FOR ALL INSTALLATION AND SAFETY PRECAUTIONS/MEASURES REQUIRED.

AGL NOTES

1. ALL AGL WORKS TO BE UNDERTAKEN BY AN AGL CONTRACTOR APPROVED BY THE PRINCIPAL. THE CONTRACTOR IS TO LIAISE WITH THE PRINCIPAL AND THE AGL CONTRACTOR ON ALL AGL REQUIREMENTS.
2. ALL EXISTING SECONDARY AND EARTH CABLES AFFECTED BY THE WORKS ARE TO BE REMOVED FROM THE LIGHT FITTING BACK TO THE SERIES ISOLATION TRANSFORMER (SIT).
3. WHERE INDICATED ON THE DRAWINGS, THE ROUTES FOR NEW PRIMARY, SECONDARY AND EARTH CABLES ARE TO BE CONFIRMED BY THE AGL CONTRACTOR. AGL INSTALLATION METHODOLOGY TO BE AGREED WITH THE CONTRACT ADMINISTRATOR PRIOR TO THE WORKS COMMENCING.
4. PROPOSED AGL PRIMARY, SECONDARY AND EARTH CABLES ALIGNMENTS ARE TO BE SUBMITTED TO THE CONTRACT ADMINISTRATOR FOR APPROVAL PRIOR TO THE WORKS COMMENCING.
5. THE LOCATION AND ROUTE OF EXISTING AGL SECONDARY AND EARTH CABLES HAS BEEN DETERMINED BASED ON AVAILABLE MAPBASE DATA AND AGL UPGRADE PROJECT AS-BUILTS. THE AGL CONTRACTOR IS TO VERIFY THE LOCATION AND ROUTE OF ALL EXISTING SECONDARY AND EARTH CABLING PRIOR TO WORKS COMMENCING.
6. THE CONTRACTOR IS TO CONFIRM, THE EXISTING BASE CAN CONFIGURATION AND TYPE PRIOR TO PROCUREMENT OF NEW AGL EQUIPMENT. THE CONTRACTOR IS TO RAISE ANY DISCREPANCIES BETWEEN DESIGN ASSUMPTIONS DETAILED ON THE DESIGN DRAWINGS AND ACTUAL CONFIGURATION.
7. (B) ALL EXISTING LIGHT FITTINGS AND SITS AFFECTED BY THE WORKS ARE TO BE REMOVED AND RETAINED FOR REINSTATEMENT (UNO). ANY AGL FITTING OR SIT DAMAGED IS TO BE REPLACED BY THE AGL CONTRACTOR AT NO COST TO THE PRINCIPAL.
8. AGL BASE AND LIGHT FITTINGS ARE TO BE INSTALLED AS PER THE MANUFACTURER'S SPECIFICATIONS.
9. EXISTING AGL LIGHTS INCLUDING LOCATION AND AIMING POINTS ARE TO BE SURVEYED PRIOR TO THE WORKS COMMENCING. REINSTATEMENT OF AGL TO BE UNDERTAKEN BASED ON THIS SURVEY.
10. ALL AGL FITTINGS WITHIN THE WORKS VICINITY MUST BE PROTECTED OR REMOVED AND REPLACED WITH A BLANK PLATE FOR THE DURATION OF THE WORKS. ANY DAMAGED AGL FITTINGS MUST BE REPLACED BY THE AGL CONTRACTOR AT THE CONTRACTOR'S OWN COST.
11. THE CONTRACTOR MUST PREPARE A DETAILED AGL DELAPIDATION SURVEY FOR ALL AGL WITHIN THE VICINITY OF THE WORKS PRIOR TO THE WORKS COMMENCING.
12. CONTRACTOR TO COORDINATE PROPOSED AGL PITS AND CONDUITS, MAINTAINING REQUIRED CLEARANCES FROM EXISTING SERVICES AND FINISHED SURFACE LEVELS.
13. THE CONTRACTOR SHALL EXPOSE EXISTING AGL PITS TO WHICH CONNECTIONS ARE TO BE MADE PRIOR TO LAYING CONDUITS. IF CONDUIT CONNECTION CANNOT BE MADE, THEE CONTRACTOR MUST SEEK INSTRUCTION FROM THE CONTRACT ADMINISTRATOR.
14. ALL AGL CONDUIT ALIGNMENTS RUNS INTO DEEP BASE CANS ARE TO BE STRAIGHT.
15. AGL DEMOLITION, TEMPORARY WORKS OR WORKS IN GENERAL MUST BE UNDERTAKEN AND STAGED TO AVOID ANY DISRUPTIONS TO OPERATIONS, UNLESS APPROVED OTERWISE BY THE PRINCIPAL IN WRITING.

LINE MARKING NOTES

1. EXISTING PAVEMENT MARKINGS DAMAGED DURING CONSTRUCTION SHALL BE RE-INSTATED AS PER EXISTING BY THE CONTRACTOR AT NO COST TO THE PRINCIPAL.
2. ALL LINE MARKING MUST BE MARKED TO THE EXTENT OF THE PERMITTED CLOSURE AREA OR AS AGREED WITH THE PRINCIPAL.
3. ALL PAVEMENT MARKINGS ARE TO BE IN ACCORDANCE WITH CASA MANUAL OF STANDARDS PART 139 AND MELBOURNE AIRPORT STANDARD, MAS-CVL-002.
4. YELLOW MARKING TO BE GOLDEN YELLOW (Y14). WHITE MARKING TO BE WHITE (N14). BLACK MARKING TO BE BLACK (N61).
5. ALL NEW LINE MARKINGS ARE TO MATCH AND TIE IN WITH THE EXISTING LINE MARKING (UNO). THE EXACT SETTING OUT CO-ORDINATES AT TIE IN POINTS TO BE VERIFIED ON SITE BY THE CONTRACTOR.

STORMWATER NOTES

1. ALL REINFORCED CONCRETE STORMWATER DRAINAGE PIPES ARE TO HAVE SPIGOT AND SOCKET RUBBER RING JOINTS AND LAID IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION.
2. THE CONTRACTOR MUST ORGANISE AND STAGE THE CONSTRUCTION WORKS AND UNDERTAKE ANY DIVERSION WORKS, TO ENSURE THAT THE EXISTING DIVERSION AREAS ARE ABLE TO CONVEY ALL STORMWATER THAT MAY OCCUR DURING THE PERIOD OF CONSTRUCTION WORKS.
3. THE CONTRACTOR MUST ALSO PROVIDE DIVERSION WORK ETC, TO PROTECT WORKS IN PROGRESS TO SUCH TIME THAT THE WORKS ARE FINISHED AND IN STABLE CONDITION.
4. ANY DAMAGE TO THE WORKS DUE TO STORMWATER FLOWS OR FLOODING DURING THE CONSTRUCTION PERIOD IS AT THE CONTRACTOR'S RISK.
5. SAND BAGS AND EROSION MEASURES TO BE PROVIDED AROUND ALL SURFACE INLET PITS DURING CONSTRUCTION.
6. STRUCTURAL CERTIFICATION IS REQUIRED FOR CONSTRUCTION OF ANY TEMPORARY DRAINAGE STRUCTURES.
7. ALL PIPE LAYING OPERATIONS MUST BE INSPECTED BY THE PRINCIPAL'S DESIGN CONSULTANT AFTER JOINING & PRIOR TO BACKFILLING.
8. ALL LONGITUDINAL PIPELINES MUST BE BACKFILLED AS PER THE DRAWINGS.
9. PRECAST CONCRETE PITS MAY BE USED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATION AND IF APPROVED BY THE CONTRACT ADMINISTRATOR.
10. UNLESS NOTED OTHERWISE, PIPES TO BE INSTALLED TO TYPE HS2 SUPPORT IN ACCORDANCE WITH AS3725 (1989).
11. PIPES ARE DESIGNED FOR OPERATIONAL LOADS ONLY. APPROPRIATE MEASURES TO BE TAKEN TO PROTECT PIPES DURING CONSTRUCTION.
12. STEP IRONS TO AS1657 MUST BE PROVIDED WHERE THE PIT DEPTH IS GREATER THAN 1.4m.
13. STORMWATER DRAINAGE PITS AND PIPES TO BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE TECHNICAL SPECIFICATIONS.

CONSTRUCTION STAGING NOTES

1. FOR CONSTRUCTION STAGING REFER TO DRAWING 60705085-SHT-03_2-150-1001.
2. ALL WORKS WILL BE SUBJECT TO AGREEMENT WITH THE PRINCIPAL AND THE APPROVED METHOD OF WORKS PLAN (MOWP).
3. THE CONTRACTOR IS TO REFLECT IN THEIR PROGRAM AND COST ALL REQUIREMENTS TO UNDERTAKE THE WORKS AS IT RELATES TO THE STAGING AND SEQUENCING OF THE WORKS TO MINIMISE IMPACTS TO OPERATIONS.

TOPSOIL AND FINISHING

1. CONTRACTOR TO REINSTATE AND LEVEL ANY DISTURBED AREAS WITH TOPSOIL AND GRASSED IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION.
2. THE CONTRACTOR IS TO ENSURE ALL DISTURBED AREAS ARE FREE DRAINING AND WITHOUT CAUSING PONDING.

ENVIRONMENT NOTES

1. PROTECTED GRASSES UNDER THE ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999 ('EPBC ACT') ARE WITHIN THE PROJECT AREA. THESE INCLUDE THE NATURAL TEMPERATE GRASSLAND OF THE VICTORIAN VOLCANIC PLAIN.
2. PROTECTED GRASSES WITHIN THE PROJECT AREA MUST NOT BE IMPACTED UNTIL APAM HAS GAINED APPROPRIATE PERMITS FROM THE COMMONWEALTH DEPARTMENT OF CLIMATE CHANGE, ENERGY, THE ENVIRONMENT AND WATER.

EARTHWORKS NOTES (B)

1. EARTHWORKS SHALL BE CONSTRUCTED TO THE LINES, GRADES AND DIMENSIONS SHOWN ON THE DRAWINGS
2. IF UNSUITABLE MATERIAL IS ENCOUNTERED, THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE CONTRACT ADMINISTRATOR TO SEEK DIRECTION, IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION
3. THE CONTRACTOR MUST ENSURE THAT STABILISATION IS UNDERTAKEN IN STRICT ACCORDANCE WITH THE APPLICABLE SAFETY REGULATIONS AND MUST MANAGE THE RISK OF WIND BLOWN PARTICLES.

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PROJECT

MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

REGISTRATION

CJ

PROJECT MANAGEMENT INITIALS		
CJ	NW	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION		
B	03.11.2023	ISSUED FOR TENDER
A	22.08.2023	DRAFT - TENDER DESIGN
I/R	DATE	DESCRIPTION

NOT FOR CONSTRUCTION

PROJECT NUMBER

60705085

SHEET TITLE

MAPMP2
DESIGN PACKAGE 3 - STAGE 2
NOTES

SHEET NUMBER

60705085-SHT-03_2-10-0003

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ISO A1 594mm x 841mm

LEGEND - EXISTING - TOPOGRAPHICAL SURVEY

- AGL FITTING
- ABANDONED AGL FITTING
- PITS
- EARTH STAKE
- GUARD RAIL GUIDE POST
- 129 — EXISTING CONTOURS (0.2m INCREMENT)
- D(B) — DRAINAGE Xm DEPTH (QUALITY LEVEL B)

LEGEND - EXISTING - UTILITIES AND APAM BASEMAPS

- C — COMMS CONDUIT (UNDERGROUND)
- E / LV — ELECTRICAL CONDUIT (UNDERGROUND)
- D — DRAINAGE PIPE (UNDERGROUND)
- DRAINAGE SUBSOIL PIPE (UNDERGROUND)
- F — FUEL SUPPLY (UNDERGROUND)
- W — WATER RING MAIN (UNDERGROUND)
- SERVICES DUCT (UNDERGROUND)
- EXISTING TAXIWAY CENTRELINE LIGHT
- EXISTING LINE MARKING
- EPBC - NATURAL TEMPERATE GRASSLAND OF THE VICTORIAN VOLCANIC PLAIN

LEGEND - EXISTING - AGL UPGRADE PROJECT AS BUILT

- NEW SECONDARY CABLES IN SAW-CUTS
- TAXIWAY CENTRELINE LIGHT
- NEW SECONDARYS CABLE IN CONDUITS
- NEW SECONDARYS CABLE IN JOINTS
- NEW PRIMARY CONDUITS
- E — ASSUMED PROVEN EXISTING ELECTRICAL CONDUIT

LEGEND - DESIGN - PROPOSED UTILITIES

- WATERMAIN SLEEVE
- COMMUNICATIONS CONDUIT BANK

LEGEND - DESIGN - GEOMETRY

- GRADED PORTION OF TAXIWAY STRIP
- TAXIWAY STRIP
- FUTURE GRADED PORTION OF TAXIWAY STRIP (M3R CROSS-FIELD TAXIWAY CONNECTIONS)
- FUTURE TAXIWAY STRIP (M3R CROSS-FIELD TAXIWAY CONNECTIONS)
- 1 — SETOUT POINT

LEGEND - DESIGN - GENERAL

- EXTENT OF WORKS

LEGEND - DESIGN - DEMOLITION

- EXISTING CONCRETE PAVEMENT TO BE DEMOLISHED
- EXISTING ASPHALT TO BE DEMOLISHED
- EXTENTS OF PROPOSED EARTHWORKS
- EXISTING SERVICE TO BE RETAINED AND PROTECTED
- EXISTING AGL FITTING TO BE REMOVED FOR REINSTATEMENT
- EXISTING AGL PIT TO BE DEMOLISHED
- EXISTING GRATED PIT (DRAINAGE) TO BE DEMOLISHED
- EXISTING AGL PRIMARY CABLE AND CONDUIT TO BE DEMOLISHED
- EXISTING AGL SECONDARY CABLE AND CONDUIT TO BE DEMOLISHED
- EXISTING LINE MARKING TO BE REMOVED
- EXISTING CONDUIT BANK / SERVICE TO BE CONFIRMED REDUNDANT AND DEMOLISHED

LEGEND - DESIGN - AGL

- TAXIWAY CENTRELINE AGL - DEEP BASE CAN HOUSING - WITH STEEL BLANKING PLATE
- TAXIWAY CENTRELINE AGL - DEEP BASE CAN HOUSING
- TAXIWAY CENTRELINE AGL - SHALLOW BASE CAN HOUSING
- TAXIWAY CENTRELINE AGL - FUTURE M3R TAXIWAY CENTRELINE (FOR REFERENCE ONLY, NOT TO BE INSTALLED)
- INTERMEDIATE HOLDING POSITION AGL - TO REMAIN IN CURRENT LOCATION
- INTERMEDIATE HOLDING POSITION AGL - SHALLOW BASE CAN HOUSING
- NEW SECONDARY CABLE IN SAW-CUTS
- NEW SECONDARY CABLE IN EXISTING CONDUIT
- NEW SECONDARY CABLES IN NEW 32mm² HD UPVC CONDUIT
- NEW SECONDARY CABLES IN NEW/EXISTING JOINT
- L1 — 1x80Ø HD uPVC AGL PRIMARY CONDUIT - CONCRETE ENCASED
- L1 — 1x80Ø HD uPVC AGL PRIMARY CONDUIT
- L2 — 2x80Ø HD uPVC AGL PRIMARY CONDUIT
- L2 — 2x80Ø HD uPVC AGL PRIMARY CONDUIT - CONCRETE ENCASED
- L1 — 1x100Ø HD uPVC AGL PRIMARY CONDUIT
- L2 — 2x100Ø HD uPVC AGL PRIMARY CONDUIT
- L4 — 4x80Ø HD uPVC AGL PRIMARY CONDUIT - CONCRETE ENCASED
- L4 — 4x100Ø HD uPVC AGL PRIMARY CONDUIT
- L3 — 3x100Ø HD uPVC AGL PRIMARY CONDUIT
- L8 — 8x100Ø HD uPVC AGL PRIMARY CONDUIT
- EP — ELECTRICAL PIT (WITH PIT ID) — EPXXX

LEGEND - DESIGN - GRADING

- 129.000 — DESIGN CONTOURS
- 129.200 — (0.2m INCREMENT)

LEGEND - DESIGN - PRIMARY CIRCUITS AND EARTHING

C

- ERXXX — EXISTING PRIMARY CIRCUIT ROUTE
- AGL UPGRADE PROJECT PRIMARY CIRCUIT ROUTE
- ERXXX — PROPOSED REDUNDANT PRIMARY CIRCUIT ROUTE
- ERXXX — AGL UPGRADE PROJECT LIGHT LOCATION
- PROPOSED DEEP BASE CAN EARTHING

LEGEND - DESIGN - PAVEMENT TYPES

- TAXIWAY PAVEMENT TYPE 1
- TAXIWAY PAVEMENT TYPE 2
- REINFORCED SLAB
- SHOULDER PAVEMENT TYPE 1
- SHOULDER PAVEMENT TYPE 2
- BLAST SHOULDER PAVEMENT TYPE 1
- BLAST SHOULDER PAVEMENT TYPE 2
- EXTENT OF FLANK WORKS
- FUTURE M3R PAVEMENT
- AGL DEEP CASE CAN
- AGL DEEP CASE CAN - BLOCKOUT REQURIED

LEGEND - DESIGN - PAVEMENT JOINT TYPES

- A — TYPE A - DOWELLED CONSTRUCTION JOINT
- B — TYPE B - DOWELLED ISOLATION JOINT
- C — TYPE C - SAWN CONTRACTION JOINT
- D — TYPE D1 - THICKENED EDGE JOINT - ADJACENT TO SHOULDER PAVEMENT
- D — TYPE D2 - THICKENED EGDE JOINT - ADJACENT TO FUTURE M3R CONNECTION
- E — TYPE E - UNDERSLAB JOINT
- TRIMMER BAR

LEGEND - DESIGN - LINE MARKING

- NEW TAXIWAY LINE MARKINGS

LEGEND - DESIGN - DRAINAGE

- PROPOSED PIPELINE
- XX-XX-X — PROPOSED FIELD INLET PIT (WITH PIT ID)
- XX-XX-X — PROPOSED SUBSURFACE FLUSHOUT OR BENDING POINT (WITH PIT ID)
- PROPOSED SUBSOIL DRAINAGE (PERFORATED PIPE)
- PROPOSED SUBSOIL DRAINAGE (NON-PERFORATED PIPE)
- PROPOSED SWALE LOW POINT
- EXISTING NATURAL SURFACE FLOWPATH
- EXISTING PIPELINE
- EXX-XX-XX — EXISTING FIELD INLET PIT (WITH PIT ID)

LEGEND - DESIGN - CONSTRUCTION STAGING

- PHASE 1 - TAXIWAY A (BETWEEN TAXIWAY J AND TAXIWAY W/K)
- PHASE 2 - TAXIWAY J (TAXIWAY A-J INTERSECTION)
- PHASE 3 - TAXIWAY A-K-W INTERSECTION

LEGEND - GEOTECHNICAL INVESTIGATIONS

- DIPPING / DCPs IN RIGID PAVEMENT
- DIPPING / DCPs IN FLEXIBLE PAVEMENT
- DCP
- BORE HOLE
- TEST PIT / DCP
- SAMPLE LOCATION FOR CONTAMINATION ASSESSMENT

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PROJECT

MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

REGISTRATION

CJ

PROJECT MANAGEMENT INITIALS

CJ	NW	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

I/R	DATE	DESCRIPTION
C	08.03.2024	ISSUED FOR TENDER
B	03.11.2023	ISSUED FOR TENDER
A	22.08.2023	DRAFT - TENDER DESIGN

NOT FOR CONSTRUCTION

PROJECT NUMBER

60705085

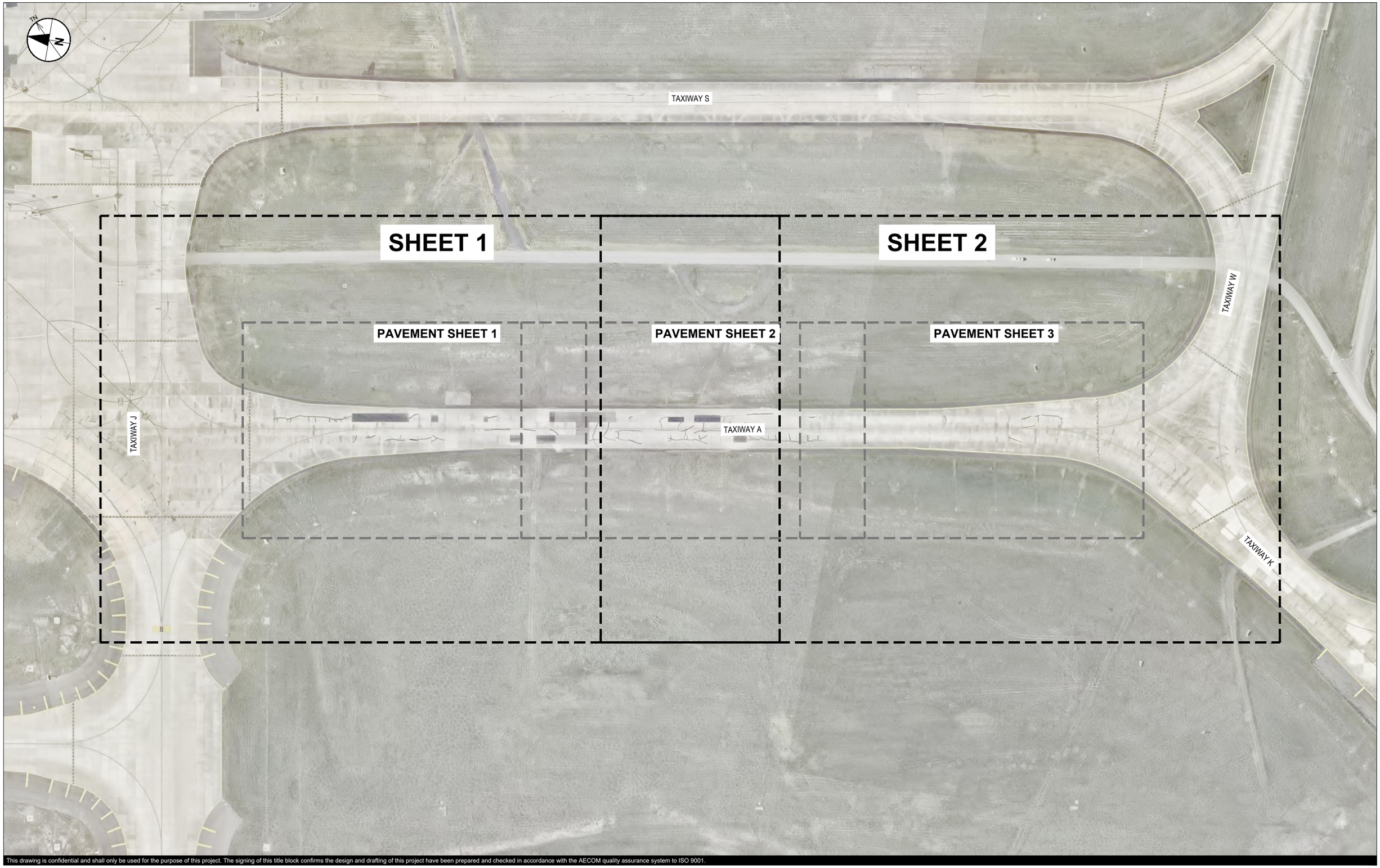
SHEET TITLE

MAPMP2
DESIGN PACKAGE 3 - STAGE 2
LEGEND

SHEET NUMBER

60705085-SHT-03_2-10-0004

ISO A1 594mm x 841mm



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PROJECT

MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

SCALE A 0 10 20 30 40 50m
1 : 2000 (A3) 1 : 1000 (A1)

REGISTRATION

CJ

PROJECT MANAGEMENT INITIALS

CJ	NW	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	03.11.2023	ISSUED FOR TENDER
A	22.08.2023	DRAFT - TENDER DESIGN

NOT FOR CONSTRUCTION

PROJECT NUMBER

60705085

SHEET TITLE

MAPMP2
DESIGN PACKAGE 3 - STAGE 2
KEY PLAN

SHEET NUMBER

60705085-SHT-03_2-10-0005

ISO A1 594mm x 841mm

NOTES

1. FOR NOTES REFER TO DRG 10-0003.
2. FOR LEGEND REFER TO DRG 10-0004.

TAXIWAY J

JOINS SHEET 2

TAXIWAY A

LP4200-028

LP4200-008

LP4200-009

LP4200-010

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PROJECT

MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

SCALE B
0 10 20 25m
1 : 1000 (A3) 1 : 500 (A1)

REGISTRATION

CJ

PROJECT MANAGEMENT INITIALS

CJ	NW	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

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NOT FOR CONSTRUCTION

PROJECT NUMBER

60705085

SHEET TITLE

MAPMP2
DESIGN PACKAGE 3 - STAGE 2
EXISTING CONDITIONS AND UTILITIES PLAN
SHEET 1

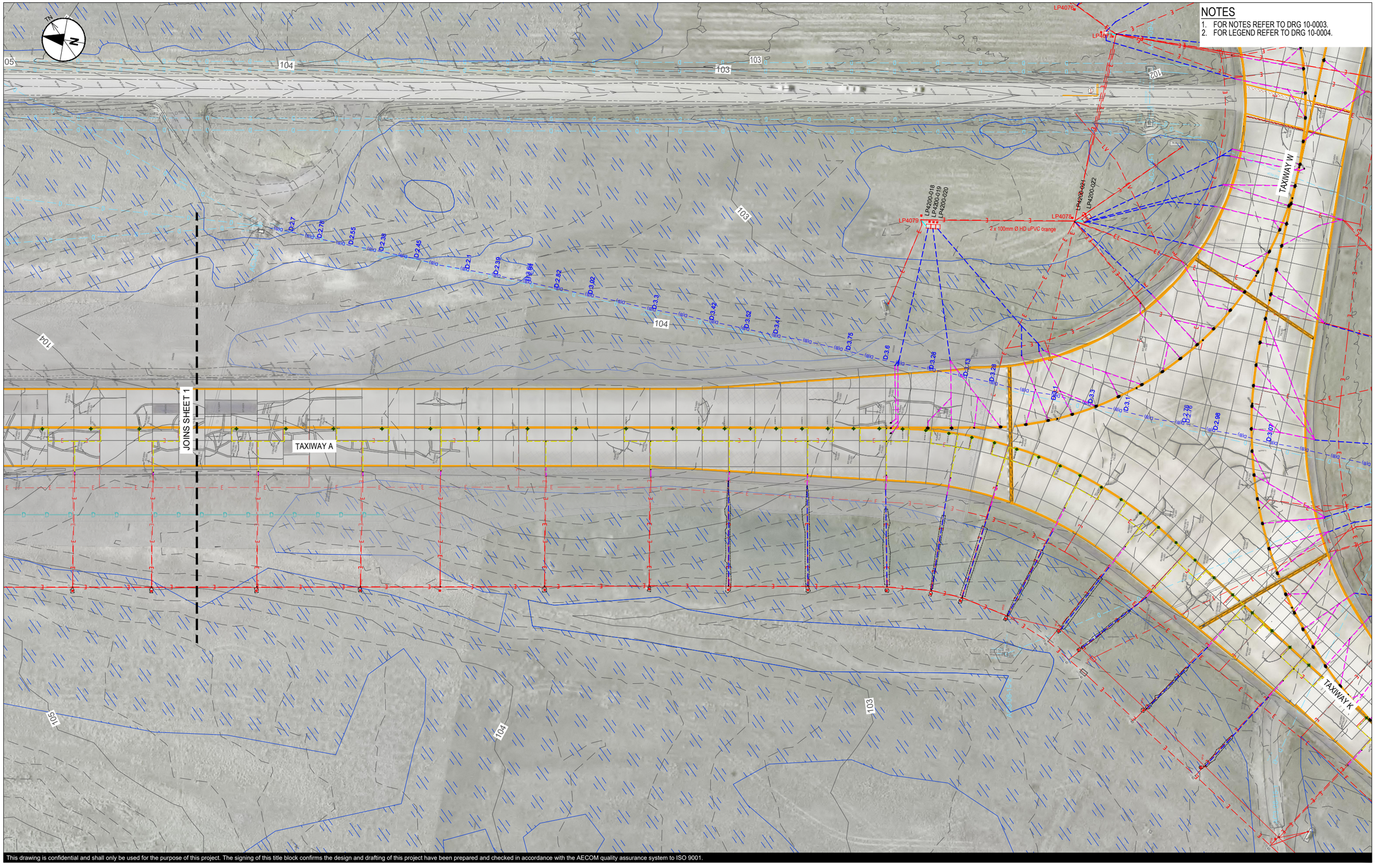
SHEET NUMBER

60705085-SHT-03_2-30-1001

ISO A1 594mm x 841mm

NOTES

1. FOR NOTES REFER TO DRG 10-0003.
2. FOR LEGEND REFER TO DRG 10-0004.



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PROJECT

MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

SCALE B
0 10 20 25m
1 : 1000 (A3) 1 : 500 (A1)

REGISTRATION

CJ

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PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

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B	03.11.2023	ISSUED FOR TENDER
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NOT FOR CONSTRUCTION

PROJECT NUMBER

60705085

SHEET TITLE

MAPMP2
DESIGN PACKAGE 3 - STAGE 2
EXISTING CONDITIONS AND UTILITIES PLAN
SHEET 2

SHEET NUMBER

60705085-SHT-03_2-30-1002

ISO A1 594mm x 841mm

NOTES

1. FOR NOTES REFER TO DRG 10-0003.
2. FOR LEGEND REFER TO DRG 10-0004.

EXISTING AGL PRIMARY CONDUITS CROSSING TO BE DEMOLISHED. NEW TAXIWAY CROSSING PROPOSED. REFER TO DRG 100-1001.

DEMOLITION OF AGL INFRASTRUCTURE CAN ONLY BE UNDERTAKEN ONCE A NEW OR ALTERNATIVE ARRANGEMENT FOR THE CIRCUITS IS PROVIDED.

EXISTING CONCRETE SLAB(S) ADJACENT TO THE TAXIWAY TO BE DEMOLISHED

REINSTATEMENT OF EXISTING AIRSIDE TRACK TO BE CONFIRMED BY APAM. CONTRACTOR TO CONFIRM PRIOR TO WORKS.

EXISTING CONCRETE EDGE MUST BE PROTECTED AT ALL TIMES

EXISTING IHP MARKING ASSUMED TO HAVE BEEN REMOVED AT TIME OF CONSTRUCTION (BY OTHERS). CONTRACTOR TO CONFIRM PRIOR TO WORKS

DEMOLITION OF AGL INFRASTRUCTURE CAN ONLY BE UNDERTAKEN ONCE A NEW OR ALTERNATIVE ARRANGEMENT FOR THE CIRCUITS IS PROVIDED.

TAXIWAY J

TAXIWAY A

JOINS SHEET 2

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PROJECT
MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT
MELBOURNE AIRPORT

SCALE
SCALE B
0 10 20 25m
1 : 1000 (A3) 1 : 500 (A1)

REGISTRATION
CJ

PROJECT MANAGEMENT INITIALS

CJ	NW	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	03.11.2023	ISSUED FOR TENDER
A	22.08.2023	DRAFT - TENDER DESIGN

NOT FOR CONSTRUCTION

PROJECT NUMBER
60705085

SHEET TITLE
MAPMP2
DESIGN PACKAGE 3 - STAGE 2
DEMOLITION AND SITE CLEARANCE PLAN
SHEET 1

SHEET NUMBER
60705085-SHT-03_2-40-1001

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ISO A1 594mm x 841mm

NOTES

1. FOR NOTES REFER TO DRG 10-0003.
2. FOR LEGEND REFER TO DRG 10-0004.

DEPTH OF TOP OF PIPE UNDER PAVEMENT BASED ON CCTV SURVEY APPROX. 3-5m (QUALITY LEVEL B). CONTRACTOR TO CONFIRM PRIOR TO WORKS.

EXISTING MAG SIGN TO BE REMOVED AND RETAINED FOR RE-USE. EXISTING PLINTH TO BE DEMOLISHED

EXISTING IHP MARKING ASSUMED TO HAVE BEEN REMOVED AT TIME OF CONSTRUCTION (BY OTHERS). CONTRACTOR TO CONFIRM PRIOR TO WORKS.

EXISTING CONCRETE EDGE MUST BE PROTECTED AT ALL TIMES

DEPTH OF TOP OF PIPE UNDER PAVEMENT BASED ON CCTV SURVEY APPROX. 3-4m (QUALITY LEVEL B). CONTRACTOR TO CONFIRM PRIOR TO WORKS.

DEMOLITION OF AGL INFRASTRUCTURE CAN ONLY BE UNDERTAKEN ONCE A NEW OR ALTERNATIVE ARRANGEMENT FOR THE CIRCUITS IS PROVIDED.

LINEMARKING TO BE REMOVED UP TO LOCATION OF NEW IHP MARKINGS

JOINS SHEET 1

TAXIWAY A

TAXIWAY W

TAXIWAY K

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PROJECT

MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

SCALE B 0 10 20 25m
1 : 1000 (A3) 1 : 500 (A1)

REGISTRATION

CJ

PROJECT MANAGEMENT INITIALS

CJ	NW	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	03.11.2023	ISSUED FOR TENDER
A	22.08.2023	DRAFT - TENDER DESIGN

NOT FOR CONSTRUCTION

PROJECT NUMBER

60705085

SHEET TITLE

MAPMP2
DESIGN PACKAGE 3 - STAGE 2
DEMOLITION AND SITE CLEARANCE PLAN
SHEET 2

SHEET NUMBER

60705085-SHT-03_2-40-1002

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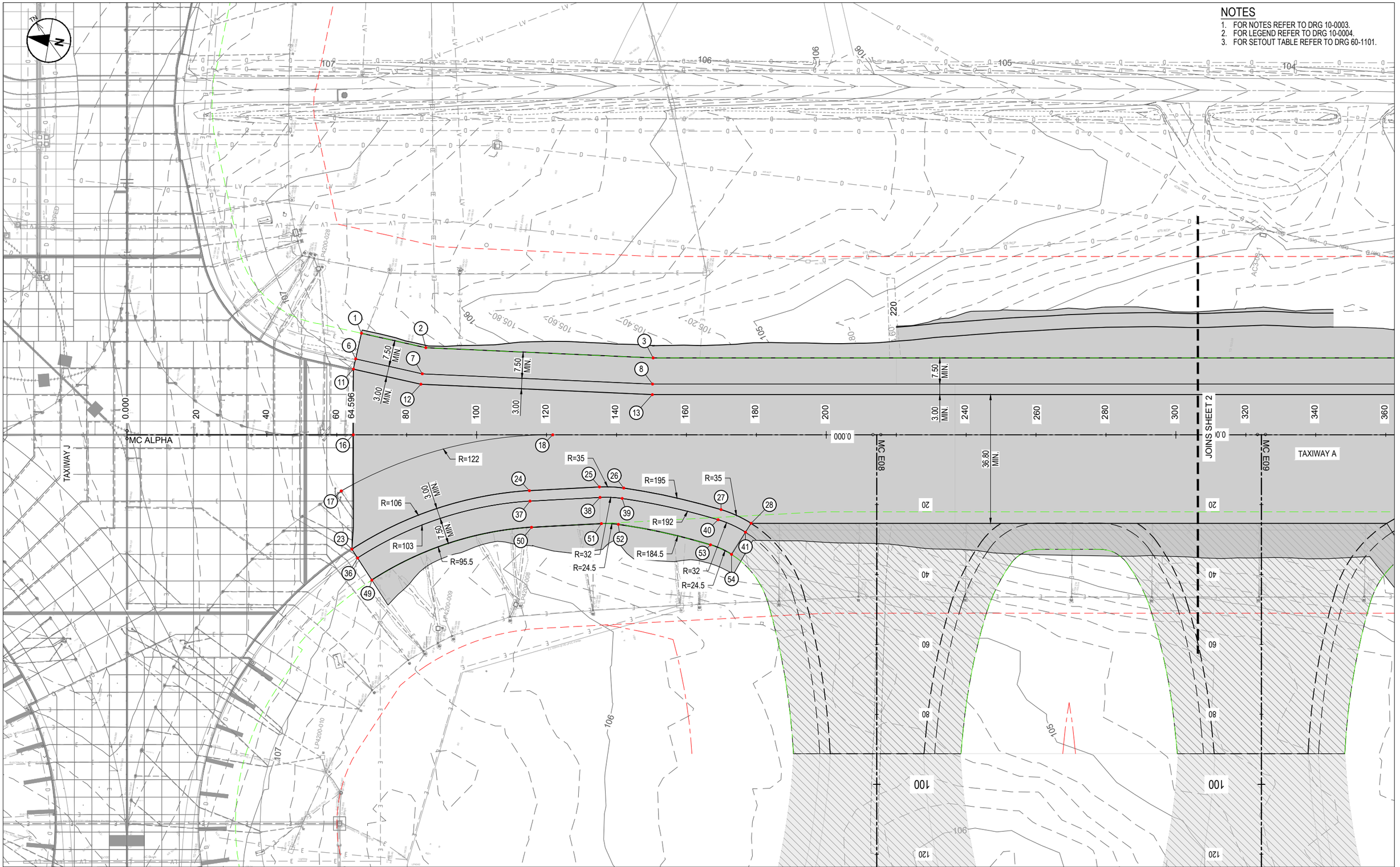
NOTES

1. FOR NOTES REFER TO DRG 10-0003.
2. FOR LEGEND REFER TO DRG 10-0004.
3. FOR SETOUT TABLE REFER TO DRG 60-1101.



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PROJECT

MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

SCALE B 0 10 20 25m
1 : 1000 (A3) 1 : 500 (A1)

REGISTRATION

CJ

PROJECT MANAGEMENT INITIALS

JC	PM	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	03.11.2023	ISSUED FOR TENDER
A	22.08.2023	DRAFT - TENDER DESIGN

NOT FOR CONSTRUCTION

PROJECT NUMBER

60705085

SHEET TITLE

MAPMP2
DESIGN PACKAGE 3 - STAGE 2
ALIGNMENT GEOMETRY PLAN
SHEET 1

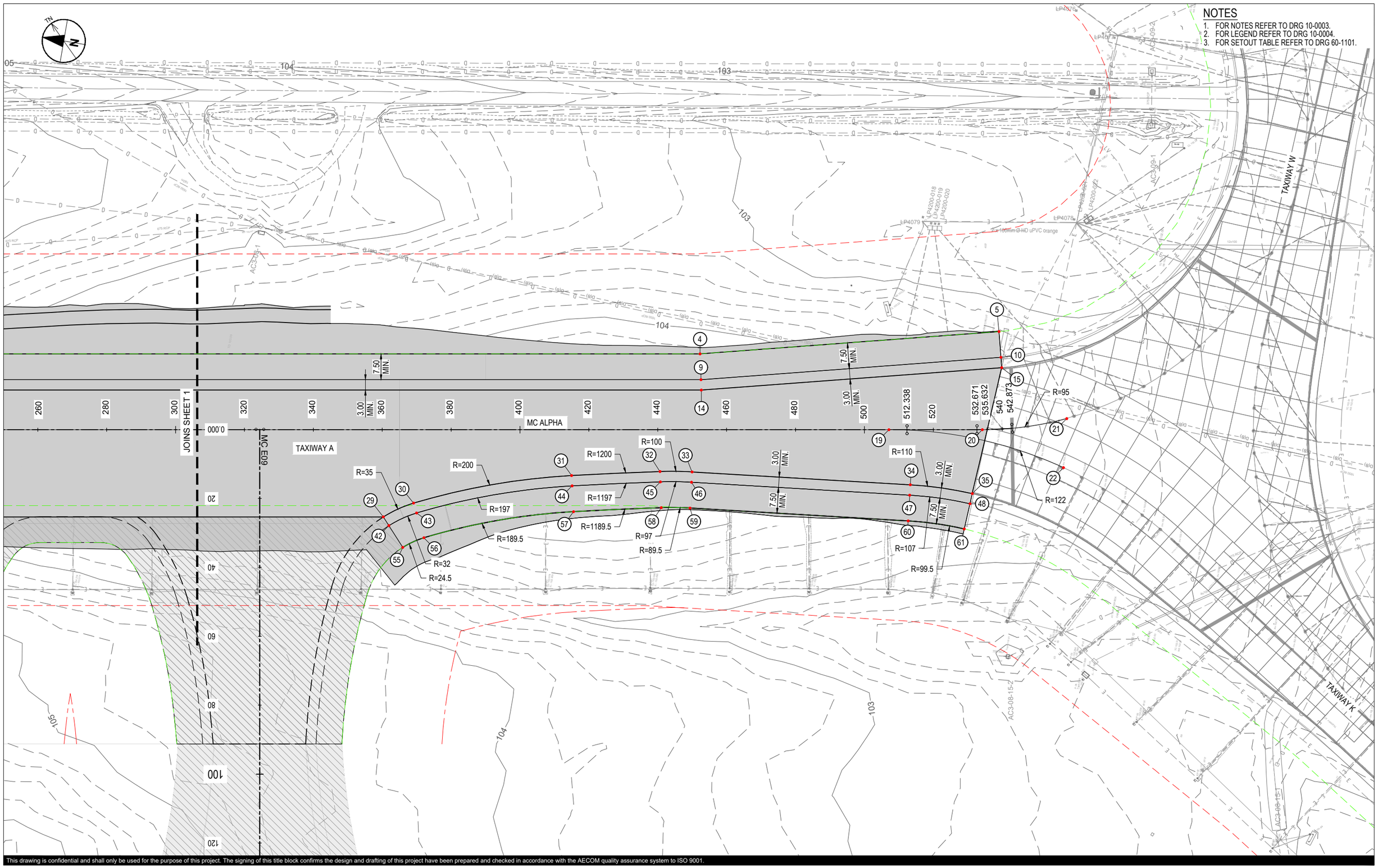
SHEET NUMBER

60705085-SHT-03_2-60-1001

ISO A1 594mm x 841mm

NOTES

1. FOR NOTES REFER TO DRG 10-0003.
2. FOR LEGEND REFER TO DRG 10-0004.
3. FOR SETOUT TABLE REFER TO DRG 60-1101.



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AECOM

CONSULTANT

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www.aecom.com

PROJECT

MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

SCALE B
0 10 20 25m
1 : 1000 (A3) 1 : 500 (A1)

REGISTRATION

CJ

PROJECT MANAGEMENT INITIALS

JC	PM	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

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NOT FOR CONSTRUCTION

PROJECT NUMBER

60705085

SHEET TITLE

MAPMP2
DESIGN PACKAGE 3 - STAGE 2
ALIGNMENT GEOMETRY PLAN
SHEET 2

SHEET NUMBER

60705085-SHT-03_2-60-1002

SETOUT POINTS

POINT No.	COORDINATES		DESCRIPTION
	EASTING	NORTHING	
1	309903.441	5827617.003	IP
2	309902.493	5827598.173	IP
3	309910.642	5827533.592	IP
4	309961.795	5827236.188	IP
5	309982.896	5827151.735	IP
6	309895.950	5827617.380	IP
7	309894.970	5827597.893	IP
8	309903.222	5827532.486	IP
9	309954.451	5827234.641	IP
10	309975.619	5827149.917	IP
11	309892.954	5827617.531	IP
12	309891.960	5827597.782	IP
13	309900.254	5827532.044	IP
14	309951.513	5827234.022	IP
15	309972.709	5827149.190	IP
16	309874.422	5827614.387	IP
17	309858.008	5827615.074	IP
18	309884.092	5827558.167	TP
19	309949.412	5827178.397	TP
20	309954.006	5827151.689	TP
21	309961.330	5827128.079	IP
22	309947.140	5827126.590	IP
23	309842.104	5827609.227	IP
24	309867.220	5827562.035	TP
25	309871.670	5827542.471	TP
26	309872.531	5827535.588	TP
27	309871.161	5827507.102	TP
28	309868.773	5827497.986	IP
29	309899.594	5827318.781	IP
30	309905.035	5827310.793	TP
31	309920.680	5827266.957	TP
32	309926.176	5827241.843	TP
33	309927.644	5827232.635	TP
34	309934.703	5827169.580	TP
35	309935.225	5827151.406	IP
36	309839.897	5827607.196	IP
37	309864.298	5827561.354	TP
38	309868.745	5827541.806	TP
39	309869.532	5827535.513	TP
40	309868.183	5827507.465	TP
41	309865.999	5827499.130	IP
42	309897.371	5827316.766	IP
43	309902.346	5827309.463	TP
44	309917.756	5827266.284	TP
45	309923.239	5827241.233	TP
46	309924.663	5827232.301	TP
47	309931.721	5827169.246	TP
48	309932.229	5827151.568	IP
49	309834.379	5827602.117	IP
50	309856.994	5827559.651	TP
51	309861.432	5827540.142	TP
52	309862.034	5827535.324	TP
53	309860.738	5827508.372	TP
54	309859.066	5827501.990	IP
55	309891.815	5827311.729	IP
56	309895.624	5827306.137	TP
57	309910.447	5827264.602	TP
58	309915.895	5827239.708	TP
59	309917.210	5827231.467	TP
60	309924.268	5827168.412	TP
61	309924.740	5827151.973	IP

ABBREVIATIONS

1. IP - INTERSECTION POINT (INCLUDING START AND END POINTS)
2. C - CENTRE
3. TP - TANGENT POINT

AECOM

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PROJECT

MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

REGISTRATION

CJ

PROJECT MANAGEMENT INITIALS

NMcK	PM	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	03.11.2023	ISSUED FOR TENDER
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NOT FOR CONSTRUCTION

PROJECT NUMBER

60705085

SHEET TITLE

MAPMP2
DESIGN PACKAGE 3 - STAGE 2
ALIGNMENT SCHEDULES

SHEET NUMBER

60705085-SHT-03_2-60-1101

ISO A1 594mm x 841mm

NOTES

1. FOR NOTES REFER TO DRG 10-0003.
2. FOR LEGEND REFER TO DRG 10-0004
3. SLAB CORNER LEVELS TO BE REPORTED AT IFC.

B

NEW CONCRETE SLABS TO TIE-IN FLUSH TO EXISTING SLABS. ANY FAULTING OF EXISTING SLABS TO BE REPORTED TO CONTRACT ADMINISTRATOR FOR DIRECTION.

FOR TREATMENT OF SWALE REFER TO DRG 130-5001

FOR TREATMENT OF SWALE REFER TO DRG 130-5001

EX1-01-01-1

EX1-01-01-2

EX1-01-01-3

MC ALPHA

MC E08

MC E09

JOINS SHEET 2

TAXIWAY J

TAXIWAY A

0.000

64.596

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PROJECT
MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT
MELBOURNE AIRPORT

SCALE
SCALE B
0 10 20 25m
1 : 1000 (A3) 1 : 500 (A1)

REGISTRATION
CJ

PROJECT MANAGEMENT INITIALS

NMcK	PM	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

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NOT FOR CONSTRUCTION

PROJECT NUMBER
60705085

SHEET TITLE
MAPMP2
DESIGN PACKAGE 3 - STAGE 2
GRADING TOPOGRAPHICAL PLAN
SHEET 1

SHEET NUMBER
60705085-SHT-03_2-60-2001

Last saved by: CASSIE.THOMPSON (2023-10-27) Last Plotted: 2023-11-01
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ISO A1 594mm x 841mm

NOTES

1. FOR NOTES REFER TO DRG 10-0003.
2. FOR LEGEND REFER TO DRG 10-0004
3. SLAB CORNER LEVELS TO BE REPORTED AT IFC.

B

EXISTING DRAINAGE FLOW PATH - OPEN SWALE TO BE RETAINED AND PRESERVED

NEW CONCRETE SLABS TO TIE-IN FLUSH TO EXISTING SLABS. ANY FAULTING OF EXISTING SLABS TO BE REPORTED TO CONTRACT ADMINISTRATOR FOR DIRECTION.

FOR TREATMENT OF SWALE REFER TO DRG 130-5001

EXISTING DRAINAGE FLOW PATH - OPEN SWALE TO BE RETAINED AND PRESERVED

JOINS SHEET 1

MC E09

TAXIWAY A

TAXIWAY W

TAXIWAY K

EX1-01-01-3

EX4-01-01-1

EX4-01-01-2

EX2-01-01

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PROJECT

MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

SCALE B
0 10 20 25m
1 : 1000 (A3) 1 : 500 (A1)

REGISTRATION

CJ

PROJECT MANAGEMENT INITIALS

NMcK	PM	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

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NOT FOR CONSTRUCTION

PROJECT NUMBER

60705085

SHEET TITLE

MAPMP2
DESIGN PACKAGE 3 - STAGE 2
GRADING TOPOGRAPHICAL PLAN
SHEET 2

SHEET NUMBER

60705085-SHT-03_2-60-2002

Last saved by: CASSIE.THOMPSON(2023-10-27) Last Plotted: 2023-11-01
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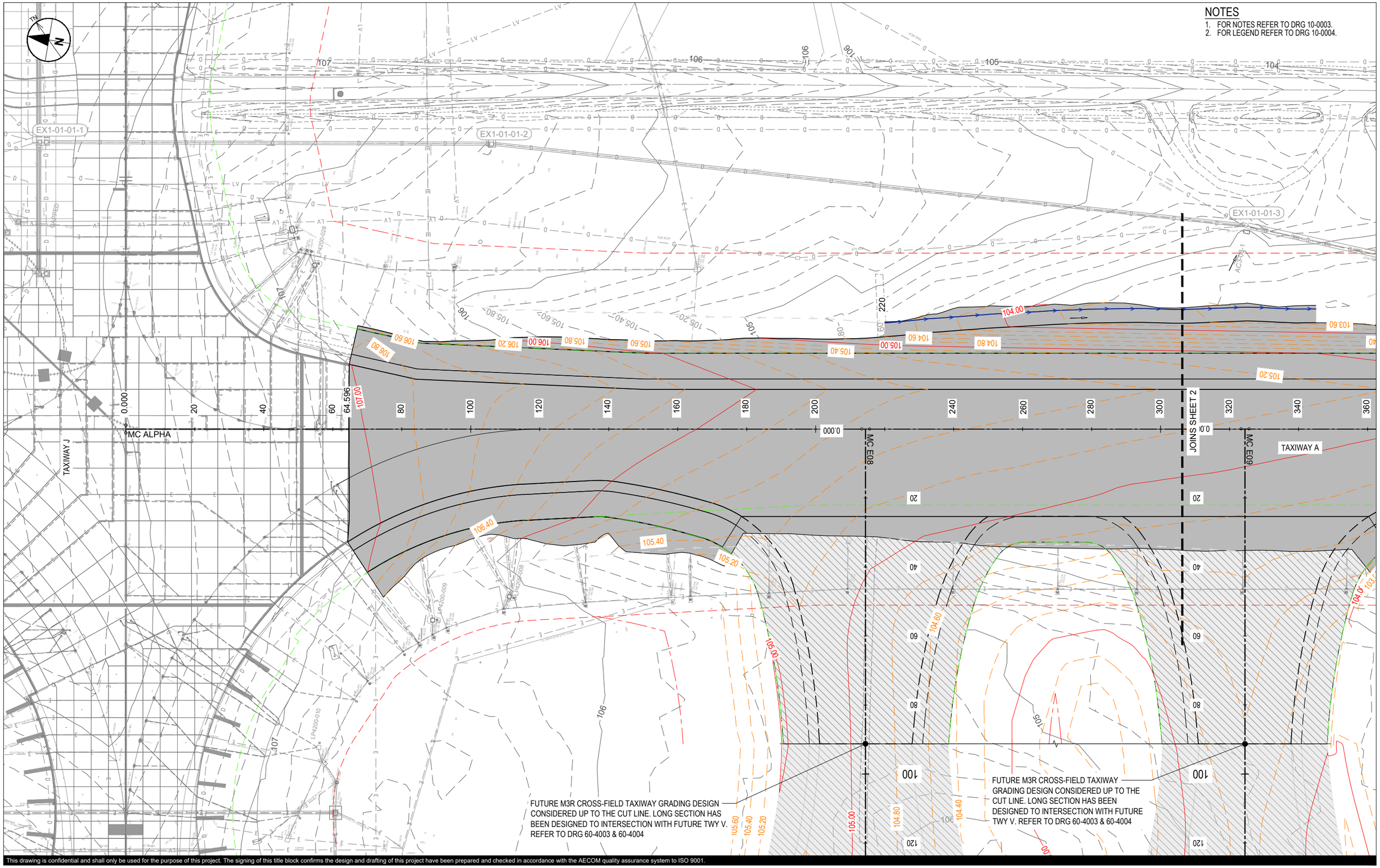
ISO A1 594mm x 841mm

NOTES

1. FOR NOTES REFER TO DRG 10-0003.
2. FOR LEGEND REFER TO DRG 10-0004.



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PROJECT

MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

SCALE B
0 10 20 25m
1 : 1000 (A3) 1 : 500 (A1)

REGISTRATION

CJ

PROJECT MANAGEMENT INITIALS

NMcK	PM	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	03.11.2023	ISSUED FOR TENDER
A	22.08.2023	DRAFT - TENDER DESIGN

NOT FOR CONSTRUCTION

PROJECT NUMBER

60705085

SHEET TITLE

MAPMP2
DESIGN PACKAGE 3 - STAGE 2
FUTURE M3R GRADING PLAN
SHEET 1

SHEET NUMBER

60705085-SHT-03_2-60-2101

ISO A1 594mm x 841mm

NOTES

1. FOR NOTES REFER TO DRG 10-0003.
2. FOR LEGEND REFER TO DRG 10-0004.

TAXIWAY A

JOINS SHEET 1

M3C E09

TAXIWAY W

TAXIWAY K

EX1-01-01-3

EX4-01-01-1

EX4-01-01-2

EX2-01-01

FUTURE M3R CROSS-FIELD TAXIWAY GRADING DESIGN CONSIDERED UP TO THE CUT LINE. LONG SECTION HAS BEEN DESIGNED TO INTERSECTION WITH FUTURE TWY V. REFER TO DRG 60-4003 & 60-4004

AECOM

CONSULTANT

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PROJECT

MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

SCALE B
0 10 20 25m
1 : 1000 (A3) 1 : 500 (A1)

REGISTRATION

CJ

PROJECT MANAGEMENT INITIALS

NMcK	PM	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

I/R	DATE	DESCRIPTION
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NOT FOR CONSTRUCTION

PROJECT NUMBER

60705085

SHEET TITLE

MAPMP2
DESIGN PACKAGE 3 - STAGE 2
FUTURE M3R GRADING PLAN
SHEET 2

SHEET NUMBER

60705085-SHT-03_2-60-2102

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ISO A1 594mm x 841mm

NOTES

1. FOR NOTES REFER TO DRG 10-0003.
2. FOR LEGEND REFER TO DRG 10-0004.

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-0.9	to	-0.8	m
-0.8	to	-0.7	m
-0.7	to	-0.6	m
-0.6	to	-0.5	m
-0.5	to	-0.4	m
-0.4	to	-0.3	m
-0.3	to	-0.2	m
-0.2	to	-0.1	m
-0.1	to	0.0	m
0.0	to	0.1	m
0.1	to	0.2	m
0.2	to	0.3	m
0.3	to	0.4	m
0.4	to	0.5	m
0.5	to	0.6	m
0.6	to	0.7	m
0.7	to	0.8	m
0.8	to	0.9	m
0.9	to	1.0	m
1.0	to	1.1	m
1.1	to	1.2	m
1.2	to	1.3	m
1.3	to	1.4	m
1.4	to	1.5	m
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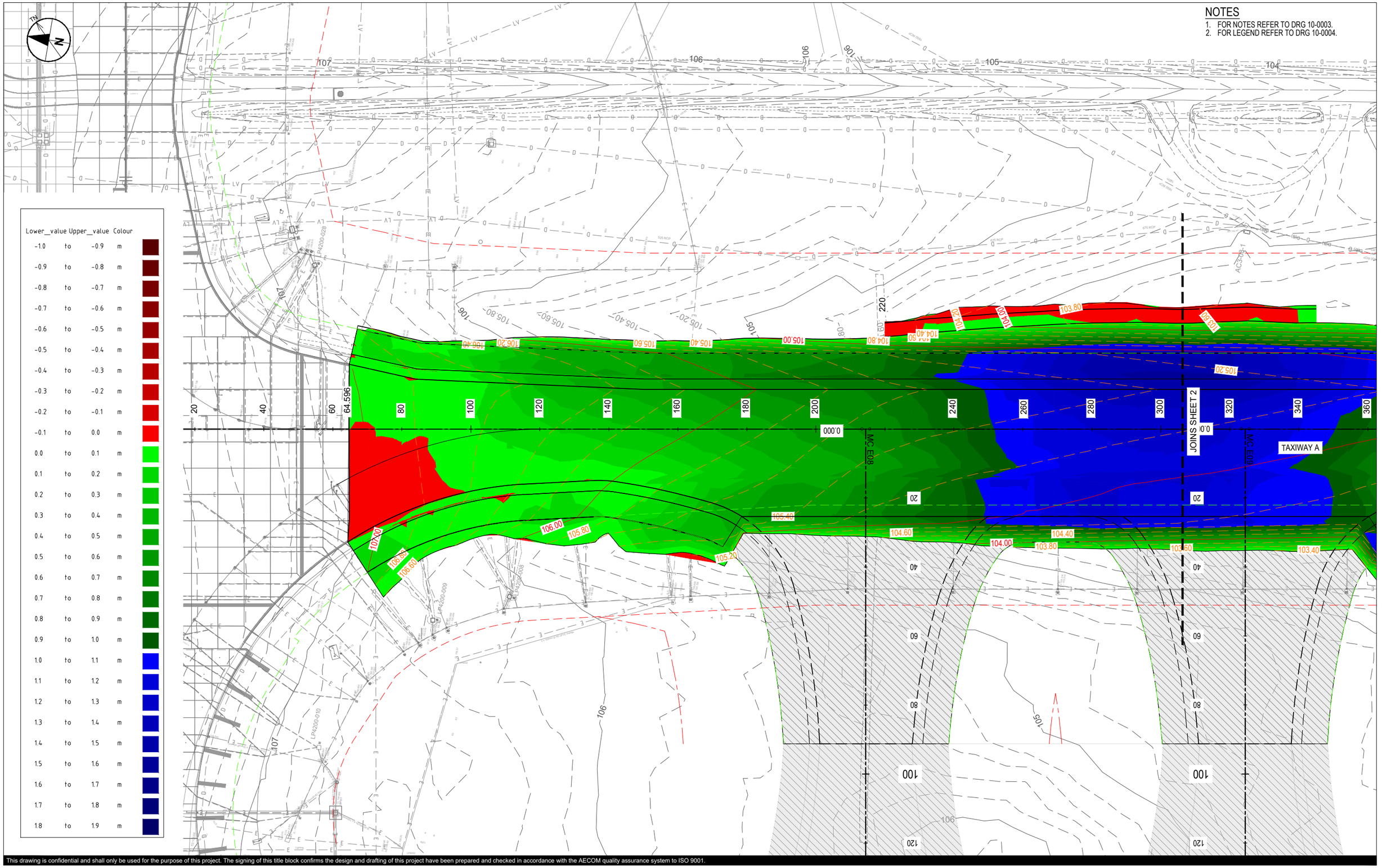
1.8	to	1.9	m



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PROJECT

MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

SCALE B
0 10 20 25m
1 : 1000 (A3) 1 : 500 (A1)

REGISTRATION

CJ

PROJECT MANAGEMENT INITIALS

NMcK	PM	BB
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PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

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NOT FOR CONSTRUCTION

PROJECT NUMBER

60705085

SHEET TITLE

MAPMP2
DESIGN PACKAGE 3 - STAGE 2
GRADING ISOPACHYTES PLAN
SHEET 1

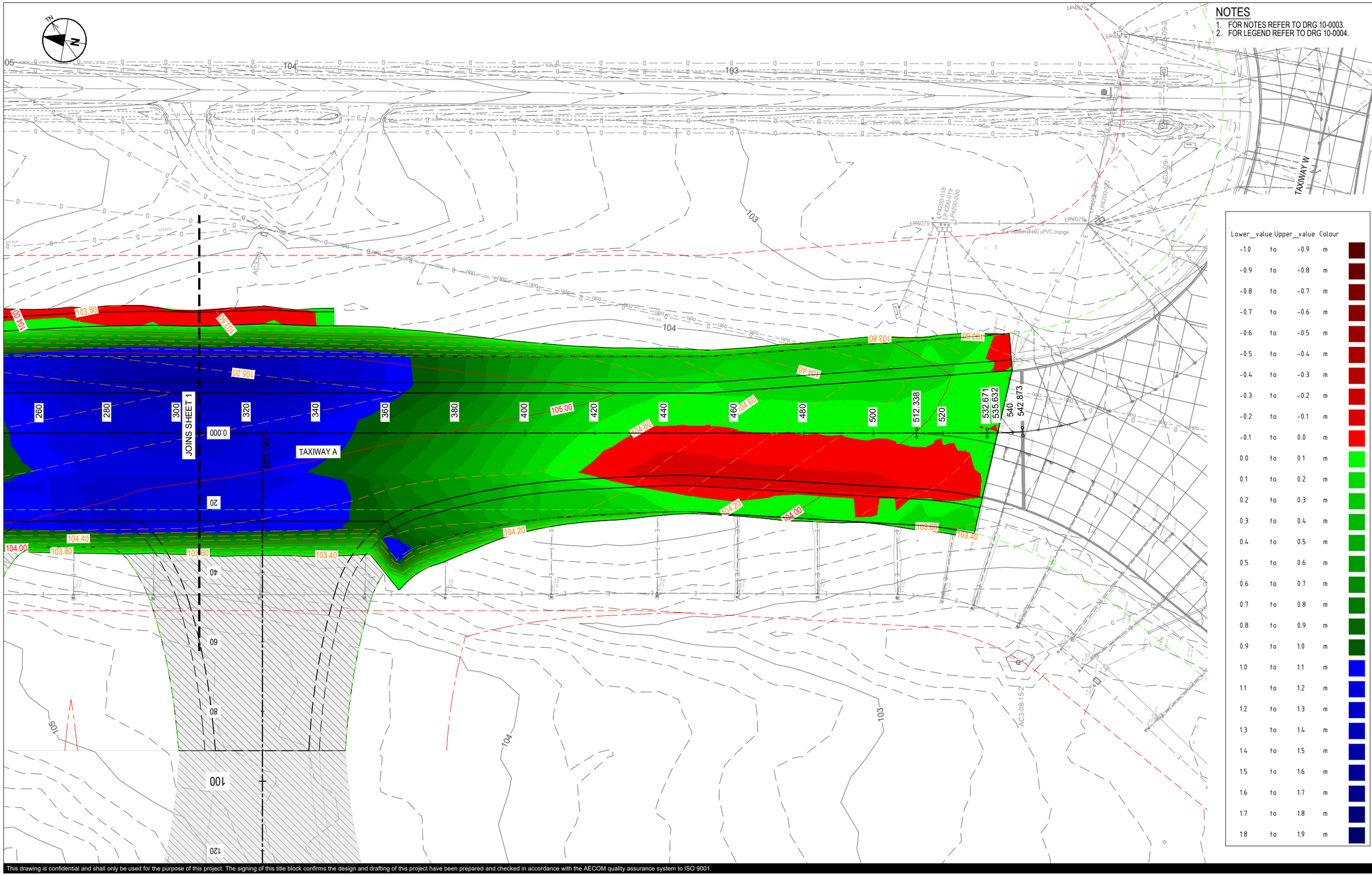
SHEET NUMBER

60705085-SHT-03_2-60-3001

ISO A1 594mm x 841mm

NOTES

1. FOR NOTES REFER TO DRG 10-0003.
2. FOR LEGEND REFER TO DRG 10-0004.



Lower_value		Upper_value		Colour
-1.0	to	-0.9	m	
-0.9	to	-0.8	m	
-0.8	to	-0.7	m	
-0.7	to	-0.6	m	
-0.6	to	-0.5	m	
-0.5	to	-0.4	m	
-0.4	to	-0.3	m	
-0.3	to	-0.2	m	
-0.2	to	-0.1	m	
-0.1	to	0.0	m	
0.0	to	0.1	m	
0.1	to	0.2	m	
0.2	to	0.3	m	
0.3	to	0.4	m	
0.4	to	0.5	m	
0.5	to	0.6	m	
0.6	to	0.7	m	
0.7	to	0.8	m	
0.8	to	0.9	m	
0.9	to	1.0	m	
1.0	to	1.1	m	
1.1	to	1.2	m	
1.2	to	1.3	m	
1.3	to	1.4	m	
1.4	to	1.5	m	
1.5	to	1.6	m	
1.6	to	1.7	m	
1.7	to	1.8	m	
1.8	to	1.9	m	

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CONSULTANT
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PROJECT
MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT
MELBOURNE AIRPORT

SCALE
SCALE B 0 10 20 25m
1 : 1000 (A3) 1 : 500 (A1)

REGISTRATION
CJ

PROJECT MANAGEMENT INITIALS

NMcK	PM	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

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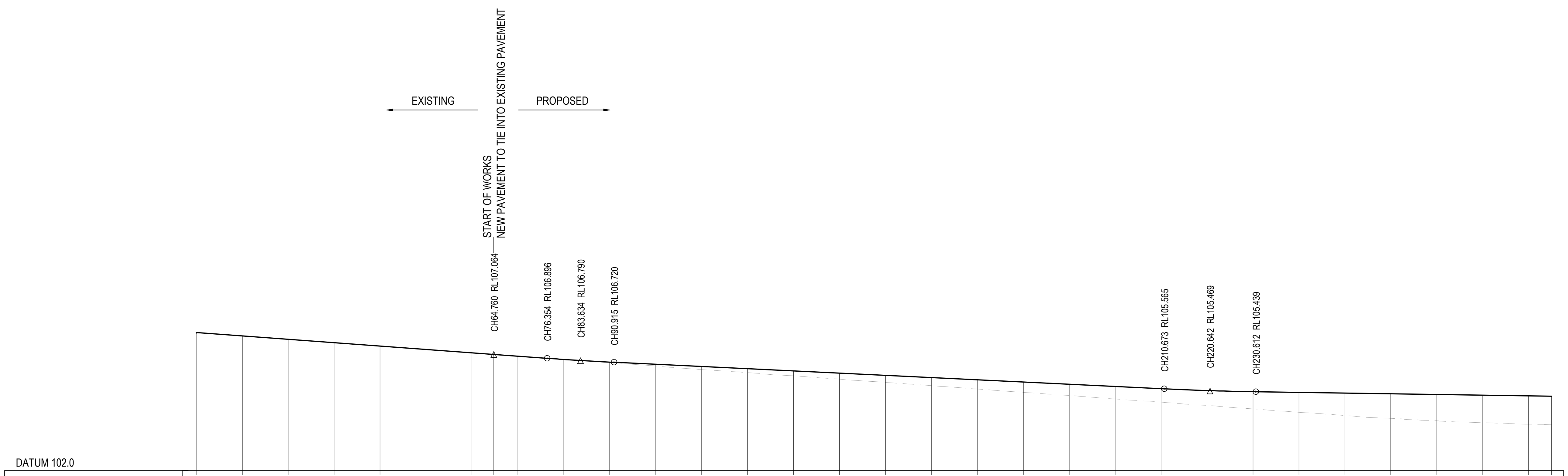
NOT FOR CONSTRUCTION

PROJECT NUMBER
60705085

SHEET TITLE
MAPMP2
DESIGN PACKAGE 3 - STAGE 2
GRADING ISOPACHYTES PLAN
SHEET 2

SHEET NUMBER
60705085-SHT-03_2-60-3002



VERTICAL DETAILS: -1.472% | -1.450% | R=3000.000 | -0.965% | R=3000.000 | -0.300%

HORIZONTAL DETAILS: L=61.420 | L=88.573 | L=302.572

CHAINAGES	DESIGN LEVELS	EXISTING LEVELS	LEVEL DIFFERENCE
0.000	108.017	108.017	0.000
10.000	107.870	107.870	0.000
20.000	107.723	107.722	-0.001
30.000	107.576	107.580	0.004
40.000	107.428	107.436	0.008
50.000	107.281	107.280	-0.001
60.000	107.134	107.130	-0.005
64.754	107.064	107.064	-0.000
70.000	106.988	106.990	0.002
80.000	106.845	106.840	-0.005
90.000	106.729	106.706	-0.023
100.000	106.633	106.557	-0.075
110.000	106.536	106.404	-0.132
120.000	106.440	106.270	-0.169
130.000	106.343	106.130	-0.213
140.000	106.247	105.985	-0.262
150.000	106.150	105.847	-0.303
160.000	106.054	105.704	-0.350
170.000	105.957	105.558	-0.399
180.000	105.861	105.409	-0.452
190.000	105.764	105.275	-0.490
200.000	105.668	105.122	-0.546
210.000	105.571	104.981	-0.590
220.000	105.489	104.840	-0.650
230.000	105.441	104.691	-0.750
240.000	105.411	104.539	-0.872
250.000	105.381	104.402	-0.979
260.000	105.351	104.279	-1.072
270.000	105.321	104.171	-1.150
280.000	105.291	104.088	-1.203
290.000	105.261	104.025	-1.236
295.000	105.246	103.998	-1.248

CONTROL LINE MC ALPHA

HORIZONTAL - 1 : 500

VERTICAL - 1 : 100

CONSULTANT

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www.aecom.com

PROJECT

MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

HORIZONTAL 1:1000 (A3) 1:500 (A1) 0 5 10 15 20 25m
VERTICAL 0 1 2 3 4 5m 1:200 (A3) 1:100 (A1)

REGISTRATION

CJ

PROJECT MANAGEMENT INITIALS

DESIGNER	CHECKED	APPROVED
NMcK	PM	BB

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

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NOT FOR CONSTRUCTION

PROJECT NUMBER

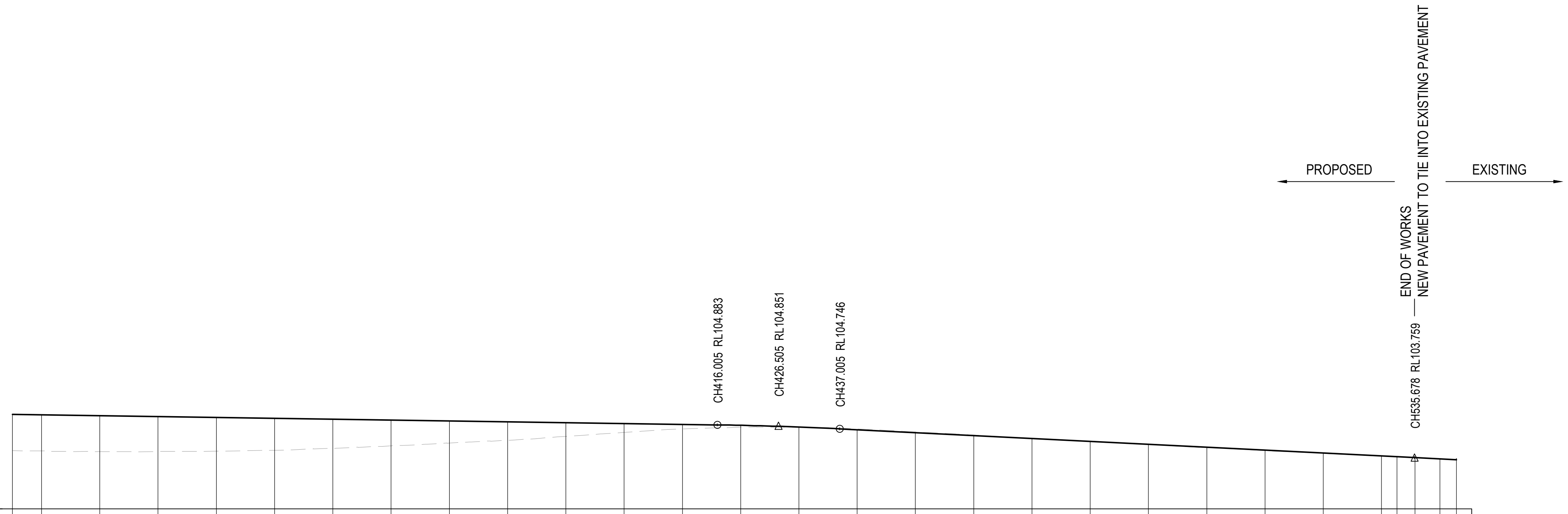
60705085

SHEET TITLE

MAPMP2
DESIGN PACKAGE 3 - STAGE 2
GRADING LONG SECTIONS
SHEET 1

SHEET NUMBER

60705085-SHT-03_2-60-4001



DATUM 102.0

VERTICAL DETAILS: -0.300% | R=3000.000 | -1.000% | -1.049%

HORIZONTAL DETAILS: L=302.572 | L=80.106 | R=-227.256

DESIGN LEVELS	105.246	105.231	105.201	105.171	105.141	105.111	105.081	105.051	105.021	104.991
EXISTING LEVELS	103.998	103.989	103.962	103.968	103.980	104.011	104.076	104.161	104.259	104.354
LEVEL DIFFERENCE	-1.248	-1.242	-1.238	-1.203	-1.160	-1.100	-1.004	-0.890	-0.761	-0.636
CHAINAGES	295.000	300.000	310.000	320.000	330.000	340.000	350.000	360.000	370.000	380.000

DESIGN LEVELS	104.961	104.931	104.901	104.868	104.808	104.716	104.616	104.516	104.416	104.316
EXISTING LEVELS	104.487	104.625	104.740	104.798	104.802	104.745	104.640	104.531	104.416	104.312
LEVEL DIFFERENCE	-0.474	-0.305	-0.160	-0.070	-0.007	0.029	0.023	0.015	-0.001	-0.004
CHAINAGES	390.000	400.000	410.000	420.000	430.000	440.000	450.000	460.000	470.000	480.000

DESIGN LEVELS	104.216	104.116	104.016	103.916	103.816	103.789	103.759	103.714	103.684
EXISTING LEVELS	104.211	104.100	103.996	103.901	103.807	103.784	103.759	103.715	103.684
LEVEL DIFFERENCE	-0.005	-0.016	-0.020	-0.015	-0.009	-0.005	0.000	0.001	-0.000
CHAINAGES	490.000	500.000	510.000	520.000	530.000	532.671	535.757	540.000	542.873

CONTROL LINE MC ALPHA

HORIZONTAL - 1 : 500

VERTICAL - 1 : 100

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PROJECT

MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

HORIZONTAL 1:1000 (A3) 1:500 (A1) 0 5 10 15 20 25m
VERTICAL 1:200 (A3) 1:100 (A1) 0 1 2 3 4 5m

REGISTRATION

CJ

PROJECT MANAGEMENT INITIALS

NMcK	PM	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	03.11.2023	ISSUED FOR TENDER
A	22.08.2023	DRAFT - TENDER DESIGN

NOT FOR CONSTRUCTION

PROJECT NUMBER

60705085

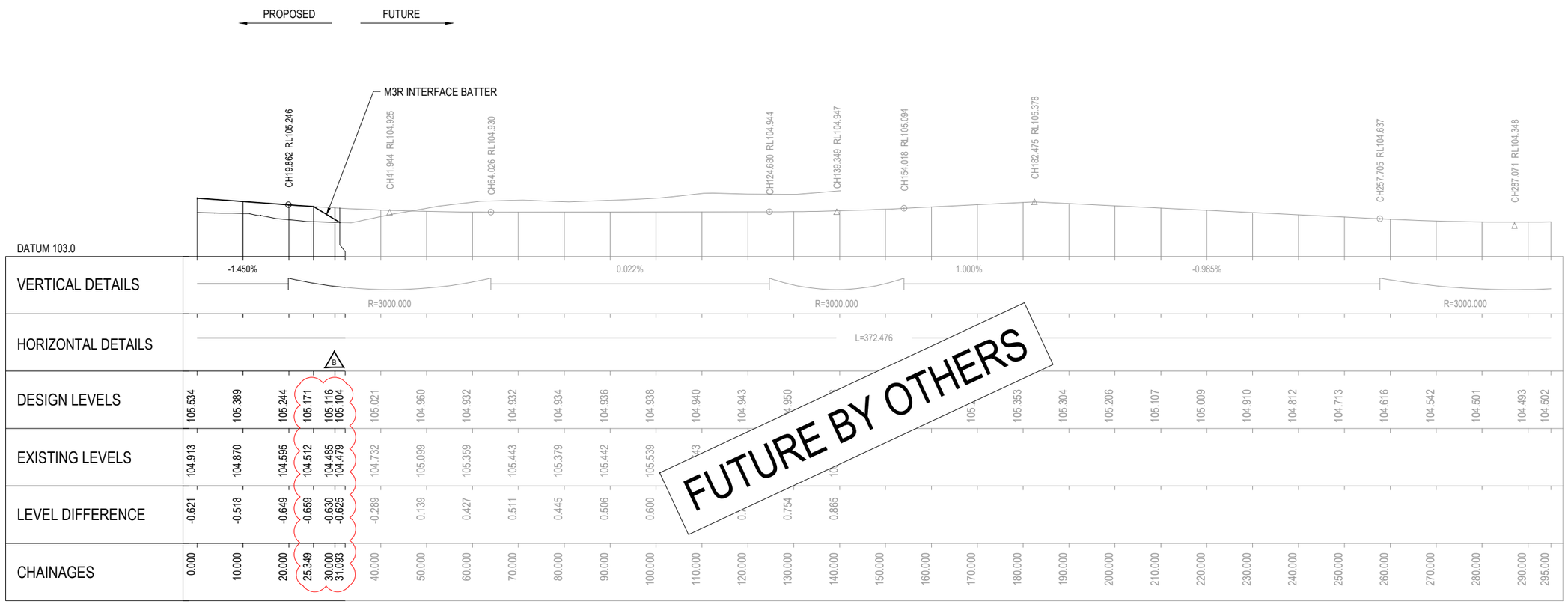
SHEET TITLE

MAPMP2
DESIGN PACKAGE 3 - STAGE 2
GRADING LONG SECTIONS
SHEET 2

SHEET NUMBER

60705085-SHT-03_2-60-4002

ISO A1 594mm x 841mm



CONTROL LINE MC E08

HORIZONTAL - 1 : 500

VERTICAL - 1 : 100

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PROJECT

MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

HORIZONTAL 1:1000 (A3) 1:500 (A1) 0 5 10 15 20 25m
VERTICAL 1:200 (A3) 1:100 (A1) 0 1 2 3 4 5m

REGISTRATION

CJ

PROJECT MANAGEMENT INITIALS

NMcK	PM	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	03.11.2023	ISSUED FOR TENDER
A	22.08.2023	DRAFT - TENDER DESIGN

NOT FOR CONSTRUCTION

PROJECT NUMBER

60705085

SHEET TITLE

MAPMP2
DESIGN PACKAGE 3 - STAGE 2
GRADING LONG SECTIONS
SHEET 3

SHEET NUMBER

60705085-SHT-03_2-60-4003

CONTROL LINE MC E09

HORIZONTAL - 1 : 500

VERTICAL - 1 : 100

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PROJECT

MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

HORIZONTAL: 1:1000 (A3) 0 5 10 15 20 25m 1:500 (A1)
VERTICAL: 0 1 2 3 4 5m 1:200 (A3) 1:100 (A1)

REGISTRATION

CJ

PROJECT MANAGEMENT INITIALS

NMcK	PM	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	03.11.2023	ISSUED FOR TENDER
A	22.08.2023	DRAFT - TENDER DESIGN

NOT FOR CONSTRUCTION

PROJECT NUMBER

60705085

SHEET TITLE

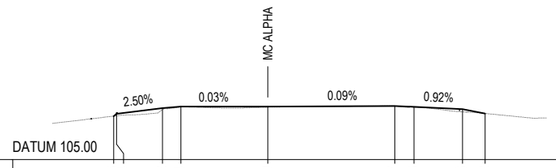
MAPMP2
DESIGN PACKAGE 3 - STAGE 2
GRADING LONG SECTIONS
SHEET 4

SHEET NUMBER

60705085-SHT-03_2-60-4004

B

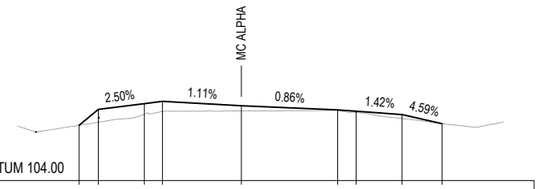
CENTRELINE DATA
E = 309878.741
N = 5827589.480
Z = 106.729



DESIGN LEVELS	106.416 106.494	106.682	106.724	106.729	106.747 106.716	106.643	106.502
HEIGHT DIFFERENCE	0.000 -0.067	-0.056	-0.000	-0.023	0.008 -0.008	-0.085	0.000
EXISTING SURFACE	106.416 106.427	106.626	106.724	106.706	106.755 106.708	106.558	106.502
OFFSETS	-25.142 -24.673	-17.165	-14.168	0.000	20.694 23.845	31.767	35.447

CHAINAGE 90.000

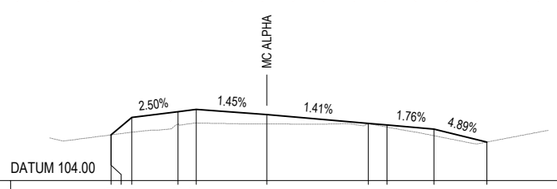
CENTRELINE DATA
E = 309883.809
N = 5827559.911
Z = 106.440



DESIGN LEVELS	105.803 106.320	106.508 106.582	106.440	106.305 106.262	106.155	105.857	
HEIGHT DIFFERENCE	0.000 -0.420	-0.344 -0.331	-0.169	-0.018 -0.043	-0.133	-0.004	
EXISTING SURFACE	105.803 105.901	106.164 106.251	106.270	106.287 106.219	106.022	105.853	
OFFSETS	-26.419 -23.316	-15.808 -12.840	0.000	15.728 18.732	26.243	32.752	

CHAINAGE 120.000

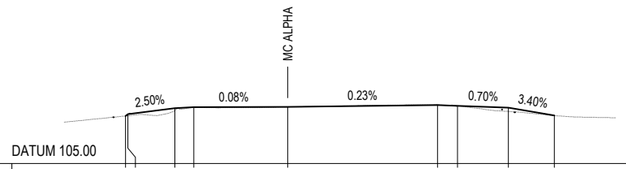
CENTRELINE DATA
E = 309888.877
N = 5827530.342
Z = 106.150



DESIGN LEVELS	105.490 106.055	106.242 106.317	106.150	105.867 105.814	105.680	105.256	
HEIGHT DIFFERENCE	0.000 -0.478	-0.402 -0.440	-0.303	-0.025 -0.071	-0.216	0.000	
EXISTING SURFACE	105.490 105.577	105.841 105.877	105.847	105.842 105.743	105.463	105.256	
OFFSETS	-25.389 -22.000	-14.500 -11.511	0.000	16.550 19.604	27.246	35.899	

CHAINAGE 150.000

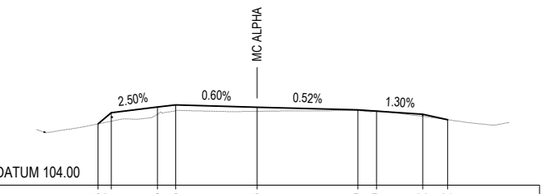
CENTRELINE DATA
E = 309877.052
N = 5827599.336
Z = 106.845



DESIGN LEVELS	106.550 106.612	106.804	106.833	106.845	106.902	106.876	106.818	106.563
HEIGHT DIFFERENCE	0.000 -0.055	-0.073	0.000	-0.005	0.016	0.003	-0.121	-0.002
EXISTING SURFACE	106.550 106.557	106.731	106.833	106.840	106.918	106.879	106.697	106.561
OFFSETS	-26.470 -26.097	-18.412	-15.338	0.000	24.416	27.691	35.967	43.464

CHAINAGE 80.000

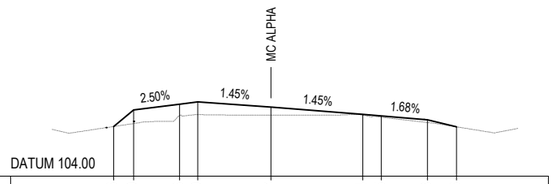
CENTRELINE DATA
E = 309882.120
N = 5827569.767
Z = 106.536



DESIGN LEVELS	105.996 106.357	106.545 106.616	106.536	106.450 106.410	106.312	106.132	
HEIGHT DIFFERENCE	0.000 -0.274	-0.240 -0.179	-0.132	-0.010 0.016	-0.072	0.000	
EXISTING SURFACE	105.996 106.083	106.305 106.437	106.404	106.440 106.426	106.240	106.132	
OFFSETS	-25.933 -23.768	-16.260 -13.282	0.000	16.445 19.465	27.020	31.081	

CHAINAGE 110.000

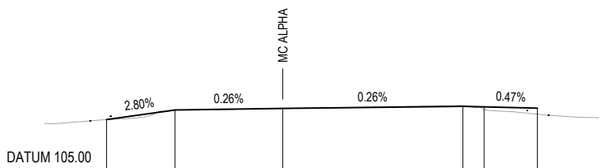
CENTRELINE DATA
E = 309887.188
N = 5827540.199
Z = 106.247



DESIGN LEVELS	105.616 106.159	106.346 106.420	106.247	106.014 105.965	105.838	105.606	
HEIGHT DIFFERENCE	0.000 -0.445	-0.377 -0.413	-0.262	-0.026 -0.046	-0.093	0.000	
EXISTING SURFACE	105.616 105.714	105.970 106.007	105.985	105.989 105.919	105.746	105.606	
OFFSETS	-25.667 -22.411	-14.903 -11.954	0.000	14.987 17.999	25.541	30.261	

CHAINAGE 140.000

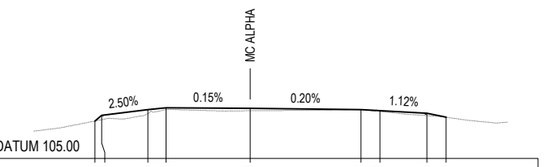
CENTRELINE DATA
E = 309875.362
N = 5827609.193
Z = 106.988



DESIGN LEVELS	106.628	106.942	106.988	107.064	107.044	107.003	
HEIGHT DIFFERENCE	0.000	-0.000	0.002	0.019	-0.084	-0.201	
EXISTING SURFACE	106.628	106.942	106.990	107.083	106.960	106.802	
OFFSETS	-28.771	-17.574	0.000	29.362	32.819	41.512	

CHAINAGE 70.000

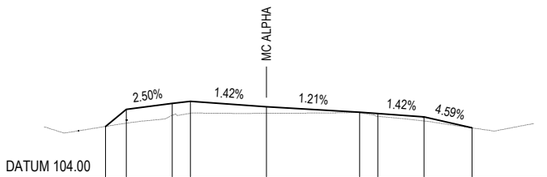
CENTRELINE DATA
E = 309880.431
N = 5827579.624
Z = 106.633



DESIGN LEVELS	106.233 106.408	106.596 106.653	106.633	106.597 106.562	106.475 106.346		
HEIGHT DIFFERENCE	0.000 -0.142	-0.133 -0.046	-0.075	-0.003 -0.024	-0.075 0.000		
EXISTING SURFACE	106.233 106.266	106.462 106.607	106.557	106.594 106.538	106.400 106.346		
OFFSETS	-26.332 -24.221	-16.713 -13.725	0.000	18.065 21.133	28.823 31.937		

CHAINAGE 100.000

CENTRELINE DATA
E = 309885.499
N = 5827550.055
Z = 106.343



DESIGN LEVELS	105.698 106.258	106.445 106.519	106.343	106.160 106.117	106.010	105.650	
HEIGHT DIFFERENCE	0.000 -0.455	-0.381 -0.396	-0.213	-0.013 -0.090	-0.137	0.000	
EXISTING SURFACE	105.698 105.803	106.064 106.124	106.130	106.146 106.026	105.873	105.650	
OFFSETS	-26.219 -22.863	-15.355 -12.397	0.000	15.188 18.193	25.703	33.551	

CHAINAGE 130.000

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PROJECT
MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT
MELBOURNE AIRPORT

SCALE
HORIZONTAL 1:500 (A3) 1:250 (A1) 0 2.5 5 7.5 10 12.5m
VERTICAL 1:200 (A3) 1:100 (A1) 0 1 2 3 4 5m

REGISTRATION
CJ

PROJECT MANAGEMENT INITIALS

NMcK	PM	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	03.11.2023	ISSUED FOR TENDER
A	22.08.2023	DRAFT - TENDER DESIGN

NOT FOR CONSTRUCTION

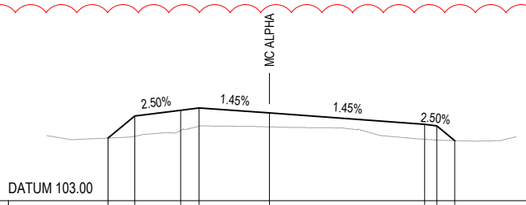
PROJECT NUMBER
60705085

SHEET TITLE
MAPMP2
DESIGN PACKAGE 3 - STAGE 2
GRADING CROSS SECTIONS
SHEET 1

SHEET NUMBER
60705085-SHT-03_2-60-5001

B

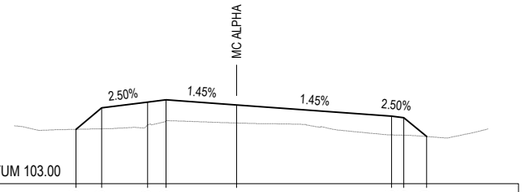
CENTRELINE DATA
E = 309893.963
N = 5827500.777
Z = 105.861



DESIGN LEVELS	105.044	105.765	105.953	106.028	105.861	105.494	105.444	104.961	
HEIGHT DIFFERENCE	0.000	-0.665	-0.660	-0.587	-0.452	-0.490	-0.465	0.000	
EXISTING SURFACE	105.044	105.100	105.293	105.440	105.409	105.004	104.979	104.961	
OFFSETS	-26.326	-22.000	-14.500	-11.500	0.000	25.299	27.299	30.195	

CHAINAGE 180.000

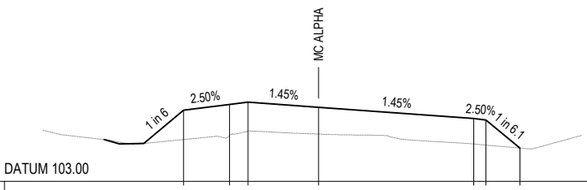
CENTRELINE DATA
E = 309899.048
N = 5827471.211
Z = 105.571



DESIGN LEVELS	104.775	105.476	105.663	105.738	105.571	105.205	105.155	104.540	
HEIGHT DIFFERENCE	0.000	-0.682	-0.740	-0.677	-0.590	-0.612	-0.573	0.000	
EXISTING SURFACE	104.775	104.794	104.923	105.061	104.981	104.593	104.581	104.540	
OFFSETS	-26.201	-22.000	-14.500	-11.500	0.000	25.299	27.299	30.985	

CHAINAGE 210.000

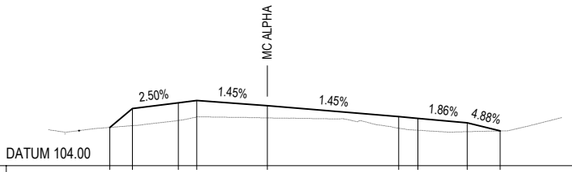
CENTRELINE DATA
E = 309904.133
N = 5827441.645
Z = 105.411



DESIGN LEVELS	105.315	105.502	105.577	105.411	105.044	104.994	104.082		
HEIGHT DIFFERENCE	-0.954	-1.013	-0.939	-0.872	-0.829	-0.814	0.000		
EXISTING SURFACE	104.361	104.490	104.639	104.539	104.215	104.180	104.082		
OFFSETS	-22.000	-14.500	-11.500	0.000	25.299	27.299	32.868		

CHAINAGE 240.000

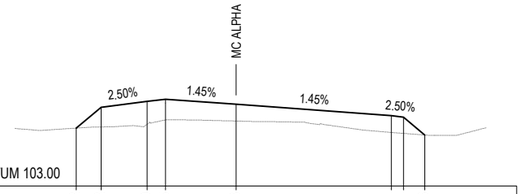
CENTRELINE DATA
E = 309892.268
N = 5827510.632
Z = 105.957



DESIGN LEVELS	105.248	105.862	106.049	106.124	105.957	105.600	105.544	105.394	105.131
HEIGHT DIFFERENCE	0.000	-0.555	-0.577	-0.527	-0.399	-0.377	-0.388	-0.284	0.000
EXISTING SURFACE	105.248	105.306	105.472	105.597	105.558	105.223	105.156	105.110	105.131
OFFSETS	-25.682	-22.000	-14.500	-11.500	0.000	21.430	24.578	32.628	38.011

CHAINAGE 170.000

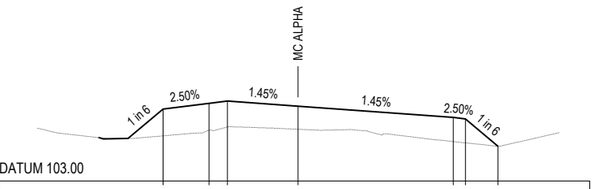
CENTRELINE DATA
E = 309897.353
N = 5827481.066
Z = 105.668



DESIGN LEVELS	104.892	105.572	105.760	105.835	105.668	105.301	105.251	104.666	
HEIGHT DIFFERENCE	0.000	-0.644	-0.742	-0.668	-0.546	-0.551	-0.532	0.000	
EXISTING SURFACE	104.892	104.928	105.018	105.167	105.122	104.750	104.719	104.666	
OFFSETS	-26.084	-22.000	-14.500	-11.500	0.000	25.299	27.299	30.764	

CHAINAGE 200.000

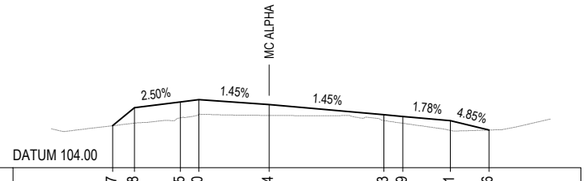
CENTRELINE DATA
E = 309902.438
N = 5827451.500
Z = 105.441



DESIGN LEVELS	105.345	105.532	105.607	105.441	105.075	105.025	104.137		
HEIGHT DIFFERENCE	-0.869	-0.869	-0.836	-0.750	-0.784	-0.776	0.000		
EXISTING SURFACE	104.476	104.664	104.772	104.691	104.291	104.248	104.137		
OFFSETS	-22.000	-14.500	-11.500	0.000	25.299	27.299	32.596		

CHAINAGE 230.000

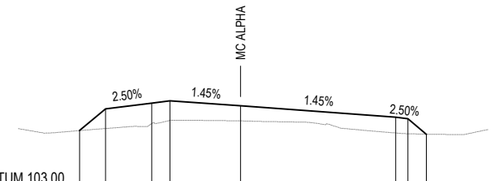
CENTRELINE DATA
E = 309890.573
N = 5827520.487
Z = 106.054



DESIGN LEVELS	105.367	105.958	106.145	106.220	106.054	105.723	105.669	105.531	105.226
HEIGHT DIFFERENCE	0.000	-0.507	-0.522	-0.479	-0.350	-0.187	-0.223	-0.316	0.000
EXISTING SURFACE	105.367	105.451	105.624	105.741	105.704	105.536	105.446	105.215	105.226
OFFSETS	-25.546	-22.000	-14.500	-11.500	0.000	18.710	21.799	29.535	35.825

CHAINAGE 160.000

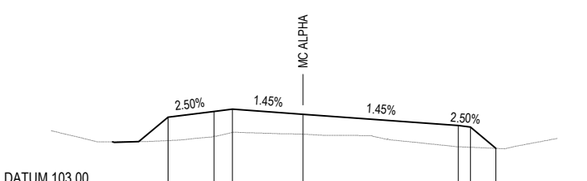
CENTRELINE DATA
E = 309895.658
N = 5827490.921
Z = 105.764



DESIGN LEVELS	104.960	105.669	105.856	105.931	105.764	105.398	105.348	104.840
HEIGHT DIFFERENCE	0.000	-0.642	-0.669	-0.633	-0.490	-0.517	-0.491	0.000
EXISTING SURFACE	104.960	105.026	105.187	105.298	105.275	104.881	104.856	104.840
OFFSETS	-26.251	-22.000	-14.500	-11.500	0.000	25.299	27.299	30.322

CHAINAGE 190.000

CENTRELINE DATA
E = 309900.743
N = 5827461.355
Z = 105.489



DESIGN LEVELS	105.394	105.581	105.656	105.489	105.124	105.074	104.379	
HEIGHT DIFFERENCE	-0.761	-0.806	-0.748	-0.650	-0.692	-0.659	0.000	
EXISTING SURFACE	104.633	104.776	104.908	104.840	104.432	104.415	104.379	
OFFSETS	-22.000	-14.500	-11.500	0.000	25.299	27.299	31.467	

CHAINAGE 220.000

AECOM

CONSULTANT

AECOM Australia Pty Ltd
A.B.N 20 093 846 925
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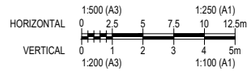
PROJECT

MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE



REGISTRATION

CJ

PROJECT MANAGEMENT INITIALS

NMcK	PM	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	03.11.2023	ISSUED FOR TENDER
A	22.08.2023	DRAFT - TENDER DESIGN

NOT FOR CONSTRUCTION

PROJECT NUMBER

60705085

SHEET TITLE

MAPMP2
DESIGN PACKAGE 3 - STAGE 2
GRADING CROSS SECTIONS
SHEET 2

SHEET NUMBER

60705085-SHT-03_2-60-5002

B

CENTRELINE DATA
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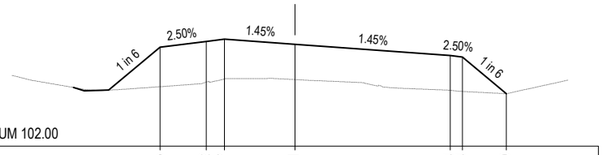
N = 5827412.079
Z = 105.321



DATUM 102.00

DESIGN LEVELS	105.225	105.412	105.487	105.321	104.954 104.904	103.710
HEIGHT DIFFERENCE	-1.287	-1.323	-1.285	-1.150	-1.134 -1.120	0.000
EXISTING SURFACE	103.938	104.089	104.202	104.171	103.820 103.784	103.710
OFFSETS	-22.000	-14.500	-11.500	0.000	25.300 27.300	34.465

CHAINAGE 270.000

CENTRELINE DATA
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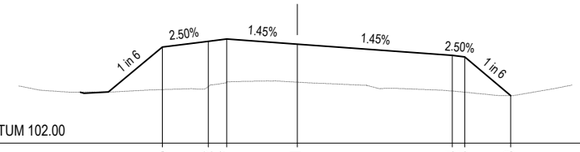
N = 5827382.513
Z = 105.231



DATUM 102.00

DESIGN LEVELS	105.135	105.322	105.397	105.231	104.864 104.814	103.553
HEIGHT DIFFERENCE	-1.388	-1.478	-1.401	-1.242	-1.164 -1.152	0.000
EXISTING SURFACE	103.747	103.845	103.997	103.989	103.700 103.662	103.553
OFFSETS	-22.000	-14.500	-11.500	0.000	25.300 27.300	34.817

CHAINAGE 300.000

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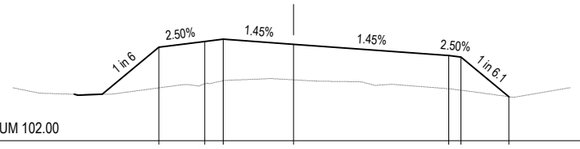
E = 309919.389
N = 5827352.947
Z = 105.141

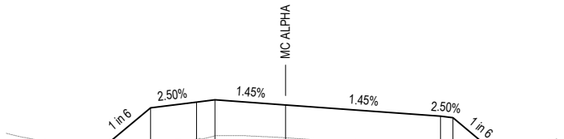


DATUM 102.00

DESIGN LEVELS	105.045	105.232	105.307	105.141	104.774 104.724	103.431
HEIGHT DIFFERENCE	-1.327	-1.383	-1.349	-1.160	-1.084 -1.082	0.000
EXISTING SURFACE	103.718	103.849	103.958	103.980	103.690 103.641	103.431
OFFSETS	-22.000	-14.500	-11.500	0.000	25.300 27.300	35.126

CHAINAGE 330.000

CENTRELINE DATA
E = 309907.524
N = 5827421.934
Z = 105.351



DATUM 102.00

DESIGN LEVELS	105.255	105.442	105.517	105.351	104.984 104.934	103.770
HEIGHT DIFFERENCE	-1.172	-1.216	-1.167	-1.072	-1.070 -1.061	0.000
EXISTING SURFACE	104.083	104.226	104.350	104.279	103.914 103.873	103.770
OFFSETS	-22.000	-14.500	-11.500	0.000	25.300 27.300	34.262

CHAINAGE 260.000

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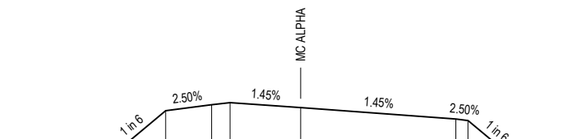
N = 5827392.368
Z = 105.261

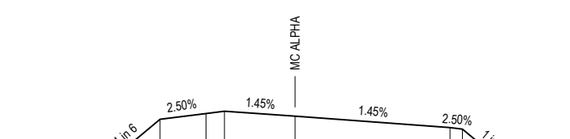


DATUM 102.00

DESIGN LEVELS	105.165	105.352	105.427	105.261	104.894 104.844	103.622
HEIGHT DIFFERENCE	-1.418	-1.444	-1.393	-1.236	-1.215 -1.196	0.000
EXISTING SURFACE	103.747	103.908	104.034	104.025	103.679 103.647	103.622
OFFSETS	-22.000	-14.500	-11.500	0.000	25.300 27.300	34.632

CHAINAGE 290.000

CENTRELINE DATA
E = 309917.694
N = 5827362.803
Z = 105.171



DATUM 102.00

DESIGN LEVELS	105.075	105.262	105.337	105.171	104.804 104.754	103.444
HEIGHT DIFFERENCE	-1.412	-1.428	-1.396	-1.203	-1.123 -1.134	0.000
EXISTING SURFACE	103.663	103.835	103.941	103.968	103.681 103.620	103.444
OFFSETS	-22.000	-14.500	-11.500	0.000	25.300 27.300	35.200

CHAINAGE 320.000

CENTRELINE DATA
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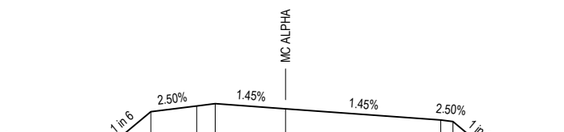
N = 5827431.790
Z = 105.381



DATUM 102.00

DESIGN LEVELS	105.285	105.472	105.547	105.381	105.014 104.964	103.866
HEIGHT DIFFERENCE	-1.076	-1.110	-1.023	-0.979	-1.025 -1.012	0.000
EXISTING SURFACE	104.208	104.363	104.524	104.402	103.989 103.951	103.866
OFFSETS	-22.000	-14.500	-11.500	0.000	25.300 27.300	33.887

CHAINAGE 250.000

CENTRELINE DATA
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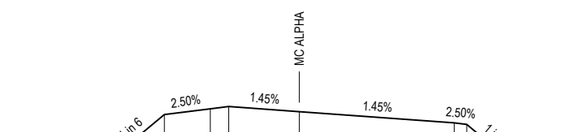
N = 5827402.224
Z = 105.291

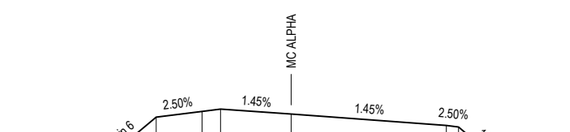


DATUM 102.00

DESIGN LEVELS	105.195	105.382	105.457	105.291	104.924 104.874	103.650
HEIGHT DIFFERENCE	-1.377	-1.389	-1.353	-1.203	-1.241 -1.203	0.000
EXISTING SURFACE	103.818	103.994	104.104	104.088	103.683 103.671	103.650
OFFSETS	-22.000	-14.500	-11.500	0.000	25.300 27.300	34.846

CHAINAGE 280.000

CENTRELINE DATA
E = 309915.999
N = 5827372.658
Z = 105.201



DATUM 102.00

DESIGN LEVELS	105.105	105.292	105.367	105.201	104.834 104.784	103.445
HEIGHT DIFFERENCE	-1.375	-1.471	-1.418	-1.238	-1.194 -1.187	0.000
EXISTING SURFACE	103.730	103.822	103.949	103.962	103.640 103.597	103.445
OFFSETS	-22.000	-14.500	-11.500	0.000	25.300 27.300	35.272

CHAINAGE 310.000

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PROJECT
MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT
MELBOURNE AIRPORT

SCALE
HORIZONTAL 1:500 (A3) 1:250 (A1) 0 2.5 5 7.5 10 12.5m
VERTICAL 1:200 (A3) 1:100 (A1) 0 1 2 3 4 5m

REGISTRATION
CJ

PROJECT MANAGEMENT INITIALS

NMcK	PM	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	03.11.2023	ISSUED FOR TENDER
A	22.08.2023	DRAFT - TENDER DESIGN

NOT FOR CONSTRUCTION

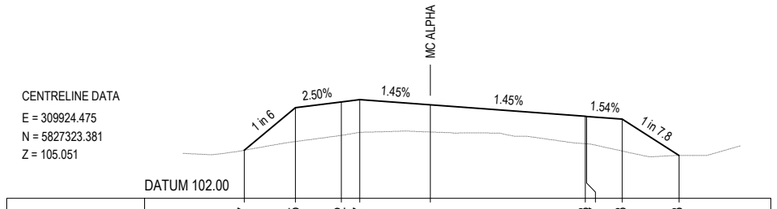
PROJECT NUMBER
60705085

SHEET TITLE
MAPMP2
DESIGN PACKAGE 3 - STAGE 2
GRADING CROSS SECTIONS
SHEET 3

SHEET NUMBER
60705085-SHT-03_2-60-5003

ISO A1 594mm x 841mm

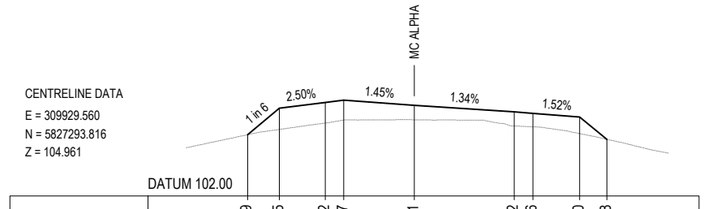
B



CENTRELINE DATA
E = 309924.475
N = 5827323.381
Z = 105.051

DESIGN LEVELS	103.567	104.955	105.142 105.217	105.051	104.673 104.667	104.578	103.393
HEIGHT DIFFERENCE	0.000	-1.106	-1.092 -1.066	-0.890	-0.884 -0.891	-1.038	0.000
EXISTING SURFACE	103.567	103.849	104.051 104.151	104.161	103.778 103.776	103.540	103.393
OFFSETS	-30.328	-22.000	-14.500 -11.500	0.000	25.301 25.504	31.299	40.543

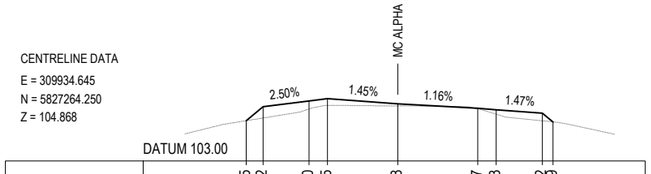
CHAINAGE 360.000



CENTRELINE DATA
E = 309929.560
N = 5827293.816
Z = 104.961

DESIGN LEVELS	103.999	104.865	105.052 105.127	104.961	104.742 104.696	104.580	103.848
HEIGHT DIFFERENCE	0.000	-0.693	-0.674 -0.649	-0.474	-0.458 -0.439	-0.544	0.000
EXISTING SURFACE	103.999	104.172	104.378 104.479	104.487	104.285 104.257	104.036	103.848
OFFSETS	-27.194	-22.000	-14.500 -11.500	0.000	16.283 19.334	26.969	31.431

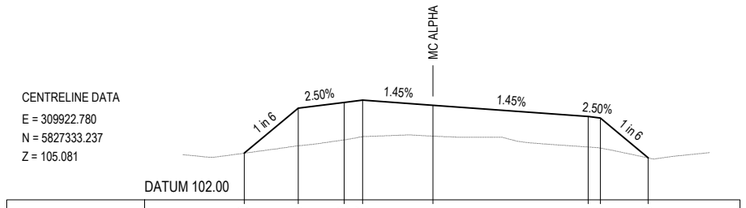
CHAINAGE 390.000



CENTRELINE DATA
E = 309934.645
N = 5827264.250
Z = 104.868

DESIGN LEVELS	104.315 104.772	104.960 105.035	104.868	104.717 104.673	104.562 104.269
HEIGHT DIFFERENCE	0.000 -0.369	-0.262 -0.218	-0.070	-0.016 -0.146	-0.249 0.009
EXISTING SURFACE	104.315 104.403	104.697 104.817	104.798	104.700 104.527	104.313 104.277
OFFSETS	-24.746 -22.000	-14.500 -11.500	0.000	13.034 16.038	23.548 29.317

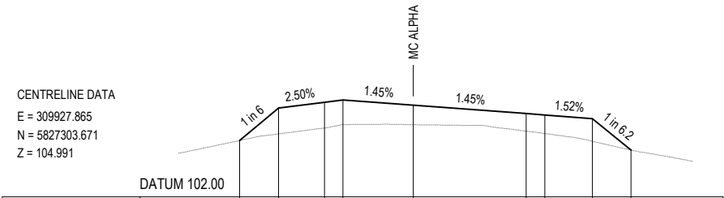
CHAINAGE 420.000



CENTRELINE DATA
E = 309922.780
N = 5827333.237
Z = 105.081

DESIGN LEVELS	103.520	104.985	105.172 105.247	105.081	104.714 104.664	103.368
HEIGHT DIFFERENCE	0.000	-1.223	-1.217 -1.186	-1.004	-0.991 -0.977	0.000
EXISTING SURFACE	103.520	103.761	103.955 104.062	104.076	103.723 103.687	103.368
OFFSETS	-30.789	-22.000	-14.500 -11.500	0.000	25.301 27.301	35.078

CHAINAGE 350.000



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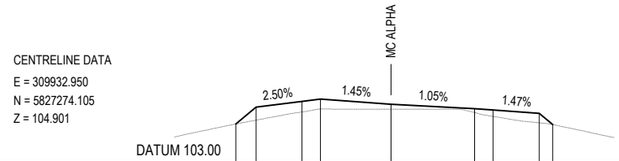
E = 309927.865
N = 5827303.671
Z = 104.991

DESIGN LEVELS	103.839	104.895	105.082 105.157	104.991	104.718 104.671	104.554	103.529
HEIGHT DIFFERENCE	0.000	-0.841	-0.834 -0.799	-0.636	-0.572 -0.604	-0.741	0.000
EXISTING SURFACE	103.839	104.054	104.248 104.358	104.354	104.146 104.067	103.813	103.529
OFFSETS	-28.333	-22.000	-14.500 -11.500	0.000	18.385 21.470	29.193	35.518

CHAINAGE 380.000



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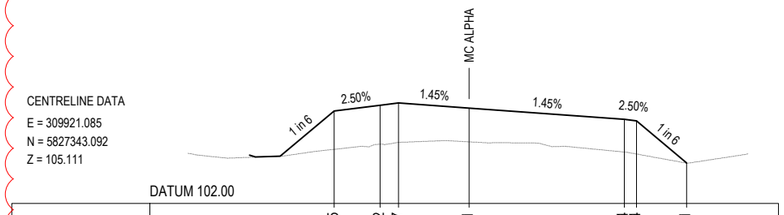
N = 5827274.105
Z = 104.901

DESIGN LEVELS	104.258 104.805	104.992 105.067	104.901	104.757 104.713	104.602 104.237
HEIGHT DIFFERENCE	0.000 -0.423	-0.344 -0.322	-0.160	-0.125 -0.209	-0.307 0.000
EXISTING SURFACE	104.258 104.382	104.649 104.746	104.740	104.632 104.504	104.295 104.237
OFFSETS	-25.281 -22.000	-14.500 -11.500	0.000	13.644 16.654	24.181 26.378

CHAINAGE 410.000



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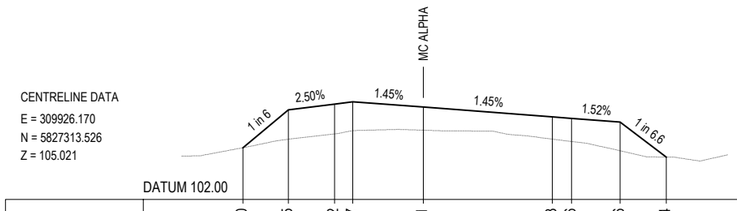
E = 309921.085
N = 5827343.092
Z = 105.111

DESIGN LEVELS	105.015	105.202	105.277	105.111	104.744 104.694	103.321
HEIGHT DIFFERENCE	-1.248	-1.271	-1.284	-1.100	-1.065 -1.079	0.000
EXISTING SURFACE	103.767	103.932	103.994	104.011	103.678 103.614	103.321
OFFSETS	-22.000	-14.500	-11.500	0.000	25.301 27.301	35.453

CHAINAGE 340.000



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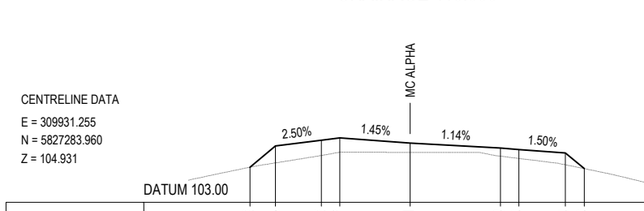
E = 309926.170
N = 5827313.526
Z = 105.021

DESIGN LEVELS	103.690	104.925	105.112 105.187	105.021	104.693 104.646	104.526	103.384
HEIGHT DIFFERENCE	0.000	-0.960	-0.973 -0.940	-0.761	-0.724 -0.754	-0.937	0.000
EXISTING SURFACE	103.690	103.965	104.140 104.248	104.259	103.969 103.892	103.589	103.384
OFFSETS	-29.408	-22.000	-14.500 -11.500	0.000	21.030 24.158	32.089	39.626

CHAINAGE 370.000



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E = 309931.255
N = 5827283.960
Z = 104.931

DESIGN LEVELS	104.142 104.835	105.022 105.097	104.931	104.763 104.718	104.604 104.098
HEIGHT DIFFERENCE	0.000 -0.553	-0.500 -0.465	-0.305	-0.262 -0.291	-0.383 0.000
EXISTING SURFACE	104.142 104.282	104.522 104.632	104.625	104.501 104.427	104.221 104.098
OFFSETS	-26.157 -22.000	-14.500 -11.500	0.000	14.707 17.733	25.303 28.367

CHAINAGE 400.000

AECOM

CONSULTANT

AECOM Australia Pty Ltd
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PROJECT

MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

HORIZONTAL 1:500 (A3) 1:250 (A1) 0 2.5 5 7.5 10 12.5m
VERTICAL 1:200 (A3) 1:100 (A1) 0 1 2 3 4 5m

REGISTRATION

CJ

PROJECT MANAGEMENT INITIALS

NMcK	PM	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	03.11.2023	ISSUED FOR TENDER
A	22.08.2023	DRAFT - TENDER DESIGN

NOT FOR CONSTRUCTION

PROJECT NUMBER

60705085

SHEET TITLE

MAPMP2
DESIGN PACKAGE 3 - STAGE 2
GRADING CROSS SECTIONS
SHEET 4

SHEET NUMBER

60705085-SHT-03_2-60-5004

ISO A1 594mm x 841mm

B

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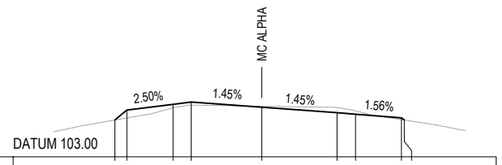
N = 5827234.684
Z = 104.616



DESIGN LEVELS	104.196 104.520	104.708 104.783	104.616	104.435 104.388	104.270 104.197
HEIGHT DIFFERENCE	0.000 -0.256	-0.114 -0.102	0.023	0.170 0.107	-0.060 0.000
EXISTING SURFACE	104.196 104.264	104.594 104.681	104.640	104.605 104.494	104.210 104.197
OFFSETS	-23.945 -22.000	-14.500 -11.500	0.000	12.261 15.266	22.779 23.226

CHAINAGE 450.000

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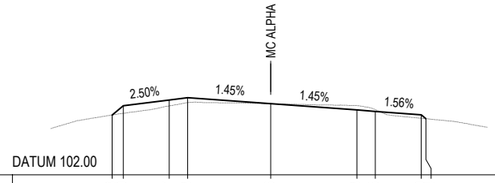
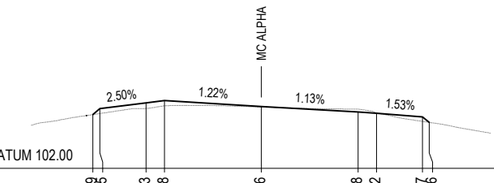
N = 5827205.118
Z = 104.316



DESIGN LEVELS	104.248 104.249	104.437 104.513	104.316	104.113 104.066	103.893 103.824
HEIGHT DIFFERENCE	0.000 -0.248	-0.193 -0.159	-0.004	0.143 0.056	-0.109 0.002
EXISTING SURFACE	104.248 104.002	104.244 104.354	104.312	104.256 104.122	103.840 103.826
OFFSETS	-25.882 -24.072	-16.552 -13.543	0.000	14.027 17.032	24.545 25.290

CHAINAGE 480.000

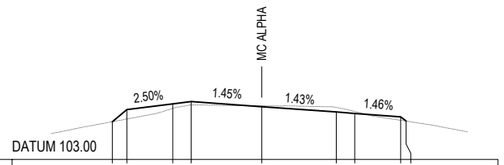
CENTRELINE DATA
E = 309949.898
N = 5827175.552
Z = 104.016



DESIGN LEVELS	103.749 103.945	104.133 104.208	104.016	103.838 103.792	103.677 103.496
HEIGHT DIFFERENCE	0.000 -0.161	-0.182 -0.170	-0.020	0.089 0.017	-0.149 0.000
EXISTING SURFACE	103.749 103.784	103.951 104.038	103.996	103.927 103.809	103.528 103.496
OFFSETS	-27.487 -26.314	-18.793 -15.784	0.000	15.793 18.798	26.311 27.397

CHAINAGE 510.000

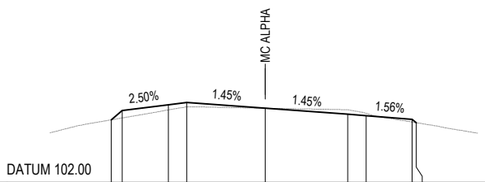
CENTRELINE DATA
E = 309938.036
N = 5827244.539
Z = 104.716



DESIGN LEVELS	104.227 104.620	104.808 104.883	104.716	104.543 104.499	104.389 104.297
HEIGHT DIFFERENCE	0.000 -0.306	-0.146 -0.104	0.029	0.150 0.062	-0.116 0.000
EXISTING SURFACE	104.227 104.314	104.662 104.779	104.745	104.693 104.560	104.273 104.247
OFFSETS	-24.360 -22.000	-14.500 -11.500	0.000	12.167 15.169	22.674 23.531

CHAINAGE 440.000

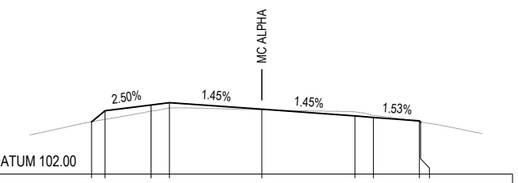
CENTRELINE DATA
E = 309943.120
N = 5827214.973
Z = 104.416



DESIGN LEVELS	104.040 104.339	104.527 104.602	104.416	104.221 104.174	104.057 103.995
HEIGHT DIFFERENCE	0.000 -0.237	-0.165 -0.143	-0.001	0.148 0.076	-0.090 0.000
EXISTING SURFACE	104.040 104.102	104.361 104.458	104.416	104.368 104.249	103.966 103.995
OFFSETS	-25.116 -23.325	-15.805 -12.796	0.000	13.438 16.443	23.956 24.828

CHAINAGE 470.000

CENTRELINE DATA
E = 309948.204
N = 5827185.407
Z = 104.116



DESIGN LEVELS	103.704 104.071	104.259 104.334	104.116	103.896 103.850	103.735 103.706
HEIGHT DIFFERENCE	0.000 -0.286	-0.206 -0.175	-0.016	0.140 0.066	-0.028 0.000
EXISTING SURFACE	103.704 103.785	104.053 104.159	104.100	104.036 103.915	103.707 103.706
OFFSETS	-27.770 -25.567	-18.046 -15.037	0.000	15.204 18.209	25.722 25.929

CHAINAGE 500.000

CENTRELINE DATA
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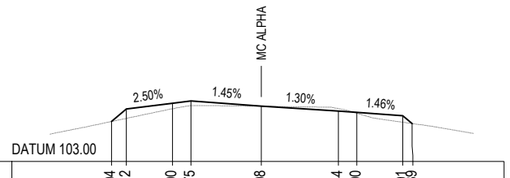
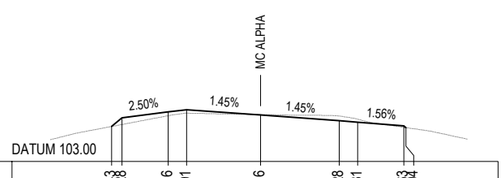
N = 5827254.395
Z = 104.808



DESIGN LEVELS	104.304 104.712	104.900 104.975	104.808	104.644 104.600	104.491 104.239
HEIGHT DIFFERENCE	0.000 -0.305	-0.181 -0.149	-0.007	0.080 -0.026	-0.210 0.000
EXISTING SURFACE	104.304 104.407	104.719 104.825	104.802	104.724 104.574	104.281 104.239
OFFSETS	-24.450 -22.000	-14.500 -11.500	0.000	12.559 15.562	23.069 24.588

CHAINAGE 430.000

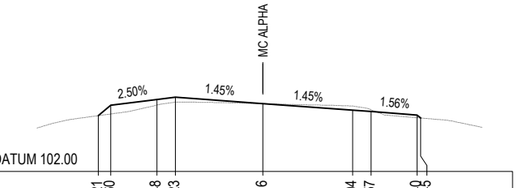
CENTRELINE DATA
E = 309941.425
N = 5827224.829
Z = 104.516



DESIGN LEVELS	104.143 104.428	104.616 104.691	104.516	104.328 104.281	104.163 104.104
HEIGHT DIFFERENCE	0.000 -0.220	-0.126 -0.111	0.015	0.158 0.098	-0.048 0.002
EXISTING SURFACE	104.143 104.208	104.490 104.580	104.531	104.485 104.379	104.116 104.106
OFFSETS	-24.287 -22.376	-15.058 -12.049	0.000	12.849 15.855	23.368 23.758

CHAINAGE 460.000

CENTRELINE DATA
E = 309946.509
N = 5827195.262
Z = 104.216



DESIGN LEVELS	103.821 104.160	104.348 104.423	104.216	104.004 103.957	103.840 103.745
HEIGHT DIFFERENCE	0.000 -0.284	-0.181 -0.159	-0.005	0.132 0.057	-0.086 0.000
EXISTING SURFACE	103.821 103.876	104.167 104.264	104.211	104.136 104.014	103.754 103.745
OFFSETS	-26.857 -24.820	-17.299 -14.290	0.000	14.615 17.621	25.134 25.704

CHAINAGE 490.000

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PROJECT
MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT
MELBOURNE AIRPORT

SCALE
HORIZONTAL 1:500 (A3) 1:250 (A1) 0 2.5 5 7.5 10 12.5m
VERTICAL 0 1 2 3 4 5m 1:200 (A3) 1:100 (A1)

REGISTRATION
CJ

PROJECT MANAGEMENT INITIALS

NMcK	PM	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	03.11.2023	ISSUED FOR TENDER
A	22.08.2023	DRAFT - TENDER DESIGN

NOT FOR CONSTRUCTION

PROJECT NUMBER
60705085

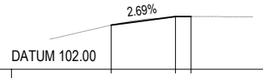
SHEET TITLE
MAPMP2
DESIGN PACKAGE 3 - STAGE 2
GRADING CROSS SECTIONS
SHEET 5

SHEET NUMBER
60705085-SHT-03_2-60-5005

Last saved by: CASSIE.THOMPSON(2023-10-27) Last Plotted: 2023-11-01
Filename: C:\PWWORKING\AECOM_DS13_AU\CASSIE.THOMPSON@AECOM.COM\D0103783\60705085-SHT-03_2-60-5005.DWG

B

CENTRELINE DATA
E = 309955.224
N = 5827146.032
Z = null



DESIGN LEVELS	103.435	103.717	103.717
HEIGHT DIFFERENCE	0.002	-0.004	0.000
EXISTING SURFACE	103.436	103.713	103.718
OFFSETS	-28.237	-17.734	-15.176

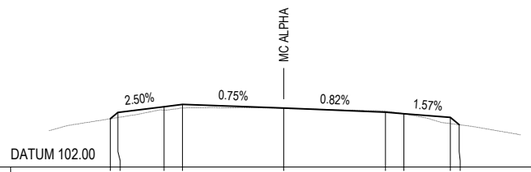
CHAINAGE 540.000

CENTRELINE DATA
E = 309953.287
N = 5827155.841
Z = 103.816

DESIGN LEVELS	103.596	103.859	103.816	103.720	103.671	103.621
HEIGHT DIFFERENCE	-0.131	-0.054	-0.009	0.003	-0.049	-0.104
EXISTING SURFACE	103.465	103.805	103.807	103.723	103.622	103.517
OFFSETS	-27.808	-17.278	0.000	18.262	21.333	24.376

CHAINAGE 530.000

CENTRELINE DATA
E = 309951.593
N = 5827165.696
Z = 103.916



DESIGN LEVELS	103.579	103.965	104.040	103.916	103.780	103.733	103.614	103.375
HEIGHT DIFFERENCE	0.007	-0.109	-0.118	-0.015	0.043	-0.003	-0.202	0.000
EXISTING SURFACE	103.570	103.856	103.922	103.901	103.823	103.730	103.412	103.375
OFFSETS	-29.288	-19.540	-16.531	0.000	16.587	19.609	27.471	28.614

CHAINAGE 520.000

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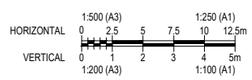
PROJECT

MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE



REGISTRATION

CJ

PROJECT MANAGEMENT INITIALS

NMcK	PM	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	03.11.2023	ISSUED FOR TENDER
A	22.08.2023	DRAFT - TENDER DESIGN

NOT FOR CONSTRUCTION

PROJECT NUMBER

60705085

SHEET TITLE

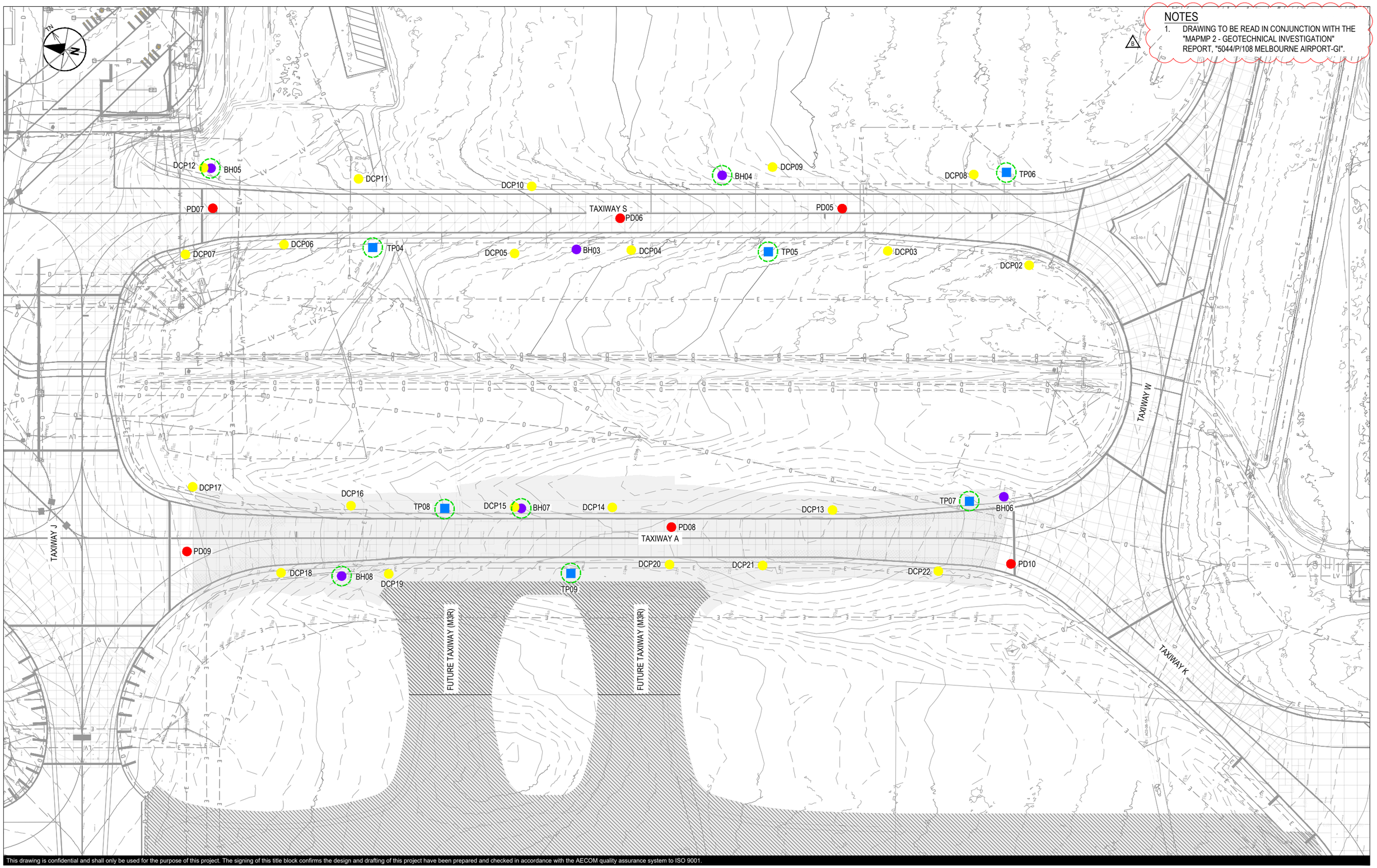
MAPMP2
DESIGN PACKAGE 3 - STAGE 2
GRADING CROSS SECTIONS
SHEET 6

SHEET NUMBER

60705085-SHT-03_2-60-5006

NOTES

1. DRAWING TO BE READ IN CONJUNCTION WITH THE "MAPMP 2 - GEOTECHNICAL INVESTIGATION" REPORT, "5044/P/108 MELBOURNE AIRPORT-GI".



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PROJECT
MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT
MELBOURNE AIRPORT

SCALE
SCALE A
0 10 20 30 40 50m
1 : 2000 (A3) 1 : 1000 (A1)

REGISTRATION
CJ

PROJECT MANAGEMENT INITIALS

CJ	NW	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	03.11.2023	ISSUED FOR TENDER
A	22.08.2023	DRAFT - TENDER DESIGN

NOT FOR CONSTRUCTION

PROJECT NUMBER
60705085

SHEET TITLE
MAPMP2
DESIGN PACKAGE 3 - STAGE 2
GEOTECHNICAL INVESTIGATIONS

SHEET NUMBER
60705085-SHT-03_2-70-1001

ISO A1 594mm x 841mm

NOTES

1. FOR NOTES REFER TO DRG 10-0003.
2. FOR LEGEND REFER TO DRG 10-0004.
3. FOR SUBSOIL DRAIN DETAILS REFER TO DRG 130-1001 AND 130-1002.
4. TRANSITION LOCATION IS INDICATIVE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE LOCATION OF THE TRANSITION BETWEEN TAXIWAY PAVEMENTS TYPE 1 AND TYPE 2. SUCH TRANSITION OCCURS WHEN THE THICKNESS OF THE EXISTING GRANULAR PAVEMENT (CRUSHED ROCK) UNDERNEATH THE REMOVED CONCRETE SLABS IS >= 300mm ACROSS THE FULL WIDTH OF THE TAXIWAY. REFER TO DRG 80-5006 FOR DETAILS. THIS DRAWING ASSUMES THE EXISTING CONCRETE SLABS ARE 400mm THICK.
5. TRANSITION LOCATION IS INDICATIVE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE LOCATION OF THE TRANSITION BETWEEN BLAST PAVEMENT TYPE 1 AND BLAST PAVEMENT TYPE 2. SUCH TRANSITION OCCURS WHEN THE THICKNESS OF THE CLASS 4 CRUSHED ROCK LAYER WITHIN THE BLAST PAVEMENT IS > 150mm. THIS DRAWING ASSUMES 150mm STRIPPING OF EXISTING TOPSOIL.
6. FINAL JOINT LAYOUT TO BE DETERMINED AND AGREED BASED ON CONTRACTOR'S PROPOSED PAVEMENT LAYING PLAN.
7. REFER TO AGL DRAWINGS FOR AGL LAYOUT PLANS. JOINTS TO BE REALIGNED (AS SHOWN) TO AVOID AGL LOCATIONS. ALL JOINTS AND AGL ARE TO BE SETOUT BY THE CONTRACTOR PRIOR TO PLACEMENT OF THE AGL INFRASTRUCTURE AND SLABS.
8. REINFORCEMENT REQUIRED IN SLABS CONTAINING AGL IN ACCORDANCE WITH THE DETAILS, WHICH IS NOT SHOWN ON THIS PLAN. REFER TO DRG 80-5004.

REFER TO NOTE 5

JOINS SHEET 2

AGL BLOCKOUT REQUIRED

AGL BLOCKOUT REQUIRED

PRICED OPTION: REPLACE 2m STRIP ADJOINING THE PCC WITH 2m WIDE BLAST PAVEMENT TYPE 2

AGL BLOCKOUT REQUIRED

TYPE D2 - THICKENED EDGE JOINT - ADJACENT TO FUTURE M3R CONNECTION

Last saved by: JARVISC(2024-03-08) Last Plotted: 2024-03-08
Filename: C:\PWWORKING\AECOM_DS13_AU\CHRISTOPHER.JARVIS@AECOM.COM\D0103783\60705085-SHT-03_2-80-1001.DWG

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PROJECT

MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

SCALE C 0 5 10 12.5m
1 : 500 (A3) 1 : 250 (A1)

REGISTRATION

MA

PROJECT MANAGEMENT INITIALS

KT	MA	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

I/R	DATE	DESCRIPTION
C	08.03.2024	ISSUED FOR TENDER
B	03.11.2023	ISSUED FOR TENDER
A	22.08.2023	DRAFT - TENDER DESIGN

NOT FOR CONSTRUCTION

PROJECT NUMBER

60705085

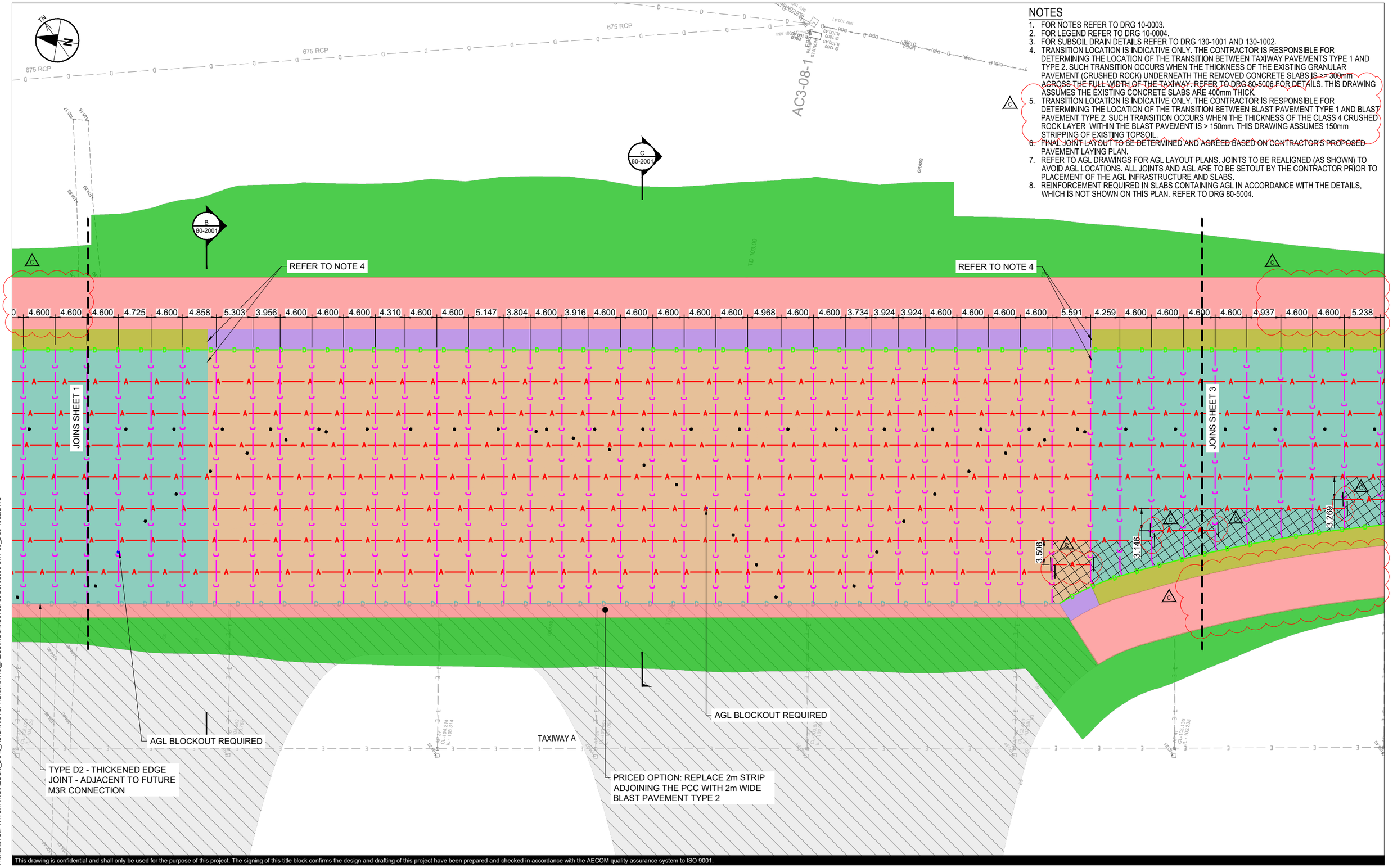
SHEET TITLE

MAPMP2
DESIGN PACKAGE 3 - STAGE 2
PAVEMENT PLAN
SHEET 1

SHEET NUMBER

60705085-SHT-03_2-80-1001

ISO A1 594mm x 841mm



NOTES

1. FOR NOTES REFER TO DRG 10-0003.
2. FOR LEGEND REFER TO DRG 10-0004.
3. FOR SUBSOIL DRAIN DETAILS REFER TO DRG 130-1001 AND 130-1002.
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5. TRANSITION LOCATION IS INDICATIVE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE LOCATION OF THE TRANSITION BETWEEN BLAST PAVEMENT TYPE 1 AND BLAST PAVEMENT TYPE 2. SUCH TRANSITION OCCURS WHEN THE THICKNESS OF THE CLASS 4 CRUSHED ROCK LAYER WITHIN THE BLAST PAVEMENT IS > 150mm. THIS DRAWING ASSUMES 150mm STRIPPING OF EXISTING TOPSOIL.
6. FINAL JOINT LAYOUT TO BE DETERMINED AND AGREED BASED ON CONTRACTOR'S PROPOSED PAVEMENT LAYING PLAN.
7. REFER TO AGL DRAWINGS FOR AGL LAYOUT PLANS. JOINTS TO BE REALIGNED (AS SHOWN) TO AVOID AGL LOCATIONS. ALL JOINTS AND AGL ARE TO BE SETOUT BY THE CONTRACTOR PRIOR TO PLACEMENT OF THE AGL INFRASTRUCTURE AND SLABS.
8. REINFORCEMENT REQUIRED IN SLABS CONTAINING AGL IN ACCORDANCE WITH THE DETAILS, WHICH IS NOT SHOWN ON THIS PLAN. REFER TO DRG 80-5004.

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PROJECT

MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

SCALE C 0 5 10 12.5m
1 : 500 (A3) 1 : 250 (A1)

REGISTRATION

MA

PROJECT MANAGEMENT INITIALS

KT	MA	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

I/R	DATE	DESCRIPTION
C	08.03.2024	ISSUED FOR TENDER
B	03.11.2023	ISSUED FOR TENDER
A	22.08.2023	DRAFT - TENDER DESIGN

NOT FOR CONSTRUCTION

PROJECT NUMBER

60705085

SHEET TITLE

MAPMP2
DESIGN PACKAGE 3 - STAGE 2
PAVEMENT PLAN
SHEET 2

SHEET NUMBER

60705085-SHT-03_2-80-1002

ISO A1 594mm x 841mm

NOTES

1. FOR NOTES REFER TO DRG 10-0003.
2. FOR LEGEND REFER TO DRG 10-0004.
3. FOR SUBSOIL DRAIN DETAILS REFER TO DRG 130-1001 AND 130-1002.
4. TRANSITION LOCATION IS INDICATIVE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE LOCATION OF THE TRANSITION BETWEEN TAXIWAY PAVEMENTS TYPE 1 AND TYPE 2. SUCH TRANSITION OCCURS WHEN THE THICKNESS OF THE EXISTING GRANULAR PAVEMENT (CRUSHED ROCK) UNDERNEATH THE REMOVED CONCRETE SLABS IS >= 300mm ACROSS THE FULL WIDTH OF THE TAXIWAY. REFER TO DRG 80-5006 FOR DETAILS. THIS DRAWING ASSUMES THE EXISTING CONCRETE SLABS ARE 400mm THICK.
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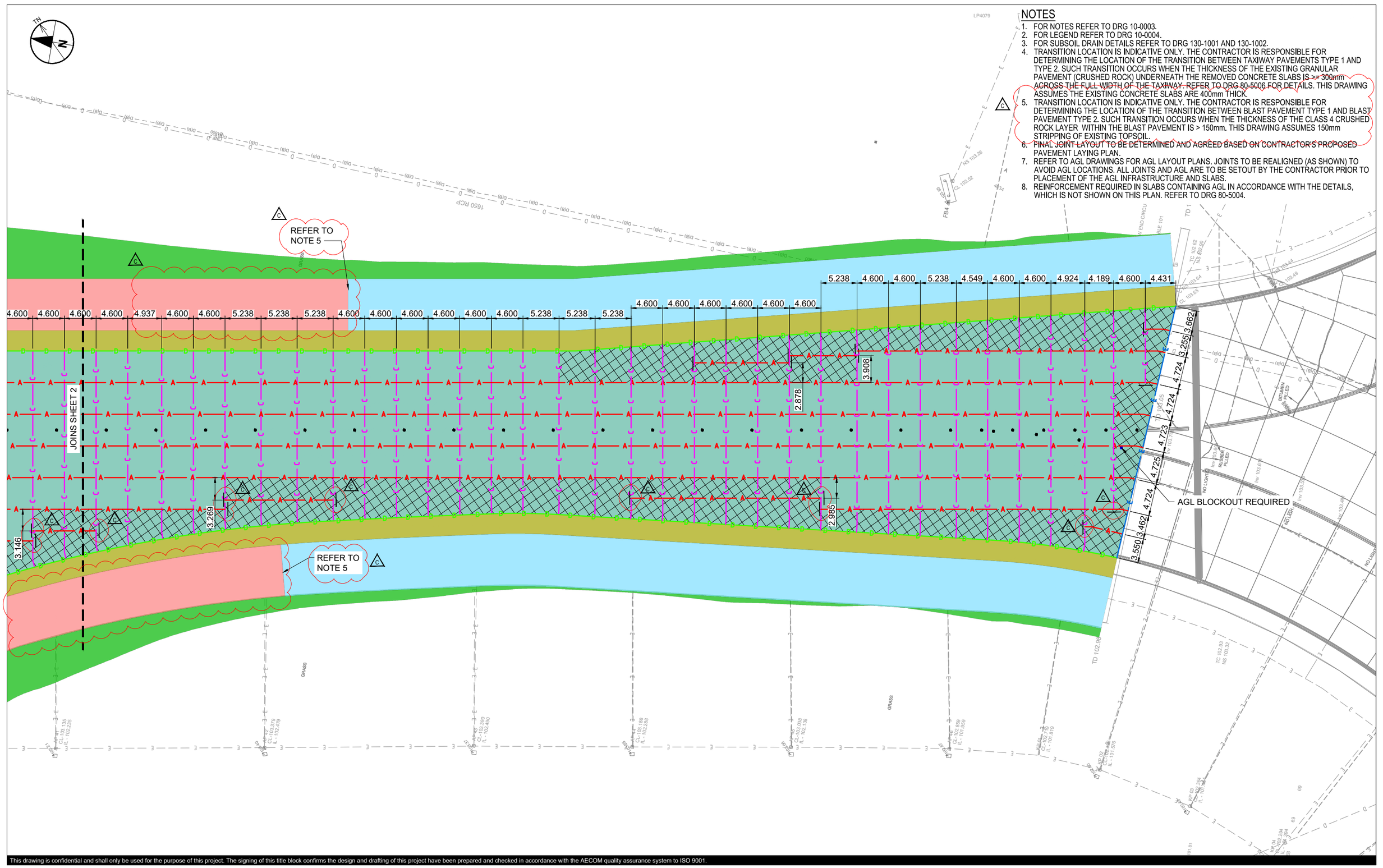
6. FINAL JOINT LAYOUT TO BE DETERMINED AND AGREED BASED ON CONTRACTOR'S PROPOSED PAVEMENT LAYING PLAN.
7. REFER TO AGL DRAWINGS FOR AGL LAYOUT PLANS. JOINTS TO BE REALIGNED (AS SHOWN) TO AVOID AGL LOCATIONS. ALL JOINTS AND AGL ARE TO BE SETOUT BY THE CONTRACTOR PRIOR TO PLACEMENT OF THE AGL INFRASTRUCTURE AND SLABS.
8. REINFORCEMENT REQUIRED IN SLABS CONTAINING AGL IN ACCORDANCE WITH THE DETAILS, WHICH IS NOT SHOWN ON THIS PLAN. REFER TO DRG 80-5004.



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PROJECT
MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT
MELBOURNE AIRPORT

SCALE
SCALE C 0 5 10 12.5m
1 : 500 (A3) 1 : 250 (A1)

REGISTRATION
MA

PROJECT MANAGEMENT INITIALS

KT	MA	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

I/R	DATE	DESCRIPTION
C	08.03.2024	ISSUED FOR TENDER
B	03.11.2023	ISSUED FOR TENDER
A	22.08.2023	DRAFT - TENDER DESIGN

NOT FOR CONSTRUCTION

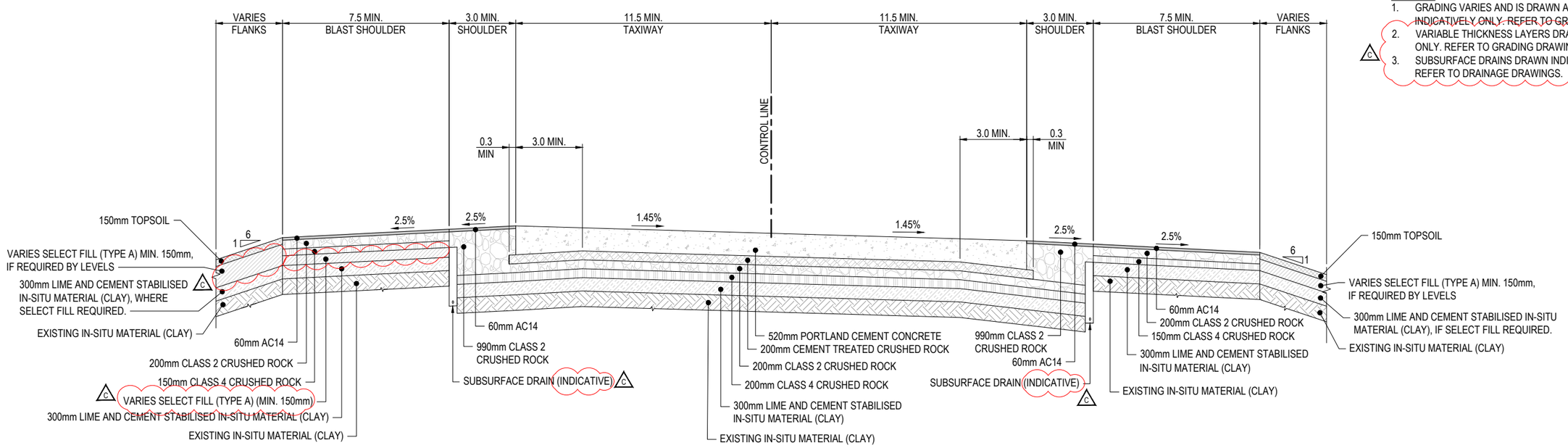
PROJECT NUMBER
60705085

SHEET TITLE
MAPMP2
DESIGN PACKAGE 3 - STAGE 2
PAVEMENT PLAN
SHEET 3

SHEET NUMBER
60705085-SHT-03_2-80-1003

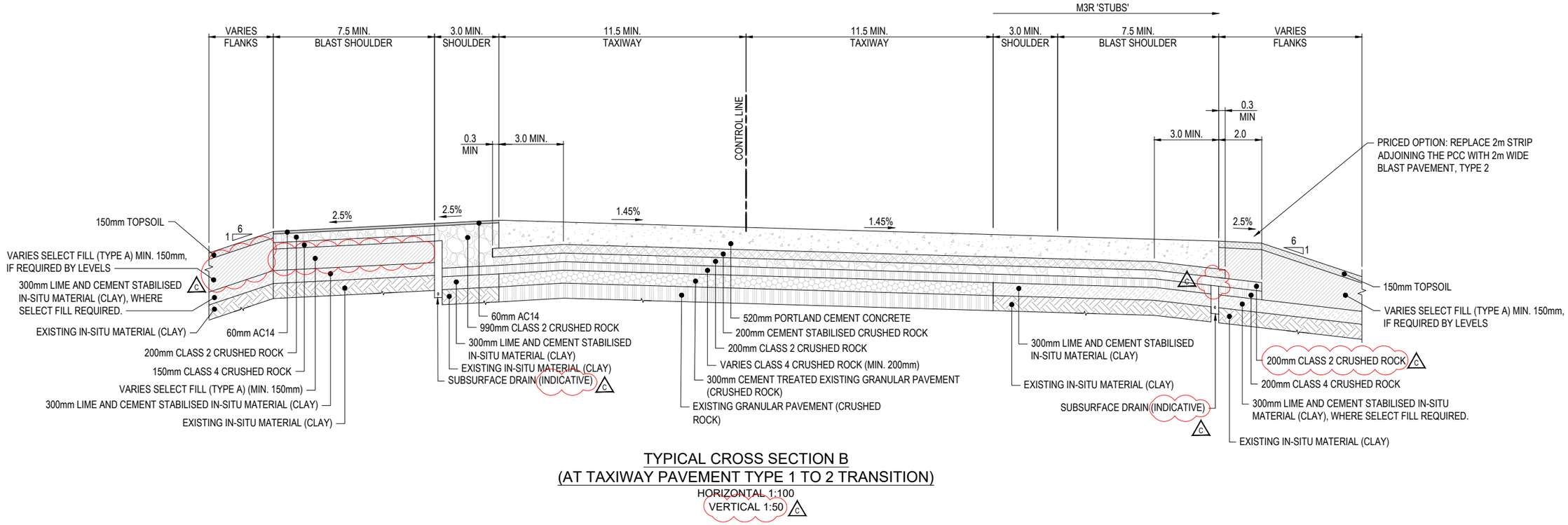
NOTES

1. GRADING VARIES AND IS DRAWN AND ANNOTATED INDICATIVELY ONLY. REFER TO GRADING DRAWINGS.
2. VARIABLE THICKNESS LAYERS DRAWN INDICATIVELY ONLY. REFER TO GRADING DRAWINGS.
3. SUBSURFACE DRAINS DRAWN INDICATIVELY ONLY. REFER TO DRAINAGE DRAWINGS.



TYPICAL CROSS SECTION A

HORIZONTAL 1:100
VERTICAL 1:50 C



TYPICAL CROSS SECTION B
(AT TAXIWAY PAVEMENT TYPE 1 TO 2 TRANSITION)

HORIZONTAL 1:100
VERTICAL 1:50 C

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PROJECT

MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

SCALE E: 0 1 2 3 4 5m — 1 : 200 (A3) — 1 : 100 (A1)
SCALE F: 0 1.0 2.0 2.5m — 1 : 100 (A3) — 1 : 50 (A1)

REGISTRATION

MA

PROJECT MANAGEMENT INITIALS

KT	MA	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

I/R	DATE	DESCRIPTION
C	08.03.2024	ISSUED FOR TENDER
B	03.11.2023	ISSUED FOR TENDER
A	22.08.2023	DRAFT - TENDER DESIGN

NOT FOR CONSTRUCTION

PROJECT NUMBER

60705085

SHEET TITLE

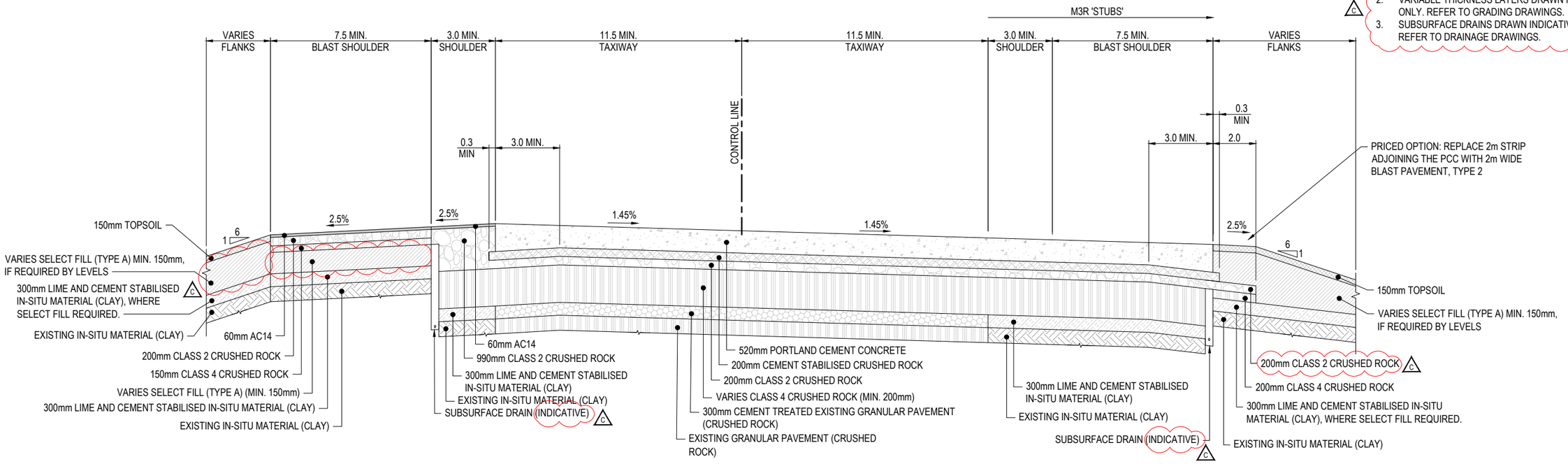
MAPMP2
DESIGN PACKAGE 3 - STAGE 2
PAVEMENT TYPICAL SECTIONS
SHEET 1

SHEET NUMBER

60705085-SHT-03_2-80-2001

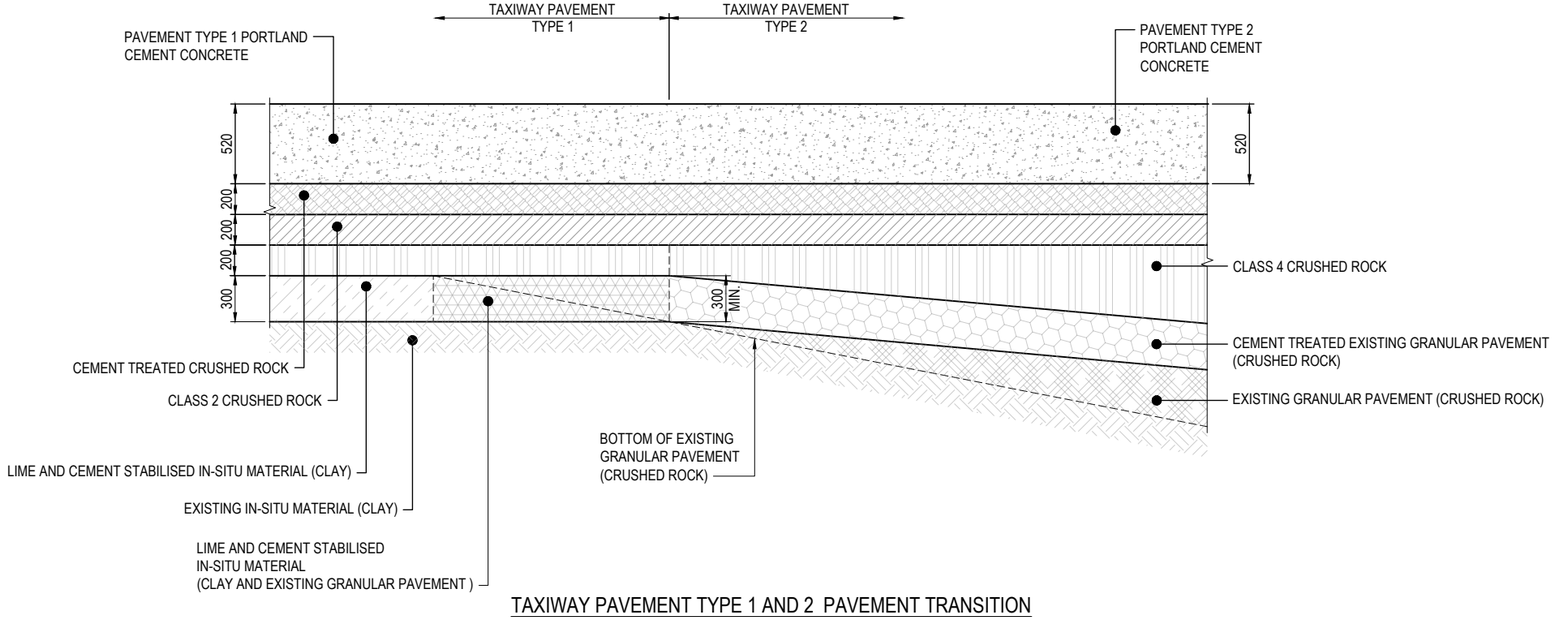
NOTES

1. GRADING VARIES AND IS DRAWN AND ANNOTATED INDICATIVELY ONLY. REFER TO GRADING DRAWINGS.
2. VARIABLE THICKNESS LAYERS DRAWN INDICATIVELY ONLY. REFER TO GRADING DRAWINGS.
3. SUBSURFACE DRAINS DRAWN INDICATIVELY ONLY. REFER TO DRAINAGE DRAWINGS.



TYPICAL CROSS SECTION C
(>200mm MIN. CLASS 4 THICKNESS)

HORIZONTAL 1:100
VERTICAL 1:50



TAXIWAY PAVEMENT TYPE 1 AND 2 PAVEMENT TRANSITION

SCALE NTS

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PROJECT

MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

SCALE E: 0 1 2 3 4 5m — 1 : 200 (A3) — 1 : 100 (A1)
SCALE F: 0 1.0 2.0 2.5m — 1 : 100 (A3) — 1 : 50 (A1)

REGISTRATION

MA

PROJECT MANAGEMENT INITIALS

KT	MA	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

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NOT FOR CONSTRUCTION

PROJECT NUMBER

60705085

SHEET TITLE

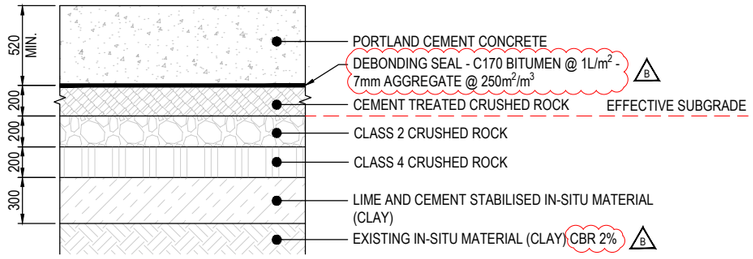
MAPMP2
DESIGN PACKAGE 3 - STAGE 2
PAVEMENT TYPICAL SECTIONS
SHEET 2

SHEET NUMBER

60705085-SHT-03_2-80-2002

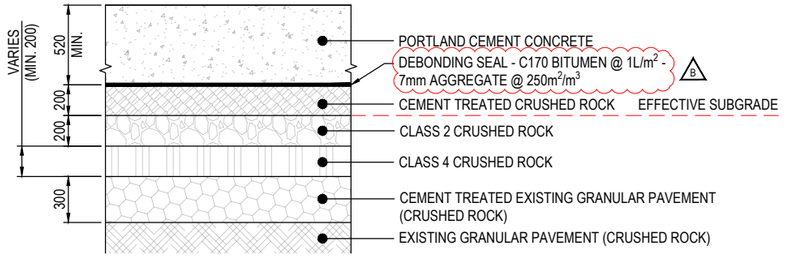
NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. PORTLAND CEMENT CONCRETE MUST ACHIEVE THE MINIMUM FLEXURAL STRENGTH IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION.
3. ALL THE WORKS AND THE MATERIALS MUST COMPLY WITH THE REQUIREMENTS OF THE TECHNICAL SPECIFICATIONS.
4. WHERE PCC THICKNESS IS "NOMINAL", CONSTRUCTION TOLERANCES AS PER THE SPECIFICATION APPLY. WHERE NOTED AS "MINIMUM" OR "MIN.", PCC THICKNESS IS NOT LESS THAN THIS THICKNESS REGARDLESS OF CONSTRUCTION TOLERANCES.
5. THE EFFECTIVE SUBGRADE LEVEL MARKED ON THIS DRAWING IS FOR THE PURPOSES OF THE PAVEMENT THICKNESS DESIGN MODEL ONLY.



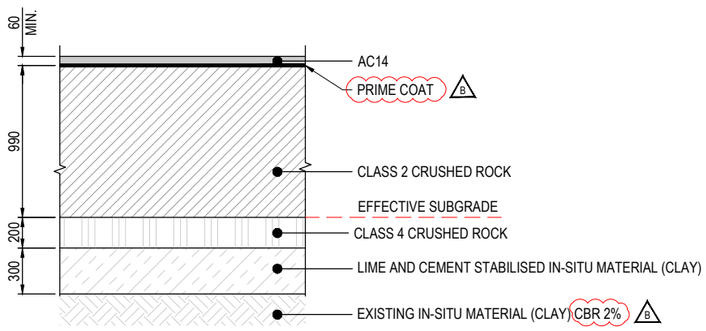
TAXIWAY PAVEMENT TYPE 1

SCALE NTS



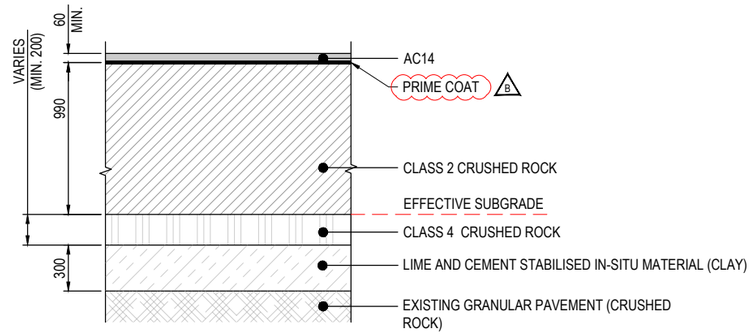
TAXIWAY PAVEMENT TYPE 2

SCALE NTS



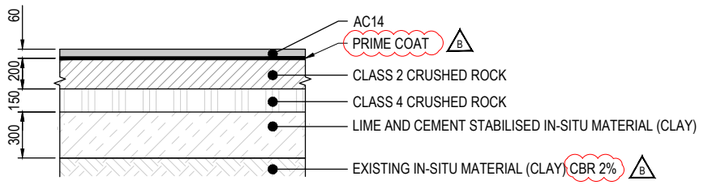
SHOULDER TYPE 1

SCALE NTS



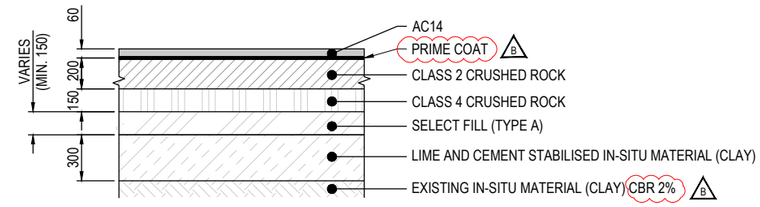
SHOULDER TYPE 2

SCALE NTS



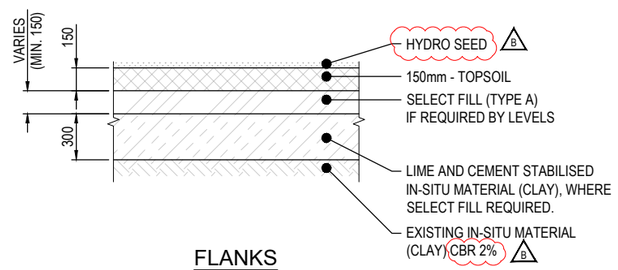
BLAST PAVEMENT TYPE 1

SCALE NTS



BLAST PAVEMENT TYPE 2

SCALE NTS



FLANKS

SCALE NTS

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PROJECT

MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

REGISTRATION

MA

PROJECT MANAGEMENT INITIALS

KT	MA	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	03.11.2023	ISSUED FOR TENDER
A	22.08.2023	DRAFT - TENDER DESIGN

NOT FOR CONSTRUCTION

PROJECT NUMBER

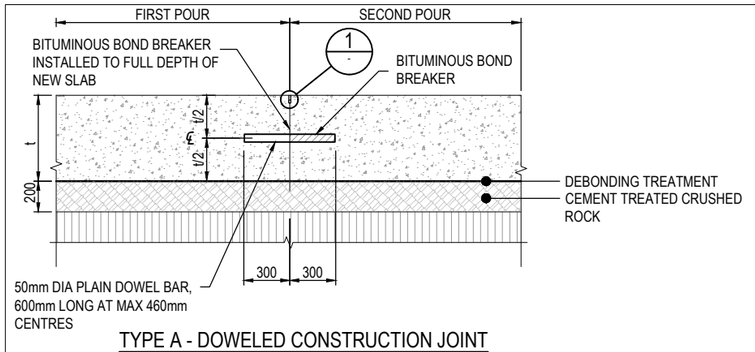
60705085

SHEET TITLE

MAPMP2
DESIGN PACKAGE 3 - STAGE 2
PAVEMENT DETAILS
SHEET 1

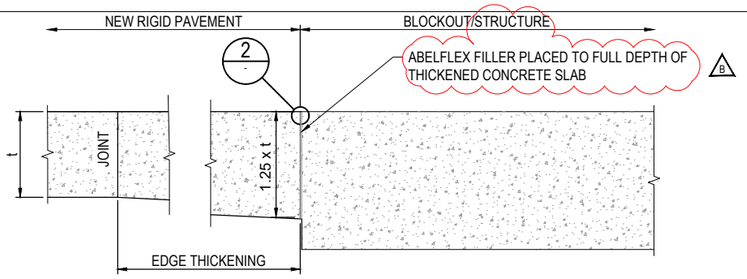
SHEET NUMBER

60705085-SHT-03_2-80-5001



TYPE A - DOWELED CONSTRUCTION JOINT

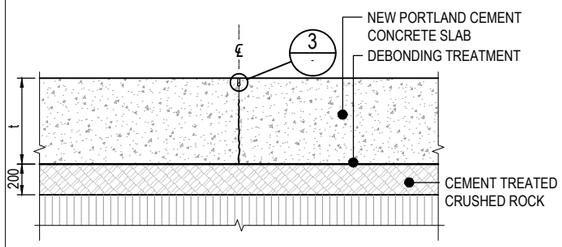
SCALE 1:20



TYPE F - EXPANSION JOINT (ABUTTING BLOCKOUTS/STRUCTURES) B

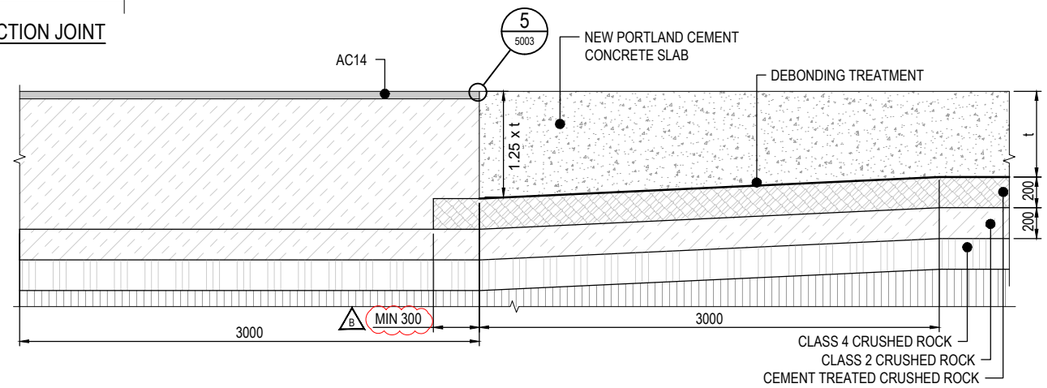
SCALE 1:20

NOT USED - SHOWN IF REQUIRED - SUBJECT TO PRIOR APPROVAL



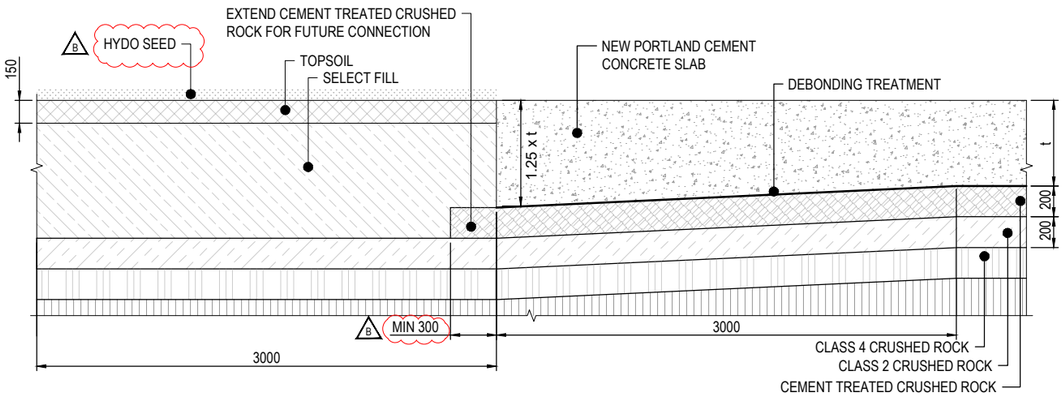
TYPE C - SAWN CONTRACTION JOINT

SCALE 1:20



TYPE D1 - THICKENED EDGE JOINT - ADJACENT TO SHOULDER PAVEMENT

SCALE 1:20



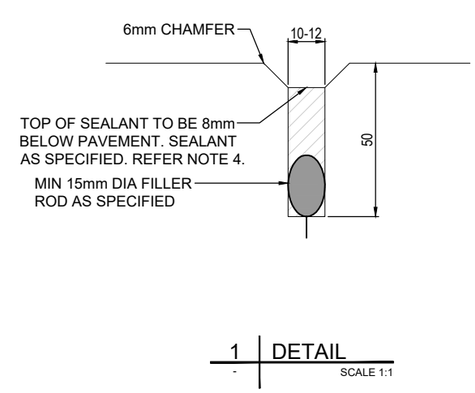
TYPE D2 - THICKENED EDGE JOINT - ADJACENT TO FUTURE M3R PAVEMENT

SCALE 1:20

NOTES

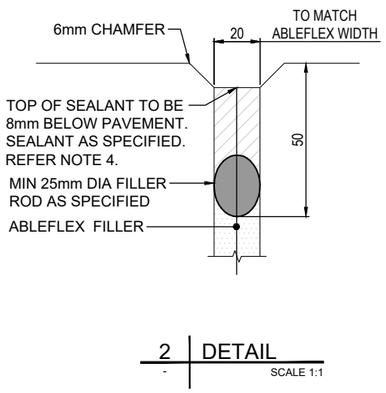
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. PORTLAND CEMENT CONCRETE MUST ACHIEVE THE MINIMUM FLEXURAL STRENGTH.
3. DOWEL BARS MUST BE GRADE 250. DOWELS MUST BE 600mm LONG. DOWEL SPACING IS MAX 460mm (BETWEEN DOWEL CENTRES).
4. JOINT SEALANT MUST BE DOWSIL 888 SILICON OR APPROVED EQUIVALENT. JOINTS MUST BE CLEAN, DRY AND FREE FROM ALL LOOSE MATERIAL PRIOR TO APPLICATION OF SEALANT.
5. EDGE THICKENING IS 1.25 TIMES CONCRETE SLAB THICKNESS ROUNDED TO THE UPPER 5mm.
6. ALL THE WORKS AND THE MATERIALS MUST COMPLY WITH THE REQUIREMENTS OF THE TECHNICAL SPECIFICATIONS.
7. DOWEL EXPANSION CAPS (OR 'DOWEL CAPS'), IF SHOWN, MUST HAVE A SUITABLE FRANGIBLE STOP TO HOLD END OF CAP MINIMUM DISTANCE OF 'JOINT WIDTH PLUS 6mm', FROM END OF DOWEL. THE CAP MUST FIT DOWEL TIGHTLY, BE WATERPROOF AND REMAIN IN PLACE UNTIL CONCRETE HAS HARDENED.
8. THE WHOLE SURFACE OF THE DOWEL HALF NOT TO BE BONDED SHALL BE COATED WITH BITUMINOUS BOND BREAKER PRIOR TO PLACING CONCRETE. THE BITUMINOUS BOND BREAKER SHALL BE ALLOWED TO DRY (BREAK) COMPLETELY PRIOR TO PLACING THE CONCRETE.

PCC THICKNESS	
PAVEMENT TYPE	THICKNESS (t)
TAXIWAY PAVEMENT TYPE 1	520
TAXIWAY PAVEMENT TYPE 2	520



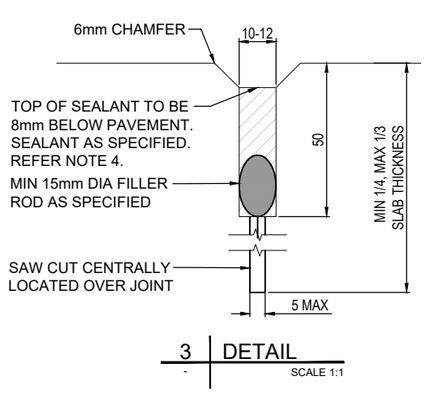
1 | DETAIL - SCALE 1:1

CONSTRUCTION JOINT DETAIL



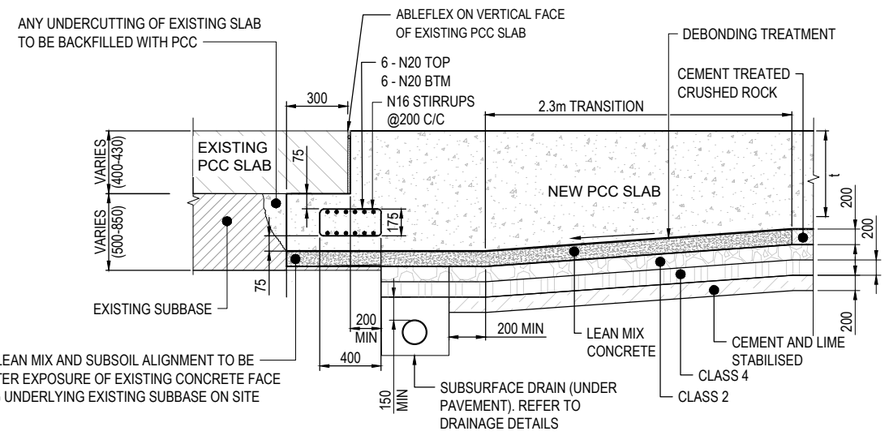
2 | DETAIL - SCALE 1:1

ISOLATION JOINT DETAIL



3 | DETAIL - SCALE 1:1

SAWN CONTRACTION JOINT DETAIL



TYPE E - UNDERSLAB JOINT

NTS

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PROJECT

MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

0 25 50 mm
1:1

0 500 1000 mm
1:20

REGISTRATION

MA

PROJECT MANAGEMENT INITIALS

KT	MA	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	03.11.2023	ISSUED FOR TENDER
A	22.08.2023	DRAFT - TENDER DESIGN

NOT FOR CONSTRUCTION

PROJECT NUMBER

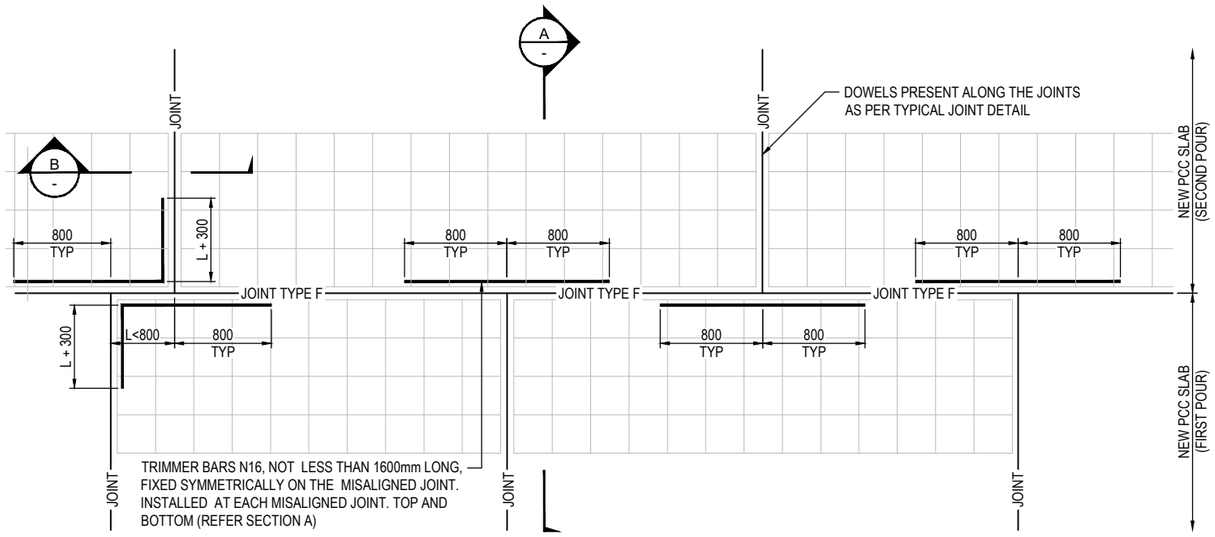
60705085

SHEET TITLE

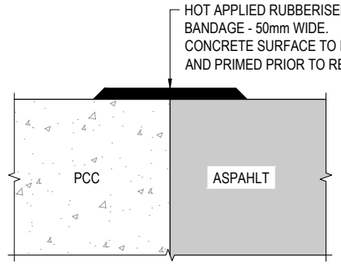
MAPMP2
DESIGN PACKAGE 3 - STAGE 2
PAVEMENT DETAILS
SHEET 2

SHEET NUMBER

60705085-SHT-03_2-80-5002



TYPE F - MISALIGNED JOINT REINFORCEMENT DETAIL
SCALE NTS



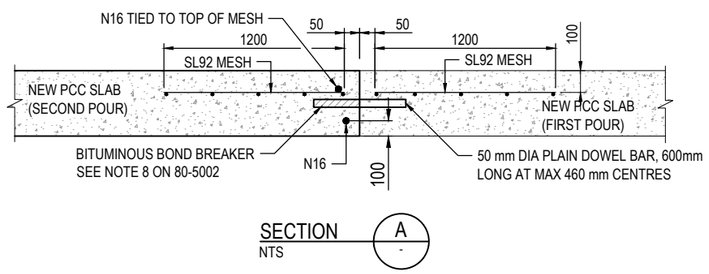
5 DETAIL 80-5002 SCALE 1:1

ASPHALT - CONCRETE JOINT DETAIL

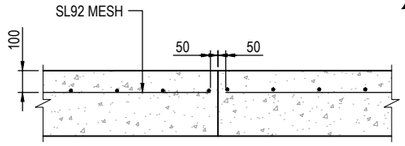
NOTES

STEEL REINFORCEMENT NOTES

1. STEEL REINFORCING MATERIALS MUST CONFORM TO AS/NZS 4671.
2. WELDED STEEL REINFORCING MESH MUST BE MANUFACTURED FROM DEFORMED AND RIBBED STEEL BAR OF STRENGTH GRADE 500L.
3. REINFORCING MESH MUST BE LAPPED SO THAT TWO OUTERMOST WIRES OF ONE SHEET OVERLAP TWO OUTERMOST WIRES OF ADJACENT SHEET.
4. MESH MUST BE CUT, PLACED AND LAPPED SO THAT THERE IS AN EDGE WIRE ALONG EVERY EDGE OF THE MESH.
5. COVER TO REINFORCING STEEL FROM JOINTS AND EDGES OF CONCRETE BASE MUST BE 50mm (TOLERANCE -0mm; +20mm).
6. EVERY SLAB OF CONCRETE THAT ABUTS A SLAB CONTAINING A JOINT WHICH INTERSECTS THEIR COMMON JOINT AND DOES NOT ALIGN WITH A JOINT IN THE FIRST SLAB (I.E. A MISALIGNED JOINT) MUST BE REINFORCED ALONG THE FULL LENGTH OF THE SLAB EDGE INTERSECTING THE MISALIGNED JOINT AS SHOWN IN THE PLAN, DETAILS AND SECTIONS.
7. FOR MISALIGNED JOINTS, TRIMMER STEEL REINFORCING BARS MUST BE N16, NOT LESS THAN 1600mm LONG, FIXED SYMMETRICALLY ON THE MISALIGNED JOINT AND COGGED AS REQUIRED TO AVOID CROSSING ANY JOINT AS SHOWN IN THE PLAN, DETAIL AND SECTIONS.
8. WHERE PCC THICKNESS IS "NOMINAL", CONSTRUCTION TOLERANCES AS PER THE SPECIFICATION APPLY. WHERE NOTED AS "MINIMUM", PCC THICKNESS IS NOT LESS THAN THIS THICKNESS REGARDLESS OF CONSTRUCTION TOLERANCES.
9. (B) IF ANY SLAB IS DOWELLED ON MORE THAN 3 SIDES, THE SLAB MUST BE REINFORCED TO BE AS PER THE TYPICAL DETAIL FOR IRREGULAR PCC SLABS.

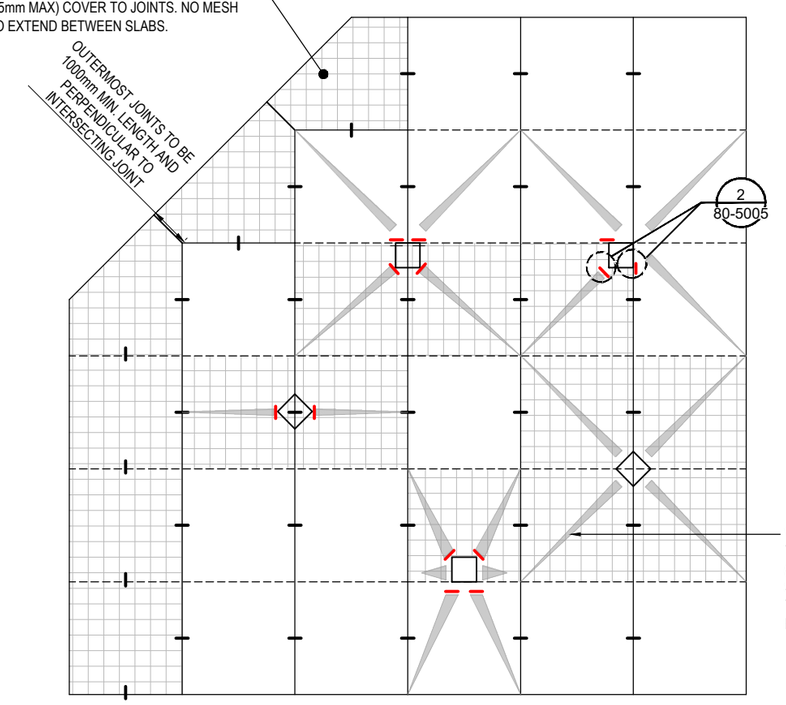


SECTION A NTS

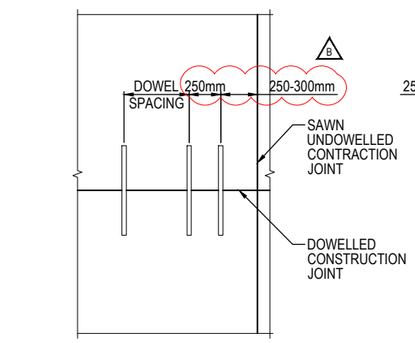


SECTION B NTS

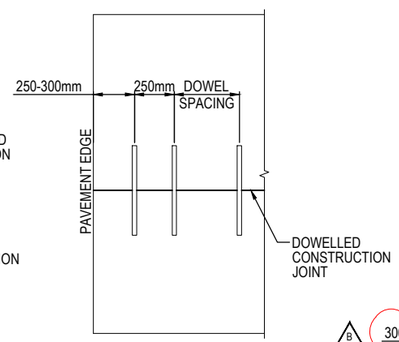
(B) SL92 MESH TO BE INSTALLED AT TOP OF SLAB WITH 100mm COVER AND 50mm (75mm MAX) COVER TO JOINTS. NO MESH TO EXTEND BETWEEN SLABS.



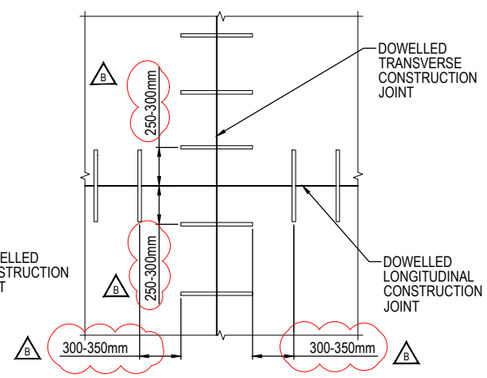
TYPICAL DETAILS FOR IRREGULAR PCC SLABS AND BLOCKOUTS
SCALE NTS



TYPICAL DOWEL BAR PLACEMENT FROM AN UNDOWELLED CONTRACTION JOINT DETAIL
NOT TO SCALE



TYPICAL DOWEL BAR PLACEMENT FROM PAVEMENT EDGE DETAIL
NOT TO SCALE



TYPICAL DOWEL BAR CORNER PLACEMENT DETAIL
NOT TO SCALE

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PROJECT
MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT
MELBOURNE AIRPORT

SCALE
SCALE N 0 10 20 30 40 50mm
1 : 2 (A3) 1 : 1 (A1)

REGISTRATION
CJ

PROJECT MANAGEMENT INITIALS

CJ	NW	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

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B	03.11.2023	ISSUED FOR TENDER
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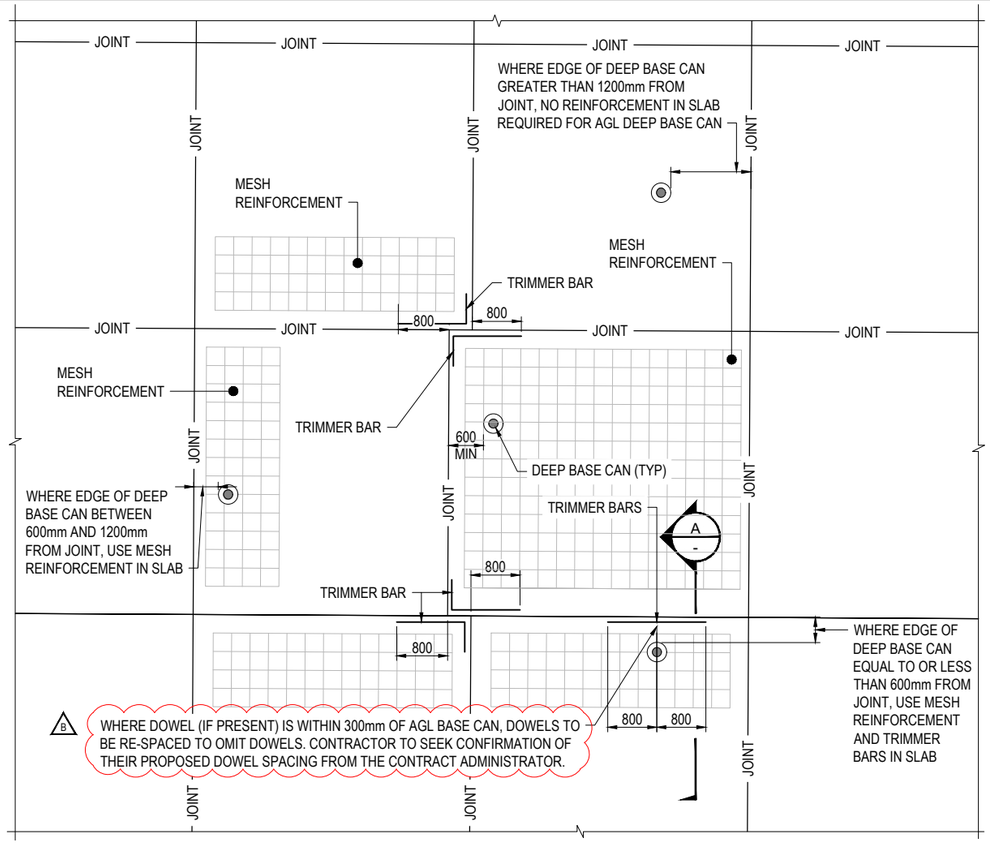
NOT FOR CONSTRUCTION

PROJECT NUMBER
60705085

SHEET TITLE
MAPMP2
DESIGN PACKAGE 3 - STAGE 2
PAVEMENT DETAILS
SHEET 3

SHEET NUMBER
60705085-SHT-03_2-80-5003



PLAN DETAIL - REINFORCEMENT OF SLABS WITH DEEP BASE CANS

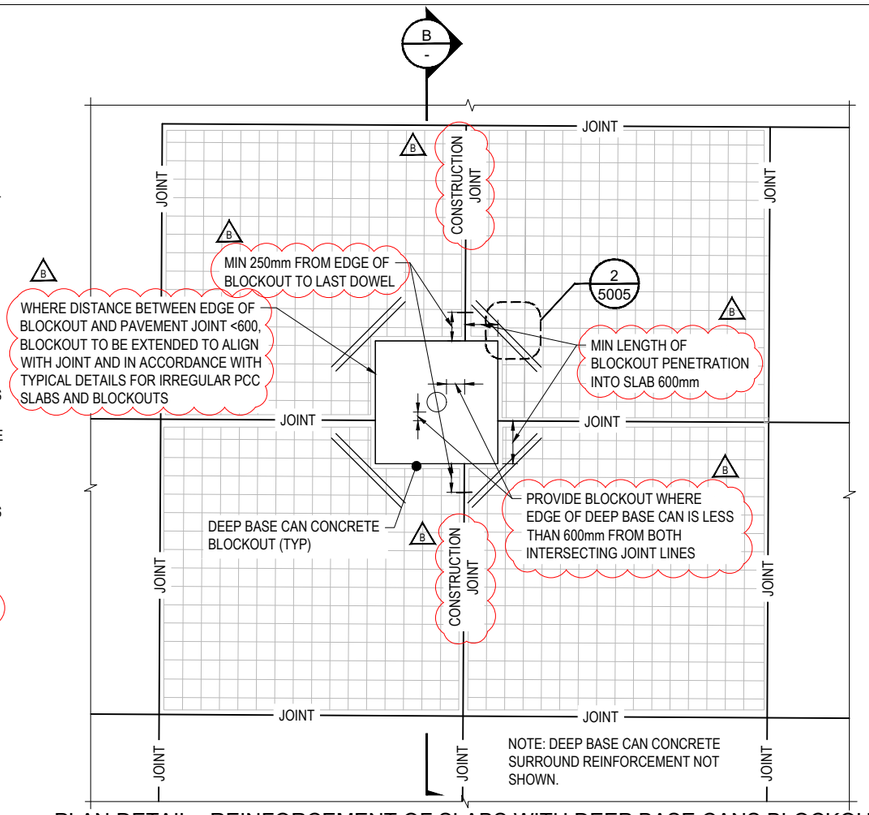
SCALE 1:50

NOTES

STEEL REINFORCEMENT NOTES

1. STEEL REINFORCING MATERIALS MUST CONFORM TO AS/NZS 4671.
2. WELDED STEEL REINFORCING MESH MUST BE MANUFACTURED FROM DEFORMED AND RIBBED STEEL BAR OF STRENGTH GRADE 500L.
3. REINFORCING MESH MUST BE LAPPED SO THAT TWO OUTERMOST WIRES OF ONE SHEET OVERLAP TWO OUTERMOST WIRES OF ADJACENT SHEET.
4. MESH MUST BE CUT, PLACED AND LAPPED SO THAT THERE IS AN EDGE WIRE ALONG EVERY EDGE OF THE MESH.
5. COVER TO REINFORCING STEEL FROM JOINTS AND EDGES OF CONCRETE BASE MUST BE 50mm (TOLERANCE -0mm; +20mm).
6. EVERY SLAB OF CONCRETE THAT ABUTS A SLAB CONTAINING A JOINT WHICH INTERSECTS THEIR COMMON JOINT AND DOES NOT ALIGN WITH A JOINT IN THE FIRST SLAB (I.E. A MISALIGNED JOINT) MUST BE REINFORCED ALONG THE FULL LENGTH OF THE SLAB EDGE INTERSECTING THE MISALIGNED JOINT AS SHOWN IN THE PLAN, DETAILS AND SECTIONS.
7. FOR MISALIGNED JOINTS, TRIMMER STEEL REINFORCING BARS MUST BE N16, NOT LESS THAN 1600mm LONG, FIXED SYMMETRICALLY ON THE MISALIGNED JOINT AND COGGED AS REQUIRED TO AVOID CROSSING ANY JOINT AS SHOWN IN THE PLAN, DETAIL AND SECTIONS.
8. WHERE PCC THICKNESS IS "NOMINAL", CONSTRUCTION TOLERANCES AS PER THE SPECIFICATION APPLY. WHERE NOTED AS "MINIMUM", PCC THICKNESS IS NOT LESS THAN THIS THICKNESS REGARDLESS OF CONSTRUCTION TOLERANCES.
9. IF ANY SLAB IS DOWELLED ON MORE THAN 3 SIDES, THE SLAB MUST BE REINFORCED ACROSS THE ENTIRE SLAB. REINFORCEMENT TO BE AS PER THE TYPICAL DETAIL FOR IRREGULAR PCC SLABS.

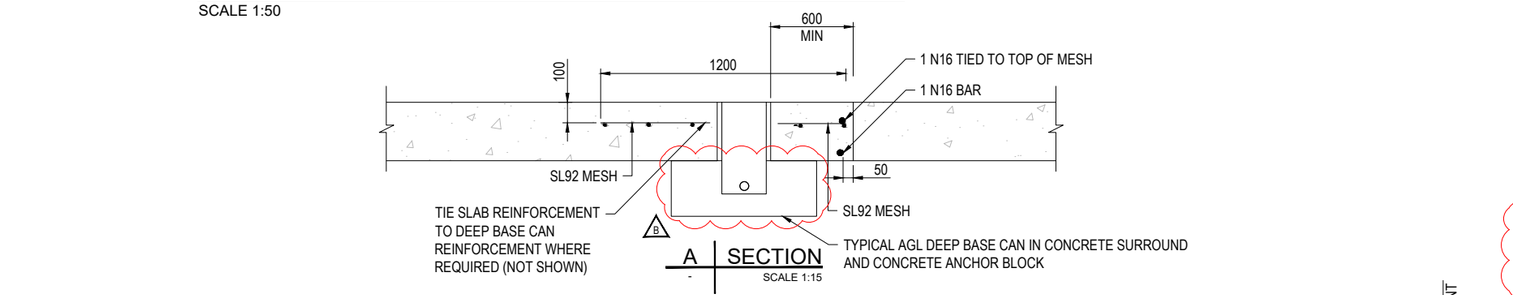
B



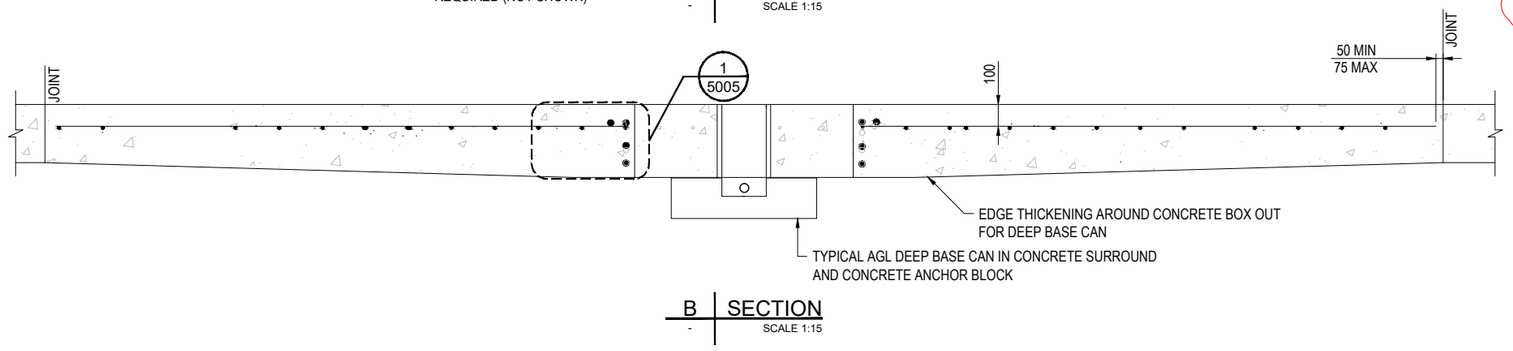
PLAN DETAIL - REINFORCEMENT OF SLABS WITH DEEP BASE CANS BLOCKOUTS TYPE 1

SCALE 1:50

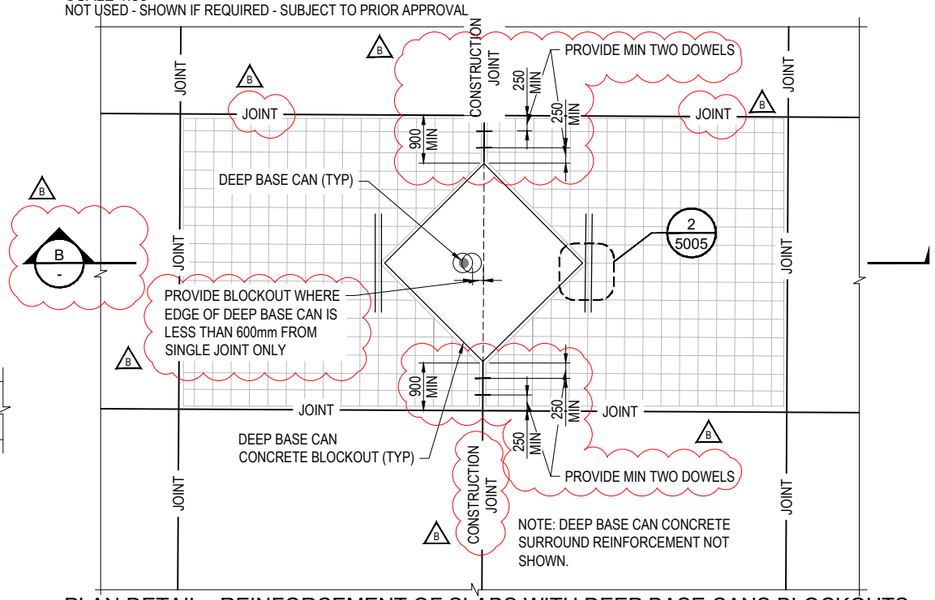
NOT USED - SHOWN IF REQUIRED - SUBJECT TO PRIOR APPROVAL



A SECTION
SCALE 1:15



B SECTION
SCALE 1:15



PLAN DETAIL - REINFORCEMENT OF SLABS WITH DEEP BASE CANS BLOCKOUTS TYPE 2

NOT USED - SHOWN IF REQUIRED - SUBJECT TO PRIOR APPROVAL

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PROJECT

MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

SCALE F: 0, 1.0, 2.0, 2.5m — 1 : 100 (A3) — 1 : 50 (A1)

SCALE Z: 0, 150, 300, 450, 600, 750mm — 1:30 (A3) — 1:15 (A1)

REGISTRATION

CJ

PROJECT MANAGEMENT INITIALS

CJ	NW	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	03.11.2023	ISSUED FOR TENDER
A	22.08.2023	DRAFT - TENDER DESIGN

NOT FOR CONSTRUCTION

PROJECT NUMBER

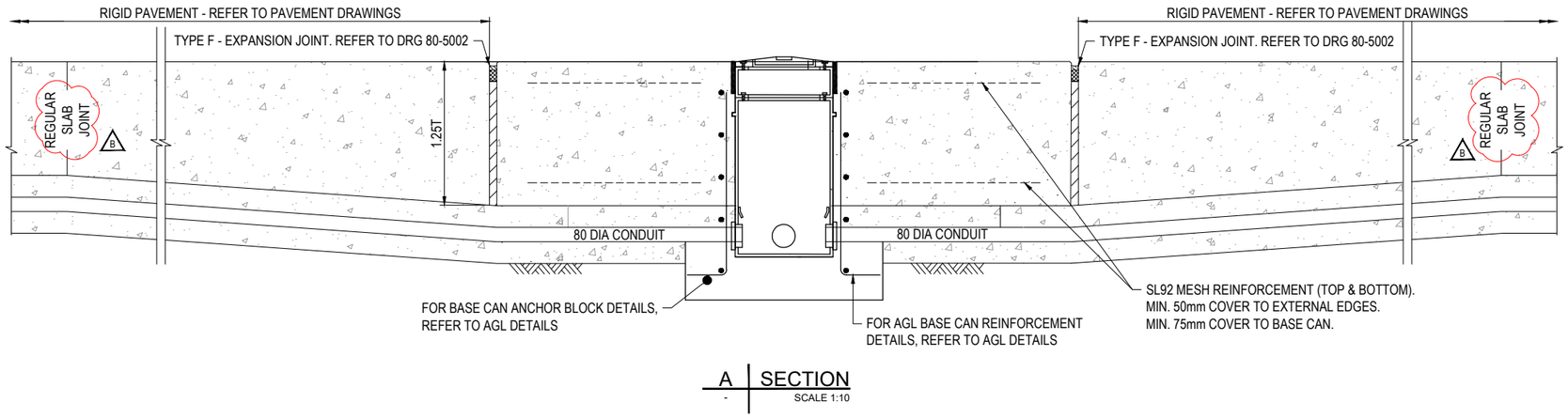
60705085

SHEET TITLE

MAPMP2
DESIGN PACKAGE 3 - STAGE 2
PAVEMENT DETAILS
SHEET 4

SHEET NUMBER

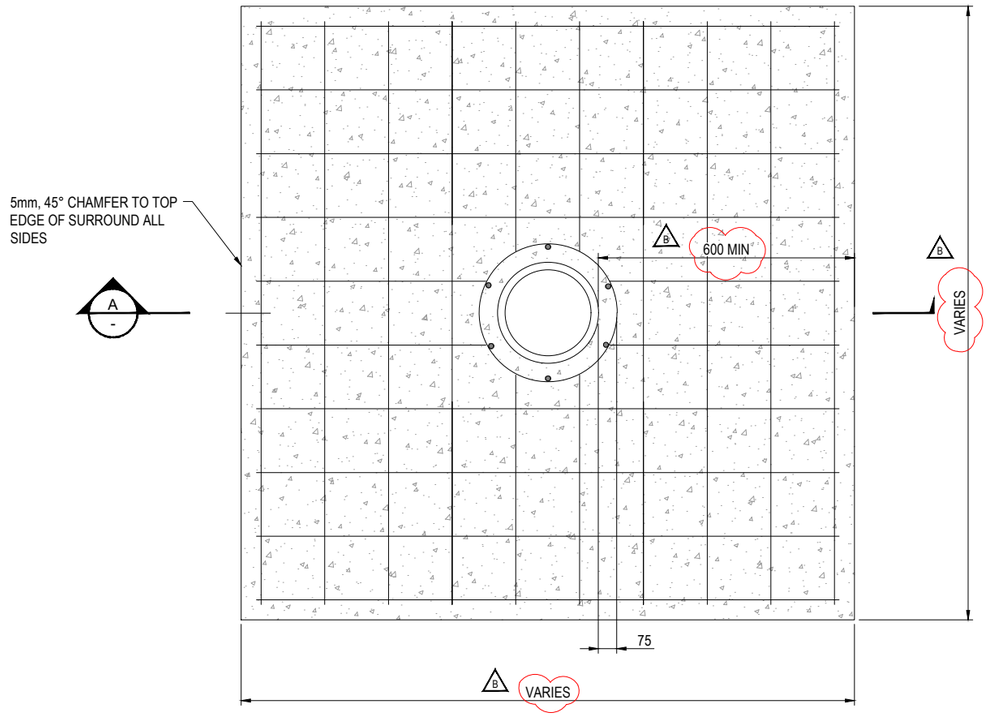
60705085-SHT-03_2-80-5004



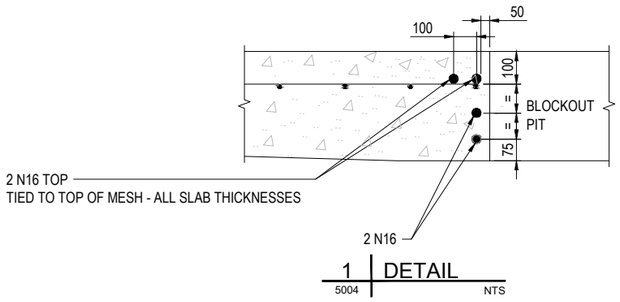
A - SECTION
SCALE 1:10

NOTES

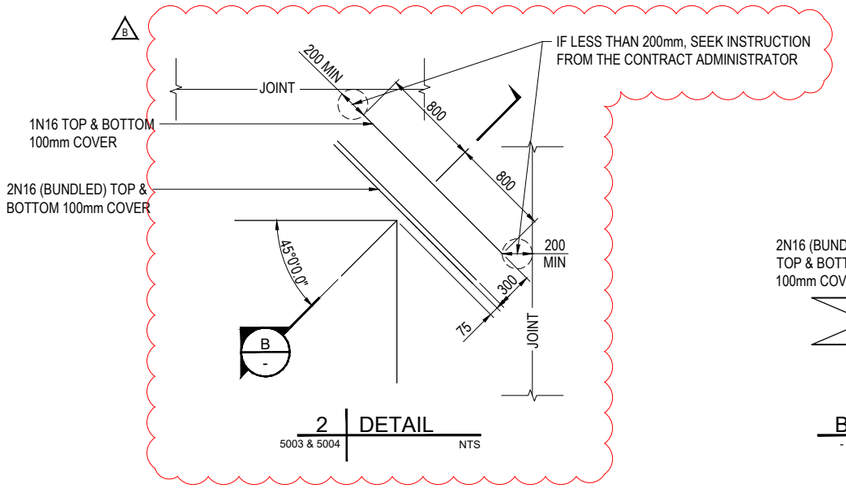
1. STEEL REINFORCING MATERIALS MUST CONFORM TO AS/NZS 4671.
2. WELDED STEEL REINFORCING MESH MUST BE MANUFACTURED FROM DEFORMED AND RIBBED STEEL BAR OF STRENGTH GRADE 500L.
3. REINFORCING MESH MUST BE LAPPED SO THAT TWO OUTERMOST WIRES OF ONE SHEET OVERLAP TWO OUTERMOST WIRES OF ADJACENT SHEET.
4. MESH MUST BE CUT, PLACED AND LAPPED SO THAT THERE IS AN EDGE WIRE ALONG EVERY EDGE OF THE MESH.
5. COVER TO REINFORCING STEEL FROM JOINTS AND EDGES OF CONCRETE BASE MUST BE 50mm (TOLERANCE -0mm; +20mm).
6. BLOCKOUT CONCRETE TO BE HAND PLACED PCC AS PER THE TECHNICAL SPECIFICATION.
7. WHERE BLOCKOUTS ARE REQUIRED, CONTRACTOR MAY UTILISE LEAN MIX CONCRETE TO REPLACE CTCR AND CLASS 2 CRUSHED ROCK. LEAN MIX CONCRETE MUST EXTEND PAST THE ADJACENT REGULAR SLAB JOINT BY MINIMUM 300mm.



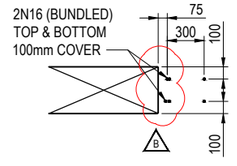
AGL DEEP BASE CAN BLOCKOUT REINFORCED CONCRETE SURROUND
PLAN VIEW
SCALE 1:10
NOT USED - SHOWN IF REQUIRED (SUBJECT TO PRIOR APPROVAL)



1 - DETAIL
5004
NTS



2 - DETAIL
5003 & 5004
NTS



B - SECTION
NTS

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PROJECT
MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT
MELBOURNE AIRPORT

SCALE
SCALE N 0 10 20 30 40 50mm
1 : 2 (A3) 1 : 1 (A1)

REGISTRATION
CJ

PROJECT MANAGEMENT INITIALS

CJ	NW	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

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B	03.11.2023	ISSUED FOR TENDER
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NOT FOR CONSTRUCTION

PROJECT NUMBER
60705085

SHEET TITLE
MAPMP2
DESIGN PACKAGE 3 - STAGE 2
PAVEMENT DETAILS
SHEET 5

SHEET NUMBER
60705085-SHT-03_2-80-5005

ISO A1 594mm x 841mm

NOTES

1. FOR NOTES REFER TO DRG 10-0003.
2. FOR LEGEND REFER TO DRG 10-0004.
3. FOR LONGITUDINAL SECTIONS REFER TO 130-3001 AND 130-3002
4. FOR PIT AND SUBSOIL SETOUT INFORMATION REFER TO 130-4001.

POTENTIAL CLASHES WITH PROPOSED SUBSOIL LINE AND OTHER EXISTING OR PROPOSED SERVICES. CONTRACTOR TO PROVIDE SERVICE LEVEL DATA TO THE CONTRACT ADMINISTRATOR TO ALLOW TO DEEPEN PROPOSED DRAIN IF REQUIRED.

AGL PIT DRAIN. REFER AGL PLANS.

150 DIA. SOLID UPVC PIPE OUTSIDE OF TAXIWAY PAVEMENT

LOCALLY GRADE BETWEEN PITS TO PREVENT TRAPPED LOW POINTS AND ALLOW GRASSED AREAS TO DRAIN TO INLET PITS AND CONTINUE DRAINING SOUTH ALONG NATURAL FLOW PATH.

JOINS SHEET 2

TAXIWAY J

TAXIWAY A

EX1-01-01-1 EX1-01-01-2 EX1-01-01-3

CP1-5 HP1-4 HP1-3 BP1-2 FP2-1 VP2-2 VP2-3 FP1-1 FP13-1 VP13-2 FP13-3 FP12-1 VP12-2 EC12-3 EC11-2 CP12-4 CP13-4 A1-01-1 A1-02-1 CP2-5 BP2-4 FP3-1 VP3-2 BP3-3 A1-02-2 CP3-4 FP4-1 VP4-2 FP4-3 FP5-3 VP5-2 A1-02-3 CP4-4 CP14-2 A1-03-1 EC14-1

Ø375 375ø

A 150-5001

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PROJECT

MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

SCALE B 0 10 20 25m
1 : 1000 (A3) 1 : 500 (A1)

REGISTRATION

PM

PROJECT MANAGEMENT INITIALS		
AN	PM	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA			
DATUM	AHD	SURVEY	MGA94 Z55

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PROJECT NUMBER

60705085

SHEET TITLE

MAPMP2
DESIGN PACKAGE 3 - STAGE 2
STORMWATER DRAINAGE AND HYDRAULICS PLAN
SHEET 1

SHEET NUMBER

60705085-SHT-03_2-130-1001

Last saved by: CASSIE.THOMPSON(2023-11-01) Last Plotted: 2023-11-01
Filename: C:\PWWORKING\AECOM_DS13_AU\CASSIE.THOMPSON@AECOM.COM\D0103783\60705085-SHT-03_2-130-1001.DWG

ISO A1 594mm x 841mm

NOTES

1. FOR NOTES REFER TO DRG 10-0003.
2. FOR LEGEND REFER TO DRG 10-0004.
3. FOR LONGITUDINAL SECTIONS REFER TO 130-3001 AND 130-3002
4. FOR PIT AND SUBSOIL SETOUT INFORMATION REFER TO 130-4001.

CONNECT PIPELINE TO EXISTING PIT. CONTRACTOR TO PROPOSED CONNECTION METHODOLOGY FOR REVIEW.

LOCALLY GRADE AREA TO PREVENT TRAPPED LOW POINTS AND ALLOW GRASSED AREAS TO DRAIN INLET PITS AND CONTINUE DRAINING SOUTH TO NATURAL FLOW PATH.

CONNECT SUBSURFACE DRAINAGE AND DRAINAGE PIPELINE TO EXISTING PIT. CONTRACTOR TO PROPOSE CONNECTION METHODOLOGY FOR REVIEW.

150 DIA. SOLID UPVC PIPE OUTSIDE OF TAXIWAY PAVEMENT

POTENTIAL CLASHES WITH PROPOSED SUBSURFACE DRAINAGE, EXISTING AND/OR PROPOSED ELECTRICAL SERVICES. CONTRACTOR TO ADVISE OF ANY IDENTIFIED CLASHES FOR RESOLUTION AS AN RFI.

150 DIA. SOLID UPVC PIPE OUTSIDE OF TAXIWAY PAVEMENT

LOCALLY GRADE BETWEEN PITS TO PREVENT TRAPPED LOW POINTS AND ALLOW GRASSED AREAS TO DRAIN TO INLET PITS AND CONTINUE DRAINING SOUTH ALONG NATURAL FLOW PATH.

AGL PIT DRAIN. REFER AGL PLANS.

CONNECT SUBSURFACE DRAINAGE AND DRAINAGE PIPELINE TO EXISTING PIT. CONTRACTOR TO PROPOSE CONNECTION METHODOLOGY FOR REVIEW.

JOINS SHEET 1

TAXIWAY A

TAXIWAY W

TAXIWAY K

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PROJECT
MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT
MELBOURNE AIRPORT

SCALE
SCALE B
0 10 20 25m
1 : 1000 (A3) 1 : 500 (A1)

REGISTRATION
PM

PROJECT MANAGEMENT INITIALS		
AN	PM	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION		
B	03.11.2023	ISSUED FOR TENDER
A	22.08.2023	DRAFT - TENDER DESIGN
I/R	DATE	DESCRIPTION

NOT FOR CONSTRUCTION

PROJECT NUMBER
60705085

SHEET TITLE
MAPMP2
DESIGN PACKAGE 3 - STAGE 2
STORMWATER DRAINAGE AND HYDRAULICS PLAN
SHEET 2

SHEET NUMBER
60705085-SHT-03_2-130-1002

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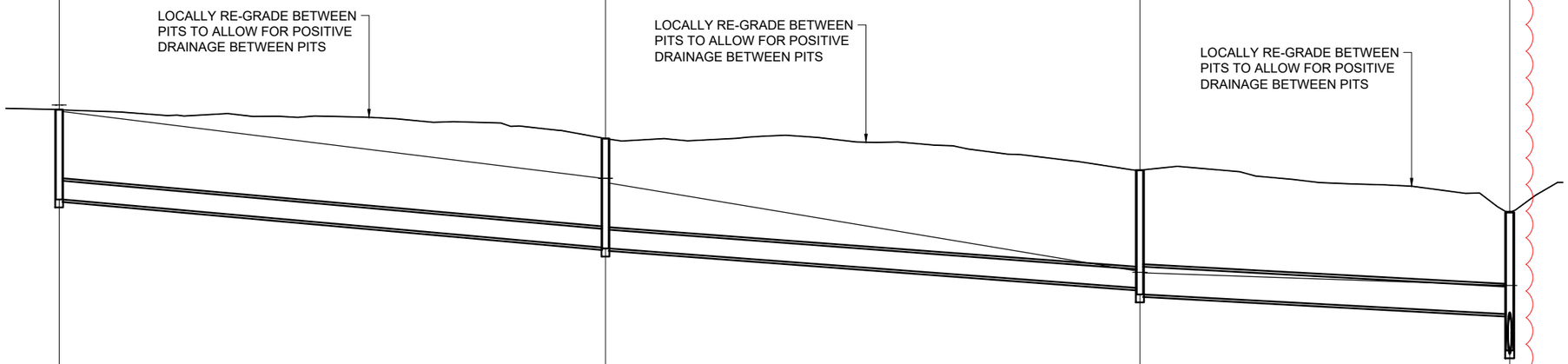
ISO A1 594mm x 841mm

B

NOTES:

1. THE HYDRAULIC GRADE LINE, FLOWS AND VELOCITIES SHOWN IN THE LONGITUDINAL SECTIONS HAVE A NUMBER OF ASSUMPTIONS ASSOCIATED WITH THEM. AN ASSUMED DOWNSTREAM TAIL WATER LEVEL HAS BEEN CONSIDERED AS WELL AS AN UPSTREAM BASE INFLOW FROM UPSTREAM CATCHMENTS. THESE ASSUMPTIONS LIMIT THE ACCURACY OF THE VALUES SHOWN.



STRUCTURE NAME	A1-01-1		A1-01-2		A1-01-3		EX2-01-01
STRUCTURE DESCRIPTION	Field Inlet Pit		Field Inlet Pit		Field Inlet Pit		Field Inlet Pit
PIPE SIZE (mm)	351		351		518		
PIPE CLASS	RCP (CLASS 4)		RCP (CLASS 4)		RCP (CLASS 4)		
PIPE GRADE (%)	0.88%		0.74%		0.53%		
PIPE SLOPE (1 in X)	114.0		135.6		187.7		
PIPE FLOW (cumecs)	0.169		0.192		0.279		
CAPACITY FLOW (cumecs)							
FULL PIPE VELOCITY (m/s)	1.74		2.02		1.67		
NORMAL DEPTH VELOCITY (m/s)							
DATUM RL	93.000						
HGL ELEVATION	103.823	103.703	102.447	102.361	100.707	100.683	100.673	100.436	100.327
DEPTH TO INVERT	1.687		2.044	2.064	2.211	2.331	1.910	2.590
INVERT LEVEL OF DRAIN	102.050		101.150	101.130	100.390	100.270	99.900	99.220
DESIGN (& EXISTING) SURFACE LEVEL	103.737		103.194		102.601		101.824	
SETOUT COORDINATES	309872.324E	5827406.288N	309882.015E	5827302.545N	309886.108E	5827202.291N	309890.380E	5827132.984N
CHAINAGE	0.000	102.570	102.570	100.338	202.908	69.438	272.346	

LINE A1-01

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PROJECT

MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

SCALE B 0 10 20 25m
1 : 1000 (A3) 1 : 500 (A1)

REGISTRATION

PM

PROJECT MANAGEMENT INITIALS

AN	PM	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

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B	03.11.2023	ISSUED FOR TENDER
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NOT FOR CONSTRUCTION

PROJECT NUMBER

60705085

SHEET TITLE

MAPMP2
DESIGN PACKAGE 3 - STAGE 2
STORMWATER DRAINAGE AND HYDRAULICS LONG SECTIONS
SHEET 1

SHEET NUMBER

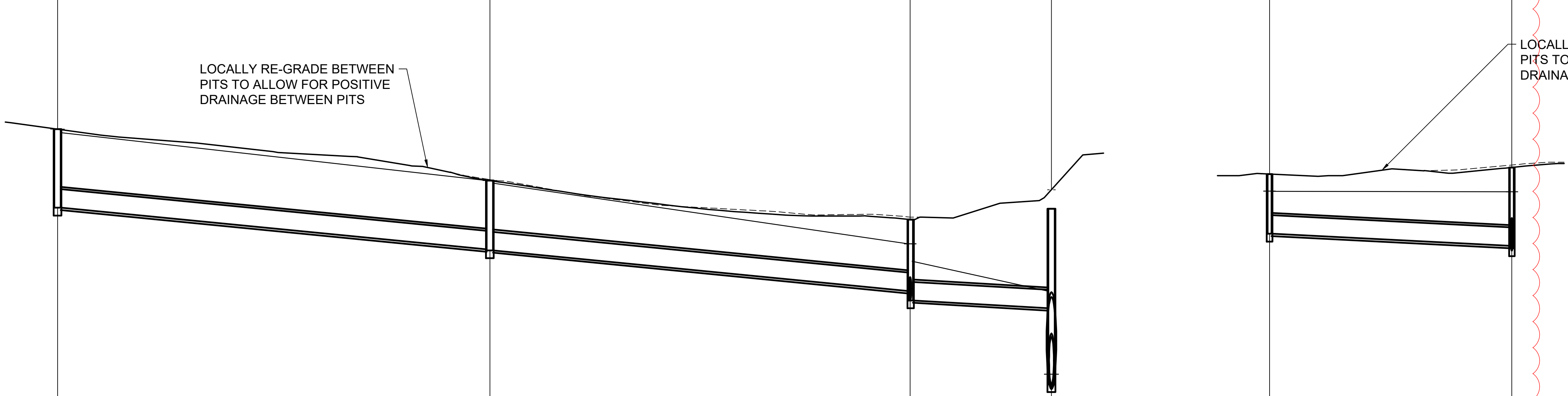
60705085-SHT-03_2-130-3001

ISO A1 594mm x 841mm

B

NOTES:

1. THE HYDRAULIC GRADE LINE, FLOWS AND VELOCITIES SHOWN IN THE LONGITUDINAL SECTIONS HAVE A NUMBER OF ASSUMPTIONS ASSOCIATED WITH THEM. AN ASSUMED DOWNSTREAM TAIL WATER LEVEL HAS BEEN CONSIDERED AS WELL AS AN UPSTREAM BASE INFLOW FROM UPSTREAM CATCHMENTS. THESE ASSUMPTIONS LIMIT THE ACCURACY OF THE VALUES SHOWN.



LINE A1-02

STRUCTURE NAME	A1-02-1	A1-02-2	A1-02-3	EX1-01-01-3
STRUCTURE DESCRIPTION	Field Inlet Pit	Field Inlet Pit	Field Inlet Pit	Field Inlet Pit
HGL ELEVATION	105.308 / 105.239	104.323 / 104.269	103.106 / 102.771	102.197 / 100.603 / 100.602
DEPTH TO INVERT	1.506	1.321 / 1.341	1.373 / 1.553	2.275 / 3.735
INVERT LEVEL OF DRAIN	103.800	103.000 / 102.980	102.200 / 102.020	101.870 / 100.410
DESIGN (& EXISTING) SURFACE LEVEL	105.306	104.321 / 104.339	103.573 / 103.620	104.145
SETOUT COORDINATES	309922.185E 5827535.716N	309934.751E 5827453.808N	309951.593E 5827369.343N	309976.662E 5827368.164N
CHAINAGE	0.000	82.890	162.784	189.870

DATUM RL 95.000

	A1-02-1 to A1-02-2	A1-02-2 to A1-02-3	A1-02-3 to EX1-01-01-3
PIPE SIZE (mm)	375	375	375
PIPE CLASS	RCP (4)	RCP (4)	RCP (4)
PIPE GRADE (%)	0.97%	0.97%	0.55%
PIPE SLOPE (1 in X)	103.6	103.3	180.6
PIPE FLOW (cumecs)	0.188	0.205	0.212
CAPACITY FLOW (cumecs)			
FULL PIPE VELOCITY (m/s)	1.91	2.09	2.17
NORMAL DEPTH VELOCITY (m/s)			
CHAINAGE	82.890	80.580	27.086

LINE A1-03

STRUCTURE NAME	A1-03-1	A1-02-3
STRUCTURE DESCRIPTION	Field Inlet Pit	Field Inlet Pit
HGL ELEVATION	103.116 / 103.112	103.106 / 102.771
DEPTH TO INVERT	1.144	1.505 / 1.553
INVERT LEVEL OF DRAIN	102.300	102.067 / 102.020
DESIGN (& EXISTING) SURFACE LEVEL	103.444	103.573 (103.620)
SETOUT COORDINATES	309962.276E 5827329.879N	309951.593E 5827369.343N
CHAINAGE	0.000	46.459

DATUM RL 94.000

	A1-03-1 to A1-02-3
PIPE SIZE (mm)	375
PIPE CLASS	RCP (4)
PIPE GRADE (%)	0.50%
PIPE SLOPE (1 in X)	199.8
PIPE FLOW (cumecs)	-0.070
CAPACITY FLOW (cumecs)	
FULL PIPE VELOCITY (m/s)	0.84
NORMAL DEPTH VELOCITY (m/s)	
CHAINAGE	46.459

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PROJECT
MELBOURNE AIRPORT
MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT
MELBOURNE AIRPORT

SCALE
SCALE B 0 10 20 25m
1 : 1000 (A3) 1 : 500 (A1)

REGISTRATION
PM

PROJECT MANAGEMENT INITIALS

AN	PM	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

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PROJECT NUMBER
60705085

SHEET TITLE
MAPMP2
DESIGN PACKAGE 3 - STAGE 2
STORMWATER DRAINAGE AND HYDRAULICS LONG SECTIONS
SHEET 2

SHEET NUMBER
60705085-SHT-03_2-130-3002

PIT SCHEDULE

PIT NAME	PIT TYPE	PIT COVER TYPE	EASTING	NORTHING	INTERNAL DIMENSIONS (m)		INVERT LEVEL (m AHD)	SETOUT RL (m AHD)	DEPTH (m)	COMMENTS
					WIDTH	LENGTH				
A1-01-1	CLASS D PIT AS PER VIC ROADS SD 1011	CLASS D GRATED INLET PIT	309874.663	5827404.852	1.0	1.0	102.050	103.737	1.687	GRATED CLASS D COVERS TO BE INSTALLED AS PER PROPRIETORS REQUIREMENTS.
A1-01-2	CLASS D PIT AS PER VIC ROADS SD 1011	CLASS D GRATED INLET PIT	309882.015	5827302.545	1.0	1.0	101.130	103.194	2.064	GRATED CLASS D COVERS TO BE INSTALLED AS PER PROPRIETORS REQUIREMENTS.
A1-01-3	CLASS D PIT AS PER VIC ROADS SD 1011	CLASS D GRATED INLET PIT	309886.108	5827202.291	1.0	1.0	100.270	102.601	2.331	GRATED CLASS D COVERS TO BE INSTALLED AS PER PROPRIETORS REQUIREMENTS.
EX2-01-01	EXISTING PIT	N/A	-	-	-	-	-	-	-	CONNECTION INTO EXISTING PIT.
A1-02-1	CLASS D PIT AS PER VIC ROADS SD 1011	CLASS D GRATED INLET PIT	309922.185	5827535.716	1.0	1.0	103.700	105.306	1.606	GRATED CLASS D COVERS TO BE INSTALLED AS PER PROPRIETORS REQUIREMENTS.
A1-02-2	CLASS D PIT AS PER VIC ROADS SD 1011	CLASS D GRATED INLET PIT	309934.751	5827453.808	1.0	1.0	102.980	104.339	1.359	GRATED CLASS D COVERS TO BE INSTALLED AS PER PROPRIETORS REQUIREMENTS.
A1-02-3	CLASS D PIT AS PER VIC ROADS SD 1011	CLASS D GRATED INLET PIT	309951.593	5827369.343	1.0	1.0	102.020	103.573	1.553	GRATED CLASS D COVERS TO BE INSTALLED AS PER PROPRIETORS REQUIREMENTS.
A1-03-1	CLASS D PIT AS PER VIC ROADS SD 1011	CLASS D GRATED INLET PIT	309962.276	5827329.879	1.0	1.0	102.300	103.444	1.144	GRATED CLASS D COVERS TO BE INSTALLED AS PER PROPRIETORS REQUIREMENTS.
EX1-01-01-3	EXISTING PIT	N/A	-	-	-	-	-	-	-	CONNECTION INTO EXISTING PIT.

B

NOTES

1. NORTHING AND EASTING SETOUT IS TO PIT CENTRE.
2. SETOUT LEVEL TO PIT COVER LEVEL.
3. PITS ARE TO BE RATED TO CLASS D AS PER AS 3996 AND ARE TO BE IN GENERAL ACCORDANCE WITH VICROADS STANDARD DRAWING SD1011. FINAL DESIGN OF REINFORCEMENT WITHIN PIT IS TO CONSIDER FINAL ARRANGEMENT OF ALL CONNECTING PIPES INCLUDING SUBSURFACE DRAINAGE PIPES. ALL CONNECTIONS TO RECEIVE ADEQUATE TRIMMER BARS TO SUIT REINFORCEMENT REQUIREMENTS. TOP OF PIT TO BE REBATED TO SUIT GRATED LID (FLUSH FINISH) THAT IS RATED TO CLASS D AS PER AS 3996. ALL PITS AND GRATED LIDS TO BE DESIGNED AND CERTIFIED TO CURRENT AUSTRALIAN STANDARDS.
4. GRATE AND GRATE FRAME TO BE HOT DIP GALVANIZED TO AS4680.
5. SUBSURFACE DRAINAGE PREFORMED HOLE LOCATIONS ARE TO BE AT THE INVERT LEVELS SPECIFIED IN THE SUBSURFACE DRAINAGE SCHEDULE AND ARE TO BE BE LARGE ENOUGH TO ACCOMMODATE THE 150mm PVC SUBSURFACE PIPE SIZE SPECIFIED.
6. GRATED INLET OPENING TO BE 900x900 MIN U.N.O.
7. FOR PIPE INVERT LEVELS REFER TO TO LONGITUDINAL SECTIONS.

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PROJECT

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TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

REGISTRATION

PM

PROJECT MANAGEMENT INITIALS

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DESIGNER	CHECKED	APPROVED

PROJECT DATA

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SHEET TITLE

MAPMP2
DESIGN PACKAGE 3 - STAGE 2
STORMWATER DRAINAGE AND HYDRAULICS SCHEDULES
SHEET 1

SHEET NUMBER

60705085-SHT-03_2-130-4001

B

SUBSURFACE DRAINAGE SCHEDULE

ID	POINT TYPE	EASTING	NORTHING	INVERT LEVEL (m AHD)	DOWNSTREAM PIPE GRADE (%)	COMMENTS
FP1-1	FLUSHING POINT	309842.104	5827609.2274	105.206	0.500%	START OF LINE FLUSH-OUT.
BP1-2	BENDING POINT	309892.889	5827617.520	104.949	0.500%	MID-LINE BENDING POINT
HP1-3	HORIZONTAL BENDING POINT	309933.479	5827617.112	105.046	0.500%	MID-LINE HORIZONTAL BENDING POINT
HP1-4	HORIZONTAL BENDING POINT	309957.706	5827587.125	104.853	0.500%	MID-LINE HORIZONTAL BENDING POINT
CP1-5	CONNECTION POINT	309962.452	5827587.502	104.829	-	CONNECT TO EXISTING PIT EX1-01-01-2. MAINTAIN 600mm COVER THROUGH ALL GRASSED AREAS. SETOUT INFORMATION IS APPROX, INTENDED FOR INDENTIFYING EXISTING PIT ON SITE.
FP2-1	FLUSHING POINT	309895.972	5827613.993	104.920	1.100%	START OF LINE FLUSH-OUT.
VP2-2	VERTICAL BEND POINT	309896.355	5827588.564	105.162	0.500%	MID-LINE VERTICAL BENDING POINT
VP2-3	VERTICAL BEND POINT	309901.263	5827548.388	104.717	1.000%	MID-LINE VERTICAL BENDING POINT
BP2-4	BENDING POINT	309903.168	5827532.798	104.290	1.500%	MID-LINE BENDING POINT
CP2-5	CONNECTION POINT	309921.444	5827535.602	104.193	-	CONNECT TO NEW STORMWATER PIT A1-02-1. MAINTAIN 600mm COVER THROUGH ALL GRASSED AREAS.
FP3-1	FLUSHING POINT	309903.463	5827531.081	104.520	1.000%	START OF LINE FLUSH-OUT.
VP3-2	VERTICAL BEND POINT	309914.852	5827464.870	103.848	1.400%	MID-LINE VERTICAL BENDING POINT
BP3-3	BENDING POINT	309917.271	5827450.803	103.648	1.400%	MID-LINE BENDING POINT
CP3-4	CONNECTION POINT	309933.191	5827453.540	103.422	-	CONNECT TO NEW STORMWATER PIT A1-02-2. MAINTAIN 600mm COVER THROUGH ALL GRASSED AREAS.
FP4-1	FLUSHING POINT	309917.481	5827449.585	103.680	1.400%	START OF LINE FLUSH-OUT.
VP4-2	VERTICAL BEND POINT	309924.204	5827410.422	103.124	0.750%	MID-LINE VERTICAL BENDING POINT
FP4-3	FLUSHING POINT	309930.900	5827371.568	102.828	0.500%	MIDLINE TEE AND FLUSH POINT WITH B5-3
CP4-4	CONNECTION POINT	309949.816	5827374.698	102.729	-	CONNECT TO NEW STORMWATER PIT A1-02-3. MAINTAIN 600mm COVER THROUGH ALL GRASSED AREAS.
FP5-1	FLUSHING POINT	309942.369	5827304.888	103.382	1.100%	START OF LINE FLUSH-OUT.
VP5-2	VERTICAL BEND POINT	309938.060	5827329.941	103.103	0.650%	MID-LINE VERTICAL BENDING POINT
FP5-3	FLUSHING POINT	309930.900	5827371.568	102.828	-	MIDLINE TEE AND FLUSH POINT WITH B4-3
FP7-1	FLUSHING POINT	309942.660	5827303.195	103.373	0.550%	START OF LINE FLUSH-OUT.
FP7-2	FLUSHING POINT	309954.451	5827234.641	102.991	1.200%	MID-LINE FLUSHING POINT
FP7-3	FLUSHING POINT	309975.703	5827149.938	101.942	1.200%	MID-LINE FLUSHING POINT
FP7-4	VERTICAL BEND POINT	309987.045	5827147.284	101.802	1.500%	MID-LINE VERTICAL BENDING POINT
HP7-5	HORIZONTAL BENDING POINT	310021.290	5827139.270	101.275	0.500%	MID-LINE HORIZONTAL BENDING POINT
CP7-6	CONNECTION POINT	310049.593	5827118.847	101.101	-	CONNECT TO EXISTING PIT EX4-01-01-2. MAINTAIN 600mm COVER THROUGH ALL GRASSED AREAS. SETOUT INFORMATION IS APPROX, INTENDED FOR INDENTIFYING EXISTING PIT ON SITE.
FP8-1	FLUSHING POINT	309972.709	5827149.190	101.754	0.500%	START OF LINE FLUSH-OUT.
BP8-2	BENDING POINT	309935.225	5827151.406	101.564	1.000%	MID-LINE BENDING POINT
CP8-3	CONNECTION POINT	309891.046	5827133.052	101.091	-	CONNECT TO EXISTING PIT EX2-01-01. MAINTAIN 600mm COVER THROUGH ALL GRASSED AREAS. SETOUT INFORMATION IS APPROX, INTENDED FOR INDENTIFYING EXISTING PIT ON SITE.
FP9-1	FLUSHING POINT	309920.935	5827252.073	102.900	1.100%	START OF LINE FLUSH-OUT.
FP9-2	FLUSHING POINT	309932.229	5827151.568	101.786	1.500%	MID-LINE FLUSHING POINT
CP9-3	CONNECTION POINT	309890.774	5827133.463	101.108	-	CONNECT TO EXISTING PIT EX2-01-01. MAINTAIN 600mm COVER THROUGH ALL GRASSED AREAS. SETOUT INFORMATION IS APPROX, INTENDED FOR INDENTIFYING EXISTING PIT ON SITE.
FP10-1	FLUSHING POINT	309920.568	5827253.759	102.910	0.500%	START OF LINE FLUSH-OUT.
BP10-2	BENDING POINT	309897.422	5827316.708	102.572	0.500%	MID-LINE BENDING POINT
CP10-3	CONNECTION POINT	309882.609	5827302.563	102.470	-	CONNECT TO NEW STORMWATER PIT A1-01-2. MAINTAIN 600mm COVER THROUGH ALL GRASSED AREAS.
FP11-1	FLUSHING POINT	309899.594	5827318.781	102.890	0.500%	START OF LINE FLUSH-OUT.
EC11-2	FLUSHING POINT	309886.632	5827394.146	102.508	-	MIDLINE TEE CONNECTION WITH EC12-3
FP12-1	FLUSHING POINT	309869.273	5827497.986	103.800	1.000%	START OF LINE FLUSH-OUT.
VP12-2	VERTICAL BEND POINT	309881.365	5827425.654	103.067	1.750%	MID-LINE VERTICAL BENDING POINT
EC12-3	FLUSHING POINT	309886.632	5827394.146	102.508	0.500%	MIDLINE TEE CONNECTION WITH EC11-2
CP12-4	CONNECTION POINT	309875.236	5827404.968	102.429	-	CONNECT TO NEW STORMWATER PIT A1-01-1. MAINTAIN 600mm COVER THROUGH ALL GRASSED AREAS.
FP13-1	FLUSHING POINT	309839.897	5827607.196	105.337	1.450%	START OF LINE FLUSH-OUT.
VP13-2	VERTICAL BEND POINT	309869.441	5827537.244	104.218	1.450%	MID-LINE VERTICAL BENDING POINT
FP13-3	FLUSHING POINT	309865.999	5827499.130	103.660	0.500%	MID-LINE FLUSHING POINT
CP13-4	CONNECTION POINT	309874.588	5827405.426	103.127	-	CONNECT TO NEW STORMWATER PIT A1-01-1. MAINTAIN 600mm COVER THROUGH ALL GRASSED AREAS.
EC14-1	FLUSHING POINT	309905.534	5827365.785	102.600	0.500%	START OF LINE END CAP.
CP14-2	CONNECTION POINT	309949.816	5827374.698	102.371	-	CONNECT TO NEW STORMWATER PIT A1-02-3. MAINTAIN 600mm COVER THROUGH ALL GRASSED AREAS.

NOTES

1. ALL SURFACE LEVELS TO BE COORDINATED WITH FINISHED PAVEMENT SURFACE LEVELS.
2. ALL SUBSURFACE PIPES TO BE INSTALLED AT SPECIFIED AND AN ABSOLUTE MIN GRADE OF 0.5%.
3. ALL FLUSHOUT POINTS TO BE INSTALLED WITH A CLASS G COVER. REFER DETAILS ON SHEET 60705085-SHT-03_2-130-5002.
4. SUBSURFACE DRAINS TO BE INSTALLED TO THE LEVELS SPECIFIED AND IN ACCORDANCE WITH PAVEMENT DRAWINGS.
5. NORTHINGS AND EASTINGS FOR SETOUT OF SUBSURFACE FLUSH-OUT POINTS ARE APPROXIMATE AND TBC ON SITE BY CONTRACTOR. FINAL SETOUT LOCATION IS TO ALIGN WITH LOCATION SHOWN IN PAVEMENT DRAWING SECTIONS AND DETAILS. SPACING BETWEEN FLUSH-OUT POINTS IS 500mm MIN.
6. NORTHINGS AND EASTINGS FOR SETOUT OF CONNECTIONS POINTS IS TO BE CONFIRMED ON SITE BY CONTRACTOR.

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PROJECT

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MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

REGISTRATION

PM

PROJECT MANAGEMENT INITIALS

AN	PM	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	03.11.2023	ISSUED FOR TENDER
A	22.08.2023	DRAFT - TENDER DESIGN

NOT FOR CONSTRUCTION

PROJECT NUMBER

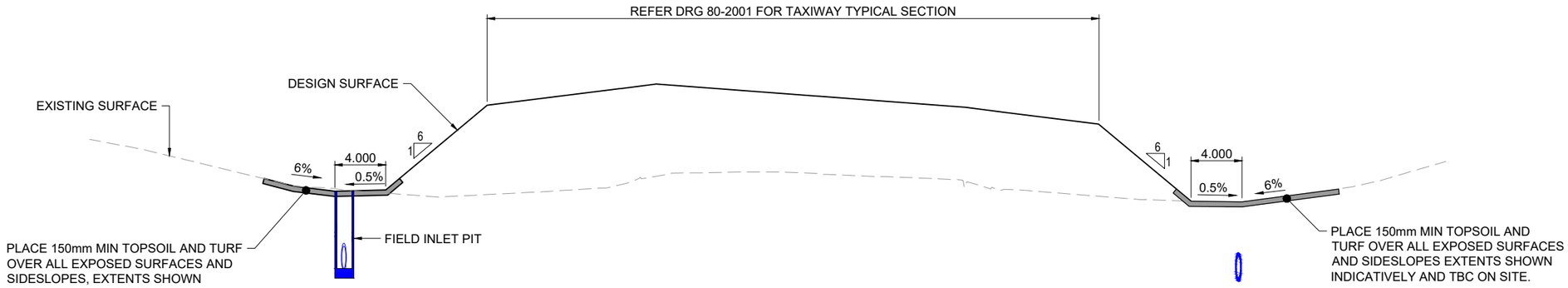
60705085

SHEET TITLE

MAPMP2
DESIGN PACKAGE 3 - STAGE 2
STORMWATER DRAINAGE AND HYDRAULICS SCHEDULES
SHEET 2

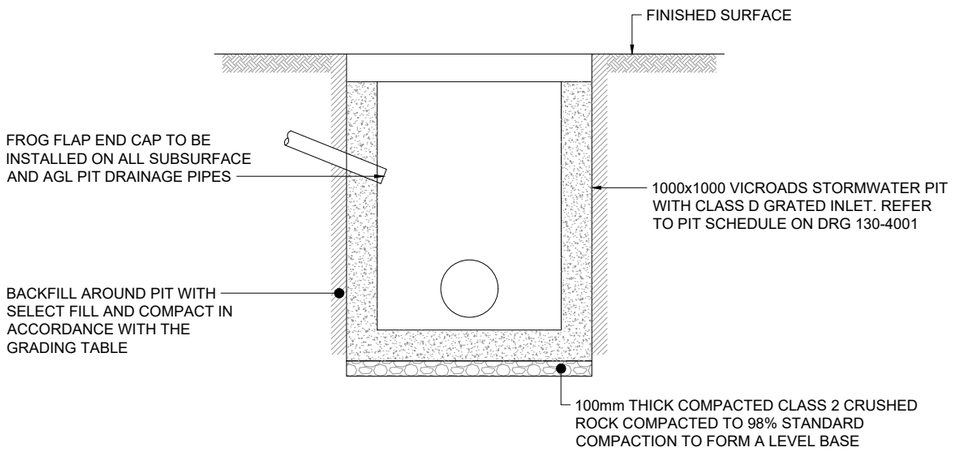
SHEET NUMBER

60705085-SHT-03_2-130-4002



A | TYPICAL SECTION

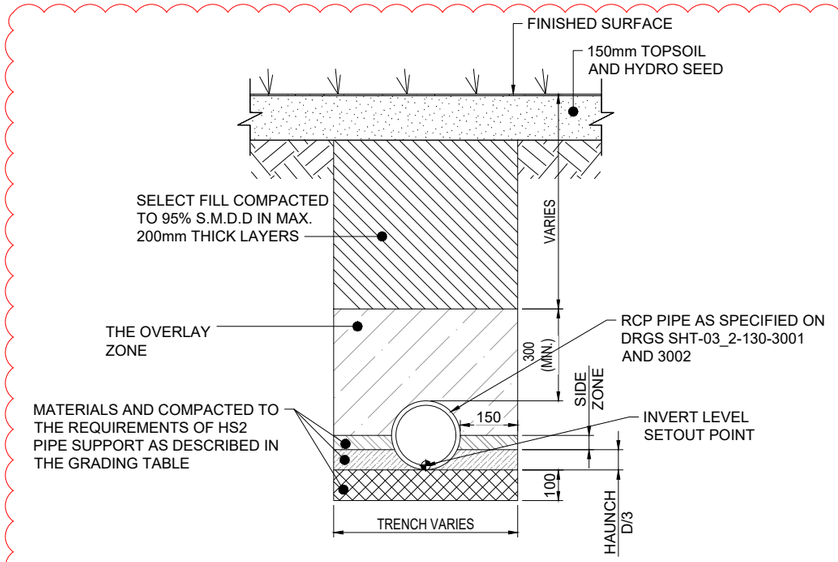
130-1001 SCALE H 1:200 V 1:100



TYPICAL DRAINAGE PIT DETAIL

SCALE 1:20

B



CONCRETE PIPE TRENCH DETAIL IN GRASSED AREA

SCALE 1:10

BED AND HAUNCH ZONE REQUIREMENTS

1. SELECT FILL MATERIALS AS PER GRADING REQUIREMENTS BELOW:

SIEVE SIZE (mm)	19	2.36	0.6	0.3	0.15	0.075
& MASS PASSING	100	100-50	90-20	60-10	25-0	10-0

2. FRACTION APSSING THE 0.075mm SIEVE SHALL HAVE A MAX LINEAR SHRINKAGE OF 10% IN ACCORDANCE WITH AS1289.3.4.1.
3. COMPACT IN LAYERS NOT EXCEEDING 200mm LOOSE LAYER THICKNESS TO ACHIEVE MIN 60% DENSITY INDEX.
4. ALTERNATIVELY USE CONTROLLED LOW STRENGTH MATERIAL (CLSM).

SIDE ZONE REQUIREMENTS

1. SELECT FILL MATERIALS AS PER GRADING REQUIREMENTS BELOW:

SIEVE SIZE (mm)	75	9.50	2.36	0.6	0.075
& MASS PASSING	100	100-50	100-30	50-15	25-0

2. COMPACT IN LAYERS NOT EXCEEDING 200mm LOOSE LAYERS THICKNESS.
3. COMPACTION SHALL ACHIEVE 90% SMDD OR MIN 60% DENSITY INDEX FOR COHESIONLESS MATERIAL.

OVERLAY ZONE REQUIREMENTS

1. VICROADS 20mm CLASS 3 CRUSHED ROCK AS DEFINED IN VICROADS SPECIFICATION SECTION 812.
2. MATERIAL TO BE COMPACTED IN MAX 200mm THICK (LOOSE) LAYERS TO 98% SMDD.

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TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

SCALE J: 0 100 200 300 400 500 mm — 1 : 20 (A3) 1 : 10 (A1)
SCALE H: 0 200 400 600 800 1000mm — 1 : 40 (A3) 1 : 20 (A1)
SCALE E: 0 1 2 3 4 5m — 1 : 200 (A3) 1 : 100 (A1)
SCALE D: 0 2 4 6 8 10m — 1 : 400 (A3) 1 : 200 (A1)

REGISTRATION

PM

PROJECT MANAGEMENT INITIALS

AN	PM	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	03.11.2023	ISSUED FOR TENDER
A	22.08.2023	DRAFT - TENDER DESIGN

NOT FOR CONSTRUCTION

PROJECT NUMBER

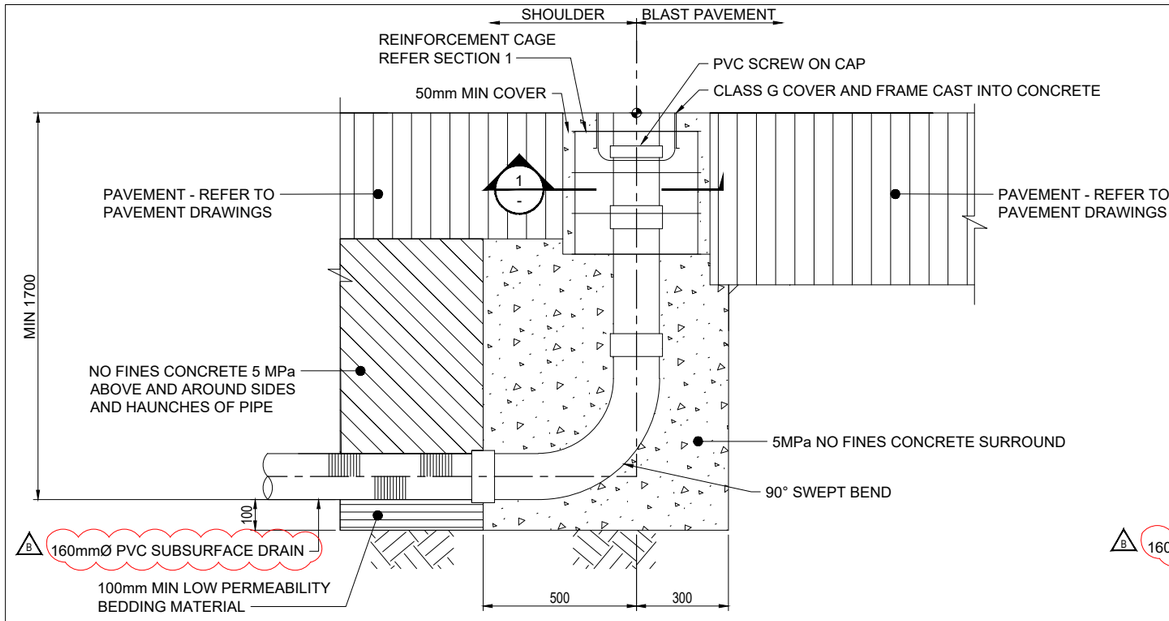
60705085

SHEET TITLE

MAPMP2
DESIGN PACKAGE 3 - STAGE 2
STORMWATER DRAINAGE AND HYDRAULICS DETAILS
SHEET 1

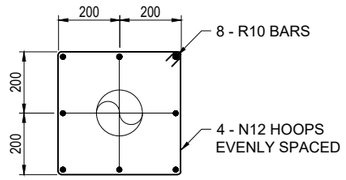
SHEET NUMBER

60705085-SHT-03_2-130-5001



SUBSURFACE DRAIN FLUSH-OUT POINT

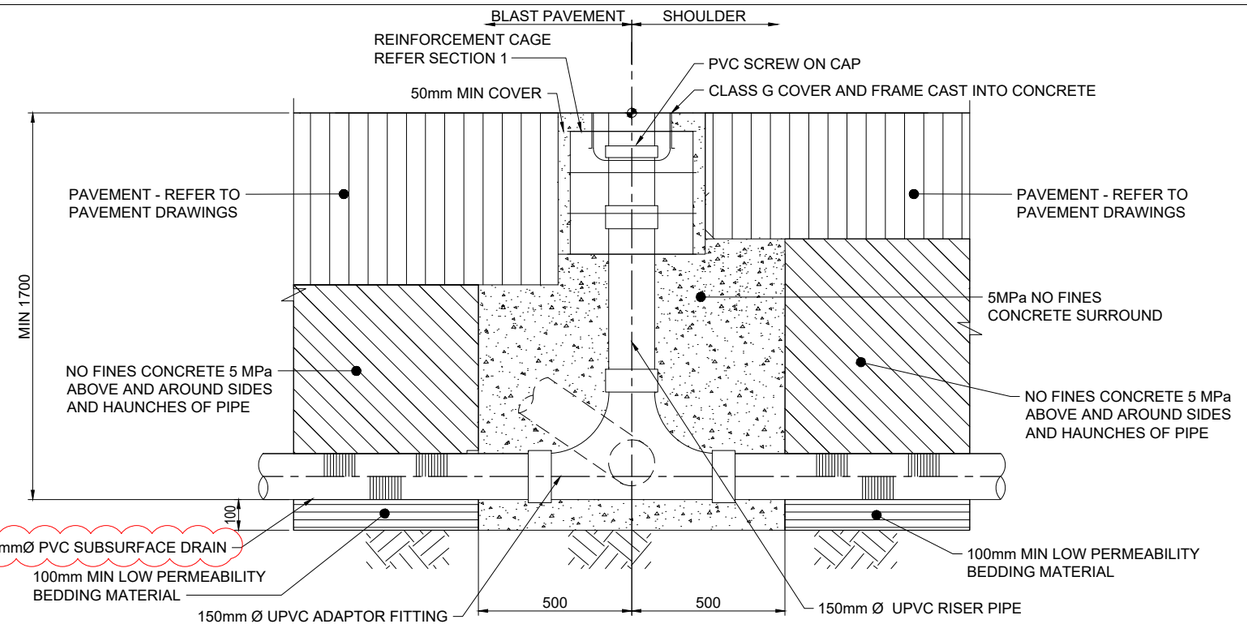
SCALE 1:10



FLUSH-OUT POINT
REINFORCEMENT CAGE DETAIL

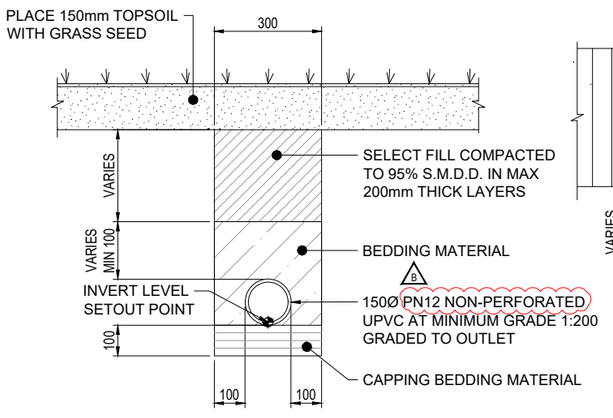
1 SECTION

SCALE 1:10



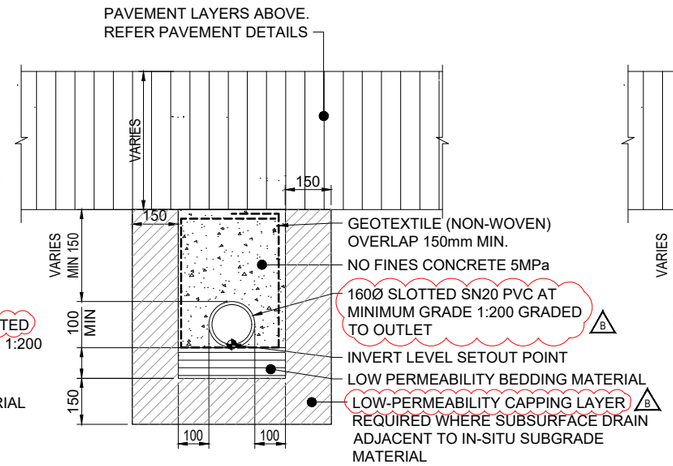
SUBSURFACE DRAIN INTERMEDIATE FLUSH-OUT POINT

SCALE 1:10



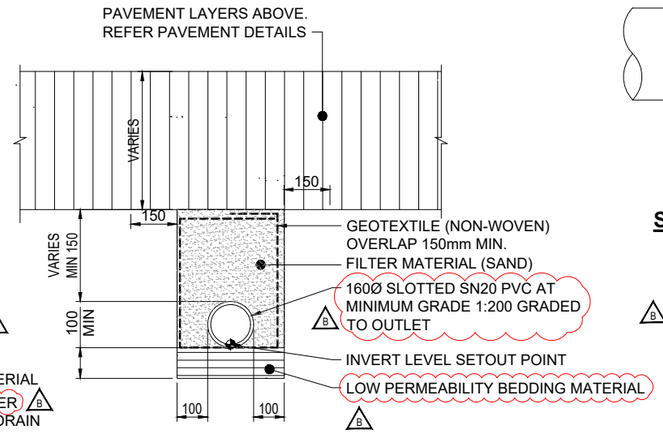
SUBSURFACE DRAIN (OUTSIDE PAVEMENT)

SCALE 1:10



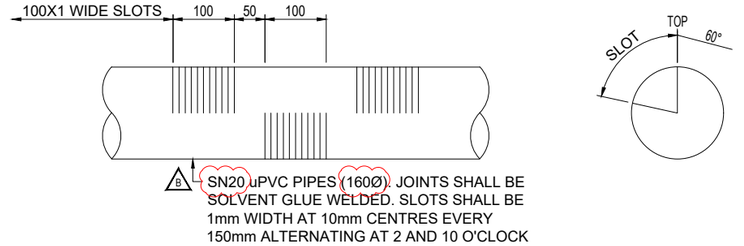
SUBSURFACE DRAIN (UNDER PAVEMENT)

SCALE 1:10



SUBSURFACE DRAIN (IN EXISTING CRUSHED ROCK)

SCALE 1:10



SLOTTED SUBSURFACE DRAIN DETAIL

SCALE 1:5

NOTES

B 1. 160Ø SN20 CLASS 1000 (PVC MATERIAL) SLOTTED PIPE SHALL BE USED. UNLESS SPECIFIED OTHERWISE.
2. FLUSH-OUT RISERS SHALL BE USED AT THE START OF RUNS AS SHOWN ON THE PLANS AND AT MAX. 120m INTERVAL.
3. GRADE SUBSURFACE DRAINS AT MIN. 1:200.
4. AT SUBSURFACE DRAINAGE CONNECTIONS CONTRACTOR TO USE APPROPRIATE AND APPROVED JOINT CONNECTION PRODUCT.
5. REFER TO SUBSURFACE DRAINAGE SCHEDULE FOR SETOUT INFORMATION.
B 6. IN A CASE WHERE THE FLUSH-OUT RISER LOCATION IS ADJACENT TO CONCRETE PAVEMENT, ENSURE THE RISER SURROUND ALIGNS WITH JOINTS AND AN EXPANSION JOINT PROVIDED (REFER TO DRG 80-5002).

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TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

SCALE K: 0 100 200 250mm — 1 : 10 (A3) 1 : 5 (A1)
SCALE J: 0 100 200 300 400 500 mm — 1 : 20 (A3) 1 : 10 (A1)

REGISTRATION

MA

PROJECT MANAGEMENT INITIALS

KT	MA	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	03.11.2023	ISSUED FOR TENDER
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NOT FOR CONSTRUCTION

PROJECT NUMBER

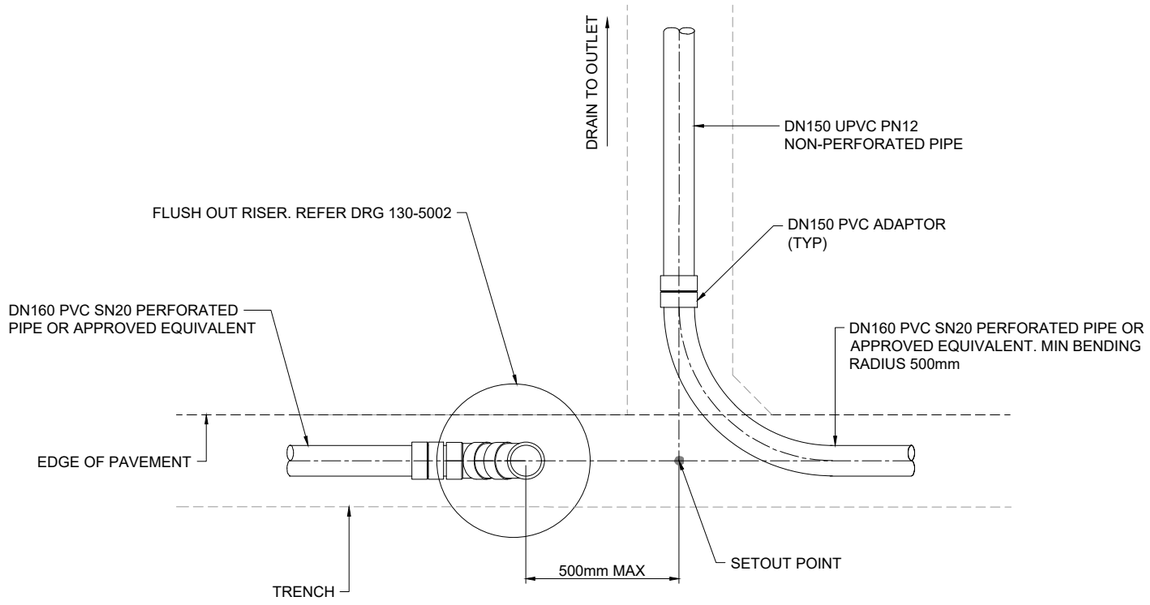
60705085

SHEET TITLE

MAPMP2
DESIGN PACKAGE 3 - STAGE 2
STORMWATER DRAINAGE AND HYDRAULICS DETAILS
SHEET 2

SHEET NUMBER

60705085-SHT-03_2-130-5002



SUBSURFACE DRAIN BENDING POINT
NTS

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MELBOURNE AIRPORT
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TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

REGISTRATION

MA

PROJECT MANAGEMENT INITIALS

KT	MA	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

I/R	DATE	DESCRIPTION
A	03.11.2023	ISSUED FOR TENDER

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PROJECT NUMBER

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SHEET TITLE

MAPMP2
DESIGN PACKAGE 3 - STAGE 2
STORMWATER DRAINAGE AND HYDRAULICS DETAILS
SHEET 3

SHEET NUMBER

60705085-SHT-03_2-130-5003

ISO A1 594mm x 841mm

NOTES

1. FOR NOTES REFER TO DRG 10-0003.
2. FOR LEGEND REFER TO DRG 10-0004.

TAXIWAY S

TAXIWAY W

W1

PHASE 2

PHASE 1

TAXIWAY A

PHASE 3

TAXIWAY K

TAXIWAY J

RUNWAY 16-34

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MAPMP 2 CP1002
DESIGN PACKAGE 3
TAXIWAY A STRUCTURAL REHAB

CLIENT

MELBOURNE AIRPORT

SCALE

SCALE Z

0 20 40 60 80 100m

1 : 4000 (A3) 1 : 2000 (A1)

REGISTRATION

CJ

PROJECT MANAGEMENT INITIALS

CJ	NW	BB
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	MGA94 Z55

ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	03.11.2023	ISSUED FOR TENDER
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PROJECT NUMBER

60705085

SHEET TITLE

MAPMP2
DESIGN PACKAGE 3 - STAGE 2
CONSTRUCTION STAGING PLAN

SHEET NUMBER

60705085-SHT-03_2-150-1001

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Appendix E

Review of listed flora and fauna

Flora

The following abbreviations and symbols are relevant to this Appendix:

Code	Meaning	Reference
National listings (EPBC Act)		
EX	Extinct	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)
CR	Critically endangered	
EN	Endangered	
VU	Vulnerable	
PMST	Protected Matters Search Tool	
State listings (FFG Act)		
x	Extinct	Victorian *Flora and Fauna Guarantee Act 1988* (FFG Act)
cr	Critically endangered	
e	Endangered	
v	Vulnerable	
t	Threatened	
P	Protected (public land only)	
Weed status (CaLP Act)		
SP	State prohibited species	Victorian *Catchment and Land Protection Act 1994* (CaLP Act)
RP	Regionally prohibited species	
RC	Regionally controlled species	
R	Restricted species	
Other		
#	Native species outside its natural range	Victorian Biodiversity Atlas (VBA)

A1.1 Listed flora species

The following table includes the listed flora species that have potential to occur within the project area. The list of species is sourced from the Protected Matters Search Tool (DCCEEW; accessed on 20 November 2023) and the Victorian Biodiversity Atlas (accessed on 20 November 2023).

Table A1.1 Listed flora species recorded / predicted to occur within 10 km of the project area

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
National significance								
Amphibromus fluitans	River Swamp Wallaby-grass	VU			PMST	Swampy areas, mainly along the Murray River between Wodonga and Echuca with scattered records from southern Victoria.	**Negligible**	No suitable habitat within the project area.
Dianella amoena	Matted Flax-lily	EN	cr	2021	PMST	Lowland grassland and grassy woodland, on well-drained to seasonally waterlogged fertile sandy loam soils to heavy cracking clays.	**Low**	Most grassland within the project area is species-poor, having been highly modified by grazing, sown pastures, earthworks and/or rock removal. Historical land uses and disturbances mean that this species is unlikely to be present. The extent and coverage of vegetation surveys over the past decade is likely to have detected an important population if one existing in the project area. Other more common members of this genus which otherwise also occupy this type of habitat are also absent.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
Diuris basaltica	Small Golden Moths	EN	cr	1962	PMST	Plains Grassland dominated by tussock-forming perennial grasses (including Kangaroo Grass); often with embedded surface basalt.	**Negligible**	No recent records from the local area. Most grassland within the project area is species-poor, having been highly modified by grazing, sown pastures, earthworks and/or rock removal.
Diuris fragrantissima	Sunshine Diuris	EN	cr	1974	PMST	Grassland dominated by Themeda trianda, on plains with heavy basalt soils and embedded boulders; only known naturally occurring population is in Sunshine.	**Negligible**	No recent records from the local area. Most grassland within the project area is species-poor, having been highly modified by grazing, sown pastures, earthworks and/or rock removal. Only known extant population is approximately 12 km south of the project area.
Dodonaea procumbens	Trailing Hop-bush	VU			PMST	Sandy or clay soils in low-lying, winter-wet areas in grasslands, woodlands, and low-open forest.	**Negligible**	No suitable habitat exists within the project area and the species has never been recorded from the local area or during detailed vegetation surveys within the project area over the past decade. The project area is outside the known distribution for the species, the nearest record being approximately 45 km west.
Eucalyptus crenulata	Buxton Gum	EN	e	2017		Alluvial soils in seasonally inundated depressions along river flats; records away from Buxton and Yering in the northeast are likely to be introductions.	**Negligible**	The project area is outside the natural range for this species. Any specimens in the local area are likely to be from cultivation.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
Glycine latrobeana	Clover Glycine	VU	v	1995	PMST	Grasslands and grassy woodlands, particularly those dominated by Kangaroo Grass.	**Low**	There are limited records within the local area and the most recent is old >20 years old. Potential habitat within the project area is marginal and unlikely to support the species. Most grassland within the project area is species-poor, having been highly modified by grazing, sown pastures, earthworks and/or rock removal.
Lachnagrostis adamsonii	Adamson's Blown-grass	EN	e		PMST	Low-lying, seasonally wet or swampy areas of plains communities, often in slightly saline conditions.	**Low**	Suitable habitat with moist saline soils is not present or very limited in the project area and, if present, is dominated by introduced grasses. Most records of this species are from south-west Victoria with only a few occurrences near Craigieburn north of Melbourne.
Lepidium aschersonii	Spiny Peppercress	VU	e		PMST	Heavy clay soils near salt lakes on the volcanic plains; disjunct records near Lake Omeo.	**Low**	Suitable habitat with moist saline soils is not present or very limited in the project area and, if present, is dominated by introduced grasses. Most records of this species are from south-west Victoria with only a few occurrences near Craigieburn north of Melbourne.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
Lepidium hyssopifolium s.s.	Basalt Peppercress	EN	e	2018		Basalt plains grassland and woodland communities.	**Negligible**	There are limited records within the local area and the most recent record is >20 years old. Habitat within the project area is marginal and unlikely to support this species. Most grassland within the project area is species-poor, having been highly modified by grazing, sown pastures, earthworks and/or rock removal.
Leucochrysum albicans subsp. *tricolor*	White Sunray	EN	e		PMST	Grasslands of the Victorian Volcanic Plains, primarily on acidic clay soils derived from basalt, with occasional occurrences on adjacent sedimentary, sandy-clay soils.	**Low**	Potential grassland habitat in the project area is modified and species poor. This species is generally known from intact species-rich basalt plains grasslands in south-west Victoria. This species is likely to have been detected during the past decade of vegetation surveys, if it were present.
Pimelea spinescens subsp. *spinescens*	Spiny Rice-flower	CR	cr	2020	PMST	Primarily grasslands featuring a moderate diversity of other native species and inter-tussock spaces, although also recorded in grassland dominated by introduced perennial grasses.	**Low**	While potentially suitable habitat is present within the project area and there are recent records of the species from the local area, the project area is unlikely to currently support the species due to the high levels of past landscape modification and current land management practices. The extent and coverage of vegetation surveys over the past decade is likely to have

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
								detected a population if one existed in the project area.
Prasophyllum suaveolens	Fragrant Leek-orchid	EN	cr	1962		Open, species rich grasslands dominated by Themeda triandra on poorly draining red-brown soils in western Victoria.	**Negligible**	There are limited records of this species within the local area and the closest record is >20 years old. The project area is also highly modified and likely to be unsuitable.
Pterostylis chlorogramma	Green-striped Greenhood	VU	e		PMST	Heathy woodland; more specific habitat requirements are poorly known.	**Negligible**	Suitable habitat is not present in the project area.
Pterostylis cucullata	Leafy Greenhood	VU			PMST	Protected areas of stabilised coastal sand dunes within scrub communities with an open ground layer; occasionally in Coastal Manna Gum woodland.	**Negligible**	Suitable habitat is not present in the project area as this subspecies is known mostly from coastal scrub habitats.
Rutidosis leptorhynchoides	Button Wrinklewort	EN	e	2015	PMST	Higher quality Plains Grassland and Grassy Woodland in Western Victoria, particularly those with fertile soil and light timber cover.	**Negligible**	While there are recent records (<20 years old) from the local area, the project area is unlikely to support the species due to the high levels of land modification and continued land management practices (e.g. grazing), which have led to relatively species-poor grassland being present. The species is generally only known

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
								from relatively undisturbed native grassland remnants.
Senecio macrocarpus	Large-headed Fireweed	VU	cr	2021	PMST	Grassland, shrubland and woodland habitats on heavy soils subject to waterlogging and/or drought conditions in summer.	**Low**	While there are recent records (<20 years old) from the local area, the project area is unlikely to support the species due to the high levels of land modification and continued land management practices (e.g. grazing), which have led to relatively species-poor grassland being present. This large and conspicuous herb is likely to have been detected during the past decade of vegetation surveys if a population were present.
Senecio psilocarpus	Swamp Fireweed	VU			PMST	Seasonally inundated herb-rich swamps, growing on peaty soils or volcanic clays.	**Negligible**	There is no suitable habitat located within the project area and the species is not known to be present in the local area.
Thelymitra orientalis	Slender Plum-orchid	CR	cr		PMST	Occur on white sands ans d sandy loams in heathland and in damper heaths.	**Negligible**	There is no suitable habitat located within the project area and no recent records from the local area.
Thesium australe	Austral Toad-flax	VU	e	1904		Most commonly in damp grassland and woodland, including subalpine grassy heathlands.	**Negligible**	There is no suitable habitat located within the project area and no recent records from the local area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
Xerochrysum palustre	Swamp Everlasting	VU	cr		PMST	Sedge-swamps and shallow freshwater marshes and swamps in lowlands, on black cracking clay soils.	**Low**	While there are recent records (<20 years old) from the local area, there is no suitable habitat within the project area.
State significance								
Acacia howittii	Sticky Wattle		v	2016		Moist forest. Natural occurrences are confined to South Gippsland and Central Highlands.	**Negligible**	No suitable habitat present within the project area.
Acacia rostriformis	Bacchus Marsh Wattle		v	2020		Occurs in low hilly areas in Eucalyptus woodland.	**Negligible**	There is no suitable habitat located within the project area. This large and conspicuous shrub is likely to have been detected during the past decade of vegetation surveys if a population were present.
Allocasuarina luehmannii	Buloke		cr	1996		Non-calcareous soils in drier areas on slopes and plains; often in woodlands associated with Grey Box.	**Low**	While there are recent records (<20 years old) from the local area, there is no suitable habitat present within the project area.
Botrychium australe	Austral Moonwort		cr	1983		Lowland forest and scrubland to subalpine grasslands, lightly wooded plains, at the base of granitic hills, alongside subalpine streams, and in some disturbed environments.	**Negligible**	There are limited records of the species within the local area and the closest record is >20 years old. There is no suitable habitat within the project area.
Calotis lappulacea	Yellow Burr-daisy		v	2014		Dry rocky country, open woodland, and fertile, loam or clay soils.	**Low**	While there are recent records (<20 years old) from the local area, there is no suitable habitat present within the

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
								project area. Vegetation within the project area is relatively species-poor.
Chloris ventricosa	Plump Windmill Grass		e	2011		Woodlands. Mainly found on clay soils, sometimes in winter-wet depressions.	**Low**	While there are recent records (<20 years old) in the local area, grassland within the project area is highly modified.
Cladium procerum	Leafy Twig-sedge		e	2018		Waterlogged soils, often along slow-flowing streams and lake margins.	**Negligible**	There are recent (<20 years old) records within the local area but vegetation in wetlands and along drainage lines is highly modified within the project area. This distinctive species is likely to have been detected during the past decade of vegetation surveys if a population were present.
Comesperma polygaloides	Small Milkwort		cr	2014		Grasslands on the western basalt plains; less commonly in grassy woodlands between Bendigo and the Wimmera.	**Low**	While there is potentially suitable (albeit highly modified) grassland habitat present within the project area, there are not recent (<20 years old) records from the local area. The species is relatively conspicuous when flowering and is likely to have been detected during the past decade of vegetation surveys if a population were present.
Coronidium gunnianum	Pale Swamp Everlasting		cr	2017		Widespread and sometimes locally common, particularly in high-rainfall areas of Victoria; often in moist	**Low**	While there are recent (<20 years old) records within the local area, wetland and regularly inundated grassland habitat within the project area

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
						sites in open forests and woodlands.		is highly modified and unlikely to support the species.
Corymbia maculata	Spotted Gum		v	2021		In Victoria, naturally confined to a small population near Mt Tara in the east of the state.	**Negligible**	The project area is outside the natural range for this species. Any specimens in the local area are likely to be planted.
Cullen parvum	Small Scurf-pea		e	1986		Lowland grasslands, including pastures and occasionally in otherwise disturbed grassy areas.	**Low**	While there are limited recent records within the local area, grassland within the project area is highly modified and unlikely to support a population of this species.
Cullen tenax	Tough Scurf-pea		e	2021		Lowland grasslands, including pastures and occasionally in otherwise disturbed grassy areas.	**Low**	While there are limited recent records within the local area, grassland within the project area is highly modified and unlikely to support a population of this species.
Dianella longifolia var. *grandis s.l.*	Glaucous Flax-lily		cr	2018		Grassland, grassy woodland and rocky outcrops of the Victorian Volcanic Plain and Victorian Riverina.	**Low**	Most grassland within the project area is species-poor, having been highly modified by grazing, sown pastures, earthworks and/or rock removal. Historical land uses and disturbances mean that this species is unlikely to be present. The extent and coverage of vegetation surveys over the past decade is likely to have detected an important population if one existing in the project area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
Dianella sp. aff. *longifolia (Benambra)*	Arching Flax-lily		t	2021		The habitat requirements of this species are poorly known.	**Low**	Most grassland within the project area is species-poor, having been highly modified by grazing, sown pastures, earthworks and/or rock removal. Historical land uses and disturbances mean that this species is unlikely to be present.
Diuris palustris	Swamp Diuris		e	1979		Grasslands and open woodlands, often in swampy depressions; confined to the west of the State.	**Negligible**	There is no suitably unmodified grassland habitat within the project area and no recent (<20 years old) records from the local area.
Diuris punctata var. *punctata*	Purple Diuris		e	1982		Fertile, loamy soils and periodically wet areas in lowland grasslands, grassy woodlands, heathy woodlands and open heathlands.	**Negligible**	There is no suitably unmodified grassland habitat within the project area and no recent (<20 years old) records from the local area.
Diuris X palachila	Broad-lip Diuris		e	1904		Heathlands, grasslands, open woodlands and dry open forests.	**Negligible**	There is no suitably unmodified grassland habitat within the project area and no recent (<20 years old) records from the local area.
Eleocharis plana	Flat Spike-sedge		cr	1986		Shallow freshwater pools and the margins of lakes and rivers.	**Negligible**	There is no suitably unmodified wetland habitat within the project area and no recent (<20 years old) records from the local area.
Eragrostis trachycarpa	Rough-grain Love-grass		e	1996		Moist grassland or grassy woodland sites.	**Low**	While there is potentially suitable habitat present within the project area, records from the local area are not recent

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
								and are thought to have been an accidental introduction.
Eremophila maculata subsp. *maculata*	Spotted Emu-bush		cr	2021		Mainly in Black Box forests or woodlands on heavy clay soils.	**Negligible**	No suitable habitat present within the project area.
Eucalyptus globulus subsp. *globulus*	Southern Blue-gum		e	2020		Damp forest communities. Restricted to South Gippsland and the Otway Ranges.	**Negligible**	The project area is outside the natural range for this species. Any specimens in the local area are likely to be planted.
Eucalyptus leucoxylon subsp. *connata*	Melbourne Yellow-gum		e	2017		Well-drained slopes in a restricted area around Melbourne and Geelong.	**Negligible**	There are recent records of this species in the local area (e.g. at Bulla). However, this is a large and conspicuous species that would have been identified during previous survey efforts.
Eucalyptus leucoxylon subsp. *megalocarpa*	Large-fruit Yellow-gum		cr	2018		Coastal, near Nelson.	**Negligible**	The project area is outside the natural range for this species. Any specimens in the local area are likely to be from cultivation.
Eucalyptus sideroxylon subsp. *sideroxylon*	Mugga		e	2021		Typically found on poor, shallow soils, including sands, gravels, ironstones and clays.	**Negligible**	No suitable habitat present within the project area.
Geranium solanderi var. *solanderi s.s.*	Austral Crane's-bill		e	2019		Grasslands or grassy woodlands where hydrology is not a limiting factor.	**Medium**	There are recent records from the local area and suitable habitat within the project area. The species is known to recolonise modified or disturbed grassland.
Geranium sp. *1*	Large-flower Crane's-bill		cr	2021		The habitat requirements of this species are poorly known.	**Medium**	There are recent records from the local area and suitable habitat within the project area. The species is known to

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
								recolonise modified or disturbed grassland.
Geranium sp. *3*	Pale-flower Crane's-bill		e	2016		Grasslands and dry woodlands.	**Medium**	There are recent records from the local area and suitable habitat within the project area. The species is known to recolonise modified or disturbed grassland.
Goodia medicaginea	Western Golden-tip		e	2021		Drier sites within wet or dry sclerophyll forests.	**Negligible**	While there are recent records from the local area, the species is a conspicuous shrub and is likely to have been detected during the past decade of vegetation surveys if a population were present within the project area.
Lachnagrostis semibarbata var. *semibarbata*	Purple Blown-grass		e	2001		Wet marshes and slightly saline swamps and depressions in plains communities.	**Low**	Suitable habitat with moist saline soils is not present or very limited in the project area and, if present, is dominated by introduced grasses.
Leiocarpa leptolepis	Pale Plover-daisy		e	1912		Grasslands and grassy woodlands, often in disturbed areas. In Victoria, confined to one known population approximately 4km east of Mildura.	**Negligible**	There are no recent (<20 years old) records of this species from the local area and the species is currently only known from north-west Victoria.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
Leionema bilobum subsp. *bilobum*	Truncate Leionema		v	2006		Endemic to heathland and heathy woodland, in the Grampians and mostly in the north and east (e.g. Mt Difficult, Mt William, Wonderland and Serra Ranges), but with isolated occurrences at Mt Zero and Wallaby Rocks. Usually in rocky, elevated sites.	**Negligible**	There is no suitable habitat within project area and the project area is outside of the natural range for this species. The species is a relatively conspicuous shrub and is likely to have been detected during the past decade of vegetation surveys.
Melaleuca armillaris subsp. *armillaris*	Giant Honey-myrtle		e	2021		Near coastal heath/scrub, rocky coast and foothill outcrops.	**Negligible**	No suitable habitat present within the project area and outside natural range for this species. Nearby records are likely to be planted.
Nicotiana suaveolens	Austral Tobacco		e	2021		Areas of sandy or gravelly soil typically associated with streams, gullies and other drainage lines; also grasslands and escarpment shrublands.	**Low**	While there are recent records of the species within the local area, grassland within the project area is highly modified and unlikely to still be suitable habitat. This large and conspicuous herb is likely to have been detected during the past decade of vegetation surveys if a population were present.
Podolepis linearifolia	Basalt Podolepis		e	2016		Grasslands and grassy woodlands.	**Low**	While there are recent records of the species within the local area, grassland within the project area is highly modified and unlikely to still be suitable habitat. This large and conspicuous herb is likely to

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
								have been detected during the past decade of vegetation surveys if a population were present.
Prostanthera nivea var. *nivea*	Snowy Mint-bush		v	2014		Largely confined to shrubland and open woodland associated with granite outcrops.	**Low**	No suitable habitat within the project area.
Pterostylis cucullata subsp. *cucullata*	Leafy Greenhood		e	1770		Protected areas of stabilised coastal sand dunes within scrub communities with an open ground layer; occasionally in Coastal Manna Gum woodland.	**Negligible**	Species is not known to be present in the local area.
Pterostylis truncata	Brittle Greenhood		cr	1931		Grassland and grassy woodland habitats, largely to the west of Melbourne.	**Negligible**	There are no recent (<20 years old) records of the species from the local area and the highly modified grassland within the project area is unlikely to be suitable habitat for the species.
Rhagodia parabolica	Fragrant Saltbush		v	2021		Plains and escarpment grassland, shrubland and woodland.	**Low**	While there are recent records of the species within the local area, many of these records are likely to be planted specimens. This large and conspicuous shrub is likely to have been detected during the past decade of vegetation surveys if a population were present.
Senecio cunninghamii var. *cunninghamii*	Branching Groundsel		e	1981		Heavy soils that are sometimes winter-wet, or dry rocky soils; often	**Negligible**	There are few records from the local area and all are >20 years old. The species is more commonly known from

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
						on embankments or escarpments.		northern Victoria. This large and conspicuous herb is likely to have been detected during the past decade of vegetation surveys if an important population was present.
Thelymitra gregaria	Basalt Sun-orchid		cr	1953		Open, species-rich grassland dominated by Themeda triandra on poorly draining soils of the volcanic plains.	**Negligible**	There are no recent (<20 years old) records of the species from the local area and the highly modified grassland within the project area is unlikely to be suitable habitat for the species.
Tripogonella loliiformis	Rye Beetle-grass		e	2016		Dry sites in association with escarpments and rocky outcrops.	**Low**	While there are recent (<20 years old) records from the local area and the species may have gone undetected during past surveys (due to its nature as a resurrection plant), most grassland within the project area is species-poor, having been modified by grazing, sown pastures, earthworks and/or rock removal.

Fauna

The following abbreviations and symbols are relevant to this Appendix:

Code	Meaning	Reference
National listings (EPBC Act)		
EX	Extinct	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)
CR	Critically endangered	
EN	Endangered	
VU	Vulnerable	
NT	Near threatened	
CD	Conservation dependent	
PMST	Protected Matters Search Tool	
State listings (FFG Act)		
x	Extinct	Victorian *Flora and Fauna Guarantee Act 1988* (FFG Act)
cr	Critically endangered	
e	Endangered	
v	Vulnerable	
t	Threatened	
P	Protected (fish only)	
Pest animal status (CaLP Act and Fisheries Act)		
PS	Declared pest animal	Victorian *Catchment and Land Protection Act 1994* (CaLP Act)
Other		
*****	Introduced species	Victorian Biodiversity Atlas (VBA)

A2.1 Listed fauna species

The following table includes a list of the listed fauna species that have potential to occur within the project area. The list of species is sourced from the Protected Matters Search Tool (DCCEEW; accessed on 20 November 2023) and the Victorian Biodiversity Atlas (accessed on 20 November 2023).

Table A2.1 Listed fauna species recorded, or predicted to occur, within 10 km of the project area

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
National significance								
Pedionomus torquatus	Plains-wanderer	CR	cr	1949	PMST	Native grassland with a sparse, open structure.	**Low**	Historically the open plains grassland at Melbourne Airport would have provided suitable habitat for this species but the area has since been heavily utilised for agriculture and the development of infrastructure such that suitable habitat is no longer present. The species is rarely recorded around Melbourne, a few recent records from the past 10 years occur around Ravenhall, Melton / Eynesbury and Balliang.
Rostratula australis	Australian Painted-snipe	EN	cr		PMST	Shallows of well-vegetated freshwater wetlands.	**Negligible**	No suitable habitat within the project area.
Botaurus poiciloptilus	Australasian Bittern	EN	cr	1950	PMST	Shallow freshwater and brackish wetlands with abundant emergent aquatic vegetation.	**Negligible**	No suitable habitat within the project area.
Falco hypoleucos	Grey Falcon	VU	v		PMST	Lightly timbered plains and Acacia scrub.	**Low**	May fly over the project area, but would be a rare visitor to the area. No previous records from the local area.
Calyptorhynchus banksii graptogyne	Red-tailed Black-Cockatoo	EN	e	1846		Desert Stringybark, Brown Stringybark	**Negligible**	Victorian population does not extend east of the Grampians. This species does not occur within the project area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
	(south-eastern)					and Buloke woodlands.		
Callocephalon fimbriatum	Gang-gang Cockatoo	EN	e	2002	PMST	S Vic to E NSW. Forests and woodlands from coast to alpine areas. Autumn-winter dispersal from highlands to lower elevations. Forages in eucalypts, acacias and some exotic garden trees and shrubs.	**Medium**	Species likely to utilise the adjacent woodland patches north of the project area, which may result in flights over the project area at times.
Polytelis swainsonii	Superb Parrot	VU	e	1846		Red-gum and box-dominated forests and woodlands.	**Low**	Project area is outside of the species known range. This species does not occur within the project area.
Neophema chrysostoma	Blue-winged Parrot	VU		2009	PMST	A range of coastal, sub-coastal and semi-arid regions throughout south-eastern Australia. Nests in tree hollows in coastal eucalypt forests and woodlands. Feeds on seeds of a range of native grasses and herbs.	**Low**	Suitable habitat located within the woodland, however there is no suitable habitat within this project area and the species may only fly over.
Lathamus discolor	Swift Parrot	CR	cr	2000	PMST	A range of forests and woodlands, especially those supporting nectar-producing tree	**Low**	The species has been recorded from the woodland located to the north of the project area in 2010, however there is no suitable habitat within this project area and the species may only fly over.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
						species. Also well-treed urban areas.		
Hirundapus caudacutus	White-throated Needletail	VU	v	2019	PMST	An almost exclusively aerial species within Australia, occurring over most types of habitat, particularly wooded areas.	**High**	It is likely that the species utilises the airspace at Melbourne Airport with the woodland providing preferable habitat for the species. There is an incidental record of the species from 2010 (Birdlife Australia) over Sky Road in Melbourne Airport and other records surrounding the Airport.
Sternula nereis nereis	Australian Fairy Tern	VU			PMST	Fairy Terns inhabit coastal environments including intertidal mudflats, sand flats and beaches. Nests above high-water mark on sandy shell-grit beaches.	**Negligible**	No suitable habitat for this species in the project area.
Sternula nereis	Fairy Tern	VU	cr	1977		Fairy Terns inhabit coastal environments including intertidal mudflats, sand flats and beaches. Nests above high-water mark on sandy shell-grit beaches.	**Negligible**	No suitable habitat for this species in the project area.
Charadrius mongolus	Lesser Sand Plover	EN	e	1978		Intertidal mudflats and sandbanks of sheltered bays and estuaries.	**Negligible**	No suitable habitat for this species in the project area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
Charadrius leschenaultii	Greater Sand Plover	VU	v		PMST	Intertidal mudflats and sandbanks of sheltered bays and estuaries.	**Negligible**	No suitable habitat for this species in the project area.
Numenius madagascariensis	Eastern Curlew	CR	cr	1977	PMST	Large intertidal sandflats, banks, mudflats, estuaries, inlets, coastal lagoons and bays.	**Negligible**	No suitable habitat for this species in the project area.
Limosa lapponica	Bar-tailed Godwit	VU	v	1977		Bar-tailed Godwits inhabit estuarine mudflats, beaches and mangroves. They are common in coastal areas around Australia. They are social birds and are often seen in large flocks and in the company of other waders.	**Negligible**	No suitable habitat for this species in the project area.
Calidris ferruginea	Curlew Sandpiper	CR	cr	1977	PMST	Large intertidal sandflats, banks, mudflats, estuaries, inlets, sewage farms, saltworks, harbours, coastal lagoons and bays.	**Negligible**	No suitable habitat for this species in the project area.
Calidris canutus	Red Knot	EN	e		PMST	Large intertidal sandflats, banks, mudflats, estuaries, inlets,	**Negligible**	No suitable habitat for this species in the project area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
						sewage farms, saltworks, harbours, coastal lagoons and bays.		
Melanodryas cucullata	Hooded Robin	EN	v	1846	PMST	Woodlands of eucalypt, Mallee, semi-cleared farmland.	**Low**	Suitable habitat located within the woodland, however there is no suitable habitat within this project area and the species may only fly over.
Aphelocephala leucopsis	Southern Whiteface	VU		1995	PMST	Occurs in a wide range of open woodlands and shrublands, favouring sparsely treed areas with an herbaceous understorey containing grasses and/or shrubs.	**Low**	Suitable habitat located within the woodland, however there is no suitable habitat within this project area and the species may only fly over.
Grantiella picta	Painted Honeyeater	VU	v		PMST	Dry open woodlands and forests. Typically forages for fruit and nectar in mistletoes and in tree canopies.	**Negligible**	Species rarely recorded south of the Great dividing range and not recorded regularly within 50km of Melbourne Airport. No suitable woodland habitat is present within the project area.
Anthochaera phrygia	Regent Honeyeater	CR	cr	1846	PMST	A range of dry woodlands and forests dominated by nectar-producing tree species.	**Negligible**	Although on occasion the odd individual of this species turns up in the local area Melbourne is considered outside of the species current range and no suitable woodland habitat is present within the project area.
Stagonopleura guttata	Diamond Firetail	VU	v	1990	PMST	Open forests and woodlands with a grassy ground layer.	**Negligible**	No suitable habitat for this species in the project area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
Climacteris picumnus	Brown Treecreeper	VU		1991	PMST	Open eucalypt forests, woodlands and Mallee, often where there are stands of dead trees.	**Negligible**	No suitable habitat for this species in the project area.
Dasyurus maculatus maculatus (SE mainland population)	Spot-tailed Quoll	EN	e		PMST	Rainforest and wet and dry sclerophyll forests and woodlands.	**Negligible**	No suitable habitat for this species in the project area.
Perameles gunnii Victorian subspecies	Eastern Barred Bandicoot (Mainland)	EN			PMST	Natural temperate grasslands and grassy woodlands.		
Perameles gunnii	Eastern Barred Bandicoot	EN	e	2021		Natural temperate grasslands and grassy woodlands.	**Negligible**	Although the species historically would have occurred within the open plains grassland and woodland at Melbourne Airport the species is now extinct in the wild in Victoria.
Petaurus australis	Yellow-bellied Glider	VU	v		PMST	Sclerophyll forest with large hollow-bearing trees, prefers mature eucalypt dominated forest and woodland. Distributed along South-eastern Australia.	**Negligible**	No suitable habitat for this species in the project area.
Pseudomys novaehollandiae	New Holland Mouse	VU	e		PMST	Coastal heathland, heathy woodland and dry sclerophyll forest.	**Negligible**	No suitable habitat for this species in the project area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
Pteropus poliocephalus	Grey-headed Flying-fox	VU	v	2021	PMST	Rainforest, wet and dry sclerophyll forest, woodland and urban areas.	**Medium**	Species likely to utilise flowing trees adjacent to the project area, which may result in flights over the project area at times.
Aprasia parapulchella	Pink-tailed Worm-Lizard	VU	e		PMST	Woodland and grassland with partially buried rocks.	**Negligible**	Suitable grassland habitat for this species within the project area, however the species has only been recorded around the Bendigo area.
Delma impar	Striped Legless Lizard	VU	e	2019	PMST	Natural temperate grassland, grassy woodland and exotic grassland.	**Low**	Extensive targeted surveys have been previously undertaken at Melbourne Airport, and the species was not detected. Based on the results of previous surveys undertaken more broadly, and the modified nature of habitat present, this species is considered to have a low likelihood of occurrence.
Lissolepis coventryi	Swamp Skink	EN	e		PMST	Densely vegetated swamps and associated watercourses, and adjacent wet heaths, sedgelands and saltmarshes.	**Low**	No suitable habitat for this species in the project area.
Tympanocryptis pinguicolla	Grassland Earless Dragon	CR	cr	1884	PMST	Natural temperate grassland.	**Negligible**	Considered to be locally extinct.
Litoria raniformis	Growling Grass Frog	VU	v	2019	PMST	Still or slow-flowing waterbodies and surrounding terrestrial vegetation.	**Low**	Species is known to occur in connected waterways in the broader local area, however no suitable habitat within the project area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
Prototroctes maraena	Australian Grayling	VU	e	2015	PMST	Adults inhabit cool, clear, freshwater streams.	**Low**	No suitable habitat within the project area.
Maccullochella macquariensis	Trout Cod	EN	e	1908		Streams characterised by a high abundance of large woody debris.	**Low**	Project area is outside accepted range of the species. Historic records represent failed translocations.
Maccullochella peelii	Murray Cod	VU	e	1981	PMST	A diverse range of stream habitats in the Murray-Darling basin; principally the main channels of rivers and their major tributaries.	**Low**	Project area is outside accepted range of the species. Historic records represent failed translocations.
Macquaria australasica	Macquarie Perch	EN	e	1970		Streams with clear water and deep, rocky holes with abundant cover.	**Low**	Project area is outside accepted range of the species. Historic records represent failed translocations.
Nannoperca obscura	Yarra Pygmy Perch	VU	v		PMST	Lakes, pools and slow-flowing streams with abundant aquatic vegetation.	**Negligible**	No suitable habitat within the project area.
Bidyanus bidyanus	Silver Perch	CR	e	1981		Lowland streams within the Murray-Darling Basin.	**Negligible**	No suitable habitat within the project area.
Synemon plana	Golden Sun Moth	VU	v	2020	PMST	Natural temperate grassland, grassy woodland and pasture supporting spear grasses and	**Low**	Highly disturbed grassland areas adjacent to runways, taxiways and taxi lanes unlikely to be suitable habitat for this species. APAM have previously indicated that the areas immediately adjacent to the runways are sprayed

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
						wallaby grasses and exotic grassland dominated by Chilean needle grass.		with insecticide to reduce the risk of bird collisions with aircraft.
Paralucia pyrodiscus lucida	Eltham Copper Butterfly	EN	e	1922		Drier sclerophyll forests and woodlands supporting Sweet Bursaria *Bursaria spinosa*, especially along ridgelines.	**Negligible**	Project area is outside accepted range of the species, and no suitable habitat present.
State significance								
Geopelia cuneata	Diamond Dove		v	1999		Drier woodlands and scrub, spinifex and mulga.	**Low**	No suitable habitat within the project area.
Lewinia pectoralis	Lewin's Rail		v	1991		Swamps, dense riparian vegetation and saltmarsh.	**Low**	Confined to vicinity of watercourses and dams however there is limited suitable habitat present in the project area for this species.
Burhinus grallarius	Bush Stone-curlew		cr	1846		Open woodland, treed farmland.	**Negligible**	Lack of suitable habitat. Site is outside accepted range of the species.
Ardeotis australis	Australian Bustard		cr	1846		Grassland, open dry woodlands of Mallee and mulga, arid heathland saltbush and bluebush.	**Negligible**	Locally extinct.
Egretta garzetta	Little Egret		e	2019		Swamps, billabongs, floodplain pools, mudflats, mangroves and channels; breeds	**Low**	No suitable habitat within the project area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
						in trees standing in water.		
Ardea intermedia plumifera	Plumed Egret		cr	1980		Densely-vegetated freshwater wetlands including lakes, swamps and billabongs. Breeds in trees standing in water.	**Low**	No suitable habitat within the project area.
Ardea alba modesta	Eastern Great Egret		v	2021		Flooded crops, pasture, swamps, lagoons, saltmarsh, sewage ponds, estuaries, dams, roadside ditches. Breeds in trees standing in water.	**Low**	No suitable habitat within the project area.
Ixobrychus dubius	Australian Little Bittern		e	1980		Freshwater swamps, lakes and rivers with dense reedbeds, saltmarsh and coastal lagoons.	**Negligible**	No suitable habitat within the project area.
Anseranas semipalmata	Magpie Goose		v	2016		Swamps, lakes, sewage ponds, flooded pasture, dams.	**Negligible**	No suitable habitat within the project area.
Spatula rhynchotis	Australasian Shoveler		v	2019		Variety of wetlands, with a preference for large, permanent, freshwater lakes/swamps with dense	**Low**	No suitable habitat within the project area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
						fringing vegetation.		
Stictonetta naevosa	Freckled Duck		e	2007		Large freshwater wetlands, generally with dense vegetation.	**Low**	No suitable habitat within the project area.
Aythya australis	Hardhead		v	2020		Deep freshwater swamps and wetlands, with abundant aquatic and terrestrial vegetation for roosting. Can occur in sheltered estuaries.	**Low**	No suitable habitat within the project area.
Oxyura australis	Blue-billed Duck		v	2019		Open or densely vegetated wetlands.	**Low**	No suitable habitat within the project area.
Biziura lobata	Musk Duck		v	2019		Deep, permanent freshwater wetlands with areas of open water and patches of dense aquatic vegetation.	**Low**	No suitable habitat within the project area.
Accipiter novaehollandiae	Grey Goshawk		e	2018		Rainforest, gallery forest, tall wet forest and woodland. Also partially cleared agricultural land.	**Low**	No suitable habitat within the project area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
Hieraaetus morphnoides	Little Eagle		v	2017		Woodland and open areas. Rabbits are a key component of their diet. Nesting occurs in mature trees in open woodland or riparian vegetation.	**Medium**	Suitable habitat present in the broader local area and the species may forage over the project area.
Haliaeetus leucogaster	White-bellied Sea-Eagle		e	2019		Coastal areas such as beaches and estuaries, inland wetlands and major inland streams.	**Low**	May visit waterways and dams in the broader local area but unlikely to make significant use of the project area.
Falco subniger	Black Falcon		cr	2018		Woodlands, open country and around terrestrial wetlands areas, including rivers and creeks. Primarily occurs in arid and semi-arid zones in the north, north-west and west of Victoria.	**Medium**	Area adjacent to runways is highly managed to prevent prey (rabbits, rodents etc) and scare cannon guns are used to prevent bird activity in the area. However, suitable habitat present in the broader local area and the species may forage over the project area occasionally.
Neophema pulchella	Turquoise Parrot		v	2000		Woodlands and associated grasslands.	**Low**	No recent records in the local area. Some suitable habitat nearby but is likely only to be a rare visitor.
Hydroprogne caspia	Caspian Tern		v	2007		Estuaries, inlets, bays, lagoons, inland lakes, flooded pasture, sewage ponds.	**Low**	No suitable habitat within the project area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
Actitis hypoleucos	Common Sandpiper		v	1981	PMST	Migrates to Australia from Eurasia in August where it inhabits a wide variety of coastal and inland wetlands with muddy margins before departing north in March.	**Negligible**	No suitable habitat within the project area.
Tringa nebularia	Common Greenshank		e		PMST	A variety of ephemeral and permanent inland wetlands and sheltered coastal wetlands.	**Negligible**	No suitable habitat within the project area.
Tringa stagnatilis	Marsh Sandpiper		e	2018		Permanent or ephemeral wetlands, mudflats and saltmarshes in coastal and inland environments.	**Negligible**	No suitable habitat within the project area.
Pomatostomus temporalis	Grey-crowned Babbler		v	1846		Open forests and woodlands.	**Negligible**	Site is outside current accepted range of the species.
Pyrrholaemus sagittatus	Speckled Warbler		e	2018		Eucalypt woodland with rocky gullies, ridges, tussock grasses and a sparse shrub understorey.	**Low**	Confined to woodland areas and therefore unlikely to occur within the project area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
Phascogale tapoatafa	Brush-tailed Phascogale		v	2017		Drier sclerophyll forests and woodlands.	**Low**	No woodland habitat within the project area
Sminthopsis crassicaudata	Fat-tailed Dunnart		v	1990		Inhabits sparse grasslands and open shrubland habitats, usually where there is a significant component of bare ground and suitable refuge sites such as surface rocks or logs where it constructs nests of grass or other dried plant material.	**Low**	Low quality habitat within the project area, lacking suitable habitat components such as logs and rocks. The species has not been recorded within the local area (<10 kms) within the last 20 years.
Ornithorhynchus anatinus	Platypus		v	1999		A variety of freshwater waterbodies, particularly those with stable banks suitable for burrows, and shallow waters for foraging.	**Low**	No suitable habitat within the project area, and no downstream records of the species within the last 20 years.
Saccolaimus flaviventris	Yellow-bellied Sheathtail Bat		v	1932		A variety of habitats, ranging from wet forests to desert.	**Low**	May occasionally fly over the project area, however no suitable roosting habitat within the project area.
Miniopterus orianae oceanensis	Eastern Bent-winged Bat		cr	2013		A variety of treed and treeless habitats. Roosts in	**Low**	May fly over the project area, however no suitable roosting habitat within the project area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
						caves and man-made structures.		
Pogona barbata	Bearded Dragon		v	1988		Woodlands, forests and heathlands with abundant cover of course woody debris.	**Low**	No suitable habitat within the project area, outside current accepted range for the species.
Pseudemoia pagenstecheri	Tussock Skink		e	2020		On the ground in a range of grasslands or sparse grassy woodlands from alps to coast.	**High**	Species recorded during targeted surveys for SLL. Seventeen Tussock Skink were captured and recorded during the SLL tile surveys. Suitable habitat is present within grassland habitat throughout the project area and was recorded from tile grids landside and airside.
Emydura macquarii	Murray River Turtle		cr	2017		A medium sized freshwater turtle that inhabits inland river systems including the Murray-Darling catchment.	**Low**	Introduced to waterways in the local area, but considered unlikely to be present within the project area.
Pseudophryne bibronii	Brown Toadlet		e	1994		A wide variety of woodland, forest and grassland habitats, where it shelters under leaf litter and other debris in moist soaks and depressions. Breeds in swamps and inundated	**Low**	Suitable habitat present for the species in wooded areas near the project area, however no suitable habitat within the project area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
						habitats, and along creek lines.		
Pseudophryne semimarmorata	Southern Toadlet		e	1961		A wide variety of woodland, forest and grassland habitats, where it shelters under leaf litter and other debris in moist soaks and depressions. Breeds in swamps and inundated habitats, and along creek lines.	**Low**	Very few records from the broader local area, as the project area is outside current accepted range.
Neochanna cleaveri	Australian Mudfish		e	2008		Freshwater habitats with abundant aquatic vegetation such as streams, backwaters, billabongs and floodplain wetlands.	**Low**	No suitable habitat within the project area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in project area	Rationale for likelihood ranking
		EPBC	FFG					
Jalmenus icilius	Amethyst Hairstreak Butterfly		e	1921		Occurs in open woodland, grassland and arid woodland in all mainland states. Adults feed on flowers and are generally seen in or near patches of suitable larval food plants. In Victoria, the larvae feed mainly on acacias. The larvae are attended by the ant species *Iridomyrmex rufoniger*. This species was considered to be extinct in the Melbourne region until it was rediscovered in the Amber fields Grassland Reserve in Craigieburn in 2015.	**Low**	One recorded from similar habitat within 10km of the project area. Records of this species in the Melbourne area are very uncommon and the species has not been observed during other various ecological surveys at Melbourne Airport to date.

A2.2 Migratory species (EPBC Act listed)

Table A2.2 Migratory fauna species recorded or predicted to occur within 10 km of the project area

Scientific name	Common name	Most recent record
Migratory species		
Gallinago hardwickii	Latham's Snipe	2019
Plegadis falcinellus	Glossy Ibis	2006
Hirundapus caudacutus	White-throated Needletail	2019
Apus pacificus	Fork-tailed Swift	2006
Pandion haliaetus	Osprey	PMST
Ardenna tenuirostris	Short-tailed Shearwater	2008
Sterna hirundo	Common Tern	2006
Hydroprogne caspia	Caspian Tern	2007
Thalasseus bergii	Crested Tern	2021
Charadrius mongolus	Lesser Sand Plover	1978
Charadrius bicinctus	Double-banded Plover	2004
Charadrius leschenaultii	Greater Sand Plover	PMST
Numenius madagascariensis	Eastern Curlew	1977
Limosa lapponica	Bar-tailed Godwit	1977
Actitis hypoleucos	Common Sandpiper	1981
Tringa nebularia	Common Greenshank	PMST
Tringa stagnatilis	Marsh Sandpiper	2018
Calidris ferruginea	Curlew Sandpiper	1977
Calidris acuminata	Sharp-tailed Sandpiper	2009
Calidris canutus	Red Knot	PMST
Calidris alba	Sanderling	1977
Calidris melanotos	Pectoral Sandpiper	PMST
Motacilla flava	Yellow Wagtail	PMST
Rhipidura rufifrons	Rufous Fantail	2021
Myiagra cyanoleuca	Satin Flycatcher	1979
Monarcha melanopsis	Black-faced Monarch	PMST

Appendix F

Detailed native vegetation survey method

Detailed native vegetation survey methods

Vegetation assessments followed a three-step approach:

1. Identifying and mapping all native vegetation using the Victorian EVC classification system
2. Identifying and mapping all areas of native vegetation that satisfy the criteria for a TEC listed under the EPBC Act
3. Assessing the quality of all TECs present.

Native vegetation patches were identified and mapped using the ArcGIS Collector app on a GPS-enabled tablet. This mapping relied on definitions provided in the Victoria Planning Provisions (VPP), NatureKit (DELWP 2020) and Guidelines for the Removal, Destruction or Lopping of Native Vegetation (DELWP 2017). Key definitions are outlined in Table A1.

Patches of native vegetation were assigned to appropriate EVCs with reference to EVC benchmarks for the appropriate bioregion (DSE 2004a, DSE 2004b), NatureKit's EVC modelling (DELWP 2020), maps dating back to 1840 (Kemp 1840, DoL c. 1849, Hoddle 1850, DoD 1915, DoD 1938, DCLS 1946), geological mapping (Mines Department 1970, Mines Department 1973, DNRE 1997, Senversa 2020 (unpublished)) and previous studies (McDougall 1987, Biosis 2015, Biosis 2019).

Vegetation patches were mapped at a scale of 10 square metres (0.001 hectares) for the following reasons:

- The EPBC Act Offset Assessment Guide (DSEWPaC 2012b) requires a scale of at least 0.01 hectares for quantifying impacts on threatened ecological communities. Melbourne Airport's mapping, on a 0.001-hectare scale (i.e. one order of magnitude finer resolution), allows for accurate addition and rounding of impacts
- A scale of 0.001 hectares is the scale required to map 0.001 habitat hectares (assuming a perfect vegetation condition score) which is the scale required by DELWP's Native Vegetation Offset Register for securing offset sites in Victoria
- A scale of 10 square metres was approximately within the resolution of the error of the GPS-enabled tablet.

Table A1 Key definitions used for identifying and mapping native vegetation at Melbourne Airport

Term	Definition	Reference
Native vegetation	Plants that are indigenous to Victoria, including trees, shrubs, herbs, and grasses.	VPP, cl. 73.01
Patch of native vegetation	An area of vegetation where at least 25% of total perennial understorey plant cover is native or any area with three or more native canopy trees where the drip line of each tree touches the drip line of at least one other tree, forming a continuous canopy (Note that the Current Wetlands Map has been excluded from this definition).	DELWP 2017, p.6
Scattered tree	A native canopy tree that does not form part of a patch.	DELWP 2017, p.6

Term	Definition	Reference
Canopy tree	A mature tree (i.e. it is able to flower) greater than 3 metres in height and normally found in the upper layer of the relevant vegetation type (EVC).	DELWP 2017, p.35
Ecological Vegetation Class (EVC)	A native vegetation type classified on the basis of a combination of its floristics, lifeforms and ecological characteristics.	DELWP 2017, p.35

Detailed Threatened Ecological Communities (TEC) assessment methods

Vegetation corresponding to the NTGVVP TEC was identified and mapped using ArcGIS Collector on a GPS-enabled tablet. EVC mapping helped identify the potential presence of NTGVVP.

When mapping NTGVVP, the following considerations applied:

- Only naturalised flora species were considered. Planted vegetation was not considered as contributing to total vegetation cover.
- Vegetation boundaries were mapped as they appeared on the ground at the time of the assessment. For example, the presence and cover of introduced annuals is not considered when mapping NTGVVP. When introduced species that may have annual or perennial life histories (e.g. Ox-tongue *Helminthotheca echioides*) were encountered, only the life history traits that the plants appeared to be exhibiting at the time of the assessment were considered. Therefore, if plants appeared to be one year old and persisting in favourable conditions (e.g. high-nutrient drainage lines) they were considered perennial. When there was doubt, it was assumed the plants were annual.

A field checklist was devised for determining the presence of the NTGVVP TEC (Table A2), which relies upon the diagnostic characteristics and condition thresholds outlined in the listing advice (TSSC 2008). Where the listing advice was unclear, further clarity was sought from the NTGVVP Information Sheet (DSEWPaC 2011) and, if required, guidance provided by DCCEEW (and its predecessors).

The field checklist was used to identify the presence or absence of NTGVVP in areas mapped as suitable EVCs (e.g. Heavier-soils Plains Grassland). The checklist was also used in areas of predominantly introduced vegetation previously mapped as NTGVVP to confirm they no longer satisfied the key diagnostic characteristics and condition thresholds of the TEC.

The field checklist relies on accurate plant-cover estimates being obtained. To ensure that assessments were consistent and standardised, cover estimates were made with reference to predefined cover charts.

Where cover estimates were close to a condition threshold, gridded 1x1 metre quadrats were used to objectively sample plant covers within the grassland patch and confirm the veracity of the cover estimates.

The 1x1 metre quadrats were gridded with 10 horizontal and 10 vertical string lines, resulting in 100 intersection points at which flora species were recorded (allowing for an objective estimate of the percentage cover of each plant species across the square metre). Where the gridded 1x1 metre quadrats were used, patches were randomly sampled to avoid sampling bias.

The listing advice includes minimum contiguous size thresholds for a grassland patch to qualify as NTGVVP. It uses terms such as ‘native vegetation remnant’ and ‘grassland patch’ (TSSC 2008, p.3).

For the purpose of assessing size thresholds, the 'grassland patch' was taken to be the NTGVVP patch rather than the (generally larger) Heavier-soils Plains Grassland patch. In addition, the 'native vegetation remnant' was taken to be the contiguous 'patch of native vegetation' as defined in Table A1 rather than a contiguous area of one or more TECs. DAWE confirmed that this was an appropriate interpretation of the listing advice (J. Vranjic, DAWE, pers. comm., March 2020).

This literal interpretation of the NTGVVP listing advice size thresholds had the following implications for grassland patches that otherwise met all other key diagnostic characteristics and condition thresholds for NTGVVP:

- The grassland patch was not considered to be NTGVVP if the grassland patch was less than 0.05 hectares even if all other key diagnostic characteristics and condition thresholds were met
- Where the grassland patch was contiguous with other native vegetation that did not satisfy key diagnostic characteristics or condition thresholds for NTGVVP, together forming a native vegetation remnant of one hectare or less, the grassland patch was considered to be NTGVVP only if the grassland patch was at least 0.05 hectares
- Where the grassland patch was contiguous with other native vegetation that did not satisfy key diagnostic characteristics or condition thresholds for NTGVVP, together forming a native vegetation remnant of more than one hectare, the grassland patch was considered to be NTGVVP only if the grassland patch was at least 0.5 hectares.

This literal interpretation results in an anomaly whereby small patches of grassland (at least 0.05 hectares but less than 0.5 hectares) are considered to be NTGVVP when they are part of small native vegetation remnants (one hectare or less) but not when they form part of larger vegetation remnants (greater than one hectare). In effect, small patches of grassland with greater connectivity with surrounding native vegetation are less likely to meet the minimum size thresholds for NTGVVP. DAWE has confirmed that this anomaly is nevertheless the correct interpretation of the listing advice (J. Vranjic, DAWE, pers. comm., 19 March 2020).

Table A2 NTGVVP Field Checklist

Habitat zone:		**Date:**		**Recorder:**	
1.	Time since mowing/grazing/burning:	Days	Weeks	Months	
2.	Do native flora make up ≥50% of total vegetation cover, ex. introduced annuals?				Y / N
	% cover of all native flora (incl. native annuals):				
	% cover perennial weeds:				
3.1	Do *Themeda*, *Rytidosperma*, *Austrostipa* and/or *Poa* (circle genera that are present) make up ≥50% native cover AND ≥50% of total perennial tussock cover?				Y / N
	% cover of *Themeda*/*Rytidosperma*/*Austrostipa*/*Poa*:				
	% cover of all perennial tussocks (native and introduced):				
3.2	If total perennial tussock cover represented by *Themeda*, *Rytidosperma*, *Austrostipa* and/or *Poa* is <50%, then is ground cover of native forbs (wildflowers) ≥50% of total vegetation cover during spring-summer (September to February)?				Y / N
	% cover of all vegetation (native and introduced, ex. moss, lichen and introduced annuals):				
	% cover of native forbs:				

3.3	Do *Themeda*, *Rytidosperma*, *Austrostipa* and/or *Poa* (circle genera that are present) make up ≥50% native cover AND is cover of perennial non-grass weeds <30% of total vegetation cover at any time of the year?	Y / N
	% cover of all vegetation (native and introduced, ex. moss, lichen and introduced annuals):	
	% cover of perennial non-grass weeds:	
4.1	For native vegetation remnant of ≤1ha: is contiguous grassland patch ≥0.05ha AND do shrubs/trees >1m tall have % crown cover of ≤5%?	Y / N
	Area (ha) of contiguous grassland patch:	
	% crown cover of shrubs and trees >1m tall:	
4.2	For native vegetation remnant of >1ha: is contiguous grassland patch ≥0.5ha AND are there <2 mature (*not defined) trees/ha?	Y / N
	Area (ha) of contiguous grassland patch:	
	# mature trees within patch:	
5.	Is NTGVVP present (i.e. responded Y to 2, 3 and 4)? If Y, proceed to VQA.	Y / N

Quality assessment

The quality of native vegetation corresponding to the NTGVVP TEC was assessed using the habitat hectare (vegetation quality assessment) methodology (DSE 2004c).

DCCEEW has previously endorsed the 'habitat hectare' method as appropriate for assessing the condition of TECs such as NTGVVP.

The habitat hectare score comprised the following:

- A condition score (out of 75) incorporating values for understorey, lack of weeds, recruitment, organic litter and, where relevant, large trees, canopy cover and logs. The following qualifications should be noted:
  - Condition scores were determined with reference to relevant EVC benchmarks maintained by DELWP
  - Where components of the score were not relevant (e.g. values for large trees, canopy cover and logs are not part of the benchmark for Heavier- soils Plains Grassland) the condition score was standardised to provide a score out of 75
  - The condition score considered only the condition of native vegetation corresponding to the TEC. The condition of any contiguous vegetation of the same EVC was not considered. For example, where a patch of NTGVVP formed part of a broader patch of Heavier-soils Plains Grassland EVC, the condition score only considered what was present within the smaller NTGVVP patch
  - In accordance with the habitat hectare methodology, vegetative life forms in the understorey were 'assessed according to their current appearance and height, not according to their predicted mature expression' (DSE 2004c, p.18) with reference to the life-form category definitions provided in Appendix 6 of the Vegetation Quality Assessment Manual (DSE, 2004 p.58). As a result, if a grass species (e.g. Spear Grass *Austrostipa* spp.) that would normally have an inflorescence more than one metre in height had been slashed to a height of 20 centimetres, it was recorded as a medium tufted graminoid rather than a large tufted graminoid. Similarly, if both woody and non-woody individuals of a species (e.g. Berry Saltbush *Atriplex semibaccata* or Ruby

Saltbush *Enchylaena tomentosa* var. *tomentosa*) were observed, they were recorded in both shrub (woody) and herb (non-woody) life-form categories.

- A landscape score (out of 25), incorporating values for patch size, percentage of native vegetation in the surrounding area (neighbourhood) and distance to core area. The following qualifications should be noted:
  - Patch size was taken to be the size of the entire contiguous patch of native vegetation (as defined in Table A1) rather than the size of the TEC that may have been a subset of the broader patch of native vegetation. For example, where a patch of NTGVVP was part of a larger patch of contiguous Heavier-soils Plains Grassland EVC patch, patch size was taken to be the size of the broader Heavier-soils Plains Grassland patch. This means that TECs, buffered by areas of native vegetation that did not meet the criteria of the threatened ecological community, nevertheless received slightly higher patch-size values than TECs with no native vegetation buffers
  - Percentage of native vegetation in the neighbourhood was determined with reference to contemporary native vegetation mapping that had been completed in the surrounding area as part of the same project and, where areas of the neighbourhood had not been assessed, DELWP's 2005 EVC modelling via NatureKit.

Appendix G

Detailed survey methods for threatened species

Targeted fauna survey methods

Golden Sun Moth

Previous survey effort

A desktop review was undertaken of all previous Golden Sun Moth survey reports at the Melbourne Airport. These reports include:

- GAGIN 2008. Habitat Assessment and Presence of Synemon plana (Golden Sun Moth), Melbourne Airport, Tullamarine. Report prepared for Australia Pacific Airports Melbourne
- GAGIN 2009. Second Report Presence of the Golden Sun Moth Synemon plana Melbourne Airport 2008. Report prepared for Australia Pacific Airports Melbourne.
- GAGIN 2010. Survey for the Presence of Golden Sun Moth Synemon plana Melbourne Airport, Tullamarine 2009. Report prepared for Australia Pacific Airports Melbourne.
- Biosis 2015. Flora and fauna assessment of the Runway Development Program, Melbourne Airport: Existing conditions and impact assessment report. Authors: Kay K, Smales I & Byrne A, Biosis Pty Ltd, Melbourne.
- Biosis 2019. Melbourne Airport Golden Sun Moth habitat survey. Letter report to Australia Pacific Airports Melbourne. Author: Campbell, K, Biosis Pty Ltd, Melbourne.

This data was utilised to compile Figure 9 which outlines previous survey effort for the species. This information was then used to determine whether adequate survey effort existed for the species and if not what the level of additional survey was to be.

It was determined that there were no surveys undertaken within the Melbourne Airport Third Runway project area in the last three years and as such an updated assessment for the entire project area was to occur.

Habitat assessment

Prior to the Golden Sun Moth flight season between October–November the entire project area was traversed by one zoologist experienced in Golden Sun Moth habitat surveys to determine the project area habitat values.

The project area was subsequently classified as:

- Not habitat:
  - Pasture improved paddocks
  - Paddocks with no food plants
  - Degraded areas covered in fill with no food plants
  - Areas of infrastructure, roads, stockpiles etc.
- Potential habitat
  - Any areas where there was cover of known food plants.

All areas of potential habitat located within and immediately adjacent to the project area were subject to targeted surveys.

The areas of potential habitat were divided into five survey areas. Each survey area was assessed four times during the targeted surveys. A summary of the survey areas and habitat descriptions are provided in Table G1 below.

Table G1 Melbourne Airport Third Runway Project Golden Sun Moth survey sites and details

GSM survey site	Site size (hectares)	Transect type	No of surveyors	Distance between transects	Site characteristics
GSM survey site Northern area	62.88	Walk	3	Approx. 100 meters	North of the woodland Open Grey Box woodland with mixed understory of Chilean Needle Grass *Nassella neesiana*, Blanket Weed *Galenia pubescens*, Serrated Tussock Nassella *trichotoma*, scattered wallaby grass *Rytidosperma* sp. and Spear Grass *Austrostipa* sp. there are also some larger expanses of open Chilean Needle Grass patches throughout. Area up the hill from Deep CreeK tributary. Characterised by Serrated Tussock and Chilean Needle Grass. Thistles and Blanket weed. Sub-optimal habitat but scattered Wallaby Grass present. Sunbury Road Paddock. A mix of Phalaris *Phalaris aquatica*, brassicas and scattered occurrence of Chilean Needle Grass and Wallaby Grass. HIAL disturbed ground story.
GSM survey site Mcnabs Road West	178.81	All areas of native grassland walked. In some degraded areas transects were driven	2	Approx. 100 meters	Broad area that includes habitat ranging from high cover of wallaby grass and optimal habitat to degraded areas with scattered occurrence of wallaby grass and paddocks dominated by Chilean Needle Grass, Rye *Lolium* Sp., Oat *Avena* sp., Phalaris and grazed by cattle in areas.
GSM survey site Arundel Creek	71.32	Walked/ driven were possible	2	Approx. 100 meters	Predominantly Phalaris, Oat, Blanket Weed, one square patch of Chilean Needle Grass. Includes some areas dominated by Wallaby Grass.

GSM survey site	Site size (hectares)	Transect type	No of surveyors	Distance between transects	Site characteristics
GSM survey site Southern area	50.66	Walk	2	Approx. 100 Meters	Areas of native grassland dominated by Wallaby Grass and other areas dominated by Phalaris with scattered occurrences of Chilean Needle Grass, *Brassica* Sp., Oat and Wallaby Grass.
GSM survey site Airside	172	Walk	2	Approx. 100 meters	Dominated by Wallaby Grass and Spear Grass throughout with scattered areas of Chilean Needle Grass and Serrated Tussock.

Targeted Surveys

Targeted surveys were conducted on 8, 17, 23, 24 and 29 December 2019. All four surveys were conducted on days of appropriate weather conditions as set out in the survey guidelines within the *Significant impact guidelines for the critically endangered golden sun moth (*Synemon plana*)* (DEWHA 2009a).

Adults of the species, especially males, can be observed during their diurnal flights. However, their flights are generally restricted to sunny days with little wind and when temperatures are above 20°C by 10 am. Hence, capacity to detect the species is limited to active searching when conditions are precisely appropriate.

To detect any Golden Sun Moth within the site, two or three ecologists experienced in Golden Sun Moth identification walked transects approximately 100 metres apart. Where possible transects were driven across the survey sites.

Striped Legless Lizard

Previous survey effort

Suitable potential habitat for Striped Legless Lizard is present within the project area. Potential habitat areas constitute tussock-forming grasslands, especially where these are growing on cracking soils. Previous surveys for Striped Legless Lizard at Melbourne Airport failed to detect the species. A review of recent database records revealed a record on the Atlas of Living Australia from 2011 (ALA 2020) approximately 4 kilometres south of the southern point of the project area. There is an additional record from 2017 within 10 kilometres of the project area in the Victorian Biodiversity Atlas database (Appendix 5).

A desktop assessment was undertaken of all previous reports where Striped Legless Lizard surveys had been undertaken at Melbourne Airport. These reports include:

- Biosis 2014. Melbourne Airport Business Park: Striped Legless Lizard survey 2013. Draft report for Australia Pacific Airports (Melbourne). Author: I. Smales, Biosis Pty Ltd, Melbourne.
- Biosis 2015. *Flora and fauna assessment of the Runway Development Program, Melbourne Airport: Existing conditions and impact assessment report*. Authors: Kay K, Smales I & Byrne A, Biosis Pty Ltd, Melbourne.

This data was utilised to compile Figure 9 which outlines previous survey effort for the species at Melbourne Airport. This information was then used to determine whether adequate survey effort existed for the species and if not what the level of additional survey was to be. It was recommended that due to the presence of suitable habitat that had not been subject to previous targeted surveys additional surveys for Striped Legless Lizard were warranted.

Targeted survey

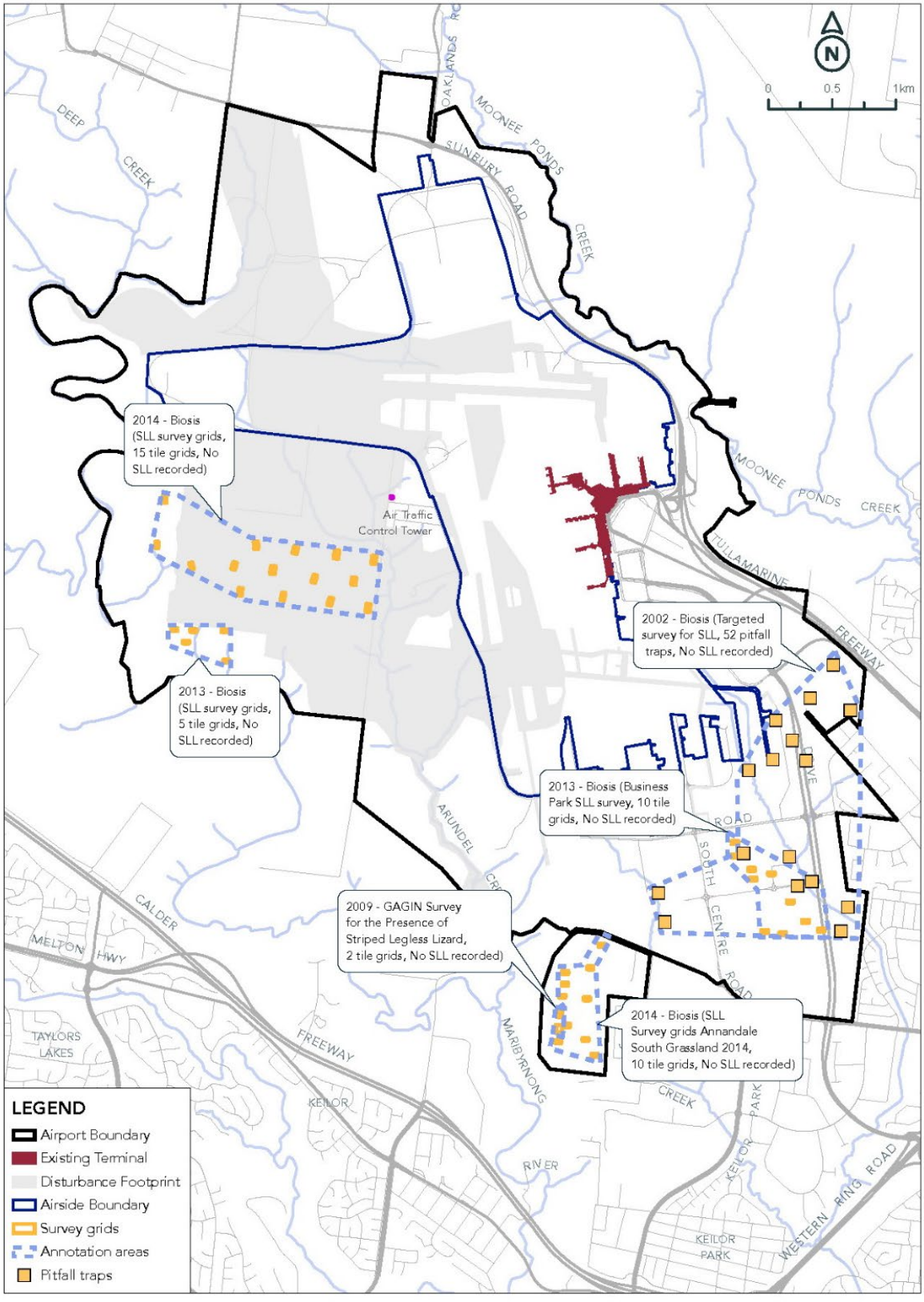
Artificial shelter (tile surveys) technique, was used for targeted surveys as this is widely recognized as the most effective technique to survey for the species. Twenty survey grids with each grid consisting of 50 tiles set out at 5 metre spacing between tiles, arranged in a grid of 10 x 5 tiles (1000 tiles) were placed in areas of suitable habitat within the project area landside on the 12-13/8/2019 and airside on the 19/8/2019, targeting areas of habitat which had not been subject to previous surveys.

All tiles were checked once per week by two zoologists from the 18/9/2019 until the end of December 2019, a total of 15 checks were undertaken for each tile grid during the targeted survey. A final check was conducted in conjunction with the decommissioning of the survey grids. All species detected during the surveys were recorded along with weather details at the time of survey.

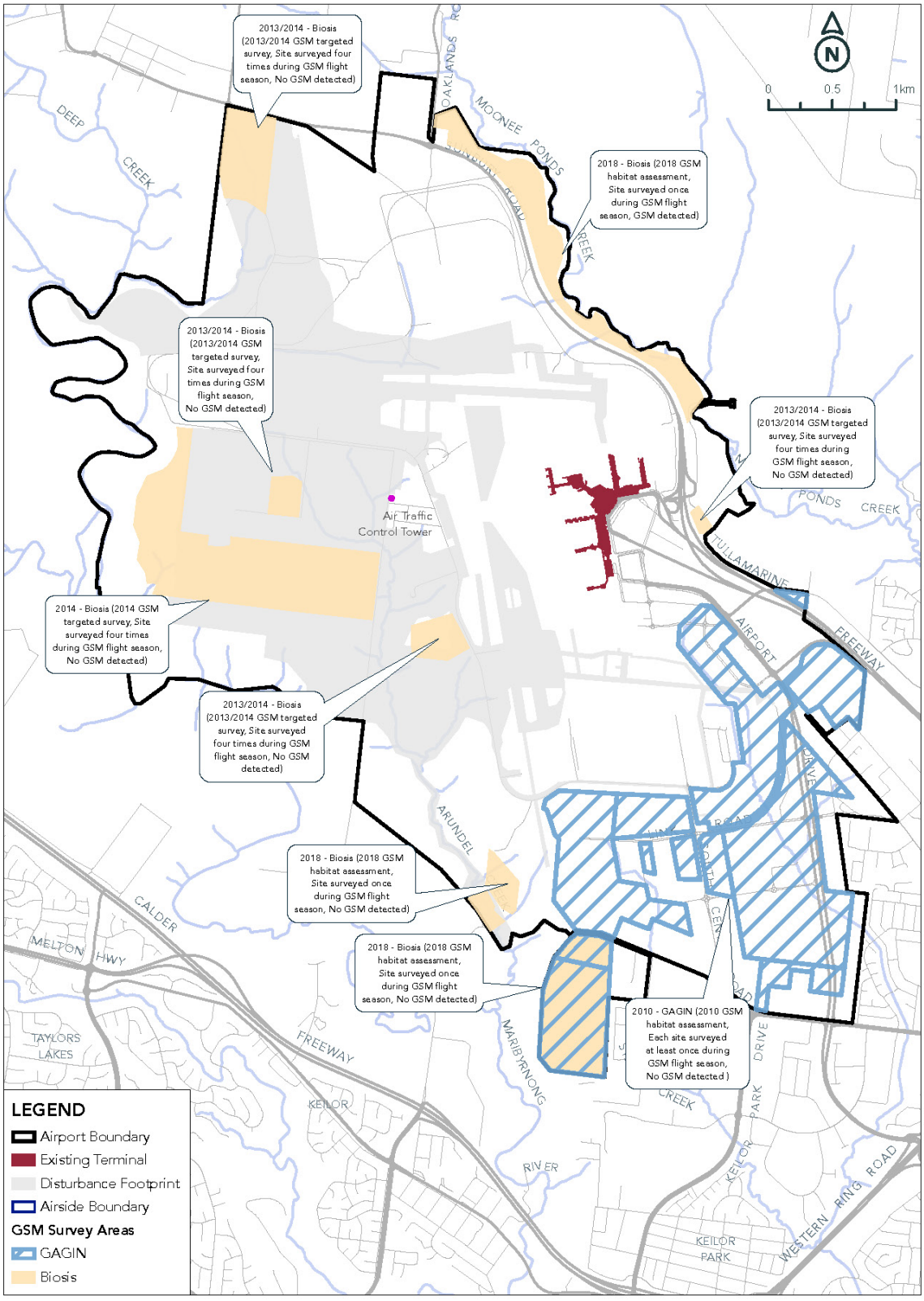
Appendix H

Overview of previous surveys for SLL and GSM

Previous survey effort for SLL at Melbourne Airport



Previous survey effort for GSM at Melbourne Airport



Appendix I

Targeted Environmental Site Assessment Report

Prepared for
Australia Pacific Airports (Melbourne) Pty Ltd
ABN: 62 076 999 114

AECOM

Design Package 3 - Taxiway A Structural Rehabilitation Design

Targeted Environmental Site Assessment Report

05-May-2023
Melbourne Airport Pavement Maintenance Program 2.0 (MAPMP 2.0)
Doc No. 60692389-RP-03-AV-0003
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Delivering a better world

Design Package 3 - Taxiway A Structural Rehabilitation Design

Targeted Environmental Site Assessment Report

Client: Australia Pacific Airports (Melbourne) Pty Ltd

ABN: 62 076 999 114

Prepared by

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05-May-2023

Job No.: 60692389

AECOM in Australia and New Zealand is certified to ISO9001, ISO14001 and ISO45001.

Quality Information

Document Design Package 3 - Taxiway A Structural Rehabilitation Design

Ref 60692389 - MAPMP2.0

Date 05-May-2023

Prepared by Lauren McGloin and Stefan Fenger

Reviewed by Todd Mitchell

Revision History

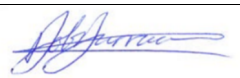
Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
A	28-Mar-2023	Draft for Client Review	Todd Mitchell Technical Director	
B	05-May-2023	Final	Bob Burrowes Principal Aviation Engineer	

Table of Contents

1.0 Introduction

Australia Pacific Airports (Melbourne) (APAM) Pty Ltd has engaged AECOM Australia Pty Ltd (AECOM) under the Melbourne Airport Pavement Maintenance Program 2.0 (CP22062) to provide Airfield Engineering and Design Services.

The contracted services include the provision of Design Phase Services (DPS) to develop and implement three (3) separate packages of airfield pavement maintenance works, as well as undertaking the annual aircraft pavement condition inspection to inform the Aerodrome Technical Inspection (ATI). Each of the four Design Packages are further defined below:

Design Package 1 – Minor Asphalt Works

- This package includes provision for undertaking routine flexible pavement maintenance works including asphalt patch repairs, shoulder pavement reconstruction, AGL reinstatement, line marking, surface treatments and other ancillary miscellaneous works to asphalt pavement areas identified as part of the 2021 Pavement Maintenance Plan (PMP).

Design Package 2 – Expedient Concrete Works

- This package includes provision for replacement of existing concrete slabs identified as part of the 2021 PMP. The slabs will be replaced with a proprietary expedient concrete.

Design Package 3 – Taxiway A Structural Rehabilitation Design

- This package includes 2 key scope elements:
  - Stage 1 is considered enabling works to Stage 2. Stage 1 includes works along Taxiway S (between Taxiways J and K) to enable Code F (wide body) aircraft operations. Stage 1 must be completed to enable Stage 2 to proceed.
  - Stage 2 includes the reconstruction of Taxiway A (between Taxiways J and K) to allow current and future Code F operations.

Design Package 4 – ATI

- This package requires AECOM to undertake an annual aircraft pavement condition inspection to inform the Aerodrome Technical Inspection (ATI) that meets the requirements of the Manual of Standards (MOS) - Part 139 (2020) and Civil Aviation Safety Regulations (CASR).

1.1 Scope of Works

This Environmental Site Assessment Report relates to Design Package 3 – Taxiway A Structural Rehabilitation Design.

AECOM has prepared a limited (and targeted) preliminary soil sampling program to assist in the characterisation of soil and pavement materials in the areas where the new and reinstated pavement works are proposed. In addition to this soil assessment, the installation of one groundwater monitoring bore was also undertaken (in accordance with the brief) to understand if there is interaction with perched water and the pavements at shallow depths (<2mbgs). The primary objective of the monitoring well is to monitor the perched or groundwater level throughout a full seasonal year to understand cyclic change of water levels (should water exist) at the proposed location.

This report details the findings from the soil investigation, which were conducted in January 2023. Management of excess soils associated with the project is unknown at this stage however a preliminary soil waste classification has also been provided for planning purposes.

The scope of work for this investigation consisted of the following general tasks:

- Review Nearmap © imagery to establish historical use of the specific locations and if filling had occurred in this area over time.
- Review Melbourne Airport historical documents targeting the potential for historical activities in the vicinity of the proposed pavement and taxiway upgrades. -

- Prepare a sampling plan of environmental locations showing approximate locations and methodology in GIS format. A revised sampling plan was agreed with Melbourne Airport during the site works due to operational constraints which resulted in limited access to complete the original scope (refer to aconex email AEC ANZ-GCOR-000213).
- Completion of an external project safety induction and kick off meetings as well as the safety requirements for the site and brief on the sampling plans and scope of works.
- Preparation of a safe work method statement for soil and groundwater tasks including hazard mitigation methods.
- Project coordination of resources including laboratory results, timing, progress, and general queries.
- Liaison with APAM and relevant laboratories (ALS Environmental Pty Ltd (ALS) and Eurofins-MGT (Eurofins)).
- Collection of soil samples from 17 soil locations positioned across the following taxiway infrastructure:
  - Taxiway A (between Taxiway J and Taxiway K)
  - Taxiway S (between Taxiway J and Taxiway K)
  - Taxiway A Shoulder (between Taxiway E and Runway 09-27)
  - Taxiway K Flanks
- The samples were submitted to the laboratory for the following analysis:
  - Analysis of 17 primary soil samples for Suite 1 – EPA Publication 1828.2 Screen (excluding EDTA)
  - Analysis of 17 primary soil samples for Suite 2 – Metals (15), TPH/TRH, BTEX and PAHs, and
  - Suite 3 – PFAS compounds extended Suite.
- Installation of one shallow groundwater monitoring well to 3 metres below ground level (mbgl).
- Completion of one groundwater gauging event of the single on-site monitoring well.
- Preparation of a targeted assessment report (this report), including the methodology of the soil and groundwater testing program for each area, tabulated results compared to Tier 1 screening criteria. Separate results tables have been prepared to present the PFAS compounds tabulated against criteria set in the PFAS NEMP Version 2 May 2020 and EPA waste disposal categories - characteristics and thresholds (Publication 1828.2). A summary of the results as well as the conclusions and recommendations based on the data collected has also been included.

2.0 Site Setting

Site identification and land use details are summarised below in **Table 1**.

Table 1 Site Identification Information

Item	Details
Site location	Melbourne Airport (23 kilometres northwest of the city centre, adjacent to the suburb of Tullamarine). The investigation area is outlined in **Figure 2**, **Appendix A** and is targeting discrete locations across Taxiway A, Taxiway S, and Taxiway K
Current land use	The Melbourne Airport site has been operating as an airport since the 1960s.
Adjacent site uses	• North: Woodlands Historic Park followed by low density residential land use. • South: Commercial/industrial land use followed by high density residential land use. • East: High density residential land use; and • West: Low- and high-density residential land use.
Current Infrastructure	Melbourne Airport currently has four terminals and two runways.

2.1 Background Information and Historical Summary

The Melbourne Airport site has been operating as an airport since the 1960s.The historical operations at the Melbourne Airport generally include:

- Passenger and cargo aviation which includes fuel storage and handling.
- Fire training and the storage and use of firefighting foam.
- Tenant-operated maintenance facilities for vehicles and aircraft.
- Water run-off from vehicle-related activities including aircraft maintenance and car park facilities.
- General airport operation, construction, maintenance, and landscaping, including the use and disposal of pesticides and herbicides, solvents and paints, batteries, and asbestos-containing materials within existing buildings, fuels and cleaning chemicals.

It is noted that Taxiway A and S are used for transiting planes from the main runway to the boarding terminals, and not the storage of fuels or fire training. No evidence of spills or foam use or storage of chemicals was observed from the nearmap imagery.

2.2 Taxiway – NearMap Review

Taxiway A comprises the original 1968 concrete slabs. The aged and fatigued slabs, particularly over the middle 3rd of the Taxiway length, are in a very poor condition AECOM 2022 (Concept Design Report). The slabs are showing some cracking and breaks from NearMap imagery reviewed between 2009-2022. Several of the cracks have been repaired with asphalt and in some locations the existing repair is in poor condition and have some vegetation growing within them.

Taxiway S comprises the original 1968 concrete slabs which were noted to be in ‘poor to fair condition’. The main forms of distress observed are weathering, longitudinal cracking, shrinkage cracking, and halving cracks within the wheel paths, and corner and edge spalls AECOM 2022 (Concept Design Report). NearMap imagery confirmed some cracked concrete but overall, the general outline of both Taxiway A and Taxiway S had not changed from 2009-2022 and no evidence of spills, staining or fire training was observed.

3.0 Assessment Methodology

3.1 Soil Investigation and Groundwater Monitoring Well Installation Methodology

Details of the soil investigation and monitoring well installation methodology are summarised in **Table 2** below. The location of the soil bores, test pits and groundwater monitoring well (BH02) are presented on **Figure 2** (**Appendix A**).

Table 2 Soil Investigation Methodology

Activity/Item	Details
Date of Field Activities	23, 24, 25, 29, 30, 31 January 2023
Service Location	Service location was undertaken prior to drilling works being undertaken by Construction Sciences.
Drilling Method	Four (4) pavement dipping locations (PD05, PD08, PD11, PD12) were drilled to depths ranging between 1-2m using a trailer mounted rig. Six (6) test pit locations (TP04-TP09) were excavated to depths of 2m Seven (7) borehole locations (BH2-BH08) were drilled using push tube drilling methods In conjunction with the geotechnical assessment at the site, one soil bore (BH2) was drilled and completed as a groundwater monitoring well. BH2 was advanced using solid auger to 3.2 mbgl. Refer to **Figure 2, Appendix A** outlining the individual test locations on each of the Taxiway network
Soil Logging	The soil bore logs are presented in **Appendix C**. A summary of materials encountered is provided in **Section 6.0**.
Soil Sampling and Analysis	Soil samples were collected for analysis from the solid stem auger and from the excavator bucket. All soil samples were screened for volatile organic compounds (VOC) using a photo-ionisation detector (PID). Soil samples were typically collected near surface, at 0.2 mbgl, 0.5 mbgl, 1.0 mbgl and 2.0mbgl. Two soil samples collected were analysed per location. One soil sample for heavy metals (8), PAHs, BTEX, TRH and PFAS and one sample for an EPA Publication 1828.2 Screen (excluding EDTA). The PID calibration certificate is provided in **Appendix C** and laboratory certificates are provided in **Appendix D.**
Quality Control Sampling	One field duplicate and field triplicate sample was collected to comply with the quality control rate of 1 in every 20 primary samples. Field and rinsate blanks were collected for each day of sampling. Samples were analysed for TRH, BTEX, PFAS short suite and metals. The primary samples and the quality control and quality assurance samples, excluding the field triplicate, were analysed by ALS. The field triplicate was analysed by Eurofins. Laboratory certificates are provided in **Appendix D**.

Activity/Item	Details
Groundwater Monitoring Well Installation	The groundwater monitoring well was installed using nominal 50 mm diameter Class 18 uPVC casing with machine-slotted (0.5 mm slot) uPVC screen installed. A sand filter pack (8/16" washed quartz sand) was installed in the bore annulus across and above the top of the screen. Above this, a bentonite seal was installed and hydrated. The annulus of bore was then grouted to surface level and a flush gatic installed. Constructions details are presented in **Appendix C.** Monitoring well BH2 was not required to be surveyed.
Decontamination Procedures	Dedicated and disposable nitrile gloves were worn during collection of each sample. All samples were placed in clean, laboratory-supplied, acid washed, solvent rinsed glass jars. The drilling equipment was decontaminated prior to the collection of each sample.
Sample Preservation	All samples were collected in laboratory supplied sample containers and placed in chilled eskies for transportation under standard AECOM Chain of Custody (CoC) procedures to the laboratory for analysis. Copies of the CoCs are provided in **Appendix D**.
Equipment Calibration	Supplier and field calibration certificates are provided in **Appendix C**.

3.2 Groundwater Sampling Methodology

Details of the groundwater sampling methodology are summarised in **Table 3** below. The location of the groundwater monitoring well is presented on **Figure 2** (**Appendix A**).

Table 3 Groundwater Sampling Methodology

Activity/Item	Details
Date of Field Activities	23 January 2023 – well installed and gauged 3 February 2023 – water level gauging event.
Groundwater Sampling Method	The groundwater was proposed to be collected by Hydrasleeve™ sampling techniques at BH2. However, the well was found to be dry, therefore ex-situ measurements of groundwater pH, dissolved oxygen (DO), reduction potential (redox), electrical conductivity (EC) and temperature were not collected.

3.3 Quality Assurance / Quality Control Methodology

Quality assurance and control measures (QA/QC) were incorporated into the sampling and analysis work so that the data quality objectives could be achieved and to demonstrate accuracy, precision, comparability, representativeness, and completeness with regard to the data generated.

3.3.1 Data Quality Indicators (DQIs)

The data quality objectives (DQIs) adopted are based upon data validation guidance documents published by Standards Australia (SA) and National Environment Protection Council (NEPC). These include *Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soil* (AS 4482.1-2005 – withdrawn for revision), Schedule B2 *Site Characterisation* (NEPM, 2013b) and Schedule B3 *Laboratory Analysis of Potentially Contaminated Soils* (NEPC 1999, amended 2013).

The process involves the checking of analytical procedure compliance and an assessment of the accuracy and precision of analytical data from a range of quality control measurements, generated from both the field sampling and analytical programs.

Specific elements that have been checked and assessed for this project include:

- Preservation and storage of samples upon collection and during transport to the laboratory.
- Sample holding times.
- Use of appropriate analytical and field sampling procedures.
- Required laboratory limit of reporting (LOR).
- Frequency of conducting quality control measurements.
- Rinsate, field and trip blank results.
- Laboratory blank results.
- Field duplicate and triplicate results.
- Laboratory duplicate results.
- Matrix spike (MS) results.
- Surrogates spike results.
- Review of chromatograms.
- The occurrence of apparently unusual or anomalous results, e.g., laboratory results that appear to be inconsistent with field observations or measurements.

The data validation summary is provided in **Appendix E**.

4.0 Adopted Investigation Levels

4.1 Soil Investigation Levels

Investigation levels have been adopted in accordance with the Airports (*Environment Protection*) Regulations 1997, the PFAS National Environmental Management Plan, Version 2, (PFAS NEMP), the National Environment Protection (*Assessment of Site Contamination*) Measure 1999 (as amended in 2013) and the Melbourne Airport PFAS Management Framework (March 2022).

4.1.1 Human Health

The adopted assessment criteria for the protection of human health are Commercial/Industrial Health Investigation Levels (HIL-D) and Health Screening Levels (HSLs) as described in Schedule B1 (Guideline on Investigation Levels for Soil and Groundwater) of the Amended National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPC 2013), henceforth referred to as the Amended ASC NEPM.

The Amended ASC NEPM provides risk-based guidelines for selected organic and inorganic chemicals in soils. Different levels are provided for a variety of exposure settings including residential, open space/ parks/ recreational and commercial/ industrial land uses.

In addition, the Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC CARE) HSLs source document (CRC CARE, 2011) is referenced for HSLs applicable for the assessment of vapour intrusion for intrusive maintenance workers and direct contact. As the direct contact HSLs are significantly higher than most other soil screening levels, this pathway is unlikely to be a primary driver and, therefore the direct contact HSLs have not been adopted for this assessment.

The VI soil HSLs vary according to the site-specific soil type/s and depth/s to impacts. The soil type is based on observations detailed as part of this investigation. As the shallow soil encountered within several bores comprised sand, clayey sand / sandy clay, AECOM has adopted Sand HSLs.

In addition to HSLs, the Amended ASC NEPM provides Management Limits (MLs) for petroleum hydrocarbon compounds in soils. These limits are to assess for potential formation of LNAPL, fire and explosion risk, and damage to buried infrastructure.

The adopted assessment criteria for the protection of human health from PFAS chemicals has been derived from the Heads of the EPA (HEPA) PFAS National Environmental Management Plan version 2.0 (January 2020), herein referred to as the HEPA NEMP 2.0.

The HEPA NEMP 2.0 provides risk-based guidelines for PFAS compounds, principally PFOA and the Sum of PFOS and PFHxS, for human health. Different investigation levels are provided depending on the sites current and future land use, consistent with the Amended ASC NEPM. For the purposes of this assessment residential land use criteria have been adopted which includes commercial and industrial soils.

4.1.2 Land Dependant Ecosystems and Species (Highly Modified)

The Amended ASC NEPM provides ecological investigation levels (EILs) (derived for arsenic, chromium (III), copper, lead, naphthalene, nickel, and zinc) and ecological screening levels (ESLs) (derived for TRH fractions, BTEX and benzo(a)pyrene) for a range of different land uses. The EILs and ESLs are generally applicable to the top 2 m of soil only. AECOM adopted a Cation Exchange Capacity of 5, a pH of 4.3 and a clay content of 5% to calculate EILs based on data from the Victorian Background Soil Database (https://soilexplorer.org.au/). EILs were calculated on a site-specific basis using the 'EIL Calculation Spreadsheet' presented as part of the ASC NEPM Toolbox dated December 2010 (http://nepc.gov.au/nepms/assessment-site-contamination/toolbox).

4.1.3 Aesthetics

The Amended ASC NEPM provides guidance for the assessment process for aesthetic issues, including the presence of low-concern or non-hazardous inert foreign material (refuse) in soil or fill resulting from human activity. It should be noted that aesthetic issues include visual and olfactory signs of foreign material. Sites that have been assessed as being acceptable from a human health and environmental perspective may still contain such foreign material, such as fragments of concrete, metal, bricks, pottery, glass, or low odour residue (for example, weak petroleum hydrocarbon odours). Given

the ongoing commercial/industrial use of the site, aesthetics has not been considered as part of this assessment.

4.2 Waste Classification

Disposal of waste soils in Victoria are regulated by the EPA who detail relevant criteria in 'Waste disposal categories – characteristics and thresholds' (EPA Publication 1828.2 dated March 2021).

The disposal category of a soil is assessed based upon the total concentration of potential contaminants and where soils exceed Fill Material levels, the leachable concentration. The actual classification of a soil body will also depend on other factors such as source, quantity of soil and presence of other components (aesthetically unacceptable materials, asbestos containing materials, etc).

The soil results have been compared to the criteria presented in Publication 1828.2, however it is noted that these results are preliminary only and further data will be required to accurately classify soil for offsite disposal. It is also noted that these criteria do not apply to the on-site re-use of spoil (as Melbourne Airport is Commonwealth land).

4.3 Airports (Environment Protection) Regulations 1997

The purpose of the Airports (Environment Protection) Regulations (Airport, 1997) is to establish a Commonwealth system of regulation for pollution and excessive noise and to promote better environmental outcomes on leased Commonwealth airports.

The objectives of these Regulations are:

a. To establish, in conjunction with national environment protection measures made under section 14 of the *National Environment Protection Council Act 1994*, a Commonwealth system of regulations of, and accountability for, activities at airports that generate, or have potential to generate:
   i. Pollution; or
   ii. Excessive noise; and

b. To promote improving environmental management practices for activities carried out at airport sites.

4.4 Melbourne Airport PFAS Management Framework

The PFAS Management Framework has been prepared to ensure that consistent environmental management practices are understood and implemented to manage the potential environmental risks associated with PFAS impacted material during construction and maintenance activities at Melbourne Airport. It is to outline the minimum environmental management requirements required during construction and maintenance activities at Melbourne Airport and to demonstrate how Melbourne Airport complies with the requirements of the PFAS NEMP. Management levels and requirements are listed in **Table 4** below:

Table 4 Reuse and Gate 11 Facility Management levels and Requirements

Management Level	PFOS + PFHxS Concentration		Reuse Management Requirement	Storage at the Gate 11 Facility
	Total (mg/kg)**	Leachable (ASLP pH neutral) µg/L**		
Level 1	≤0.01	≤0.4	Reuse within same concentration areas with surface stabilisation improvements (e.g. hydromulch) If material is topsoil and has ASLP concentrations <0.07 µg/L, can be reused within same concentration areas without surface stabilisation	Stabilisation to minimise dust generation and surface water runoff using hydromulch or similar stabilisation product***.

Management Level	PFOS + PFHxS Concentration		Reuse Management Requirement	Storage at the Gate 11 Facility
	Total (mg/kg)**	Leachable (ASLP pH neutral) µg/L**		
Level 2	>0.01– 0.014	>0.4– 0.7	Reuse within same concentration areas with surface stabilisation i.e. >50 mm clean fill / topsoil / Level 1 materials	Stabilisation to minimise dust generation and surface water runoff using hydromulch or similar stabilisation product***.
Level 3	>0.014– 0.14	>0.7– 7	Reuse subject to specific risk assessment in accordance with the PFAS NEMP, followed by APAM approval	Temporary and final stockpiles covered with impermeable barrier to prevent infiltration to, and leaching from, stockpile (e.g. LDPE with maintenance; or impermeable geocomposite; or similar material)
Level 4	>0.14– 50*	>7– 2,500	Reuse subject to specific risk assessment in accordance with the PFAS NEMP, followed by APAM approval	Storage subject to specific risk assessment to confirm required controls followed by APAM approval
Level 5	>50 mg/kg*	>2,500 µg/L	Cannot be reused on-site. May require treatment prior to reuse, storage or disposal. May be able to be retained on-site under specific management circumstances subject to risk assessment, engineering controls and APAM approval.	Storage not permitted without further risk assessment and APAM approval. May require treatment prior to reuse, storage or disposal.

* The maximum total concentration of PFOS+PFHxS considered for reuse is 50 mg/kg. Any material that exceeds this must be segregated and an appropriate remediation strategy developed.

** The management requirements in this table for Management Levels 1 to 4 are driven by leachable, rather than total concentrations. The total concentrations listed here can be applied if leachable analysis has not been undertaken, as they have been back calculated and reflect the total acceptable soil concentration if 100% is conservatively assumed. However, slightly higher total concentrations may be acceptable provided that leachable concentrations have been measured and meet the relevant threshold, subject to APAM discretion and approval.

*** Where proposed management requirement is not feasible/ practicable, a higher level of management control must be adopted (e.g. LDPE).

Notes:

1) Material not impacted by detectable PFAS concentrations can be reused on-site in line with the Airports (Environment Protection) Regulations 1997 or disposed of off-site in line with the Environment Protection Regulations 2021, without restrictions outlined in this framework.
2) The maximum total concentration considered for storage within the facility is 0.14 mg/kg and leachable concentration is 7µg/L. Any material that exceeds these thresholds will require further assessment in consultation with the APAM Environment and Sustainability Team to identify potentially unacceptable risks to human health associated with retaining the material on-site.
3) The maximum total concentration considered for reuse is 50 mg/kg. Any material that exceeds this concentration must be segregated and an appropriate remediation solution identified in consultation with the APAM Environment and Sustainability Team.
4) The use of statistical analysis and 95% upper confidence limits can be adopted for establishing PFAS Management Levels where sufficient data is available (e.g. 10 samples for like soil material).
5) Management levels have been selected from generic values provided in the PFAS NEMP along with values derived through risk-based assessment as outlined in the Technical Background Document (Senversa, 2021).
6) Management levels presented above are based on a commercial/industrial use setting. Where a more sensitive land use is identified within the estate more conservative criteria may apply and will need to be considered as part of the risk assessment process required as outlined in Section 3.4.3.
7) Reuse management levels have not been provided for PFOA, as PFOS + PFHxS have been found to be the primary PFAS contaminant of concern and management driver at Melbourne Airport.

5.0 Groundwater Investigation Levels

To assess the potential impacts to groundwater, the quality of groundwater is considered with respect to the NEPM investigation levels.

The newly installed well was found to be dry on two occasions and therefore investigation levels have not been defined for this assessment.

6.0 Results

6.1 Soil

6.1.1 Site-Specific Geology

Beneath the taxiway pavements the general soil profile consists of:

- The upper geological layer consisted of fill / reworked natural to a depth of approximately 0.2-0.5 mbgl. The fill / reworked natural soil consisted of primarily of sand, sandy clay, and clay.
- The underlying natural soil consisted primarily of clay with some traces of silt and sand observed (0.5-2.0 mbgl).

6.1.2 Soil Observations and VOC Screening

Hydrocarbon impacts (e.g., staining, hydrocarbon odours, elevated PID readings over 100 ppm) were not observed in soils from soil bores, test pits or boreholes. There was also no observations of foreign material, such as fragments of concrete, metal or bricks. Bore logs are provided in **Appendix C**.

6.1.3 Soil Analytical Results

A total of 35 primary samples were collected from different depth intervals (ranging from 0.1 mbgl to 5 mbgl). The soil analytical results screened against the adopted human health and ecological assessment criteria described in **Section 4.0** are presented in **Table T1-T4**, respectively, in **Appendix B**. The results indicate:

- Results for all metals selected were below the Tier 1 human health criteria for commercial/industrial use for all samples.
- The pH of soil samples ranged between 6.1 and 8.5 consistent with the classification of 'non aggressive' (AS2159 2009 Piling – Design and Installation, Table 6.4.2 pH >5.5).
- The soil results were not above the criteria for land dependent ecosystems and species and there were no observations of vegetation stress made during the site visit.
- No asbestos was observed during the collection of the samples.
- Results for Total Petroleum Hydrocarbons, Total Recoverable Hydrocarbons, Monocyclic Aromatic Hydrocarbons, Phenolic Compounds, Polychlorinated Biphenyls, Organochlorine Pesticides (OC) and Cyanides were reported below the laboratory LORs and below Tier 1 human health criteria for commercial/industrial use for all samples collected in Taxiway A, S and Area K and E.
- Two samples reported Perfluorooctane sulfonic acid (PFOS) in TP04_1.0 and QC14_29012023 above the PFAS NEMP 2020 Ecological indirect exposure criteria (0.01mg/kg), these samples were collected in Taxiway S. Samples exceedances for PFOS in sample QC14_29012023 was not detected in the primary sample (BH04_0.5). The variability between primary and QC samples can be explained by the heterogeneity of the soil when sampled. It is also noted that the assessment of risk should be made on primary data only. The purpose of QC data is to assess the reliability of the analytical results.
- Results compared against Airports (*Environment Protection*) Regulations (AEPR 1997) guidelines show exceedances against Areas of Environmental Significance for barium, manganese and nickel in multiple samples. However, these elements are products of basalt weathering and are common with in volcanic derived soils. The results do not exceed background soil concentrations. According to the Victorian Soil Database (V.1.0.0) (https://soilexplorer.org.au/), barium concentrations of the Newer Volcanics range from <2 to 3,100 mg/kg with a mean of 245 mg/kg. The highest result reported was 890 mg/kg (BH8_1.0). Background concentrations for manganese in the Newer Volcanics range from <5 to 871 mg/kg with a mean of 263 mg/kg. The highest result recorded was 625 mg/kg (BH2_0.5). Background nickel concentrations for the Newer Volcanics range from <5 to 170 mg/kg with a mean of 31 mg/kg. The highest recorded results for nickel was 87 mg/kg (PD08_0.5).
- Analytical data compared against the Melbourne Airport PFAS Management Framework show that one result, QC14 (0.011 mg/kg Sum (PFHxS + PFOS)) exceeds the PFAS management Level 1 and sits within Level 2 (>0.01 – 0.014 mg/kg Sum (PFHxS + PFOS)). Two results, BH05_0.5

(0.0324 mg/kg Sum (PFHxS + PFOS)) and TP04_1.0 (0.124 mg/kg Sum (PFHxS + PFOS)) exceed Level 2 PFAS management levels and are categorised as Level 3. It is noted that these are not statistically representative of spoil likely to require management and further testing is likely to be required for proper management.

- The soil analytical results screened against the EPA waste classification criteria **Section 4.0** are presented in **TableT2**, in **Appendix A.** The results reported concentrations of the COPC analysed were below the upper limit of the 'Fill' criteria in all samples analysed. Therefore, considering the results of this assessment, the sampling locations reported a preliminary soil classification of Fill material in Taxiway A, S, and K. Leachate analysis was not undertaken as part of this assessment and would be required to be compliant with requirements in EPA Publication 1827.2, March 2021 (where off-site disposal is proposed).

6.2 Groundwater

Depth to water was gauged on 29 January 2023 during installation. The bore was found to be dry. Depth to water was gauged again on 3 February 2023 and the bore was also found to be dry. No further sampling could be undertaken. Due to the limited information on existing perched water / groundwater levels, it is not possible confirm or exclude a possible interaction between the Taxiways and sub-surface water (groundwater or perched water). Further assessment of the groundwater levels during the typically wetter months of July to early September will allow confirmation of interaction between the new pavement and groundwater (if any).

7.0 Findings and Conclusions

The conclusions of this preliminary soil and waste classification assessment are as follows:

- The Melbourne Airport site has been operating as an airport since the 1960s. The historical operations specific to the taxiways are largely general airport operation and movement of planes in transit from the main runway to the boarding lounges. The preliminary review of NearMap images confirmed the site use as a taxiway has not changed. Taxiway A and S had not changed in width or appeared to have been interfered with since 2009. Therefore, it is unlikely that impact has occurred from activities such as bulk aviation, fuel storage and handling, fire training and the storage and use of firefighting foam.
- No soil staining or visual evidence of contamination was observed or recorded in the soil profile during the intrusive drilling and the soil sampling works.
- There was no asbestos or asbestos-containing material (ACM) noted during the field works.
- Results for metals, Total Petroleum Hydrocarbons, Total Recoverable Hydrocarbons, Monocyclic Aromatic Hydrocarbons, Phenolic Compounds, Polychlorinated Biphenyls, Organochlorine Pesticides (OC) and Cyanides were reported below the laboratory LORs and below Tier 1 human health criteria for commercial/industrial use for all samples in Taxiway A, Taxiway S and Taxiway K. Soil results were also below the land dependant ecosystems and species criteria.
- The pH of soil samples ranged between 6.1 and 8.5 consistent with the classification of 'non aggressive' (AS2159 2009 Piling – Design and Installation, Table 6.4.2 pH >5.5).
- Two samples reported Perfluorooctane sulfonic acid (PFOS) in TP04_1.0 and QC14_29012023 above the PFAS NEMP 2020 Ecological indirect exposure criteria (0.01mg/kg).
- One sample reported Sum (PFHxS + PFOS) concentrations withing Level 2 of the Melbourne Airport PFAS Management Framework guidelines. Two samples reported Sum (PFHxS + PFOS) concentrations within Level 3.
- Exceedances for barium, manganese and nickel were reported against Airports (*Environment Protection*) Regulations (AEPR 1997) Areas of Environmental Significance Guidelines. However, sample concentrations do not exceed reported background concentrations reported of the Newer Volcanics Soil Database.
- Depth to water was gauged on 29 January 2023 during bore installation and was found to be dry. Depth to water was gauged again on the 3 February 2023 and the bore was also found to be dry. No further sampling could be undertaken. Due to the limited information on the existing groundwater levels, it is not possible to confirm or exclude a possible interaction between the Taxiways and sub-surface water (groundwater or perched water). Further assessment of water levels during the typically wetter months of July to early September will allow confirmation of interaction between the new pavement and groundwater (if any).
- Considering the results of this assessment, the sampling locations reported a preliminary soil classification of "Fill material". Leachate analysis was not undertaken as part of this assessment and may be required along with some additional soil testing if off-site disposal is proposed; to be compliant with waste disposal requirements in EPA Publication 1827.2, March 2021.

8.0 Standard Limitations

This conclusion and all information in this Report are provided strictly in accordance with and subject to the following limitations and recommendations:

a. The ESA undertaken to form this conclusion is limited to the scope of work agreed between AECOM and Melbourne Airport as outlined in **Section 1.2** ("Scope of Work") of this Report.

b. This Report has been prepared for the sole benefit of Australia Pacific Airports Melbourne Pty Ltd .

c. Except as required by law, no third party may use or rely on, this Report unless otherwise agreed by AECOM in writing.

d. The ESA carried out for the purposes of the Report has been undertaken, and the Report has been prepared, in accordance with normal prudent practice and by reference to applicable environmental regulatory authority and industry standards and guidelines in existence at the date of this Report.

e. This Report should be read in full, and no excerpts are to be taken as representative of the findings. No responsibility is accepted by AECOM for use of any part of this Report in any other context.

a. This Report is based on the available information reviewed during the time of preparation as outlined in **Section 1.2**. AECOM accepts no responsibility for any changes in site conditions or in the information reviewed that have occurred after this period.

f. The investigations carried out for the purposes of the Report have been undertaken, and the Report has been prepared, in accordance with normal prudent practice and by reference to applicable environmental regulatory authority and industry standards, guidelines and assessment criteria in existence at the date of this Report.

g. Where this Report indicates that information has been provided to AECOM by third parties, AECOM has made no independent verification of this information except as expressly stated in the Report. AECOM assumes no liability for any inaccuracies in or omissions to that information.

h. Given the limited Scope of Works, AECOM has only assessed the potential for material liability issues resulting from past and current known uses of the site associated with land contamination.

b. AECOM has tested only for those chemicals specifically referred to in this Report. AECOM makes no statement or representation as to the existence (or otherwise) of any other chemicals.

c. Investigations have not been undertaken into off-site conditions, as specified in **Section 1.2**, and AECOM makes no statement as to whether:

    1. any adjoining sites may have been impacted by contamination or other conditions originating from this site or from any other source; and/or

    2. any contamination originating from adjoining sites has or may have an impact on the site itself.

i. Except as otherwise specifically stated in this Report, AECOM makes no warranty or representation as to the presence or otherwise of asbestos and/or asbestos containing materials (“ACM”) on the site. If fill has been imported on to the site at any time, or if any buildings constructed prior to 1970 have been demolished on the site or materials from such buildings disposed of on the site, the site may contain asbestos or ACM.

j. No investigations have been undertaken into any off-site conditions, or whether any adjoining sites may have been impacted by contamination or other conditions originating from this site.

k. Investigations undertaken in respect of this Report are constrained by the site conditions, such as the location of buildings, services, and vegetation. As a result, not all relevant site features and contamination may have been identified in this Report.

l. Subsurface conditions can vary across a particular site and cannot be exhaustively defined by the investigations described in this Report. It is unlikely therefore that the results and estimations expressed in this Report will represent conditions at any location removed from the specific points of sampling.

m. A site which appears to be unaffected by contamination at the time the Report was prepared may later, due to natural phenomena or human intervention, become contaminated.

n. The conclusion set out above is based solely on the information and findings contained in this Report.

o. Except as specifically stated above, AECOM makes no warranty, statement or representation of any kind concerning the suitability of the site for any purpose or the permissibility of any use, development, or re-development of the site.

p. Use, development, or re-development of the site for any purpose may require planning and other approvals and, in some cases, environmental regulatory authority and accredited site auditor approvals. AECOM offers no opinion as to whether the current use has any or all approvals required, is operating in accordance with any approvals, the likelihood of obtaining any approvals, or the conditions and obligations which such approvals may impose, which may include the requirement for additional environmental works.

q. AECOM makes no determination or recommendation regarding a decision to provide or not to provide financing with respect to the site.

r. The ongoing use of the site and/or use of the site for any different purpose may require the owner/user to manage and/or remediate site conditions, such as contamination and other conditions, including but not limited to conditions referred to in this Report.

s. To the extent permitted by law, AECOM expressly disclaims and excludes liability for any loss, damage, cost, or expenses suffered by any third party relating to or resulting from the use of, or reliance on, any information contained in this Report. AECOM does not admit that any action, liability, or claim may exist or be available to any third party.

t. Except as specifically stated in this section, AECOM does not authorise the use of this Report by any third party. It is the responsibility of third parties to independently make inquiries or seek advice in relation to their requirements and proposed use of the site.

9.0 References

AECOM, Design Concept Report, 2022

Airports (Environment Protection) Regulations 1997, *Statutory Rules 1997 No. 13 as amended*, 1997 (Airport, 1997)

Australian and New Zealand Guidelines for Fresh and Marine Water Quality, 2018 (ANZG, 2018)

Australian Standard AS2159-2007 *'Piling-Design and Installation'.*

Melbourne Airport PFAS Management Framework, March 2022

NEPM, 2013a, National Environment Protection (Assessment of Site Contamination) Measure 1999, Amendment Measure 2013 (No 1). Schedule B1 *Guideline on the Investigation Levels for Soil and Groundwater* (NEPM, 2013a).

NEPM, 2013b, National Environment Protection (Assessment of Site Contamination) Measure 1999, Amendment Measure 2013 (No 1). Schedule B2 *Guideline on Site Characterisation* (NEPM, 2013b).

NEPM, 2013c, National Environment Protection (Assessment of Site Contamination) Measure 1999, Amendment Measure 2013 (No 1). Schedule B3 *Laboratory Analysis of Potentially Contaminated Soils* (NEPM, 2013c).

Victorian Government, 2017, *Environment Protection Act, 2017, Authorised Version No. 004, No 51 of 2017*

Victorian Government, 2021, *Environment Protection Regulation, 2021, S.R No. 47/2021*

EPA Waste classification assessment protocol (publication 1827.2) and waste disposal categories - characteristics and thresholds (publication 1828.2)

Appendix A

Figures

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DATUM GDA 1994, PROJECTION MGA ZONE 54

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LEGEND

Environmental Assessment locations

SITE LAYOUT

MELBOURNE AIRPORT

Environmental Assessment
MELBOURNE AIRPORT PAVEMENT
MAINTENANCE PROGRAM 2.0 (MAPMP 2.0)
Melbourne Airport, Melbourne

Figure

F1

Map Document: (L:\Legacy\Projects\606X\60692389\900_CAD_GIS\920_GIS\02_Maps\2023\03\F1_Site_Locality.mxd)

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LEGEND
- Assessment Locations
- Environmental Assessment locations

ASSESSMENT LOCATIONS

MELBOURNE AIRPORT

Environmental Assessment
MELBOURNE AIRPORT PAVEMENT
MAINTENANCE PROGRAM 2.0 (MAPMP 2.0)
Melbourne Airport, Melbourne

Figure

F2

Map Document: (L:\Legacy\Projects\606X\60692389\900_CAD_GIS\920_GIS\02_Maps\2023\03\F2_Assessment_Locs.mxd)

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Appendix B

Tables

Table 1 - Soil Analytical Results

AECOM

	Metals																				Total Petroleum Hydrocarbons					Total Recoverable Hydrocarbons						
	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Chromium (hexavalent)	Cobalt	Copper	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Tin	Vanadium	Zinc	C6-C9 fraction	C10-C14 fraction	C15-C28 fraction	C29-C36 fraction	C10-C36 fraction (sum)	C6-C10 fraction	C6-C10 fraction (minus BTEX)(F1)	>C10-C16 (minus Naphthalene)(F2)	>C10-C16 fraction	>C16-C34 fraction	>C34-C40 fraction	>C10-C40 fraction (sum)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR	5	5	10	1	50	1	2	0.5	2	5	5	5	0.1	2	2	5	2	5	5	5	10	50	100	100	50	10	10	50	50	100	100	50
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil		3000		500	300000	900		3600	4000	240000	1500	60000	730		6000	10000				400000												
NEPM 2013 Table 1B(5) Generic EIL - Comm/Ind		160																														
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil																										700			1000	3500	10000	
0-2m																											NL	NL				
2-4m																											NL	NL				
>4m																											NL	NL				
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Clay																																
0-1m																											310	NL				
1-2m																											480	NL				
2-4m																											NL	NL				
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil (0-2m)																											215	170	170	1700	3300	
CRC Care 2011 Table B3 Soil HSL Int. Main. Worker (Shallow Trench), Sand																											NL	NL				

Location ID	Field ID	Depth (m)	Sampled Date	Sample Type	Lab Report Number																													
BH03	BH03_0.2	0.2	29/01/2023	Normal	EM2301773	-	<5	110	<1	<50	<1	46	-	14	25	8	367	<0.1	-	39	<5	-	-	41	48	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
BH03	BH03_0.5	0.5	29/01/2023	Normal	EM2301773	<5	<5	90	<1	<50	<1	-	<0.5	-	16	9	-	<0.1	<2	27	<5	<2	<5	-	35	<10	<50	<100	pf	<50	<10	<10	<50	<50	<100	<100	<50
BH04	BH04_0.5	0.5	29/01/2023	Normal	EM2301773	-	<5	60	<1	<50	<1	26	-	10	15	8	210	<0.1	-	25	<5	-	-	36	26	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
BH04	QC13_29012023	0.5	29/01/2023	Intralaboratory Duplicate	EM2301773	-	<5	50	<1	<50	<1	42	-	12	15	14	310	<0.1	-	19	<5	-	-	44	21	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
BH04	QC14_29012023	0.5	29/01/2023	Interlaboratory Duplicate	961022	-	2.1	-	<2	14	<0.4	-	<1	13	18	9.3	280	<0.1	-	25	<2	-	-	-	30	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100
BH05	BH05_0.5	0.5	29/01/2023	Normal	EM2301773	-	<5	380	1	<50	<1	23	-	13	6	8	290	<0.1	-	37	<5	-	-	22	10	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
BH05	BH05_2.0	2	29/01/2023	Normal	EM2301773	<5	<5	460	1	<50	<1	-	<0.5	-	9	8	-	<0.1	<2	33	<5	<2	<5	-	16	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
BH2	BH2_0.2	0.2	24/01/2023	Normal	EM2301163	<5	<5	90	1	<50	<1	-	<0.5	-	14	11	-	<0.1	<2	48	<5	<2	<5	-	19	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
BH2	BH2_0.5	0.5	24/01/2023	Normal	EM2301163	-	<5	300	1	<50	<1	44	-	23	10	11	625	<0.1	-	46	<5	-	-	38	16	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
BH6	BH6_0.5	0.5	24/01/2023	Normal	EM2301163	<5	<5	210	1	<50	<1	-	<0.5	-	15	12	-	<0.1	<2	36	<5	<2	<5	-	26	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
BH6	BH6_1.0	1	24/01/2023	Normal	EM2301163	-	<5	150	1	<50	<1	33	-	17	11	10	337	<0.1	-	44	<5	-	-	39	12	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
BH7	BH7_0.2	0.2	25/01/2023	Normal	EM2301163	<5	<5	290	1	<50	<1	-	<0.5	-	6	10	-	<0.1	<2	17	<5	<2	<5	-	7	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
BH7	BH7_0.5	0.5	25/01/2023	Normal	EM2301163	-	<5	350	1	<50	<1	28	-	18	12	12	152	<0.1	-	23	<5	-	-	36	13	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
BH8	BH8_0.5	0.5	25/01/2023	Normal	EM2301163	<5	<5	410	1	<50	<1	-	<0.5	-	8	10	-	<0.1	<2	28	<5	<2	<5	-	12	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
BH8	BH8_1.0	1	25/01/2023	Normal	EM2301163	-	<5	890	1	<50	<1	36	-	17	10	9	288	<0.1	-	33	<5	-	-	48	16	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
PD05	PD05_0.42	0.42	29/01/2023	Normal	EM2301773	<5	<5	70	<1	<50	<1	-	<0.5	-	15	<5	-	<0.1	<2	30	<5	<2	<5	-	34	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
PD08	PD08_0.5	0.5	24/01/2023	Normal	EM2301163	-	<5	20	1	<50	<1	21	-	24	50	<5	568	<0.1	-	87	<5	-	-	29	44	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
PD08	PD08_1.1	1.1	24/01/2023	Normal	EM2301163	<5	<5	140	<1	<50	<1	-	<0.5	-	10	8	-	<0.1	<2	39	<5	<2	<5	-	17	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
PD11	PD11_0.1	0.1	31/01/2023	Normal	EM2301412	-	<5	70	<1	<50	<1	31	-	14	40	<5	189	<0.1	-	38	<5	-	-	25	29	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
PD11	PD11_0.5	0.5	31/01/2023	Normal	EM2301412	<5	<5	40	<1	<50	<1	-	<0.5	-	17	5	-	<0.1	<2	34	<5	<2	<5	-	30	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
PD12	PD12_0.1	0.1	31/01/2023	Normal	EM2301412	<5	<5	70	<1	<50	<1	-	<0.5	-	20	9	-	<0.1	<2	32	<5	<2	<5	-	21	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
PD12	PD12_0.5	0.5	31/01/2023	Normal	EM2301412	-	<5	80	<1	<50	<1	13	-	4	<5	8	90	<0.1	-	6	<5	-	-	33	9	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
TP04	TP04_0.5	0.5	30/01/2023	Normal	EM2301773	<5	<5	50	<1	<50	<1	-	<0.5	-	25	23	-	<0.1	<2	22	<5	<2	6	-	49	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
TP04	TP04_1.0	1.0	30/01/2023	Normal	EM2301773	-	<5	330	1	<50	<1	36	-	16	8	10	417	<0.1	-	53	<5	-	-	47	16	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
TP05	TP05_0.2	0.2	30/01/2023	Normal	EM2301773	<5	<5	90	<1	<50	<1	-	<0.5	-	23	8	-	<0.1	<2	34	<5	<2	<5	-	37	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
TP05	TP05_1.0	1.0	30/01/2023	Normal	EM2301773	-	<5	40	1	<50	<1	45	-	22	12	12	132	<0.1	-	56	<5	-	-	59	16	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
TP06	TP06_0.5	0.5	30/01/2023	Normal	EM2301773	<5	<5	150	1	<50	<1	-	<0.5	-	9	9	-	<0.1	<2	47	<5	<2	<5	-	13	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
TP06	TP06_1.0	1.0	30/01/2023	Normal	EM2301773	-	<5	280	<1	<50	<1	18	-	15	<5	8	243	<0.1	-	36	<5	-	-	23	7	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
TP07	TP07_0.2	0.2	26/01/2023	Normal	EM2301163	<5	<5	280	1	<50	<1	-	<0.5	-	16	11	-	<0.1	<2	44	<5	<2	<5	-	23	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
TP07	TP07_1.0	1.0	26/01/2023	Normal	EM2301163	-	<5	200	1	<50	<1	39	-	20	11	11	300	<0.1	-	38	<5	-	-	50	14	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
TP08	TP08_0.5	0.5	26/01/2023	Normal	EM2301163	<5	<5	160	<1	<50	<1	-	<0.5	-	<5	8	-	<0.1	<2	15	<5	<2	<5	-	6	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
TP08	TP08_1.0	1.0	26/01/2023	Normal	EM2301163	-	<5	190	<1	<50	<1	32	-	6	5	9	40	<0.1	-	18	<5	-	-	37	8	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
TP09	TP09_0.2	0.2	26/01/2023	Normal	EM2301163	<5	<5	200	1	<50	<1	-	<0.5	-	9	11	-	<0.1	<2	28	<5	<2	<5	-	15	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
TP09	QC08_260123	0.2	26/01/2023	Intralaboratory Duplicate	EM2301163	<5	<5	270	1	<50	<1	-	<0.5	-	11	11	-	<0.1	<2	30	<5	<2	<5	-	20	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
TP09	TP09_0.5	0.5	26/01/2023	Normal	EM2301163	-	<5	40	1	<50	<1	46	-	16	6	10	147	<0.1	-	22	<5	-	-	40	11	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50

Legend
LOR - Limit of Reporting

Table 1 - Soil Analytical Results

AECOM

					Major Ions	Monocyclic Aromatic Hydrocarbons																Polynuclear Aromatic Hydrocarbons																					
					Fluoride	Benzene	Toluene	Ethylbenzene	m&p-Xylene	o-Xylene	Total Xylenes	Styrene	Isopropylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	tert-butylbenzene	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Total BTEX	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ calc (Zero)	Benzo(a)pyrene TEQ calc(PQL)	Naphthalene	Acenaphthylene	Acenaphthene	Anthracene	Fluorene	Phenanthrene	Fluoranthene	Benz(a)anthracene	Benzo(k)fluoranthene	Benzo(b&j)fluoranthene	Benzo(b+j) & Benzo(k)fluoranthene	Benzo(a)pyrene	Chrysene	Pyrene	Benzo(g,h,i)perylene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Sum of PAHs	Sum of polycyclic aromatic hydrocarbons
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR					40	0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil																						40	40	40																		4000	4000
NEPM 2013 Table 1B(5) Generic EIL - Comm/Ind																									370																		
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil																																											
0-2m						77	NL	NL			NL																																
2-4m						160	NL	NL			NL																																
>4m						NL	NL	NL			NL																																
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Clay																																											
0-1m						4	NL	NL			NL														NL																		
1-2m						6	NL	NL			NL														NL																		
2-4m						9	NL	NL			NL														NL																		
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil (0-2m)						75	135	165			180																									1.4							
CRC Care 2011 Table B3 Soil HSL Int. Main. Worker (Shallow Trench), Sand						77	NL	NL																																			
Location ID	**Field ID**	**Depth (m)**	**Sampled Date**	**Sample Type**																																							
BH03	BH03_0.2	0.2	29/01/2023	Normal	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH03	BH03_0.5	0.5	29/01/2023	Normal	250	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
BH04	BH04_0.5	0.5	29/01/2023	Normal	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH04	QC13_29012023	0.5	29/01/2023	Intralaboratory Duplicate	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH04	QC14_29012023	0.5	29/01/2023	Interlaboratory Duplicate	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH05	BH05_0.5	0.5	29/01/2023	Normal	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH05	BH05_2.0	2	29/01/2023	Normal	270	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
BH2	BH2_0.2	0.2	24/01/2023	Normal	160	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
BH2	BH2_0.5	0.5	24/01/2023	Normal	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH6	BH6_0.5	0.5	24/01/2023	Normal	160	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
BH6	BH6_1.0	1	24/01/2023	Normal	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH7	BH7_0.2	0.2	25/01/2023	Normal	230	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
BH7	BH7_0.5	0.5	25/01/2023	Normal	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH8	BH8_0.5	0.5	25/01/2023	Normal	210	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
BH8	BH8_1.0	1	25/01/2023	Normal	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
PD05	PD05_0.42	0.42	29/01/2023	Normal	410	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
PD08	PD08_0.5	0.5	24/01/2023	Normal	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
PD08	PD08_1.1	1.1	24/01/2023	Normal	160	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
PD11	PD11_0.1	0.1	31/01/2023	Normal	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
PD11	PD11_0.5	0.5	31/01/2023	Normal	370	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
PD12	PD12_0.1	0.1	31/01/2023	Normal	260	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
PD12	PD12_0.5	0.5	31/01/2023	Normal	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP04	TP04_0.5	0.5	30/01/2023	Normal	110	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
TP04	TP04_1.0	1.0	30/01/2023	Normal	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP05	TP05_0.2	0.2	30/01/2023	Normal	170	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
TP05	TP05_1.0	1.0	30/01/2023	Normal	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP06	TP06_0.5	0.5	30/01/2023	Normal	240	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
TP06	TP06_1.0	1.0	30/01/2023	Normal	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP07	TP07_0.2	0.2	26/01/2023	Normal	190	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
TP07	TP07_1.0	1.0	26/01/2023	Normal	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP08	TP08_0.5	0.5	26/01/2023	Normal	220	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
TP08	TP08_1.0	1.0	26/01/2023	Normal	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP09	TP09_0.2	0.2	26/01/2023	Normal	280	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
TP09	QC08_260123	0.2	26/01/2023	Intralaboratory Duplicate	230	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
TP09	TP09_0.5	0.5	26/01/2023	Normal	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-

Legend
LOR - Limit of Reporting

Table 1
Soil Analytical Results
APAM - Melbourne Airport

Table 1 - Soil Analytical Results

AECOM

	VOCs	Phenolic Compounds																Phenols	Fumigants					Halogenated Aromatic Compounds										
	Total +ve MAHs	3/4-Methylphenol (m/p-cresol)	Phenol	2-Chlorophenol	2-Methylphenol (o-Cresol)	Total Cresols	2-Nitrophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4,6-Trichlorophenol	2,4,5-Trichlorophenol	4,6-Dinitro-2-methylphenol	2,4-Dinitrophenol	2-Cyclohexyl-4,6-dinitrophenol	4-Nitrophenol	Dinoseb	Phenols (non-halogenated) EPAVic	1,2-Dibromoethane (EDB)	1,2-Dichloropropane	2,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Bromobenzene	Chlorobenzene	2-Chlorotoluene	4-Chlorotoluene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,3,5-Trichlorobenzene	Trichlorobenzenes (Sum)
	mg/kg	LOR	0.2	1	1	0.03	1	1	1	0.03	1	0.05	0.05	5	5	5	5	5	1	0.5	0.5	0.5	0.5	0.5	0.5	0.02	0.5	0.5	0.02	0.5	0.02	0.01	0.01	0.01	0.01
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil			240000			25000																												
NEPM 2013 Table 1B(5) Generic EIL - Comm/Ind																																		
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil																																		
0-2m																																		
2-4m																																		
>4m																																		
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Clay																																		
0-1m																																		
1-2m																																		
2-4m																																		
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil (0-2m)																																		
CRC Care 2011 Table B3 Soil HSL Int. Main. Worker (Shallow Trench), Sand																																		
BH03	BH03_0.2	0.2	29/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-
BH03	BH03_0.5	0.5	29/01/2023	Normal	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01
BH04	BH04_0.5	0.5	29/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-
BH04	QC13_29012023	0.5	29/01/2023	Intralaboratory Duplicate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-
BH04	QC14_29012023	0.5	29/01/2023	Interlaboratory Duplicate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH05	BH05_0.5	0.5	29/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-
BH05	BH05_2.0	2	29/01/2023	Normal	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01
BH2	BH2_0.2	0.2	24/01/2023	Normal	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01
BH2	BH2_0.5	0.5	24/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH6	BH6_0.5	0.5	24/01/2023	Normal	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01
BH6	BH6_1.0	1	24/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH7	BH7_0.2	0.2	25/01/2023	Normal	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01
BH7	BH7_0.5	0.5	25/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH8	BH8_0.5	0.5	25/01/2023	Normal	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01
BH8	BH8_1.0	1	25/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PD05	PD05_0.42	0.42	29/01/2023	Normal	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01
PD08	PD08_0.5	0.5	24/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-
PD08	PD08_1.1	1.1	24/01/2023	Normal	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01
PD11	PD11_0.1	0.1	31/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-
PD11	PD11_0.5	0.5	31/01/2023	Normal	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01
PD12	PD12_0.1	0.1	31/01/2023	Normal	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01
PD12	PD12_0.5	0.5	31/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-
TP04	TP04_0.5	0.5	30/01/2023	Normal	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01
TP04	TP04_1.0	1.0	30/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-
TP05	TP05_0.2	0.2	30/01/2023	Normal	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01
TP05	TP05_1.0	1.0	30/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-
TP06	TP06_0.5	0.5	30/01/2023	Normal	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01
TP06	TP06_1.0	1.0	30/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-
TP07	TP07_0.2	0.2	26/01/2023	Normal	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01
TP07	TP07_1.0	1.0	26/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP08	TP08_0.5	0.5	26/01/2023	Normal	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01
TP08	TP08_1.0	1.0	26/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP09	TP09_0.2	0.2	26/01/2023	Normal	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01
TP09	QC08_260123	0.2	26/01/2023	Intralaboratory Duplicate	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01
TP09	TP09_0.5	0.5	26/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Legend
LOR - Limit of Reporting

Table 1
Soil Analytical Results
APAM - Melbourne Airport

Table 1 - Soil Analytical Results

AECOM

	Halogenated Aliphatic Compounds																														Trihalomethanes				sico-Chemical Parame			PCBs	Oxygenated Compounds				
	Dichlorodifluoromethane (Freon 12)	Chloromethane	Vinyl chloride	Bromomethane	Chloroethane	Trichlorofluoromethane (Freon 11)	1,1-Dichloroethene	Iodomethane	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1,1-Trichloroethane	1,1-Dichloropropene	Carbon Tetrachloride	1,2-Dichloroethane	Trichloroethene	Dibromomethane	1,1,2-Trichloroethane	1,3-Dichloropropane	Tetrachloroethene	1,1,1,2-Tetrachloroethane	trans-1,4-Dichloro-2-butene	cis-1,4-Dichloro-2-butene	1,1,2,2-Tetrachloroethane	1,2,3-Trichloropropane	Dichloromethane	Pentachloroethane	1,2-Dibromo-3-chloropropane	Hexachlorobutadiene	Bromodichloromethane	Bromoform	Chloroform	Dibromochloromethane	Moisture Content (dried @ 103°C)	pH (CaCl2)	Moisture Content	Polychlorinated Biphenyls	Vinyl acetate	2-Butanone (MEK)	2-hexanone (MBK)	4-Methyl-2-pentanone (MIBK)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	pH Units	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR	5	5	0.02	5	5	5	0.01	0.5	0.5	0.01	0.02	0.01	0.5	0.01	0.02	0.02	0.5	0.04	0.5	0.02	0.01	0.5	0.5	0.02	0.5	0.4	0.5	0.5	0.02	0.5	0.5	0.02	0.5	1	0.1	0.1	0.1	5	1	5	5
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil																																				7				
NEPM 2013 Table 1B(5) Generic EIL - Comm/Ind																																								
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil																																								
0-2m																																								
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0-1m																																								
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NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil (0-2m)																																								
CRC Care 2011 Table B3 Soil HSL Int. Main. Worker (Shallow Trench), Sand																																								

Location ID	Field ID	Depth (m)	Sampled Date	Sample Type																																							
BH03	BH03_0.2	0.2	29/01/2023	Normal	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	6.2	-	<5	<5	<5	<5
BH03	BH03_0.5	0.5	29/01/2023	Normal	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	8.1	6.4	<0.1	-	<1	-	-
BH04	BH04_0.5	0.5	29/01/2023	Normal	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	5.7	-	<5	<5	<5	<5
BH04	QC13_29012023	0.5	29/01/2023	Intralaboratory Duplicate	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	7.1	-	<5	<5	<5	<5
BH04	QC14_29012023	0.5	29/01/2023	Interlaboratory Duplicate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.2	-	-	-	-	-	-	-	-
BH05	BH05_0.5	0.5	29/01/2023	Normal	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	22	-	<5	<5	<5	<5
BH05	BH05_2.0	2	29/01/2023	Normal	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	8	17.9	<0.1	-	<1	-	-
BH2	BH2_0.2	0.2	24/01/2023	Normal	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	6.1	19.2	<0.1	-	<1	-	-
BH2	BH2_0.5	0.5	24/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25.2	-	-	-	-	-
BH6	BH6_0.5	0.5	24/01/2023	Normal	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	7.8	19.7	<0.1	-	<1	-	-
BH6	BH6_1.0	1	24/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.1	-	-	-	-	-
BH7	BH7_0.2	0.2	25/01/2023	Normal	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	8.3	24.6	<0.1	-	<1	-	-
BH7	BH7_0.5	0.5	25/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26.7	-	-	-	-	-
BH8	BH8_0.5	0.5	25/01/2023	Normal	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	8.2	29.5	<0.1	-	<1	-	-
BH8	BH8_1.0	1	25/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.2	-	-	-	-	-
PD05	PD05_0.42	0.42	29/01/2023	Normal	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	8.9	4.8	<0.1	-	<1	-	-
PD08	PD08_0.5	0.5	24/01/2023	Normal	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	<5	<5	<5	<5
PD08	PD08_1.1	1.1	24/01/2023	Normal	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	8.4	19.5	<0.1	-	<1	-	-
PD11	PD11_0.1	0.1	31/01/2023	Normal	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	5.5	-	<5	<5	<5	<5
PD11	PD11_0.5	0.5	31/01/2023	Normal	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	7.8	6.1	<0.1	-	<1	-	-
PD12	PD12_0.1	0.1	31/01/2023	Normal	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	8	19.1	<0.1	-	<1	-	-
PD12	PD12_0.5	0.5	31/01/2023	Normal	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	17.6	-	<5	<5	<5	<5
TP04	TP04_0.5	0.5	30/01/2023	Normal	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	7.8	13.7	<0.1	-	<1	-	-
TP04	TP04_1.0	1.0	30/01/2023	Normal	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	24.1	-	<5	<5	<5	<5
TP05	TP05_0.2	0.2	30/01/2023	Normal	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	7.5	7.4	<0.1	-	<1	-	-
TP05	TP05_1.0	1.0	30/01/2023	Normal	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	29.4	-	<5	<5	<5	<5
TP06	TP06_0.5	0.5	30/01/2023	Normal	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	8.1	21.2	<0.1	-	<1	-	-
TP06	TP06_1.0	1.0	30/01/2023	Normal	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	23.5	-	<5	<5	<5	<5
TP07	TP07_0.2	0.2	26/01/2023	Normal	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	7.8	19.5	<0.1	-	<1	-	-
TP07	TP07_1.0	1.0	26/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20.5	-	-	-	-	-
TP08	TP08_0.5	0.5	26/01/2023	Normal	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	8.2	24.2	<0.1	-	<1	-	-
TP08	TP08_1.0	1.0	26/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.6	-	-	-	-	-
TP09	TP09_0.2	0.2	26/01/2023	Normal	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	8.2	22	<0.1	-	<1	-	-
TP09	QC08_260123	0.2	26/01/2023	Intralaboratory Duplicate	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	8	19.6	<0.1	-	<1	-	-
TP09	TP09_0.5	0.5	26/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28.5	-	-	-	-	-

Legend
LOR - Limit of Reporting

Table 1 - Soil Analytical Results

AECOM

					Sulfonated Compounds	Phthalate Esters	Nitroaromatics/Ketones		Chlorinated Hydrocarbons	Organochlorine Pesticides (OC)																								Cyanides		Herbicides	Organotin Compounds	Inorganics
Location ID	Field ID	Depth (m)	Sampled Date	Sample Type	Carbon disulfide	Bis(2-ethylhexyl)phthalate	2,4-Dinitrotoluene	Nitrobenzene	Chlorinated hydrocarbons (sum)	Aldrin	Dieldrin	Aldrin + Dieldrin	a-BHC	b-BHC	d-BHC	g-BHC (Lindane)	cis-Chlordane	trans-Chlordane	Chlordane	DDD	DDE	DDT	DDT+DDE+DDD	Endosulfan 1	Endosulfan 2	Endosulfan sulfate	Endrin	Endrin aldehyde	Heptachlor	Heptachlor epoxide	Hexachlorobenzene (HCB)	Methoxychlor	Other organochlorine pesticides (sum)	Cyanide (amenable)	Cyanide Total	2,4-Dichlorophenoxy acetic acid	Tributyltin oxide	Formaldehyde
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR					0.5	0.5	1	0.5	0.01	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.05	0.05	0.05	0.05	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	1	1	0.001	0.01	2
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil												45							530				3600				100		50		80	2500				9000		
NEPM 2013 Table 1B(5) Generic EIL - Comm/Ind																						640																
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil																																						
0-2m																																						
2-4m																																						
>4m																																						
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Clay																																						
0-1m																																						
1-2m																																						
2-4m																																						
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil (0-2m)																																						
CRC Care 2011 Table B3 Soil HSL Int. Main. Worker (Shallow Trench), Sand																																						
BH03	BH03_0.2	0.2	29/01/2023	Normal	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH03	BH03_0.5	0.5	29/01/2023	Normal	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2
BH04	BH04_0.5	0.5	29/01/2023	Normal	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04	QC13_29012023	0.5	29/01/2023	Intralaboratory Duplicate	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04	QC14_29012023	0.5	29/01/2023	Interlaboratory Duplicate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH05	BH05_0.5	0.5	29/01/2023	Normal	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH05	BH05_2.0	2	29/01/2023	Normal	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2
BH2	BH2_0.2	0.2	24/01/2023	Normal	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2
BH2	BH2_0.5	0.5	24/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH6	BH6_0.5	0.5	24/01/2023	Normal	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2
BH6	BH6_1.0	1	24/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH7	BH7_0.2	0.2	25/01/2023	Normal	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2
BH7	BH7_0.5	0.5	25/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH8	BH8_0.5	0.5	25/01/2023	Normal	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2
BH8	BH8_1.0	1	25/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PD05	PD05_0.42	0.42	29/01/2023	Normal	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2
PD08	PD08_0.5	0.5	24/01/2023	Normal	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PD08	PD08_1.1	1.1	24/01/2023	Normal	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2
PD11	PD11_0.1	0.1	31/01/2023	Normal	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PD11	PD11_0.5	0.5	31/01/2023	Normal	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2
PD12	PD12_0.1	0.1	31/01/2023	Normal	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	3
PD12	PD12_0.5	0.5	31/01/2023	Normal	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP04	TP04_0.5	0.5	30/01/2023	Normal	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2
TP04	TP04_1.0	1.0	30/01/2023	Normal	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP05	TP05_0.2	0.2	30/01/2023	Normal	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2
TP05	TP05_1.0	1.0	30/01/2023	Normal	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP06	TP06_0.5	0.5	30/01/2023	Normal	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2
TP06	TP06_1.0	1.0	30/01/2023	Normal	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP07	TP07_0.2	0.2	26/01/2023	Normal	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2
TP07	TP07_1.0	1.0	26/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP08	TP08_0.5	0.5	26/01/2023	Normal	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2
TP08	TP08_1.0	1.0	26/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP09	TP09_0.2	0.2	26/01/2023	Normal	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2
TP09	QC08_260123	0.2	26/01/2023	Intralaboratory Duplicate	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2
TP09	TP09_0.5	0.5	26/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Legend
LOR - Limit of Reporting

Table 2
Soil Analytical Results - Waste Classification
APAM - Melbourne Airport

Table 2 - Waste Classification

AECOM

	Metals																									
	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Chromium (hexavalent)	Cobalt	Copper	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Tin	Vanadium	Zinc	Perfluorooctanoic acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum (PFHxS + PFOS)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR	5	5	10	1	50	1	2	0.5	2	5	5	5	0.1	2	2	5	2	5	5	5	0.0002	0.0002	0.0002	0.0002
EPA Vic IWRG1828.2 Fill material upper limit		20				3		1		100	300		1	40	60	10	10	50		200				
EPA Vic IWRG1828.2 Category B upper limit	300	2000	25000	400	60000	400		2000		20000	6000		300	4000	12000	40000	720			140000				
EPA Vic IWRG1828.2 Category C upper limit	75	500	6250	100	15000	100		500		5000	1500		75	1000	3000	10000	180			35000				
EPA Vic IWRG1828.2 Category D / Industrial Waste upper limit	75	500	6250	100	15000	100		500		5000	1500		75	1000	3000	10000	180			35000				

Location ID	Field ID	Depth (m)	Sampled Date	Sample Type	Lab Report Number																					
BH03	BH03_0.2	0.2	29/01/2023	Normal	EM2301773	-	<5	110	<1	<50	<1	46	-	14	25	8	367	<0.1	-	39	<5	-	-	41	48	<0.0002	0.0065	0.0002	0.0067
BH03	BH03_0.5	0.5	29/01/2023	Normal	EM2301773	<5	<5	90	<1	<50	<1	-	<0.5	-	16	9	-	<0.1	<2	27	<5	<2	<5	-	35	-	-	-	-
BH04	BH04_0.5	0.5	29/01/2023	Normal	EM2301773	-	<5	60	<1	<50	<1	26	-	10	15	8	210	<0.1	-	25	<5	-	-	36	26	<0.0002	0.0022	0.0003	0.0025
BH04	QC13_29012023	0.5	29/01/2023	Intralaboratory Duplicate	EM2301773	-	<5	50	<1	<50	<1	42	-	12	15	14	310	<0.1	-	19	<5	-	-	44	21	<0.0002	0.008	0.0008	0.0088
BH04	QC14_29012023	0.5	29/01/2023	Interlaboratory Duplicate	961022	-	2.1	-	<2	14	<0.4	-	<1	13	18	9.3	280	<0.1	-	25	<2	-	-	-	30	<0.005	0.011	<0.005	0.011
BH05	BH05_0.5	0.5	29/01/2023	Normal	EM2301773	-	<5	380	1	<50	<1	23	-	13	6	8	290	<0.1	-	37	<5	-	-	22	10	0.0002	0.0097	0.0227	0.0324
BH05	BH05_2.0	2.0	29/01/2023	Normal	EM2301773	<5	<5	460	1	<50	<1	-	<0.5	-	9	8	-	<0.1	<2	33	<5	<2	<5	-	16	-	-	-	-
BH2	BH2_0.2	0.2	24/01/2023	Normal	EM2301163	<5	<5	90	1	<50	<1	-	<0.5	-	14	11	-	<0.1	<2	48	<5	<2	<5	-	19	<0.0002	<0.0002	<0.0002	<0.0002
BH2	BH2_0.5	0.5	24/01/2023	Normal	EM2301163	-	<5	300	1	<50	<1	44	-	23	10	11	625	<0.1	-	46	<5	-	-	38	16	-	-	-	-
BH6	BH6_0.5	0.5	24/01/2023	Normal	EM2301163	<5	<5	210	1	<50	<1	-	<0.5	-	15	12	-	<0.1	<2	36	<5	<2	<5	-	26	<0.0002	0.0002	<0.0002	0.0002
BH6	BH6_1.0	1.0	24/01/2023	Normal	EM2301163	-	<5	150	1	<50	<1	33	-	17	11	10	337	<0.1	-	44	<5	-	-	39	12	-	-	-	-
BH7	BH7_0.2	0.2	25/01/2023	Normal	EM2301163	<5	<5	290	1	<50	<1	-	<0.5	-	6	10	-	<0.1	<2	17	<5	<2	<5	-	7	-	-	-	-
BH7	BH7_0.5	0.5	25/01/2023	Normal	EM2301163	-	<5	350	1	<50	<1	28	-	18	12	12	152	<0.1	-	23	<5	-	-	36	13	0.0003	0.0018	0.0002	0.002
BH8	BH8_0.5	0.5	25/01/2023	Normal	EM2301163	<5	<5	410	1	<50	<1	-	<0.5	-	8	10	-	<0.1	<2	28	<5	<2	<5	-	12	<0.0002	0.0005	0.0005	0.001
BH8	BH8_1.0	1.0	25/01/2023	Normal	EM2301163	-	<5	890	1	<50	<1	36	-	17	10	9	288	<0.1	-	33	<5	-	-	48	16	-	-	-	-
PD05	PD05_0.42	0.4	29/01/2023	Normal	EM2301773	<5	<5	70	<1	<50	<1	-	<0.5	-	15	<5	-	<0.1	<2	30	<5	<2	<5	-	34	-	-	-	-
PD08	PD08_0.5	0.5	24/01/2023	Normal	EM2301163	-	<5	20	1	<50	<1	21	-	24	50	<5	568	<0.1	-	57	<5	-	-	29	44	<0.0002	<0.0002	<0.0002	<0.0002
PD08	PD08_1.1	1.1	24/01/2023	Normal	EM2301163	<5	<5	140	<1	<50	<1	-	<0.5	-	10	8	-	<0.1	<2	39	<5	<2	<5	-	17	-	-	-	-
PD11	PD11_0.1	0.1	31/01/2023	Normal	EM2301412	-	<5	70	<1	<50	<1	31	-	14	40	<5	189	<0.1	-	38	<5	-	-	25	29	<0.0002	<0.0002	<0.0002	<0.0002
PD11	PD11_0.5	0.5	31/01/2023	Normal	EM2301412	<5	<5	40	<1	<50	<1	-	<0.5	-	17	5	-	<0.1	<2	34	<5	<2	<5	-	30	-	-	-	-
PD12	PD12_0.1	0.1	31/01/2023	Normal	EM2301412	<5	<5	70	<1	<50	<1	-	<0.5	-	20	9	-	<0.1	<2	32	<5	<2	<5	-	21	-	-	-	-
PD12	PD12_0.5	0.5	31/01/2023	Normal	EM2301412	-	<5	80	<1	<50	<1	13	-	4	<5	8	90	<0.1	-	6	<5	-	-	33	9	<0.0002	<0.0002	<0.0002	<0.0002
TP04	TP04_0.5	0.5	30/01/2023	Normal	EM2301773	<5	<5	50	<1	<50	<1	-	<0.5	-	25	23	-	<0.1	<2	22	<5	<2	6	-	49	-	-	-	-
TP04	TP04_1.0	1.0	30/01/2023	Normal	EM2301773	-	<5	330	1	<50	<1	36	-	16	8	10	417	<0.1	-	53	<5	-	-	47	16	0.0023	0.0181	0.106	0.124
TP05	TP05_0.2	0.2	30/01/2023	Normal	EM2301773	<5	<5	90	<1	<50	<1	-	<0.5	-	23	8	-	<0.1	<2	34	<5	<2	<5	-	37	-	-	-	-
TP05	TP05_1.0	1.0	30/01/2023	Normal	EM2301773	-	<5	40	1	<50	<1	45	-	22	12	12	132	<0.1	-	56	<5	-	-	59	16	<0.0002	<0.0002	<0.0002	<0.0002
TP06	TP06_0.5	0.5	30/01/2023	Normal	EM2301773	<5	<5	150	1	<50	<1	-	<0.5	-	9	9	-	<0.1	<2	47	<5	<2	<5	-	13	-	-	-	-
TP06	TP06_1.0	1.0	30/01/2023	Normal	EM2301773	-	<5	280	<1	<50	<1	18	-	15	<5	8	243	<0.1	-	36	<5	-	-	23	7	<0.0002	0.0003	0.0021	0.0024
TP07	TP07_0.2	0.2	26/01/2023	Normal	EM2301163	<5	<5	280	1	<50	<1	-	<0.5	-	16	11	-	<0.1	<2	44	<5	<2	<5	-	23	<0.0002	0.0006	<0.0002	0.0006
TP07	TP07_1.0	1.0	26/01/2023	Normal	EM2301163	-	<5	200	1	<50	<1	39	-	20	11	11	300	<0.1	-	38	<5	-	-	50	14	-	-	-	-
TP08	TP08_0.5	0.5	26/01/2023	Normal	EM2301163	<5	<5	160	<1	<50	<1	-	<0.5	-	<5	8	-	<0.1	<2	15	<5	<2	<5	-	6	-	-	-	-
TP08	TP08_1.0	1.0	26/01/2023	Normal	EM2301163	-	<5	190	<1	<50	<1	32	-	6	5	9	40	<0.1	-	18	<5	-	-	37	8	<0.0002	0.0039	0.0037	0.0076
TP09	TP09_0.2	0.2	26/01/2023	Normal	EM2301163	<5	<5	200	1	<50	<1	-	<0.5	-	9	11	-	<0.1	<2	28	<5	<2	<5	-	15	<0.0002	0.001	<0.0002	0.001
TP09	QC08_260123	0.2	26/01/2023	Intralaboratory Duplicate	EM2301163	<5	<5	270	1	<50	<1	-	<0.5	-	11	11	-	<0.1	<2	30	<5	<2	<5	-	20	<0.0002	0.0016	<0.0002	0.0016
TP09	TP09_0.5	0.5	26/01/2023	Normal	EM2301163	-	<5	40	1	<50	<1	46	-	16	6	10	147	<0.1	-	22	<5	-	-	40	11	-	-	-	-

Legend
LOR - Limit of Reporting

Table 2 - Waste Classification

AECOM

					Per- and Poly-fluoroalkyl Substances																					
					4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	PFNS	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluoropropanesulfonic acid (PFPrS)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	ng/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR					0.0005	0.0005	0.0005	0.0005	0.0002	0.001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.005	0.0002	0.0002	0.0002	0.0002	5000	0.0005	0.0002	0.0002	0.0005	0.0002
EPA Vic IWRG1828.2 Fill material upper limit																										
EPA Vic IWRG1828.2 Category B upper limit																										
EPA Vic IWRG1828.2 Category C upper limit																										
EPA Vic IWRG1828.2 Category D / Industrial Waste upper limit																										
Location ID	**Field ID**	**Depth (m)**	**Sampled Date**	**Sample Type**																						
BH03	BH03_0.2	0.2	29/01/2023	Normal	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002
BH03	BH03_0.5	0.5	29/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04	BH04_0.5	0.5	29/01/2023	Normal	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002
BH04	QC13_29012023	0.5	29/01/2023	Intralaboratory Duplicate	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002
BH04	QC14_29012023	0.5	29/01/2023	Interlaboratory Duplicate	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<5000	<0.005	<0.005	<0.005	<0.005	<0.01
BH05	BH05_0.5	0.5	29/01/2023	Normal	<0.0005	<0.0005	<0.0005	<0.0005	0.0014	<0.001	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	0.0048	-	<0.0002	<0.0002	0.0017	0.0004	-	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002
BH05	BH05_2.0	2.0	29/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH2	BH2_0.2	0.2	24/01/2023	Normal	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002
BH2	BH2_0.5	0.5	24/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH6	BH6_0.5	0.5	24/01/2023	Normal	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002
BH6	BH6_1.0	1.0	24/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH7	BH7_0.2	0.2	25/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH7	BH7_0.5	0.5	25/01/2023	Normal	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002
BH8	BH8_0.5	0.5	25/01/2023	Normal	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002
BH8	BH8_1.0	1.0	25/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PD05	PD05_0.42	0.4	29/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PD08	PD08_0.5	0.5	24/01/2023	Normal	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002
PD08	PD08_1.1	1.1	24/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PD11	PD11_0.1	0.1	31/01/2023	Normal	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002
PD11	PD11_0.5	0.5	31/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PD12	PD12_0.1	0.1	31/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PD12	PD12_0.5	0.5	31/01/2023	Normal	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002
TP04	TP04_0.5	0.5	30/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP04	TP04_1.0	1.0	30/01/2023	Normal	<0.0005	<0.0005	<0.0005	<0.0005	0.0081	<0.001	<0.0002	<0.0002	<0.0002	0.0012	0.0027	0.0221	-	<0.0002	<0.0002	0.0146	0.0017	-	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002
TP05	TP05_0.2	0.2	30/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP05	TP05_1.0	1.0	30/01/2023	Normal	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002
TP06	TP06_0.5	0.5	30/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP06	TP06_1.0	1.0	30/01/2023	Normal	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	0.0008	<0.0002	-	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002
TP07	TP07_0.2	0.2	26/01/2023	Normal	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002
TP07	TP07_1.0	1.0	26/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP08	TP08_0.5	0.5	26/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP08	TP08_1.0	1.0	26/01/2023	Normal	<0.0005	<0.0005	<0.0005	<0.0005	0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	-	<0.0002	<0.0002	0.0004	<0.0002	-	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002
TP09	TP09_0.2	0.2	26/01/2023	Normal	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002
TP09	QC08_260123	0.2	26/01/2023	Intralaboratory Duplicate	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002
TP09	TP09_0.5	0.5	26/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Legend
LOR - Limit of Reporting

Table 2 - Waste Classification

AECOM

										Total Petroleum Hydrocarbons					Total Recoverable Hydrocarbons							Major Ions						
					N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	Sum of PFAS	Sum of WA DWER PFAS (n=10)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)	Sum of US EPA PFAS (PFOS + PFOA)	C6-C9 fraction	C10-C14 fraction	C15-C28 fraction	C29-C36 fraction	C10-C36 fraction (sum)	C6-C10 fraction	C6-C10 fraction (minus BTEX)(F1)	>C10-C16 (minus Naphthalene)(F2)	>C10-C16 fraction	>C16-C34 fraction	>C34-C40 fraction	>C10-C40 fraction (sum)	Fluoride	Benzene	Toluene	Ethylbenzene	m&p-Xylene	o-Xylene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	ug/kg	UG/KG	UG/KG	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR					0.0005	0.0005	0.0002	0.0005	0.0002	0.2	5	5	10	50	100	100	50	10	10	50	50	100	100	50	40	0.2	0.5	0.5	0.5	0.5
EPA Vic IWRG1828.2 Fill material upper limit													100				1000								450	1				
EPA Vic IWRG1828.2 Category B upper limit													2600				40000								40000	16	12800	4800		
EPA Vic IWRG1828.2 Category C upper limit													650				10000								10000	4	3200	1200		
EPA Vic IWRG1828.2 Category D / Industrial Waste upper limit													325				5000								10000	4	3200	1200		
Location ID	**Field ID**	**Depth (m)**	**Sampled Date**	**Sample Type**																										
BH03	BH03_0.2	0.2	29/01/2023	Normal	<0.0005	<0.0005	<0.0002	<0.0005	0.0067	6.7	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5
BH03	BH03_0.5	0.5	29/01/2023	Normal	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	250	<0.2	<0.5	<0.5	<0.5	<0.5
BH04	BH04_0.5	0.5	29/01/2023	Normal	<0.0005	<0.0005	<0.0002	<0.0005	0.0025	2.5	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5
BH04	QC13_29012023	0.5	29/01/2023	Intralaboratory Duplicate	<0.0005	<0.0005	<0.0002	<0.0005	0.0091	8.8	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5
BH04	QC14_29012023	0.5	29/01/2023	Interlaboratory Duplicate	<0.005	<0.005	<0.01	<0.005	<0.05	11	11	11	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<0.1	<0.1	<0.1	<0.2	<0.1
BH05	BH05_0.5	0.5	29/01/2023	Normal	<0.0005	<0.0005	<0.0002	<0.0005	0.0414	39.2	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5
BH05	BH05_2.0	2.0	29/01/2023	Normal	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	270	<0.2	<0.5	<0.5	<0.5	<0.5
BH2	BH2_0.2	0.2	24/01/2023	Normal	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.2	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	160	<0.2	<0.5	<0.5	<0.5	<0.5
BH2	BH2_0.5	0.5	24/01/2023	Normal	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5
BH6	BH6_0.5	0.5	24/01/2023	Normal	<0.0005	<0.0005	<0.0002	<0.0005	0.0002	0.2	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	160	<0.2	<0.5	<0.5	<0.5	<0.5
BH6	BH6_1.0	1.0	24/01/2023	Normal	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5
BH7	BH7_0.2	0.2	25/01/2023	Normal	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	230	<0.2	<0.5	<0.5	<0.5	<0.5
BH7	BH7_0.5	0.5	25/01/2023	Normal	<0.0005	<0.0005	<0.0002	<0.0005	0.0023	2.3	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5
BH8	BH8_0.5	0.5	25/01/2023	Normal	<0.0005	<0.0005	<0.0002	<0.0005	0.001	1	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	210	<0.2	<0.5	<0.5	<0.5	<0.5
BH8	BH8_1.0	1.0	25/01/2023	Normal	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5
PD05	PD05_0.42	0.4	29/01/2023	Normal	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	410	<0.2	<0.5	<0.5	<0.5	<0.5
PD08	PD08_0.5	0.5	24/01/2023	Normal	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.2	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5
PD08	PD08_1.1	1.1	24/01/2023	Normal	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	160	<0.2	<0.5	<0.5	<0.5	<0.5
PD11	PD11_0.1	0.1	31/01/2023	Normal	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.2	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5
PD11	PD11_0.5	0.5	31/01/2023	Normal	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	370	<0.2	<0.5	<0.5	<0.5	<0.5
PD12	PD12_0.1	0.1	31/01/2023	Normal	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	260	<0.2	<0.5	<0.5	<0.5	<0.5
PD12	PD12_0.5	0.5	31/01/2023	Normal	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.2	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5
TP04	TP04_0.5	0.5	30/01/2023	Normal	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	110	<0.2	<0.5	<0.5	<0.5	<0.5
TP04	TP04_1.0	1.0	30/01/2023	Normal	<0.0005	<0.0005	<0.0002	<0.0005	0.177	161	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5
TP05	TP05_0.2	0.2	30/01/2023	Normal	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	170	<0.2	<0.5	<0.5	<0.5	<0.5
TP05	TP05_1.0	1.0	30/01/2023	Normal	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.2	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5
TP06	TP06_0.5	0.5	30/01/2023	Normal	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	240	<0.2	<0.5	<0.5	<0.5	<0.5
TP06	TP06_1.0	1.0	30/01/2023	Normal	<0.0005	<0.0005	<0.0002	<0.0005	0.0037	2.9	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5
TP07	TP07_0.2	0.2	26/01/2023	Normal	<0.0005	<0.0005	<0.0002	<0.0005	0.0006	0.6	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	190	<0.2	<0.5	<0.5	<0.5	<0.5
TP07	TP07_1.0	1.0	26/01/2023	Normal	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5
TP08	TP08_0.5	0.5	26/01/2023	Normal	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	220	<0.2	<0.5	<0.5	<0.5	<0.5
TP08	TP08_1.0	1.0	26/01/2023	Normal	<0.0005	<0.0005	<0.0002	<0.0005	0.0086	8.2	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5
TP09	TP09_0.2	0.2	26/01/2023	Normal	<0.0005	<0.0005	<0.0002	<0.0005	0.001	1	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	280	<0.2	<0.5	<0.5	<0.5	<0.5
TP09	QC08_260123	0.2	26/01/2023	Intralaboratory Duplicate	<0.0005	<0.0005	<0.0002	<0.0005	0.0016	1.6	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	230	<0.2	<0.5	<0.5	<0.5	<0.5
TP09	TP09_0.5	0.5	26/01/2023	Normal	-	-	-	-	-	-	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5

Legend
LOR - Limit of Reporting

Table 2 - Waste Classification

AECOM

					Monocyclic Aromatic Hydrocarbons											Polynuclear Aromatic Hydrocarbons																
					Total Xylenes	Styrene	Isopropylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	tert-butylbenzene	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Total BTEX	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ calc (Zero)	Benzo(a)pyrene TEQ calc(PQL)	Naphthalene	Acenaphthylene	Acenaphthene	Anthracene	Fluorene	Phenanthrene	Fluoranthene	Benz(a)anthracene	Benzo(k)fluoranthene	Benzo(b&j)fluoranthene	Benzo(b+j) & Benzo(k)fluoranthene	Benzo(a)pyrene	Chrysene	Pyrene	Benzo(g,h,i)perylene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	0.5	0.5	0.5
EPA Vic IWRG1828.2 Fill material upper limit																														1			
EPA Vic IWRG1828.2 Category B upper limit					9600	480																								160			
EPA Vic IWRG1828.2 Category C upper limit					2400	120																								40			
EPA Vic IWRG1828.2 Category D / Industrial Waste upper limit					2400	120																								20			
Location ID	**Field ID**	**Depth (m)**	**Sampled Date**	**Sample Type**																													
BH03	BH03_0.2	0.2	29/01/2023	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
BH03	BH03_0.5	0.5	29/01/2023	Normal	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5
BH04	BH04_0.5	0.5	29/01/2023	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
BH04	QC13_29012023	0.5	29/01/2023	Intralaboratory Duplicate	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
BH04	QC14_29012023	0.5	29/01/2023	Interlaboratory Duplicate	<0.3	-	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
BH05	BH05_0.5	0.5	29/01/2023	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
BH05	BH05_2.0	2.0	29/01/2023	Normal	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5
BH2	BH2_0.2	0.2	24/01/2023	Normal	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5
BH2	BH2_0.5	0.5	24/01/2023	Normal	<0.5	-	-	-	-	-	-	-	-	-	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
BH6	BH6_0.5	0.5	24/01/2023	Normal	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5
BH6	BH6_1.0	1.0	24/01/2023	Normal	<0.5	-	-	-	-	-	-	-	-	-	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
BH7	BH7_0.2	0.2	25/01/2023	Normal	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5
BH7	BH7_0.5	0.5	25/01/2023	Normal	<0.5	-	-	-	-	-	-	-	-	-	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
BH8	BH8_0.5	0.5	25/01/2023	Normal	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5
BH8	BH8_1.0	1.0	25/01/2023	Normal	<0.5	-	-	-	-	-	-	-	-	-	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
PD05	PD05_0.42	0.4	29/01/2023	Normal	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5
PD08	PD08_0.5	0.5	24/01/2023	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
PD08	PD08_1.1	1.1	24/01/2023	Normal	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5
PD11	PD11_0.1	0.1	31/01/2023	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
PD11	PD11_0.5	0.5	31/01/2023	Normal	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5
PD12	PD12_0.1	0.1	31/01/2023	Normal	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5
PD12	PD12_0.5	0.5	31/01/2023	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
TP04	TP04_0.5	0.5	30/01/2023	Normal	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5
TP04	TP04_1.0	1.0	30/01/2023	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
TP05	TP05_0.2	0.2	30/01/2023	Normal	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5
TP05	TP05_1.0	1.0	30/01/2023	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
TP06	TP06_0.5	0.5	30/01/2023	Normal	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5
TP06	TP06_1.0	1.0	30/01/2023	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
TP07	TP07_0.2	0.2	26/01/2023	Normal	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5
TP07	TP07_1.0	1.0	26/01/2023	Normal	<0.5	-	-	-	-	-	-	-	-	-	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
TP08	TP08_0.5	0.5	26/01/2023	Normal	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5
TP08	TP08_1.0	1.0	26/01/2023	Normal	<0.5	-	-	-	-	-	-	-	-	-	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
TP09	TP09_0.2	0.2	26/01/2023	Normal	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5
TP09	QC08_260123	0.2	26/01/2023	Intralaboratory Duplicate	<0.5	<0.5	-	-	-	-	-	-	-	-	-	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5
TP09	TP09_0.5	0.5	26/01/2023	Normal	<0.5	-	-	-	-	-	-	-	-	-	<0.2	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5

Legend
LOR - Limit of Reporting

Table 2 - Waste Classification

Location ID	Field ID	Depth (m)	Sampled Date	Sample Type	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Sum of PAHs	Sum of polycyclic aromatic hydrocarbons	VOCs: Total +ve MAHs	Phenolic Compounds: 3/4-Methylphenol (m/p-cresol)	Phenol	2-Chlorophenol	2-Methylphenol (o-Cresol)	Total Cresols	2-Nitrophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4,6-Trichlorophenol	2,4,5-Trichlorophenol	4,6-Dinitro-2-methylphenol	2,4-Dinitrophenol	2-Cyclohexyl-4,6-dinitrophenol	4-Nitrophenol	Dinoseb	Phenols: Phenols (non-halogenated) EPAVic	Fumigants: 1,2-Dibromoethane (EDB)	1,2-Dichloropropane	2,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Bromobenzene	Chlorobenzene	2-Chlorotoluene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR					0.5	0.5	0.5	0.5	0.2	1	1	0.03	1	1	1	0.03	1	0.05	0.05	5	5	5	5	5	1	0.5	0.5	0.5	0.5	0.5	0.5	0.02	0.5
EPA Vic IWRG1828.2 Fill material upper limit							20	20	7																60								
EPA Vic IWRG1828.2 Category B upper limit							400	400				4800		32000		3200		320	64000						2200							4800	
EPA Vic IWRG1828.2 Category C upper limit							100	100				1200		8000		800		80	16000						560							1200	
EPA Vic IWRG1828.2 Category D / Industrial Waste upper limit							50	50				1200		8000		800		80	16000						560							1200	
BH03	BH03_0.2	0.2	29/01/2023	Normal	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH03	BH03_0.5	0.5	29/01/2023	Normal	<0.5	<0.5	-	<0.5	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-
BH04	BH04_0.5	0.5	29/01/2023	Normal	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH04	QC13_29012023	0.5	29/01/2023	Intralaboratory Duplicate	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH04	QC14_29012023	0.5	29/01/2023	Interlaboratory Duplicate	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH05	BH05_0.5	0.5	29/01/2023	Normal	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH05	BH05_2.0	2.0	29/01/2023	Normal	<0.5	<0.5	-	<0.5	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-
BH2	BH2_0.2	0.2	24/01/2023	Normal	<0.5	<0.5	-	<0.5	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-
BH2	BH2_0.5	0.5	24/01/2023	Normal	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH6	BH6_0.5	0.5	24/01/2023	Normal	<0.5	<0.5	-	<0.5	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-
BH6	BH6_1.0	1.0	24/01/2023	Normal	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH7	BH7_0.2	0.2	25/01/2023	Normal	<0.5	<0.5	-	<0.5	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-
BH7	BH7_0.5	0.5	25/01/2023	Normal	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH8	BH8_0.5	0.5	25/01/2023	Normal	<0.5	<0.5	-	<0.5	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-
BH8	BH8_1.0	1.0	25/01/2023	Normal	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PD05	PD05_0.42	0.4	29/01/2023	Normal	<0.5	<0.5	-	<0.5	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-
PD08	PD08_0.5	0.5	24/01/2023	Normal	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PD08	PD08_1.1	1.1	24/01/2023	Normal	<0.5	<0.5	-	<0.5	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-
PD11	PD11_0.1	0.1	31/01/2023	Normal	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PD11	PD11_0.5	0.5	31/01/2023	Normal	<0.5	<0.5	-	<0.5	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-
PD12	PD12_0.1	0.1	31/01/2023	Normal	<0.5	<0.5	-	<0.5	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-
PD12	PD12_0.5	0.5	31/01/2023	Normal	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP04	TP04_0.5	0.5	30/01/2023	Normal	<0.5	<0.5	-	<0.5	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-
TP04	TP04_1.0	1.0	30/01/2023	Normal	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP05	TP05_0.2	0.2	30/01/2023	Normal	<0.5	<0.5	-	<0.5	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-
TP05	TP05_1.0	1.0	30/01/2023	Normal	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP06	TP06_0.5	0.5	30/01/2023	Normal	<0.5	<0.5	-	<0.5	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-
TP06	TP06_1.0	1.0	30/01/2023	Normal	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP07	TP07_0.2	0.2	26/01/2023	Normal	<0.5	<0.5	-	<0.5	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-
TP07	TP07_1.0	1.0	26/01/2023	Normal	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP08	TP08_0.5	0.5	26/01/2023	Normal	<0.5	<0.5	-	<0.5	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-
TP08	TP08_1.0	1.0	26/01/2023	Normal	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP09	TP09_0.2	0.2	26/01/2023	Normal	<0.5	<0.5	-	<0.5	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-
TP09	QC08_260123	0.2	26/01/2023	Intralaboratory Duplicate	<0.5	<0.5	-	<0.5	<0.2	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<1	-	-	-	-	-	-	<0.02	-
TP09	TP09_0.5	0.5	26/01/2023	Normal	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Legend
LOR - Limit of Reporting

Table 2 - Waste Classification

AECOM

					Halogenated Aromatic Compounds								Halogenated Aliphatic Compounds																				
					4-Chlorotoluene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,3,5-Trichlorobenzene	Trichlorobenzenes (Sum)	Dichlorodifluoromethane (Freon 12)	Chloromethane	Vinyl chloride	Bromomethane	Chloroethane	Trichlorofluoromethane (Freon 11)	1,1-Dichloroethene	Iodomethane	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1,1-Trichloroethane	1,1-Dichloropropene	Carbon Tetrachloride	1,2-Dichloroethane	Trichloroethene	Dibromomethane	1,1,2-Trichloroethane	1,3-Dichloropropane	Tetrachloroethene	1,1,1,2-Tetrachloroethane
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR					0.5	0.02	0.5	0.02	0.01	0.01	0.01	0.01	5	5	0.02	5	5	5	0.01	0.5	0.5	0.01	0.02	0.01	0.5	0.01	0.02	0.02	0.5	0.04	0.5	0.02	0.01
EPA Vic IWRG1828.2 Fill material upper limit																																	
EPA Vic IWRG1828.2 Category B upper limit						24000		640				480			4.8				480					4800		48	48	80		190		800	1600
EPA Vic IWRG1828.2 Category C upper limit						6000		160				120			1.2				120					1200		12	12	20		48		200	400
EPA Vic IWRG1828.2 Category D / Industrial Waste upper limit						6000		160				120			1.2				120					1200		12	12	20		48		200	400
Location ID	**Field ID**	**Depth (m)**	**Sampled Date**	**Sample Type**																													
BH03	BH03_0.2	0.2	29/01/2023	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH03	BH03_0.5	0.5	29/01/2023	Normal	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01
BH04	BH04_0.5	0.5	29/01/2023	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH04	QC13_29012023	0.5	29/01/2023	Intralaboratory Duplicate	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH04	QC14_29012023	0.5	29/01/2023	Interlaboratory Duplicate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH05	BH05_0.5	0.5	29/01/2023	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH05	BH05_2.0	2.0	29/01/2023	Normal	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01
BH2	BH2_0.2	0.2	24/01/2023	Normal	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01
BH2	BH2_0.5	0.5	24/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH6	BH6_0.5	0.5	24/01/2023	Normal	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01
BH6	BH6_1.0	1.0	24/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH7	BH7_0.2	0.2	25/01/2023	Normal	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01
BH7	BH7_0.5	0.5	25/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH8	BH8_0.5	0.5	25/01/2023	Normal	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01
BH8	BH8_1.0	1.0	25/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PD05	PD05_0.42	0.4	29/01/2023	Normal	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01
PD08	PD08_0.5	0.5	24/01/2023	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PD08	PD08_1.1	1.1	24/01/2023	Normal	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01
PD11	PD11_0.1	0.1	31/01/2023	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PD11	PD11_0.5	0.5	31/01/2023	Normal	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01
PD12	PD12_0.1	0.1	31/01/2023	Normal	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01
PD12	PD12_0.5	0.5	31/01/2023	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP04	TP04_0.5	0.5	30/01/2023	Normal	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01
TP04	TP04_1.0	1.0	30/01/2023	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP05	TP05_0.2	0.2	30/01/2023	Normal	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01
TP05	TP05_1.0	1.0	30/01/2023	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP06	TP06_0.5	0.5	30/01/2023	Normal	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01
TP06	TP06_1.0	1.0	30/01/2023	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP07	TP07_0.2	0.2	26/01/2023	Normal	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01
TP07	TP07_1.0	1.0	26/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP08	TP08_0.5	0.5	26/01/2023	Normal	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01
TP08	TP08_1.0	1.0	26/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP09	TP09_0.2	0.2	26/01/2023	Normal	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01
TP09	QC08_260123	0.2	26/01/2023	Intralaboratory Duplicate	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01
TP09	TP09_0.5	0.5	26/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Legend
LOR - Limit of Reporting

Table 2 - Waste Classification

AECOM

					Trihalomethanes								Physico-Chemical Parameters			PCBs	Oxygenated Compounds				Sulfonated Compounds
					trans-1,4-Dichloro-2-butene	cis-1,4-Dichloro-2-butene	1,1,2,2-Tetrachloroethane	1,2,3-Trichloropropane	Dichloromethane	Pentachloroethane	1,2-Dibromo-3-chloropropane	Hexachlorobutadiene	Bromodichloromethane	Bromoform	Chloroform	Dibromochloromethane	Moisture Content (dried @ 103°C)	pH (CaCl2)	Moisture Content	Polychlorinated Biphenyls	Vinyl acetate	2-Butanone (MEK)	2-hexanone (MBK)	4-Methyl-2-pentanone (MIBK)	Carbon disulfide
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	pH Units	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR					0.5	0.5	0.02	0.5	0.4	0.5	0.5	0.02	0.5	0.5	0.02	0.5	1	0.1	0.1	0.1	5	1	5	5	0.5
EPA Vic IWRG1828.2 Fill material upper limit																				2					
EPA Vic IWRG1828.2 Category B upper limit							210		64			11			960					6		32000			
EPA Vic IWRG1828.2 Category C upper limit							52		16			2.8			240					50		8000			
EPA Vic IWRG1828.2 Category D / Industrial Waste upper limit							52		16			2.8			240					2		8000			
Location ID	**Field ID**	**Depth (m)**	**Sampled Date**	**Sample Type**																					
BH03	BH03_0.2	0.2	29/01/2023	Normal	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	6.2	-	<5	<5	<5	<5	<0.5
BH03	BH03_0.5	0.5	29/01/2023	Normal	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	8.1	6.4	<0.1	-	<1	-	-	-
BH04	BH04_0.5	0.5	29/01/2023	Normal	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	5.7	-	<5	<5	<5	<5	<0.5
BH04	QC13_29012023	0.5	29/01/2023	Intralaboratory Duplicate	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	7.1	-	<5	<5	<5	<5	<0.5
BH04	QC14_29012023	0.5	29/01/2023	Interlaboratory Duplicate	-	-	-	-	-	-	-	-	-	-	-	-	9.2	-	-	-	-	-	-	-	-
BH05	BH05_0.5	0.5	29/01/2023	Normal	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	22	-	<5	<5	<5	<5	<0.5
BH05	BH05_2.0	2.0	29/01/2023	Normal	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	8	17.9	<0.1	-	<1	-	-	-
BH2	BH2_0.2	0.2	24/01/2023	Normal	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	6.1	19.2	<0.1	-	<1	-	-	-
BH2	BH2_0.5	0.5	24/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25.2	-	-	-	-	-	-
BH6	BH6_0.5	0.5	24/01/2023	Normal	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	7.8	19.7	<0.1	-	<1	-	-	-
BH6	BH6_1.0	1.0	24/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.1	-	-	-	-	-	-
BH7	BH7_0.2	0.2	25/01/2023	Normal	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	8.3	24.6	<0.1	-	<1	-	-	-
BH7	BH7_0.5	0.5	25/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26.7	-	-	-	-	-	-
BH8	BH8_0.5	0.5	25/01/2023	Normal	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	8.2	29.5	<0.1	-	<1	-	-	-
BH8	BH8_1.0	1.0	25/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.2	-	-	-	-	-	-
PD05	PD05_0.42	0.4	29/01/2023	Normal	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	8.9	4.8	<0.1	-	<1	-	-	-
PD08	PD08_0.5	0.5	24/01/2023	Normal	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	<5	<5	<5	<5	<0.5
PD08	PD08_1.1	1.1	24/01/2023	Normal	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	8.4	19.5	<0.1	-	<1	-	-	-
PD11	PD11_0.1	0.1	31/01/2023	Normal	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	5.5	-	<5	<5	<5	<5	<0.5
PD11	PD11_0.5	0.5	31/01/2023	Normal	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	7.8	6.1	<0.1	-	<1	-	-	-
PD12	PD12_0.1	0.1	31/01/2023	Normal	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	8	19.1	<0.1	-	<1	-	-	-
PD12	PD12_0.5	0.5	31/01/2023	Normal	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	17.6	-	<5	<5	<5	<5	<0.5
TP04	TP04_0.5	0.5	30/01/2023	Normal	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	7.8	13.7	<0.1	-	<1	-	-	-
TP04	TP04_1.0	1.0	30/01/2023	Normal	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	24.1	-	<5	<5	<5	<5	<0.5
TP05	TP05_0.2	0.2	30/01/2023	Normal	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	7.5	7.4	<0.1	-	<1	-	-	-
TP05	TP05_1.0	1.0	30/01/2023	Normal	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	29.4	-	<5	<5	<5	<5	<0.5
TP06	TP06_0.5	0.5	30/01/2023	Normal	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	8.1	21.2	<0.1	-	<1	-	-	-
TP06	TP06_1.0	1.0	30/01/2023	Normal	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	23.5	-	<5	<5	<5	<5	<0.5
TP07	TP07_0.2	0.2	26/01/2023	Normal	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	7.8	19.5	<0.1	-	<1	-	-	-
TP07	TP07_1.0	1.0	26/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20.5	-	-	-	-	-	-
TP08	TP08_0.5	0.5	26/01/2023	Normal	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	8.2	24.2	<0.1	-	<1	-	-	-
TP08	TP08_1.0	1.0	26/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.6	-	-	-	-	-	-
TP09	TP09_0.2	0.2	26/01/2023	Normal	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	8.2	22	<0.1	-	<1	-	-	-
TP09	QC08_260123	0.2	26/01/2023	Intralaboratory Duplicate	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-	8	19.6	<0.1	-	<1	-	-	-
TP09	TP09_0.5	0.5	26/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28.5	-	-	-	-	-	-

Legend
LOR - Limit of Reporting

Table 2 - Waste Classification

AECOM

	Phthalate Esters	Nitroaromatics/Ketones		Chlorinated Hydrocarbons	Organochlorine Pesticides (OC)																	
	Bis(2-ethylhexyl)phthalate	2,4-Dinitrotoluene	Nitrobenzene	Chlorinated hydrocarbons (sum)	Aldrin	Dieldrin	Aldrin + Dieldrin	a-BHC	b-BHC	d-BHC	g-BHC (Lindane)	cis-Chlordane	trans-Chlordane	Chlordane	DDD	DDE	DDT	DDT+DDE+DDD	Endosulfan 1	Endosulfan 2	Endosulfan sulfate
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR	0.5	1	0.5	0.01	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.05	0.05	0.05	0.05	0.03	0.03	0.03
EPA Vic IWRG1828.2 Fill material upper limit				1																	
EPA Vic IWRG1828.2 Category B upper limit	160	21	320				4.8							16				50			
EPA Vic IWRG1828.2 Category C upper limit	40	5.2	80				1.2							4				50			
EPA Vic IWRG1828.2 Category D / Industrial Waste upper limit	40	5.2	80				1.2							4				50			

Location ID	Field ID	Depth (m)	Sampled Date	Sample Type																			
BH03	BH03_0.2	0.2	29/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH03	BH03_0.5	0.5	29/01/2023	Normal	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03
BH04	BH04_0.5	0.5	29/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04	QC13_29012023	0.5	29/01/2023	Intralaboratory Duplicate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04	QC14_29012023	0.5	29/01/2023	Interlaboratory Duplicate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH05	BH05_0.5	0.5	29/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH05	BH05_2.0	2.0	29/01/2023	Normal	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03
BH2	BH2_0.2	0.2	24/01/2023	Normal	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03
BH2	BH2_0.5	0.5	24/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH6	BH6_0.5	0.5	24/01/2023	Normal	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03
BH6	BH6_1.0	1.0	24/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH7	BH7_0.2	0.2	25/01/2023	Normal	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03
BH7	BH7_0.5	0.5	25/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH8	BH8_0.5	0.5	25/01/2023	Normal	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03
BH8	BH8_1.0	1.0	25/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PD05	PD05_0.42	0.4	29/01/2023	Normal	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03
PD08	PD08_0.5	0.5	24/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PD08	PD08_1.1	1.1	24/01/2023	Normal	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03
PD11	PD11_0.1	0.1	31/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PD11	PD11_0.5	0.5	31/01/2023	Normal	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03
PD12	PD12_0.1	0.1	31/01/2023	Normal	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03
PD12	PD12_0.5	0.5	31/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP04	TP04_0.5	0.5	30/01/2023	Normal	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03
TP04	TP04_1.0	1.0	30/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP05	TP05_0.2	0.2	30/01/2023	Normal	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03
TP05	TP05_1.0	1.0	30/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP06	TP06_0.5	0.5	30/01/2023	Normal	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03
TP06	TP06_1.0	1.0	30/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP07	TP07_0.2	0.2	26/01/2023	Normal	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03
TP07	TP07_1.0	1.0	26/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP08	TP08_0.5	0.5	26/01/2023	Normal	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03
TP08	TP08_1.0	1.0	26/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP09	TP09_0.2	0.2	26/01/2023	Normal	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03
TP09	QC08_260123	0.2	26/01/2023	Intralaboratory Duplicate	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03
TP09	TP09_0.5	0.5	26/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Legend
LOR - Limit of Reporting

Table 2 - Waste Classification

AECOM

										Cyanides		Herbicides	Organotin Compounds	Inorganics				
				Endrin	Endrin aldehyde	Heptachlor	Heptachlor epoxide	Hexachlorobenzene (HCB)	Methoxychlor	Other organochlorine pesticides (sum)	Cyanide (amenable)	Cyanide Total	2,4-Dichlorophenoxy acetic acid	Tributyltin oxide	Formaldehyde			
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg			
LOR				0.03	0.03	0.03	0.03	0.03	0.03	0.03	1	1	0.001	0.01	2			
EPA Vic IWRG1828.2 Fill material upper limit												50						
EPA Vic IWRG1828.2 Category B upper limit						4.8				50	1200	10000	480	10	8000			
EPA Vic IWRG1828.2 Category C upper limit						1.2				10	300	2500	120	2.5	2000			
EPA Vic IWRG1828.2 Category D / Industrial Waste upper limit						1.2				10	300	2500	120	2.5	2000			
Location ID	**Field ID**	**Depth (m)**	**Sampled Date**	**Sample Type**														
BH03	BH03_0.2	0.2	29/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-		
BH03	BH03_0.5	0.5	29/01/2023	Normal	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2		
BH04	BH04_0.5	0.5	29/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-		
BH04	QC13_29012023	0.5	29/01/2023	Intralaboratory Duplicate	-	-	-	-	-	-	-	-	-	-	-	-		
BH04	QC14_29012023	0.5	29/01/2023	Interlaboratory Duplicate	-	-	-	-	-	-	-	-	-	-	-	-		
BH05	BH05_0.5	0.5	29/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-		
BH05	BH05_2.0	2.0	29/01/2023	Normal	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2		
BH2	BH2_0.2	0.2	24/01/2023	Normal	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2		
BH2	BH2_0.5	0.5	24/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-		
BH6	BH6_0.5	0.5	24/01/2023	Normal	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2		
BH6	BH6_1.0	1.0	24/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-		
BH7	BH7_0.2	0.2	25/01/2023	Normal	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2		
BH7	BH7_0.5	0.5	25/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-		
BH8	BH8_0.5	0.5	25/01/2023	Normal	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2		
BH8	BH8_1.0	1.0	25/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-		
PD05	PD05_0.42	0.4	29/01/2023	Normal	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2		
PD08	PD08_0.5	0.5	24/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-		
PD08	PD08_1.1	1.1	24/01/2023	Normal	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2		
PD11	PD11_0.1	0.1	31/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-		
PD11	PD11_0.5	0.5	31/01/2023	Normal	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2		
PD12	PD12_0.1	0.1	31/01/2023	Normal	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	3		
PD12	PD12_0.5	0.5	31/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-		
TP04	TP04_0.5	0.5	30/01/2023	Normal	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2		
TP04	TP04_1.0	1.0	30/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-		
TP05	TP05_0.2	0.2	30/01/2023	Normal	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2		
TP05	TP05_1.0	1.0	30/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-		
TP06	TP06_0.5	0.5	30/01/2023	Normal	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2		
TP06	TP06_1.0	1.0	30/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-		
TP07	TP07_0.2	0.2	26/01/2023	Normal	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2		
TP07	TP07_1.0	1.0	26/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-		
TP08	TP08_0.5	0.5	26/01/2023	Normal	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2		
TP08	TP08_1.0	1.0	26/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-		
TP09	TP09_0.2	0.2	26/01/2023	Normal	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2		
TP09	QC08_260123	0.2	26/01/2023	Intralaboratory Duplicate	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<0.01	<2		
TP09	TP09_0.5	0.5	26/01/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-		

Legend
LOR - Limit of Reporting

Table 3
Soil Analytical Results - PFAS
APAM - Melbourne Airport

Table 3 - PFAS Analytical Results

AECOM

					Per- and Poly-fluoroalkyl Substances																							
					Perfluorooctanoic acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum (PFHxS + PFOS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	PFNS	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluoropropanesulfonic acid (PFPrS)	Perfluorotetradecanoic acid (PFTeDA)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	ng/kg	mg/kg
LOR					**0.0002**	**0.0002**	**0.0002**	**0.0002**	**0.0005**	**0.0005**	**0.0005**	**0.0005**	**0.0002**	**0.001**	**0.0002**	**0.0002**	**0.0002**	**0.0002**	**0.0002**	**0.0002**	**0.005**	**0.0002**	**0.0002**	**0.0002**	**0.0002**	**5000**	**0.0005**
PFAS NEMP 2020 Ecological indirect exposure						0.01																					
PFAS NEMP 2020 Industrial/ commercial (HIL D)					50			20																			
PFAS NEMP 2020 Unlined Landfill Acceptance Criteria						20																					
PFAS Management Level 2								0.01																			
PFAS Management Level 3								0.014																			
PFAS Management Level 4								0.14																			
PFAS Management Level 5								0.5																			
Location_Code	**Field_ID**	**Sample_Depth_Range**	**Sampled_Date_Time**	**Lab_Report_Number**																							
BH03	BH03_0.2	0.2	29/01/2023	EM2301773	<0.0002	**0.0065**	**0.0002**	**0.0067**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	<0.0002	**0.0022**	**0.0003**	**0.0025**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005
	QC13_29012023		29/01/2023	EM2301773	<0.0002	**0.008**	**0.0008**	**0.0088**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	**0.0003**	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005
	QC14_29012023		29/01/2023	961022	**<0.005**	**0.011**	**<0.005**	**0.011**	**<0.005**	**<0.01**	**<0.005**	**<0.005**	**<0.005**	**<0.005**	**<0.005**	**<0.005**	**<0.005**	**<0.005**	**<0.005**	**<0.005**	<0.005	**<0.005**	**<0.005**	**<0.005**	**<0.005**	<5000	**<0.005**
BH05	BH05_0.5	0.5	29/01/2023	EM2301773	**0.0002**	**0.0097**	**0.0227**	**0.0324**	<0.0005	<0.0005	<0.0005	<0.0005	**0.0014**	<0.001	<0.0002	<0.0002	<0.0002	**0.0005**	<0.0002	**0.0048**	-	<0.0002	<0.0002	**0.0017**	**0.0004**	-	<0.0005
BH2	BH2_0.2	0.2	24/01/2023	EM2301163	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005
BH6	BH6_0.5	0.5	24/01/2023	EM2301163	<0.0002	**0.0002**	<0.0002	**0.0002**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005
BH7	BH7_0.5	0.5	25/01/2023	EM2301163	**0.0003**	**0.0018**	**0.0002**	**0.002**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005
BH8	BH8_0.5	0.5	25/01/2023	EM2301163	<0.0002	**0.0005**	**0.0005**	**0.001**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005
PD08	PD08_0.5	0.5	24/01/2023	EM2301163	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005
PD11	PD11_0.1	0.1	31/01/2023	EM2301412	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005
PD12	PD12_0.5	0.5	31/01/2023	EM2301412	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005
TP04	TP04_1.0	1	30/01/2023	EM2301773	**0.0023**	**0.0181**	**0.106**	**0.124**	<0.0005	<0.0005	<0.0005	<0.0005	**0.0081**	<0.001	<0.0002	<0.0002	<0.0002	**0.0012**	**0.0027**	**0.0221**	-	<0.0002	<0.0002	**0.0146**	**0.0017**	-	<0.0005
TP05	TP05_1.0	1	30/01/2023	EM2301773	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005
TP06	TP06_1.0	1	30/01/2023	EM2301773	<0.0002	**0.0003**	**0.0021**	**0.0024**	<0.0005	<0.0005	<0.0005	<0.0005	**0.0005**	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	**0.0008**	<0.0002	-	<0.0005
TP07	TP07_0.2	0.2	26/01/2023	EM2301163	<0.0002	**0.0006**	<0.0002	**0.0006**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005
TP08	TP08_1.0	1	26/01/2023	EM2301163	<0.0002	**0.0039**	**0.0037**	**0.0076**	<0.0005	<0.0005	<0.0005	<0.0005	**0.0002**	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	**0.0004**	-	<0.0002	<0.0002	**0.0004**	<0.0002	-	<0.0005
TP09	QC08_260123	0.2	26/01/2023	EM2301163	<0.0002	**0.0016**	<0.0002	**0.0016**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005
	TP09_0.2		26/01/2023	EM2301163	<0.0002	**0.001**	<0.0002	**0.001**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005

Legend
LOR - Limit of Reporting

Table 3
Soil Analytical Results - PFAS
APAM - Melbourne Airport

Table 3 - PFAS Analytical Results

AECOM

					Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	Sum of PFAS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)	Sum of US EPA PFAS (PFOS + PFOA)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	UG/KG	UG/KG
LOR					**0.0002**	**0.0002**	**0.0005**	**0.0002**	**0.0005**	**0.0005**	**0.0002**	**0.0005**	**0.0002**	**5**	**5**
PFAS NEMP 2020 Ecological indirect exposure															
PFAS NEMP 2020 Industrial/ commercial (HIL D)															
PFAS NEMP 2020 Unlined Landfill Acceptance Criteria															
PFAS Management Level 2															
PFAS Management Level 3															
PFAS Management Level 4															
PFAS Management Level 5															
Location_Code	**Field_ID**	**Sample_Depth_Range**	**Sampled_Date_Time**	**Lab_Report_Number**											
BH03	BH03_0.2	0.2	29/01/2023	EM2301773	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0067**	-	-
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0025**	-	-
	QC13_29012023		29/01/2023	EM2301773	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0091**	-	-
	QC14_29012023		29/01/2023	961022	**<0.005**	**<0.005**	**<0.005**	**<0.01**	**<0.005**	**<0.005**	**<0.01**	**<0.005**	**<0.05**	**11**	**11**
BH05	BH05_0.5	0.5	29/01/2023	EM2301773	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0414**	-	-
BH2	BH2_0.2	0.2	24/01/2023	EM2301163	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	-	-
BH6	BH6_0.5	0.5	24/01/2023	EM2301163	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0002**	-	-
BH7	BH7_0.5	0.5	25/01/2023	EM2301163	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0023**	-	-
BH8	BH8_0.5	0.5	25/01/2023	EM2301163	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.001**	-	-
PD08	PD08_0.5	0.5	24/01/2023	EM2301163	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	-	-
PD11	PD11_0.1	0.1	31/01/2023	EM2301412	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	-	-
PD12	PD12_0.5	0.5	31/01/2023	EM2301412	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	-	-
TP04	TP04_1.0	1	30/01/2023	EM2301773	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.177**	-	-
TP05	TP05_1.0	1	30/01/2023	EM2301773	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	-	-
TP06	TP06_1.0	1	30/01/2023	EM2301773	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0037**	-	-
TP07	TP07_0.2	0.2	26/01/2023	EM2301163	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0006**	-	-
TP08	TP08_1.0	1	26/01/2023	EM2301163	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0086**	-	-
TP09	QC08_260123	0.2	26/01/2023	EM2301163	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0016**	-	-
	TP09_0.2		26/01/2023	EM2301163	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.001**	-	-

Legend
LOR - Limit of Reporting

Table 4
Soil Analytical Results - Airport Regulations
APAM - Melbourne Airport

Table 4 - Airport Regulations

AECOM

					Metals																			Total Petroleum Hydrocarbons					Total	
					Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Chromium (hexavalent)	Cobalt	Copper	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Tin	Vanadium	Zinc	C6-C9 fraction	C10-C14 fraction	C15-C28 fraction	C29-C36 fraction	C10-C36 fraction (sum)	C6-C10 fraction	C6-C10 fraction (minus BTEX)(F1)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR					**5**	**5**	**10**	**1**	**50**	**1**	**2**	**0.5**	**2**	**5**	**5**	**5**	**0.1**	**2**	**2**	**5**	**2**	**5**	**5**	**5**	**10**	**50**	**100**	**100**	**50**	**10**	**10**
Airport Regulations - Area of an airport generally						500		100		100		500		5000	1500	7500	75		3000					35000	800				5000		
Airport Regulations - Areas of environmental significance					20	20	200		75	3	50		170	60	300	500	1	20	60			50		200	100				1000		
Location ID	**Field ID**	**Depth (m)**	**Sampled Date**	**Sample Type**	**Lab Report Number**																										
BH03	BH03_0.2	0.2	29/01/2023		EM2301773	-	<5	**110**	<1	<50	<1	**46**	-	**14**	**25**	**8**	**367**	<0.1	-	**39**	<5	-	-	**41**	**48**	<10	<50	<100	<100	<50	<10	<10
BH03	BH03_0.5	0.5	29/01/2023		EM2301773	<5	<5	**90**	<1	<50	<1	-	<0.5	-	**16**	**9**	-	<0.1	<2	**27**	<5	<2	<5	-	**35**	<10	<50	<100	<100	<50	<10	<10
BH04	BH04_0.5	0.5	29/01/2023		EM2301773	-	<5	**60**	<1	<50	<1	**26**	-	**10**	**15**	**8**	**210**	<0.1	-	**25**	<5	-	-	**36**	**26**	<10	<50	<100	<100	<50	<10	<10
BH04	QC13_29012023	0.5	29/01/2023		EM2301773	-	<5	**50**	<1	<50	<1	**42**	-	**12**	**15**	**14**	**310**	<0.1	-	**19**	<5	-	-	**44**	**21**	<10	<50	<100	<100	<50	<10	<10
BH05	BH05_0.5	0.5	29/01/2023		EM2301773	-	<5	**380**	**1**	<50	<1	**23**	-	**13**	**6**	**8**	**290**	<0.1	-	**37**	<5	-	-	**22**	**10**	<10	<50	<100	<100	<50	<10	<10
BH05	BH05_2.0	2	29/01/2023		EM2301773	<5	<5	**460**	**1**	<50	<1	-	<0.5	-	**9**	**8**	-	<0.1	<2	**33**	<5	<2	<5	-	**16**	<10	<50	<100	<100	<50	<10	<10
BH2	BH2_0.2	0.2	24/01/2023		EM2301163	<5	<5	**90**	**1**	<50	<1	-	<0.5	-	**14**	**11**	-	<0.1	<2	**48**	<5	<2	<5	-	**19**	<10	<50	<100	<100	<50	<10	<10
BH2	BH2_0.5	0.5	24/01/2023		EM2301163	-	<5	**300**	**1**	<50	<1	**44**	-	**23**	**10**	**11**	**625**	<0.1	-	**46**	<5	-	-	**38**	**16**	<10	<50	<100	<100	<50	<10	<10
BH6	BH6_0.5	0.5	24/01/2023		EM2301163	<5	<5	**210**	**1**	<50	<1	-	<0.5	-	**15**	**12**	-	<0.1	<2	**36**	<5	<2	<5	-	**26**	<10	<50	<100	<100	<50	<10	<10
BH6	BH6_1.0	1	24/01/2023		EM2301163	-	<5	**150**	**1**	<50	<1	**33**	-	**17**	**11**	**10**	**337**	<0.1	-	**44**	<5	-	-	**39**	**12**	<10	<50	<100	<100	<50	<10	<10
BH7	BH7_0.2	0.2	25/01/2023		EM2301163	<5	<5	**290**	**1**	<50	<1	-	<0.5	-	**6**	**10**	-	<0.1	<2	**17**	<5	<2	<5	-	**7**	<10	<50	<100	<100	<50	<10	<10
BH7	BH7_0.5	0.5	25/01/2023		EM2301163	-	<5	**350**	**1**	<50	<1	**28**	-	**18**	**12**	**12**	**152**	<0.1	-	**23**	<5	-	-	**36**	**13**	<10	<50	<100	<100	<50	<10	<10
BH8	BH8_0.5	0.5	25/01/2023		EM2301163	<5	<5	**410**	**1**	<50	<1	-	<0.5	-	**8**	**10**	-	<0.1	<2	**28**	<5	<2	<5	-	**12**	<10	<50	<100	<100	<50	<10	<10
BH8	BH8_1.0	1	25/01/2023		EM2301163	-	<5	**890**	**1**	<50	<1	**36**	-	**17**	**10**	**9**	**288**	<0.1	-	**33**	<5	-	-	**48**	**16**	<10	<50	<100	<100	<50	<10	<10
PD05	PD05_0.42	0.42	29/01/2023		EM2301773	<5	<5	**70**	<1	<50	<1	-	<0.5	-	**15**	<5	-	<0.1	<2	**30**	<5	<2	<5	-	**34**	<10	<50	<100	<100	<50	<10	<10
PD08	PD08_0.5	0.5	24/01/2023		EM2301163	-	<5	**20**	**1**	<50	<1	**21**	-	**24**	**50**	<5	**568**	<0.1	-	**87**	<5	-	-	**29**	**44**	<10	<50	<100	<100	<50	<10	<10
PD08	PD08_1.1	1.1	24/01/2023		EM2301163	<5	<5	**140**	<1	<50	<1	-	<0.5	-	**10**	**8**	-	<0.1	<2	**39**	<5	<2	<5	-	**17**	<10	<50	<100	<100	<50	<10	<10
PD11	PD11_0.1	0.1	31/01/2023		EM2301412	-	<5	**70**	<1	<50	<1	**31**	-	**14**	**40**	<5	**189**	<0.1	-	**38**	<5	-	-	**25**	**29**	<10	<50	<100	<100	<50	<10	<10
PD11	PD11_0.5	0.5	31/01/2023		EM2301412	<5	<5	**40**	<1	<50	<1	-	<0.5	-	**17**	**5**	-	<0.1	<2	**34**	<5	<2	<5	-	**30**	<10	<50	<100	<100	<50	<10	<10
PD12	PD12_0.1	0.1	31/01/2023		EM2301412	<5	<5	**70**	<1	<50	<1	-	<0.5	-	**20**	**9**	-	<0.1	<2	**32**	<5	<2	<5	-	**21**	<10	<50	<100	<100	<50	<10	<10
PD12	PD12_0.5	0.5	31/01/2023		EM2301412	-	<5	**80**	<1	<50	<1	**13**	-	**4**	<5	**8**	**90**	<0.1	-	**6**	<5	-	-	**33**	**9**	<10	<50	<100	<100	<50	<10	<10
QC14	QC14_29012023		29/01/2023		961022	-	2.1	-	**<2**	14	<0.4	-	**<1**	**13**	**18**	**9.3**	**280**	<0.1	-	**25**	<2	-	-	-	**30**	**<20**	<20	<50	<50	<50	**<20**	**<20**
TP04	TP04_0.5	0.5	30/01/2023		EM2301773	<5	<5	**50**	<1	<50	<1	-	<0.5	-	**25**	**23**	-	<0.1	<2	**22**	<5	<2	**6**	-	**49**	<10	<50	<100	<100	<50	<10	<10
TP04	TP04_1.0	1	30/01/2023		EM2301773	-	<5	**330**	**1**	<50	<1	**36**	-	**16**	**8**	**10**	**417**	<0.1	-	**53**	<5	-	-	**47**	**16**	<10	<50	<100	<100	<50	<10	<10
TP05	TP05_0.2	0.2	30/01/2023		EM2301773	<5	<5	**90**	<1	<50	<1	-	<0.5	-	**23**	**8**	-	<0.1	<2	**34**	<5	<2	<5	-	**37**	<10	<50	<100	<100	<50	<10	<10
TP05	TP05_1.0	1	30/01/2023		EM2301773	-	<5	**40**	**1**	<50	<1	**45**	-	**22**	**12**	**12**	**132**	<0.1	-	**56**	<5	-	-	**59**	**16**	<10	<50	<100	<100	<50	<10	<10
TP06	TP06_0.5	0.5	30/01/2023		EM2301773	<5	<5	**150**	**1**	<50	<1	-	<0.5	-	**9**	**9**	-	<0.1	<2	**47**	<5	<2	<5	-	**13**	<10	<50	<100	<100	<50	<10	<10
TP06	TP06_1.0	1	30/01/2023		EM2301773	-	<5	**280**	<1	<50	<1	**18**	-	**15**	<5	**8**	**243**	<0.1	-	**36**	<5	-	-	**23**	**7**	<10	<50	<100	<100	<50	<10	<10
TP07	TP07_0.2	0.2	26/01/2023		EM2301163	<5	<5	**280**	**1**	<50	<1	-	<0.5	-	**16**	**11**	-	<0.1	<2	**44**	<5	<2	<5	-	**23**	<10	<50	<100	<100	<50	<10	<10
TP07	TP07_1.0	1	26/01/2023		EM2301163	-	<5	**200**	**1**	<50	<1	**39**	-	**20**	**11**	**11**	**300**	<0.1	-	**38**	<5	-	-	**50**	**14**	<10	<50	<100	<100	<50	<10	<10
TP08	TP08_0.5	0.5	26/01/2023		EM2301163	<5	<5	**160**	<1	<50	<1	-	<0.5	-	<5	**8**	-	<0.1	<2	**15**	<5	<2	<5	-	**6**	<10	<50	<100	<100	<50	<10	<10
TP08	TP08_1.0	1	26/01/2023		EM2301163	-	<5	**190**	<1	<50	<1	**32**	-	**6**	**5**	**9**	**40**	<0.1	-	**18**	<5	-	-	**37**	**8**	<10	<50	<100	<100	<50	<10	<10
TP09	QC08_260123		26/01/2023		EM2301163	<5	<5	**270**	**1**	<50	<1	-	<0.5	-	**11**	**11**	-	<0.1	<2	**30**	<5	<2	<5	-	**20**	<10	<50	<100	<100	<50	<10	<10
TP09	TP09_0.2	0.2	26/01/2023		EM2301163	<5	<5	**200**	**1**	<50	<1	-	<0.5	-	**9**	**11**	-	<0.1	<2	**28**	<5	<2	<5	-	**15**	<10	<50	<100	<100	<50	<10	<10
TP09	TP09_0.5	0.5	26/01/2023		EM2301163	-	<5	**40**	**1**	<50	<1	**46**	-	**16**	**6**	**10**	**147**	<0.1	-	**22**	<5	-	-	**40**	**11**	<10	<50	<100	<100	<50	<10	<10

Legend
LOR - Limit of Reporting

Table 4
Soil Analytical Results - Airport Regulations
APAM - Melbourne Airport

Table 4 - Airport Regulations

AECOM

						Recoverable Hydrocarbons					Major Ions	Monocyclic Aromatic Hydrocarbons																			
						>C10-C16 (minus Naphthalene)(F2)	>C10-C16 fraction	>C16-C34 fraction	>C34-C40 fraction	>C10-C40 fraction (sum)	Fluoride	Benzene	Toluene	Ethylbenzene	m&p-Xylene	o-Xylene	Total Xylenes	Styrene	Isopropylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	tert-butylbenzene	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Total BTEX	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ calc (Zero)	Benzo(a)pyrene TEQ calc(PQL)	Naphthalene
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR						**50**	**50**	**100**	**100**	**50**	**40**	**0.2**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.2**	**0.5**	**0.5**	**0.5**	**0.5**
Airport Regulations - Area of an airport generally												1	130	50			25														
Airport Regulations - Areas of environmental significance												0.5	3	5			5														
Location ID	**Field ID**	**Depth (m)**	**Sampled Date**	**Sample Type**	**Lab Report Number**																										
BH03	BH03_0.2	0.2	29/01/2023		EM2301773	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	**0.6**	<0.5	**1.2**	<0.5
BH03	BH03_0.5	0.5	29/01/2023		EM2301773	<50	<50	<100	<100	<50	**250**	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	**0.6**	<0.5	**1.2**	<0.5
BH04	BH04_0.5	0.5	29/01/2023		EM2301773	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	**0.6**	<0.5	**1.2**	<0.5
BH04	QC13_29012023	0.5	29/01/2023		EM2301773	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	**0.6**	<0.5	**1.2**	<0.5
BH05	BH05_0.5	0.5	29/01/2023		EM2301773	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	**0.6**	<0.5	**1.2**	<0.5
BH05	BH05_2.0	2	29/01/2023		EM2301773	<50	<50	<100	<100	<50	**270**	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	**0.6**	<0.5	**1.2**	<0.5
BH2	BH2_0.2	0.2	24/01/2023		EM2301163	<50	<50	<100	<100	<50	**160**	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	**0.6**	<0.5	**1.2**	<0.5
BH2	BH2_0.5	0.5	24/01/2023		EM2301163	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	<0.2	**0.6**	<0.5	**1.2**	<0.5
BH6	BH6_0.5	0.5	24/01/2023		EM2301163	<50	<50	<100	<100	<50	**160**	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	**0.6**	<0.5	**1.2**	<0.5
BH6	BH6_1.0	1	24/01/2023		EM2301163	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	<0.2	**0.6**	<0.5	**1.2**	<0.5
BH7	BH7_0.2	0.2	25/01/2023		EM2301163	<50	<50	<100	<100	<50	**230**	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	**0.6**	<0.5	**1.2**	<0.5
BH7	BH7_0.5	0.5	25/01/2023		EM2301163	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	<0.2	**0.6**	<0.5	**1.2**	<0.5
BH8	BH8_0.5	0.5	25/01/2023		EM2301163	<50	<50	<100	<100	<50	**210**	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	**0.6**	<0.5	**1.2**	<0.5
BH8	BH8_1.0	1	25/01/2023		EM2301163	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	<0.2	**0.6**	<0.5	**1.2**	<0.5
PD05	PD05_0.42	0.42	29/01/2023		EM2301773	<50	<50	<100	<100	<50	**410**	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	**0.6**	<0.5	**1.2**	<0.5
PD08	PD08_0.5	0.5	24/01/2023		EM2301163	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	**0.6**	<0.5	**1.2**	<0.5
PD08	PD08_1.1	1.1	24/01/2023		EM2301163	<50	<50	<100	<100	<50	**160**	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	**0.6**	<0.5	**1.2**	<0.5
PD11	PD11_0.1	0.1	31/01/2023		EM2301412	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	**0.6**	<0.5	**1.2**	<0.5
PD11	PD11_0.5	0.5	31/01/2023		EM2301412	<50	<50	<100	<100	<50	**370**	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	**0.6**	<0.5	**1.2**	<0.5
PD12	PD12_0.1	0.1	31/01/2023		EM2301412	<50	<50	<100	<100	<50	**260**	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	**0.6**	<0.5	**1.2**	<0.5
PD12	PD12_0.5	0.5	31/01/2023		EM2301412	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	**0.6**	<0.5	**1.2**	<0.5
QC14	QC14_29012023		29/01/2023		961022	<50	<50	<100	<100	**<100**	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	-	-	-	-	-	-	-	-	**0.6**	<0.5	**1.2**	<0.5
TP04	TP04_0.5	0.5	30/01/2023		EM2301773	<50	<50	<100	<100	<50	**110**	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	**0.6**	<0.5	**1.2**	<0.5
TP04	TP04_1.0	1	30/01/2023		EM2301773	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	**0.6**	<0.5	**1.2**	<0.5
TP05	TP05_0.2	0.2	30/01/2023		EM2301773	<50	<50	<100	<100	<50	**170**	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	**0.6**	<0.5	**1.2**	<0.5
TP05	TP05_1.0	1	30/01/2023		EM2301773	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	**0.6**	<0.5	**1.2**	<0.5
TP06	TP06_0.5	0.5	30/01/2023		EM2301773	<50	<50	<100	<100	<50	**240**	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	**0.6**	<0.5	**1.2**	<0.5
TP06	TP06_1.0	1	30/01/2023		EM2301773	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	**0.6**	<0.5	**1.2**	<0.5
TP07	TP07_0.2	0.2	26/01/2023		EM2301163	<50	<50	<100	<100	<50	**190**	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	**0.6**	<0.5	**1.2**	<0.5
TP07	TP07_1.0	1	26/01/2023		EM2301163	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	<0.2	**0.6**	<0.5	**1.2**	<0.5
TP08	TP08_0.5	0.5	26/01/2023		EM2301163	<50	<50	<100	<100	<50	**220**	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	**0.6**	<0.5	**1.2**	<0.5
TP08	TP08_1.0	1	26/01/2023		EM2301163	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	<0.2	**0.6**	<0.5	**1.2**	<0.5
TP09	QC08_260123		26/01/2023		EM2301163	<50	<50	<100	<100	<50	**230**	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	**0.6**	<0.5	**1.2**	<0.5
TP09	TP09_0.2	0.2	26/01/2023		EM2301163	<50	<50	<100	<100	<50	**280**	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	**0.6**	<0.5	**1.2**	<0.5
TP09	TP09_0.5	0.5	26/01/2023		EM2301163	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	<0.2	**0.6**	<0.5	**1.2**	<0.5

Legend
LOR - Limit of Reporting

Table 4
Soil Analytical Results - Airport Regulations
APAM - Melbourne Airport

Table 4 - Airport Regulations

AECOM

	Polynuclear Aromatic Hydrocarbons																		Phenolic Compounds									
	Acenaphthylene	Acenaphthene	Anthracene	Fluorene	Phenanthrene	Fluoranthene	Benz(a)anthracene	Benzo(k)fluoranthene	Benzo(b&j)fluoranthene	Benzo(b+j) & Benzo(k)fluoranthene	Benzo(a)pyrene	Chrysene	Pyrene	Benzo(g,h,i)perylene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Sum of PAHs	3/4-Methylphenol (m/p-cresol)	Phenol	2-Chlorophenol	2-Methylphenol (o-Cresol)	Total Cresols	2-Nitrophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4,6-Trichlorophenol	2,4,5-Trichlorophenol
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**1**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**1**	**1**	**0.03**	**1**	**1**	**1**	**0.03**	**1**	**0.05**	**0.05**
Airport Regulations - Area of an airport generally											5						100		42500								
Airport Regulations - Areas of environmental significance																	5										

Location ID	Field ID	Depth (m)	Sampled Date	Sample Type	Lab Report Number																								
BH03	BH03_0.2	0.2	29/01/2023		EM2301773	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-
BH03	BH03_0.5	0.5	29/01/2023		EM2301773	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05
BH04	BH04_0.5	0.5	29/01/2023		EM2301773	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-
BH04	QC13_29012023	0.5	29/01/2023		EM2301773	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-
BH05	BH05_0.5	0.5	29/01/2023		EM2301773	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-
BH05	BH05_2.0	2	29/01/2023		EM2301773	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05
BH2	BH2_0.2	0.2	24/01/2023		EM2301163	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05
BH2	BH2_0.5	0.5	24/01/2023		EM2301163	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-
BH6	BH6_0.5	0.5	24/01/2023		EM2301163	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05
BH6	BH6_1.0	1	24/01/2023		EM2301163	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-
BH7	BH7_0.2	0.2	25/01/2023		EM2301163	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05
BH7	BH7_0.5	0.5	25/01/2023		EM2301163	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-
BH8	BH8_0.5	0.5	25/01/2023		EM2301163	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05
BH8	BH8_1.0	1	25/01/2023		EM2301163	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-
PD05	PD05_0.42	0.42	29/01/2023		EM2301773	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05
PD08	PD08_0.5	0.5	24/01/2023		EM2301163	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-
PD08	PD08_1.1	1.1	24/01/2023		EM2301163	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05
PD11	PD11_0.1	0.1	31/01/2023		EM2301412	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-
PD11	PD11_0.5	0.5	31/01/2023		EM2301412	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05
PD12	PD12_0.1	0.1	31/01/2023		EM2301412	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05
PD12	PD12_0.5	0.5	31/01/2023		EM2301412	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-
QC14	QC14_29012023		29/01/2023		961022	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-
TP04	TP04_0.5	0.5	30/01/2023		EM2301773	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05
TP04	TP04_1.0	1	30/01/2023		EM2301773	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-
TP05	TP05_0.2	0.2	30/01/2023		EM2301773	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05
TP05	TP05_1.0	1	30/01/2023		EM2301773	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-
TP06	TP06_0.5	0.5	30/01/2023		EM2301773	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05
TP06	TP06_1.0	1	30/01/2023		EM2301773	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-
TP07	TP07_0.2	0.2	26/01/2023		EM2301163	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05
TP07	TP07_1.0	1	26/01/2023		EM2301163	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-
TP08	TP08_0.5	0.5	26/01/2023		EM2301163	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05
TP08	TP08_1.0	1	26/01/2023		EM2301163	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-
TP09	QC08_260123		26/01/2023		EM2301163	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05
TP09	TP09_0.2	0.2	26/01/2023		EM2301163	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05
TP09	TP09_0.5	0.5	26/01/2023		EM2301163	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-

Legend
LOR - Limit of Reporting

Table 4
Soil Analytical Results - Airport Regulations
APAM - Melbourne Airport

Table 4 - Airport Regulations

AECOM

												Fumigants					Halogenated Aromatic Compounds															
							4,6-Dinitro-2-methylphenol	2,4-Dinitrophenol	2-Cyclohexyl-4,6-dinitrophenol	4-Nitrophenol	Dinoseb	1,2-Dibromoethane (EDB)	1,2-Dichloropropane	2,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Bromobenzene	Chlorobenzene	2-Chlorotoluene	4-Chlorotoluene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,3,5-Trichlorobenzene	Trichlorobenzenes (Sum)	Dichlorodifluoromethane (Freon 12)	Chloromethane	Vinyl chloride	Bromomethane	Chloroethane	Trichlorofluoromethane (Freon 11)
							mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR							**5**	**5**	**5**	**5**	**5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.02**	**0.5**	**0.5**	**0.02**	**0.5**	**0.02**	**0.01**	**0.01**	**0.01**	**0.01**	**5**	**5**	**0.02**	**5**	**5**	**5**
Airport Regulations - Area of an airport generally																																	
Airport Regulations - Areas of environmental significance																																	
Location ID	**Field ID**	**Depth (m)**	**Sampled Date**	**Sample Type**	**Lab Report Number**																												
BH03	BH03_0.2	0.2	29/01/2023		EM2301773	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**<0.5**	<0.5	<0.5	**<0.5**	<0.5	**<0.5**	**<0.5**	**<0.5**	-	-	<5	<5	**<5**	<5	<5	<5
BH03	BH03_0.5	0.5	29/01/2023		EM2301773	<5	<5	<5	<5	<5	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-
BH04	BH04_0.5	0.5	29/01/2023		EM2301773	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**<0.5**	<0.5	<0.5	**<0.5**	<0.5	**<0.5**	**<0.5**	**<0.5**	-	-	<5	<5	**<5**	<5	<5	<5
BH04	QC13_29012023	0.5	29/01/2023		EM2301773	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**<0.5**	<0.5	<0.5	**<0.5**	<0.5	**<0.5**	**<0.5**	**<0.5**	-	-	<5	<5	**<5**	<5	<5	<5
BH05	BH05_0.5	0.5	29/01/2023		EM2301773	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**<0.5**	<0.5	<0.5	**<0.5**	<0.5	**<0.5**	**<0.5**	**<0.5**	-	-	<5	<5	**<5**	<5	<5	<5
BH05	BH05_2.0	2	29/01/2023		EM2301773	<5	<5	<5	<5	<5	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-
BH2	BH2_0.2	0.2	24/01/2023		EM2301163	<5	<5	<5	<5	<5	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-
BH2	BH2_0.5	0.5	24/01/2023		EM2301163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH6	BH6_0.5	0.5	24/01/2023		EM2301163	<5	<5	<5	<5	<5	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-
BH6	BH6_1.0	1	24/01/2023		EM2301163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH7	BH7_0.2	0.2	25/01/2023		EM2301163	<5	<5	<5	<5	<5	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-
BH7	BH7_0.5	0.5	25/01/2023		EM2301163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH8	BH8_0.5	0.5	25/01/2023		EM2301163	<5	<5	<5	<5	<5	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-
BH8	BH8_1.0	1	25/01/2023		EM2301163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PD05	PD05_0.42	0.42	29/01/2023		EM2301773	<5	<5	<5	<5	<5	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-
PD08	PD08_0.5	0.5	24/01/2023		EM2301163	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**<0.5**	<0.5	<0.5	**<0.5**	<0.5	**<0.5**	**<0.5**	**<0.5**	-	-	<5	<5	**<5**	<5	<5	<5
PD08	PD08_1.1	1.1	24/01/2023		EM2301163	<5	<5	<5	<5	<5	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-
PD11	PD11_0.1	0.1	31/01/2023		EM2301412	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**<0.5**	<0.5	<0.5	**<0.5**	<0.5	**<0.5**	**<0.5**	**<0.5**	-	-	<5	<5	**<5**	<5	<5	<5
PD11	PD11_0.5	0.5	31/01/2023		EM2301412	<5	<5	<5	<5	<5	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-
PD12	PD12_0.1	0.1	31/01/2023		EM2301412	<5	<5	<5	<5	<5	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-
PD12	PD12_0.5	0.5	31/01/2023		EM2301412	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**<0.5**	<0.5	<0.5	**<0.5**	<0.5	**<0.5**	**<0.5**	**<0.5**	-	-	<5	<5	**<5**	<5	<5	<5
QC14	QC14_29012023		29/01/2023		961022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP04	TP04_0.5	0.5	30/01/2023		EM2301773	<5	<5	<5	<5	<5	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-
TP04	TP04_1.0	1	30/01/2023		EM2301773	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**<0.5**	<0.5	<0.5	**<0.5**	<0.5	**<0.5**	**<0.5**	**<0.5**	-	-	<5	<5	**<5**	<5	<5	<5
TP05	TP05_0.2	0.2	30/01/2023		EM2301773	<5	<5	<5	<5	<5	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-
TP05	TP05_1.0	1	30/01/2023		EM2301773	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**<0.5**	<0.5	<0.5	**<0.5**	<0.5	**<0.5**	**<0.5**	**<0.5**	-	-	<5	<5	**<5**	<5	<5	<5
TP06	TP06_0.5	0.5	30/01/2023		EM2301773	<5	<5	<5	<5	<5	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-
TP06	TP06_1.0	1	30/01/2023		EM2301773	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**<0.5**	<0.5	<0.5	**<0.5**	<0.5	**<0.5**	**<0.5**	**<0.5**	-	-	<5	<5	**<5**	<5	<5	<5
TP07	TP07_0.2	0.2	26/01/2023		EM2301163	<5	<5	<5	<5	<5	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-
TP07	TP07_1.0	1	26/01/2023		EM2301163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP08	TP08_0.5	0.5	26/01/2023		EM2301163	<5	<5	<5	<5	<5	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-
TP08	TP08_1.0	1	26/01/2023		EM2301163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP09	QC08_260123		26/01/2023		EM2301163	<5	<5	<5	<5	<5	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-
TP09	TP09_0.2	0.2	26/01/2023		EM2301163	<5	<5	<5	<5	<5	-	-	-	-	-	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01	-	-	<0.02	-	-	-
TP09	TP09_0.5	0.5	26/01/2023		EM2301163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Legend
LOR - Limit of Reporting

Table 4
Soil Analytical Results - Airport Regulations
APAM - Melbourne Airport

Table 4 - Airport Regulations

AECOM

	Halogenated Aliphatic Compounds																								Trihalomethanes				ico-C
	1,1-Dichloroethene	Iodomethane	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1,1-Trichloroethane	1,1-Dichloropropene	Carbon Tetrachloride	1,2-Dichloroethane	Trichloroethene	Dibromomethane	1,1,2-Trichloroethane	1,3-Dichloropropane	Tetrachloroethene	1,1,1,2-Tetrachloroethane	trans-1,4-Dichloro-2-butene	cis-1,4-Dichloro-2-butene	1,1,2,2-Tetrachloroethane	1,2,3-Trichloropropane	Dichloromethane	Pentachloroethane	1,2-Dibromo-3-chloropropane	Hexachlorobutadiene	Bromodichloromethane	Bromoform	Chloroform	Dibromochloromethane	Moisture Content (dried @ 103°C)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%
LOR	**0.01**	**0.5**	**0.5**	**0.01**	**0.02**	**0.01**	**0.5**	**0.01**	**0.02**	**0.02**	**0.5**	**0.04**	**0.5**	**0.02**	**0.01**	**0.5**	**0.5**	**0.02**	**0.5**	**0.4**	**0.5**	**0.5**	**0.02**	**0.5**	**0.5**	**0.02**	**0.5**	**1**
Airport Regulations - Area of an airport generally																												
Airport Regulations - Areas of environmental significance																												

Location ID	Field ID	Depth (m)	Sampled Date	Sample Type	Lab Report Number																									
BH03	BH03_0.2	0.2	29/01/2023		EM2301773	**<0.5**	<0.5	<0.5	**<0.5**	**<0.5**	**<0.5**	<0.5	**<0.5**	**<0.5**	**<0.5**	<0.5	**<0.5**	<0.5	**<0.5**	**<0.5**	<0.5	<0.5	**<0.5**	<0.5	-	<0.5	<0.5	**<0.5**	<0.5	<0.5	**<0.5**	<0.5	-
BH03	BH03_0.5	0.5	29/01/2023		EM2301773	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-
BH04	BH04_0.5	0.5	29/01/2023		EM2301773	**<0.5**	<0.5	<0.5	**<0.5**	**<0.5**	**<0.5**	<0.5	**<0.5**	**<0.5**	**<0.5**	<0.5	**<0.5**	<0.5	**<0.5**	**<0.5**	<0.5	<0.5	**<0.5**	<0.5	-	<0.5	<0.5	**<0.5**	<0.5	<0.5	**<0.5**	<0.5	-
BH04	QC13_29012023	0.5	29/01/2023		EM2301773	**<0.5**	<0.5	<0.5	**<0.5**	**<0.5**	**<0.5**	<0.5	**<0.5**	**<0.5**	**<0.5**	<0.5	**<0.5**	<0.5	**<0.5**	**<0.5**	<0.5	<0.5	**<0.5**	<0.5	-	<0.5	<0.5	**<0.5**	<0.5	<0.5	**<0.5**	<0.5	-
BH05	BH05_0.5	0.5	29/01/2023		EM2301773	**<0.5**	<0.5	<0.5	**<0.5**	**<0.5**	**<0.5**	<0.5	**<0.5**	**<0.5**	**<0.5**	<0.5	**<0.5**	<0.5	**<0.5**	**<0.5**	<0.5	<0.5	**<0.5**	<0.5	-	<0.5	<0.5	**<0.5**	<0.5	<0.5	**<0.5**	<0.5	-
BH05	BH05_2.0	2	29/01/2023		EM2301773	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-
BH2	BH2_0.2	0.2	24/01/2023		EM2301163	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-
BH2	BH2_0.5	0.5	24/01/2023		EM2301163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH6	BH6_0.5	0.5	24/01/2023		EM2301163	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-
BH6	BH6_1.0	1	24/01/2023		EM2301163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH7	BH7_0.2	0.2	25/01/2023		EM2301163	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-
BH7	BH7_0.5	0.5	25/01/2023		EM2301163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH8	BH8_0.5	0.5	25/01/2023		EM2301163	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-
BH8	BH8_1.0	1	25/01/2023		EM2301163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PD05	PD05_0.42	0.42	29/01/2023		EM2301773	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-
PD08	PD08_0.5	0.5	24/01/2023		EM2301163	**<0.5**	<0.5	<0.5	**<0.5**	**<0.5**	**<0.5**	<0.5	**<0.5**	**<0.5**	**<0.5**	<0.5	**<0.5**	<0.5	**<0.5**	**<0.5**	<0.5	<0.5	**<0.5**	<0.5	-	<0.5	<0.5	**<0.5**	<0.5	<0.5	**<0.5**	<0.5	-
PD08	PD08_1.1	1.1	24/01/2023		EM2301163	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-
PD11	PD11_0.1	0.1	31/01/2023		EM2301412	**<0.5**	<0.5	<0.5	**<0.5**	**<0.5**	**<0.5**	<0.5	**<0.5**	**<0.5**	**<0.5**	<0.5	**<0.5**	<0.5	**<0.5**	**<0.5**	<0.5	<0.5	**<0.5**	<0.5	-	<0.5	<0.5	**<0.5**	<0.5	<0.5	**<0.5**	<0.5	-
PD11	PD11_0.5	0.5	31/01/2023		EM2301412	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-
PD12	PD12_0.1	0.1	31/01/2023		EM2301412	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-
PD12	PD12_0.5	0.5	31/01/2023		EM2301412	**<0.5**	<0.5	<0.5	**<0.5**	**<0.5**	**<0.5**	<0.5	**<0.5**	**<0.5**	**<0.5**	<0.5	**<0.5**	<0.5	**<0.5**	**<0.5**	<0.5	<0.5	**<0.5**	<0.5	-	<0.5	<0.5	**<0.5**	<0.5	<0.5	**<0.5**	<0.5	-
QC14	QC14_29012023		29/01/2023		961022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**9.2**
TP04	TP04_0.5	0.5	30/01/2023		EM2301773	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-
TP04	TP04_1.0	1	30/01/2023		EM2301773	**<0.5**	<0.5	<0.5	**<0.5**	**<0.5**	**<0.5**	<0.5	**<0.5**	**<0.5**	**<0.5**	<0.5	**<0.5**	<0.5	**<0.5**	**<0.5**	<0.5	<0.5	**<0.5**	<0.5	-	<0.5	<0.5	**<0.5**	<0.5	<0.5	**<0.5**	<0.5	-
TP05	TP05_0.2	0.2	30/01/2023		EM2301773	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-
TP05	TP05_1.0	1	30/01/2023		EM2301773	**<0.5**	<0.5	<0.5	**<0.5**	**<0.5**	**<0.5**	<0.5	**<0.5**	**<0.5**	**<0.5**	<0.5	**<0.5**	<0.5	**<0.5**	**<0.5**	<0.5	<0.5	**<0.5**	<0.5	-	<0.5	<0.5	**<0.5**	<0.5	<0.5	**<0.5**	<0.5	-
TP06	TP06_0.5	0.5	30/01/2023		EM2301773	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-
TP06	TP06_1.0	1	30/01/2023		EM2301773	**<0.5**	<0.5	<0.5	**<0.5**	**<0.5**	**<0.5**	<0.5	**<0.5**	**<0.5**	**<0.5**	<0.5	**<0.5**	<0.5	**<0.5**	**<0.5**	<0.5	<0.5	**<0.5**	<0.5	-	<0.5	<0.5	**<0.5**	<0.5	<0.5	**<0.5**	<0.5	-
TP07	TP07_0.2	0.2	26/01/2023		EM2301163	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-
TP07	TP07_1.0	1	26/01/2023		EM2301163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP08	TP08_0.5	0.5	26/01/2023		EM2301163	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-
TP08	TP08_1.0	1	26/01/2023		EM2301163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP09	QC08_260123		26/01/2023		EM2301163	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-
TP09	TP09_0.2	0.2	26/01/2023		EM2301163	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02	-	-	<0.02	-	-
TP09	TP09_0.5	0.5	26/01/2023		EM2301163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Legend
LOR - Limit of Reporting

Table 4
Soil Analytical Results - Airport Regulations
APAM - Melbourne Airport

Table 4 - Airport Regulations

AECOM

						Chemical Param		Polychlorinated Biphenyls	Oxygenated Compounds				Sulfonated Compounds	Phthalate Esters	omatics and K		Chlorinated Hydrocarbons					
						pH (CaCl2)	Moisture Content	Polychlorinated Biphenyls	Vinyl acetate	2-Butanone (MEK)	2-hexanone (MBK)	4-Methyl-2-pentanone (MIBK)	Carbon disulfide	Bis(2-ethylhexyl)phthalate	2,4-Dinitrotoluene	Nitrobenzene	Chlorinated hydrocarbons (sum)	Aldrin	Dieldrin	Aldrin + Dieldrin	a-BHC	b-BHC
						pH Units	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR						**0.1**	**0.1**	**0.1**	**5**	**1**	**5**	**5**	**0.5**	**0.5**	**1**	**0.5**	**0.01**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**
Airport Regulations - Area of an airport generally								50										50	20			
Airport Regulations - Areas of environmental significance								1										0.05	0.2			
Location ID	**Field ID**	**Depth (m)**	**Sampled Date**	**Sample Type**	**Lab Report Number**																	
BH03	BH03_0.2	0.2	29/01/2023		EM2301773	-	**6.2**	-	<5	**<5**	<5	<5	<0.5	-	-	-	-	-	-	-	-	-
BH03	BH03_0.5	0.5	29/01/2023		EM2301773	**8.1**	**6.4**	<0.1	-	<1	-	-	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03
BH04	BH04_0.5	0.5	29/01/2023		EM2301773	-	**5.7**	-	<5	**<5**	<5	<5	<0.5	-	-	-	-	-	-	-	-	-
BH04	QC13_29012023	0.5	29/01/2023		EM2301773	-	**7.1**	-	<5	**<5**	<5	<5	<0.5	-	-	-	-	-	-	-	-	-
BH05	BH05_0.5	0.5	29/01/2023		EM2301773	-	**22**	-	<5	**<5**	<5	<5	<0.5	-	-	-	-	-	-	-	-	-
BH05	BH05_2.0	2	29/01/2023		EM2301773	**8**	**17.9**	<0.1	-	<1	-	-	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03
BH2	BH2_0.2	0.2	24/01/2023		EM2301163	**6.1**	**19.2**	<0.1	-	<1	-	-	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03
BH2	BH2_0.5	0.5	24/01/2023		EM2301163	-	**25.2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH6	BH6_0.5	0.5	24/01/2023		EM2301163	**7.8**	**19.7**	<0.1	-	<1	-	-	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03
BH6	BH6_1.0	1	24/01/2023		EM2301163	-	**19.1**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH7	BH7_0.2	0.2	25/01/2023		EM2301163	**8.3**	**24.6**	<0.1	-	<1	-	-	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03
BH7	BH7_0.5	0.5	25/01/2023		EM2301163	-	**26.7**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH8	BH8_0.5	0.5	25/01/2023		EM2301163	**8.2**	**29.5**	<0.1	-	<1	-	-	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03
BH8	BH8_1.0	1	25/01/2023		EM2301163	-	**21.2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PD05	PD05_0.42	0.42	29/01/2023		EM2301773	**8.9**	**4.8**	<0.1	-	<1	-	-	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03
PD08	PD08_0.5	0.5	24/01/2023		EM2301163	-	-	-	<5	**<5**	<5	<5	<0.5	-	-	-	-	-	-	-	-	-
PD08	PD08_1.1	1.1	24/01/2023		EM2301163	**8.4**	**19.5**	<0.1	-	<1	-	-	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03
PD11	PD11_0.1	0.1	31/01/2023		EM2301412	-	**5.5**	-	<5	**<5**	<5	<5	<0.5	-	-	-	-	-	-	-	-	-
PD11	PD11_0.5	0.5	31/01/2023		EM2301412	**7.8**	**6.1**	<0.1	-	<1	-	-	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03
PD12	PD12_0.1	0.1	31/01/2023		EM2301412	**8**	**19.1**	<0.1	-	<1	-	-	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03
PD12	PD12_0.5	0.5	31/01/2023		EM2301412	-	**17.6**	-	<5	**<5**	<5	<5	<0.5	-	-	-	-	-	-	-	-	-
QC14	QC14_29012023		29/01/2023		961022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP04	TP04_0.5	0.5	30/01/2023		EM2301773	**7.8**	**13.7**	<0.1	-	<1	-	-	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03
TP04	TP04_1.0	1	30/01/2023		EM2301773	-	**24.1**	-	<5	**<5**	<5	<5	<0.5	-	-	-	-	-	-	-	-	-
TP05	TP05_0.2	0.2	30/01/2023		EM2301773	**7.5**	**7.4**	<0.1	-	<1	-	-	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03
TP05	TP05_1.0	1	30/01/2023		EM2301773	-	**29.4**	-	<5	**<5**	<5	<5	<0.5	-	-	-	-	-	-	-	-	-
TP06	TP06_0.5	0.5	30/01/2023		EM2301773	**8.1**	**21.2**	<0.1	-	<1	-	-	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03
TP06	TP06_1.0	1	30/01/2023		EM2301773	-	**23.5**	-	<5	**<5**	<5	<5	<0.5	-	-	-	-	-	-	-	-	-
TP07	TP07_0.2	0.2	26/01/2023		EM2301163	**7.8**	**19.5**	<0.1	-	<1	-	-	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03
TP07	TP07_1.0	1	26/01/2023		EM2301163	-	**20.5**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP08	TP08_0.5	0.5	26/01/2023		EM2301163	**8.2**	**24.2**	<0.1	-	<1	-	-	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03
TP08	TP08_1.0	1	26/01/2023		EM2301163	-	**21.6**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP09	QC08_260123		26/01/2023		EM2301163	**8**	**19.6**	<0.1	-	<1	-	-	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03
TP09	TP09_0.2	0.2	26/01/2023		EM2301163	**8.2**	**22**	<0.1	-	<1	-	-	-	<0.5	<1	<0.5	<0.01	<0.03	<0.03	<0.03	<0.03	<0.03
TP09	TP09_0.5	0.5	26/01/2023		EM2301163	-	**28.5**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Legend
LOR - Limit of Reporting

Table 4
Soil Analytical Results - Airport Regulations
APAM - Melbourne Airport

Table 4 - Airport Regulations

AECOM

					Organochlorine Pesticides (OC)																				Cyanides		Herbicides	Inorganics
					d-BHC	g-BHC (Lindane)	cis-Chlordane	trans-Chlordane	Chlordane	DDD	DDE	DDT	DDT+DDE+DDD	Endosulfan 1	Endosulfan 2	Endosulfan sulfate	Endrin	Endrin aldehyde	Heptachlor	Heptachlor epoxide	Hexachlorobenzene (HCB)	Methoxychlor	Other organochlorine pesticides (sum)	Cyanide (amenable)	Cyanide Total	2,4-Dichlorophenoxy acetic acid	Formaldehyde
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR					**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.05**	**0.05**	**0.05**	**0.05**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**1**	**1**	**0.001**	**2**
Airport Regulations - Area of an airport generally									250			1000							50						2500		
Airport Regulations - Areas of environmental significance												0.97															
Location ID	**Field ID**	**Depth (m)**	**Sampled Date**	**Sample Type**	**Lab Report Number**																							
BH03	BH03_0.2	0.2	29/01/2023		EM2301773	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH03	BH03_0.5	0.5	29/01/2023		EM2301773	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<2
BH04	BH04_0.5	0.5	29/01/2023		EM2301773	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04	QC13_29012023	0.5	29/01/2023		EM2301773	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH05	BH05_0.5	0.5	29/01/2023		EM2301773	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH05	BH05_2.0	2	29/01/2023		EM2301773	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<2
BH2	BH2_0.2	0.2	24/01/2023		EM2301163	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<2
BH2	BH2_0.5	0.5	24/01/2023		EM2301163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH6	BH6_0.5	0.5	24/01/2023		EM2301163	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<2
BH6	BH6_1.0	1	24/01/2023		EM2301163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH7	BH7_0.2	0.2	25/01/2023		EM2301163	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<2
BH7	BH7_0.5	0.5	25/01/2023		EM2301163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH8	BH8_0.5	0.5	25/01/2023		EM2301163	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<2
BH8	BH8_1.0	1	25/01/2023		EM2301163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PD05	PD05_0.42	0.42	29/01/2023		EM2301773	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<2
PD08	PD08_0.5	0.5	24/01/2023		EM2301163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PD08	PD08_1.1	1.1	24/01/2023		EM2301163	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<2
PD11	PD11_0.1	0.1	31/01/2023		EM2301412	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PD11	PD11_0.5	0.5	31/01/2023		EM2301412	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<2
PD12	PD12_0.1	0.1	31/01/2023		EM2301412	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	**3**
PD12	PD12_0.5	0.5	31/01/2023		EM2301412	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC14	QC14_29012023		29/01/2023		961022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP04	TP04_0.5	0.5	30/01/2023		EM2301773	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<2
TP04	TP04_1.0	1	30/01/2023		EM2301773	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP05	TP05_0.2	0.2	30/01/2023		EM2301773	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<2
TP05	TP05_1.0	1	30/01/2023		EM2301773	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP06	TP06_0.5	0.5	30/01/2023		EM2301773	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<2
TP06	TP06_1.0	1	30/01/2023		EM2301773	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP07	TP07_0.2	0.2	26/01/2023		EM2301163	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<2
TP07	TP07_1.0	1	26/01/2023		EM2301163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP08	TP08_0.5	0.5	26/01/2023		EM2301163	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<2
TP08	TP08_1.0	1	26/01/2023		EM2301163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP09	QC08_260123		26/01/2023		EM2301163	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<2
TP09	TP09_0.2	0.2	26/01/2023		EM2301163	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<2
TP09	TP09_0.5	0.5	26/01/2023		EM2301163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Legend
LOR - Limit of Reporting

Appendix C

Borehole Logs

SOIL BOREHOLE BH03

Project Name:	**Melbourne Airport**	Client:	**Australian Pacific Airports**
Drilling Contractor:	**Construction Science**	Location:	**Melbourne Airport**
Project No.:	**60692389**		
Logged By:	**AS**	Bore Size:	**mm**
Checked By:	**LM**	Total Depth:	**3.15 m**
Date Started:	**29-1-23**	Coordinates:	**mN** **mE**
Date Finished:	**29-1-23**	Permit No:	
Relative Level:	**mRL**	Drill Type:	
		Drill Model:	
		Drill Fluid:	

Method	Casing	Penetration (S M H R)	Groundwater Data and Comments	Depth (m)	Graphic Log	Classification	LITHOLOGICAL DESCRIPTION Type, plasticity / particle size, colour, secondary / minor components (e.g., "trace"), additional observations	Moisture Condition	Consistency Relative Density	Sample Interval	PID (ppm)	Sample ID
				0			CLAY with sand, brown, low plasticity, fine grained sand, trace subangular fine grained gravel, rootlets.	D	S		0	QC13 QC14
				1			CLAY, brown, medium plasticity.	W	St		0	BH03_1.0
												N = 5
				2							0	BH03_2.0
				3							0	BH03_3.0
							End of hole at 3.15 mbgl. Terminated due to refusal at base. Backfilled with bentonite.					N = 50

SOIL BOREHOLE BH04

Project Name:	**Melbourne Airport**	Client:	**Australian Pacific Airports**
Drilling Contractor:	**Construction Science**	Location:	**Melbourne Airport**
Project No.:	**60692389**		
Logged By:	**AS**	Bore Size:	**mm**
Checked By:	**LM**	Total Depth:	**0.90 m**
Date Started:	**29-1-23**	Coordinates:	**mN** **mE**
Date Finished:	**29-1-23**	Permit No:	
Relative Level:	**mRL**	Drill Type:	
		Drill Model:	
		Drill Fluid:	

Method	Casing	Penetration (S M H R)	Groundwater Data and Comments	Depth (m)	Graphic Log	Classification	LITHOLOGICAL DESCRIPTION Type, plasticity / particle size, colour, secondary / minor components (e.g., "trace"), additional observations	Moisture Condition	Consistency Relative Density	Sample Interval	PID (ppm)	Sample ID
				0			Sandy CLAY with trace gravel, dark brown, low plasticity, fine to medium grained sand, subangular fine grained gravel of basalt, rootlets.	D	S			
											0	BH04_0.2
											0	BH04_0.5
												Geotech Sample taken at 0.9m
				1			End of hole at 0.9 mbgl. Terminated due to refusal on bedrock. Backfilled with bentonite.					
				2								
				3								

SOIL BOREHOLE BH05

AECOM

Project Name: **Melbourne Airport**

Client: **Australian Pacific Airports**

Location: **Melbourne Airport**

Drilling Contractor: **Construction Science**

Project No.: **60692389**

Logged By: **AS**

Bore Size: **mm**

Relative Level: **mRL**

Drill Type:

Checked By: **LM**

Total Depth: **1.95 m**

Coordinates: **mN** **mE**

Drill Model:

Date Started: **29-1-23**

Drill Fluid:

Date Finished: **29-1-23**

Permit No:

Method	Casing	Penetration (S M H R)	Groundwater Data and Comments	Depth (m)	Graphic Log	Classification	LITHOLOGICAL DESCRIPTION Type, plasticity / particle size, colour, secondary / minor components (e.g., "trace"), additional observations	Moisture Condition	Consistency Relative Density	Sample Interval	PID (ppm)	Sample ID
				0			CLAY with sand and gravel, brown, low plasticity, fine grained sand, subangular fine grained gravel of basalt.	W	S		0	BH05_0.2
											0	BH05_0.5
				1			CLAY, brown mottled grey, low to medium plasticity.	W	VSt		0	BH05_1.0
											0	N = 13 BH05_1.7
							BASALT, highly weathered, dark brown, vesicular.					
				2			End of hole at 1.95 mbgl. Terminated due to refusal on basalt. Backfilled with bentonite.					
				3								

SOIL BOREHOLE PD05

Project Name:	**Melbourne Airport**	Client:	**Australian Pacific Airports**
Drilling Contractor:	**Construction Science**	Location:	**Melbourne Airport**
Project No.:	**60692389**		
Logged By:	**AS**	Bore Size: **mm**	Relative Level: **mRL**
Checked By:	**LM**	Total Depth: **1.50 m**	Coordinates: **mN**
Date Started:	**29-1-23**		**mE**
Date Finished:	**29-1-23**	Permit No:	Drill Type:
			Drill Model:
			Drill Fluid:

Method	Casing	Penetration (S M H R)	Groundwater Data and Comments	Depth (m)	Graphic Log	Classification	LITHOLOGICAL DESCRIPTION Type, plasticity / particle size, colour, secondary / minor components (e.g., "trace"), additional observations	Moisture Condition	Consistency Relative Density	Sample Interval	PID (ppm)	Sample ID
				0			CONCRETE.	D				
							FILL: Crushed rock. GRAVEL with sand, black, fine to coarse grained sand, subangular fine grained gravel.	D				
				1			Silty CLAY with trace gravel, dark grey, high plasticity, subangular fine grained gravel.	W	St		1.5	PD05_0.8
							CLAY, brown, low plasticity.	W	St		0	PD05_1.0
							End of hole at 1.5 mbgl. Target depth achieved.					

SOIL BOREHOLE PD06

Project Name:	**Melbourne Airport**	Client:	**Australian Pacific Airports**
Drilling Contractor:	**Construction Science**	Location:	**Melbourne Airport**
Project No.:	**60692389**		
Logged By:	**AS**	Bore Size:	**mm**
Checked By:	**LM**	Total Depth:	**1.50 m**
Date Started:	**29-1-23**	Coordinates:	**mN** **mE**
Date Finished:	**29-1-23**	Permit No:	
Relative Level:	**mRL**	Drill Type:	
		Drill Model:	
		Drill Fluid:	

Method	Casing	Penetration (S M H R)	Groundwater Data and Comments	Depth (m)	Graphic Log	Classification	LITHOLOGICAL DESCRIPTION Type, plasticity / particle size, colour, secondary / minor components (e.g., "trace"), additional observations	Moisture Condition	Consistency Relative Density	Sample Interval	PID (ppm)	Sample ID
				0			CONCRETE.	D				
							FILL: Crushed rock. GRAVEL with sand, black, fine to coarse grained sand, subangular fine grained gravel.	D				
				1			Silty CLAY with trace gravel, dark grey, high plasticity, subangular fine grained gravel.	W	St	1.5		PD06_0.8
							CLAY, brown, low plasticity.	W	St	0		PD06_1.0
							End of hole at 1.5 mbgl. Target depth achieved.					

SOIL BOREHOLE PD07

Project Name: **Melbourne Airport**
Client: **Australian Pacific Airports**
Location: **Melbourne Airport**
Drilling Contractor: **Construction Science**
Project No.: **60692389**
Logged By: **AS**
Bore Size: **mm**
Relative Level: **mRL**
Drill Type:
Checked By: **LM**
Total Depth: **1.50 m**
Coordinates: **mN**
Drill Model:
Date Started: **29-1-23**
mE
Drill Fluid:
Date Finished: **29-1-23**
Permit No:

Method	Casing	Penetration (S M H R)	Groundwater Data and Comments	Depth (m)	Graphic Log	Classification	LITHOLOGICAL DESCRIPTION Type, plasticity / particle size, colour, secondary / minor components (e.g., "trace"), additional observations	Moisture Condition	Consistency Relative Density	Sample Interval	PID (ppm)	Sample ID
				0			CONCRETE.	D				
							FILL: Crushed rock.	D				
											0	PD07_0.6
				1			Silty CLAY with trace gravel, dark grey, high plasticity, subangular fine grained gravel.	W	St			
							CLAY, brown, low plasticity.	W	St		0	PD07_1.2
							End of hole at 1.5 mbgl. Target depth achieved.					

SOIL BOREHOLE PD11

Project Name:	**Melbourne Airport**	Client:	**Australian Pacific Airports**
Drilling Contractor:	**Construction Science**	Location:	**Melbourne Airport**
Project No.:	**60692389**		
Logged By:	**BE**	Bore Size: **mm**	Relative Level: **mRL**
Checked By:	**LM**	Total Depth: **1.50 m**	Coordinates: **mN**
Date Started:	**29-1-23**		**mE**
Date Finished:	**29-1-23**	Permit No:	
Drill Type:			
Drill Model:			
Drill Fluid:			

Method	Casing	Penetration (S M H R)	Groundwater Data and Comments	Depth (m)	Graphic Log	Classification	LITHOLOGICAL DESCRIPTION Type, plasticity / particle size, colour, secondary / minor components (e.g., "trace"), additional observations	Moisture Condition	Consistency Relative Density	Sample Interval	PID (ppm)	Sample ID
				0			ASPHALT.					
							FILL: Crushed rock capping.			0.5		PD11_0.1
							FILL: Sandy GRAVEL, brown, fine to coarse grained sand, medium to coarse grained gravel, slightly moist.	M	D	1.1		PD11_0.5
				1			CLAY with trace gravel, grey, high plasticity, coarse gravel.	M	S	0.3		PD11_1.2
							End of hole at 1.5 mbgl. Target depth achieved.					

SOIL BOREHOLE PD12

Project Name:	**Melbourne Airport**	Client:	**Australian Pacific Airports**
Drilling Contractor:	**Construction Science**	Location:	**Melbourne Airport**
Project No.:	**60692389**		
Logged By:	**BE**	Bore Size: **mm**	Relative Level: **mRL**
Checked By:	**LM**	Total Depth: **1.50 m**	Coordinates: **mN**
Date Started:	**31-1-23**		**mE**
Date Finished:	**29-1-23**	Permit No:	Drill Type:
			Drill Model:
			Drill Fluid:

Method	Casing	Penetration (S M H R)	Groundwater Data and Comments	Depth (m)	Graphic Log	Classification	LITHOLOGICAL DESCRIPTION Type, plasticity / particle size, colour, secondary / minor components (e.g., "trace"), additional observations	Moisture Condition	Consistency Relative Density	Sample Interval	PID (ppm)	Sample ID
				0			ASPHALT.					
							FILL: Crushed rock of fine to coarse gravel and fine to coarse sand.				0.4	PD12_0.05
							CLAY with trace gravel, grey, high plasticity, angular gravel.	M	S		0.3	PD12_0.1
											0.2	PD12_0.5
							From 0.9 mbgl becoming grey-brown, stiff and slightly moist.	D/M	St			
				1							0.4	PD12_1.0
							End of hole at 1.5 mbgl. Target depth achieved.					

TEST PIT TP04

Equipment:

Project Name: **Melbourne Airport**

Excavation Contractor: **Construction Science**

Bucket Size: **mm**

Project No.: **60692389**

Logged By: **AS**

Test Pit Length: **m**

Relative Level: **mRL**

Client: **Australian Pacific Airports**

Checked By: **LM**

Test Pit Width: **m**

Coordinates: **mN**

Location: **Melbourne Airport**

Date Started: **30-1-23**

Test Pit Depth: **1.9 m**

mE

Date Finished: **30-1-23**

Permit No:

Ground Water Data and Comments	Depth (m)	Graphic Log	Classification	DESCRIPTION OF STRATA	Moisture Condition	Sample Interval	PID (ppm)	Sample ID
	0			CLAY, brown, medium plasticity, rootlets. Basalt coobles and boulders present.	D			
				Sandy clayey GRAVEL, brown, fine to coarse grained sand, subangular fine to coarse gravel of basalt.	D		0	TP04_0.2
							0	TP04_0.5
				From 0.8 mbgl becoming wet with depth, high plasticity.	D			
	1						0	TP04_1.0
				Silty CLAY, grey, medium plasticity.	W			
							0	TP04_1.8
				End of hole at 1.9 mbgl. Terminated due to basalt boulders at base. Backfilled with in-situ material.				

TEST PIT TP05

Equipment:

Project Name: **Melbourne Airport**

Excavation Contractor: **Construction Science**

Bucket Size: **mm**

Project No.: **60692389**

Logged By: **AS**

Test Pit Length: **m**

Relative Level: **mRL**

Client: **Australian Pacific Airports**

Checked By: **LM**

Test Pit Width: **m**

Coordinates: **mN**

Location: **Melbourne Airport**

Date Started: **30-1-23**

Test Pit Depth: **1.8 m**

mE

Date Finished: **30-1-23**

Permit No:

Ground Water Data and Comments	Depth (m)	Graphic Log	Classification	DESCRIPTION OF STRATA	Moisture Condition	Sample Interval	PID (ppm)	Sample ID
	0			FILL: Sandy gravelly CLAY, brown, low to medium plasticity, fine grained sand, angular to subrounded fine to coarse grained gravel of basalt, rootlets. DCP refusal at 0.2 mbgl - difficulty excavating.	D			
				Sandy clayey GRAVEL, brown, fine to coarse grained sand, subangular to angular fine to coarse grained gravel of basalt. Cobbles and boulders present.	W		0	TP05_0.2
				Sandy gravelly CLAY, brown, fine to coarse grained sand, subangular fine to coarse grained gravel of basalt.	W		0	TP05_0.5
				CLAY, brown, medium plasticity, firm.	W			
	1						0	TP05_1.0
				CLAY with sand, grey, medium plasticity, sand is fine to coarse, firm, trace gravel of basalt.	W			
							0	TP05_1.7
				End of hole at 1.8 mbgl. Terminated due to refusal on basalt. Backfilled with in-situ material.				

AECOM

TEST PIT TP06

Equipment:

Project Name: **Melbourne Airport**

Excavation Contractor: **Construction Science**

Bucket Size: **mm**

Project No.: **60692389**

Logged By: **AS**

Test Pit Length: **m**

Relative Level: **mRL**

Client: **Australian Pacific Airports**

Checked By: **LM**

Test Pit Width: **m**

Coordinates: **mN**

Location: **Melbourne Airport**

Date Started: **30-1-23**

Test Pit Depth: **1.8 m**

mE

Date Finished: **30-1-23**

Permit No:

Ground Water Data and Comments	Depth (m)	Graphic Log	Classification	DESCRIPTION OF STRATA	Moisture Condition	Sample Interval	PID (ppm)	Sample ID
	0			CLAY with gravel, brown mottled grey, low to medium plasticity, angular to subangular fine to medium grained gravel of basalt, rootlets.	D			
							0	TP06_0.2
				CLAY with trace gravel, brown, medium to high plasticity angular to subangular fine to coarse grained gravel of basalt.	W		0	TP06_0.5
	1			CLAY, dark grey mottled grey, medium to high plasticity.	W		0	TP06_1.0
				CLAY, grey, medium to high plasticity. Boulders < 300mm.	M		0	TP06_1.8
				End of hole at 1.8 mbgl. Terminated due to refusal on basalt at base.				

SOIL BOREHOLE PD05

Project Name:	**Melbourne Airport**	Client:	**Australian Pacific Airports**
Drilling Contractor:	**Construction Science**	Location:	**Melbourne Airport**
Project No.:	**60692389**		
Logged By:	**AS**	Bore Size: **mm**	Relative Level: **mRL**
Checked By:	**LM**	Total Depth: **1.50 m**	Coordinates: **mN**
Date Started:	**29-1-23**		**mE**
Date Finished:	**29-1-23**	Permit No:	Drill Type:
			Drill Model:
			Drill Fluid:

Method	Casing	Penetration (S M H R)	Groundwater Data and Comments	Depth (m)	Graphic Log	Classification	LITHOLOGICAL DESCRIPTION Type, plasticity / particle size, colour, secondary / minor components (e.g., "trace"), additional observations	Moisture Condition	Consistency Relative Density	Sample Interval	PID (ppm)	Sample ID
				0			CONCRETE.	D				
							FILL: Crushed rock. GRAVEL with sand, black, fine to coarse grained sand, subangular fine grained gravel.	D				
				1			Silty CLAY with trace gravel, dark grey, high plasticity, subangular fine grained gravel.	W	St		1.5	PD05_0.8
							CLAY, brown, low plasticity.	W	St		0	PD05_1.0
							End of hole at 1.5 mbgl. Target depth achieved.					

Appendix D

Laboratory Reports

ANZ

FQM - Generic Chain of Custody Form

AECOM

Q4AN(EV)-007-FM1

CONSULTANT: AECOM	ADDRESS / OFFICE:	SAMPLER: Alice Shuster	**Destination Laboratory**
PROJECT MANAGER (PM): Lauren McGloin	SITE: Melbourne Airport	MOBILE: 0409544860	PHONE: 0448485323 (Lauren M)	**ALS**
PROJECT NUMBER & TASK CODE: 60692389	P.O. NO.:	EMAIL REPORT TO: lauren.mcgloin@aecom.com;	
RESULTS REQUIRED (Date):	QUOTE № Melbourne Airport - dated 7.11.2022	ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)	

FOR LABORATORY USE ONLY

COOLER SEAL (circle appropriate)

Intact: Yes No N/A

SAMPLE TEMPERATURE

CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

antimony (Sb), arsenic (As), barium (Ba), Beryllium (Be), cadmium (Cd), chromium (Cr), cobalt (Co), copper (Cu), lead (Pb), manganese (Mn), mercury (Hg), nickel (Ni), selenium (Se) and zinc (Zn);

Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.

ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	Suite 1 - P-30/3 EPA 1828.2 Table 2 Limited Suite - excl. EDTA	Suite 2: S-10 TRH, BTEX, PAHs, Heavy metals - S3	Suite 3: EP231X Per-and poly-fluoroalkyl substances (PFAS) and associated substances extended 28 suite including	TPH/BTEXN/ PFAS short suite and metals (6)	TRH C6 – C10 and BTEXN							HOLD	
1	QC13_29012023	S	29/01/23		J	2		1	1										
→	QC14_29012023	S	29/01/23		J	2		1	1										Please forward to Eurofins
2	BH03_0.2	S	29/01/23		J	2		1	1										
3	BH03_0.5	S	29/01/23		J	2	1												
4	BH03_1.0	S	29/01/23		J	2												X	
5	BH03_2.0	S	29/01/23		J	2												X	
6	BH03_3.0	S	29/01/23		J	2												X	
7	BH05_0.2	S	29/01/23		J	2												X	
8	BH05_0.5	S	29/01/23		J	2		1	1										
9	BH05_1.0	S	29/01/23		J	2												X	
10	BH05_2.0	S	29/01/23		J	1	1												
11	BH04_0.2	S	29/01/23		J	2												X	
12	BH04_0.5	S	29/01/23		J	2		1	1										
13	QC15_290123	W	29/01/23		2VS, 1AG, 1N, 2P	6				1								X	
14	PD05_0.42	S	29/01/23		J	2	1												
15	PD05_1.5	S	29/01/23		J	2												X	
16	PD06_0.42	S	29/01/23		J	2												X	
17	PD06_0.8	S	29/01/23		J	2												X	
18	PD06_1.2	S	29/01/23		J	2												X	

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name Alice Shuster	Date: 29/01/23	Name:	Date:	Name:	Date:	Con' Note No:
Of: AECOM	Time: PM	Of:	Time:	Of:	Time:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic, AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. Soil Container Codes: Jar = Unpreserved glass jar

COC Page 1 of 2

77 Y2

4/2/23

JW (ALS) 6/2

DATE: 06/02/23
TIME: 4:40 PM
COURIER: YES
TEMPERATURE 0.4
ATTEMP TO CHILL: YES NO

ANZ

FQM - Generic Chain of Custody Form

AECOM

Q4AN(EV)-007-FM1

CONSULTANT: AECOM	ADDRESS / OFFICE:	SAMPLER: Alice Shuster	**Destination Laboratory**
PROJECT MANAGER (PM): Lauren McGlon	SITE: Melbourne Airport	MOBILE: 0409544866	PHONE: 0448485323 (Lauren M)	**ALS**
PROJECT NUMBER & TASK CODE: 60692389	P.O. NO.:	EMAIL REPORT TO: lauren.mcglon@aecom.com;	
RESULTS REQUIRED (Date):	QUOTE NO: Melbourne Airport - dated 7.11.2022	ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)	

FOR LABORATORY USE ONLY

COOLER SEAL (circle appropriate)

Intact: Yes No N/A

SAMPLE TEMPERATURE

CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL

antimony (Sb), arsenic (As), barium (Ba), Beryllium (Be), cadmium (Cd), chromium (Cr), cobalt (Co), copper (Cu), lead (Pb), manganese (Mn), mercury (Hg), nickel (Ni), selenium (Se) and zinc (Zn);

Notes: e.g. Highly contaminated samples

e.g. "High PAHs expected",

Extra volume for QC or trace LORs etc.

SAMPLE INFORMATION (note S = Soil, W=Water)					CONTAINER INFORMATION		Suite 1 : P-30/2 EPA 1828.3 Table 2 Limited Suite - excl. EDTA	Suite 2: S-10 TRH, BTEX, PAHs, Heavy metals - S3	Suite 3: PFAS short suite - fluoroalkyl substances (PFAS) and associated substances extended 28 suite including perfluoro octane		TPH/BTEXN/ PFAS short suite and metals (8)	TRH C6 – C10 and BTEXN.								HOLD	
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles															
19	PD07_0.6	S	30/01/23		J	2														X	
20	PD07_1.2	S	30/01/23		J	2														X	
21	QC15_290123	W	29/01/23		2VS, 1AG, 1N, 2P						1										
22	QC16_290123	W	29/01/23		IV	1						1									
23	QC17_300123	W	30/01/23		2VS, 1AG, 1N, 2P	6					1										
24	QC18_300123	S	30/01/23		1V	1						1									
25	QC19_300123	S	30/01/23		J	5														X	
→	QC20_300123	S	30/01/23		J	5														X	Please forward to Eurofins
26	TP06_0.2	S	30/01/23		J	2														X	
27	TP06_0.5	S	30/01/23		J	2	1														
28	TP06_1.0	S	30/01/23		J	2		1	1												
29	TP06_1.8	S	30/01/23		J	2														X	
30	TP05_0.2	S	30/01/23		J	2	1														
31	TP05_0.5	S	30/01/23		J	2														X	
32	TP05_1.0	S	30/01/23		J	2		1	1												
33	TP05_2.0	S	30/01/23		J	2														X	
34	TP04_0.2	S	30/01/23		J	2														X	
35	TP04_0.5	S	30/01/23		J	2	1														
36	TP04_1.0	S	30/01/23		J	2		1	1												
37	TP04_1.9	S	30/01/23		J	2														X	

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name: Alice Shuster	Date: 30/01/23	Name:	Date:	Name:	Date:	Con' Note No:
Of: AECOM	Time: PM	Of:	Time:	Of:	Time:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. *Soil Container Codes:* Jar = Unpreserved glass jar

COC Page 2 of 2

77 4/2

#9/01/022
Dec
01/2/23

Tyrone Gowans

From: Michael Morrison
Sent: Tuesday, 7 February 2023 10:54 AM
To: #AU_CAU001_EnviroSampleVic
Subject: FW: MISSING TASK NUMBER 60692389 (961022)

Follow Up Flag: Follow up
Flag Status: Completed

Hi Tyrone
Please append this email to the COC.

Kind Regards,

Michael Morrison
Analytical Services Manager
Phone: 03 8564 5933
Mobile: 0499 201 025
Email : michaelmorrison@eurofins.com

From: McGloin, Lauren <Lauren.McGloin@aecom.com>
Sent: Tuesday, 7 February 2023 10:52 AM
To: Michael Morrison <MichaelMorrison@eurofins.com>
Subject: RE: MISSING TASK NUMBER 60692389 (961022)

Hello

Its task 6

Principal Environmental Scientist, GRS - VSA
M +61448485323
lauren.mcgloin@aecom.com

AECOM
Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61386706800
aecom.com

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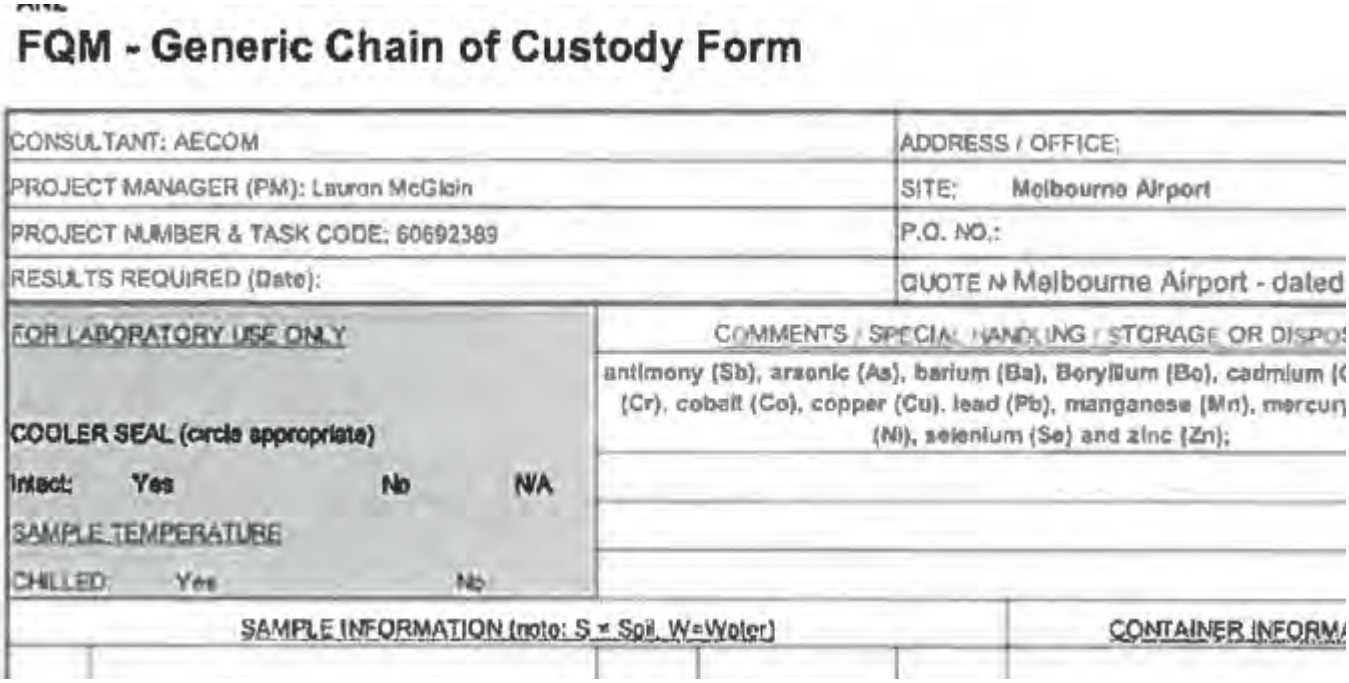
My working days are:

Monday	Tuesday	Wednesday	Thursday	Friday
✓	✓	X	✓	X

From: Michael Morrison <MichaelMorrison@eurofins.com>
Sent: Tuesday, 7 February 2023 10:26 AM
To: McGloin, Lauren <Lauren.McGloin@aecom.com>
Cc: #AU_CAU001_EnviroSampleVic <EnviroSampleVic@eurofins.com>
Subject: MISSING TASK NUMBER 60692389 (961022)

Hi Lauren
Can you please send me the task number for this one?



FQM - Generic Chain of Custody Form

CONSULTANT: AECOM	ADDRESS / OFFICE:
PROJECT MANAGER (PM): Lauren McGloin	SITE: Melbourne Airport
PROJECT NUMBER & TASK CODE: 60692389	P.O. NO.:
RESULTS REQUIRED (Date):	QUOTE N Melbourne Airport - dated

FOR LABORATORY USE ONLY	COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOS
	antimony (Sb), arsenic (As), barium (Ba), Beryllium (Be), cadmium (C
	(Cr), cobalt (Co), copper (Cu), lead (Pb), manganese (Mn), mercury
	(Ni), selenium (Se) and zinc (Zn);
COOLER SEAL (circle appropriate)	
Intact: Yes No N/A	
SAMPLE TEMPERATURE	
CHILLED: Yes No	

SAMPLE INFORMATION (note: S = Soil, W=Water)	CONTAINER INFORMA

Kind regards,

Michael Morrison
Analytical Services Manager

Eurofins Environment Testing Australia Pty Ltd
6 Monterey Rd
Dandenong South Vic 3175
Phone: +61 3 8564 5933 (Direct)
Mobile: +61 499 201 025

E-mail: MichaelMorrison@eurofins.com
Website: environment.eurofins.com.au

eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

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NSW 2145
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NATA# 1261 Site# 18217

Canberra
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Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

Brisbane
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Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
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Mayfield West NSW 2304
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NATA# 1261
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43 Detroit Drive
Rolleston,
Christchurch 7675
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IANZ# 1290

Sample Receipt Advice

Company name:	AECOM Aust Pty Ltd Melbourne
Contact name:	Lauren McGloin
Project name:	MELBOURNE AIRPORT
Project ID:	60692389
Turnaround time:	5 Day
Date/Time received	Feb 6, 2023 4:40 PM
Eurofins reference	961022

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	Sample Temperature of chilled sample on the batch as recorded by Eurofins Sample Receipt : .4 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Michael Morrison on phone : 03 8564 5933 or by email: MichaelMorrison@eurofins.com

Results will be delivered electronically via email to Lauren McGloin - lauren.mcgloin@aecom.com.

Note: A copy of these results will also be delivered to the general AECOM Aust Pty Ltd Melbourne email address.

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

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IANZ# 1290

Company Name: AECOM Aust Pty Ltd Melbourne
Address: Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008

Project Name: MELBOURNE AIRPORT
Project ID: 60692389

Order No.: 60692389/6
Report #: 961022
Phone: 03 9653 1234
Fax: 03 9654 7117

Received: Feb 6, 2023 4:40 PM
Due: Feb 13, 2023
Priority: 5 Day
Contact Name: Lauren McGloin

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						HOLD	Polycyclic Aromatic Hydrocarbons	BTEX	NEPM 2013 Metals : Metals M13	Moisture Set	Total Recoverable Hydrocarbons	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X
External Laboratory												
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**							
1	QC14_29012023	Jan 29, 2023		Soil	M23-Fe0011643		X	X	X	X	X	X
2	QC20_300123	Jan 30, 2023		Soil	M23-Fe0011644	X						
Test Counts						1	1	1	1	1	1	1

AECOM Aust Pty Ltd Melbourne
Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Lauren McGloin**

Report **961022-S**
Project name MELBOURNE AIRPORT
Project ID 60692389
Received Date Feb 06, 2023

Client Sample ID			**QC14_29012023**
Sample Matrix			**Soil**
Eurofins Sample No.			**M23-Fe0011643**
Date Sampled			**Jan 29, 2023**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100
BTEX			
Benzene	0.1	mg/kg	< 0.1
Toluene	0.1	mg/kg	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2
o-Xylene	0.1	mg/kg	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3
4-Bromofluorobenzene (surr.)	1	%	103
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.5	mg/kg	< 0.5
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5

Client Sample ID			QC14_29012023
Sample Matrix			Soil
Eurofins Sample No.			M23-Fe0011643
Date Sampled			Jan 29, 2023
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Chrysene	0.5	mg/kg	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5
Pyrene	0.5	mg/kg	< 0.5
Total PAH*	0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)	1	%	77
p-Terphenyl-d14 (surr.)	1	%	103
Chromium (hexavalent)	1	mg/kg	< 1
% Moisture	1	%	9.2
Heavy Metals			
Arsenic	2	mg/kg	2.1
Beryllium	2	mg/kg	< 2
Boron	10	mg/kg	14
Cadmium	0.4	mg/kg	< 0.4
Cobalt	5	mg/kg	13
Copper	5	mg/kg	18
Lead	5	mg/kg	9.3
Manganese	5	mg/kg	280
Mercury	0.1	mg/kg	< 0.1
Nickel	5	mg/kg	25
Selenium	2	mg/kg	< 2
Zinc	5	mg/kg	30
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5
13C4-PFBA (surr.)	1	%	132
13C5-PFPeA (surr.)	1	%	123
13C5-PFHxA (surr.)	1	%	128
13C4-PFHpA (surr.)	1	%	127
13C8-PFOA (surr.)	1	%	125
13C5-PFNA (surr.)	1	%	131
13C6-PFDA (surr.)	1	%	144
13C2-PFUnDA (surr.)	1	%	136
13C2-PFDoDA (surr.)	1	%	125
13C2-PFTeDA (surr.)	1	%	137

Client Sample ID			QC14_29012023
Sample Matrix			Soil
Eurofins Sample No.			M23-Fe0011643
Date Sampled			Jan 29, 2023
Test/Reference	LOR	Unit	
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10
13C8-FOSA (surr.)	1	%	153
D3-N-MeFOSA (surr.)	1	%	130
D5-N-EtFOSA (surr.)	1	%	145
D7-N-MeFOSE (surr.)	1	%	155
D9-N-EtFOSE (surr.)	1	%	141
D5-N-EtFOSAA (surr.)	1	%	122
D3-N-MeFOSAA (surr.)	1	%	161
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	11
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5
13C3-PFBS (surr.)	1	%	119
18O2-PFHxS (surr.)	1	%	111
13C8-PFOS (surr.)	1	%	123
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5
13C2-4:2 FTSA (surr.)	1	%	112
13C2-6:2 FTSA (surr.)	1	%	105
13C2-8:2 FTSA (surr.)	1	%	130
13C2-10:2 FTSA (surr.)	1	%	141
PFASs Summations			
Sum (PFHxS + PFOS)*	5	ug/kg	11
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	11
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	11
Sum of WA DWER PFAS (n=10)*	10	ug/kg	11
Sum of PFASs (n=30)*	50	ug/kg	< 50

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Feb 08, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Feb 08, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Feb 08, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	Feb 08, 2023	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Polycyclic Aromatic Hydrocarbons	Melbourne	Feb 08, 2023	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Chromium (hexavalent)	Melbourne	Feb 08, 2023	28 Days
- Method: LTM-INO-4230 Hexavalent Chromium by UV-Vis			
Heavy Metals	Melbourne	Feb 08, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Feb 06, 2023	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	Feb 08, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	Feb 08, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	Feb 08, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	Feb 08, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	Feb 06, 2023	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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IANZ# 1290

Company Name: AECOM Aust Pty Ltd Melbourne
Address: Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008

Project Name: MELBOURNE AIRPORT
Project ID: 60692389

Order No.: 60692389/6
Report #: 961022
Phone: 03 9653 1234
Fax: 03 9654 7117

Received: Feb 6, 2023 4:40 PM
Due: Feb 13, 2023
Priority: 5 Day
Contact Name: Lauren McGloin

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						HOLD	Polycyclic Aromatic Hydrocarbons	BTEX	NEPM 2013 Metals : Metals M13	Moisture Set	Total Recoverable Hydrocarbons	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X
External Laboratory												
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**							
1	QC14_29012023	Jan 29, 2023		Soil	M23-Fe0011643		X	X	X	X	X	X
2	QC20_300123	Jan 30, 2023		Soil	M23-Fe0011644	X						
Test Counts						1	1	1	1	1	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**µg/L:** micrograms per litre
ppm: parts per million	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Chromium (hexavalent)	mg/kg	< 1			1	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Beryllium	mg/kg	< 2			2	Pass	
Boron	mg/kg	< 10			10	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Cobalt	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Manganese	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	112			70-130	Pass	
TRH C10-C14	%	105			70-130	Pass	
TRH C6-C10	%	104			70-130	Pass	
TRH >C10-C16	%	107			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	99			70-130	Pass	
Toluene	%	105			70-130	Pass	
Ethylbenzene	%	103			70-130	Pass	
m&p-Xylenes	%	101			70-130	Pass	
Xylenes - Total*	%	99			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	89			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	100			70-130	Pass	
Acenaphthylene	%	108			70-130	Pass	
Anthracene	%	104			70-130	Pass	
Benz(a)anthracene	%	110			70-130	Pass	
Benzo(a)pyrene	%	99			70-130	Pass	
Benzo(b&j)fluoranthene	%	125			70-130	Pass	
Benzo(g.h.i)perylene	%	82			70-130	Pass	
Benzo(k)fluoranthene	%	114			70-130	Pass	
Chrysene	%	99			70-130	Pass	
Dibenz(a.h)anthracene	%	110			70-130	Pass	
Fluoranthene	%	102			70-130	Pass	
Fluorene	%	113			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	78			70-130	Pass	
Naphthalene	%	126			70-130	Pass	
Phenanthrene	%	90			70-130	Pass	
Pyrene	%	130			70-130	Pass	
LCS - % Recovery							
Chromium (hexavalent)	%	107			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	115			80-120	Pass	
Beryllium	%	100			80-120	Pass	
Boron	%	106			80-120	Pass	
Cadmium	%	106			80-120	Pass	
Cobalt	%	116			80-120	Pass	
Copper	%	109			80-120	Pass	
Lead	%	113			80-120	Pass	
Manganese	%	120			80-120	Pass	
Mercury	%	118			80-120	Pass	
Nickel	%	117			80-120	Pass	
Selenium	%	114			80-120	Pass	
Zinc	%	119			80-120	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	96			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	88			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	97			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	97			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	93			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	96			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	108			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	103			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	100			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	96			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	102			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	104			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	112			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	98			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	94			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	93			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	98			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	103			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	91			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	95			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	92			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	92			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	87			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	87			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	95			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	90			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	92			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	96			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	98			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	100			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	M23-Fe0011622	NCP	%	112			70-130	Pass	
TRH C10-C14	M23-Fe0011760	NCP	%	102			70-130	Pass	
TRH C6-C10	M23-Fe0011622	NCP	%	105			70-130	Pass	
TRH >C10-C16	M23-Fe0011760	NCP	%	104			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	M23-Fe0011622	NCP	%	94			70-130	Pass	
Toluene	M23-Fe0011622	NCP	%	97			70-130	Pass	
Ethylbenzene	M23-Fe0011622	NCP	%	98			70-130	Pass	
m&p-Xylenes	M23-Fe0011622	NCP	%	97			70-130	Pass	
o-Xylene	M23-Fe0011622	NCP	%	93			70-130	Pass	
Xylenes - Total*	M23-Fe0011622	NCP	%	96			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M23-Fe0011622	NCP	%	88			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M23-Fe0016561	NCP	%	85			70-130	Pass	
Acenaphthylene	M23-Fe0016561	NCP	%	95			70-130	Pass	
Anthracene	M23-Fe0016561	NCP	%	91			70-130	Pass	
Benz(a)anthracene	M23-Fe0016561	NCP	%	71			70-130	Pass	
Benzo(a)pyrene	M23-Fe0016561	NCP	%	79			70-130	Pass	
Benzo(b&j)fluoranthene	M23-Fe0016561	NCP	%	101			70-130	Pass	
Benzo(g.h.i)perylene	M23-Fe0016561	NCP	%	93			70-130	Pass	
Benzo(k)fluoranthene	M23-Fe0016561	NCP	%	107			70-130	Pass	
Chrysene	M23-Fe0016561	NCP	%	99			70-130	Pass	
Dibenz(a.h)anthracene	M23-Fe0016561	NCP	%	108			70-130	Pass	
Fluoranthene	M23-Fe0016561	NCP	%	87			70-130	Pass	
Fluorene	M23-Fe0016561	NCP	%	96			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Indeno(1.2.3-cd)pyrene	M23-Fe0016561	NCP	%	103			70-130	Pass	
Naphthalene	M23-Fe0016561	NCP	%	108			70-130	Pass	
Phenanthrene	M23-Fe0016561	NCP	%	77			70-130	Pass	
Pyrene	M23-Fe0016561	NCP	%	86			70-130	Pass	
Spike - % Recovery									
				Result 1					
Chromium (hexavalent)	M23-Fe0011554	NCP	%	107			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M23-Fe0011879	NCP	%	105			75-125	Pass	
Beryllium	M23-Fe0011879	NCP	%	97			75-125	Pass	
Boron	M23-Fe0011879	NCP	%	127			75-125	Fail	Q08
Cadmium	M23-Fe0011879	NCP	%	110			75-125	Pass	
Cobalt	M23-Fe0011879	NCP	%	117			75-125	Pass	
Copper	M23-Fe0011879	NCP	%	112			75-125	Pass	
Lead	M23-Fe0011879	NCP	%	113			75-125	Pass	
Manganese	M23-Fe0011879	NCP	%	69			75-125	Fail	Q08
Mercury	M23-Fe0011879	NCP	%	124			75-125	Pass	
Nickel	M23-Fe0011879	NCP	%	112			75-125	Pass	
Selenium	M23-Fe0011879	NCP	%	104			75-125	Pass	
Zinc	M23-Fe0011879	NCP	%	110			75-125	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M23-Fe0011882	NCP	%	97			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M23-Fe0011882	NCP	%	99			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M23-Fe0011882	NCP	%	93			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M23-Fe0011882	NCP	%	93			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M23-Fe0011882	NCP	%	97			50-150	Pass	
Perfluorononanoic acid (PFNA)	M23-Fe0011882	NCP	%	103			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M23-Fe0011882	NCP	%	100			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M23-Fe0011882	NCP	%	97			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M23-Fe0011882	NCP	%	100			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M23-Fe0011882	NCP	%	94			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M23-Fe0011882	NCP	%	104			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M23-Fe0011882	NCP	%	100			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M23-Fe0011882	NCP	%	109			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M23-Fe0011882	NCP	%	96			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M23-Fe0011882	NCP	%	104			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M23-Fe0011882	NCP	%	96			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M23-Fe0011882	NCP	%	95			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M23-Fe0011882	NCP	%	97			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorobutanesulfonic acid (PFBS)	M23-Fe0011882	NCP	%	84			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M23-Fe0011882	NCP	%	95			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M23-Fe0011882	NCP	%	87			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M23-Fe0011882	NCP	%	82			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M23-Fe0011882	NCP	%	93			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M23-Fe0011882	NCP	%	91			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M23-Fe0011882	NCP	%	100			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M23-Fe0011882	NCP	%	91			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M23-Fe0011882	NCP	%	89			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M23-Fe0011882	NCP	%	107			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M23-Fe0011882	NCP	%	101			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M23-Fe0011882	NCP	%	90			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	M23-Fe0011649	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M23-Fe0011474	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M23-Fe0011474	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M23-Fe0011474	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C6-C10	M23-Fe0011649	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	M23-Fe0011474	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M23-Fe0011474	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	M23-Fe0011474	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M23-Fe0011649	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	M23-Fe0011649	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	M23-Fe0011649	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	M23-Fe0011649	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	M23-Fe0011649	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	M23-Fe0011649	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M23-Fe0011649	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Benzo(b&j)fluoranthene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chromium (hexavalent)	M23-Fe0011307	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
% Moisture	M23-Fe0011636	NCP	%	5.7	6.4	12	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M23-Fe0011879	NCP	mg/kg	4.5	4.7	3.7	30%	Pass	
Beryllium	M23-Fe0011879	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Boron	M23-Fe0011879	NCP	mg/kg	49	47	4.5	30%	Pass	
Cadmium	M23-Fe0011879	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Cobalt	M23-Fe0011879	NCP	mg/kg	9.1	9.1	<1	30%	Pass	
Copper	M23-Fe0011879	NCP	mg/kg	16	17	2.1	30%	Pass	
Lead	M23-Fe0011879	NCP	mg/kg	10	10	<1	30%	Pass	
Manganese	M23-Fe0011879	NCP	mg/kg	410	410	<1	30%	Pass	
Mercury	M23-Fe0011879	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	M23-Fe0011879	NCP	mg/kg	15	15	3.6	30%	Pass	
Selenium	M23-Fe0011879	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Zinc	M23-Fe0011879	NCP	mg/kg	28	29	3.6	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M23-Fe0011869	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M23-Fe0011869	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorononanesulfonic acid (PFNS)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M23-Fe0011869	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.

Authorised by:

Catherine Wilson	Analytical Services Manager
Joseph Edouard	Senior Analyst-Volatile
Mary Makarios	Senior Analyst-Metal
Linda Chouman	Senior Analyst-Sample Properties
Mary Makarios	Senior Analyst-Inorganic
Joseph Edouard	Senior Analyst-Organic
Carroll Lee	Senior Analyst-PFAS

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2301163**	Page	: 1 of 44
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: LAUREN McGLOIN	Contact	: Peter Ravlic
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9645
Project	: 60692389	Date Samples Received	: 27-Jan-2023 16:15
Order number	: 60692389	Date Analysis Commenced	: 27-Feb-2023
C-O-C number	: ----	Issue Date	: 02-Mar-2023 17:35
Sampler	: STEFAN FENGER		
Site	: Melbourne Airport - Pavement Upgrades		
Quote number	: EN/004/21		
No. of samples received	: 44		
No. of samples analysed	: 22		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Arenie Vijayaratnam	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Dilani Fernando	Laboratory Coordinator	Melbourne Inorganics, Springvale, VIC
Jarwis Nheu	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EG048G: EM2301163 #12 Poor matrix spike recovery for Hexavalent Chromium due to sample matrix. Confirmed by re-analysis.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074-UT: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Sum of chlorinated hydrocarbons includes carbon tetrachloride, chlorobenzene, chloroform, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichloroethane, 1,1-dichloroethene, cis-1,2-dichlorothene, trans-1,2-dichlorothene, 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane, 1,2,4-trichlorobenzene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethene, vinyl chloride, hexachlorobutadiene and methylene chloride.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP074-WF: Where reported, Sum of trichlorobenzenes is the sum of the reported concentrations of 1,2,3-Trichlorobenzene and 1,2,4-Trichlorobenzene, and 1,3,5-Trichlorobenzene at or above the LOR.
- EP236: Tributyl tin is reported as Tributyl tin oxide under the conservative assumption that all of the measured Tributyl tin is present as Tributyl tin oxide.
- EK040T: EM2301163 #12 Poor matrix spike recovery for Total fluoride due to matrix effects.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	PD08_0.5	PD08_1.1	BH6_0.5	BH6_1.0	BH2_0.2
			Sampling date / time	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	EM2301163-003	EM2301163-005	EM2301163-007	EM2301163-008	EM2301163-012
				Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract								
pH (CaCl2)	----	0.1	pH Unit	----	8.4	7.8	----	6.1
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	----	19.5	19.7	----	19.2
Moisture Content	----	1.0	%	----	----	----	19.1	----
EG005(ED093)T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	----	<5	<5	----	<5
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5
Barium	7440-39-3	10	mg/kg	20	140	210	150	90
Beryllium	7440-41-7	1	mg/kg	1	<1	1	1	1
Boron	7440-42-8	50	mg/kg	<50	<50	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	21	----	----	33	----
Cobalt	7440-48-4	2	mg/kg	24	----	----	17	----
Copper	7440-50-8	5	mg/kg	50	10	15	11	14
Lead	7439-92-1	5	mg/kg	<5	8	12	10	11
Manganese	7439-96-5	5	mg/kg	568	----	----	337	----
Molybdenum	7439-98-7	2	mg/kg	----	<2	<2	----	<2
Nickel	7440-02-0	2	mg/kg	87	39	36	44	48
Selenium	7782-49-2	5	mg/kg	<5	<5	<5	<5	<5
Silver	7440-22-4	2	mg/kg	----	<2	<2	----	<2
Tin	7440-31-5	5	mg/kg	----	<5	<5	----	<5
Vanadium	7440-62-2	5	mg/kg	29	----	----	39	----
Zinc	7440-66-6	5	mg/kg	44	17	26	12	19
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	----	<0.5	<0.5	----	<0.5
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	1	mg/kg	----	<1	<1	----	<1
EK030: Cyanide Amenable to Chlorination								
Cyanide amenable to chlorination	----	1	mg/kg	----	<1	<1	----	<1
EK040T: Fluoride Total								
Fluoride	16984-48-8	40	mg/kg	----	160	160	----	160
EP010: Formaldehyde								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	PD08_0.5	PD08_1.1	BH6_0.5	BH6_1.0	BH2_0.2
				Sampling date / time	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301163-003	EM2301163-005	EM2301163-007	EM2301163-008	EM2301163-012
					Result	Result	Result	Result	Result
EP010: Formaldehyde - Continued									
Formaldehyde	50-00-0	2	mg/kg		----	<2	<2	----	<2
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		----	<0.1	<0.1	----	<0.1
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg		----	<0.2	<0.2	----	<0.2
Toluene	108-88-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Styrene	100-42-5	0.5	mg/kg		<0.5	----	----	----	----
Styrene	100-42-5	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg		<0.5	----	----	----	----
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg		----	<0.2	<0.2	----	<0.2
n-Propylbenzene	103-65-1	0.5	mg/kg		<0.5	----	----	----	----
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg		<0.5	----	----	----	----
sec-Butylbenzene	135-98-8	0.5	mg/kg		<0.5	----	----	----	----
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg		<0.5	----	----	----	----
tert-Butylbenzene	98-06-6	0.5	mg/kg		<0.5	----	----	----	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg		<0.5	----	----	----	----
n-Butylbenzene	104-51-8	0.5	mg/kg		<0.5	----	----	----	----
^ Total Xylenes	----	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	5	mg/kg		<5	----	----	----	----
2-Butanone (MEK)	78-93-3	5	mg/kg		<5	----	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg		<5	----	----	----	----
2-Hexanone (MBK)	591-78-6	5	mg/kg		<5	----	----	----	----
2-Butanone (MEK)	78-93-3	1	mg/kg		----	<1	<1	----	<1
EP074C: Sulfonated Compounds									
Carbon disulfide	75-15-0	0.5	mg/kg		<0.5	----	----	----	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	0.5	mg/kg		<0.5	----	----	----	----
1.2-Dichloropropane	78-87-5	0.5	mg/kg		<0.5	----	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg		<0.5	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	PD08_0.5	PD08_1.1	BH6_0.5	BH6_1.0	BH2_0.2
				Sampling date / time	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301163-003	EM2301163-005	EM2301163-007	EM2301163-008	EM2301163-012
					Result	Result	Result	Result	Result
EP074D: Fumigants - Continued									
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		<0.5	----	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		<0.5	----	----	----	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		<5	----	----	----	----
Chloromethane	74-87-3	5	mg/kg		<5	----	----	----	----
Vinyl chloride	75-01-4	5	mg/kg		<5	----	----	----	----
Bromomethane	74-83-9	5	mg/kg		<5	----	----	----	----
Chloroethane	75-00-3	5	mg/kg		<5	----	----	----	----
Trichlorofluoromethane	75-69-4	5	mg/kg		<5	----	----	----	----
1.1-Dichloroethene	75-35-4	0.5	mg/kg		<0.5	----	----	----	----
Iodomethane	74-88-4	0.5	mg/kg		<0.5	----	----	----	----
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		<0.5	----	----	----	----
1.1-Dichloroethane	75-34-3	0.5	mg/kg		<0.5	----	----	----	----
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		<0.5	----	----	----	----
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		<0.5	----	----	----	----
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		<0.5	----	----	----	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg		<0.5	----	----	----	----
1.2-Dichloroethane	107-06-2	0.5	mg/kg		<0.5	----	----	----	----
Trichloroethene	79-01-6	0.5	mg/kg		<0.5	----	----	----	----
Dibromomethane	74-95-3	0.5	mg/kg		<0.5	----	----	----	----
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		<0.5	----	----	----	----
1.3-Dichloropropane	142-28-9	0.5	mg/kg		<0.5	----	----	----	----
Tetrachloroethene	127-18-4	0.5	mg/kg		<0.5	----	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		<0.5	----	----	----	----
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		<0.5	----	----	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		<0.5	----	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		<0.5	----	----	----	----
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		<0.5	----	----	----	----
Pentachloroethane	76-01-7	0.5	mg/kg		<0.5	----	----	----	----
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		<0.5	----	----	----	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg		<0.5	----	----	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		<0.5	----	----	----	----
Bromobenzene	108-86-1	0.5	mg/kg		<0.5	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	PD08_0.5	PD08_1.1	BH6_0.5	BH6_1.0	BH2_0.2
			Sampling date / time	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	EM2301163-003	EM2301163-005	EM2301163-007	EM2301163-008	EM2301163-012
				Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds - Continued								
2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	----	----	----	----
4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	----	----	----	----
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	----	----	----	----
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	----	----	----	----
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	----	----	----	----
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	----	----	----	----
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	----	----	----	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	0.5	mg/kg	<0.5	----	----	----	----
Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	----	----	----	----
Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	----	----	----	----
Bromoform	75-25-2	0.5	mg/kg	<0.5	----	----	----	----
EP074H: Naphthalene								
Naphthalene	91-20-3	1	mg/kg	----	<1	<1	----	<1
EP074I: Volatile Halogenated Compounds								
Vinyl chloride	75-01-4	0.02	mg/kg	----	<0.02	<0.02	----	<0.02
1.1-Dichloroethene	75-35-4	0.01	mg/kg	----	<0.01	<0.01	----	<0.01
Methylene chloride	75-09-2	0.4	mg/kg	----	<0.4	<0.4	----	<0.4
trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	----	<0.02	<0.02	----	<0.02
cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	----	<0.01	<0.01	----	<0.01
Chloroform	67-66-3	0.02	mg/kg	----	<0.02	<0.02	----	<0.02
1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	----	<0.01	<0.01	----	<0.01
Carbon Tetrachloride	56-23-5	0.01	mg/kg	----	<0.01	<0.01	----	<0.01
1.2-Dichloroethane	107-06-2	0.02	mg/kg	----	<0.02	<0.02	----	<0.02
Trichloroethene	79-01-6	0.02	mg/kg	----	<0.02	<0.02	----	<0.02
1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	----	<0.04	<0.04	----	<0.04
1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	----	<0.01	<0.01	----	<0.01
Tetrachloroethene	127-18-4	0.02	mg/kg	----	<0.02	<0.02	----	<0.02
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	----	<0.02	<0.02	----	<0.02
Hexachlorobutadiene	87-68-3	0.02	mg/kg	----	<0.02	<0.02	----	<0.02
Chlorobenzene	108-90-7	0.02	mg/kg	----	<0.02	<0.02	----	<0.02
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	----	<0.02	<0.02	----	<0.02
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	----	<0.02	<0.02	----	<0.02
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	----	<0.01	<0.01	----	<0.01

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	PD08_0.5	PD08_1.1	BH6_0.5	BH6_1.0	BH2_0.2
				Sampling date / time	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301163-003	EM2301163-005	EM2301163-007	EM2301163-008	EM2301163-012
					Result	Result	Result	Result	Result
EP074I: Volatile Halogenated Compounds - Continued									
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg		----	<0.01	<0.01	----	<0.01
1.3.5-Trichlorobenzene	108-70-3	0.01	mg/kg		----	<0.01	<0.01	----	<0.01
1.2.3-Trichlorobenzene	87-61-6	0.01	mg/kg		----	<0.01	<0.01	----	<0.01
^ Sum of Trichlorobenzenes	----	0.01	mg/kg		----	<0.01	<0.01	----	<0.01
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	----	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	----	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	----	<0.5	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	----	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	----	<0.5	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	----	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	----	<0.5	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	----	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	----	<0.5	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	----	<0.5	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	----	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	----	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	----	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	----	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	----	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	----	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	----	----	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	----	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	----	----	**0.6**	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	----	----	**1.2**	----
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	0.03	mg/kg		----	<0.03	<0.03	----	<0.03
2.4-Dichlorophenol	120-83-2	0.03	mg/kg		----	<0.03	<0.03	----	<0.03
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	1	mg/kg		----	<1	<1	----	<1
2-Methylphenol	95-48-7	1	mg/kg		----	<1	<1	----	<1
3- & 4-Methylphenol	1319-77-3	1	mg/kg		----	<1	<1	----	<1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	PD08_0.5	PD08_1.1	BH6_0.5	BH6_1.0	BH2_0.2
				Sampling date / time	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301163-003	EM2301163-005	EM2301163-007	EM2301163-008	EM2301163-012
					Result	Result	Result	Result	Result
EP075A: Phenolic Compounds (Non-halogenated) - Continued									
2-Nitrophenol	88-75-5	1	mg/kg		----	<1	<1	----	<1
2.4-Dimethylphenol	105-67-9	1	mg/kg		----	<1	<1	----	<1
2.4-Dinitrophenol	51-28-5	5	mg/kg		----	<5	<5	----	<5
4-Nitrophenol	100-02-7	5	mg/kg		----	<5	<5	----	<5
2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg		----	<5	<5	----	<5
Dinoseb	88-85-7	5	mg/kg		----	<5	<5	----	<5
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg		----	<5	<5	----	<5
^ Cresols (Total)	----	1	mg/kg		----	<1	<1	----	<1
^ Sum of Phenols (non-halogenated)	----	1	mg/kg		----	<1	<1	----	<1
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Fluorene	86-73-7	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Anthracene	120-12-7	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Pyrene	129-00-0	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Chrysene	218-01-9	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1.0	mg/kg		----	<1.0	<1.0	----	<1.0
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	**0.6**	**0.6**	----	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	**1.2**	**1.2**	----	**1.2**
EP075C: Phthalate Esters									
bis(2-ethylhexyl) phthalate	117-81-7	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
EP075E: Nitroaromatics and Ketones									
Nitrobenzene	98-95-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	PD08_0.5	PD08_1.1	BH6_0.5	BH6_1.0	BH2_0.2
			Sampling date / time	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	EM2301163-003	EM2301163-005	EM2301163-007	EM2301163-008	EM2301163-012
				Result	Result	Result	Result	Result
EP075E: Nitroaromatics and Ketones - Continued								
2.4-Dinitrotoluene	121-14-2	1.0	mg/kg	----	<1.0	<1.0	----	<1.0
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	0.03	mg/kg	----	<0.03	<0.03	----	<0.03
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	----	<0.03	<0.03	----	<0.03
beta-BHC	319-85-7	0.03	mg/kg	----	<0.03	<0.03	----	<0.03
gamma-BHC	58-89-9	0.03	mg/kg	----	<0.03	<0.03	----	<0.03
delta-BHC	319-86-8	0.03	mg/kg	----	<0.03	<0.03	----	<0.03
Heptachlor	76-44-8	0.03	mg/kg	----	<0.03	<0.03	----	<0.03
Aldrin	309-00-2	0.03	mg/kg	----	<0.03	<0.03	----	<0.03
Heptachlor epoxide	1024-57-3	0.03	mg/kg	----	<0.03	<0.03	----	<0.03
cis-Chlordane	5103-71-9	0.03	mg/kg	----	<0.03	<0.03	----	<0.03
trans-Chlordane	5103-74-2	0.03	mg/kg	----	<0.03	<0.03	----	<0.03
Endosulfan 1	959-98-8	0.03	mg/kg	----	<0.03	<0.03	----	<0.03
4.4`-DDE	72-55-9	0.05	mg/kg	----	<0.05	<0.05	----	<0.05
Dieldrin	60-57-1	0.03	mg/kg	----	<0.03	<0.03	----	<0.03
Endrin aldehyde	7421-93-4	0.03	mg/kg	----	<0.03	<0.03	----	<0.03
Endrin	72-20-8	0.03	mg/kg	----	<0.03	<0.03	----	<0.03
Endosulfan 2	33213-65-9	0.03	mg/kg	----	<0.03	<0.03	----	<0.03
4.4`-DDD	72-54-8	0.05	mg/kg	----	<0.05	<0.05	----	<0.05
Endosulfan sulfate	1031-07-8	0.03	mg/kg	----	<0.03	<0.03	----	<0.03
4.4`-DDT	50-29-3	0.05	mg/kg	----	<0.05	<0.05	----	<0.05
Methoxychlor	72-43-5	0.03	mg/kg	----	<0.03	<0.03	----	<0.03
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg	----	<0.03	<0.03	----	<0.03
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	----	<0.05	<0.05	----	<0.05
^ Chlordane	57-74-9	0.03	mg/kg	----	<0.03	<0.03	----	<0.03
^ Sum of other organochlorine pesticides	----	0.03	mg/kg	----	<0.03	<0.03	----	<0.03
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	----	<10	----
C6 - C9 Fraction	----	10	mg/kg	----	<10	<10	----	<10
C10 - C14 Fraction	----	50	mg/kg	<50	----	----	<50	----
C10 - C14 Fraction	----	50	mg/kg	----	<50	<50	----	<50
C6 - C10 Fraction	C6_C10	10	mg/kg	----	<10	<10	----	<10
C15 - C28 Fraction	----	100	mg/kg	<100	----	----	<100	----
C15 - C28 Fraction	----	100	mg/kg	----	<100	<100	----	<100

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	PD08_0.5	PD08_1.1	BH6_0.5	BH6_1.0	BH2_0.2
				Sampling date / time	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301163-003	EM2301163-005	EM2301163-007	EM2301163-008	EM2301163-012
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C29 - C36 Fraction	----	100	mg/kg		<100	----	----	<100	----
C29 - C36 Fraction	----	100	mg/kg		----	<100	<100	----	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	----	<50	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	<50	<50	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	----	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	----	<10	----
>C10 - C16 Fraction	----	50	mg/kg		<50	----	----	<50	----
>C10 - C16 Fraction	----	50	mg/kg		----	<50	<50	----	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	----	----	<100	----
>C16 - C34 Fraction	----	100	mg/kg		----	<100	<100	----	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	----	----	<100	----
>C34 - C40 Fraction	----	100	mg/kg		----	<100	<100	----	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	----	<50	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	<50	<50	----	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	----	<50	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	<50	<50	----	<50
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	<10	<10	----	<10
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	----	<0.2	----
Toluene	108-88-3	0.5	mg/kg		<0.5	----	----	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	----	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	----	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	----	<0.5	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	----	<0.2	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	----	----	<0.5	----
Naphthalene	91-20-3	1	mg/kg		<1	----	----	<1	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	----	<0.0002	----	<0.0002

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	PD08_0.5	PD08_1.1	BH6_0.5	BH6_1.0	BH2_0.2
				Sampling date / time	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301163-003	EM2301163-005	EM2301163-007	EM2301163-008	EM2301163-012
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids - Continued									
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	----	<0.0002	----	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	----	<0.0002	----	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	----	<0.0002	----	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		<0.0002	----	**0.0002**	----	<0.0002
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	----	<0.0002	----	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	----	<0.001	----	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	----	<0.0002	----	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	----	<0.0002	----	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	----	<0.0002	----	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	----	<0.0002	----	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	----	<0.0002	----	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	----	<0.0002	----	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	----	<0.0002	----	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	----	<0.0002	----	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	----	<0.0002	----	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	----	<0.0005	----	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	----	<0.0002	----	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	----	<0.0005	----	<0.0005
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	----	<0.0005	----	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	----	<0.0005	----	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	PD08_0.5	PD08_1.1	BH6_0.5	BH6_1.0	BH2_0.2
				Sampling date / time	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301163-003	EM2301163-005	EM2301163-007	EM2301163-008	EM2301163-012
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	----	<0.0005	----	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	----	<0.0002	----	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	----	<0.0002	----	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	----	<0.0005	----	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	----	<0.0005	----	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	----	<0.0005	----	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	----	<0.0005	----	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		<0.0002	----	**0.0002**	----	<0.0002
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0002	----	**0.0002**	----	<0.0002
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		<0.0002	----	**0.0002**	----	<0.0002
EP236: Dichlorophenoxyacetic Acid (2.4-D) and Tributyltin Oxide (TBTO)									
2.4-D	94-75-7	0.001	mg/kg		----	<0.001	<0.001	----	<0.001
Tributyltin oxide	56-35-9	0.01	mg/kg		----	<0.01	<0.01	----	<0.01
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	**89.2**	**114**	----	**96.4**
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		**104**	----	----	----	----
Toluene-D8	2037-26-5	0.5	%		**107**	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.5	%		**106**	----	----	----	----
EP074S: VOC Surrogates (Ultra-Trace)									
1.2-Dichloroethane-D4	17060-07-0	0.1	%		----	**99.0**	**92.3**	----	**89.9**
Toluene-D8	2037-26-5	0.1	%		----	**91.5**	**98.4**	----	**94.7**
4-Bromofluorobenzene	460-00-4	0.1	%		----	**96.2**	**107**	----	**104**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	PD08_0.5	PD08_1.1	BH6_0.5	BH6_1.0	BH2_0.2
				Sampling date / time	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00	24-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301163-003	EM2301163-005	EM2301163-007	EM2301163-008	EM2301163-012
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	----	----	88.8	----
2-Chlorophenol-D4	93951-73-6	0.5	%		----	----	----	87.5	----
2.4.6-Tribromophenol	118-79-6	0.5	%		----	----	----	77.5	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		102	----	----	71.0	----
Anthracene-d10	1719-06-8	0.5	%		111	----	----	104	----
4-Terphenyl-d14	1718-51-0	0.5	%		106	----	----	93.5	----
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%		----	88.2	93.6	----	82.5
2-Chlorophenol-D4	93951-73-6	0.025	%		----	84.7	94.0	----	79.7
2.4.6-Tribromophenol	118-79-6	0.025	%		----	87.6	93.7	----	80.8
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.025	%		----	83.5	104	----	83.1
1.2-Dichlorobenzene-D4	2199-69-1	0.025	%		----	84.1	95.5	----	79.4
2-Fluorobiphenyl	321-60-8	0.025	%		----	87.4	97.5	----	83.2
Anthracene-d10	1719-06-8	0.025	%		----	90.4	99.6	----	84.3
4-Terphenyl-d14	1718-51-0	0.025	%		----	97.9	104	----	91.7
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		110	----	----	74.3	----
Toluene-D8	2037-26-5	0.2	%		102	----	----	78.4	----
4-Bromofluorobenzene	460-00-4	0.2	%		110	----	----	90.1	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		78.8	----	100	----	98.0
13C8-PFOA	----	0.0002	%		89.2	----	90.8	----	86.0

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH2_0.5	BH8_0.5	BH8_1.0	TP08_0.5	TP08_1.0
			Sampling date / time	24-Jan-2023 00:00	25-Jan-2023 00:00	25-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	EM2301163-013	EM2301163-018	EM2301163-019	EM2301163-021	EM2301163-022
				Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract								
pH (CaCl2)	----	0.1	pH Unit	----	8.2	----	8.2	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	----	29.5	----	24.2	----
Moisture Content	----	1.0	%	25.2	----	21.2	----	21.6
EG005(ED093)T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	----	<5	----	<5	----
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5
Barium	7440-39-3	10	mg/kg	300	410	890	160	190
Beryllium	7440-41-7	1	mg/kg	1	1	1	<1	<1
Boron	7440-42-8	50	mg/kg	<50	<50	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	44	----	36	----	32
Cobalt	7440-48-4	2	mg/kg	23	----	17	----	6
Copper	7440-50-8	5	mg/kg	10	8	10	<5	5
Lead	7439-92-1	5	mg/kg	11	10	9	8	9
Manganese	7439-96-5	5	mg/kg	625	----	288	----	40
Molybdenum	7439-98-7	2	mg/kg	----	<2	----	<2	----
Nickel	7440-02-0	2	mg/kg	46	28	33	15	18
Selenium	7782-49-2	5	mg/kg	<5	<5	<5	<5	<5
Silver	7440-22-4	2	mg/kg	----	<2	----	<2	----
Tin	7440-31-5	5	mg/kg	----	<5	----	<5	----
Vanadium	7440-62-2	5	mg/kg	38	----	48	----	37
Zinc	7440-66-6	5	mg/kg	16	12	16	6	8
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	----	<0.5	----	<0.5	----
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	1	mg/kg	----	<1	----	<1	----
EK030: Cyanide Amenable to Chlorination								
Cyanide amenable to chlorination	----	1	mg/kg	----	<1	----	<1	----
EK040T: Fluoride Total								
Fluoride	16984-48-8	40	mg/kg	----	210	----	220	----
EP010: Formaldehyde								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH2_0.5	BH8_0.5	BH8_1.0	TP08_0.5	TP08_1.0
			Sampling date / time	24-Jan-2023 00:00	25-Jan-2023 00:00	25-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	EM2301163-013	EM2301163-018	EM2301163-019	EM2301163-021	EM2301163-022
				Result	Result	Result	Result	Result
EP010: Formaldehyde - Continued								
Formaldehyde	50-00-0	2	mg/kg	----	<2	----	<2	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	<0.1	----	<0.1	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	0.2	mg/kg	----	<0.2	----	<0.2	----
Toluene	108-88-3	0.5	mg/kg	----	<0.5	----	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg	----	<0.5	----	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	<0.5	----	<0.5	----
Styrene	100-42-5	0.5	mg/kg	----	<0.5	----	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg	----	<0.5	----	<0.5	----
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	----	<0.2	----	<0.2	----
^ Total Xylenes	----	0.5	mg/kg	----	<0.5	----	<0.5	----
EP074B: Oxygenated Compounds								
2-Butanone (MEK)	78-93-3	1	mg/kg	----	<1	----	<1	----
EP074H: Naphthalene								
Naphthalene	91-20-3	1	mg/kg	----	<1	----	<1	----
EP074I: Volatile Halogenated Compounds								
Vinyl chloride	75-01-4	0.02	mg/kg	----	<0.02	----	<0.02	----
1.1-Dichloroethene	75-35-4	0.01	mg/kg	----	<0.01	----	<0.01	----
Methylene chloride	75-09-2	0.4	mg/kg	----	<0.4	----	<0.4	----
trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	----	<0.02	----	<0.02	----
cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	----	<0.01	----	<0.01	----
Chloroform	67-66-3	0.02	mg/kg	----	<0.02	----	<0.02	----
1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	----	<0.01	----	<0.01	----
Carbon Tetrachloride	56-23-5	0.01	mg/kg	----	<0.01	----	<0.01	----
1.2-Dichloroethane	107-06-2	0.02	mg/kg	----	<0.02	----	<0.02	----
Trichloroethene	79-01-6	0.02	mg/kg	----	<0.02	----	<0.02	----
1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	----	<0.04	----	<0.04	----
1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	----	<0.01	----	<0.01	----
Tetrachloroethene	127-18-4	0.02	mg/kg	----	<0.02	----	<0.02	----
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	----	<0.02	----	<0.02	----
Hexachlorobutadiene	87-68-3	0.02	mg/kg	----	<0.02	----	<0.02	----
Chlorobenzene	108-90-7	0.02	mg/kg	----	<0.02	----	<0.02	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH2_0.5	BH8_0.5	BH8_1.0	TP08_0.5	TP08_1.0
				Sampling date / time	24-Jan-2023 00:00	25-Jan-2023 00:00	25-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301163-013	EM2301163-018	EM2301163-019	EM2301163-021	EM2301163-022
					Result	Result	Result	Result	Result
EP074I: Volatile Halogenated Compounds - Continued									
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg		----	<0.02	----	<0.02	----
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg		----	<0.02	----	<0.02	----
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg		----	<0.01	----	<0.01	----
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg		----	<0.01	----	<0.01	----
1.3.5-Trichlorobenzene	108-70-3	0.01	mg/kg		----	<0.01	----	<0.01	----
1.2.3-Trichlorobenzene	87-61-6	0.01	mg/kg		----	<0.01	----	<0.01	----
^ Sum of Trichlorobenzenes	----	0.01	mg/kg		----	<0.01	----	<0.01	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	----	**0.6**	----	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	----	**1.2**	----	**1.2**
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	0.03	mg/kg		----	<0.03	----	<0.03	----
2.4-Dichlorophenol	120-83-2	0.03	mg/kg		----	<0.03	----	<0.03	----
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg		----	<0.05	----	<0.05	----
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg		----	<0.05	----	<0.05	----
EP075A: Phenolic Compounds (Non-halogenated)									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH2_0.5	BH8_0.5	BH8_1.0	TP08_0.5	TP08_1.0
				Sampling date / time	24-Jan-2023 00:00	25-Jan-2023 00:00	25-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301163-013	EM2301163-018	EM2301163-019	EM2301163-021	EM2301163-022
					Result	Result	Result	Result	Result
EP075A: Phenolic Compounds (Non-halogenated) - Continued									
Phenol	108-95-2	1	mg/kg		----	<1	----	<1	----
2-Methylphenol	95-48-7	1	mg/kg		----	<1	----	<1	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		----	<1	----	<1	----
2-Nitrophenol	88-75-5	1	mg/kg		----	<1	----	<1	----
2.4-Dimethylphenol	105-67-9	1	mg/kg		----	<1	----	<1	----
2.4-Dinitrophenol	51-28-5	5	mg/kg		----	<5	----	<5	----
4-Nitrophenol	100-02-7	5	mg/kg		----	<5	----	<5	----
2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg		----	<5	----	<5	----
Dinoseb	88-85-7	5	mg/kg		----	<5	----	<5	----
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg		----	<5	----	<5	----
^ Cresols (Total)	----	1	mg/kg		----	<1	----	<1	----
^ Sum of Phenols (non-halogenated)	----	1	mg/kg		----	<1	----	<1	----
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	<0.5	----	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg		----	<0.5	----	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg		----	<0.5	----	<0.5	----
Fluorene	86-73-7	0.5	mg/kg		----	<0.5	----	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg		----	<0.5	----	<0.5	----
Anthracene	120-12-7	0.5	mg/kg		----	<0.5	----	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg		----	<0.5	----	<0.5	----
Pyrene	129-00-0	0.5	mg/kg		----	<0.5	----	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	<0.5	----	<0.5	----
Chrysene	218-01-9	0.5	mg/kg		----	<0.5	----	<0.5	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1.0	mg/kg		----	<1.0	----	<1.0	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	<0.5	----	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	<0.5	----	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	<0.5	----	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	<0.5	----	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	<0.5	----	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	<0.5	----	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	**0.6**	----	**0.6**	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	**1.2**	----	**1.2**	----
EP075C: Phthalate Esters									
bis(2-ethylhexyl) phthalate	117-81-7	0.5	mg/kg		----	<0.5	----	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH2_0.5	BH8_0.5	BH8_1.0	TP08_0.5	TP08_1.0
				Sampling date / time	24-Jan-2023 00:00	25-Jan-2023 00:00	25-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301163-013	EM2301163-018	EM2301163-019	EM2301163-021	EM2301163-022
					Result	Result	Result	Result	Result
EP075C: Phthalate Esters - Continued									
EP075E: Nitroaromatics and Ketones									
Nitrobenzene	98-95-3	0.5	mg/kg		----	<0.5	----	<0.5	----
2.4-Dinitrotoluene	121-14-2	1.0	mg/kg		----	<1.0	----	<1.0	----
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	0.03	mg/kg		----	<0.03	----	<0.03	----
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg		----	<0.03	----	<0.03	----
beta-BHC	319-85-7	0.03	mg/kg		----	<0.03	----	<0.03	----
gamma-BHC	58-89-9	0.03	mg/kg		----	<0.03	----	<0.03	----
delta-BHC	319-86-8	0.03	mg/kg		----	<0.03	----	<0.03	----
Heptachlor	76-44-8	0.03	mg/kg		----	<0.03	----	<0.03	----
Aldrin	309-00-2	0.03	mg/kg		----	<0.03	----	<0.03	----
Heptachlor epoxide	1024-57-3	0.03	mg/kg		----	<0.03	----	<0.03	----
cis-Chlordane	5103-71-9	0.03	mg/kg		----	<0.03	----	<0.03	----
trans-Chlordane	5103-74-2	0.03	mg/kg		----	<0.03	----	<0.03	----
Endosulfan 1	959-98-8	0.03	mg/kg		----	<0.03	----	<0.03	----
4.4`-DDE	72-55-9	0.05	mg/kg		----	<0.05	----	<0.05	----
Dieldrin	60-57-1	0.03	mg/kg		----	<0.03	----	<0.03	----
Endrin aldehyde	7421-93-4	0.03	mg/kg		----	<0.03	----	<0.03	----
Endrin	72-20-8	0.03	mg/kg		----	<0.03	----	<0.03	----
Endosulfan 2	33213-65-9	0.03	mg/kg		----	<0.03	----	<0.03	----
4.4`-DDD	72-54-8	0.05	mg/kg		----	<0.05	----	<0.05	----
Endosulfan sulfate	1031-07-8	0.03	mg/kg		----	<0.03	----	<0.03	----
4.4`-DDT	50-29-3	0.05	mg/kg		----	<0.05	----	<0.05	----
Methoxychlor	72-43-5	0.03	mg/kg		----	<0.03	----	<0.03	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg		----	<0.03	----	<0.03	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		----	<0.05	----	<0.05	----
^ Chlordane	57-74-9	0.03	mg/kg		----	<0.03	----	<0.03	----
^ Sum of other organochlorine pesticides	----	0.03	mg/kg		----	<0.03	----	<0.03	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	<10	----	<10
C6 - C9 Fraction	----	10	mg/kg		----	<10	----	<10	----
C10 - C14 Fraction	----	50	mg/kg		<50	----	<50	----	<50
C10 - C14 Fraction	----	50	mg/kg		----	<50	----	<50	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH2_0.5	BH8_0.5	BH8_1.0	TP08_0.5	TP08_1.0
				Sampling date / time	24-Jan-2023 00:00	25-Jan-2023 00:00	25-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301163-013	EM2301163-018	EM2301163-019	EM2301163-021	EM2301163-022
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C6 - C10 Fraction	C6_C10	10	mg/kg		----	<10	----	<10	----
C15 - C28 Fraction	----	100	mg/kg		<100	----	<100	----	<100
C15 - C28 Fraction	----	100	mg/kg		----	<100	----	<100	----
C29 - C36 Fraction	----	100	mg/kg		<100	----	<100	----	<100
C29 - C36 Fraction	----	100	mg/kg		----	<100	----	<100	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	<50	----	<50
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	<50	----	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	<10	----	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	<10	----	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	----	<50	----	<50
>C10 - C16 Fraction	----	50	mg/kg		----	<50	----	<50	----
>C16 - C34 Fraction	----	100	mg/kg		<100	----	<100	----	<100
>C16 - C34 Fraction	----	100	mg/kg		----	<100	----	<100	----
>C34 - C40 Fraction	----	100	mg/kg		<100	----	<100	----	<100
>C34 - C40 Fraction	----	100	mg/kg		----	<100	----	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	<50	----	<50
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	<50	----	<50	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	<50	----	<50
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	<50	----	<50	----
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	<10	----	<10	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	<0.2	----	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	<0.2	----	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	----	<1	----	<1
EP231A: Perfluoroalkyl Sulfonic Acids									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH2_0.5	BH8_0.5	BH8_1.0	TP08_0.5	TP08_1.0
				Sampling date / time	24-Jan-2023 00:00	25-Jan-2023 00:00	25-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301163-013	EM2301163-018	EM2301163-019	EM2301163-021	EM2301163-022
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids - Continued									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	----	<0.0002	----	----	----	**0.0002**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	----	<0.0002	----	----	----	**0.0004**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	----	**0.0005**	----	----	----	**0.0037**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	----	<0.0002	----	----	----	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	----	**0.0005**	----	----	----	**0.0039**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	----	<0.0002	----	----	----	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	----	<0.001	----	----	----	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	----	<0.0002	----	----	----	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	----	<0.0002	----	----	----	**0.0004**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	----	<0.0002	----	----	----	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	----	<0.0002	----	----	----	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	----	<0.0002	----	----	----	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	----	<0.0002	----	----	----	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	----	<0.0002	----	----	----	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	----	<0.0002	----	----	----	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	----	<0.0002	----	----	----	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	----	<0.0005	----	----	----	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	----	<0.0002	----	----	----	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	----	<0.0005	----	----	----	<0.0005
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	----	<0.0005	----	----	----	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH2_0.5	BH8_0.5	BH8_1.0	TP08_0.5	TP08_1.0
			Sampling date / time	24-Jan-2023 00:00	25-Jan-2023 00:00	25-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	EM2301163-013	EM2301163-018	EM2301163-019	EM2301163-021	EM2301163-022
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	----	<0.0005	----	----	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	----	<0.0005	----	----	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	----	<0.0002	----	----	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	----	<0.0002	----	----	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	----	<0.0005	----	----	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	----	<0.0005	----	----	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	----	<0.0005	----	----	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	----	<0.0005	----	----	<0.0005
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	----	**0.0010**	----	----	**0.0086**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	----	**0.0010**	----	----	**0.0076**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	----	**0.0010**	----	----	**0.0082**
EP236: Dichlorophenoxyacetic Acid (2.4-D) and Tributyltin Oxide (TBTO)								
2.4-D	94-75-7	0.001	mg/kg	----	<0.001	----	<0.001	----
Tributyltin oxide	56-35-9	0.01	mg/kg	----	<0.01	----	<0.01	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	----	**97.4**	----	**102**	----
EP074S: VOC Surrogates (Ultra-Trace)								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	----	**91.9**	----	**86.8**	----
Toluene-D8	2037-26-5	0.1	%	----	**94.9**	----	**93.6**	----
4-Bromofluorobenzene	460-00-4	0.1	%	----	**104**	----	**101**	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	**74.9**	----	**79.8**	----	**74.6**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH2_0.5	BH8_0.5	BH8_1.0	TP08_0.5	TP08_1.0
				Sampling date / time	24-Jan-2023 00:00	25-Jan-2023 00:00	25-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301163-013	EM2301163-018	EM2301163-019	EM2301163-021	EM2301163-022
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2-Chlorophenol-D4	93951-73-6	0.5	%		77.8	----	78.9	----	77.7
2.4.6-Tribromophenol	118-79-6	0.5	%		72.1	----	84.8	----	78.4
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		72.5	----	67.6	----	72.5
Anthracene-d10	1719-06-8	0.5	%		101	----	99.3	----	100
4-Terphenyl-d14	1718-51-0	0.5	%		101	----	89.8	----	83.6
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%		----	81.0	----	86.3	----
2-Chlorophenol-D4	93951-73-6	0.025	%		----	79.6	----	86.4	----
2.4.6-Tribromophenol	118-79-6	0.025	%		----	85.2	----	88.4	----
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.025	%		----	79.8	----	87.8	----
1.2-Dichlorobenzene-D4	2199-69-1	0.025	%		----	75.2	----	85.0	----
2-Fluorobiphenyl	321-60-8	0.025	%		----	83.7	----	89.0	----
Anthracene-d10	1719-06-8	0.025	%		----	85.9	----	92.4	----
4-Terphenyl-d14	1718-51-0	0.025	%		----	92.0	----	104	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		78.8	----	76.0	----	74.0
Toluene-D8	2037-26-5	0.2	%		81.1	----	76.3	----	74.5
4-Bromofluorobenzene	460-00-4	0.2	%		95.6	----	89.2	----	88.9
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		----	85.2	----	----	98.5
13C8-PFOA	----	0.0002	%		----	83.0	----	----	83.8

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH7_0.2	BH7_0.5	TP07_0.2	TP07_1.0	TP09_0.2
			Sampling date / time	25-Jan-2023 00:00	25-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	EM2301163-026	EM2301163-027	EM2301163-029	EM2301163-031	EM2301163-033
				Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract								
pH (CaCl2)	----	0.1	pH Unit	8.3	----	7.8	----	8.2
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	24.6	----	19.5	----	22.0
Moisture Content	----	1.0	%	----	26.7	----	20.5	----
EG005(ED093)T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	<5	----	<5	----	<5
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5
Barium	7440-39-3	10	mg/kg	290	350	280	200	200
Beryllium	7440-41-7	1	mg/kg	1	1	1	1	1
Boron	7440-42-8	50	mg/kg	<50	<50	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	----	28	----	39	----
Cobalt	7440-48-4	2	mg/kg	----	18	----	20	----
Copper	7440-50-8	5	mg/kg	6	12	16	11	9
Lead	7439-92-1	5	mg/kg	10	12	11	11	11
Manganese	7439-96-5	5	mg/kg	----	152	----	300	----
Molybdenum	7439-98-7	2	mg/kg	<2	----	<2	----	<2
Nickel	7440-02-0	2	mg/kg	17	23	44	38	28
Selenium	7782-49-2	5	mg/kg	<5	<5	<5	<5	<5
Silver	7440-22-4	2	mg/kg	<2	----	<2	----	<2
Tin	7440-31-5	5	mg/kg	<5	----	<5	----	<5
Vanadium	7440-62-2	5	mg/kg	----	36	----	50	----
Zinc	7440-66-6	5	mg/kg	7	13	23	14	15
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	1	mg/kg	<1	----	<1	----	<1
EK030: Cyanide Amenable to Chlorination								
Cyanide amenable to chlorination	----	1	mg/kg	<1	----	<1	----	<1
EK040T: Fluoride Total								
Fluoride	16984-48-8	40	mg/kg	230	----	190	----	280
EP010: Formaldehyde								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH7_0.2	BH7_0.5	TP07_0.2	TP07_1.0	TP09_0.2
			Sampling date / time	25-Jan-2023 00:00	25-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	EM2301163-026	EM2301163-027	EM2301163-029	EM2301163-031	EM2301163-033
				Result	Result	Result	Result	Result
EP010: Formaldehyde - Continued								
Formaldehyde	50-00-0	2	mg/kg	<2	----	<2	----	<2
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	<0.1	----	<0.1
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	0.2	mg/kg	<0.2	----	<0.2	----	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Styrene	100-42-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	<0.2	----	<0.2	----	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
EP074B: Oxygenated Compounds								
2-Butanone (MEK)	78-93-3	1	mg/kg	<1	----	<1	----	<1
EP074H: Naphthalene								
Naphthalene	91-20-3	1	mg/kg	<1	----	<1	----	<1
EP074I: Volatile Halogenated Compounds								
Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	----	<0.02	----	<0.02
1.1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	----	<0.01	----	<0.01
Methylene chloride	75-09-2	0.4	mg/kg	<0.4	----	<0.4	----	<0.4
trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	----	<0.02	----	<0.02
cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	----	<0.01	----	<0.01
Chloroform	67-66-3	0.02	mg/kg	<0.02	----	<0.02	----	<0.02
1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	----	<0.01	----	<0.01
Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	----	<0.01	----	<0.01
1.2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	----	<0.02	----	<0.02
Trichloroethene	79-01-6	0.02	mg/kg	<0.02	----	<0.02	----	<0.02
1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	----	<0.04	----	<0.04
1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	----	<0.01	----	<0.01
Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	----	<0.02	----	<0.02
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	----	<0.02	----	<0.02
Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	----	<0.02	----	<0.02
Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	----	<0.02	----	<0.02

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH7_0.2	BH7_0.5	TP07_0.2	TP07_1.0	TP09_0.2
				Sampling date / time	25-Jan-2023 00:00	25-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301163-026	EM2301163-027	EM2301163-029	EM2301163-031	EM2301163-033
					Result	Result	Result	Result	Result
EP074I: Volatile Halogenated Compounds - Continued									
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg		<0.02	----	<0.02	----	<0.02
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg		<0.02	----	<0.02	----	<0.02
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg		<0.01	----	<0.01	----	<0.01
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg		<0.01	----	<0.01	----	<0.01
1.3.5-Trichlorobenzene	108-70-3	0.01	mg/kg		<0.01	----	<0.01	----	<0.01
1.2.3-Trichlorobenzene	87-61-6	0.01	mg/kg		<0.01	----	<0.01	----	<0.01
^ Sum of Trichlorobenzenes	----	0.01	mg/kg		<0.01	----	<0.01	----	<0.01
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	<0.5	----	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg		----	<0.5	----	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg		----	<0.5	----	<0.5	----
Fluorene	86-73-7	0.5	mg/kg		----	<0.5	----	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg		----	<0.5	----	<0.5	----
Anthracene	120-12-7	0.5	mg/kg		----	<0.5	----	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg		----	<0.5	----	<0.5	----
Pyrene	129-00-0	0.5	mg/kg		----	<0.5	----	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	<0.5	----	<0.5	----
Chrysene	218-01-9	0.5	mg/kg		----	<0.5	----	<0.5	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		----	<0.5	----	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		----	<0.5	----	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	<0.5	----	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	<0.5	----	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	<0.5	----	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	<0.5	----	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	<0.5	----	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	<0.5	----	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	**0.6**	----	**0.6**	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	**1.2**	----	**1.2**	----
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	0.03	mg/kg		<0.03	----	<0.03	----	<0.03
2.4-Dichlorophenol	120-83-2	0.03	mg/kg		<0.03	----	<0.03	----	<0.03
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
EP075A: Phenolic Compounds (Non-halogenated)									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH7_0.2	BH7_0.5	TP07_0.2	TP07_1.0	TP09_0.2
				Sampling date / time	25-Jan-2023 00:00	25-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301163-026	EM2301163-027	EM2301163-029	EM2301163-031	EM2301163-033
					Result	Result	Result	Result	Result
EP075A: Phenolic Compounds (Non-halogenated) - Continued									
Phenol	108-95-2	1	mg/kg		<1	----	<1	----	<1
2-Methylphenol	95-48-7	1	mg/kg		<1	----	<1	----	<1
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	----	<1	----	<1
2-Nitrophenol	88-75-5	1	mg/kg		<1	----	<1	----	<1
2.4-Dimethylphenol	105-67-9	1	mg/kg		<1	----	<1	----	<1
2.4-Dinitrophenol	51-28-5	5	mg/kg		<5	----	<5	----	<5
4-Nitrophenol	100-02-7	5	mg/kg		<5	----	<5	----	<5
2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg		<5	----	<5	----	<5
Dinoseb	88-85-7	5	mg/kg		<5	----	<5	----	<5
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg		<5	----	<5	----	<5
^ Cresols (Total)	----	1	mg/kg		<1	----	<1	----	<1
^ Sum of Phenols (non-halogenated)	----	1	mg/kg		<1	----	<1	----	<1
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1.0	mg/kg		<1.0	----	<1.0	----	<1.0
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	----	**0.6**	----	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	----	**1.2**	----	**1.2**
EP075C: Phthalate Esters									
bis(2-ethylhexyl) phthalate	117-81-7	0.5	mg/kg		<0.5	----	<0.5	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH7_0.2	BH7_0.5	TP07_0.2	TP07_1.0	TP09_0.2
			Sampling date / time	25-Jan-2023 00:00	25-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	EM2301163-026	EM2301163-027	EM2301163-029	EM2301163-031	EM2301163-033
				Result	Result	Result	Result	Result
EP075C: Phthalate Esters - Continued								
EP075E: Nitroaromatics and Ketones								
Nitrobenzene	98-95-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
2.4-Dinitrotoluene	121-14-2	1.0	mg/kg	<1.0	----	<1.0	----	<1.0
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
beta-BHC	319-85-7	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
gamma-BHC	58-89-9	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
delta-BHC	319-86-8	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
Heptachlor	76-44-8	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
Aldrin	309-00-2	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Dieldrin	60-57-1	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
Endrin	72-20-8	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
4.4`-DDT	50-29-3	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Methoxychlor	72-43-5	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
^ Chlordane	57-74-9	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
^ Sum of other organochlorine pesticides	----	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	----	<10	----	<10	----
C6 - C9 Fraction	----	10	mg/kg	<10	----	<10	----	<10
C10 - C14 Fraction	----	50	mg/kg	----	<50	----	<50	----
C10 - C14 Fraction	----	50	mg/kg	<50	----	<50	----	<50

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH7_0.2	BH7_0.5	TP07_0.2	TP07_1.0	TP09_0.2
			Sampling date / time	25-Jan-2023 00:00	25-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	EM2301163-026	EM2301163-027	EM2301163-029	EM2301163-031	EM2301163-033
				Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	----	<10	----	<10
C15 - C28 Fraction	----	100	mg/kg	----	<100	----	<100	----
C15 - C28 Fraction	----	100	mg/kg	<100	----	<100	----	<100
C29 - C36 Fraction	----	100	mg/kg	----	<100	----	<100	----
C29 - C36 Fraction	----	100	mg/kg	<100	----	<100	----	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	----	<50	----	<50	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	<50	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	----	<10	----	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	----	<10	----	<10	----
>C10 - C16 Fraction	----	50	mg/kg	----	<50	----	<50	----
>C10 - C16 Fraction	----	50	mg/kg	<50	----	<50	----	<50
>C16 - C34 Fraction	----	100	mg/kg	----	<100	----	<100	----
>C16 - C34 Fraction	----	100	mg/kg	<100	----	<100	----	<100
>C34 - C40 Fraction	----	100	mg/kg	----	<100	----	<100	----
>C34 - C40 Fraction	----	100	mg/kg	<100	----	<100	----	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	----	<50	----	<50	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	<50	----	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	----	<50	----	<50	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	----	<50	----	<50
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	----	<10	----	<10
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	----	<0.2	----	<0.2	----
Toluene	108-88-3	0.5	mg/kg	----	<0.5	----	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg	----	<0.5	----	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	<0.5	----	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg	----	<0.5	----	<0.5	----
^ Sum of BTEX	----	0.2	mg/kg	----	<0.2	----	<0.2	----
^ Total Xylenes	----	0.5	mg/kg	----	<0.5	----	<0.5	----
Naphthalene	91-20-3	1	mg/kg	----	<1	----	<1	----
EP231A: Perfluoroalkyl Sulfonic Acids								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH7_0.2	BH7_0.5	TP07_0.2	TP07_1.0	TP09_0.2
				Sampling date / time	25-Jan-2023 00:00	25-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301163-026	EM2301163-027	EM2301163-029	EM2301163-031	EM2301163-033
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids - Continued									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	----	<0.0002	<0.0002	----	<0.0002	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	----	<0.0002	<0.0002	----	<0.0002	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	----	**0.0002**	<0.0002	----	<0.0002	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	----	<0.0002	<0.0002	----	<0.0002	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	----	**0.0018**	**0.0006**	----	**0.0010**	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	----	<0.0002	<0.0002	----	<0.0002	
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	----	<0.001	<0.001	----	<0.001	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	----	<0.0002	<0.0002	----	<0.0002	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	----	<0.0002	<0.0002	----	<0.0002	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	----	<0.0002	<0.0002	----	<0.0002	
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	----	**0.0003**	<0.0002	----	<0.0002	
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	----	<0.0002	<0.0002	----	<0.0002	
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	----	<0.0002	<0.0002	----	<0.0002	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	----	<0.0002	<0.0002	----	<0.0002	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	----	<0.0002	<0.0002	----	<0.0002	
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	----	<0.0002	<0.0002	----	<0.0002	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	----	<0.0005	<0.0005	----	<0.0005	
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	----	<0.0002	<0.0002	----	<0.0002	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	----	<0.0005	<0.0005	----	<0.0005	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	----	<0.0005	<0.0005	----	<0.0005	

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH7_0.2	BH7_0.5	TP07_0.2	TP07_1.0	TP09_0.2
				Sampling date / time	25-Jan-2023 00:00	25-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301163-026	EM2301163-027	EM2301163-029	EM2301163-031	EM2301163-033
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		----	<0.0005	<0.0005	----	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		----	<0.0005	<0.0005	----	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		----	<0.0002	<0.0002	----	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		----	<0.0002	<0.0002	----	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		----	<0.0005	<0.0005	----	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		----	<0.0005	<0.0005	----	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		----	<0.0005	<0.0005	----	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		----	<0.0005	<0.0005	----	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		----	**0.0023**	**0.0006**	----	**0.0010**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		----	**0.0020**	**0.0006**	----	**0.0010**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		----	**0.0023**	**0.0006**	----	**0.0010**
EP236: Dichlorophenoxyacetic Acid (2.4-D) and Tributyltin Oxide (TBTO)									
2.4-D	94-75-7	0.001	mg/kg		<0.001	----	<0.001	----	<0.001
Tributyltin oxide	56-35-9	0.01	mg/kg		<0.01	----	<0.01	----	<0.01
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**102**	----	**98.7**	----	**101**
EP074S: VOC Surrogates (Ultra-Trace)									
1.2-Dichloroethane-D4	17060-07-0	0.1	%		**87.2**	----	**89.6**	----	**87.9**
Toluene-D8	2037-26-5	0.1	%		**91.3**	----	**95.3**	----	**94.4**
4-Bromofluorobenzene	460-00-4	0.1	%		**100**	----	**104**	----	**102**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	**69.4**	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH7_0.2	BH7_0.5	TP07_0.2	TP07_1.0	TP09_0.2
			Sampling date / time	25-Jan-2023 00:00	25-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	EM2301163-026	EM2301163-027	EM2301163-029	EM2301163-031	EM2301163-033
				Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates - Continued								
2-Chlorophenol-D4	93951-73-6	0.5	%	----	69.9	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%	----	82.3	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	----	82.9	----	100	----
Anthracene-d10	1719-06-8	0.5	%	----	100	----	118	----
4-Terphenyl-d14	1718-51-0	0.5	%	----	90.1	----	106	----
EP075S: Acid Extractable Surrogates (Waste Classification)								
Phenol-d6	13127-88-3	0.025	%	88.2	----	86.1	----	85.0
2-Chlorophenol-D4	93951-73-6	0.025	%	88.6	----	86.0	----	83.9
2.4.6-Tribromophenol	118-79-6	0.025	%	90.5	----	86.1	----	85.5
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)								
Nitrobenzene-D5	4165-60-0	0.025	%	87.3	----	87.7	----	85.4
1.2-Dichlorobenzene-D4	2199-69-1	0.025	%	85.7	----	84.5	----	81.6
2-Fluorobiphenyl	321-60-8	0.025	%	90.9	----	91.6	----	86.8
Anthracene-d10	1719-06-8	0.025	%	94.2	----	91.4	----	89.2
4-Terphenyl-d14	1718-51-0	0.025	%	102	----	103	----	101
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	----	75.9	----	105	----
Toluene-D8	2037-26-5	0.2	%	----	78.6	----	96.4	----
4-Bromofluorobenzene	460-00-4	0.2	%	----	91.2	----	101	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	----	97.0	103	----	81.8
13C8-PFOA	----	0.0002	%	----	89.8	84.2	----	88.8

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP09_0.5	QC03_240123	QC07_250123	QC08_260123	QC12_260123
			Sampling date / time	26-Jan-2023 00:00	24-Jan-2023 00:00	25-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	EM2301163-034	EM2301163-040	EM2301163-044	EM2301163-045	EM2301163-048
				Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract								
pH (CaCl2)	----	0.1	pH Unit	----	----	----	8.0	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	----	----	----	19.6	----
Moisture Content	----	1.0	%	28.5	<1.0	<1.0	----	<1.0
EG005(ED093)T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	----	----	----	<5	----
Arsenic	7440-38-2	5	mg/kg	<5	----	----	<5	----
Barium	7440-39-3	10	mg/kg	40	----	----	270	----
Beryllium	7440-41-7	1	mg/kg	1	----	----	1	----
Boron	7440-42-8	50	mg/kg	<50	----	----	<50	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	<1	----
Chromium	7440-47-3	2	mg/kg	46	----	----	----	----
Cobalt	7440-48-4	2	mg/kg	16	----	----	----	----
Copper	7440-50-8	5	mg/kg	6	----	----	11	----
Lead	7439-92-1	5	mg/kg	10	----	----	11	----
Manganese	7439-96-5	5	mg/kg	147	----	----	----	----
Molybdenum	7439-98-7	2	mg/kg	----	----	----	<2	----
Nickel	7440-02-0	2	mg/kg	22	----	----	30	----
Selenium	7782-49-2	5	mg/kg	<5	----	----	<5	----
Silver	7440-22-4	2	mg/kg	----	----	----	<2	----
Tin	7440-31-5	5	mg/kg	----	----	----	<5	----
Vanadium	7440-62-2	5	mg/kg	40	----	----	----	----
Zinc	7440-66-6	5	mg/kg	11	----	----	20	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	<0.1	----
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	----	----	----	<0.5	----
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	1	mg/kg	----	----	----	<1	----
EK030: Cyanide Amenable to Chlorination								
Cyanide amenable to chlorination	----	1	mg/kg	----	----	----	<1	----
EK040T: Fluoride Total								
Fluoride	16984-48-8	40	mg/kg	----	----	----	230	----
EP010: Formaldehyde								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP09_0.5	QC03_240123	QC07_250123	QC08_260123	QC12_260123
			Sampling date / time	26-Jan-2023 00:00	24-Jan-2023 00:00	25-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	EM2301163-034	EM2301163-040	EM2301163-044	EM2301163-045	EM2301163-048
				Result	Result	Result	Result	Result
EP010: Formaldehyde - Continued								
Formaldehyde	50-00-0	2	mg/kg	----	----	----	<2	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	----	<0.1	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	0.2	mg/kg	----	----	----	<0.2	----
Toluene	108-88-3	0.5	mg/kg	----	----	----	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg	----	----	----	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	----	----	<0.5	----
Styrene	100-42-5	0.5	mg/kg	----	----	----	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg	----	----	----	<0.5	----
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	----	----	----	<0.2	----
^ Total Xylenes	----	0.5	mg/kg	----	----	----	<0.5	----
EP074B: Oxygenated Compounds								
2-Butanone (MEK)	78-93-3	1	mg/kg	----	----	----	<1	----
EP074H: Naphthalene								
Naphthalene	91-20-3	1	mg/kg	----	----	----	<1	----
EP074I: Volatile Halogenated Compounds								
Vinyl chloride	75-01-4	0.02	mg/kg	----	----	----	<0.02	----
1.1-Dichloroethene	75-35-4	0.01	mg/kg	----	----	----	<0.01	----
Methylene chloride	75-09-2	0.4	mg/kg	----	----	----	<0.4	----
trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	----	----	----	<0.02	----
cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	----	----	----	<0.01	----
Chloroform	67-66-3	0.02	mg/kg	----	----	----	<0.02	----
1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	----	----	----	<0.01	----
Carbon Tetrachloride	56-23-5	0.01	mg/kg	----	----	----	<0.01	----
1.2-Dichloroethane	107-06-2	0.02	mg/kg	----	----	----	<0.02	----
Trichloroethene	79-01-6	0.02	mg/kg	----	----	----	<0.02	----
1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	----	----	----	<0.04	----
1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	----	----	----	<0.01	----
Tetrachloroethene	127-18-4	0.02	mg/kg	----	----	----	<0.02	----
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	----	----	----	<0.02	----
Hexachlorobutadiene	87-68-3	0.02	mg/kg	----	----	----	<0.02	----
Chlorobenzene	108-90-7	0.02	mg/kg	----	----	----	<0.02	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP09_0.5	QC03_240123	QC07_250123	QC08_260123	QC12_260123
			Sampling date / time	26-Jan-2023 00:00	24-Jan-2023 00:00	25-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	EM2301163-034	EM2301163-040	EM2301163-044	EM2301163-045	EM2301163-048
				Result	Result	Result	Result	Result
EP074I: Volatile Halogenated Compounds - Continued								
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	----	----	----	<0.02	----
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	----	----	----	<0.02	----
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	----	----	----	<0.01	----
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg	----	----	----	<0.01	----
1.3.5-Trichlorobenzene	108-70-3	0.01	mg/kg	----	----	----	<0.01	----
1.2.3-Trichlorobenzene	87-61-6	0.01	mg/kg	----	----	----	<0.01	----
^ Sum of Trichlorobenzenes	----	0.01	mg/kg	----	----	----	<0.01	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	----	----	----	----
EP075A: Phenolic Compounds (Halogenated)								
2-Chlorophenol	95-57-8	0.03	mg/kg	----	----	----	<0.03	----
2.4-Dichlorophenol	120-83-2	0.03	mg/kg	----	----	----	<0.03	----
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	----	----	----	<0.05	----
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	----	----	----	<0.05	----
EP075A: Phenolic Compounds (Non-halogenated)								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP09_0.5	QC03_240123	QC07_250123	QC08_260123	QC12_260123
				Sampling date / time	26-Jan-2023 00:00	24-Jan-2023 00:00	25-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301163-034	EM2301163-040	EM2301163-044	EM2301163-045	EM2301163-048
					Result	Result	Result	Result	Result
EP075A: Phenolic Compounds (Non-halogenated) - Continued									
Phenol	108-95-2	1	mg/kg		----	----	----	<1	----
2-Methylphenol	95-48-7	1	mg/kg		----	----	----	<1	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		----	----	----	<1	----
2-Nitrophenol	88-75-5	1	mg/kg		----	----	----	<1	----
2.4-Dimethylphenol	105-67-9	1	mg/kg		----	----	----	<1	----
2.4-Dinitrophenol	51-28-5	5	mg/kg		----	----	----	<5	----
4-Nitrophenol	100-02-7	5	mg/kg		----	----	----	<5	----
2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg		----	----	----	<5	----
Dinoseb	88-85-7	5	mg/kg		----	----	----	<5	----
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg		----	----	----	<5	----
^ Cresols (Total)	----	1	mg/kg		----	----	----	<1	----
^ Sum of Phenols (non-halogenated)	----	1	mg/kg		----	----	----	<1	----
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	----	----	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg		----	----	----	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg		----	----	----	<0.5	----
Fluorene	86-73-7	0.5	mg/kg		----	----	----	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg		----	----	----	<0.5	----
Anthracene	120-12-7	0.5	mg/kg		----	----	----	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg		----	----	----	<0.5	----
Pyrene	129-00-0	0.5	mg/kg		----	----	----	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	----	----	<0.5	----
Chrysene	218-01-9	0.5	mg/kg		----	----	----	<0.5	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1.0	mg/kg		----	----	----	<1.0	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	----	----	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	----	----	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	----	----	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	----	----	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	----	----	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	----	----	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	----	----	**0.6**	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	----	----	**1.2**	----
EP075C: Phthalate Esters									
bis(2-ethylhexyl) phthalate	117-81-7	0.5	mg/kg		----	----	----	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP09_0.5	QC03_240123	QC07_250123	QC08_260123	QC12_260123
				Sampling date / time	26-Jan-2023 00:00	24-Jan-2023 00:00	25-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301163-034	EM2301163-040	EM2301163-044	EM2301163-045	EM2301163-048
					Result	Result	Result	Result	Result
EP075C: Phthalate Esters - Continued									
EP075E: Nitroaromatics and Ketones									
Nitrobenzene	98-95-3	0.5	mg/kg		----	----	----	<0.5	----
2.4-Dinitrotoluene	121-14-2	1.0	mg/kg		----	----	----	<1.0	----
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	0.03	mg/kg		----	----	----	<0.03	----
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg		----	----	----	<0.03	----
beta-BHC	319-85-7	0.03	mg/kg		----	----	----	<0.03	----
gamma-BHC	58-89-9	0.03	mg/kg		----	----	----	<0.03	----
delta-BHC	319-86-8	0.03	mg/kg		----	----	----	<0.03	----
Heptachlor	76-44-8	0.03	mg/kg		----	----	----	<0.03	----
Aldrin	309-00-2	0.03	mg/kg		----	----	----	<0.03	----
Heptachlor epoxide	1024-57-3	0.03	mg/kg		----	----	----	<0.03	----
cis-Chlordane	5103-71-9	0.03	mg/kg		----	----	----	<0.03	----
trans-Chlordane	5103-74-2	0.03	mg/kg		----	----	----	<0.03	----
Endosulfan 1	959-98-8	0.03	mg/kg		----	----	----	<0.03	----
4.4`-DDE	72-55-9	0.05	mg/kg		----	----	----	<0.05	----
Dieldrin	60-57-1	0.03	mg/kg		----	----	----	<0.03	----
Endrin aldehyde	7421-93-4	0.03	mg/kg		----	----	----	<0.03	----
Endrin	72-20-8	0.03	mg/kg		----	----	----	<0.03	----
Endosulfan 2	33213-65-9	0.03	mg/kg		----	----	----	<0.03	----
4.4`-DDD	72-54-8	0.05	mg/kg		----	----	----	<0.05	----
Endosulfan sulfate	1031-07-8	0.03	mg/kg		----	----	----	<0.03	----
4.4`-DDT	50-29-3	0.05	mg/kg		----	----	----	<0.05	----
Methoxychlor	72-43-5	0.03	mg/kg		----	----	----	<0.03	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg		----	----	----	<0.03	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		----	----	----	<0.05	----
^ Chlordane	57-74-9	0.03	mg/kg		----	----	----	<0.03	----
^ Sum of other organochlorine pesticides	----	0.03	mg/kg		----	----	----	<0.03	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	----	<10
C6 - C9 Fraction	----	10	mg/kg		----	----	----	<10	----
C10 - C14 Fraction	----	50	mg/kg		<50	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg		----	----	----	<50	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP09_0.5	QC03_240123	QC07_250123	QC08_260123	QC12_260123
			Sampling date / time	26-Jan-2023 00:00	24-Jan-2023 00:00	25-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	EM2301163-034	EM2301163-040	EM2301163-044	EM2301163-045	EM2301163-048
				Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued								
C6 - C10 Fraction	C6_C10	10	mg/kg	----	----	----	<10	----
C15 - C28 Fraction	----	100	mg/kg	<100	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg	----	----	----	<100	----
C29 - C36 Fraction	----	100	mg/kg	<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg	----	----	----	<100	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	----	----	----	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	----	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	----	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	----	----	----	----
>C10 - C16 Fraction	----	50	mg/kg	----	----	----	<50	----
>C16 - C34 Fraction	----	100	mg/kg	<100	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg	----	----	----	<100	----
>C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	----	----	----	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	----	----	----	<50	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	----	----	----	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	----	----	----	<50	----
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	----	----	----	<10	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	----	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	----	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	----	<1
EP231A: Perfluoroalkyl Sulfonic Acids								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP09_0.5	QC03_240123	QC07_250123	QC08_260123	QC12_260123
			Sampling date / time	26-Jan-2023 00:00	24-Jan-2023 00:00	25-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	EM2301163-034	EM2301163-040	EM2301163-044	EM2301163-045	EM2301163-048
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids - Continued								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	----	----	----	<0.0002	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	----	----	----	<0.0002	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	----	----	----	<0.0002	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	----	----	----	<0.0002	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	----	----	----	**0.0016**	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	----	----	----	<0.0002	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	----	----	----	<0.001	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	----	----	----	<0.0002	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	----	----	----	<0.0002	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	----	----	----	<0.0002	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	----	----	----	<0.0002	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	----	----	----	<0.0002	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	----	----	----	<0.0002	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	----	----	----	<0.0002	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	----	----	----	<0.0002	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	----	----	----	<0.0002	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	----	----	----	<0.0005	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	----	----	----	<0.0002	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	----	----	----	<0.0005	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	----	----	----	<0.0005	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP09_0.5	QC03_240123	QC07_250123	QC08_260123	QC12_260123
				Sampling date / time	26-Jan-2023 00:00	24-Jan-2023 00:00	25-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301163-034	EM2301163-040	EM2301163-044	EM2301163-045	EM2301163-048
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		----	----	----	<0.0005	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		----	----	----	<0.0005	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		----	----	----	<0.0002	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		----	----	----	<0.0002	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		----	----	----	<0.0005	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		----	----	----	<0.0005	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		----	----	----	<0.0005	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		----	----	----	<0.0005	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		----	----	----	**0.0016**	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		----	----	----	**0.0016**	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		----	----	----	**0.0016**	----
EP236: Dichlorophenoxyacetic Acid (2.4-D) and Tributyltin Oxide (TBTO)									
2.4-D	94-75-7	0.001	mg/kg		----	----	----	<0.001	----
Tributyltin oxide	56-35-9	0.01	mg/kg		----	----	----	<0.01	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	----	**108**	----
EP074S: VOC Surrogates (Ultra-Trace)									
1.2-Dichloroethane-D4	17060-07-0	0.1	%		----	----	----	**89.6**	----
Toluene-D8	2037-26-5	0.1	%		----	----	----	**92.8**	----
4-Bromofluorobenzene	460-00-4	0.1	%		----	----	----	**102**	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**75.6**	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP09_0.5	QC03_240123	QC07_250123	QC08_260123	QC12_260123
				Sampling date / time	26-Jan-2023 00:00	24-Jan-2023 00:00	25-Jan-2023 00:00	26-Jan-2023 00:00	26-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301163-034	EM2301163-040	EM2301163-044	EM2301163-045	EM2301163-048
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2-Chlorophenol-D4	93951-73-6	0.5	%		83.6	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		77.7	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		63.1	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%		101	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		88.0	----	----	----	----
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%		----	----	----	105	----
2-Chlorophenol-D4	93951-73-6	0.025	%		----	----	----	97.4	----
2.4.6-Tribromophenol	118-79-6	0.025	%		----	----	----	101	----
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.025	%		----	----	----	101	----
1.2-Dichlorobenzene-D4	2199-69-1	0.025	%		----	----	----	91.8	----
2-Fluorobiphenyl	321-60-8	0.025	%		----	----	----	99.5	----
Anthracene-d10	1719-06-8	0.025	%		----	----	----	103	----
4-Terphenyl-d14	1718-51-0	0.025	%		----	----	----	116	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		75.1	85.8	79.9	----	83.1
Toluene-D8	2037-26-5	0.2	%		77.3	83.1	77.1	----	80.9
4-Bromofluorobenzene	460-00-4	0.2	%		89.1	96.3	89.7	----	92.2
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		----	----	----	91.0	----
13C8-PFOA	----	0.0002	%		----	----	----	83.8	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC06_250123	QC11_260123	----	----	----
				Sampling date / time	25-Jan-2023 00:00	26-Jan-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EM2301163-043	EM2301163-047	--------	--------	--------
					Result	Result	----	----	----
EG020T: Total Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L		<0.001	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	----	----	----
Zinc	7440-66-6	0.005	mg/L		<0.005	<0.005	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	----	----	----
C10 - C14 Fraction	----	50	µg/L		<50	<50	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	<100	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		<50	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	<20	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	<100	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	<100	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		<100	<100	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		<100	<100	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	----	----	----
Toluene	108-88-3	2	µg/L		<2	<2	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	----	----	----
^ **Total Xylenes**	----	2	µg/L		<2	<2	----	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	<1	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	<5	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC06_250123	QC11_260123	----	----	----
				Sampling date / time	25-Jan-2023 00:00	26-Jan-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EM2301163-043	EM2301163-047	--------	--------	--------
					Result	Result	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	----	----	----
EP231P: PFAS Sums									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**107**	**113**	----	----	----
Toluene-D8	2037-26-5	2	%		**97.8**	**101**	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		**98.3**	**98.0**	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**94.5**	**86.6**	----	----	----
13C8-PFOA	----	0.02	%		**103**	**101**	----	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	122
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	62	122
Toluene-D8	2037-26-5	64	120
4-Bromofluorobenzene	460-00-4	66	124
EP074S: VOC Surrogates (Ultra-Trace)			
1.2-Dichloroethane-D4	17060-07-0	59	119
Toluene-D8	2037-26-5	55	117
4-Bromofluorobenzene	460-00-4	59	123
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	54	125
2-Chlorophenol-D4	93951-73-6	65	123
2.4.6-Tribromophenol	118-79-6	34	122
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	61	125
Anthracene-d10	1719-06-8	62	130
4-Terphenyl-d14	1718-51-0	67	133
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	63	134
2-Chlorophenol-D4	93951-73-6	60	125
2.4.6-Tribromophenol	118-79-6	54	129
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	63	131
1.2-Dichlorobenzene-D4	2199-69-1	61	124
2-Fluorobiphenyl	321-60-8	69	131
Anthracene-d10	1719-06-8	70	133
4-Terphenyl-d14	1718-51-0	59	141
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	51	125
Toluene-D8	2037-26-5	55	125
4-Bromofluorobenzene	460-00-4	56	124
EP231S: PFAS Surrogate			
13C4-PFOS	----	68	136
13C8-PFOA	----	69	133

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP080S: TPH(V)/BTEX Surrogates			

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP080S: TPH(V)/BTEX Surrogates - Continued			
1.2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EM2301163**

Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: LAUREN McGLOIN	Contact	: Peter Ravlic
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Project	: 60692389	Page	: 1 of 7
Order number	: ----	Quote number	: ES2021AECOMAU0044 (EN/004/21)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Melbourne Airport - Pavement Upgrades		
Sampler	: STEFAN FENGER		

Dates

Date Samples Received	: 27-Jan-2023 16:15	Issue Date	: 27-Feb-2023
Client Requested Due Date	: 01-Mar-2023	Scheduled Reporting Date	: **01-Mar-2023**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 4	Temperature	: 2.0°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 44 / 20

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)	SOIL - P-30/3 EPA 1828.2 Table 2 Limited Suite (EM)	SOIL - S-03 15 Metals (NEPM 2013 Suite - incl. Digestion)	SOIL - S-07 TRH/BTEXN/PAH (SIM)
EM2301163-003	24-Jan-2023 00:00	PD08_0.5		✓	✓			
EM2301163-004	24-Jan-2023 00:00	PD08_0.9	✓					
EM2301163-005	24-Jan-2023 00:00	PD08_1.1	✓					
EM2301163-006	24-Jan-2023 00:00	BH6_0.2	✓					
EM2301163-007	24-Jan-2023 00:00	BH6_0.5		✓	✓	✓		
EM2301163-008	24-Jan-2023 00:00	BH6_1.0		✓			✓	✓
EM2301163-009	24-Jan-2023 00:00	BH6_2.0	✓					
EM2301163-010	24-Jan-2023 00:00	BH6_3.0	✓					
EM2301163-011	24-Jan-2023 00:00	BH6_4.0	✓					
EM2301163-012	24-Jan-2023 00:00	BH2_0.2		✓	✓	✓		
EM2301163-013	24-Jan-2023 00:00	BH2_0.5		✓			✓	✓
EM2301163-014	24-Jan-2023 00:00	BH2_1.0	✓					
EM2301163-015	24-Jan-2023 00:00	BH2_2.0	✓					
EM2301163-016	24-Jan-2023 00:00	BH2_3.0	✓					
EM2301163-017	25-Jan-2023 00:00	BH8_0.2	✓					
EM2301163-018	25-Jan-2023 00:00	BH8_0.5		✓	✓	✓		
EM2301163-019	25-Jan-2023 00:00	BH8_1.0		✓			✓	✓
EM2301163-020	26-Jan-2023 00:00	TP08_0.2	✓					
EM2301163-021	26-Jan-2023 00:00	TP08_0.5		✓		✓		
EM2301163-022	26-Jan-2023 00:00	TP08_1.0		✓	✓		✓	✓
EM2301163-023	26-Jan-2023 00:00	TP08_1.9	✓					
EM2301163-024	25-Jan-2023 00:00	BH8_2.0	✓					
EM2301163-025	25-Jan-2023 00:00	BH8_2.4	✓					
EM2301163-026	25-Jan-2023 00:00	BH7_0.2		✓		✓		
EM2301163-027	25-Jan-2023 00:00	BH7_0.5		✓	✓		✓	✓
EM2301163-028	25-Jan-2023 00:00	BH7_1.0	✓					
EM2301163-029	26-Jan-2023 00:00	TP07_0.2		✓	✓	✓		
EM2301163-030	26-Jan-2023 00:00	TP07_0.5	✓					
EM2301163-031	26-Jan-2023 00:00	TP07_1.0	✓					
EM2301163-032	26-Jan-2023 00:00	TP07_2.0	✓					
EM2301163-033	26-Jan-2023 00:00	TP09_0.2		✓	✓	✓		
EM2301163-034	26-Jan-2023 00:00	TP09_0.5		✓			✓	✓
EM2301163-036	26-Jan-2023 00:00	TP09_1.0	✓					
EM2301163-037	26-Jan-2023 00:00	TP09_1.3	✓					
EM2301163-040	24-Jan-2023 00:00	QC03_240123		✓				

			(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)	SOIL - P-30/3 EPA 1828.2 Table 2 Limited Suite (EM)	SOIL - S-03 15 Metals (NEPM 2013 Suite - incl. Digestion)	SOIL - S-07 TRH/BTEXN/PAH (SIM)
EM2301163-044	25-Jan-2023 00:00	QC07_250123		✓				
EM2301163-045	26-Jan-2023 00:00	QC08_260123		✓	✓	✓		
EM2301163-048	26-Jan-2023 00:00	QC12_260123		✓				
EM2301163-049	24-Jan-2023 00:00	PD10_0.4-0.8	✓					

Matrix: **SOIL**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	SOIL - S-18 TRH(C6-C9)/BTEXN
EM2301163-040	24-Jan-2023 00:00	QC03_240123	✓
EM2301163-044	25-Jan-2023 00:00	QC07_250123	✓
EM2301163-048	26-Jan-2023 00:00	QC12_260123	✓

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	(On Hold) WATER No analysis requested
EM2301163-038	24-Jan-2023 00:00	QC01_240123	✓
EM2301163-042	25-Jan-2023 00:00	QC05_250123	✓
EM2301163-046	26-Jan-2023 00:00	QC10_260123	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231 PFAS - Short Suite (12 analytes)	WATER - W-05T TRH/BTEXN/8 Metals (Total)
EM2301163-043	25-Jan-2023 00:00	QC06_250123	✓	✓
EM2301163-047	26-Jan-2023 00:00	QC11_260123	✓	✓

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Client Sample ID(s)	Container	Due for extraction	Due for analysis	Samples Received Date	Samples Received Evaluation	Instructions Received Date	Instructions Received Evaluation
EA001: pH in soil using a 0.01M CaCl2 extract							
BH2_0.2	Soil Glass Jar - Unpreserved	31-Jan-2023	31-Jan-2023	27-Jan-2023	✓	27-Feb-2023	×
BH6_0.5	Soil Glass Jar - Unpreserved	31-Jan-2023	31-Jan-2023	27-Jan-2023	✓	27-Feb-2023	×
BH7_0.2	Soil Glass Jar - Unpreserved	01-Feb-2023	01-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH8_0.5	Soil Glass Jar - Unpreserved	01-Feb-2023	01-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
QC08_260123	Soil Glass Jar - Unpreserved	02-Feb-2023	02-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
TP07_0.2	Soil Glass Jar - Unpreserved	02-Feb-2023	02-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
TP08_0.5	Soil Glass Jar - Unpreserved	02-Feb-2023	02-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
TP09_0.2	Soil Glass Jar - Unpreserved	02-Feb-2023	02-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
EA055: Moisture Content							
BH2_0.2	Soil Glass Jar - Unpreserved	----	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH2_0.5	Soil Glass Jar - Unpreserved	----	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH6_0.5	Soil Glass Jar - Unpreserved	----	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH6_1.0	Soil Glass Jar - Unpreserved	----	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH7_0.2	Soil Glass Jar - Unpreserved	----	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH7_0.5	Soil Glass Jar - Unpreserved	----	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH8_0.5	Soil Glass Jar - Unpreserved	----	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH8_1.0	Soil Glass Jar - Unpreserved	----	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
QC03_240123	Soil Glass Jar - Unpreserved	----	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
QC07_250123	Soil Glass Jar - Unpreserved	----	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
QC08_260123	Soil Glass Jar - Unpreserved	----	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
QC12_260123	Soil Glass Jar - Unpreserved	----	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
TP07_0.2	Soil Glass Jar - Unpreserved	----	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
TP08_0.5	Soil Glass Jar - Unpreserved	----	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
TP08_1.0	Soil Glass Jar - Unpreserved	----	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
TP09_0.2	Soil Glass Jar - Unpreserved	----	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
TP09_0.5	Soil Glass Jar - Unpreserved	----	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
EG035T: Total Mercury by FIMS							
BH2_0.2	Soil Glass Jar - Unpreserved	21-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH2_0.5	Soil Glass Jar - Unpreserved	21-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH6_0.5	Soil Glass Jar - Unpreserved	21-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH6_1.0	Soil Glass Jar - Unpreserved	21-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH7_0.2	Soil Glass Jar - Unpreserved	22-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH7_0.5	Soil Glass Jar - Unpreserved	22-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH8_0.5	Soil Glass Jar - Unpreserved	22-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH8_1.0	Soil Glass Jar - Unpreserved	22-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
QC08_260123	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
TP07_0.2	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×

TP08_0.5	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_1.0	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.5	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
EG048G: Hexavalent Chromium by Alkaline Digestion and DA Finish							
BH2_0.2	Soil Glass Jar - Unpreserved	21-Feb-2023	28-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	21-Feb-2023	28-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	22-Feb-2023	01-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	22-Feb-2023	01-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	23-Feb-2023	02-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	23-Feb-2023	02-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	23-Feb-2023	02-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	23-Feb-2023	02-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
EK026SF: Total Cyanide by Segmented Flow Analyser							
BH2_0.2	Soil Glass Jar - Unpreserved	07-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	08-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	09-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
EK030SF: Cyanide Amenable to Chlorination (Segmented Flow Analyser)							
BH2_0.2	Soil Glass Jar - Unpreserved	07-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	08-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	09-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
EK040T: Total Fluoride							
BH2_0.2	Soil Glass Jar - Unpreserved	21-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	21-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	22-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	22-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP066-EM: PCB - VIC EPA 448.3 Screen							
BH2_0.2	Soil Glass Jar - Unpreserved	07-Feb-2023	19-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	19-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	08-Feb-2023	20-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	20-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP071: TRH - Semivolatile Fraction							
BH2_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	19-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_1.0	Soil Glass Jar - Unpreserved	07-Feb-2023	19-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	20-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_1.0	Soil Glass Jar - Unpreserved	08-Feb-2023	20-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_1.0	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP071-EM: TRH - Semivolatile Fraction							
BH2_0.2	Soil Glass Jar - Unpreserved	07-Feb-2023	19-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	19-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	08-Feb-2023	20-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	20-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP074-UT: Volatile Organic Compounds - Ultra-trace							

BH2_0.2	Soil Glass Jar - Unpreserved	31-Jan-2023	31-Jan-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	31-Jan-2023	31-Jan-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	01-Feb-2023	01-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	01-Feb-2023	01-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	02-Feb-2023	02-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	02-Feb-2023	02-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	02-Feb-2023	02-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	02-Feb-2023	02-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP075(SIM): PAH/Phenols (SIM)							
BH2_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	19-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_1.0	Soil Glass Jar - Unpreserved	07-Feb-2023	19-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	20-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_1.0	Soil Glass Jar - Unpreserved	08-Feb-2023	20-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_1.0	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP075-EM: Semivolatile Organic Compounds - Waste Classification							
BH2_0.2	Soil Glass Jar - Unpreserved	07-Feb-2023	19-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	19-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	08-Feb-2023	20-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	20-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP080: TRH Volatiles/BTEX							
BH2_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_1.0	Soil Glass Jar - Unpreserved	07-Feb-2023	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_1.0	Soil Glass Jar - Unpreserved	08-Feb-2023	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC03_240123	Soil Glass Jar - Unpreserved	07-Feb-2023	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC07_250123	Soil Glass Jar - Unpreserved	08-Feb-2023	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC12_260123	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_1.0	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP236: 2,4-D and Tributyltin Oxide (TBTO) by LCMSMS							
BH2_0.2	Soil Glass Jar - Unpreserved	07-Feb-2023	19-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	19-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	08-Feb-2023	20-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	20-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗

Matrix: **WATER** Evaluation: ✗ = Holding time breach ; ✓ = Within holding time.

Method / Client Sample ID(s)	Container	Due for extraction	Due for analysis	Samples Received		Instructions Received	
				Date	Evaluation	Date	Evaluation
EG035T: Total Mercury by FIMS							
QC06_250123	Clear Plastic Bottle - Nitric Acid;	----	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC11_260123	Clear Plastic Bottle - Nitric Acid;	----	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP071: TRH - Semivolatile Fraction							
QC06_250123	Amber Glass Bottle - Unpreserv	01-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC11_260123	Amber Glass Bottle - Unpreserv	02-Feb-2023	14-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP080: TRH Volatiles/BTEX							
QC06_250123	Amber VOC Vial - Sulfuric Acid	08-Feb-2023	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC11_260123	Amber VOC Vial - Sulfuric Acid	09-Feb-2023	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	AP_CustomerService.ANZ@aecom.com
- Chain of Custody (CoC) (COC)	Email	AP_CustomerService.ANZ@aecom.com

LAUREN McGLOIN

- *AU Certificate of Analysis - NATA (COA)	Email	lauren.mcgloin@aecom.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	lauren.mcgloin@aecom.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	lauren.mcgloin@aecom.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	lauren.mcgloin@aecom.com
- A4 - AU Tax Invoice (INV)	Email	lauren.mcgloin@aecom.com
- Chain of Custody (CoC) (COC)	Email	lauren.mcgloin@aecom.com
- Chromatogram (CHROM)	Email	lauren.mcgloin@aecom.com
- EDI Format - ENMRG (ENMRG)	Email	lauren.mcgloin@aecom.com
- EDI Format - EQUIS_V5_AECOM_SAMPLE (EQUIS_V5_AECOM_SAMPLE)	Email	lauren.mcgloin@aecom.com
- EDI Format - ESDAT (ESDAT)	Email	lauren.mcgloin@aecom.com
- Purchase Order Request Letter (PO_Request)	Email	lauren.mcgloin@aecom.com

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EM2301163**

Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: LAUREN McGLOIN	Contact	: Peter Ravlic
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: lauren.mcgloin@aecom.com	E-mail	: peter.ravlic@alsglobal.com
Telephone	: ----	Telephone	: +6138549 9645
Facsimile	: ----	Facsimile	: +61-3-8549 9626
Project	: 60692389	Page	: 1 of 7
Order number	: 60692389	Quote number	: ES2021AECOMAU0044 (EN/004/21)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Melbourne Airport - Pavement Upgrades		
Sampler	: STEFAN FENGER		

Dates

Date Samples Received	: 27-Jan-2023 16:15	Issue Date	: 28-Feb-2023
Client Requested Due Date	: 01-Mar-2023	Scheduled Reporting Date	: **01-Mar-2023**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 4	Temperature	: 2.0°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 44 / 22

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

Method Sample ID	Sample Container Received	Preferred Sample Container for Analysis
2,4-D and Tributyltin Oxide (TBTO) by LCMSMS : EP236		
PD08_1.1	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved
Cyanide Amenable to Chlorination (Segmented Flow Analyser) : EK030SF		
PD08_1.1	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved
Formaldehyde : EP010		
PD08_1.1	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved
Hexavalent Chromium by Alkaline Digestion and DA Finish : EG048G		
PD08_1.1	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved
PAH/Phenols (SIM) : EP075(SIM)		
PD08_0.5	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved
PCB - VIC EPA 448.3 Screen : EP066-EM		
PD08_1.1	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved
Semivolatile Organic Compounds - Waste Classification : EP075-EM		
PD08_1.1	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved
Total Cyanide by Segmented Flow Analyser : EK026SF		
PD08_1.1	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved
Total Fluoride : EK040T		
PD08_1.1	- HDPE Soil Jar	- Pulp Bag
TRH - Semivolatile Fraction : EP071		
PD08_0.5	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved
TRH - Semivolatile Fraction : EP071-EM		
PD08_1.1	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved
TRH Volatiles/BTEX : EP080		
PD08_0.5	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved
Volatile Organic Compounds : EP074		
PD08_0.5	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved
Volatile Organic Compounds - Ultra-trace : EP074-UT		
PD08_1.1	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)	SOIL - P-30/3 EPA 1828.2 Table 2 Limited Suite (EM)	SOIL - S-03 15 Metals (NEPM 2013 Suite - incl. Digestion)	SOIL - S-07 TRH/BTEXN/PAH (SIM)	SOIL - S-10 TRH/VOC/PAH
EM2301163-003	24-Jan-2023 00:00	PD08_0.5		✓	✓		✓		✓
EM2301163-004	24-Jan-2023 00:00	PD08_0.9	✓						
EM2301163-005	24-Jan-2023 00:00	PD08_1.1		✓		✓			
EM2301163-006	24-Jan-2023 00:00	BH6_0.2	✓						
EM2301163-007	24-Jan-2023 00:00	BH6_0.5		✓	✓	✓			
EM2301163-008	24-Jan-2023 00:00	BH6_1.0		✓			✓	✓	
EM2301163-009	24-Jan-2023 00:00	BH6_2.0	✓						
EM2301163-010	24-Jan-2023 00:00	BH6_3.0	✓						
EM2301163-011	24-Jan-2023 00:00	BH6_4.0	✓						
EM2301163-012	24-Jan-2023 00:00	BH2_0.2		✓	✓	✓			
EM2301163-013	24-Jan-2023 00:00	BH2_0.5		✓			✓	✓	
EM2301163-014	24-Jan-2023 00:00	BH2_1.0	✓						

			(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)	SOIL - P-30/3 EPA 1828.2 Table 2 Limited Suite (EM)	SOIL - S-03 15 Metals (NEPM 2013 Suite - incl. Digestion)	SOIL - S-07 TRH/BTEXN/PAH (SIM)	SOIL - S-10 TRH/VOC/PAH
EM2301163-015	24-Jan-2023 00:00	BH2_2.0	✓						
EM2301163-016	24-Jan-2023 00:00	BH2_3.0	✓						
EM2301163-017	25-Jan-2023 00:00	BH8_0.2	✓						
EM2301163-018	25-Jan-2023 00:00	BH8_0.5		✓	✓	✓			
EM2301163-019	25-Jan-2023 00:00	BH8_1.0		✓			✓	✓	
EM2301163-020	26-Jan-2023 00:00	TP08_0.2	✓						
EM2301163-021	26-Jan-2023 00:00	TP08_0.5		✓		✓			
EM2301163-022	26-Jan-2023 00:00	TP08_1.0		✓	✓		✓	✓	
EM2301163-023	26-Jan-2023 00:00	TP08_1.9	✓						
EM2301163-024	25-Jan-2023 00:00	BH8_2.0	✓						
EM2301163-025	25-Jan-2023 00:00	BH8_2.4	✓						
EM2301163-026	25-Jan-2023 00:00	BH7_0.2		✓		✓			
EM2301163-027	25-Jan-2023 00:00	BH7_0.5		✓	✓		✓	✓	
EM2301163-028	25-Jan-2023 00:00	BH7_1.0	✓						
EM2301163-029	26-Jan-2023 00:00	TP07_0.2		✓	✓	✓			
EM2301163-030	26-Jan-2023 00:00	TP07_0.5	✓						
EM2301163-031	26-Jan-2023 00:00	TP07_1.0		✓			✓	✓	
EM2301163-032	26-Jan-2023 00:00	TP07_2.0	✓						
EM2301163-033	26-Jan-2023 00:00	TP09_0.2		✓	✓	✓			
EM2301163-034	26-Jan-2023 00:00	TP09_0.5		✓			✓	✓	
EM2301163-036	26-Jan-2023 00:00	TP09_1.0	✓						
EM2301163-037	26-Jan-2023 00:00	TP09_1.3	✓						
EM2301163-040	24-Jan-2023 00:00	QC03_240123		✓					
EM2301163-044	25-Jan-2023 00:00	QC07_250123		✓					
EM2301163-045	26-Jan-2023 00:00	QC08_260123		✓	✓	✓			
EM2301163-048	26-Jan-2023 00:00	QC12_260123		✓					
EM2301163-049	24-Jan-2023 00:00	PD10_0.4-0.8	✓						

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - S-18 TRH(C6-C9)/BTEXN
EM2301163-040	24-Jan-2023 00:00	QC03_240123	✓
EM2301163-044	25-Jan-2023 00:00	QC07_250123	✓
EM2301163-048	26-Jan-2023 00:00	QC12_260123	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	(On Hold) WATER No analysis requested	WATER - EP231 PFAS - Short Suite (12 analytes)	WATER - W-05T TRH/BTEXN/8 Metals (Total)
EM2301163-038	24-Jan-2023 00:00	QC01_240123	✓		
EM2301163-042	25-Jan-2023 00:00	QC05_250123	✓		
EM2301163-043	25-Jan-2023 00:00	QC06_250123		✓	✓
EM2301163-046	26-Jan-2023 00:00	QC10_260123	✓		
EM2301163-047	26-Jan-2023 00:00	QC11_260123		✓	✓

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Client Sample ID(s)	Container	Due for extraction	Due for analysis	Samples Received Date	Samples Received Evaluation	Instructions Received Date	Instructions Received Evaluation
EA001: pH in soil using a 0.01M CaCl2 extract							
BH2_0.2	Soil Glass Jar - Unpreserved	31-Jan-2023	28-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH6_0.5	Soil Glass Jar - Unpreserved	31-Jan-2023	28-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH7_0.2	Soil Glass Jar - Unpreserved	01-Feb-2023	28-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH8_0.5	Soil Glass Jar - Unpreserved	01-Feb-2023	28-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
PD08_1.1	HDPE Soil Jar	31-Jan-2023	28-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
QC08_260123	Soil Glass Jar - Unpreserved	02-Feb-2023	28-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
TP07_0.2	Soil Glass Jar - Unpreserved	02-Feb-2023	28-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
TP08_0.5	Soil Glass Jar - Unpreserved	02-Feb-2023	28-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
TP09_0.2	Soil Glass Jar - Unpreserved	02-Feb-2023	28-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
EA055: Moisture Content							
BH2_0.2	Soil Glass Jar - Unpreserved	----	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH2_0.5	Soil Glass Jar - Unpreserved	----	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH6_0.5	Soil Glass Jar - Unpreserved	----	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH6_1.0	Soil Glass Jar - Unpreserved	----	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH7_0.2	Soil Glass Jar - Unpreserved	----	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH7_0.5	Soil Glass Jar - Unpreserved	----	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×

BH8_0.5	Soil Glass Jar - Unpreserved	----	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_1.0	Soil Glass Jar - Unpreserved	----	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
PD08_1.1	HDPE Soil Jar	----	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC03_240123	Soil Glass Jar - Unpreserved	----	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC07_250123	Soil Glass Jar - Unpreserved	----	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	----	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC12_260123	Soil Glass Jar - Unpreserved	----	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	----	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_1.0	Soil Glass Jar - Unpreserved	----	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	----	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_1.0	Soil Glass Jar - Unpreserved	----	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	----	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.5	Soil Glass Jar - Unpreserved	----	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
EG035T: Total Mercury by FIMS							
BH2_0.2	Soil Glass Jar - Unpreserved	21-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH2_0.5	Soil Glass Jar - Unpreserved	21-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	21-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_1.0	Soil Glass Jar - Unpreserved	21-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	22-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.5	Soil Glass Jar - Unpreserved	22-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	22-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_1.0	Soil Glass Jar - Unpreserved	22-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
PD08_0.5	HDPE Soil Jar	21-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
PD08_1.1	HDPE Soil Jar	21-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_1.0	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_1.0	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.5	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
EG048G: Hexavalent Chromium by Alkaline Digestion and DA Finish							
BH2_0.2	Soil Glass Jar - Unpreserved	21-Feb-2023	07-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	21-Feb-2023	07-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	22-Feb-2023	07-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	22-Feb-2023	07-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
PD08_1.1	HDPE Soil Jar	21-Feb-2023	07-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	23-Feb-2023	07-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	23-Feb-2023	07-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	23-Feb-2023	07-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	23-Feb-2023	07-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
EK026SF: Total Cyanide by Segmented Flow Analyser							
BH2_0.2	Soil Glass Jar - Unpreserved	07-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	08-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
PD08_1.1	HDPE Soil Jar	07-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	09-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
EK030SF: Cyanide Amenable to Chlorination (Segmented Flow Analyser)							
BH2_0.2	Soil Glass Jar - Unpreserved	07-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	08-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
PD08_1.1	HDPE Soil Jar	07-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	09-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
EK040T: Total Fluoride							
BH2_0.2	Soil Glass Jar - Unpreserved	21-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	21-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	22-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	22-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗

PD08_1.1	HDPE Soil Jar	21-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP066-EM: PCB - VIC EPA 448.3 Screen							
BH2_0.2	Soil Glass Jar - Unpreserved	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	08-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
PD08_1.1	HDPE Soil Jar	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP071: TRH - Semivolatile Fraction							
BH2_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_1.0	Soil Glass Jar - Unpreserved	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_1.0	Soil Glass Jar - Unpreserved	08-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
PD08_0.5	HDPE Soil Jar	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_1.0	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_1.0	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP071-EM: TRH - Semivolatile Fraction							
BH2_0.2	Soil Glass Jar - Unpreserved	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	08-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
PD08_1.1	HDPE Soil Jar	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP074: Volatile Organic Compounds							
PD08_0.5	HDPE Soil Jar	31-Jan-2023	31-Jan-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP074-UT: Volatile Organic Compounds - Ultra-trace							
BH2_0.2	Soil Glass Jar - Unpreserved	31-Jan-2023	31-Jan-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	31-Jan-2023	31-Jan-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	01-Feb-2023	01-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	01-Feb-2023	01-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
PD08_1.1	HDPE Soil Jar	31-Jan-2023	31-Jan-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	02-Feb-2023	02-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	02-Feb-2023	02-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	02-Feb-2023	02-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	02-Feb-2023	02-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP075(SIM): PAH/Phenols (SIM)							
BH2_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_1.0	Soil Glass Jar - Unpreserved	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_1.0	Soil Glass Jar - Unpreserved	08-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
PD08_0.5	HDPE Soil Jar	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_1.0	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_1.0	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP075-EM: Semivolatile Organic Compounds - Waste Classification							
BH2_0.2	Soil Glass Jar - Unpreserved	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	08-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
PD08_1.1	HDPE Soil Jar	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP080: TRH Volatiles/BTEX							

BH2_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_1.0	Soil Glass Jar - Unpreserved	07-Feb-2023	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_1.0	Soil Glass Jar - Unpreserved	08-Feb-2023	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
PD08_0.5	HDPE Soil Jar	07-Feb-2023	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC03_240123	Soil Glass Jar - Unpreserved	07-Feb-2023	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC07_250123	Soil Glass Jar - Unpreserved	08-Feb-2023	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC12_260123	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_1.0	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_1.0	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP236: 2,4-D and Tributyltin Oxide (TBTO) by LCMSMS							
BH2_0.2	Soil Glass Jar - Unpreserved	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	08-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
PD08_1.1	HDPE Soil Jar	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗

Matrix: **WATER** Evaluation: ✗ = Holding time breach ; ✓ = Within holding time.

Method / Client Sample ID(s)	Container	Due for extraction	Due for analysis	Samples Received		Instructions Received	
				Date	Evaluation	Date	Evaluation
EG035T: Total Mercury by FIMS							
QC06_250123	Clear Plastic Bottle - Nitric Acid;	----	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC11_260123	Clear Plastic Bottle - Nitric Acid;	----	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP071: TRH - Semivolatile Fraction							
QC06_250123	Amber Glass Bottle - Unpreserv	01-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC11_260123	Amber Glass Bottle - Unpreserv	02-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP080: TRH Volatiles/BTEX							
QC06_250123	Amber VOC Vial - Sulfuric Acid	08-Feb-2023	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC11_260123	Amber VOC Vial - Sulfuric Acid	09-Feb-2023	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	AP_CustomerService.ANZ@aecom.com
- Chain of Custody (CoC) (COC)	Email	AP_CustomerService.ANZ@aecom.com

LAUREN McGLOIN

- *AU Certificate of Analysis - NATA (COA)	Email	lauren.mcgloin@aecom.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	lauren.mcgloin@aecom.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	lauren.mcgloin@aecom.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	lauren.mcgloin@aecom.com
- A4 - AU Tax Invoice (INV)	Email	lauren.mcgloin@aecom.com
- Chain of Custody (CoC) (COC)	Email	lauren.mcgloin@aecom.com
- Chromatogram (CHROM)	Email	lauren.mcgloin@aecom.com
- EDI Format - ENMRG (ENMRG)	Email	lauren.mcgloin@aecom.com
- EDI Format - EQUIS_V5_AECOM_SAMPLE (EQUIS_V5_AECOM_SAMPLE)	Email	lauren.mcgloin@aecom.com
- EDI Format - ESDAT (ESDAT)	Email	lauren.mcgloin@aecom.com
- Purchase Order Request Letter (PO_Request)	Email	lauren.mcgloin@aecom.com

ANZ

FQM - Generic Chain of Custody Form

Q4AN(EV)-007-FM1

CONSULTANT: AECOM	ADDRESS / OFFICE:	SAMPLER: Stefan Fenger	Destination Laboratory
PROJECT MANAGER (PM): Lauren McGloin	SITE: Melbourne Airport	MOBILE: 0402414251 PHONE:	
PROJECT NUMBER & TASK COI 60692389	P.O. NO.:	EMAIL REPORT TO: Lauren.mcgloin@aecom.com stefan.fenger@aecom.com	
RESULTS REQUIRED (Date):	QUOTE NO.:	ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)	

FOR LABORATORY USE ONLY
COOLER SEAL (circle appropriate)
Intact: Yes No N/A
SAMPLE TEMPERATURE
CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

URGENT

Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION		
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	HOLD
	PD04 - 0.5	S	25/01/23		Jar	2	
	PD09 - 1.0	S				2	
	PD08 - 0.5					2	
	PD08 - 0.9					2	
	PD08 - 1.1					2	
	BH6 - 0.2					2	
	BH6 - 0.5					2	
	BH6 - 1.0					2	
	BH6 - 2.0					2	
	BH6 - 3.0					2	
	BH6 - 4.0					2	
	BH02 - 0.2					2	
	BH02 - 0.5					2	
	BH02 - 1.0					2	
	BH02 - 2.0					2	
	BH02 - 3.0					2	
	BH8 - 0.2		25/01/23			2	
	BH8 - 0.5		25/01/23			2	
	BH8 - 1.0		25/01/23			2	

Environmental Division
Melbourne
Work Order Reference
EM2301163

Telephone : +61-3-8549 9600

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name:	Date:	Name: Oliver	Date: 27-1-23	Name:	Date:	Con' Note No:
Of:	Time:	Of: AES	Time: 16:15	Of:	Time:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. **Soil Container Codes:** Jar = Unpreserved glass jar

COC Page of

ANZ

FQM - Generic Chain of Custody Form

Q4AN(EV)-007-FM1

CONSULTANT: AECOM	ADDRESS / OFFICE:	SAMPLER: Stefan Fenger	Destination Laboratory
PROJECT MANAGER (PM): Lauren McGloin	SITE: Melbourne Airport	MOBILE: 0402414251 PHONE:	
PROJECT NUMBER & TASK COI 60692389	P.O. NO.:	EMAIL REPORT TO: Lauren.mcgloin@aecom.com stefan.fenger@aecom.com	
RESULTS REQUIRED (Date):	QUOTE NO.:	ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)	

FOR LABORATORY USE ONLY
COOLER SEAL (circle appropriate)
Intact: Yes No N/A
SAMPLE TEMPERATURE
CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION		
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	HOLD
	BH8 - 2.0	S	25/01/23		Jar	2	X
	BH8 - 2.4	S				2	X
	BH7 - 0.2	S				2	X
	BH7 - 0.5	S				2	X
	BH7 - 1.0	S				2	X
	QC01 - 240123	W	24/01/23		VS, AG, N	4	X
	QC02 - 240123	W			" "	4	X
	QC03 - 240123	S			Jar	1	X
	QC04 - 240123	S			Jar	1	X
	QC05 - 250123	W	25/01/23		VS, AG, N	4	X
	QC06 - 250123	W			" "	4	X
	QC07 - 250123	S			Jar	1	X
	TP02 - 0.2	S	26/01/23		Jar	2	X
	TP02 - 0.5	S				2	X
	TP07 - 1.0	S				2	X
	TP07 - 2.0	S				2	X
	TP04 - 0.2	S				2	X
	TP04 - 0.5	S				2	X
	TP01 - 1.0	S				2	X

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name:	Date:	Name: Oliver	Date: 27-1-23	Name:	Date:	Con' Note No:
Of:	Time:	Of: AES	Time: 16:15	Of:	Time:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxido/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. **Soil Container Codes:** Jar = Unpreserved glass jar

COC Page of

ANZ

FQM - Generic Chain of Custody Form

Q4AN(EV)-007-FM1

CONSULTANT: AECOM	ADDRESS / OFFICE:	SAMPLER: Stefan Fenger	Destination Laboratory
PROJECT MANAGER (PM): Lauren McGloin	SITE: Melbourne Airport	MOBILE: 0402414251 PHONE:	
PROJECT NUMBER & TASK COI 60692389	P.O. NO.:	EMAIL REPORT TO: Lauren.mcgloin@aecom.com stefan.fenger@aecom.com	
RESULTS REQUIRED (Date):	QUOTE NO.:	ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)	

FOR LABORATORY USE ONLY
COOLER SEAL (circle appropriate)
Intact: Yes No N/A
SAMPLE TEMPERATURE
CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION		HOLD	
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles		
	TP09_1.3	S	26/01/23		~~S~~ Jar	2	X	
	TP08_0.2	S	26		Jar	2	X	
	TP08_0.5	S			Jar	2	X	
	TP08_1.0	S			Jar	2	X	
	TP08_1.9	S			Jar	2	X	
	QC08_260123	S			Jar	2	X	
	QC09_260123	S			Jar	2	X	Please send to Eurofins
	QC10_260123	W			VS, AG, N	4	X	
	QC11_260123	W			VS, AG, N	4	X	
	QC12_260123	S			Jar	1	X	

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name:	Date:	Name: Oliver	Date: 24-1-23	Name:	Date:	Con' Note No:
Of:	Time:	Of: AS	Time: 16:15	Of:	Time:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. **Soil Container Codes**: Jar = Unpreserved glass jar

COC Page of

ANZ

FQM - Generic Chain of Custody Form

CONSULTANT: AECOM	ADDRESS / OFFICE:	SAMPLER: Stefan Fenger	**Destination Laboratory**
PROJECT MANAGER (PM): Lauren McGloin	SITE: **Melbourne Aiport - Pavement Upgrades**	MOBILE: 0402414251 PHONE: 0448485323 (Lauren M)	**ALS**
PROJECT NUMBER & TASK CODE: 60692389	P.O. NO.:	EMAIL REPORT TO: lauren.mcgloin@aecom.com;	
RESULTS REQUIRED (Date):	QUOTE N Melbourne Airport - dated 7.11.2022	**ANALYSIS REQUIRED including SUITES** (note - suite codes must be listed to attract suite prices)	

FOR LABORATORY USE ONLY

COOLER SEAL (circle appropriate)

Intact: Yes No N/A

SAMPLE TEMPERATURE

CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

antimony (Sb), arsenic (As), barium (Ba), Beryllium (Be), cadmium (Cd), chromium (Cr), cobalt (Co), copper (Cu), lead (Pb), manganese (Mn), mercury (Hg), nickel (Ni), selenium (Se) and zinc (Zn);

Notes: e.g. Highly contaminated samples

e.g. "High PAHs expected".

Extra volume for QC or trace LORs etc.

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION		Suite 1 : P-30/3 EPA 1828.2 Table 2 Limited Suite - excl. EDTA	Suite 2: S-10 TRH, BTEX, PAHs, Heavy metals - S3	Suite 3: EP231X Per-and poly-fluoroalkyl substances (PFAS) and associated substances extended 28 suite including										HOLD
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles													
1	PD09_0.5		24/01/23				1		1										
2	PD09_1.0	S	24/01/23		J			1											
3	PD08_0.5	S	24/01/23		J			1	1										
4	PD08_0.9	S	24/01/23		J														X
5	PD08_1.1	S	24/01/23		J		1												
6	BH5_0.2	S	24/01/23		J														X
7	BH5_0.5	S	24/01/23		J		1		1										
8	BH5_1.0	S	24/01/23		J			1											
9	BH5_2.0	S	24/01/23		J														X
10	BH5_3.0	S	24/01/23		J														X
11	BH5_4.0	S	24/01/23		J														X
12	BH2_0.2	S	24/01/23		J		1		1										
13	BH2_0.5	S	24/01/23		J			1											
14	BH2_1.0	S	24/01/23		J														x
15	BH2_2.0	S	24/01/23		J														x
16	BH2_3.0	S	24/01/23		J														x
17	BH8_0.2	S	25/01/23		J														X
18	BH8_0.5	S	25/01/23		J		1		1										
19	BH8_1.0	S	25/01/23		J			1											

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name Stefan		Name:	Date:	Name:	Date:	Con' Note No:
Of: AECOM	Time: PM	Of:	Time:	Of:	Time:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic

V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;

F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. **Soil Container Codes:** Jar = Unpreserved glass jar

COC Page of

CONSULTANT: AECOM	ADDRESS / OFFICE:	SAMPLER: Stefan Fenger		Destination Laboratory
PROJECT MANAGER (PM): Lauren McGloin	SITE: **Melbourne Aiport - Pavement Upgrades**	MOBILE: 0402414251	PHONE: 0448485323 (Lauren M)	**ALS**
PROJECT NUMBER & TASK CODE: 60692389	P.O. NO.:	EMAIL REPORT TO: lauren.mcgloin@aecom.com;		
RESULTS REQUIRED (Date):	QUOTE N: Melbourne Airport - dated 7.11.2022	**ANALYSIS REQUIRED including SUITES** (note - suite codes must be listed to attract suite prices)		

FOR LABORATORY USE ONLY	COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
COOLER SEAL (circle appropriate)	
Intact: Yes No N/A	
SAMPLE TEMPERATURE	
CHILLED: Yes No	

Notes: e.g. Highly contaminated samples e.g. "High PAHs expected", Extra volume for QC or trace LORs etc,

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION		Suite 1: P-303 EPA 1828.2 Table 2 Limited Suite - excl. EDTA	Suite 2: S-10 TRH, BTEX, PAHs, Heavy metals - S3	Suite 3: EP231X Per-and poly-fluoroalkyl substances (PFAS) and associated substances									HOLD
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles													
-																			
20	TP08_0.2	S	26/01/23		J														X
21	TP08_0.5	S	26/01/23		J		1												
22	TP08_1.0	S	26/01/23		J			1	1										
23	TP08_1.9	S	26/01/23		J														X
24	BH8_2.0	S	25/01/23		J														X
25	BH8_2.4	S	25/01/23		J														X
26	BH7_0.2	S	25/01/23		J		X												
27	BH7_0.5	S	25/01/23		J			X	X										
28	BH7_1.0	S	25/01/23		J														X
29	TP07_0.2	S	26/01/23		J		X		X										
30	TP07_0.5	S	26/01/23		J			X											
31	TP07_1.0	S	26/01/23		J														X
32	TP07_2.0	S	26/01/23		J														X
33	TP09_0.2	S	26/01/2023		J		X		X										
34	TP09_0.5	S	26/01/2023		J			X											
35	TP09_0.5	S	26/01/2023		J														X
36	TP09_1.0	S	26/01/2023		J														X
37	TP09_1.3	S	26/01/2023		J														X

Glass Jar Broke on Receipt

Sample VA

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name Stefan Fenger	Date: 07/12/2022	Name:	Date:	Name:	Date:	Con' Note No:
Of: AECOM	Time: PM	Of:	Time:	Of:	Time:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. **Soil Container Codes**: Jar = Unpreserved glass jar

CONSULTANT: AECOM	ADDRESS / OFFICE:	SAMPLER: Stefan Fenger	**Destination Laboratory**
PROJECT MANAGER (PM): Lauren McGloin	SITE: **Melbourne Aport - Pavement Upgrades**	MOBILE: 0402414251 PHONE: 0448485323 (Lauren M)	**ALS**
PROJECT NUMBER & TASK CODE: 60692389	P.O. NO.:	EMAIL REPORT TO: lauren.mcgloin@aecom.com;	
RESULTS REQUIRED (Date):	QUOTE № Melbourne Airport - dated 7.11.2022	**ANALYSIS REQUIRED including SUITES** (note - suite codes must be listed to attract suite prices)	

FOR LABORATORY USE ONLY	COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
COOLER SEAL (circle appropriate)	
Intact: Yes No N/A	
SAMPLE TEMPERATURE	
CHILLED: Yes No	

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION		Suite 1 - P-30/3 EPA 1828.2 Table 2 Limited Suite - excl. EDTA	Suite 2: S-10 TRH, BTEX, PAHs, Heavy metals - S3	Suite 3: EP231X Per-and poly-fluoroalkyl substances (PFAS) and associated substances		TPH/BTEXN/ PFAS short suite and metals (8)	TRH C6 – C10 and BTEXN.							HOLD	Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles															
-																					
38	QC01_240123	W	24/01/23		VS, AG, N															X	
39	QC02_240123	W	24/01/23		VS, AG, N						1										
40	QC03_240123	W	24/01/23		V							1									
41	QC04_240123	W	24/01/23		V							1									
42	QC05_250123	W	25/01/23		VS, AG, N															X	
43	QC06_250123	W	25/01/23		VS, AG, N						1										
44	QC07_250123	W	25/01/23		V							1									
45	QC08_260123	S	26/01/23		J		1			1											Please send QC09 to Eurofins for the same analysis
→	QC09_270123	S	26/01/23		J		1			1											
46	QC10_260123	W	26/01/23		VS, AG, N															X	
47	QC11_260123	W	26/01/23		VS, AG, N						1										
48	QC12_260123	S	26/01/23		J							1									
49	POLO-0.4-0.8	S	24/1																		

NR. = 39

NR. = 41

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name Stefan Fenger		Name:	Date:	Name:	Date:	Con' Note No:
Of: AECOM	Time: PM	Of:	Time:	Of:	Time:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. **Soil Container Codes**: Jar = Unpreserved glass jar

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From: McGloin, Lauren <Lauren.McGloin@aecom.com>
Sent: Monday, 27 February 2023 2:50 PM
To: Emily Chan <emily.chan@ALSGlobal.com>
Cc: Peter Ravlic <peter.ravlic@alsglobal.com>
Subject: [EXTERNAL] - Project: 60692389 -URGENT ANALYSIS

HI Emily and Peter

See attached COC that for samples at Melbourne Airport on hold. Can you advise how quickly these samples can be analysed. Somehow this COC was not sent on, so I'll need to get them sorted asap.

Lauren

Principal Environmental Scientist, GRS - VSA
M +61448485323
lauren.mcgloin@aecom.com

AECOM
Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61386706800
aecom.com

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My working days are:

Monday	Tuesday	Wednesday	Thursday	Friday
✓	✓	X	✓	X

From: McGloin, Lauren
Sent: Thursday, 2 February 2023 2:00 PM
To: Emily Chan <emily.chan@ALSGlobal.com>
Cc: Fenger, Stefan <Stefan.Fenger@aecom.com>; Peter Ravlic <peter.ravlic@alsglobal.com>
Subject: RE: EM2301412 & EM2301321, Project: 60692389

Hi Emily

See attached.

Thanks Lauren

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2301412**	Page	: 1 of 17
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: LAUREN McGLOIN	Contact	: Peter Ravlic
Address	: 727 COLLINS STREET DOCKLANDS 3008	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9645
Project	: 60692389	Date Samples Received	: 01-Feb-2023 12:00
Order number	: 60692389	Date Analysis Commenced	: 07-Feb-2023
C-O-C number	: ----	Issue Date	: 09-Feb-2023 18:15
Sampler	: Ben Epstein		
Site	: Melbourne Airport		
Quote number	: EN/004/21		
No. of samples received	: 10		
No. of samples analysed	: 6		

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Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Arenie Vijayaratnam	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Dilani Fernando	Laboratory Coordinator	Melbourne Inorganics, Springvale, VIC
Jarwis Nheu	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
Sanjay Parekh	LCMS Coordinator	Melbourne Organics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EG048G: EM2301412 #5 Poor matrix spike recovery for Hexavalent Chromium due to sample matrix. Confirmed by re-analysis.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074-UT: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Sum of chlorinated hydrocarbons includes carbon tetrachloride, chlorobenzene, chloroform, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichloroethane, 1,1-dichloroethene, cis-1,2-dichlorothene, trans-1,2-dichlorothene, 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane, 1,2,4-trichlorobenzene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethene, vinyl chloride, hexachlorobutadiene and methylene chloride.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP074-WF: Where reported, Sum of trichlorobenzenes is the sum of the reported concentrations of 1,2,3-Trichlorobenzene and 1,2,4-Trichlorobenzene, and 1,3,5-Trichlorobenzene at or above the LOR.
- EP236: Tributyl tin is reported as Tributyl tin oxide under the conservative assumption that all of the measured Tributyl tin is present as Tributyl tin oxide.
- TIME SORTING COMMENCED: 1730 TIME PLACED IN FRIDGE: 1800
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	PD11_0.1	PD11_0.5	PD12_0.1	PD12_0.5	----
			Sampling date / time	31-Jan-2023 00:00	31-Jan-2023 00:00	31-Jan-2023 00:00	31-Jan-2023 00:00	----
Compound	CAS Number	LOR	Unit	EM2301412-001	EM2301412-002	EM2301412-005	EM2301412-006	--------
				Result	Result	Result	Result	----
EA001: pH in soil using 0.01M CaCl extract								
pH (CaCl2)	----	0.1	pH Unit	----	7.8	8.0	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	----	6.1	19.1	----	----
Moisture Content	----	1.0	%	5.5	----	----	17.6	----
EG005(ED093)T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	----	<5	<5	----	----
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	----
Barium	7440-39-3	10	mg/kg	70	40	70	80	----
Beryllium	7440-41-7	1	mg/kg	<1	<1	<1	<1	----
Boron	7440-42-8	50	mg/kg	<50	<50	<50	<50	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	----
Chromium	7440-47-3	2	mg/kg	31	----	----	13	----
Cobalt	7440-48-4	2	mg/kg	14	----	----	4	----
Copper	7440-50-8	5	mg/kg	40	17	20	<5	----
Lead	7439-92-1	5	mg/kg	<5	5	9	8	----
Manganese	7439-96-5	5	mg/kg	189	----	----	90	----
Molybdenum	7439-98-7	2	mg/kg	----	<2	<2	----	----
Nickel	7440-02-0	2	mg/kg	38	34	32	6	----
Selenium	7782-49-2	5	mg/kg	<5	<5	<5	<5	----
Silver	7440-22-4	2	mg/kg	----	<2	<2	----	----
Tin	7440-31-5	5	mg/kg	----	<5	<5	----	----
Vanadium	7440-62-2	5	mg/kg	25	----	----	33	----
Zinc	7440-66-6	5	mg/kg	29	30	21	9	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	----
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	----	<0.5	<0.5	----	----
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	1	mg/kg	----	<1	<1	----	----
EK030: Cyanide Amenable to Chlorination								
Cyanide amenable to chlorination	----	1	mg/kg	----	<1	<1	----	----
EK040T: Fluoride Total								
Fluoride	16984-48-8	40	mg/kg	----	370	260	----	----
EP010: Formaldehyde								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	PD11_0.1	PD11_0.5	PD12_0.1	PD12_0.5	----
			Sampling date / time	31-Jan-2023 00:00	31-Jan-2023 00:00	31-Jan-2023 00:00	31-Jan-2023 00:00	----
Compound	CAS Number	LOR	Unit	EM2301412-001	EM2301412-002	EM2301412-005	EM2301412-006	--------
				Result	Result	Result	Result	----
EP010: Formaldehyde - Continued								
Formaldehyde	50-00-0	2	mg/kg	----	<2	3	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	<0.1	<0.1	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	0.2	mg/kg	----	<0.2	<0.2	----	----
Toluene	108-88-3	0.5	mg/kg	----	<0.5	<0.5	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	----	<0.5	<0.5	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	<0.5	<0.5	----	----
Styrene	100-42-5	0.5	mg/kg	<0.5	----	----	<0.5	----
Styrene	100-42-5	0.5	mg/kg	----	<0.5	<0.5	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	----	<0.5	<0.5	----	----
Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	----	----	<0.5	----
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	----	<0.2	<0.2	----	----
n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	----	----	<0.5	----
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	----	----	<0.5	----
sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	----	----	<0.5	----
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	----	----	<0.5	----
tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	----	----	<0.5	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	----	----	<0.5	----
n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	----	----	<0.5	----
^ Total Xylenes	----	0.5	mg/kg	----	<0.5	<0.5	----	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	5	mg/kg	<5	----	----	<5	----
2-Butanone (MEK)	78-93-3	5	mg/kg	<5	----	----	<5	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	----	----	<5	----
2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	----	----	<5	----
2-Butanone (MEK)	78-93-3	1	mg/kg	----	<1	<1	----	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	----	----	<0.5	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	----	----	<0.5	----
1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	----	----	<0.5	----
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	----	----	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	PD11_0.1	PD11_0.5	PD12_0.1	PD12_0.5	----
				Sampling date / time	31-Jan-2023 00:00	31-Jan-2023 00:00	31-Jan-2023 00:00	31-Jan-2023 00:00	----
Compound	CAS Number	LOR	Unit		EM2301412-001	EM2301412-002	EM2301412-005	EM2301412-006	--------
					Result	Result	Result	Result	----
EP074D: Fumigants - Continued									
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		<0.5	----	----	<0.5	----
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		<0.5	----	----	<0.5	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		<5	----	----	<5	----
Chloromethane	74-87-3	5	mg/kg		<5	----	----	<5	----
Vinyl chloride	75-01-4	5	mg/kg		<5	----	----	<5	----
Bromomethane	74-83-9	5	mg/kg		<5	----	----	<5	----
Chloroethane	75-00-3	5	mg/kg		<5	----	----	<5	----
Trichlorofluoromethane	75-69-4	5	mg/kg		<5	----	----	<5	----
1.1-Dichloroethene	75-35-4	0.5	mg/kg		<0.5	----	----	<0.5	----
Iodomethane	74-88-4	0.5	mg/kg		<0.5	----	----	<0.5	----
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		<0.5	----	----	<0.5	----
1.1-Dichloroethane	75-34-3	0.5	mg/kg		<0.5	----	----	<0.5	----
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		<0.5	----	----	<0.5	----
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		<0.5	----	----	<0.5	----
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		<0.5	----	----	<0.5	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg		<0.5	----	----	<0.5	----
1.2-Dichloroethane	107-06-2	0.5	mg/kg		<0.5	----	----	<0.5	----
Trichloroethene	79-01-6	0.5	mg/kg		<0.5	----	----	<0.5	----
Dibromomethane	74-95-3	0.5	mg/kg		<0.5	----	----	<0.5	----
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		<0.5	----	----	<0.5	----
1.3-Dichloropropane	142-28-9	0.5	mg/kg		<0.5	----	----	<0.5	----
Tetrachloroethene	127-18-4	0.5	mg/kg		<0.5	----	----	<0.5	----
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		<0.5	----	----	<0.5	----
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		<0.5	----	----	<0.5	----
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		<0.5	----	----	<0.5	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		<0.5	----	----	<0.5	----
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		<0.5	----	----	<0.5	----
Pentachloroethane	76-01-7	0.5	mg/kg		<0.5	----	----	<0.5	----
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		<0.5	----	----	<0.5	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg		<0.5	----	----	<0.5	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		<0.5	----	----	<0.5	----
Bromobenzene	108-86-1	0.5	mg/kg		<0.5	----	----	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	PD11_0.1	PD11_0.5	PD12_0.1	PD12_0.5	----
			Sampling date / time	31-Jan-2023 00:00	31-Jan-2023 00:00	31-Jan-2023 00:00	31-Jan-2023 00:00	----
Compound	CAS Number	LOR	Unit	EM2301412-001	EM2301412-002	EM2301412-005	EM2301412-006	--------
				Result	Result	Result	Result	----
EP074F: Halogenated Aromatic Compounds - Continued								
2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	----	----	<0.5	----
4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	----	----	<0.5	----
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	----	----	<0.5	----
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	----	----	<0.5	----
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	----	----	<0.5	----
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	----	----	<0.5	----
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	----	----	<0.5	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	0.5	mg/kg	<0.5	----	----	<0.5	----
Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	----	----	<0.5	----
Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	----	----	<0.5	----
Bromoform	75-25-2	0.5	mg/kg	<0.5	----	----	<0.5	----
EP074H: Naphthalene								
Naphthalene	91-20-3	1	mg/kg	----	<1	<1	----	----
EP074I: Volatile Halogenated Compounds								
Vinyl chloride	75-01-4	0.02	mg/kg	----	<0.02	<0.02	----	----
1.1-Dichloroethene	75-35-4	0.01	mg/kg	----	<0.01	<0.01	----	----
Methylene chloride	75-09-2	0.4	mg/kg	----	<0.4	<0.4	----	----
trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	----	<0.02	<0.02	----	----
cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	----	<0.01	<0.01	----	----
Chloroform	67-66-3	0.02	mg/kg	----	<0.02	<0.02	----	----
1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	----	<0.01	<0.01	----	----
Carbon Tetrachloride	56-23-5	0.01	mg/kg	----	<0.01	<0.01	----	----
1.2-Dichloroethane	107-06-2	0.02	mg/kg	----	<0.02	<0.02	----	----
Trichloroethene	79-01-6	0.02	mg/kg	----	<0.02	<0.02	----	----
1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	----	<0.04	<0.04	----	----
1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	----	<0.01	<0.01	----	----
Tetrachloroethene	127-18-4	0.02	mg/kg	----	<0.02	<0.02	----	----
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	----	<0.02	<0.02	----	----
Hexachlorobutadiene	87-68-3	0.02	mg/kg	----	<0.02	<0.02	----	----
Chlorobenzene	108-90-7	0.02	mg/kg	----	<0.02	<0.02	----	----
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	----	<0.02	<0.02	----	----
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	----	<0.02	<0.02	----	----
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	----	<0.01	<0.01	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	PD11_0.1	PD11_0.5	PD12_0.1	PD12_0.5	----
				Sampling date / time	31-Jan-2023 00:00	31-Jan-2023 00:00	31-Jan-2023 00:00	31-Jan-2023 00:00	----
Compound	CAS Number	LOR	Unit		EM2301412-001	EM2301412-002	EM2301412-005	EM2301412-006	--------
					Result	Result	Result	Result	----
EP074I: Volatile Halogenated Compounds - Continued									
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg		----	<0.01	<0.01	----	----
1.3.5-Trichlorobenzene	108-70-3	0.01	mg/kg		----	<0.01	<0.01	----	----
1.2.3-Trichlorobenzene	87-61-6	0.01	mg/kg		----	<0.01	<0.01	----	----
^ Sum of Trichlorobenzenes	----	0.01	mg/kg		----	<0.01	<0.01	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	----	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	----	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	----	<0.5	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	----	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	----	<0.5	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	----	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	----	<0.5	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	----	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	----	<0.5	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	----	<0.5	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	----	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	----	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	----	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	----	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	----	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	----	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	----	----	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	----	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	----	----	**0.6**	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	----	----	**1.2**	----
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	0.03	mg/kg		----	<0.03	<0.03	----	----
2.4-Dichlorophenol	120-83-2	0.03	mg/kg		----	<0.03	<0.03	----	----
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg		----	<0.05	<0.05	----	----
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg		----	<0.05	<0.05	----	----
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	1	mg/kg		----	<1	<1	----	----
2-Methylphenol	95-48-7	1	mg/kg		----	<1	<1	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		----	<1	<1	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	PD11_0.1	PD11_0.5	PD12_0.1	PD12_0.5	----
				Sampling date / time	31-Jan-2023 00:00	31-Jan-2023 00:00	31-Jan-2023 00:00	31-Jan-2023 00:00	----
Compound	CAS Number	LOR	Unit		EM2301412-001	EM2301412-002	EM2301412-005	EM2301412-006	--------
					Result	Result	Result	Result	----
EP075A: Phenolic Compounds (Non-halogenated) - Continued									
2-Nitrophenol	88-75-5	1	mg/kg		----	<1	<1	----	----
2.4-Dimethylphenol	105-67-9	1	mg/kg		----	<1	<1	----	----
2.4-Dinitrophenol	51-28-5	5	mg/kg		----	<5	<5	----	----
4-Nitrophenol	100-02-7	5	mg/kg		----	<5	<5	----	----
2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg		----	<5	<5	----	----
Dinoseb	88-85-7	5	mg/kg		----	<5	<5	----	----
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg		----	<5	<5	----	----
^ Cresols (Total)	----	1	mg/kg		----	<1	<1	----	----
^ Sum of Phenols (non-halogenated)	----	1	mg/kg		----	<1	<1	----	----
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg		----	<0.5	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		----	<0.5	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg		----	<0.5	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg		----	<0.5	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg		----	<0.5	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg		----	<0.5	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg		----	<0.5	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	<0.5	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg		----	<0.5	<0.5	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1.0	mg/kg		----	<1.0	<1.0	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	<0.5	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	<0.5	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	<0.5	<0.5	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	**0.6**	**0.6**	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	**1.2**	**1.2**	----	----
EP075C: Phthalate Esters									
bis(2-ethylhexyl) phthalate	117-81-7	0.5	mg/kg		----	<0.5	<0.5	----	----
EP075E: Nitroaromatics and Ketones									
Nitrobenzene	98-95-3	0.5	mg/kg		----	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	PD11_0.1	PD11_0.5	PD12_0.1	PD12_0.5	----
				Sampling date / time	31-Jan-2023 00:00	31-Jan-2023 00:00	31-Jan-2023 00:00	31-Jan-2023 00:00	----
Compound	CAS Number	LOR	Unit		EM2301412-001	EM2301412-002	EM2301412-005	EM2301412-006	--------
					Result	Result	Result	Result	----
EP075E: Nitroaromatics and Ketones - Continued									
2.4-Dinitrotoluene	121-14-2	1.0	mg/kg		----	<1.0	<1.0	----	----
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	0.03	mg/kg		----	<0.03	<0.03	----	----
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg		----	<0.03	<0.03	----	----
beta-BHC	319-85-7	0.03	mg/kg		----	<0.03	<0.03	----	----
gamma-BHC	58-89-9	0.03	mg/kg		----	<0.03	<0.03	----	----
delta-BHC	319-86-8	0.03	mg/kg		----	<0.03	<0.03	----	----
Heptachlor	76-44-8	0.03	mg/kg		----	<0.03	<0.03	----	----
Aldrin	309-00-2	0.03	mg/kg		----	<0.03	<0.03	----	----
Heptachlor epoxide	1024-57-3	0.03	mg/kg		----	<0.03	<0.03	----	----
cis-Chlordane	5103-71-9	0.03	mg/kg		----	<0.03	<0.03	----	----
trans-Chlordane	5103-74-2	0.03	mg/kg		----	<0.03	<0.03	----	----
Endosulfan 1	959-98-8	0.03	mg/kg		----	<0.03	<0.03	----	----
4.4`-DDE	72-55-9	0.05	mg/kg		----	<0.05	<0.05	----	----
Dieldrin	60-57-1	0.03	mg/kg		----	<0.03	<0.03	----	----
Endrin aldehyde	7421-93-4	0.03	mg/kg		----	<0.03	<0.03	----	----
Endrin	72-20-8	0.03	mg/kg		----	<0.03	<0.03	----	----
Endosulfan 2	33213-65-9	0.03	mg/kg		----	<0.03	<0.03	----	----
4.4`-DDD	72-54-8	0.05	mg/kg		----	<0.05	<0.05	----	----
Endosulfan sulfate	1031-07-8	0.03	mg/kg		----	<0.03	<0.03	----	----
4.4`-DDT	50-29-3	0.05	mg/kg		----	<0.05	<0.05	----	----
Methoxychlor	72-43-5	0.03	mg/kg		----	<0.03	<0.03	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg		----	<0.03	<0.03	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		----	<0.05	<0.05	----	----
^ Chlordane	57-74-9	0.03	mg/kg		----	<0.03	<0.03	----	----
^ Sum of other organochlorine pesticides	----	0.03	mg/kg		----	<0.03	<0.03	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	----	<10	----
C6 - C9 Fraction	----	10	mg/kg		----	<10	<10	----	----
C10 - C14 Fraction	----	50	mg/kg		<50	----	----	<50	----
C10 - C14 Fraction	----	50	mg/kg		----	<50	<50	----	----
C6 - C10 Fraction	C6_C10	10	mg/kg		----	<10	<10	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	----	----	<100	----
C15 - C28 Fraction	----	100	mg/kg		----	<100	<100	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	PD11_0.1	PD11_0.5	PD12_0.1	PD12_0.5	----
				Sampling date / time	31-Jan-2023 00:00	31-Jan-2023 00:00	31-Jan-2023 00:00	31-Jan-2023 00:00	----
Compound	CAS Number	LOR	Unit		EM2301412-001	EM2301412-002	EM2301412-005	EM2301412-006	--------
					Result	Result	Result	Result	----
EP080/071: Total Petroleum Hydrocarbons - Continued									
C29 - C36 Fraction	----	100	mg/kg		<100	----	----	<100	----
C29 - C36 Fraction	----	100	mg/kg		----	<100	<100	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	----	<50	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	<50	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	----	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	----	<10	----
>C10 - C16 Fraction	----	50	mg/kg		<50	----	----	<50	----
>C10 - C16 Fraction	----	50	mg/kg		----	<50	<50	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	----	----	<100	----
>C16 - C34 Fraction	----	100	mg/kg		----	<100	<100	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	----	----	<100	----
>C34 - C40 Fraction	----	100	mg/kg		----	<100	<100	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	----	<50	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	<50	<50	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	----	<50	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	<50	<50	----	----
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	<10	<10	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	----	<0.2	----
Toluene	108-88-3	0.5	mg/kg		<0.5	----	----	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	----	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	----	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	----	<0.5	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	----	<0.2	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	----	----	<0.5	----
Naphthalene	91-20-3	1	mg/kg		<1	----	----	<1	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	----	----	<0.0002	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	PD11_0.1	PD11_0.5	PD12_0.1	PD12_0.5	----
				Sampling date / time	31-Jan-2023 00:00	31-Jan-2023 00:00	31-Jan-2023 00:00	31-Jan-2023 00:00	----
Compound	CAS Number	LOR	Unit		EM2301412-001	EM2301412-002	EM2301412-005	EM2301412-006	--------
					Result	Result	Result	Result	----
EP231A: Perfluoroalkyl Sulfonic Acids - Continued									
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	----	----	<0.0002	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	----	----	<0.0002	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	----	----	<0.0002	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		<0.0002	----	----	<0.0002	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	----	----	<0.0002	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	----	----	<0.001	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	----	----	<0.0002	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	----	----	<0.0002	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	----	----	<0.0002	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	----	----	<0.0002	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	----	----	<0.0002	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	----	----	<0.0002	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	----	----	<0.0002	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	----	----	<0.0002	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	----	----	<0.0002	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	----	----	<0.0005	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	----	----	<0.0002	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	----	----	<0.0005	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	----	----	<0.0005	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	----	----	<0.0005	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	PD11_0.1	PD11_0.5	PD12_0.1	PD12_0.5	----
				Sampling date / time	31-Jan-2023 00:00	31-Jan-2023 00:00	31-Jan-2023 00:00	31-Jan-2023 00:00	----
Compound	CAS Number	LOR	Unit		EM2301412-001	EM2301412-002	EM2301412-005	EM2301412-006	--------
					Result	Result	Result	Result	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	----	----	<0.0005	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	----	----	<0.0002	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	----	----	<0.0002	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	----	----	<0.0005	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	----	----	<0.0005	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	----	----	<0.0005	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	----	----	<0.0005	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		<0.0002	----	----	<0.0002	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0002	----	----	<0.0002	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		<0.0002	----	----	<0.0002	----
EP236: Dichlorophenoxyacetic Acid (2.4-D) and Tributyltin Oxide (TBTO)									
2.4-D	94-75-7	0.001	mg/kg		----	<0.001	<0.001	----	----
Tributyltin oxide	56-35-9	0.01	mg/kg		----	<0.01	<0.01	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	75.7	78.4	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		107	----	----	100	----
Toluene-D8	2037-26-5	0.5	%		102	----	----	99.6	----
4-Bromofluorobenzene	460-00-4	0.5	%		107	----	----	106	----
EP074S: VOC Surrogates (Ultra-Trace)									
1.2-Dichloroethane-D4	17060-07-0	0.1	%		----	106	83.1	----	----
Toluene-D8	2037-26-5	0.1	%		----	97.4	84.4	----	----
4-Bromofluorobenzene	460-00-4	0.1	%		----	102	91.6	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	PD11_0.1	PD11_0.5	PD12_0.1	PD12_0.5	----
				Sampling date / time	31-Jan-2023 00:00	31-Jan-2023 00:00	31-Jan-2023 00:00	31-Jan-2023 00:00	----
Compound	CAS Number	LOR	Unit		EM2301412-001	EM2301412-002	EM2301412-005	EM2301412-006	--------
					Result	Result	Result	Result	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		88.8	----	----	88.4	----
2-Chlorophenol-D4	93951-73-6	0.5	%		88.4	----	----	89.8	----
2.4.6-Tribromophenol	118-79-6	0.5	%		104	----	----	98.4	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		93.2	----	----	93.3	----
Anthracene-d10	1719-06-8	0.5	%		114	----	----	118	----
4-Terphenyl-d14	1718-51-0	0.5	%		102	----	----	108	----
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%		----	85.7	87.1	----	----
2-Chlorophenol-D4	93951-73-6	0.025	%		----	85.0	86.2	----	----
2.4.6-Tribromophenol	118-79-6	0.025	%		----	78.2	84.0	----	----
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.025	%		----	85.7	85.4	----	----
1.2-Dichlorobenzene-D4	2199-69-1	0.025	%		----	82.8	81.7	----	----
2-Fluorobiphenyl	321-60-8	0.025	%		----	89.6	87.9	----	----
Anthracene-d10	1719-06-8	0.025	%		----	91.2	91.1	----	----
4-Terphenyl-d14	1718-51-0	0.025	%		----	94.8	95.9	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		93.7	----	----	88.2	----
Toluene-D8	2037-26-5	0.2	%		86.3	----	----	84.1	----
4-Bromofluorobenzene	460-00-4	0.2	%		111	----	----	110	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		88.0	----	----	103	----
13C8-PFOA	----	0.0002	%		73.8	----	----	78.5	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC23_310123	QC24_310123	----	----	----
				Sampling date / time	31-Jan-2023 00:00	31-Jan-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EM2301412-009	EM2301412-010	--------	--------	--------
					Result	Result	----	----	----
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		<0.005	----	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	----	----	----
C10 - C14 Fraction	----	50	µg/L		<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	----	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	<20	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		<100	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	----	----	----
Toluene	108-88-3	2	µg/L		<2	<2	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	----	----	----
^ **Total Xylenes**	----	2	µg/L		<2	<2	----	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	<1	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	<5	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC23_310123	QC24_310123	----	----	----
				Sampling date / time	31-Jan-2023 00:00	31-Jan-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EM2301412-009	EM2301412-010	--------	--------	--------
					Result	Result	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	----	----	----
EP231P: PFAS Sums									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**103**	**110**	----	----	----
Toluene-D8	2037-26-5	2	%		**107**	**106**	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		**115**	**114**	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**99.5**	----	----	----	----
13C8-PFOA	----	0.02	%		**98.2**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	122
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	62	122
Toluene-D8	2037-26-5	64	120
4-Bromofluorobenzene	460-00-4	66	124
EP074S: VOC Surrogates (Ultra-Trace)			
1.2-Dichloroethane-D4	17060-07-0	59	119
Toluene-D8	2037-26-5	55	117
4-Bromofluorobenzene	460-00-4	59	123
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	54	125
2-Chlorophenol-D4	93951-73-6	65	123
2.4.6-Tribromophenol	118-79-6	34	122
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	61	125
Anthracene-d10	1719-06-8	62	130
4-Terphenyl-d14	1718-51-0	67	133
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	63	134
2-Chlorophenol-D4	93951-73-6	60	125
2.4.6-Tribromophenol	118-79-6	54	129
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	63	131
1.2-Dichlorobenzene-D4	2199-69-1	61	124
2-Fluorobiphenyl	321-60-8	69	131
Anthracene-d10	1719-06-8	70	133
4-Terphenyl-d14	1718-51-0	59	141
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	51	125
Toluene-D8	2037-26-5	55	125
4-Bromofluorobenzene	460-00-4	56	124
EP231S: PFAS Surrogate			
13C4-PFOS	----	68	136
13C8-PFOA	----	69	133

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP080S: TPH(V)/BTEX Surrogates			

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP080S: TPH(V)/BTEX Surrogates - Continued			
1.2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EM2301412**

Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: LAUREN McGLOIN	Contact	: Peter Ravlic
Address	: 727 COLLINS STREET DOCKLANDS 3008	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: lauren.mcgloin@aecom.com	E-mail	: peter.ravlic@alsglobal.com
Telephone	: ----	Telephone	: +6138549 9645
Facsimile	: ----	Facsimile	: +61-3-8549 9626
Project	: 60692389	Page	: 1 of 3
Order number	: 60692389	Quote number	: ES2021AECOMAU0044 (EN/004/21)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Melbourne Airport		
Sampler	: Ben Epstein		

Dates

Date Samples Received	: 01-Feb-2023 12:00	Issue Date	: 06-Feb-2023
Client Requested Due Date	: 09-Feb-2023	Scheduled Reporting Date	: **09-Feb-2023**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 1	Temperature	: 1.7°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 10 / 6

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- TIME SORTING COMMENCED: 1730 TIME PLACED IN FRIDGE: 1800
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)	SOIL - P-30/3 EPA 1828.2 Table 2 Limited Suite (EM)	SOIL - S-03 15 Metals (NEPM 2013 Suite - incl. Digestion)	SOIL - S-10 TRH/VOC/PAH
EM2301412-001	31-Jan-2023 00:00	PD11_0.1		✓	✓		✓	✓
EM2301412-002	31-Jan-2023 00:00	PD11_0.5		✓		✓		
EM2301412-003	31-Jan-2023 00:00	PD11_1.2	✓					
EM2301412-004	31-Jan-2023 00:00	PD12_0.05	✓					
EM2301412-005	31-Jan-2023 00:00	PD12_0.1		✓		✓		
EM2301412-006	31-Jan-2023 00:00	PD12_0.5		✓	✓		✓	✓
EM2301412-007	31-Jan-2023 00:00	PD12_1.0	✓					
EM2301412-008	31-Jan-2023 00:00	QC21_310123	✓					

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231 PFAS - Short Suite (12 analytes)
EM2301412-009	31-Jan-2023 00:00	QC23_310123	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - W-05 TRH/BTEXN/8 Metals	WATER - W-18 TRH(C6 - C9)/BTEXN
EM2301412-009	31-Jan-2023 00:00	QC23_310123	✓	
EM2301412-010	31-Jan-2023 00:00	QC24_310123		✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	AP_CustomerService.ANZ@aecom.com

LAUREN McGLOIN

- *AU Certificate of Analysis - NATA (COA)	Email	lauren.mcgloin@aecom.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	lauren.mcgloin@aecom.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	lauren.mcgloin@aecom.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	lauren.mcgloin@aecom.com
- Chain of Custody (CoC) (COC)	Email	lauren.mcgloin@aecom.com
- EDI Format - ENMRG (ENMRG)	Email	lauren.mcgloin@aecom.com
- EDI Format - EQUIS_V5_AECOM_SAMPLE (EQUIS_V5_AECOM_SAMPLE)	Email	lauren.mcgloin@aecom.com
- EDI Format - ESDAT (ESDAT)	Email	lauren.mcgloin@aecom.com
- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)	Email	lauren.mcgloin@aecom.com
- Purchase Order Request Letter (PO_Request)	Email	lauren.mcgloin@aecom.com

ANZ

FQM - Generic Chain of Custody Form

Q4AN(EV)-007-FM1

CONSULTANT: AECOM	ADDRESS / OFFICE:	SAMPLER: Stefan Fenger	Destination Laboratory
PROJECT MANAGER (PM): Lauren McGloin	SITE: Melbourne Airport	MOBILE: 0402414251 PHONE:	ALS
PROJECT NUMBER & TASK COI 60692389	P.O. NO.:	EMAIL REPORT TO: stefan.fenger@aecom.com	
RESULTS REQUIRED (Date):	QUOTE NO.:	ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)	

FOR LABORATORY USE ONLY
COOLER SEAL (circle appropriate)
Intact: Yes No N/A
SAMPLE TEMPERATURE
CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
All samples on HOLD
Lauren McGloin to email analysis

Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION		
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	HOLD
	PD11_0.1	S	31/1/23		JAR, PFAS	2	
	PD11_0.5					2	
	PD11_1.2					2	
	PD12_0.05					2	
	PD12_0.1					2	
	PD12_0.5					2	
	PD12_1.0					2	
	QC21					2	
	QC22	W				2	
	QC23	W			2VS, 1AG, 1V, 2P	6	
	QC24	W			1VS	1	

Please forward to Eurofins

Environmental Division
Melbourne
Work Order Reference
EM2301412

Telephone : +61-3-8549 9600

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name: Ben Epstein	Date: 1/2/23	Name:	Date:	Name:	Date: 1/2	Con' Note No:
Of: AECOM	Time:	Of:	Time:	Of:	Time: 12:00	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. **Soil Container Codes:** Jar = Unpreserved glass jar

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ANZ

FQM - Generic Chain of Custody Form

Q4AN(EV)-007-FM1

CONSULTANT: AECOM	ADDRESS / OFFICE:	SAMPLER: Stefan Fenger	Destination Laboratory: Eurofins
PROJECT MANAGER (PM): Lauren McGloin	SITE: Melbourne Airport	MOBILE: 0402414251 PHONE:	
PROJECT NUMBER & TASK COI 60692389	P.O. NO.:	EMAIL REPORT TO: stefan.fenger@aecom.com	
RESULTS REQUIRED (Date):	QUOTE NO.:	ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)	

FOR LABORATORY USE ONLY
COOLER SEAL (circle appropriate)
Intact: Yes No N/A
SAMPLE TEMPERATURE
CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
Sample on HOLD, Lauren McGloin to email analysis

Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION			
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles		HOLD
	QC22	S	31/1/23		JAR, PFAS	2		X

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name: Ben Epstein	Date: 1/2/23	Name:	Date:	Name:	Date:	Con' Note No:
Of: AECOM	Time:	Of:	Time:	Of:	Time:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. **Soil Container Codes:** Jar = Unpreserved glass jar

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1/2 1200

ANZ

FQM - Generic Chain of Custody Form

Q4AN(EV)-007-FM1

CONSULTANT: AECOM	ADDRESS / OFFICE:	SAMPLER: Stefan Fenger	Destination Laboratory
PROJECT MANAGER (PM): Lauren McGloin	SITE: Melbourne Airport	MOBILE: 0402414251 PHONE:	ALS
PROJECT NUMBER & TASK COI 60692389	P.O. NO.:	EMAIL REPORT TO: stefan.fenger@aecom.com	
RESULTS REQUIRED (Date):	QUOTE NO.:	ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)	

FOR LABORATORY USE ONLY
COOLER SEAL (circle appropriate)
Intact: Yes No N/A
SAMPLE TEMPERATURE
CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
All samples on HOLD
Lauren McGloin to email analysis

Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.

ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	HOLD
	PD11_0.1	S	31/1/23		JAR, PFAS	2	
	PD11_0.5					2	
	PD11_1.2					2	
	PD12_0.05					2	
	PD12_0.1					2	
	PD12_0.5					2	
	PD12_1.0					2	
	QC21					2	
	QC22	W				2	Please forward to Curtin
	QC23	W			2VS, 1AG, 1V, 2P	6	
	QC24	W			1VS	1	

SAMPLE INFORMATION (note: S = Soil, W=Water)
CONTAINER INFORMATION

Environmental Division
Melbourne
Work Order Reference
EM2301412

Telephone : +61-3-8549 9600

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name: Ben Epstein	Date: 1/2/23	Name:	Date:	Name:	Date: 1/2	Con' Note No:
Of: AECOM	Time:	Of:	Time:	Of:	Time: 12:00	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. **Soil Container Codes:** Jar = Unpreserved glass jar

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ANZ

FQM - Generic Chain of Custody Form

CONSULTANT: AECOM	ADDRESS / OFFICE:	SAMPLER: Ben Epstein	Destination Laboratory ALS
PROJECT MANAGER (PM): Lauren McGlain	SITE: Melbourne Airport	MOBILE:	PHONE: 0448485323 (Lauren M)
PROJECT NUMBER & TASK CODE: 60692389	P.O. NO.:	EMAIL REPORT TO: lauren.mcglain@aecom.com;	
RESULTS REQUIRED (Date):	QUOTE N Melbourne Airport - dated 7.11.2022	ANALYSIS REQUIRED Including SUITES (note - suite codes must be listed to attract suite prices)	

FOR LABORATORY USE ONLY

COOLER SEAL (circle appropriate)

Intact: Yes NS NA

SAMPLE TEMPERATURE

CHILLED: Yes NS

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

antimony (Sb), arsenic (As), barium (Ba), Beryllium (Be), cadmium (Cd), chromium (Cr), cobalt (Co), copper (Cu), lead (Pb), manganese (Mn), mercury (Hg), nickel (Ni), selenium (Se) and zinc (Zn);

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION		Suite 1 : P-303 EPA 1828.2 Table 2 Limited Suite - excl. EDTA	Suite 2: S-10 TRH, BTEX, PAHs, Heavy metals - S3	Suite 3: EP231X Per-and poly-fluoroalkyl substances (PFAS) and associated substances extended 28 suite including		TPH/BTEXN/ PFAS short list+and metals (8)	TRH C5 – C10 and BTEXN.							Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles													HOLD	
1	PD11_0.1	S	31/01/23		J	2		1	1											
2	PD11_0.5	S	31/01/23		J	2	1													
3	PD11_1.2	S	31/01/23		J	2													X	
4	PD12_0.05	S	31/01/23		J	2													X	
5	PD12_0.1	S	31/01/23		J	2	1													
6	PD12_0.5	S	31/01/23		J	2		1	1											
7	PD12_1.0	S	31/01/23		J	2													X	
8	QC21_310123	S	31/01/23		J	2													X	
9	QC22_310123	S	31/01/23		J	2													X	Please forward to Eurofins
10	QC23_310123	W	31/01/23		2VS, 1AG, 1N, 2P	6						1								
	QC24_310123	W	31/01/23		1VS	1							1							

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name Ben Epstein	Date: 01/02/23	Name:	Date:	Name:	Date:	Con' Note No:
Of: AECOM	Time: PM	Of:	Time:	Of:	Time:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic

V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;

F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. Soil Container Codes: Jar = Unpreserved glass jar

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ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2301773**	Page	: 1 of 39
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: LAUREN McGLOIN	Contact	: Peter Ravlic
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9645
Project	: 60692389	Date Samples Received	: 31-Jan-2023 12:50
Order number	: 60692389	Date Analysis Commenced	: 06-Feb-2023
C-O-C number	: ----	Issue Date	: 09-Feb-2023 23:50
Sampler	: ALICE SHUSTER		
Site	: Melbourne Airport		
Quote number	: EN/004/21		
No. of samples received	: 39		
No. of samples analysed	: 18		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Laboratory Coordinator	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
Sanjay Parekh	LCMS Coordinator	Melbourne Organics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EG048G: EM2301412 #5 Poor matrix spike recovery for Hexavalent Chromium due to sample matrix. Confirmed by re-analysis.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074-UT: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Sum of chlorinated hydrocarbons includes carbon tetrachloride, chlorobenzene, chloroform, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichloroethane, 1,1-dichloroethene, cis-1,2-dichlorothene, trans-1,2-dichlorothene, 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane, 1,2,4-trichlorobenzene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethene, vinyl chloride, hexachlorobutadiene and methylene chloride.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP074-WF: Where reported, Sum of trichlorobenzenes is the sum of the reported concentrations of 1,2,3-Trichlorobenzene and 1,2,4-Trichlorobenzene, and 1,3,5-Trichlorobenzene at or above the LOR.
- EP236: Tributyl tin is reported as Tributyl tin oxide under the conservative assumption that all of the measured Tributyl tin is present as Tributyl tin oxide.
- TIME SORTING COMMENCED: 1250 TIME PLACED IN FRIDGE: 1410
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	QC13_29012023	BH03_0.2	BH03_0.5	BH05_0.5	BH05_2.0
			Sampling date / time	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	EM2301773-001	EM2301773-002	EM2301773-003	EM2301773-008	EM2301773-010
				Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract								
pH (CaCl2)	----	0.1	pH Unit	----	----	8.1	----	8.0
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	----	----	6.4	----	17.9
Moisture Content	----	1.0	%	7.1	6.2	----	22.0	----
EG005(ED093)T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	----	----	<5	----	<5
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5
Barium	7440-39-3	10	mg/kg	50	110	90	380	460
Beryllium	7440-41-7	1	mg/kg	<1	<1	<1	1	1
Boron	7440-42-8	50	mg/kg	<50	<50	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	42	46	----	23	----
Cobalt	7440-48-4	2	mg/kg	12	14	----	13	----
Copper	7440-50-8	5	mg/kg	15	25	16	6	9
Lead	7439-92-1	5	mg/kg	14	8	9	8	8
Manganese	7439-96-5	5	mg/kg	310	367	----	290	----
Molybdenum	7439-98-7	2	mg/kg	----	----	<2	----	<2
Nickel	7440-02-0	2	mg/kg	19	39	27	37	33
Selenium	7782-49-2	5	mg/kg	<5	<5	<5	<5	<5
Silver	7440-22-4	2	mg/kg	----	----	<2	----	<2
Tin	7440-31-5	5	mg/kg	----	----	<5	----	<5
Vanadium	7440-62-2	5	mg/kg	44	41	----	22	----
Zinc	7440-66-6	5	mg/kg	21	48	35	10	16
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	----	----	<0.5	----	<0.5
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	1	mg/kg	----	----	<1	----	<1
EK030: Cyanide Amenable to Chlorination								
Cyanide amenable to chlorination	----	1	mg/kg	----	----	<1	----	<1
EK040T: Fluoride Total								
Fluoride	16984-48-8	40	mg/kg	----	----	250	----	270
EP010: Formaldehyde								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC13_29012023	BH03_0.2	BH03_0.5	BH05_0.5	BH05_2.0
				Sampling date / time	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301773-001	EM2301773-002	EM2301773-003	EM2301773-008	EM2301773-010
					Result	Result	Result	Result	Result
EP010: Formaldehyde - Continued									
Formaldehyde	50-00-0	2	mg/kg		----	----	<2	----	<2
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		----	----	<0.1	----	<0.1
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg		----	----	<0.2	----	<0.2
Toluene	108-88-3	0.5	mg/kg		----	----	<0.5	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		----	----	<0.5	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	----	<0.5	----	<0.5
Styrene	100-42-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Styrene	100-42-5	0.5	mg/kg		----	----	<0.5	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		----	----	<0.5	----	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg		----	----	<0.2	----	<0.2
n-Propylbenzene	103-65-1	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
sec-Butylbenzene	135-98-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
tert-Butylbenzene	98-06-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
n-Butylbenzene	104-51-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
^ Total Xylenes	----	0.5	mg/kg		----	----	<0.5	----	<0.5
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	5	mg/kg		<5	<5	----	<5	----
2-Butanone (MEK)	78-93-3	5	mg/kg		<5	<5	----	<5	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg		<5	<5	----	<5	----
2-Hexanone (MBK)	591-78-6	5	mg/kg		<5	<5	----	<5	----
2-Butanone (MEK)	78-93-3	1	mg/kg		----	----	<1	----	<1
EP074C: Sulfonated Compounds									
Carbon disulfide	75-15-0	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.2-Dichloropropane	78-87-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC13_29012023	BH03_0.2	BH03_0.5	BH05_0.5	BH05_2.0
				Sampling date / time	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301773-001	EM2301773-002	EM2301773-003	EM2301773-008	EM2301773-010
					Result	Result	Result	Result	Result
EP074D: Fumigants - Continued									
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		<5	<5	----	<5	----
Chloromethane	74-87-3	5	mg/kg		<5	<5	----	<5	----
Vinyl chloride	75-01-4	5	mg/kg		<5	<5	----	<5	----
Bromomethane	74-83-9	5	mg/kg		<5	<5	----	<5	----
Chloroethane	75-00-3	5	mg/kg		<5	<5	----	<5	----
Trichlorofluoromethane	75-69-4	5	mg/kg		<5	<5	----	<5	----
1.1-Dichloroethene	75-35-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Iodomethane	74-88-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.1-Dichloroethane	75-34-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.2-Dichloroethane	107-06-2	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Trichloroethene	79-01-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Dibromomethane	74-95-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.3-Dichloropropane	142-28-9	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Tetrachloroethene	127-18-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Pentachloroethane	76-01-7	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Bromobenzene	108-86-1	0.5	mg/kg		<0.5	<0.5	----	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC13_29012023	BH03_0.2	BH03_0.5	BH05_0.5	BH05_2.0
				Sampling date / time	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301773-001	EM2301773-002	EM2301773-003	EM2301773-008	EM2301773-010
					Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds - Continued									
2-Chlorotoluene	95-49-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
4-Chlorotoluene	106-43-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Bromodichloromethane	75-27-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Dibromochloromethane	124-48-1	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Bromoform	75-25-2	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		----	----	<1	----	<1
EP074I: Volatile Halogenated Compounds									
Vinyl chloride	75-01-4	0.02	mg/kg		----	----	<0.02	----	<0.02
1.1-Dichloroethene	75-35-4	0.01	mg/kg		----	----	<0.01	----	<0.01
Methylene chloride	75-09-2	0.4	mg/kg		----	----	<0.4	----	<0.4
trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg		----	----	<0.02	----	<0.02
cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg		----	----	<0.01	----	<0.01
Chloroform	67-66-3	0.02	mg/kg		----	----	<0.02	----	<0.02
1.1.1-Trichloroethane	71-55-6	0.01	mg/kg		----	----	<0.01	----	<0.01
Carbon Tetrachloride	56-23-5	0.01	mg/kg		----	----	<0.01	----	<0.01
1.2-Dichloroethane	107-06-2	0.02	mg/kg		----	----	<0.02	----	<0.02
Trichloroethene	79-01-6	0.02	mg/kg		----	----	<0.02	----	<0.02
1.1.2-Trichloroethane	79-00-5	0.04	mg/kg		----	----	<0.04	----	<0.04
1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg		----	----	<0.01	----	<0.01
Tetrachloroethene	127-18-4	0.02	mg/kg		----	----	<0.02	----	<0.02
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg		----	----	<0.02	----	<0.02
Hexachlorobutadiene	87-68-3	0.02	mg/kg		----	----	<0.02	----	<0.02
Chlorobenzene	108-90-7	0.02	mg/kg		----	----	<0.02	----	<0.02
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg		----	----	<0.02	----	<0.02
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg		----	----	<0.02	----	<0.02
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg		----	----	<0.01	----	<0.01

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC13_29012023	BH03_0.2	BH03_0.5	BH05_0.5	BH05_2.0
				Sampling date / time	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301773-001	EM2301773-002	EM2301773-003	EM2301773-008	EM2301773-010
					Result	Result	Result	Result	Result
EP074I: Volatile Halogenated Compounds - Continued									
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg		----	----	<0.01	----	<0.01
1.3.5-Trichlorobenzene	108-70-3	0.01	mg/kg		----	----	<0.01	----	<0.01
1.2.3-Trichlorobenzene	87-61-6	0.01	mg/kg		----	----	<0.01	----	<0.01
^ Sum of Trichlorobenzenes	----	0.01	mg/kg		----	----	<0.01	----	<0.01
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	----	**0.6**	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	----	**1.2**	----
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	0.03	mg/kg		----	----	<0.03	----	<0.03
2.4-Dichlorophenol	120-83-2	0.03	mg/kg		----	----	<0.03	----	<0.03
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg		----	----	<0.05	----	<0.05
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg		----	----	<0.05	----	<0.05
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	1	mg/kg		----	----	<1	----	<1
2-Methylphenol	95-48-7	1	mg/kg		----	----	<1	----	<1
3- & 4-Methylphenol	1319-77-3	1	mg/kg		----	----	<1	----	<1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	QC13_29012023	BH03_0.2	BH03_0.5	BH05_0.5	BH05_2.0
			Sampling date / time	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	EM2301773-001	EM2301773-002	EM2301773-003	EM2301773-008	EM2301773-010
				Result	Result	Result	Result	Result
EP075A: Phenolic Compounds (Non-halogenated) - Continued								
2-Nitrophenol	88-75-5	1	mg/kg	----	----	<1	----	<1
2.4-Dimethylphenol	105-67-9	1	mg/kg	----	----	<1	----	<1
2.4-Dinitrophenol	51-28-5	5	mg/kg	----	----	<5	----	<5
4-Nitrophenol	100-02-7	5	mg/kg	----	----	<5	----	<5
2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	----	----	<5	----	<5
Dinoseb	88-85-7	5	mg/kg	----	----	<5	----	<5
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg	----	----	<5	----	<5
^ Cresols (Total)	----	1	mg/kg	----	----	<1	----	<1
^ Sum of Phenols (non-halogenated)	----	1	mg/kg	----	----	<1	----	<1
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	----	<0.5	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	----	----	<0.5	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	----	----	<0.5	----	<0.5
Fluorene	86-73-7	0.5	mg/kg	----	----	<0.5	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	----	----	<0.5	----	<0.5
Anthracene	120-12-7	0.5	mg/kg	----	----	<0.5	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	----	----	<0.5	----	<0.5
Pyrene	129-00-0	0.5	mg/kg	----	----	<0.5	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	----	----	<0.5	----	<0.5
Chrysene	218-01-9	0.5	mg/kg	----	----	<0.5	----	<0.5
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1.0	mg/kg	----	----	<1.0	----	<1.0
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	----	<0.5	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	----	<0.5	----	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	----	----	<0.5	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	----	----	<0.5	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	----	<0.5	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	----	----	<0.5	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	----	----	**0.6**	----	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	----	**1.2**	----	**1.2**
EP075C: Phthalate Esters								
bis(2-ethylhexyl) phthalate	117-81-7	0.5	mg/kg	----	----	<0.5	----	<0.5
EP075E: Nitroaromatics and Ketones								
Nitrobenzene	98-95-3	0.5	mg/kg	----	----	<0.5	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC13_29012023	BH03_0.2	BH03_0.5	BH05_0.5	BH05_2.0
				Sampling date / time	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301773-001	EM2301773-002	EM2301773-003	EM2301773-008	EM2301773-010
					Result	Result	Result	Result	Result
EP075E: Nitroaromatics and Ketones - Continued									
2.4-Dinitrotoluene	121-14-2	1.0	mg/kg		----	----	<1.0	----	<1.0
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	0.03	mg/kg		----	----	<0.03	----	<0.03
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg		----	----	<0.03	----	<0.03
beta-BHC	319-85-7	0.03	mg/kg		----	----	<0.03	----	<0.03
gamma-BHC	58-89-9	0.03	mg/kg		----	----	<0.03	----	<0.03
delta-BHC	319-86-8	0.03	mg/kg		----	----	<0.03	----	<0.03
Heptachlor	76-44-8	0.03	mg/kg		----	----	<0.03	----	<0.03
Aldrin	309-00-2	0.03	mg/kg		----	----	<0.03	----	<0.03
Heptachlor epoxide	1024-57-3	0.03	mg/kg		----	----	<0.03	----	<0.03
cis-Chlordane	5103-71-9	0.03	mg/kg		----	----	<0.03	----	<0.03
trans-Chlordane	5103-74-2	0.03	mg/kg		----	----	<0.03	----	<0.03
Endosulfan 1	959-98-8	0.03	mg/kg		----	----	<0.03	----	<0.03
4.4`-DDE	72-55-9	0.05	mg/kg		----	----	<0.05	----	<0.05
Dieldrin	60-57-1	0.03	mg/kg		----	----	<0.03	----	<0.03
Endrin aldehyde	7421-93-4	0.03	mg/kg		----	----	<0.03	----	<0.03
Endrin	72-20-8	0.03	mg/kg		----	----	<0.03	----	<0.03
Endosulfan 2	33213-65-9	0.03	mg/kg		----	----	<0.03	----	<0.03
4.4`-DDD	72-54-8	0.05	mg/kg		----	----	<0.05	----	<0.05
Endosulfan sulfate	1031-07-8	0.03	mg/kg		----	----	<0.03	----	<0.03
4.4`-DDT	50-29-3	0.05	mg/kg		----	----	<0.05	----	<0.05
Methoxychlor	72-43-5	0.03	mg/kg		----	----	<0.03	----	<0.03
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg		----	----	<0.03	----	<0.03
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		----	----	<0.05	----	<0.05
^ Chlordane	57-74-9	0.03	mg/kg		----	----	<0.03	----	<0.03
^ Sum of other organochlorine pesticides	----	0.03	mg/kg		----	----	<0.03	----	<0.03
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	----	<10	----
C6 - C9 Fraction	----	10	mg/kg		----	----	<10	----	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	----	<50	----
C10 - C14 Fraction	----	50	mg/kg		----	----	<50	----	<50
C6 - C10 Fraction	C6_C10	10	mg/kg		----	----	<10	----	<10
C15 - C28 Fraction	----	100	mg/kg		<100	<100	----	<100	----
C15 - C28 Fraction	----	100	mg/kg		----	----	<100	----	<100

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC13_29012023	BH03_0.2	BH03_0.5	BH05_0.5	BH05_2.0
				Sampling date / time	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301773-001	EM2301773-002	EM2301773-003	EM2301773-008	EM2301773-010
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C29 - C36 Fraction	----	100	mg/kg		<100	<100	----	<100	----
C29 - C36 Fraction	----	100	mg/kg		----	----	<100	----	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	----	<50	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	----	<50	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	----	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	----	<10	----
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	----	<50	----
>C10 - C16 Fraction	----	50	mg/kg		----	----	<50	----	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	----	<100	----
>C16 - C34 Fraction	----	100	mg/kg		----	----	<100	----	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	----	<100	----
>C34 - C40 Fraction	----	100	mg/kg		----	----	<100	----	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	----	<50	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	----	<50	----	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	----	<50	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	----	<50	----	<50
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	----	<10	----	<10
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	----	<0.2	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	----	<0.2	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	----	<1	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	----	**0.0014**	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC13_29012023	BH03_0.2	BH03_0.5	BH05_0.5	BH05_2.0
				Sampling date / time	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301773-001	EM2301773-002	EM2301773-003	EM2301773-008	EM2301773-010
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids - Continued									
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	----	**0.0017**	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		**0.0008**	**0.0002**	----	**0.0227**	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		**0.0003**	<0.0002	----	**0.0005**	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0080**	**0.0065**	----	**0.0097**	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0002	----	<0.0002	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	----	<0.001	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	----	**0.0004**	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	----	**0.0048**	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	----	<0.0002	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	----	**0.0002**	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	----	<0.0002	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	----	<0.0002	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	----	<0.0002	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	----	<0.0002	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	----	<0.0002	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	----	<0.0005	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	----	<0.0002	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	----	<0.0005	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	----	<0.0005	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	----	<0.0005	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC13_29012023	BH03_0.2	BH03_0.5	BH05_0.5	BH05_2.0
				Sampling date / time	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301773-001	EM2301773-002	EM2301773-003	EM2301773-008	EM2301773-010
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	----	<0.0005	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	----	<0.0002	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	----	<0.0002	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	----	<0.0005	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	----	<0.0005	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	----	<0.0005	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	----	<0.0005	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0091**	**0.0067**	----	**0.0414**	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0088**	**0.0067**	----	**0.0324**	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0088**	**0.0067**	----	**0.0392**	----
EP236: Dichlorophenoxyacetic Acid (2.4-D) and Tributyltin Oxide (TBTO)									
2.4-D	94-75-7	0.001	mg/kg		----	----	<0.001	----	<0.001
Tributyltin oxide	56-35-9	0.01	mg/kg		----	----	<0.01	----	<0.01
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	**79.6**	----	**71.0**
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		**107**	**96.2**	----	**90.8**	----
Toluene-D8	2037-26-5	0.5	%		**112**	**105**	----	**99.4**	----
4-Bromofluorobenzene	460-00-4	0.5	%		**107**	**101**	----	**96.3**	----
EP074S: VOC Surrogates (Ultra-Trace)									
1.2-Dichloroethane-D4	17060-07-0	0.1	%		----	----	**91.8**	----	**85.3**
Toluene-D8	2037-26-5	0.1	%		----	----	**93.0**	----	**91.3**
4-Bromofluorobenzene	460-00-4	0.1	%		----	----	**104**	----	**99.8**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC13_29012023	BH03_0.2	BH03_0.5	BH05_0.5	BH05_2.0
				Sampling date / time	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301773-001	EM2301773-002	EM2301773-003	EM2301773-008	EM2301773-010
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		80.8	83.2	----	80.7	----
2-Chlorophenol-D4	93951-73-6	0.5	%		82.2	85.4	----	82.5	----
2.4.6-Tribromophenol	118-79-6	0.5	%		81.4	93.2	----	92.0	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		87.7	95.1	----	94.1	----
Anthracene-d10	1719-06-8	0.5	%		109	116	----	111	----
4-Terphenyl-d14	1718-51-0	0.5	%		96.6	96.9	----	97.5	----
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%		----	----	85.1	----	84.8
2-Chlorophenol-D4	93951-73-6	0.025	%		----	----	84.5	----	82.4
2.4.6-Tribromophenol	118-79-6	0.025	%		----	----	82.6	----	81.7
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.025	%		----	----	85.7	----	83.1
1.2-Dichlorobenzene-D4	2199-69-1	0.025	%		----	----	80.8	----	77.3
2-Fluorobiphenyl	321-60-8	0.025	%		----	----	87.6	----	85.3
Anthracene-d10	1719-06-8	0.025	%		----	----	90.7	----	87.9
4-Terphenyl-d14	1718-51-0	0.025	%		----	----	92.3	----	89.3
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		94.0	84.4	----	79.6	----
Toluene-D8	2037-26-5	0.2	%		97.0	90.7	----	85.7	----
4-Bromofluorobenzene	460-00-4	0.2	%		114	107	----	102	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		94.5	95.0	----	102	----
13C8-PFOA	----	0.0002	%		87.0	86.8	----	87.0	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH04_0.5	PD05_0.42	QC16 290123	QC18_300123	TP06_0.5
			Sampling date / time	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	EM2301773-012	EM2301773-014	EM2301773-022	EM2301773-024	EM2301773-027
				Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract								
pH (CaCl2)	----	0.1	pH Unit	----	8.9	----	----	8.1
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	----	4.8	----	----	21.2
Moisture Content	----	1.0	%	5.7	----	<1.0	<1.0	----
EG005(ED093)T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	----	<5	----	----	<5
Arsenic	7440-38-2	5	mg/kg	<5	<5	----	----	<5
Barium	7440-39-3	10	mg/kg	60	70	----	----	150
Beryllium	7440-41-7	1	mg/kg	<1	<1	----	----	1
Boron	7440-42-8	50	mg/kg	<50	<50	----	----	<50
Cadmium	7440-43-9	1	mg/kg	<1	<1	----	----	<1
Chromium	7440-47-3	2	mg/kg	26	----	----	----	----
Cobalt	7440-48-4	2	mg/kg	10	----	----	----	----
Copper	7440-50-8	5	mg/kg	15	15	----	----	9
Lead	7439-92-1	5	mg/kg	8	<5	----	----	9
Manganese	7439-96-5	5	mg/kg	210	----	----	----	----
Molybdenum	7439-98-7	2	mg/kg	----	<2	----	----	<2
Nickel	7440-02-0	2	mg/kg	25	30	----	----	47
Selenium	7782-49-2	5	mg/kg	<5	<5	----	----	<5
Silver	7440-22-4	2	mg/kg	----	<2	----	----	<2
Tin	7440-31-5	5	mg/kg	----	<5	----	----	<5
Vanadium	7440-62-2	5	mg/kg	36	----	----	----	----
Zinc	7440-66-6	5	mg/kg	26	34	----	----	13
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	----	----	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	----	<0.5	----	----	<0.5
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	1	mg/kg	----	<1	----	----	<1
EK030: Cyanide Amenable to Chlorination								
Cyanide amenable to chlorination	----	1	mg/kg	----	<1	----	----	<1
EK040T: Fluoride Total								
Fluoride	16984-48-8	40	mg/kg	----	410	----	----	240
EP010: Formaldehyde								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH04_0.5	PD05_0.42	QC16 290123	QC18_300123	TP06_0.5
			Sampling date / time	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	EM2301773-012	EM2301773-014	EM2301773-022	EM2301773-024	EM2301773-027
				Result	Result	Result	Result	Result
EP010: Formaldehyde - Continued								
Formaldehyde	50-00-0	2	mg/kg	----	<2	----	----	<2
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	<0.1	----	----	<0.1
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	0.2	mg/kg	----	<0.2	----	----	<0.2
Toluene	108-88-3	0.5	mg/kg	----	<0.5	----	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	----	<0.5	----	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	<0.5	----	----	<0.5
Styrene	100-42-5	0.5	mg/kg	<0.5	----	----	----	----
Styrene	100-42-5	0.5	mg/kg	----	<0.5	----	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	----	<0.5	----	----	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	----	----	----	----
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	----	<0.2	----	----	<0.2
n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	----	----	----	----
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	----	----	----	----
sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	----	----	----	----
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	----	----	----	----
tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	----	----	----	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	----	----	----	----
n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	----	----	----	----
^ Total Xylenes	----	0.5	mg/kg	----	<0.5	----	----	<0.5
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	5	mg/kg	<5	----	----	----	----
2-Butanone (MEK)	78-93-3	5	mg/kg	<5	----	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	----	----	----	----
2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	----	----	----	----
2-Butanone (MEK)	78-93-3	1	mg/kg	----	<1	----	----	<1
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	----	----	----	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	----	----	----	----
1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	----	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH04_0.5	PD05_0.42	QC16 290123	QC18_300123	TP06_0.5
				Sampling date / time	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301773-012	EM2301773-014	EM2301773-022	EM2301773-024	EM2301773-027
					Result	Result	Result	Result	Result
EP074D: Fumigants - Continued									
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		<0.5	----	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		<0.5	----	----	----	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		<5	----	----	----	----
Chloromethane	74-87-3	5	mg/kg		<5	----	----	----	----
Vinyl chloride	75-01-4	5	mg/kg		<5	----	----	----	----
Bromomethane	74-83-9	5	mg/kg		<5	----	----	----	----
Chloroethane	75-00-3	5	mg/kg		<5	----	----	----	----
Trichlorofluoromethane	75-69-4	5	mg/kg		<5	----	----	----	----
1.1-Dichloroethene	75-35-4	0.5	mg/kg		<0.5	----	----	----	----
Iodomethane	74-88-4	0.5	mg/kg		<0.5	----	----	----	----
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		<0.5	----	----	----	----
1.1-Dichloroethane	75-34-3	0.5	mg/kg		<0.5	----	----	----	----
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		<0.5	----	----	----	----
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		<0.5	----	----	----	----
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		<0.5	----	----	----	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg		<0.5	----	----	----	----
1.2-Dichloroethane	107-06-2	0.5	mg/kg		<0.5	----	----	----	----
Trichloroethene	79-01-6	0.5	mg/kg		<0.5	----	----	----	----
Dibromomethane	74-95-3	0.5	mg/kg		<0.5	----	----	----	----
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		<0.5	----	----	----	----
1.3-Dichloropropane	142-28-9	0.5	mg/kg		<0.5	----	----	----	----
Tetrachloroethene	127-18-4	0.5	mg/kg		<0.5	----	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		<0.5	----	----	----	----
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		<0.5	----	----	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		<0.5	----	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		<0.5	----	----	----	----
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		<0.5	----	----	----	----
Pentachloroethane	76-01-7	0.5	mg/kg		<0.5	----	----	----	----
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		<0.5	----	----	----	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg		<0.5	----	----	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		<0.5	----	----	----	----
Bromobenzene	108-86-1	0.5	mg/kg		<0.5	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH04_0.5	PD05_0.42	QC16 290123	QC18_300123	TP06_0.5
				Sampling date / time	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301773-012	EM2301773-014	EM2301773-022	EM2301773-024	EM2301773-027
					Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds - Continued									
2-Chlorotoluene	95-49-8	0.5	mg/kg		<0.5	----	----	----	----
4-Chlorotoluene	106-43-4	0.5	mg/kg		<0.5	----	----	----	----
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg		<0.5	----	----	----	----
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg		<0.5	----	----	----	----
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg		<0.5	----	----	----	----
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg		<0.5	----	----	----	----
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		<0.5	----	----	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		<0.5	----	----	----	----
Bromodichloromethane	75-27-4	0.5	mg/kg		<0.5	----	----	----	----
Dibromochloromethane	124-48-1	0.5	mg/kg		<0.5	----	----	----	----
Bromoform	75-25-2	0.5	mg/kg		<0.5	----	----	----	----
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		----	<1	----	----	<1
EP074I: Volatile Halogenated Compounds									
Vinyl chloride	75-01-4	0.02	mg/kg		----	<0.02	----	----	<0.02
1.1-Dichloroethene	75-35-4	0.01	mg/kg		----	<0.01	----	----	<0.01
Methylene chloride	75-09-2	0.4	mg/kg		----	<0.4	----	----	<0.4
trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg		----	<0.02	----	----	<0.02
cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg		----	<0.01	----	----	<0.01
Chloroform	67-66-3	0.02	mg/kg		----	<0.02	----	----	<0.02
1.1.1-Trichloroethane	71-55-6	0.01	mg/kg		----	<0.01	----	----	<0.01
Carbon Tetrachloride	56-23-5	0.01	mg/kg		----	<0.01	----	----	<0.01
1.2-Dichloroethane	107-06-2	0.02	mg/kg		----	<0.02	----	----	<0.02
Trichloroethene	79-01-6	0.02	mg/kg		----	<0.02	----	----	<0.02
1.1.2-Trichloroethane	79-00-5	0.04	mg/kg		----	<0.04	----	----	<0.04
1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg		----	<0.01	----	----	<0.01
Tetrachloroethene	127-18-4	0.02	mg/kg		----	<0.02	----	----	<0.02
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg		----	<0.02	----	----	<0.02
Hexachlorobutadiene	87-68-3	0.02	mg/kg		----	<0.02	----	----	<0.02
Chlorobenzene	108-90-7	0.02	mg/kg		----	<0.02	----	----	<0.02
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg		----	<0.02	----	----	<0.02
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg		----	<0.02	----	----	<0.02
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg		----	<0.01	----	----	<0.01

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH04_0.5	PD05_0.42	QC16 290123	QC18_300123	TP06_0.5
				Sampling date / time	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301773-012	EM2301773-014	EM2301773-022	EM2301773-024	EM2301773-027
					Result	Result	Result	Result	Result
EP074I: Volatile Halogenated Compounds - Continued									
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg		----	<0.01	----	----	<0.01
1.3.5-Trichlorobenzene	108-70-3	0.01	mg/kg		----	<0.01	----	----	<0.01
1.2.3-Trichlorobenzene	87-61-6	0.01	mg/kg		----	<0.01	----	----	<0.01
^ Sum of Trichlorobenzenes	----	0.01	mg/kg		----	<0.01	----	----	<0.01
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	----	----	----	----
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	0.03	mg/kg		----	<0.03	----	----	<0.03
2.4-Dichlorophenol	120-83-2	0.03	mg/kg		----	<0.03	----	----	<0.03
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg		----	<0.05	----	----	<0.05
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg		----	<0.05	----	----	<0.05
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	1	mg/kg		----	<1	----	----	<1
2-Methylphenol	95-48-7	1	mg/kg		----	<1	----	----	<1
3- & 4-Methylphenol	1319-77-3	1	mg/kg		----	<1	----	----	<1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH04_0.5	PD05_0.42	QC16 290123	QC18_300123	TP06_0.5
				Sampling date / time	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301773-012	EM2301773-014	EM2301773-022	EM2301773-024	EM2301773-027
					Result	Result	Result	Result	Result
EP075A: Phenolic Compounds (Non-halogenated) - Continued									
2-Nitrophenol	88-75-5	1	mg/kg		----	<1	----	----	<1
2.4-Dimethylphenol	105-67-9	1	mg/kg		----	<1	----	----	<1
2.4-Dinitrophenol	51-28-5	5	mg/kg		----	<5	----	----	<5
4-Nitrophenol	100-02-7	5	mg/kg		----	<5	----	----	<5
2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg		----	<5	----	----	<5
Dinoseb	88-85-7	5	mg/kg		----	<5	----	----	<5
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg		----	<5	----	----	<5
^ Cresols (Total)	----	1	mg/kg		----	<1	----	----	<1
^ Sum of Phenols (non-halogenated)	----	1	mg/kg		----	<1	----	----	<1
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	<0.5	----	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		----	<0.5	----	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		----	<0.5	----	----	<0.5
Fluorene	86-73-7	0.5	mg/kg		----	<0.5	----	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		----	<0.5	----	----	<0.5
Anthracene	120-12-7	0.5	mg/kg		----	<0.5	----	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		----	<0.5	----	----	<0.5
Pyrene	129-00-0	0.5	mg/kg		----	<0.5	----	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	<0.5	----	----	<0.5
Chrysene	218-01-9	0.5	mg/kg		----	<0.5	----	----	<0.5
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1.0	mg/kg		----	<1.0	----	----	<1.0
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	<0.5	----	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	<0.5	----	----	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	<0.5	----	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	<0.5	----	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	<0.5	----	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	<0.5	----	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	**0.6**	----	----	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	**1.2**	----	----	**1.2**
EP075C: Phthalate Esters									
bis(2-ethylhexyl) phthalate	117-81-7	0.5	mg/kg		----	<0.5	----	----	<0.5
EP075E: Nitroaromatics and Ketones									
Nitrobenzene	98-95-3	0.5	mg/kg		----	<0.5	----	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH04_0.5	PD05_0.42	QC16 290123	QC18_300123	TP06_0.5
			Sampling date / time	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	EM2301773-012	EM2301773-014	EM2301773-022	EM2301773-024	EM2301773-027
				Result	Result	Result	Result	Result
EP075E: Nitroaromatics and Ketones - Continued								
2.4-Dinitrotoluene	121-14-2	1.0	mg/kg	----	<1.0	----	----	<1.0
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	0.03	mg/kg	----	<0.03	----	----	<0.03
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	----	<0.03	----	----	<0.03
beta-BHC	319-85-7	0.03	mg/kg	----	<0.03	----	----	<0.03
gamma-BHC	58-89-9	0.03	mg/kg	----	<0.03	----	----	<0.03
delta-BHC	319-86-8	0.03	mg/kg	----	<0.03	----	----	<0.03
Heptachlor	76-44-8	0.03	mg/kg	----	<0.03	----	----	<0.03
Aldrin	309-00-2	0.03	mg/kg	----	<0.03	----	----	<0.03
Heptachlor epoxide	1024-57-3	0.03	mg/kg	----	<0.03	----	----	<0.03
cis-Chlordane	5103-71-9	0.03	mg/kg	----	<0.03	----	----	<0.03
trans-Chlordane	5103-74-2	0.03	mg/kg	----	<0.03	----	----	<0.03
Endosulfan 1	959-98-8	0.03	mg/kg	----	<0.03	----	----	<0.03
4.4`-DDE	72-55-9	0.05	mg/kg	----	<0.05	----	----	<0.05
Dieldrin	60-57-1	0.03	mg/kg	----	<0.03	----	----	<0.03
Endrin aldehyde	7421-93-4	0.03	mg/kg	----	<0.03	----	----	<0.03
Endrin	72-20-8	0.03	mg/kg	----	<0.03	----	----	<0.03
Endosulfan 2	33213-65-9	0.03	mg/kg	----	<0.03	----	----	<0.03
4.4`-DDD	72-54-8	0.05	mg/kg	----	<0.05	----	----	<0.05
Endosulfan sulfate	1031-07-8	0.03	mg/kg	----	<0.03	----	----	<0.03
4.4`-DDT	50-29-3	0.05	mg/kg	----	<0.05	----	----	<0.05
Methoxychlor	72-43-5	0.03	mg/kg	----	<0.03	----	----	<0.03
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg	----	<0.03	----	----	<0.03
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	----	<0.05	----	----	<0.05
^ Chlordane	57-74-9	0.03	mg/kg	----	<0.03	----	----	<0.03
^ Sum of other organochlorine pesticides	----	0.03	mg/kg	----	<0.03	----	----	<0.03
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	<10	<10	----
C6 - C9 Fraction	----	10	mg/kg	----	<10	----	----	<10
C10 - C14 Fraction	----	50	mg/kg	<50	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg	----	<50	----	----	<50
C6 - C10 Fraction	C6_C10	10	mg/kg	----	<10	----	----	<10
C15 - C28 Fraction	----	100	mg/kg	<100	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg	----	<100	----	----	<100

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH04_0.5	PD05_0.42	QC16 290123	QC18_300123	TP06_0.5
				Sampling date / time	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301773-012	EM2301773-014	EM2301773-022	EM2301773-024	EM2301773-027
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C29 - C36 Fraction	----	100	mg/kg		<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg		----	<100	----	----	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	<50	----	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	<10	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	<10	<10	----
>C10 - C16 Fraction	----	50	mg/kg		<50	----	----	----	----
>C10 - C16 Fraction	----	50	mg/kg		----	<50	----	----	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg		----	<100	----	----	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg		----	<100	----	----	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	<50	----	----	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	----	----	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	<50	----	----	<50
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	<10	----	----	<10
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	<0.2	<0.2	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Naphthalene	91-20-3	1	mg/kg		<1	----	<1	<1	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH04_0.5	PD05_0.42	QC16 290123	QC18_300123	TP06_0.5
				Sampling date / time	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301773-012	EM2301773-014	EM2301773-022	EM2301773-024	EM2301773-027
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids - Continued									
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		**0.0003**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0022**	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH04_0.5	PD05_0.42	QC16 290123	QC18_300123	TP06_0.5
				Sampling date / time	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301773-012	EM2301773-014	EM2301773-022	EM2301773-024	EM2301773-027
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0025**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0025**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0025**	----	----	----	----
EP236: Dichlorophenoxyacetic Acid (2.4-D) and Tributyltin Oxide (TBTO)									
2.4-D	94-75-7	0.001	mg/kg		----	<0.001	----	----	<0.001
Tributyltin oxide	56-35-9	0.01	mg/kg		----	<0.01	----	----	<0.01
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	**81.2**	----	----	**75.7**
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		**99.9**	----	----	----	----
Toluene-D8	2037-26-5	0.5	%		**108**	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.5	%		**108**	----	----	----	----
EP074S: VOC Surrogates (Ultra-Trace)									
1.2-Dichloroethane-D4	17060-07-0	0.1	%		----	**97.9**	----	----	**90.5**
Toluene-D8	2037-26-5	0.1	%		----	**98.4**	----	----	**95.5**
4-Bromofluorobenzene	460-00-4	0.1	%		----	**109**	----	----	**104**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH04_0.5	PD05_0.42	QC16 290123	QC18_300123	TP06_0.5
				Sampling date / time	29-Jan-2023 00:00	29-Jan-2023 00:00	29-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301773-012	EM2301773-014	EM2301773-022	EM2301773-024	EM2301773-027
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		89.0	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		92.0	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		99.5	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		102	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%		106	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		102	----	----	----	----
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%		----	91.8	----	----	84.4
2-Chlorophenol-D4	93951-73-6	0.025	%		----	89.6	----	----	84.2
2.4.6-Tribromophenol	118-79-6	0.025	%		----	87.8	----	----	82.6
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.025	%		----	86.6	----	----	84.1
1.2-Dichlorobenzene-D4	2199-69-1	0.025	%		----	85.2	----	----	80.1
2-Fluorobiphenyl	321-60-8	0.025	%		----	92.9	----	----	86.1
Anthracene-d10	1719-06-8	0.025	%		----	96.9	----	----	89.5
4-Terphenyl-d14	1718-51-0	0.025	%		----	97.9	----	----	90.2
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		87.6	----	92.0	94.9	----
Toluene-D8	2037-26-5	0.2	%		93.0	----	98.2	89.1	----
4-Bromofluorobenzene	460-00-4	0.2	%		115	----	111	120	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		104	----	----	----	----
13C8-PFOA	----	0.0002	%		84.0	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP06_1.0	TP05_0.2	TP05_1.0	TP04_0.5	TP04_1.0
			Sampling date / time	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	EM2301773-028	EM2301773-030	EM2301773-032	EM2301773-035	EM2301773-036
				Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract								
pH (CaCl2)	----	0.1	pH Unit	----	7.5	----	7.8	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	----	7.4	----	13.7	----
Moisture Content	----	1.0	%	23.5	----	29.4	----	24.1
EG005(ED093)T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	----	<5	----	<5	----
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5
Barium	7440-39-3	10	mg/kg	280	90	40	50	330
Beryllium	7440-41-7	1	mg/kg	<1	<1	1	<1	1
Boron	7440-42-8	50	mg/kg	<50	<50	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	18	----	45	----	36
Cobalt	7440-48-4	2	mg/kg	15	----	22	----	16
Copper	7440-50-8	5	mg/kg	<5	23	12	25	8
Lead	7439-92-1	5	mg/kg	8	8	12	23	10
Manganese	7439-96-5	5	mg/kg	243	----	132	----	417
Molybdenum	7439-98-7	2	mg/kg	----	<2	----	<2	----
Nickel	7440-02-0	2	mg/kg	36	34	56	22	53
Selenium	7782-49-2	5	mg/kg	<5	<5	<5	<5	<5
Silver	7440-22-4	2	mg/kg	----	<2	----	<2	----
Tin	7440-31-5	5	mg/kg	----	<5	----	6	----
Vanadium	7440-62-2	5	mg/kg	23	----	59	----	47
Zinc	7440-66-6	5	mg/kg	7	37	16	49	16
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	----	<0.5	----	<0.5	----
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	1	mg/kg	----	<1	----	<1	----
EK030: Cyanide Amenable to Chlorination								
Cyanide amenable to chlorination	----	1	mg/kg	----	<1	----	<1	----
EK040T: Fluoride Total								
Fluoride	16984-48-8	40	mg/kg	----	170	----	110	----
EP010: Formaldehyde								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP06_1.0	TP05_0.2	TP05_1.0	TP04_0.5	TP04_1.0
			Sampling date / time	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	EM2301773-028	EM2301773-030	EM2301773-032	EM2301773-035	EM2301773-036
				Result	Result	Result	Result	Result
EP010: Formaldehyde - Continued								
Formaldehyde	50-00-0	2	mg/kg	----	<2	----	<2	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	<0.1	----	<0.1	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	0.2	mg/kg	----	<0.2	----	<0.2	----
Toluene	108-88-3	0.5	mg/kg	----	<0.5	----	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg	----	<0.5	----	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	<0.5	----	<0.5	----
Styrene	100-42-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Styrene	100-42-5	0.5	mg/kg	----	<0.5	----	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg	----	<0.5	----	<0.5	----
Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	----	<0.2	----	<0.2	----
n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
^ Total Xylenes	----	0.5	mg/kg	----	<0.5	----	<0.5	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	5	mg/kg	<5	----	<5	----	<5
2-Butanone (MEK)	78-93-3	5	mg/kg	<5	----	<5	----	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	----	<5	----	<5
2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	----	<5	----	<5
2-Butanone (MEK)	78-93-3	1	mg/kg	----	<1	----	<1	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP06_1.0	TP05_0.2	TP05_1.0	TP04_0.5	TP04_1.0
			Sampling date / time	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	EM2301773-028	EM2301773-030	EM2301773-032	EM2301773-035	EM2301773-036
				Result	Result	Result	Result	Result
EP074D: Fumigants - Continued								
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	----	<5	----	<5
Chloromethane	74-87-3	5	mg/kg	<5	----	<5	----	<5
Vinyl chloride	75-01-4	5	mg/kg	<5	----	<5	----	<5
Bromomethane	74-83-9	5	mg/kg	<5	----	<5	----	<5
Chloroethane	75-00-3	5	mg/kg	<5	----	<5	----	<5
Trichlorofluoromethane	75-69-4	5	mg/kg	<5	----	<5	----	<5
1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Iodomethane	74-88-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Trichloroethene	79-01-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Dibromomethane	74-95-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Bromobenzene	108-86-1	0.5	mg/kg	<0.5	----	<0.5	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP06_1.0	TP05_0.2	TP05_1.0	TP04_0.5	TP04_1.0
			Sampling date / time	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	EM2301773-028	EM2301773-030	EM2301773-032	EM2301773-035	EM2301773-036
				Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds - Continued								
2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
EP074G: Trihalomethanes								
Chloroform	67-66-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Bromoform	75-25-2	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
EP074H: Naphthalene								
Naphthalene	91-20-3	1	mg/kg	----	<1	----	<1	----
EP074I: Volatile Halogenated Compounds								
Vinyl chloride	75-01-4	0.02	mg/kg	----	<0.02	----	<0.02	----
1.1-Dichloroethene	75-35-4	0.01	mg/kg	----	<0.01	----	<0.01	----
Methylene chloride	75-09-2	0.4	mg/kg	----	<0.4	----	<0.4	----
trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	----	<0.02	----	<0.02	----
cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	----	<0.01	----	<0.01	----
Chloroform	67-66-3	0.02	mg/kg	----	<0.02	----	<0.02	----
1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	----	<0.01	----	<0.01	----
Carbon Tetrachloride	56-23-5	0.01	mg/kg	----	<0.01	----	<0.01	----
1.2-Dichloroethane	107-06-2	0.02	mg/kg	----	<0.02	----	<0.02	----
Trichloroethene	79-01-6	0.02	mg/kg	----	<0.02	----	<0.02	----
1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	----	<0.04	----	<0.04	----
1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	----	<0.01	----	<0.01	----
Tetrachloroethene	127-18-4	0.02	mg/kg	----	<0.02	----	<0.02	----
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	----	<0.02	----	<0.02	----
Hexachlorobutadiene	87-68-3	0.02	mg/kg	----	<0.02	----	<0.02	----
Chlorobenzene	108-90-7	0.02	mg/kg	----	<0.02	----	<0.02	----
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	----	<0.02	----	<0.02	----
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	----	<0.02	----	<0.02	----
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	----	<0.01	----	<0.01	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP06_1.0	TP05_0.2	TP05_1.0	TP04_0.5	TP04_1.0
				Sampling date / time	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301773-028	EM2301773-030	EM2301773-032	EM2301773-035	EM2301773-036
					Result	Result	Result	Result	Result
EP074I: Volatile Halogenated Compounds - Continued									
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg		----	<0.01	----	<0.01	----
1.3.5-Trichlorobenzene	108-70-3	0.01	mg/kg		----	<0.01	----	<0.01	----
1.2.3-Trichlorobenzene	87-61-6	0.01	mg/kg		----	<0.01	----	<0.01	----
^ Sum of Trichlorobenzenes	----	0.01	mg/kg		----	<0.01	----	<0.01	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	----	**0.6**	----	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	----	**1.2**	----	**1.2**
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	0.03	mg/kg		----	<0.03	----	<0.03	----
2.4-Dichlorophenol	120-83-2	0.03	mg/kg		----	<0.03	----	<0.03	----
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg		----	<0.05	----	<0.05	----
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg		----	<0.05	----	<0.05	----
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	1	mg/kg		----	<1	----	<1	----
2-Methylphenol	95-48-7	1	mg/kg		----	<1	----	<1	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		----	<1	----	<1	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP06_1.0	TP05_0.2	TP05_1.0	TP04_0.5	TP04_1.0
			Sampling date / time	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	EM2301773-028	EM2301773-030	EM2301773-032	EM2301773-035	EM2301773-036
				Result	Result	Result	Result	Result
EP075A: Phenolic Compounds (Non-halogenated) - Continued								
2-Nitrophenol	88-75-5	1	mg/kg	----	<1	----	<1	----
2.4-Dimethylphenol	105-67-9	1	mg/kg	----	<1	----	<1	----
2.4-Dinitrophenol	51-28-5	5	mg/kg	----	<5	----	<5	----
4-Nitrophenol	100-02-7	5	mg/kg	----	<5	----	<5	----
2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	----	<5	----	<5	----
Dinoseb	88-85-7	5	mg/kg	----	<5	----	<5	----
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg	----	<5	----	<5	----
^ Cresols (Total)	----	1	mg/kg	----	<1	----	<1	----
^ Sum of Phenols (non-halogenated)	----	1	mg/kg	----	<1	----	<1	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	<0.5	----	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg	----	<0.5	----	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg	----	<0.5	----	<0.5	----
Fluorene	86-73-7	0.5	mg/kg	----	<0.5	----	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg	----	<0.5	----	<0.5	----
Anthracene	120-12-7	0.5	mg/kg	----	<0.5	----	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg	----	<0.5	----	<0.5	----
Pyrene	129-00-0	0.5	mg/kg	----	<0.5	----	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	----	<0.5	----	<0.5	----
Chrysene	218-01-9	0.5	mg/kg	----	<0.5	----	<0.5	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1.0	mg/kg	----	<1.0	----	<1.0	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	<0.5	----	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	<0.5	----	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	----	<0.5	----	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	----	<0.5	----	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	<0.5	----	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	----	<0.5	----	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	----	**0.6**	----	**0.6**	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	**1.2**	----	**1.2**	----
EP075C: Phthalate Esters								
bis(2-ethylhexyl) phthalate	117-81-7	0.5	mg/kg	----	<0.5	----	<0.5	----
EP075E: Nitroaromatics and Ketones								
Nitrobenzene	98-95-3	0.5	mg/kg	----	<0.5	----	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP06_1.0	TP05_0.2	TP05_1.0	TP04_0.5	TP04_1.0
			Sampling date / time	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	EM2301773-028	EM2301773-030	EM2301773-032	EM2301773-035	EM2301773-036
				Result	Result	Result	Result	Result
EP075E: Nitroaromatics and Ketones - Continued								
2.4-Dinitrotoluene	121-14-2	1.0	mg/kg	----	<1.0	----	<1.0	----
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	0.03	mg/kg	----	<0.03	----	<0.03	----
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	----	<0.03	----	<0.03	----
beta-BHC	319-85-7	0.03	mg/kg	----	<0.03	----	<0.03	----
gamma-BHC	58-89-9	0.03	mg/kg	----	<0.03	----	<0.03	----
delta-BHC	319-86-8	0.03	mg/kg	----	<0.03	----	<0.03	----
Heptachlor	76-44-8	0.03	mg/kg	----	<0.03	----	<0.03	----
Aldrin	309-00-2	0.03	mg/kg	----	<0.03	----	<0.03	----
Heptachlor epoxide	1024-57-3	0.03	mg/kg	----	<0.03	----	<0.03	----
cis-Chlordane	5103-71-9	0.03	mg/kg	----	<0.03	----	<0.03	----
trans-Chlordane	5103-74-2	0.03	mg/kg	----	<0.03	----	<0.03	----
Endosulfan 1	959-98-8	0.03	mg/kg	----	<0.03	----	<0.03	----
4.4`-DDE	72-55-9	0.05	mg/kg	----	<0.05	----	<0.05	----
Dieldrin	60-57-1	0.03	mg/kg	----	<0.03	----	<0.03	----
Endrin aldehyde	7421-93-4	0.03	mg/kg	----	<0.03	----	<0.03	----
Endrin	72-20-8	0.03	mg/kg	----	<0.03	----	<0.03	----
Endosulfan 2	33213-65-9	0.03	mg/kg	----	<0.03	----	<0.03	----
4.4`-DDD	72-54-8	0.05	mg/kg	----	<0.05	----	<0.05	----
Endosulfan sulfate	1031-07-8	0.03	mg/kg	----	<0.03	----	<0.03	----
4.4`-DDT	50-29-3	0.05	mg/kg	----	<0.05	----	<0.05	----
Methoxychlor	72-43-5	0.03	mg/kg	----	<0.03	----	<0.03	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg	----	<0.03	----	<0.03	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	----	<0.05	----	<0.05	----
^ Chlordane	57-74-9	0.03	mg/kg	----	<0.03	----	<0.03	----
^ Sum of other organochlorine pesticides	----	0.03	mg/kg	----	<0.03	----	<0.03	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	<10	----	<10
C6 - C9 Fraction	----	10	mg/kg	----	<10	----	<10	----
C10 - C14 Fraction	----	50	mg/kg	<50	----	<50	----	<50
C10 - C14 Fraction	----	50	mg/kg	----	<50	----	<50	----
C6 - C10 Fraction	C6_C10	10	mg/kg	----	<10	----	<10	----
C15 - C28 Fraction	----	100	mg/kg	<100	----	<100	----	<100
C15 - C28 Fraction	----	100	mg/kg	----	<100	----	<100	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP06_1.0	TP05_0.2	TP05_1.0	TP04_0.5	TP04_1.0
				Sampling date / time	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301773-028	EM2301773-030	EM2301773-032	EM2301773-035	EM2301773-036
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C29 - C36 Fraction	----	100	mg/kg		<100	----	<100	----	<100
C29 - C36 Fraction	----	100	mg/kg		----	<100	----	<100	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	<50	----	<50
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	<50	----	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	<10	----	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	<10	----	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	----	<50	----	<50
>C10 - C16 Fraction	----	50	mg/kg		----	<50	----	<50	----
>C16 - C34 Fraction	----	100	mg/kg		<100	----	<100	----	<100
>C16 - C34 Fraction	----	100	mg/kg		----	<100	----	<100	----
>C34 - C40 Fraction	----	100	mg/kg		<100	----	<100	----	<100
>C34 - C40 Fraction	----	100	mg/kg		----	<100	----	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	<50	----	<50
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	<50	----	<50	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	<50	----	<50
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	<50	----	<50	----
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	<10	----	<10	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	<0.2	----	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	<0.2	----	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	----	<1	----	<1
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		**0.0005**	----	<0.0002	----	**0.0081**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP06_1.0	TP05_0.2	TP05_1.0	TP04_0.5	TP04_1.0
				Sampling date / time	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		EM2301773-028	EM2301773-030	EM2301773-032	EM2301773-035	EM2301773-036
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids - Continued									
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		**0.0008**	----	<0.0002	----	**0.0146**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		**0.0021**	----	<0.0002	----	**0.106**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	----	<0.0002	----	**0.0012**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0003**	----	<0.0002	----	**0.0181**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	----	<0.0002	----	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	----	<0.001	----	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	----	<0.0002	----	**0.0017**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	----	<0.0002	----	**0.0221**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	----	<0.0002	----	**0.0027**
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	----	<0.0002	----	**0.0023**
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	----	<0.0002	----	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	----	<0.0002	----	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	----	<0.0002	----	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	----	<0.0002	----	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	----	<0.0002	----	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	----	<0.0005	----	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	----	<0.0002	----	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	----	<0.0005	----	<0.0005
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	----	<0.0005	----	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	----	<0.0005	----	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP06_1.0	TP05_0.2	TP05_1.0	TP04_0.5	TP04_1.0
			Sampling date / time	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	EM2301773-028	EM2301773-030	EM2301773-032	EM2301773-035	EM2301773-036
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	----	<0.0005	----	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	----	<0.0002	----	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	----	<0.0002	----	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	----	<0.0005	----	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	----	<0.0005	----	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	----	<0.0005	----	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	----	<0.0005	----	<0.0005
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	**0.0037**	----	<0.0002	----	**0.177**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	**0.0024**	----	<0.0002	----	**0.124**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	**0.0029**	----	<0.0002	----	**0.161**
EP236: Dichlorophenoxyacetic Acid (2.4-D) and Tributyltin Oxide (TBTO)								
2.4-D	94-75-7	0.001	mg/kg	----	<0.001	----	<0.001	----
Tributyltin oxide	56-35-9	0.01	mg/kg	----	<0.01	----	<0.01	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	----	**75.7**	----	**72.5**	----
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.5	%	**99.7**	----	**102**	----	**96.1**
Toluene-D8	2037-26-5	0.5	%	**94.7**	----	**96.0**	----	**88.5**
4-Bromofluorobenzene	460-00-4	0.5	%	**104**	----	**104**	----	**93.6**
EP074S: VOC Surrogates (Ultra-Trace)								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	----	**99.0**	----	**91.6**	----
Toluene-D8	2037-26-5	0.1	%	----	**99.6**	----	**96.5**	----
4-Bromofluorobenzene	460-00-4	0.1	%	----	**108**	----	**103**	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP06_1.0	TP05_0.2	TP05_1.0	TP04_0.5	TP04_1.0
			Sampling date / time	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00	30-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	EM2301773-028	EM2301773-030	EM2301773-032	EM2301773-035	EM2301773-036
				Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	83.9	----	86.5	----	83.1
2-Chlorophenol-D4	93951-73-6	0.5	%	86.0	----	90.4	----	85.0
2.4.6-Tribromophenol	118-79-6	0.5	%	102	----	88.8	----	96.5
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	94.5	----	99.2	----	96.1
Anthracene-d10	1719-06-8	0.5	%	105	----	106	----	110
4-Terphenyl-d14	1718-51-0	0.5	%	100	----	102	----	97.5
EP075S: Acid Extractable Surrogates (Waste Classification)								
Phenol-d6	13127-88-3	0.025	%	----	82.5	----	90.4	----
2-Chlorophenol-D4	93951-73-6	0.025	%	----	82.7	----	87.6	----
2.4.6-Tribromophenol	118-79-6	0.025	%	----	81.7	----	89.0	----
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)								
Nitrobenzene-D5	4165-60-0	0.025	%	----	83.6	----	88.3	----
1.2-Dichlorobenzene-D4	2199-69-1	0.025	%	----	79.6	----	80.9	----
2-Fluorobiphenyl	321-60-8	0.025	%	----	86.0	----	91.0	----
Anthracene-d10	1719-06-8	0.025	%	----	88.4	----	94.3	----
4-Terphenyl-d14	1718-51-0	0.025	%	----	90.8	----	95.4	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	87.4	----	89.0	----	84.3
Toluene-D8	2037-26-5	0.2	%	81.7	----	82.7	----	76.3
4-Bromofluorobenzene	460-00-4	0.2	%	111	----	111	----	99.6
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	96.8	----	90.0	----	81.0
13C8-PFOA	----	0.0002	%	96.5	----	84.8	----	93.8

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QC15_290123	QC15_290123 Duplicate of 13	QC17_300123	----	----
			Sampling date / time	29-Jan-2023 00:00	29-Jan-2023 00:00	30-Jan-2023 00:00	----	----
Compound	CAS Number	LOR	Unit	EM2301773-013	EM2301773-021	EM2301773-023	--------	--------
				Result	Result	Result	----	----
EG020F: Dissolved Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	<0.0001	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	<0.001	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	----	<0.001	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	----	<0.001	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	<0.001	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	----	<0.005	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	<0.0001	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	----	<20	----	----
C10 - C14 Fraction	----	50	µg/L	<50	----	<50	----	----
C15 - C28 Fraction	----	100	µg/L	<100	----	<100	----	----
C29 - C36 Fraction	----	50	µg/L	<50	----	<50	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L	<50	----	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	----	<20	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L	<20	----	<20	----	----
>C10 - C16 Fraction	----	100	µg/L	<100	----	<100	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	----	<100	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	----	<100	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L	<100	----	<100	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L	<100	----	<100	----	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	----	<1	----	----
Toluene	108-88-3	2	µg/L	<2	----	<2	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	----	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	----	<2	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	----	<2	----	----
^ **Total Xylenes**	----	2	µg/L	<2	----	<2	----	----
^ **Sum of BTEX**	----	1	µg/L	<1	----	<1	----	----
Naphthalene	91-20-3	5	µg/L	<5	----	<5	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC15_290123	QC15_290123 Duplicate of 13	QC17_300123	----	----
				Sampling date / time	29-Jan-2023 00:00	29-Jan-2023 00:00	30-Jan-2023 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2301773-013	EM2301773-021	EM2301773-023	--------	--------
					Result	Result	Result	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	----	<0.02	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	----	<0.01	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	----	<0.01	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	----	<0.1	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	----	<0.02	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	----	<0.02	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	----	<0.02	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	----	<0.01	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	<0.05	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	<0.05	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	<0.05	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	<0.05	----	----
EP231P: PFAS Sums									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	----	<0.01	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	----	<0.01	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**108**	**112**	**109**	----	----
Toluene-D8	2037-26-5	2	%		**95.2**	**107**	**106**	----	----
4-Bromofluorobenzene	460-00-4	2	%		**106**	**114**	**114**	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**94.1**	----	**102**	----	----
13C8-PFOA	----	0.02	%		**101**	----	**97.1**	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	122
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	62	122
Toluene-D8	2037-26-5	64	120
4-Bromofluorobenzene	460-00-4	66	124
EP074S: VOC Surrogates (Ultra-Trace)			
1.2-Dichloroethane-D4	17060-07-0	59	119
Toluene-D8	2037-26-5	55	117
4-Bromofluorobenzene	460-00-4	59	123
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	54	125
2-Chlorophenol-D4	93951-73-6	65	123
2.4.6-Tribromophenol	118-79-6	34	122
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	61	125
Anthracene-d10	1719-06-8	62	130
4-Terphenyl-d14	1718-51-0	67	133
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	63	134
2-Chlorophenol-D4	93951-73-6	60	125
2.4.6-Tribromophenol	118-79-6	54	129
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	63	131
1.2-Dichlorobenzene-D4	2199-69-1	61	124
2-Fluorobiphenyl	321-60-8	69	131
Anthracene-d10	1719-06-8	70	133
4-Terphenyl-d14	1718-51-0	59	141
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	51	125
Toluene-D8	2037-26-5	55	125
4-Bromofluorobenzene	460-00-4	56	124
EP231S: PFAS Surrogate			
13C4-PFOS	----	68	136
13C8-PFOA	----	69	133

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP080S: TPH(V)/BTEX Surrogates			

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP080S: TPH(V)/BTEX Surrogates - Continued			
1.2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EM2301773**

Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: LAUREN McGLOIN	Contact	: Peter Ravlic
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: lauren.mcgloin@aecom.com	E-mail	: peter.ravlic@alsglobal.com
Telephone	: ----	Telephone	: +6138549 9645
Facsimile	: ----	Facsimile	: +61-3-8549 9626
Project	: 60692389	Page	: 1 of 4
Order number	: 60692389	Quote number	: ES2021AECOMAU0044 (EN/004/21)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Melbourne Airport		
Sampler	: ALICE SHUSTER		

Dates

Date Samples Received	: 31-Jan-2023 12:50	Issue Date	: 06-Feb-2023
Client Requested Due Date	: 09-Feb-2023	Scheduled Reporting Date	: **09-Feb-2023**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 2.1°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 39 / 18

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- TIME SORTING COMMENCED: 1250 TIME PLACED IN FRIDGE: 1410
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

Method Sample ID	Sample Container Received	Preferred Sample Container for Analysis
Total Mercury by FIMS : EG035T		
QC15_290123	- Clear Plastic Bottle - Nitric Acid; Filtered	- Clear Plastic Bottle - Nitric Acid; Unfiltered
QC15_290123 Duplicate of 13	- Clear Plastic Bottle - Nitric Acid; Filtered	- Clear Plastic Bottle - Nitric Acid; Unfiltered
QC17_300123	- Clear Plastic Bottle - Nitric Acid; Filtered	- Clear Plastic Bottle - Nitric Acid; Unfiltered
Total Metals by ICP-MS - Suite A : EG020A-T		
QC15_290123	- Clear Plastic Bottle - Nitric Acid; Filtered	- Clear Plastic Bottle - Nitric Acid; Unfiltered
QC15_290123 Duplicate of 13	- Clear Plastic Bottle - Nitric Acid; Filtered	- Clear Plastic Bottle - Nitric Acid; Unfiltered
QC17_300123	- Clear Plastic Bottle - Nitric Acid; Filtered	- Clear Plastic Bottle - Nitric Acid; Unfiltered

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

EM2301773-016 : [29-Jan-2023] : PD06_0.42 - NOT RECEIVED
EM2301773-021 : [29-Jan-2023] : QC15_290123 - Duplicate of 13
EM2301773-039 : [30-Jan-2023] : QC19_300123 - Extra Volume

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)	SOIL - P-30/3 EPA 1828.2 Table 2 Limited Suite (EM)	SOIL - S-03 15 Metals (NEPM 2013 Suite - incl. Digestion)	SOIL - S-10 TRH/VOC/PAH
EM2301773-001	29-Jan-2023 00:00	0		✓	✓		✓	✓
EM2301773-002	29-Jan-2023 00:00	BH03_0.2		✓	✓		✓	✓
EM2301773-003	29-Jan-2023 00:00	BH03_0.5		✓		✓		
EM2301773-004	29-Jan-2023 00:00	BH03_1.0	✓					
EM2301773-005	29-Jan-2023 00:00	BH03_2.0	✓					
EM2301773-006	29-Jan-2023 00:00	BH03_3.0	✓					
EM2301773-007	29-Jan-2023 00:00	BH05_0.2	✓					
EM2301773-008	29-Jan-2023 00:00	BH05_0.5		✓	✓		✓	✓
EM2301773-009	29-Jan-2023 00:00	BH05_1.0	✓					
EM2301773-010	29-Jan-2023 00:00	BH05_2.0		✓		✓		
EM2301773-011	29-Jan-2023 00:00	BH04_0.2	✓					
EM2301773-012	29-Jan-2023 00:00	BH04_0.5		✓	✓		✓	✓
EM2301773-014	29-Jan-2023 00:00	PD05_0.42		✓		✓		
EM2301773-015	29-Jan-2023 00:00	PD05_1.5	✓					
EM2301773-016	29-Jan-2023 00:00	PD06_0.42 NOT RECEI...	✓					
EM2301773-017	29-Jan-2023 00:00	PD06_0.8	✓					
EM2301773-018	29-Jan-2023 00:00	PD06_1.2	✓					
EM2301773-019	30-Jan-2023 00:00	PD07_0.6	✓					
EM2301773-020	30-Jan-2023 00:00	PD07_1.2	✓					
EM2301773-022	29-Jan-2023 00:00	QC16 290123		✓				

			(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)	SOIL - P-30/3 EPA 1828.2 Table 2 Limited Suite (EM)	SOIL - S-03 15 Metals (NEPM 2013 Suite - incl. Digestion)	SOIL - S-10 TRH/VOC/PAH
EM2301773-024	30-Jan-2023 00:00	QC18_300123		✓				
EM2301773-025	30-Jan-2023 00:00	QC19_300123	✓					
EM2301773-026	30-Jan-2023 00:00	TP06_0.2	✓					
EM2301773-027	30-Jan-2023 00:00	TP06_0.5		✓		✓		
EM2301773-028	30-Jan-2023 00:00	TP06_1.0		✓	✓		✓	✓
EM2301773-029	30-Jan-2023 00:00	TP06_1.8	✓					
EM2301773-030	30-Jan-2023 00:00	TP05_0.2		✓		✓		
EM2301773-031	30-Jan-2023 00:00	TP05_0.5	✓					
EM2301773-032	30-Jan-2023 00:00	TP05_1.0		✓	✓		✓	✓
EM2301773-033	30-Jan-2023 00:00	TP05_2.0	✓					
EM2301773-034	30-Jan-2023 00:00	TP04_0.2	✓					
EM2301773-035	30-Jan-2023 00:00	TP04_0.5		✓		✓		
EM2301773-036	30-Jan-2023 00:00	TP04_1.0		✓	✓		✓	✓
EM2301773-037	30-Jan-2023 00:00	TP04_1.9	✓					
EM2301773-038	30-Jan-2023 00:00	PD06_1.5_290123	✓					
EM2301773-039	30-Jan-2023 00:00	QC19_300123 Extra V...	✓					

Matrix: **SOIL**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	SOIL - S-18 TRH(C6-C9)/BTEXN
EM2301773-022	29-Jan-2023 00:00	QC16 290123	✓
EM2301773-024	30-Jan-2023 00:00	QC18_300123	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - W-05T TRH/BTEXN/8 Metals (Total)
EM2301773-013	29-Jan-2023 00:00	QC15_290123	✓
EM2301773-021	29-Jan-2023 00:00	QC15_290123 Duplica...	✓
EM2301773-023	30-Jan-2023 00:00	QC17_300123	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231 PFAS - Short Suite (12 analytes)
EM2301773-013	29-Jan-2023 00:00	QC15_290123	✓
EM2301773-021	29-Jan-2023 00:00	QC15_290123 Duplica...	✓
EM2301773-023	30-Jan-2023 00:00	QC17_300123	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	AP_CustomerService.ANZ@aecom.com
- Chain of Custody (CoC) (COC)	Email	AP_CustomerService.ANZ@aecom.com

LAUREN McGLOIN

- *AU Certificate of Analysis - NATA (COA)	Email	lauren.mcgloin@aecom.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	lauren.mcgloin@aecom.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	lauren.mcgloin@aecom.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	lauren.mcgloin@aecom.com
- Chain of Custody (CoC) (COC)	Email	lauren.mcgloin@aecom.com
- EDI Format - ENMRG (ENMRG)	Email	lauren.mcgloin@aecom.com
- EDI Format - EQUIS_V5_AECOM_SAMPLE (EQUIS_V5_AECOM_SAMPLE)	Email	lauren.mcgloin@aecom.com
- EDI Format - ESDAT (ESDAT)	Email	lauren.mcgloin@aecom.com
- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)	Email	lauren.mcgloin@aecom.com
- Purchase Order Request Letter (PO_Request)	Email	lauren.mcgloin@aecom.com

ANZ

FQM - Generic Chain of Custody Form

Samples on hold electronic CoC

Q4AN(EV)-007-FM1

CONSULTANT: AECOM	ADDRESS / OFFICE:	SAMPLER: Alice Shuster ~~Stefan Fenger~~	Destination Laboratory
PROJECT MANAGER (PM): Lauren McGloin	SITE: Melbourne Airport	MOBILE: ~~0402414251~~ PHONE: 0409544860	ALS
PROJECT NUMBER & TASK COI 60692389	P.O. NO.:	EMAIL REPORT TO: lauren.mcgloin@aecom.com stefan.fenger@aecom.com	
RESULTS REQUIRED (Date):	QUOTE NO.:	ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)	

FOR LABORATORY USE ONLY
COOLER SEAL (circle appropriate)
Intact: Yes No N/A
SAMPLE TEMPERATURE
CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.

ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	EPA 1828.2	TRH/BTEX, PAHs, Heavy metals	PFAS, PFOS, PFOA, PFHxS	HOLD	
	PD07-0.6					2				X	
	PD07-1.2					2				X	
	QC16	S			✓	1				X	
	QC17300123	W				6				X	
	QC18	S				1				X	
	QC19	S				5				X	~~FWD TO EUROFINS~~
	QC20	S				5				X	FWD EUROFINS
	TP06_0.2					2				X	
	TP06_0.5					2				X	
	TP06-1.0					2				X	
	TP06-1.8					2				X	
	TP05_0.2					2				X	
	TP05_0.5					2				X	
	TP05-1.0					2				X	
	TP05-2.0					2				X	
	TP04-0.2					2				X	
	TP04-0.5					2				X	
	TP04-1.0					2				X	
	TP04-1.9					2				X	

Environmental Division
Melbourne
Work Order Reference
EM2301773

Telephone : +61-3-8549 9600

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name: Alice Shuster	Date: 30.01.23	Name: Caitlin	Date: 31/1/23	Name:	Date:	Con' Note No:
Of: AECOM	Time: 30.1.23	Of: ALS	Time: 12:50	Of:	Time:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. **Soil Container Codes:** Jar = Unpreserved glass jar

COC Page 2 of 2

ANZ

FQM - Generic Chain of Custody Form

All samples on hold NOTE: until further notice

Q4AN(EV)-007-FM1

Electronic CoC

CONSULTANT: AECOM	ADDRESS / OFFICE:	SAMPLER: Alice Shuster ~~Stefan Fenger~~	Destination Laboratory
PROJECT MANAGER (PM): Lauren McGloin	SITE: Melbourne Airport	MOBILE: ~~0402414251~~ PHONE: 0409 544860	ALS
PROJECT NUMBER & TASK COI 60692389	P.O. NO.:	EMAIL REPORT TO: alice.shuster@aecom.com Lauren.McGloin@aecom.com ~~stefan.fenger@aecom.com~~	
RESULTS REQUIRED (Date):	QUOTE NO.:	ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)	

FOR LABORATORY USE ONLY
COOLER SEAL (circle appropriate)
Intact: Yes No N/A
SAMPLE TEMPERATURE
CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.

ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	EPA 1808 screen	Metals(S/15) TRH TPH BTEX PAH	PFAS compounds extended	PFAS: TPH BTEX N	TRH C6-C10								HOLD	Notes
	QC13-29012023	S				2													X	
	QC14-29012023	S				2													X	FWD Eurofins
	BH03-0.2	S				2													X	
	BH03-0.5	S				2													X	
	BH03-1.0	S				2													X	
	BH03-2.0	S				2													X	
	BH03-3.0	S				2													X	
	BH05-0.2	S				2													X	
	BH05-0.5	S				2													X	
	BH05-1.0	S				2													X	
	BH05-2.0	S				1													X	
	BH04-0.2	S				2													X	
	BH04-0.5	S				2													X	
	QC15	W				6													X	
	PD05-0.42	S				2													X	
	PD05-1.5	S				2													X	
	PD06-0.42	S				2													X	
	PD06-0.8	S				2													X	
	PD06-1.2	S				2													X	

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name: Alice Shuster	Date: 29.01.22	Name: Caitlin	Date: 31/1/23	Name:	Date:	Con' Note No:
Of: AECOM	Time:	Of: ALS	Time: 12:50	Of:	Time:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils, B = Unpreserved Bag. **Soil Container Codes**: Jar = Unpreserved glass jar

COC Page 1 of 2

Felix Dong

From: Peter Ravlic
Sent: Thursday, 2 February 2023 2:08 PM
To: COC Melbourne
Subject: AECOM COC - EM2301412 & EM2301321, Project: 60692389
Attachments: 60692389_FQM_Chain_of_Custody_FormCOC2_Melbourne Airport.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Categories: COC for WO on hold

Peter Ravlic

Client Services – Springvale

Environmental

T +61 3 8549 9600
F +61 3 8549 9626
Peter.Ravlic@alsglobal.com
2-4 Westall Rd
Springvale Vic 3171
Australia

From: McGloin, Lauren <Lauren.McGloin@aecom.com>
Sent: Thursday, 2 February 2023 2:00 PM
To: Emily Chan <emily.chan@ALSGlobal.com>
Cc: Fenger, Stefan <Stefan.Fenger@aecom.com>; Peter Ravlic <peter.ravlic@alsglobal.com>
Subject: [EXTERNAL] - RE: EM2301412 & EM2301321, Project: 60692389

Hi Emily

See attached.

Thanks Lauren

Principal Environmental Scientist, GRS - VSA
M +61448485323
lauren.mcgloin@aecom.com

AECOM
Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61386706800
aecom.com

Delivering a better world
LinkedIn | Twitter | Facebook | Instagram

My working days are:

Monday	Tuesday	Wednesday	Thursday	Friday
✓	✓	X	✓	X

From: Emily Chan <emily.chan@ALSGlobal.com>
Sent: Thursday, 2 February 2023 11:04 AM
To: McGloin, Lauren <Lauren.McGloin@aecom.com>
Cc: Fenger, Stefan <Stefan.Fenger@aecom.com>; Peter Ravlic <peter.ravlic@alsglobal.com>
Subject: EM2301412 & EM2301321, Project: 60692389

Hi Lauren,

We have received your samples as per the attached COCs for project 60692389, however analysis has not been allocated.

*Please provide an updated COC with analysis required when possible.

Thank you!

Kind Regards,

right solutions. right partner.

Emily Chan
Client Service Officer, Environmental
ALS Limited

T: +61 3 8549 9600
D: +61 3 8549 9652

emily.chan@alsglobal.com

2-4 Westall Road, Springvale VIC 3171

alsglobal.com

Late in 2022 ALS Springvale will be transitioning our telephone services to a different provider. During this time you may notice that the number that we call you on is not consistent with the details listed above. All of our existing numbers are being routed through temporary numbers during this time and will remain active for the entire process. Please continue to contact us via the numbers listed above, we would recommend not saving the temporary numbers to your records as they will be deleted once the transition is complete.

AECOM

Q4AN(EV)-007-FM1

ANZ

FQM - Generic Chain of Custody Form

CONSULTANT: AECOM	ADDRESS / OFFICE:	SAMPLER: Alice Shuster	**Destination Laboratory**
PROJECT MANAGER (PM): Lauren McGloin	SITE: **Melbourne Airport**	MOBILE: 0409544860 PHONE: 0448485323 (Lauren M)	**ALS**
PROJECT NUMBER & TASK CODE: 60692389	P.O. NO.:	EMAIL REPORT TO: lauren.mcgloin@aecom.com;	
RESULTS REQUIRED (**Date**):	QUOTE N Melbourne Airport - dated 7.11.2022	**ANALYSIS REQUIRED including SUITES** (note - suite codes must be listed to attract suite prices)	

FOR LABORATORY USE ONLY

COOLER SEAL (circle appropriate)

Intact: Yes No N/A

SAMPLE TEMPERATURE

CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

antimony (Sb), arsenic (As), barium (Ba), Beryllium (Be), cadmium (Cd), chromium (Cr), cobalt (Co), copper (Cu), lead (Pb), manganese (Mn), mercury (Hg), nickel (Ni), selenium (Se) and zinc (Zn):

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION		Suite 1 : P-30/3 EPA 1828.2 Table 2 Limited Suite - excl. EDTA	Suite 2: S-10 TRH, BTEX, PAHs, Heavy metals - S3	Suite 3: EP231X Per-and poly-fluoroalkyl substances (PFAS) and associated substances extended 28 suite including		TPH/BTEXN/ PFAS short suite and metals (8)	TRH C6 – C10 and BTEXN.							HOLD	Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles														
1	QC13_29012023	S	29/01/23		J	2		1	1											
→	QC14_29012023	S	29/01/23		J	2		1	1											Please forward to Eurofins
2	BH03_0.2	S	29/01/23		J	2		1	1											
3	BH03_0.5	S	29/01/23		J	2	1													
4	BH03_1.0	S	29/01/23		J	2													X	
5	BH03_2.0	S	29/01/23		J	2													X	
6	BH03_3.0	S	29/01/23		J	2													X	
7	BH05_0.2	S	29/01/23		J	2													X	
8	BH05_0.5	S	29/01/23		J	2		1	1											
9	BH05_1.0	S	29/01/23		J	2													X	
10	BH05_2.0	S	29/01/23		J	1	1													
11	BH04_0.2	S	29/01/23		J	2													X	
12	BH04_0.5	S	29/01/23		J	2		1	1											
13	QC15_290123	W	29/01/23		2VS, 1AG, 1N, 2P	6					1								X	
14	PD05_0.42	S	29/01/23		J	2	1													
15	PD05_1.5	S	29/01/23		J	2													X	
16	PD06_0.42	S	29/01/23		J	2													X	
17	PD06_0.8	S	29/01/23		J	2													X	
18	PD06_1.2	S	29/01/23		J	2													X	

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name Alice Shuster	Date: 29/01/23	Name:	Date:	Name:	Date:	Con' Note No:
Of: AECOM	Time: PM	Of:	Time:	Of:	Time:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic

V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;

F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. **Soil Container Codes:** Jar = Unpreserved glass jar

COC Page 1 of 2

ANZ

FQM - Generic Chain of Custody Form

CONSULTANT: AECOM	ADDRESS / OFFICE:	SAMPLER: Alice Shuster	**Destination Laboratory**
PROJECT MANAGER (PM): Lauren McGloin	SITE: **Melbourne Airport**	MOBILE: 0409544860 PHONE: 0448485323 (Lauren M)	**ALS**
PROJECT NUMBER & TASK CODE: 60692389	P.O. NO.:	EMAIL REPORT TO: lauren.mcgloin@aecom.com;	
RESULTS REQUIRED (Date):	QUOTE Nr Melbourne Airport - dated 7.11.2022	**ANALYSIS REQUIRED including SUITES** (note - suite codes must be listed to attract suite prices)	

FOR LABORATORY USE ONLY

COOLER SEAL (circle appropriate)

Intact: Yes No N/A

SAMPLE TEMPERATURE

CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

antimony (Sb), arsenic (As), barium (Ba), Beryllium (Be), cadmium (Cd), chromium (Cr), cobalt (Co), copper (Cu), lead (Pb), manganese (Mn), mercury (Hg), nickel (Ni), selenium (Se) and zinc (Zn);

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION		Suite 1 : P-30/3 EPA 1828.2 Table 2 Limited Suite - excl. EDTA	Suite 2: S-10 TRH, BTEX, PAHs, Heavy metals - S3	Suite 3: EP231X Perand poly-fluoroalkyl substances (PFAS) and associated substances extended 28 suite including perfluoro octane		TPH/BTEXN/ PFAS short suite and metals (8)	TRH C6 – C10 and BTEXN							HOLD	Notes: e.g. Highly contaminated samples e.g. "High PAHs expected", Extra volume for QC or trace LORs etc.
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles														
19	PD07_0.6	S	30/01/23		J	2													X	
20	PD07_1.2	S	30/01/23		J	2													X	
21	QC15_290123	W	29/01/23		2VS, 1AG, 1N, 2P						1									
22	QC16_290123	W	29/01/23		IV	1						1								
23	QC17_300123	W	30/01/23		2VS, 1AG, 1N, 2P	6					1									
24	QC18_300123	S	30/01/23		1V	1						1								
25	QC19_300123	S	30/01/23		J	5													X	
→	QC20_300123	S	30/01/23		J	5													X	Please forward to Eurofins
26	TP06_0.2	S	30/01/23		J	2													X	
27	TP06_0.5	S	30/01/23		J	2	1													
28	TP06_1.0	S	30/01/23		J	2		1	1											
29	TP06_1.8	S	30/01/23		J	2													X	
30	TP05_0.2	S	30/01/23		J	2	1													
31	TP05_0.5	S	30/01/23		J	2													X	
32	TP05_1.0	S	30/01/23		J	2		1	1											
33	TP05_2.0	S	30/01/23		J	2													X	
34	TP04_0.2	S	30/01/23		J	2													X	
35	TP04_0.5	S	30/01/23		J	2	1													
36	TP04_1.0	S	30/01/23		J	2		1	1											
37	TP04_1.9	S	30/01/23		J	2													X	

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name: Alice Shuster	Date: 30/01/23	Name:	Date:	Name:	Date:	Con' Note No:
Of: AECOM	Time: PM	Of:	Time:	Of:	Time:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic

V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;

F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. **Soil Container Codes:** Jar = Unpreserved glass jar

Appendix E

Data Validation

LABORATORY DATA VALIDATION REPORT

Project number:	60692389	**Validation by:**	Callum Barry	**Date:**	7/3/2023
Client:	APAM				
Site:	Melbourne Airport				
Matrix type:	Soil	**Data verified by:**	Lauren McGloin	**Date:**	7/3/2023
Samples:	32 (Primary)				
Laboratory:	ALS (Primary), Eurofins (Interlab)				
Lab reference:	EM2301163, EM2301773, EM2301412, 961022	**Project Manager:**	Lauren McGloin		

Key Issues: **No Key Issues Identified.**

Handling and preservation

Field documentation including Chain of Custody (COC) information and sampling was completed on 31 January 2023 by suitably qualified AECOM field staff.

Lab Reference	Date of Receipt	Temperature °C
EM2301163	27 January 2023	2.0
EM2301773	31 January 2023	2.1
EM2301412	1 February 2023	1.7
961022	6 February 2023	0.4

Samples were received within the recommended temperature range of ≤6˚C for all laboratory batches.

All samples were received at the laboratory in appropriate containers

Holding time compliance

EM2301163

All samples within batch EM2301163 breached the recommended holding times for all analytes prior to instructions being received at the laboratory.

There were soil extraction/preparation holding time breaches for all analyte groups with the exception of:

- Total metals
- Formaldehyde
- PFAS
- Dichlorophenoxyacetic Acid (2.4-D) and Tributyltin Oxide (TBTO)

There were soil analysis holding time breaches for the following analyte groups:

- Moisture content
- Total recoverable mercury
- Fluoride
- Monocyclic aromatic hydrocarbons
- Oxygenated compounds

LABORATORY DATA VALIDATION REPORT

Project number:	60692389	**Validation by:**	Callum Barry	**Date:**	7/3/2023
Client:	APAM				
Site:	Melbourne Airport				
Matrix type:	Soil	**Data verified by:**	Lauren McGloin	**Date:**	7/3/2023
Samples:	32 (Primary)				
Laboratory:	ALS (Primary), Eurofins (Interlab)				
Lab reference:	EM2301163, EM2301773, EM2301412, 961022	**Project Manager:**	Lauren McGloin		

- Sulfonated compounds
- Fumigants
- Halogenated aliphatic compounds
- Halogenated aromatic compounds
- Trihalomethanes
- Naphthalene
- Volatile halogenated compounds
- Select samples for total petroleum hydrocarbons and total recoverable hydrocarbons
- BTEXN

For the rinsate water sample, there were extraction/preparation and analysis holding time breaches for the following analyte groups:

- Total recoverable mercury
- Total petroleum hydrocarbons
- Total recoverable hydrocarbons
- BTEXN

There is the potential for these analytes to have degraded over time and not be truly representative of field conditions. However the results affect 5 samples and similar results were observed across the sampling areas as well as the samples being held and refrigerated conditions at the laboratory which would have limited volatile loss.

<u>EM2301773</u>

All samples within batch EM2301773 were within the recommended holding times for all analytes prior to instructions being received at the laboratory.

There were soil extraction/preparation holding time breaches select samples for the following analyte groups:

- pH
- Monocyclic aromatic hydrocarbons
- Oxygenated compounds
- Sulfonated compounds
- Fumigants

LABORATORY DATA VALIDATION REPORT

Project number:	60692389	**Validation by:**	Callum Barry	**Date:**	7/3/2023
Client:	APAM				
Site:	Melbourne Airport				
Matrix type:	Soil	**Data verified by:**	Lauren McGloin	**Date:**	7/3/2023
Samples:	32 (Primary)				
Laboratory:	ALS (Primary), Eurofins (Interlab)				
Lab reference:	EM2301163, EM2301773, EM2301412, 961022	**Project Manager:**	Lauren McGloin		

- Halogenated aliphatic compounds
- Halogenate aromatic compounds
- Trihalomethanes
- Naphthalene
- Volatile halogenated compounds
- Total petroleum hydrocarbons
- Total recoverable hydrocarbons

There were soil analysis holding time breaches for select samples for the following analyte groups:

- Monocyclic aromatic hydrocarbons
- Oxygenated compounds
- Sulfonated compounds
- Fumigants
- Halogenated aliphatic compounds
- Halogenated aromatic compounds
- Trihalomethanes
- Naphthalene
- Volatile halogenated compounds
- Total petroleum hydrocarbons
- Total recoverable hydrocarbons

For the rinsate water sample, there were extraction/preparation holding time breaches for the following analyte groups:

- Total petroleum hydrocarbons (QC15_290123)
- Total recoverable hydrocarbons (QC15_290123)

<u>EM230141</u>

No holding time breaches were reported for report EM2301412.

<u>961022</u>

No holding time breaches were reported for report 961022.

LABORATORY DATA VALIDATION REPORT

Project number:	60692389	**Validation by:**	Callum Barry	**Date:**	7/3/2023
Client:	APAM				
Site:	Melbourne Airport				
Matrix type:	Soil	**Data verified by:**	Lauren McGloin	**Date:**	7/3/2023
Samples:	32 (Primary)				
Laboratory:	ALS (Primary), Eurofins (Interlab)				
Lab reference:	EM2301163, EM2301773, EM2301412, 961022	**Project Manager:**	Lauren McGloin		

Laboratory Accreditation	ALS and Eurofins are NATA accredited for the analysis conducted: • ALS - NATA Accreditation # 825 • Eurofins - NATA Accreditation # 1261
Frequency of laboratory QC	All laboratory reports reported a sufficient frequency of quality control samples to assess whether the results have been reported to an acceptable accuracy and precision for soil samples where relevant. Report EM2301163 reported an insufficient frequency of quality control samples for the rinsate sample for PFAS and TRH (semivolatile fraction). Reports EM2301773 and EM2301412 reported an insufficient frequency of quality control samples for rinsate samples for TRH (semivolatile fraction). As none of these analyte groups were detected in soil samples, this is not expected to affect the reliability of rinsate sample results and cross-contamination associated with equipment is unlikely to have occurred.
Method Blank (MB)	MB concentrations were below the LOR for all samples assessed.
Laboratory Duplicate (LD) Relative Percent Difference (RPD)	LD RPDs met the acceptability limits for all analytes for all batches. The LD RPDs are presented in the laboratory Quality Control Report.
Rinsate Blank	Five rinsates were collected during sampling and reported results below LOR. The required frequency of one rinsate blank sample per day per piece of equipment was met.
Trip Blank	One trip blank was collected for batch EM2301163, EM2301773, EM2301412, 961022 which reported results below LOR and suggests cross contamination within the esky has not occurred.
Trip Spike	Samples were immediately iced after collection and transported to the laboratory. One trip spike was submitted for batch EM2301163 and reported recovery levels within 70-100% of the trip spike control for BTEXN. This suggests loss of volatile hydrocarbons during transportation was low and acceptable.
Laboratory Control Spike (LCS) recovery	LCS recoveries met the acceptability limits.

LABORATORY DATA VALIDATION REPORT

Project number:	60692389	**Validation by:**	Callum Barry	**Date:**	7/3/2023
Client:	APAM				
Site:	Melbourne Airport				
Matrix type:	Soil	**Data verified by:**	Lauren McGloin	**Date:**	7/3/2023
Samples:	32 (Primary)				
Laboratory:	ALS (Primary), Eurofins (Interlab)				
Lab reference:	EM2301163, EM2301773, EM2301412, 961022	**Project Manager:**	Lauren McGloin		

Matrix Spike (MS) recovery	Matrix spikes (MS) were conducted on anonymous samples. All MS recoveries (where reported) were within AECOM and/or laboratory limits (70-130%), with the exception of the following: • Chromium – 'recovery less than lower data quality objective'
Surrogate spike (SS) recovery	The SS recoveries were reported within acceptability limits
Comparison of Esdat data and Laboratory Results	No anomalous results between ESDAT output data and laboratory analysis results were noted.
QA/QC Data Evaluation	
Field intra-laboratory duplicate samples (BH04_240123)	Intra-laboratory duplicates RPDs were reported within acceptable limits (≤30%, or ≤50% for results 10-20 x LOR, or No Limit for results <10 x LOR) with the following exception: • Phenanthrene – 82%
Inter-laboratory duplicate samples (QC14_240123)	Intra-laboratory duplicates RPDs were reported within acceptable limits (≤30%, or ≤50% for results 10-20 x LOR, or No Limit for results <10 x LOR) with the following exceptions: • Copper – 115% • Lead – 82% • Mercury – 192% • Zinc – 158% • PFOS – 169% • PFHxS – 170% • C6 – C10 fraction – 84% • TRH F1 fraction – 84% • TRH F2 fraction – 195% • >C16 – C34 fraction – 195% • >C34 – C40 fraction – 137% • >C10 – C40 fraction (sum) – 197% • Benzo(a)pyrene TEQ calc (Half) – 100% • Benzo(a)pyrene TEQ calc (Zero) – 100%

LABORATORY DATA VALIDATION REPORT

Project number:	60692389	**Validation by:**	Callum Barry	**Date:**	7/3/2023
Client:	APAM				
Site:	Melbourne Airport				
Matrix type:	Soil	**Data verified by:**	Lauren McGloin	**Date:**	7/3/2023
Samples:	32 (Primary)				
Laboratory:	ALS (Primary), Eurofins (Interlab)				
Lab reference:	EM2301163, EM2301773, EM2301412, 961022	**Project Manager:**	Lauren McGloin		

- Phenanthrene – 82%
- Fluoranthene – 131%
- Benz(a)anthracene – 100%
- Benzo(a)pyrene – 82%
- Chrysene – 120%
- Pyrene – 169%
- Sum of PAHs – 88%

Where required for quantitative purposes, the highest concentration from the primary and duplicate pair will be used in the assessment. These elevated RPDs should be considered in the interpretation of analytical data

Overall Assessment

Data validation procedure employed in the assessment of the field and laboratory QA/QC data indicated that the reported analytical results are representative of the sample locations and that the overall quality of the analytical data produced is acceptably reliable for the purpose of this report.

Table 1 - Relative Percentage Difference

AECOM

					Metals																				NA		Organotin Compounds	PAH/Phenols (SIM)
					Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Chromium (hexavalent)	Cobalt	Copper	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Tin	Vanadium	Zinc	Naphthalene (value used in F2 calc)	Sum of WA DWER PFAS (n=10)*	Tributyltin oxide	Sum of polycyclic aromatic hydrocarbons
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	ug/kg	mg/kg	mg/kg
LOR					5	2	10	1	10	0.4	2	0.5	2	5	5	5	0.1	2	2	2	2	5	5	5		0.2	0.01	0.5
Location ID	**Field ID**	**Depth**	**Date**	**Lab Report Number**																								
TP09	TP09_0.2	0.2	26/01/2023	EM2301163	<5	<5	200	1	<50	<1	-	<0.5	-	9	11	-	<0.1	<2	28	<5	<2	<5	-	15	<1	1.0	<0.01	<0.5
	QC08_260123	0.2	26/01/2023	EM2301163	<5	<5	270	1	<50	<1	-	<0.5	-	11	11	-	<0.1	<2	30	<5	<2	<5	-	20	<1	1.6	<0.01	<0.5
				RPD (%):	0	0	30	0	0	0	-	0	-	20	0	-	0	0	7	0	0	0	-	29	0	46	0	0
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	-	<5	60	<1	<50	<1	26	-	10	15	8	210	<0.1	-	25	<5	-	-	36	26	-	2.5	-	-
	QC13_29012023	0.5	29/01/2023	EM2301773	-	<5	50	<1	<50	<1	42	-	12	15	14	310	<0.1	-	19	<5	-	-	44	21	-	8.8	-	-
				RPD (%):	-	0	18	0	0	0	47	-	18	0	55	38	0	-	27	0	-	-	20	21	-	112	-	-
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	-	<5	60	<1	<50	<1	26	-	10	15	8	210	<0.1	-	25	<5	-	-	36	26	-	2.5	-	-
	QC14_29012023	0.5	29/01/2023	961022	-	2.1	-	<2	14	<0.4	-	<1	13	18	9.3	280	<0.1	-	25	<2	-	-	-	30	-	11	-	-
				RPD (%):	-	0	-	0	0	0	-	-	26	18	15	29	0	-	0	0	-	-	-	14	-	126	-	-

***RPDs have only been considered where a concentration is greater than 1 times the LOR.**
****Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each LOR multiplier range are: 30 (1 - 10 x LOR); 30 (10 - 30 x LOR); 30 (> 30 x LOR))**
*****Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory**

Legend

Pass	RPD < = 30%
Fail	RPD > = 30%
-	Not Reported / Calculated

LOR - Limit of Reporting

Table 1
QAQC RPDs Results
APAM - Melbourne Airport

Table 1 - Relative Percentage Difference

AECOM

					Per- and Poly-fluoroalkyl Substances																																			
					Perfluorooctanoic acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum (PFHxS + PFOS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	PFNS	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluoropropanesulfonic acid (PFPrS)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	Sum of PFAS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)	Sum of US EPA PFAS (PFOS + PFOA)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	UG/KG	UG/KG
LOR					0.0002	0.0002	0.0002	0.0002	0.0005	0.0005	0.0005	0.0005	0.0002	0.001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.005	0.0002	0.0002	0.0002	0.0002	5,000	0.0005	0.0002	0.0002	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0002	5	5
Location ID	**Field ID**	**Depth**	**Date**	**Lab Report Number**																																				
TP09	TP09_0.2	0.2	26/01/2023	EM2301163	<0.0002	0.0010	<0.0002	0.0010	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0010	-	-
	QC08_260123	0.2	26/01/2023	EM2301163	<0.0002	0.0016	<0.0002	0.0016	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0016	-	-
				RPD (%):	0	46	0	46	0	0	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	-	0	0	0	0	0	0	0	0	0	46	-	-
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	<0.0002	0.0022	0.0003	0.0025	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0025	-	-
	QC13_29012023	0.5	29/01/2023	EM2301773	<0.0002	0.0080	0.0008	0.0088	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0091	-	-
				RPD (%):	0	114	91	112	0	0	0	0	0	0	0	0	0	40	0	0	-	0	0	0	0	-	0	0	0	0	0	0	0	0	0	114	-	-
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	<0.0002	0.0022	0.0003	0.0025	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0025	-	-
	QC14_29012023	0.5	29/01/2023	961022	<0.005	0.011	<0.005	0.011	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<5,000	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.05	11	11
				RPD (%):	0	133	0	126	0	0	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	-	-

**RPDs have only been considered where a concentration is greater than 1 times the LOR.
**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each LOR multiplier range are: 30 (1
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in tl

Legend

Pass	RPD < = 30%
Fail	RPD > = 30%
-	Not Reported / Calculated

LOR - Limit of Reporting

Table 1 - Relative Percentage Difference

AECOM

					Phenols	VOCs in soil	Total Petroleum Hydrocarbons					Total Recoverable Hydrocarbons							Major Ions	Monocyclic Aromatic Hydrocarbons														
					Phenols (non-halogenated) EPA Vic	Total +ve MAHs	>C6-C9 fraction	>C10-C14 fraction	>C15-C28 fraction	>C29-C36 fraction	>C10-C36 fraction (sum)	>C6-C10 fraction	>C6-C10 fraction (minus BTEX)(F1)	>C6-C16 fraction (minus Naphthalene)(F2)	>C10-C16 fraction	>C10-C16 fraction	>C16-C34 fraction	>C34-C40 fraction	>C10-C40 fraction (sum)	fluoride	Benzene	Toluene	Ethylbenzene	m&p-Xylene	o-Xylene	Total Xylenes	Styrene	Isopropylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	tert-butylbenzene	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Total BTEX
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR					1	0.2	10	20	50	50	50	10	10	50	50	100	100	50	40	0.1	0.1	0.1	0.2	0.1	0.3	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.2
Location ID	**Field ID**	**Depth**	**Date**	**Lab Report Number**																														
TP09	TP09_0.2	0.2	26/01/2023	EM2301163	<1	<0.2	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	280	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
	QC08_260123	0.2	26/01/2023	EM2301163	<1	<0.2	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	230	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-
				RPD (%):	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
	QC13_29012023	0.5	29/01/2023	EM2301773	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
				RPD (%):	-	-	0	0	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
	QC14_29012023	0.5	29/01/2023	961022	-	-	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	-	-	-	-	-	-	-	-	-
				RPD (%):	-	-	0	0	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-

**RPDs have only been considered where a concentration is greater than 1 times the LOR.
**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each LOR multiplier range are: 30 (1
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in tl

Legend

Pass	RPD < = 30%
Fail	RPD > = 30%
-	Not Reported / Calculated

LOR - Limit of Reporting

Table 1 - Relative Percentage Difference

AECOM

					Polynuclear Aromatic Hydrocarbons																						Phenolic Compounds															
					Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ calc (Zero)	Benzo(a)pyrene TEQ calc(PQL)	Naphthalene	Acenaphthylene	Acenaphthene	Anthracene	fluorene	Phenanthrene	fluoranthene	Benz(a)anthracene	Benzo(k)fluoranthene	Benzo(b&j)fluoranthene	Benzo(b+j) & Benzo(k)fluoranthene	Benzo(a)pyrene	Chrysene	Pyrene	Benzo(g,h,i)perylene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Sum of PAHs	2/4-Methylphenol (m/p-cresol)	Phenol	2-Chlorophenol	2-Methylphenol (o-Cresol)	Total Cresols	2-Nitrophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4,6-Trichlorophenol	2,4,5-Trichlorophenol	4,6-Dinitro-2-methylphenol	2,4-Dinitrophenol	2-Cyclohexyl-4,6-dinitrophenol	4-Nitrophenol	Dinoseb
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1	1	0.03	1	1	1	0.03	1	0.05	0.05	5	5	5	5	5	5
Location ID	**Field ID**	**Depth**	**Date**	**Lab Report Number**																																						
TP09	TP09_0.2	0.2	26/01/2023	EM2301163	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<5
	QC08_260123	0.2	26/01/2023	EM2301163	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<5
				RPD (%):	0	0	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QC13_29012023	0.5	29/01/2023	EM2301773	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				RPD (%):	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QC14_29012023	0.5	29/01/2023	961022	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				RPD (%):	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each LOR multiplier range are: 30 (1
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in tl

Legend

Pass	RPD < = 30%
Fail	RPD > = 30%
-	Not Reported / Calculated

LOR - Limit of Reporting

Table 1 - Relative Percentage Difference

AECOM

Fumigants

Location ID	Field ID	Depth	Date	Lab Report Number	1,2-Dibromoethane (EDB)	1,2-Dichloropropane	2,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR					0.5	0.5	0.5	0.5	0.5
TP09	TP09_0.2	0.2	26/01/2023	EM2301163	-	-	-	-	-
	QC08_260123	0.2	26/01/2023	EM2301163	-	-	-	-	-
				RPD (%):	-	-	-	-	-
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	<0.5	<0.5	<0.5	<0.5	<0.5
	QC13_29012023	0.5	29/01/2023	EM2301773	<0.5	<0.5	<0.5	<0.5	<0.5
				RPD (%):	0	0	0	0	0
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	<0.5	<0.5	<0.5	<0.5	<0.5
	QC14_29012023	0.5	29/01/2023	961022	-	-	-	-	-
				RPD (%):	-	-	-	-	-

Halogenated Aromatic Compounds

Location ID	Field ID	Depth	Date	Lab Report Number	Bromobenzene	Chlorobenzene	2-Chlorotoluene	4-Chlorotoluene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,3,5-Trichlorobenzene	Trichlorobenzenes (Sum)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR					0.5	0.02	0.5	0.5	0.02	0.5	0.02	0.01	0.01	0.01	0.01
TP09	TP09_0.2	0.2	26/01/2023	EM2301163	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01
	QC08_260123	0.2	26/01/2023	EM2301163	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01
				RPD (%):	-	0	-	-	0	-	0	0	0	0	0
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-
	QC13_29012023	0.5	29/01/2023	EM2301773	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-
				RPD (%):	0	0	0	0	0	0	0	0	0	-	-
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-
	QC14_29012023	0.5	29/01/2023	961022	-	-	-	-	-	-	-	-	-	-	-
				RPD (%):	-	-	-	-	-	-	-	-	-	-	-

Halogenated Aliphatic Compounds

Location ID	Field ID	Depth	Date	Lab Report Number	Dichlorodifluoromethane (Freon 12)	Chloromethane	Vinyl chloride	Bromomethane	Chloroethane	Trichlorofluoromethane (Freon 11)	1,1-Dichloroethene	Iodomethane	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1,1-Trichloroethane	1,1-Dichloropropene	Carbon Tetrachloride	1,2-Dichloroethane	Trichloroethene	Dibromomethane	1,1,2-Trichloroethane	1,3-Dichloropropane	Tetrachloroethene	1,1,1,2-Tetrachloroethane	trans-1,4-Dichloro-2-butene	cis-1,4-Dichloro-2-butene	1,1,2,2-Tetrachloroethane	1,2,3-Trichloropropane	Dichloromethane	Pentachloroethane	1,2-Dibromo-3-chloropropane	Hexachlorobutadiene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR					5	5	0.02	5	5	5	0.01	0.5	0.5	0.01	0.02	0.01	0.5	0.01	0.02	0.02	0.5	0.04	0.5	0.02	0.01	0.5	0.5	0.02	0.5	0.4	0.5	0.5	0.02
TP09	TP09_0.2	0.2	26/01/2023	EM2301163	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02
	QC08_260123	0.2	26/01/2023	EM2301163	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02
				RPD (%):	-	-	0	-	-	-	0	-	-	0	0	0	-	0	0	0	-	0	-	0	0	-	-	0	-	0	-	-	0
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
	QC13_29012023	0.5	29/01/2023	EM2301773	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
				RPD (%):	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0	0	0
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
	QC14_29012023	0.5	29/01/2023	961022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				RPD (%):	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

***RPDs have only been considered where a concentration is greater than 1 times the LOR.**
****Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each LOR multiplier range are: 30 (1**
*****Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in tl**

Legend

Pass	RPD < = 30%
Fail	RPD > = 30%
-	Not Reported / Calculated

LOR - Limit of Reporting

Table 1 - Relative Percentage Difference

AECOM

					Trihalomethanes				Physico-Chemical Parameters			Polychlorinated Biphenyls	Oxygenated Compounds				Sulfonated Compounds	Phthalate Esters	Nitroaromatics and Ketones		Chlorinated Hydrocarbons
					Bromodichloromethane	Bromoform	Chloroform	Dibromochloromethane	% Moisture Content (dried @ 103°C)	pH (CaCl2)	% Moisture Content	Polychlorinated Biphenyls	Vinyl acetate	2-Butanone (MEK)	2-hexanone (MBK)	4-Methyl-2-pentanone (MIBK)	Carbon disulfide	Bis(2-ethylhexyl)phthalate	2,4-Dinitrotoluene	Nitrobenzene	Chlorinated hydrocarbons (sum)
					mg/kg	mg/kg	mg/kg	mg/kg	%	pH Units	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR					0.5	0.5	0.02	0.5	1	0.1	0.1	0.1	5	1	5	5	0.5	0.5	1	0.5	0.01
Location ID	Field ID	Depth	Date	Lab Report Number																	
TP09	TP09_0.2	0.2	26/01/2023	EM2301163	-	-	<0.02	-	-	8.2	22.0	<0.1	-	<1	-	-	-	<0.5	<1.0	<0.5	<0.01
	QC08_260123	0.2	26/01/2023	EM2301163	-	-	<0.02	-	-	8.0	19.6	<0.1	-	<1	-	-	-	<0.5	<1.0	<0.5	<0.01
				RPD (%):	-	-	0	-	-	2	12	0	-	0	-	-	-	0	0	0	0
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	<0.5	<0.5	<0.5	<0.5	-	-	5.7	-	<5	<5	<5	<5	<0.5	-	-	-	-
	QC13_29012023	0.5	29/01/2023	EM2301773	<0.5	<0.5	<0.5	<0.5	-	-	7.1	-	<5	<5	<5	<5	<0.5	-	-	-	-
				RPD (%):	0	0	0	0	-	-	22	-	0	0	0	0	0	-	-	-	-
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	<0.5	<0.5	<0.5	<0.5	-	-	5.7	-	<5	<5	<5	<5	<0.5	-	-	-	-
	QC14_29012023	0.5	29/01/2023	961022	-	-	-	-	9.2	-	-	-	-	-	-	-	-	-	-	-	-
				RPD (%):	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*RPDs have only been considered where a concentration is greater than 1 times the LOR.
**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each LOR multiplier range are: 30 (1
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in tl

Legend

Pass	RPD < = 30%
Fail	RPD > = 30%
-	Not Reported / Calculated

LOR - Limit of Reporting

Table 1 - Relative Percentage Difference

AECOM

						Organochlorine Pesticides (OC)																										Cyanides		Herbicides	Inorganics
						Aldrin	Dieldrin	Aldrin + Dieldrin	a-BHC	b-BHC	g-BHC	g-BHC (Lindane)	cis-Chlordane	trans-Chlordane	Chlordane	pDD	pDE	pDT	pDT+DDE+DDD	Endosulfan 1	Endosulfan 2	Endosulfan sulfate	Endrin	Endrin aldehyde	Heptachlor	Heptachlor epoxide	Hexachlorobenzene (HCB)	Methoxychlor	Other organochlorine pesticides (sum)	Cyanide (amenable)	Cyanide Total	2,4-Dichlorophenoxy acetic acid	formaldehyde
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR						0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.05	0.05	0.05	0.05	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	1	1	0.001	2
Location ID	**Field ID**	**Depth**	**Date**	**Lab Report Number**																													
TP09	TP09_0.2	0.2	26/01/2023	EM2301163		<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<2
	QC08_260123	0.2	26/01/2023	EM2301163		<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<2
					RPD (%):	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BH04	BH04_0.5	0.5	29/01/2023	EM2301773		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QC13_29012023	0.5	29/01/2023	EM2301773		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
					RPD (%):	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04	BH04_0.5	0.5	29/01/2023	EM2301773		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QC14_29012023	0.5	29/01/2023	961022		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
					RPD (%):	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**RPDs have only been considered where a concentration is greater than 1 times the LOR.
**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each LOR multiplier range are: 30 (1
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in tl

Legend

Pass	RPD < = 30%
Fail	RPD > = 30%
-	Not Reported / Calculated

LOR - Limit of Reporting

Table 2 - Rinsate Blanks

AECOM

					Metals													
					Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Copper	Copper (filtered)	Lead	Lead (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)
					mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
LOR					0.001	0.001	0.0001	0.0001	0.001	0.001	0.001	0.001	0.001	0.001	0.0001	0.0001	0.001	0.001	0.005	0.005
Field ID	**Date**	**Sample Type**	**Matrix Type**	**Lab Report Number**																
QC06_250123	**25/01/2023**	**Rinsate**	**Water**	**EM2301163**	<0.001	-	<0.0001	-	<0.001	-	<0.001	-	<0.001	-	<0.0001	-	<0.001	-	<0.005	-
QC11_260123	**26/01/2023**	**Rinsate**	**Water**	**EM2301163**	<0.001	-	<0.0001	-	<0.001	-	<0.001	-	<0.001	-	<0.0001	-	<0.001	-	<0.005	-
QC15_290123	**29/01/2023**	**Rinsate**	**Water**	**EM2301773**	-	<0.001	-	<0.0001	-	<0.001	-	<0.001	-	<0.001	-	<0.0001	-	<0.001	-	<0.005
QC17_300123	**30/01/2023**	**Rinsate**	**Water**	**EM2301773**	-	<0.001	-	<0.0001	-	<0.001	-	<0.001	-	<0.001	-	<0.0001	-	<0.001	-	<0.005
QC23_310123	**31/01/2023**	**Rinsate**	**Water**	**EM2301412**	-	<0.001	-	<0.0001	-	<0.001	-	<0.001	-	<0.001	-	<0.0001	-	<0.001	-	<0.005

Legend
Pass Non-Detect
Fail Detect
LOR: Limit of Reporting

Table 2 - Rinsate Blanks

AECOM

					Per- and Poly-fluoroalkyl Substances														Monocyclic Aromatic Hydrocarbons							Polynuclear Aromatic Hydrocarbons	
					Perfluorooctanoic acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum (PFHxS + PFOS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluoropentanoic acid (PFPeA)	Sum of WA DWER PFAS (n=10)*	Benzene	Toluene	Ethylbenzene	m&p-Xylene	o-Xylene	Total Xylenes	Total BTEX	Naphthalene	Naphthalene (value used in F2 calc)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	UG/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.01	0.01	0.01	0.01	0.05	0.05	0.05	0.05	0.02	0.1	0.02	0.02	0.02	0.01	1	2	2	2	2	2	1	5	5
Field ID	**Date**	**Sample Type**	**Matrix Type**	**Lab Report Number**																							
QC06_250123	**25/01/2023**	**Rinsate**	**Water**	**EM2301163**	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<1	<2	<2	<2	<2	<2	<1	-	<5
QC11_260123	**26/01/2023**	**Rinsate**	**Water**	**EM2301163**	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<1	<2	<2	<2	<2	<2	<1	-	<5
QC15_290123	**29/01/2023**	**Rinsate**	**Water**	**EM2301773**	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<1	<2	<2	<2	<2	<2	<1	<5	-
QC17_300123	**30/01/2023**	**Rinsate**	**Water**	**EM2301773**	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<1	<2	<2	<2	<2	<2	<1	<5	-
QC23_310123	**31/01/2023**	**Rinsate**	**Water**	**EM2301412**	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<1	<2	<2	<2	<2	<2	<1	<5	-

Legend
Pass Non-Detect
Fail Detect
LOR: Limit of Reporting

Table 3 - Trip Blanks

					Monocyclic Aromatic Hydrocarbons														Polynuclear Aromatic Hydrocarbons		
					Benzene	Benzene	Toluene	Toluene	Ethylbenzene	Ethylbenzene	m&p-Xylene	m&p-Xylene	o-Xylene	o-Xylene	Total Xylenes	Total Xylenes	Total BTEX	Total BTEX	Naphthalene	Naphthalene	Naphthalene (value used in F2 calc)
					mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	mg/kg
LOR					0.2	1	0.5	2	0.5	2	0.5		0.5		0.5		0.2		1	5	
Field ID	**Date**	**Sample Type**	**Matrix Type**	**Lab Report Number**																	
QC03_240123	**24/01/2023**	**Trip Blank**	**Water**	**EM2301163**	<0.2		<0.5		<0.5		<0.5		<0.5		<0.5		<0.2		-		<1
QC07_250123	**25/01/2023**	**Trip Blank**	**Water**	**EM2301163**	<0.2		<0.5		<0.5		<0.5		<0.5		<0.5		<0.2		-		<1
QC12_260123	**26/01/2023**	**Trip Blank**	**Water**	**EM2301163**	<0.2		<0.5		<0.5		<0.5		<0.5		<0.5		<0.2		-		<1
QC16_290123	**29/01/2023**	**Trip Blank**	**Water**	**EM2301773**	<0.2		<0.5		<0.5		<0.5		<0.5		<0.5		<0.2		<1		-
QC18_300123	**30/01/2023**	**Trip Blank**	**Water**	**EM2301773**	<0.2		<0.5		<0.5		<0.5		<0.5		<0.5		<0.2		<1		-
QC24_310123	**31/01/2023**	**Trip Blank**	**Water**	**EM2301412**		<1		<2		<2		<2		<2		<2		<1		<5	

Legend
Pass Non-Detect
Fail Detect
LOR: Limit of Reporting

Appendix F

Client Review Comments Register

MELBOURNE AIRPORT

AECOM Delivering a better world

Client Review Comments Register

Project: MAPMP 2
Client: APAM
Client PM: Ben Torwick
Job Number: 60692389
Document Number: 60692389-RP-03-AV-0003_A
Revision A
AECOM PM: Bob Burrowes
Todays Date: 8/05/2023

Number of Review Comments	9
Open	9
Closed	163

Index	Report	Page	Clause	Comment Type	Author	Comment Date	Client Comment	AECOM Comment	Design Review Workshop Comment	APAM Response (additional)	Status
	60692389-RP-03-AV-0003_A	7		Sticky Note	Ryoung	11/04/2023	Section should also include discussion of PFAS NEMP eclogoical guidline values	Report updated			Open
	60692389-RP-03-AV-0003_A	7		Sticky Note	Ryoung	11/04/2023	these are not relevant to commonwealth airport land. levels should be adopted in accordance with Airport (Environment Protection) Regulations 1997 and ASC NEPM. update section accordingly.	Report updated with the relevant guidelines			Open
	60692389-RP-03-AV-0003_A	9		Sticky Note	Ryoung	11/04/2023	Not Relevant	Report updated with section deleted			Open
	60692389-RP-03-AV-0003_A	9		Sticky Note	Ryoung	11/04/2023	also include assessment against AEPR 1997 (for onsite reuse) as well as APAM PFAS Management Framework avail on website (for onsite reuse)	Report updated to include assessment against AEPR 1997 and APAM PFAS Management Framework			Open
	60692389-RP-03-AV-0003_A	11		Sticky Note	Ryoung	11/04/2023	include discussion re. BH4 discrepancy between primary sample and duplicate sample	Discussion added to text section. Sample descrepancies can be explained by the heteorogenity of soil			Open
	60692389-RP-03-AV-0003_A	11		Sticky Note	Ryoung	11/04/2023	update section based on previous comments	Report updated			Open
	60692389-RP-03-AV-0003_A	11		Sticky Note	Ryoung	11/04/2023	update section based on previous comments	Report updated			Open
	60692389-RP-03-AV-0003_A	12		Sticky Note	Ryoung	11/04/2023	update section based on previous comments	Report updated			Open
	60692389-RP-03-AV-0003_A	Anex		Email	Ryoung	11/04/2023	Can you please confirm with Aecom whether the lab still has the samples? If they do, please request the following samples be sampled for leachability at a neutral pH (per the sampling requirements of the APAM PFAS Management Framework): QC13_29012023 QC14_29012023 BH05_0.5 TP04_1.0	Lab comfirmed initially they still have the samples. Then notified AECOM that the samples had been disposed off in late March. No additional testing possible			Open

Appendix J

Offsets assessment guide

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	NTGVVP
EPBC Act status	Critically Endangered
Annual probability of extinction Based on IUCN category definitions	**6.8%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	Yes	Impact area: 2.856 ha of NTGVVP with weighted average quality score of 38.00/100	**Area**	2.856	Hectares	
			Quality	**4**	Scale 0-10	
			Total quantum of impact	1.14	Adjusted hectares	
Threatened species habitat						
Area of habitat	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	Yes	1.14	Adjusted hectares	Offset site: third party offset near Foxhow, VIC comprising 26.98ha of NTGVVP with a weighted average start quality score of 52.65/100.	**Risk-related time horizon (max. 20 years)**	20	**Start area (hectares)**	8.17	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	90%	0.00	0.00	1.14	100.01%	Yes		
									Future area without offset (adjusted hectares)	8.2	**Future area with offset (adjusted hectares)**	8.2								
					Time until ecological benefit	10	**Start quality (scale of 0-10)**	**5**	**Future quality without offset (scale of 0-10)**	**3**	**Future quality with offset (scale of 0-10)**	**6**	3.00	90%	2.70	1.40				
Threatened species habitat																				
Area of habitat	No				**Time over which loss is averted (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Appendix K

CHMP 12774

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Appendix L

Environment and Sustainability Policy

MELBOURNE AIRPORT
Environment and Sustainability Policy

Purpose
The purpose of this policy is to set the direction for our business and incorporate environment, social and governance (ESG) strategies into our decision making, investments and operations.

As a vital piece of strategic infrastructure that benefits the national economy, Melbourne Airport facilitates tourism, freight and trade, and connects people and businesses to the global marketplace. We are committed to reducing our environmental impact and continuing to operate sustainably.

Our goal and commitments
Our goal is to be an environment and sustainability leader for transport and logistics in the Asia-Pacific.

Working proactively with airlines, business partners, tenants, contractors and other stakeholders, the Australia Pacific Airports (Melbourne) (APAM) Board and Executive Leadership Team is committed to provide the necessary focus and resources for our organisation to:

- adopt measures to conserve natural resources and adapt to climate change
- make a material reduction in energy consumption and operational carbon emissions under our direct control and under our influence
- be responsible for and protect the environment directly and indirectly impacted by Melbourne Airport's operations
- significantly reduce our waste to landfill both in terminals and across our estate, and implement circular economy principles across construction projects, re-using resources where possible
- manage our land to protect and enhance First Nations and European heritage and ecology, while ensuring aircraft safety
- make best use of our existing facilities and design, construct and operate new facilities in support of our environmental and sustainability goals
- work with our employees, tenants, business partners, First Nations, regulators, and local and regional communities to develop new strategies to continually improve environmental and sustainability performance and protect heritage and the environment
- comply with all relevant heritage, environmental and energy laws, policies, procedures and other compliance obligations and, where appropriate, exceed these requirements
- prevent, limit and reduce pollution
- continually improve our environmental performance through our certified Environmental Management System.

Accountabilities and responsibilities
This policy applies to all activities related to the management and operation of Melbourne Airport. This includes the activities of employees, tenants, retailers, airline and ground transport partners, and contractors.

All parties are required to comply with this policy and to consider this policy during decision making.

Lyell Strambi
Chief Executive Officer
Australia Pacific Airports (Melbourne)
March 2022

Appendix M

M3R Ecology Technical Report

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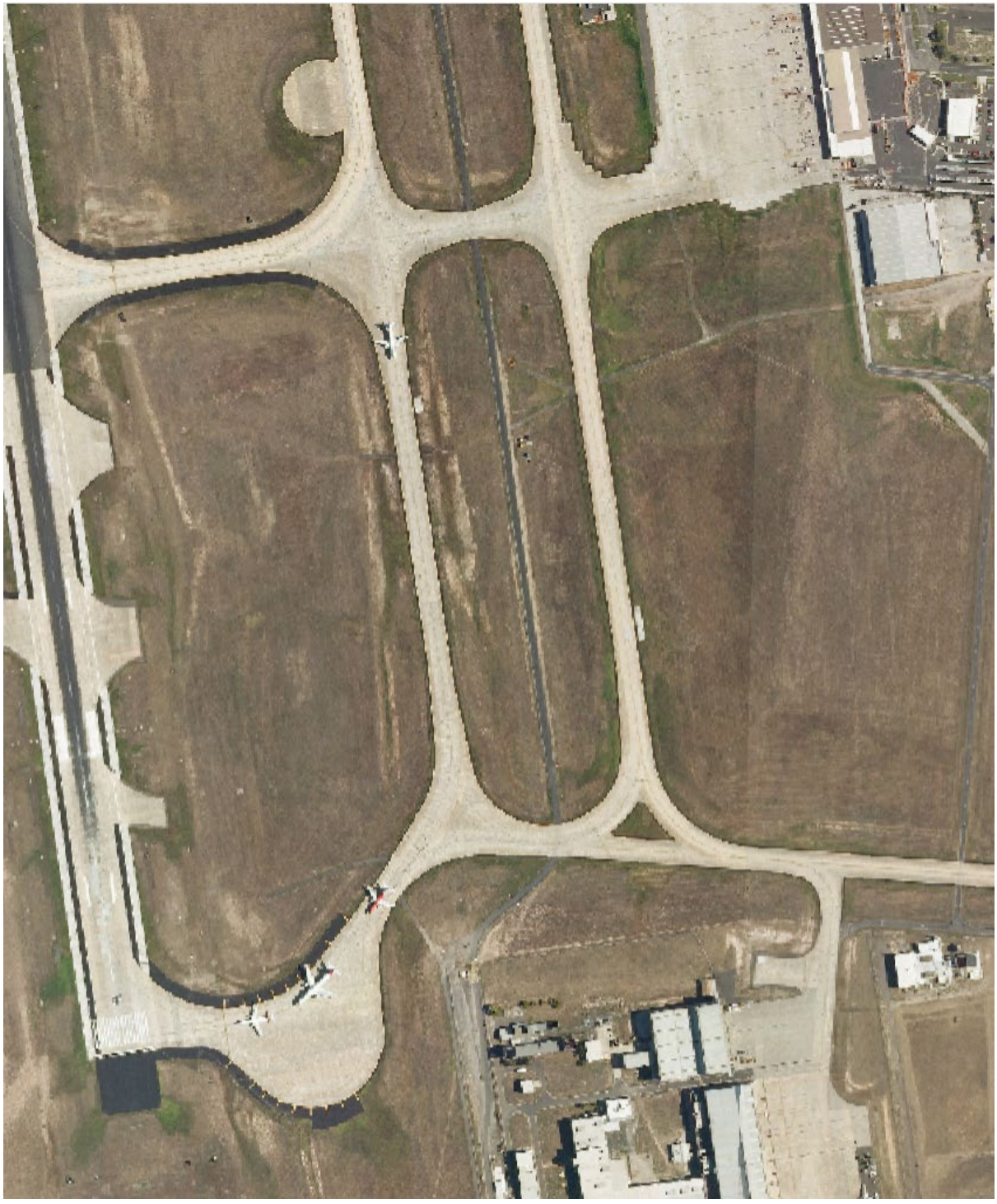
Appendix N

Historical Aerial Images

2024

2007



2005

2004

1991

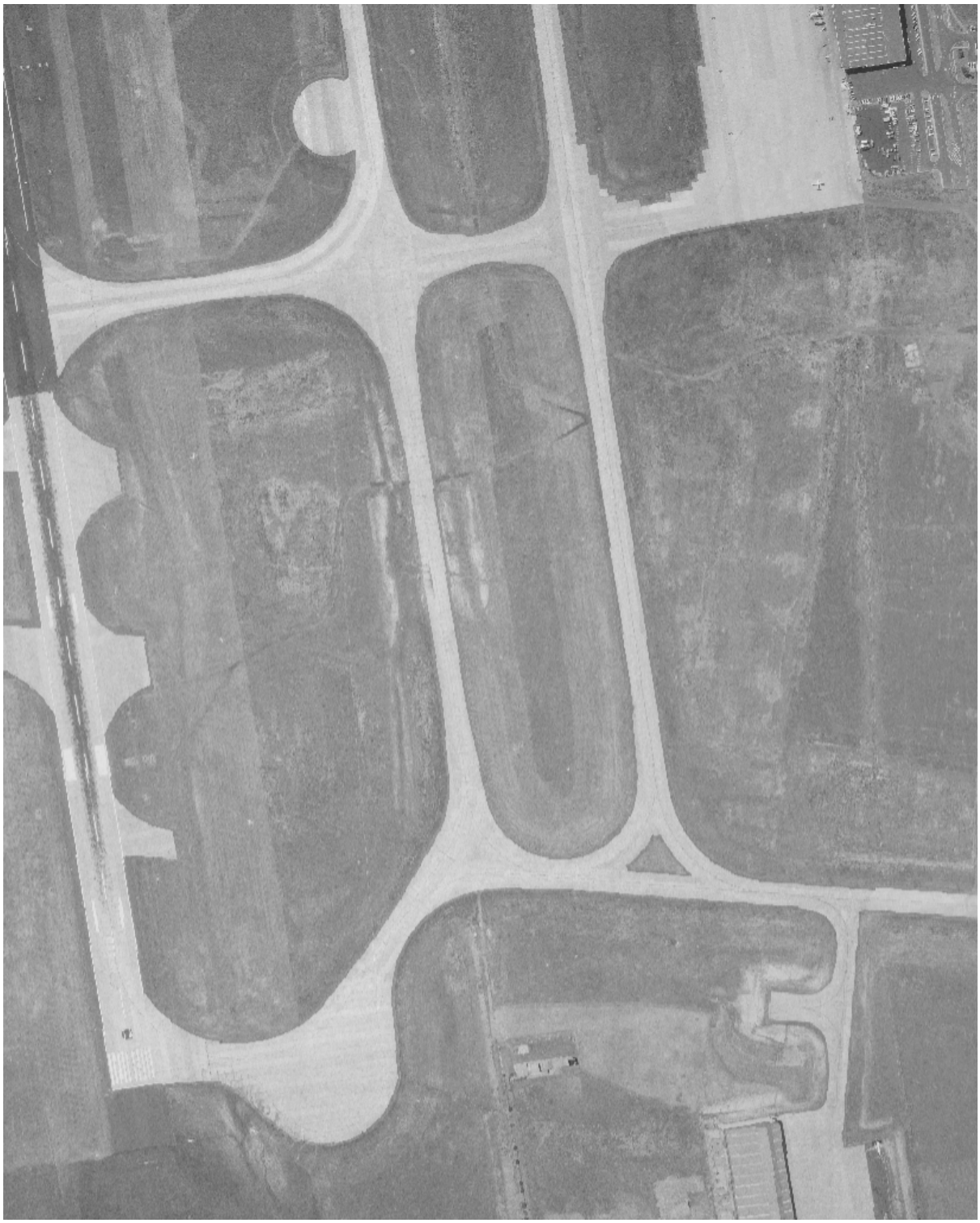
1989

1985

1982

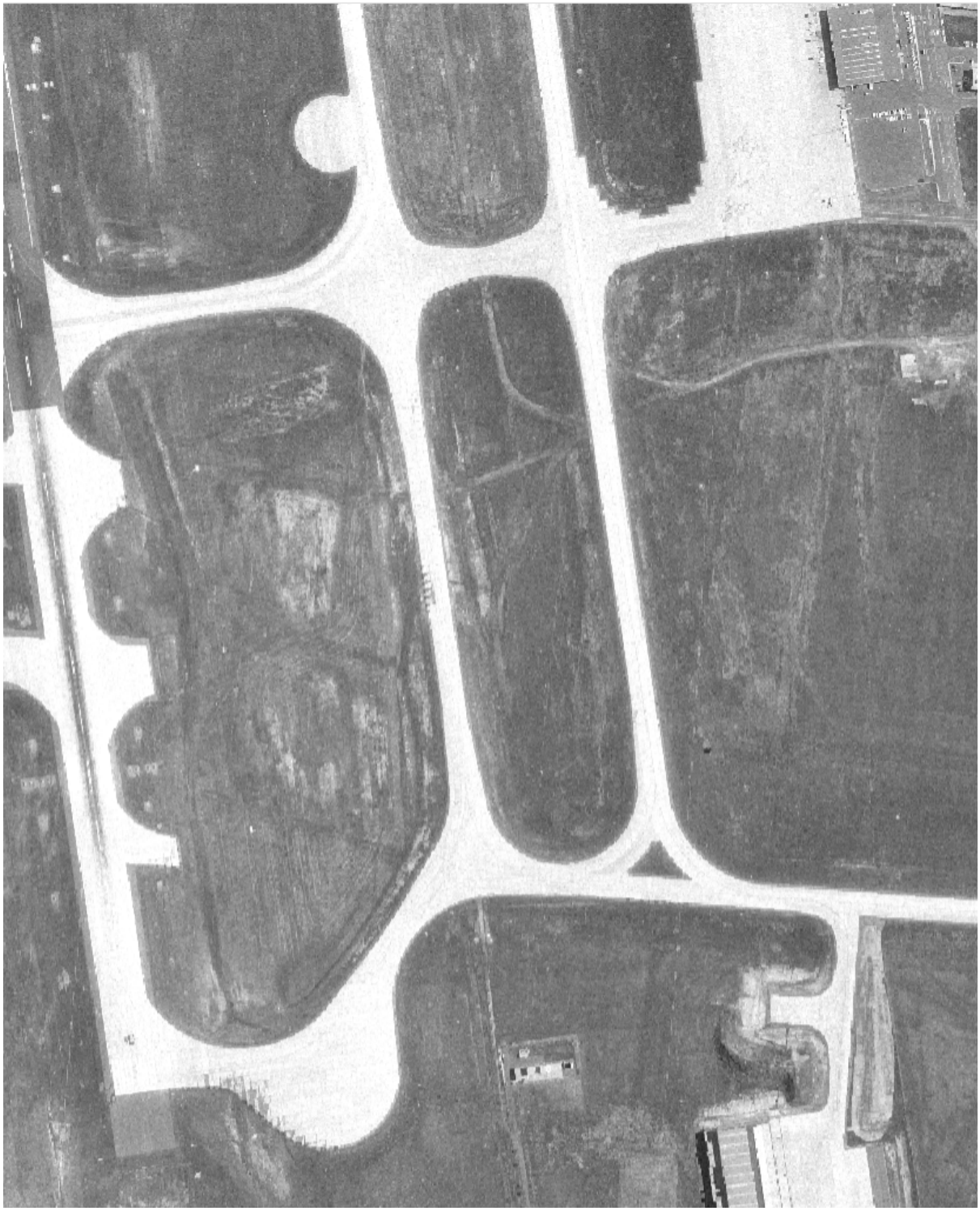
1980

1979



1975

1974



1972

1970

1969

1968

1966

1962

1951

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