

APA Technical Note - Western Outer Ring Main - Environment Effects Statement

TECHNICAL NOTE NUMBER: TN10

DATE: 28 September 2021

SUBJECT: Specialist Area: Contamination
Additional contamination investigations following EES
exhibition and response to RFI# 77.

SUMMARY This Technical Note provides detail on the additional contamination investigations undertaken following exhibition of the EES.

REQUEST: 77. Explain whether soils in the vicinity of Jacksons Creek will be tested for Per- and Polyfluoroalkyl Substances (PFAS).

ATTACHMENTS: Contamination Investigations Technical Note, dated 28 September 2021

NOTE:

Background

- 1 The exhibited EES Technical Report E *Contamination* identified that further testing was required at a small number of locations along the Project alignment where potential contaminant sources may have caused contamination or where potential or actual acid sulfate soils (PASS, AASS) may be encountered during construction.
- 2 Attached at Annexure 1 is a Technical Note summarising the scope of work undertaken, results obtained and recommendations for further mitigation measures.

Response to RFI# 77 – Testing of soils in the vicinity of Jacksons Creek for Per- and Polyfluoroalkyl Substances (PFAS)

- 3 Section 4 of the Contamination investigations technical note at Annexure 1 provides an overview of the proposed further soil investigations proposed to be undertaken at Jacksons Creek crossing prior to construction. As access for sampling has not been granted to date, the sampling will need to be conducted by the contractor prior to construction. The requirements associated with this sampling is discussed in more detail in Sections 4.1 and 4.2 of Annexure 1.

Annexure 1

Contamination Investigations Technical Note, dated 28 September 2021

Technical Memorandum

'28 September 2021

To	APA	Ref. No.	12529997
From	GHD		
Subject	APA WORM – Contamination Investigations Technical Memorandum		

1. Background

This Technical Memorandum summarises the findings of the additional contamination investigations undertaken following exhibition of the Environment Effect Statement (EES) and Pipeline Licence Application documentation for the proposed Western Outer Ring Main (WORM).

This report should be read in conjunction with EES Technical Report E: *Contamination* and Chapter 10 Waste Management (greenhouse gas and contamination) of the WORM EES and is subject to the same limitations as stated in the Technical Report.

As complete characterisation of the contamination status along the entire alignment is not feasible, an approach targeting higher contamination risk areas for further assessment was adopted. These areas along the project alignment were noted in the Contamination Technical Report as requiring further testing in addition to where potential or actual acid sulfate soils (PASS, AASS) may be encountered during construction.

The scope of the further assessment aimed to target areas identified as higher contamination or PASS risk on the Project and comprised of the following:

- The Kalkallo retarding basin to assess for the presence of per- and polyfluoroalkyl substances (PFAS) in soil, given that retarding basins can receive runoff from a wide catchment and have the potential to act as a 'sink' for any contaminants in the runoff.
- The possible former quarry in Beveridge located along the construction corridor to ascertain if the former quarry extents encroached into the Project and whether it had been backfilled with contaminated waste.
- The auto wreckers located at Diggers Rest, which was identified as a potential contaminant source due to the presence of a large number of wrecked vehicles.
- The Wollert Compressor Station, which was identified as a potential contaminant source due to the presence of an above ground oil water separator and associated triple interceptor trap as well as minor chemical storage on site. It was subsequently determined that further soil investigation at the Wollert Compressor Station was not warranted at this stage.
- The Jacksons Creek crossing to determine the presence of PFAS in shallow sediments and groundwater; as well as to assess for PASS and AASS. It should be noted that the investigations at Jacksons Creek crossing are yet to be completed due to access restrictions. Section 4 below outlines the investigation requirements based on when the Jacksons Creek Site can be accessed.
- The Merri Creek crossing with respect to assessment of PASS and AASS.

The scope of work was undertaken in general accordance with the relevant guidelines, taking into account the relevant guidance that came into effect on 1 July 2021 under the updated *Environment Protection Act 2017* (EP Act 2017).

There remains a low risk of contamination being encountered elsewhere along the alignment outside these target areas above. This risk, however, is deemed low enough for it to be managed by the construction contractors in the event that any unknown contamination is encountered within the alignment during construction through the Project CEMP and any contractor spoil management plan. This is standard industry practice for construction projects.

1.1 Objectives

The objectives of the additional contamination investigation were to:

- Assess contamination levels in soils along the pipeline alignment at Kalkallo retarding basin and Diggers Rest auto wreckers to inform potential management options.
- Assess the presence of a former quarry for contamination or previous opportunistic waste disposal and verify whether the potential former quarry extends into the construction boundary of the Project in Beveridge.
- Assess the presence or absence of PASS or AASS associated with Quaternary creek sediments at the Merri Creek and Jacksons Creek crossings.
- Assess the concentrations of PFAS in shallow sediments and groundwater at Jacksons Creek.

2. Methodology

The field methodology implemented at each of the investigation locations included soil sampling undertaken by a suitably qualified and experienced Environmental Engineer. All soil was logged in accordance with Australian Standard AS 1726¹. The lithology, visual and olfactory observations were logged, as well as any potential indicators of contamination or PASS.

All samples collected were submitted to the nominated National Association of Testing Authorities (NATA) accredited laboratories for analysis. The field observations and analytical results were assessed against the adopted criteria deemed appropriate for each of the individual investigation locations.

Established internal and external laboratory quality assurance and quality control (QAQC) procedures were maintained throughout each of the investigations. With a detailed QAQC assessment undertaken to verify the validity of the data used for each of the investigations.

3. Summary of findings

Sections 3.1 to 3.4 summarise the findings of the individual assessments undertaken at each of the investigation locations.

3.1 Kalkallo retarding basin

A total of 12 samples were collected and analysed from six boreholes advanced along the project alignment at the Kalkallo retarding basin (refer to Attachment 1, Figure 1). Based on the field observations and analytical results reported from soil samples:

- All sample results were below the upper threshold for Fill Material as defined in Environment Protection Authority Victoria (EPA Vic) Publication 1828.2 – ‘Waste disposal categories – characteristics and thresholds’ (2021).
- PFAS was not detected above the laboratory limit of reporting (LOR), for all 12 samples and therefore were below the reuse criteria in EPA Vic Publication 1669.4 – ‘Interim Position statement on PFAS’ (2020).
- Concentrations of potential contaminants of concern were below adopted commercial/industrial health guidelines. As such, soil at the Site can be managed so as to minimise the risks of harm to human

¹ Standards Australia, 1993. Australian Standard, Geotechnical site investigations. AS 1726-1993.

health of the workers undertaking construction activities so far as reasonably practicable (to comply with the duties outlined in section 39 of the EP Act 2017), through implementation of standard health, hygiene, safety and environment practices such as:

- Minimising direct physical contact with soil through the use of appropriate PPE (e.g. long sleeves, and gloves).
- Personal hygiene during and following activities involving contact with the soil (e.g. washing of hands before eating and/or drinking).
- Providing first aid, washing and toilet facilities away from work areas.
- Using dust suppression techniques, such as spray water on exposed soil and stockpiles to control dust generation as required during intrusive works.
- Providing suitable stockpile controls to prevent erosion and sedimentation as required.

3.2 Beveridge potential former quarry

A total of 14 samples were collected and analysed from five test pits advanced along the project alignment at the Beveridge site (refer to Attachment 1, Figure 2). Based on the field observations and analytical results reported from soil samples:

- No evidence could be found of the existence of the inferred former quarry within the construction boundary of the Project at this Site based on the five test pits (14 samples) collected and analysed. Given this, an additional five test pits originally planned for the area were not deemed necessary.
- Concentrations of fluoride and nickel exceeded the upper threshold for Fill Material as defined in EPA Vic Publication 1828.2. The *Environment Protection Act 2017* (EP Act 2017) defines that land is contaminated if '*waste, a chemical substance or a prescribed substance is present on or under the surface of the land, and the waste, chemical substance or prescribed substance is present in a concentration above the background level; and creates a risk of harm to human health or the environment*'. Therefore, given the concentrations are considered to represent natural background concentrations, they are not considered a risk to the project. The soil is likely to be reused to backfill the trench and is unlikely to be removed to an offsite location.
- Should offsite soil disposal be required then an application can be made to EPA Vic to issue a designation to change the classification of the soils to 'Fill Material' as the soil is sourced from areas that are naturally elevated. The application process has not yet been finalised by EPA Vic, but note that if the soil is reclassified as Fill Material, it still cannot be reused offsite where the nickel and fluoride concentrations create a risk of harm to human health or the environment under Section 35 of the *Environment Protection Act 2017*.
- Concentrations of potential contaminants of concern were below adopted commercial/industrial health guidelines. As such, soil at the Site can be managed so as to minimise the risks of harm to human health of the workers undertaking construction activities so far as reasonably practicable (to comply with the duties outlined in section 39 of the EP Act 2017), through implementation of standard health, hygiene, safety and environment practices such as those listed in section 3.1.

3.3 Auto wreckers at Diggers Rest

A total of 16 samples were collected and analysed from 10 hand auger boreholes advanced along the project alignment at the Diggers Rest property (refer to Attachment 1, Figure 3). Based on the field observations and analytical results reported from soil samples:

- All sample results were below the upper threshold for Fill Material as defined in EPA Vic Publication 1828.2 and therefore, the soil represented by these samples would be suitable for reuse on site. However, should contaminated material be observed at other locations along the trench (through visual or olfactory observations) during excavation works, further assessment may be required at that time.

- Concentrations of nickel exceeding the ASC NEPM² ecological investigation level (EIL) for Commercial/Industrial land use are considered to be naturally elevated and therefore are not considered a risk to the project.
- Concentrations of potential contaminants of concern were below adopted commercial/industrial health guidelines. As such, soil at the Site can be managed so as to minimise the risks of harm to human health of the workers undertaking construction activities so far as reasonably practicable (to comply with the duties outlined in section 39 of the EP Act 2017), through implementation of standard health, hygiene, safety and environment practices such as those listed in section 3.1.

3.4 Merri Creek

A total of two samples were collected and analysed from one hand auger borehole advanced at the project alignment at Merri Creek crossing (refer to Attachment 1, Figure 4). Based on the field observations and analytical results reported from soil samples:

- Potential or actual acid sulphate soils (PASS or AASS) associated with Quaternary creek sediments at the Site are not likely to be present
- No further actions or management measures with respect to PASS and AASS are required based on the current pipeline design.

4. Jacksons Creek investigation

Contamination EMMs C1 and C3 in the CEMP document the requirement for further soil investigations to be undertaken at Jacksons Creek crossing prior to construction. As outlined in EES Technical Report E *Contamination*, the investigation scope at Jacksons Creek crossing aims to assess waste categorisation of the soil, PASS in soil and PFAS in soil and groundwater by analysing soil and groundwater samples collected from:

- two soil bores advanced as close to the creek as possible on each side of the creek crossing (total of four bores) to approximately six metres depth, and
- one groundwater well constructed by converting one of the boreholes into a groundwater well.

Access for sampling in this area has not been available to complete field assessments to date. Therefore, it is recommended that sampling occurs prior to construction as discussed below.

As documented in EMM C1 in the CEMP, a spoil management plan (SMP) must be developed to manage all spoil types. If no contamination is found, then additional supplementary sampling will need to be undertaken for any stockpiled excess spoil to be removed offsite. This is to comply with EPA Vic sampling density requirements for waste disposal or reuse. The SMP should also include standard protocols for unexpected contamination finds, in the event that previously unidentified contamination is encountered. The CEMP includes standard protocols for unexpected contamination finds in EMMs C1 and C2. The SMP would need to direct the safe excavation and handling of the soil and control of any groundwater or surface water during construction. The CEMP includes measures for the handling of soil in EMMs C1 to C3; and controls for groundwater and surface water in EMMs GW1 to GW3; and SW1, SW2, SW4 and SW7 to SW9, respectively. With EMMs SW7 to SW9 referenced specifically as measures for the control of surface water at Jacksons Creek.

² National Environment Protection (Assessment of Site Contamination) Measure, 1999, as amended in 2013 (ASC NEPM)

5. Conclusions

Based on the scope of works undertaken as part of the required additional contamination investigations described in this document, the findings are summarised as follows:

- Soils excavated from the Kalkallo retarding basin can be classified as 'Fill Material'. Reuse onsite or offsite would be subject to ensuring no adverse impacts to the receiving environment.
- Soils excavated from the Beveridge potential former quarry indicated a nominal waste classification of Category D. However, this was based on natural elements elevated above the EPA Vic Publication 1828.2 Fill Material criteria. Consequently, an application can be made to EPA Vic to issue a designation to change the classification of the soils to 'Fill Material' should reuse offsite be required.
- Soils excavated from the auto wreckers at Diggers Rest can be classified as 'Fill Material'. Reuse onsite or offsite would be subject to ensuring no adverse impacts to the receiving environment.
- Quaternary creek sediments at the Merri Creek crossing are not likely to be PASS or AASS within the proposed excavation depths. No further actions or management measures are required.
- Soil represented by the samples collected in this study are not considered a contamination risk to the Project and would therefore be suitable for reuse on site to backfill the trench.
- Soil at the Sites can be managed so as to minimise the risks of harm to human health so far as reasonably practicable (to comply with the duties outlined in section 39 of the EP Act 2017), through implementation of the measures recommended in section 3.1.

The above conclusions are subject to the following limitations:

- Limited testing was undertaken at locations described above to inform GHD's and APA's understanding of contamination and/or acid sulfate conditions in targeted areas for the purposes of assessing higher risk areas on the Project.
- Areas considered at risk of PASS or AASS for the Project, have all been assessed with the exception of Jackson Creek (Section 4).
- To fulfil the contamination assessment requirements set out in Environment Management Measure (EMM) C1 of the Construction Environment Management Plan (CEMP), the Contractor will need to have a procedure to manage unknown contamination finds if encountered during the project. The presence of contamination may be indicated by visual or olfactory observations. This is to comply with the contamination assessment and requirements set out in EMM C1 to manage risks on the Project, human health or the environment.

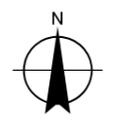
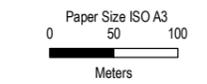
ATTACHMENTS:

Attachment 1 - Figures



Legend

-  Test Locations
-  Pipeline Alignment
-  Pipeline KPs
-  MLV
-  Construction Corridor



Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

APA Group
Australian Pipeline Limited
Western Outer Ring Main Gas Project

Project No. 12529997
Revision No. E
Date 22/04/2021

Retarding Basin

FIGURE 1

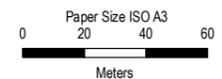
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Print date: 20 Apr 2021 - 11:01

Data source: VicMap, DELWP, 2021; APA, 2020; GHD, 2021. Created by: kgardner



Legend

-  Test pit locations
-  Pipeline Alignment
-  Pipeline Kilometre Points
-  Construction Corridor
-  Cultural Heritage Sensitivity Area
-  Approximate location of former quarry



Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 55



APA Group
 Australian Pipeline Limited
 Western Outer Ring Main Gas Project

**Former Quarry
 Investigation Area**

Project No. 12529997
 Revision No. F
 Date 27/04/2021

FIGURE 2

Data source: DELWP, VicMap 2021; GHD, 2021 Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community. Created by: kgardner
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Legend

-  Borehole Locations
-  Kilometre Point
-  Pipeline Alignment
-  Construction Corridor
-  Parcel

Paper Size ISO A3
 0 10 20
 Meters
 Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 55



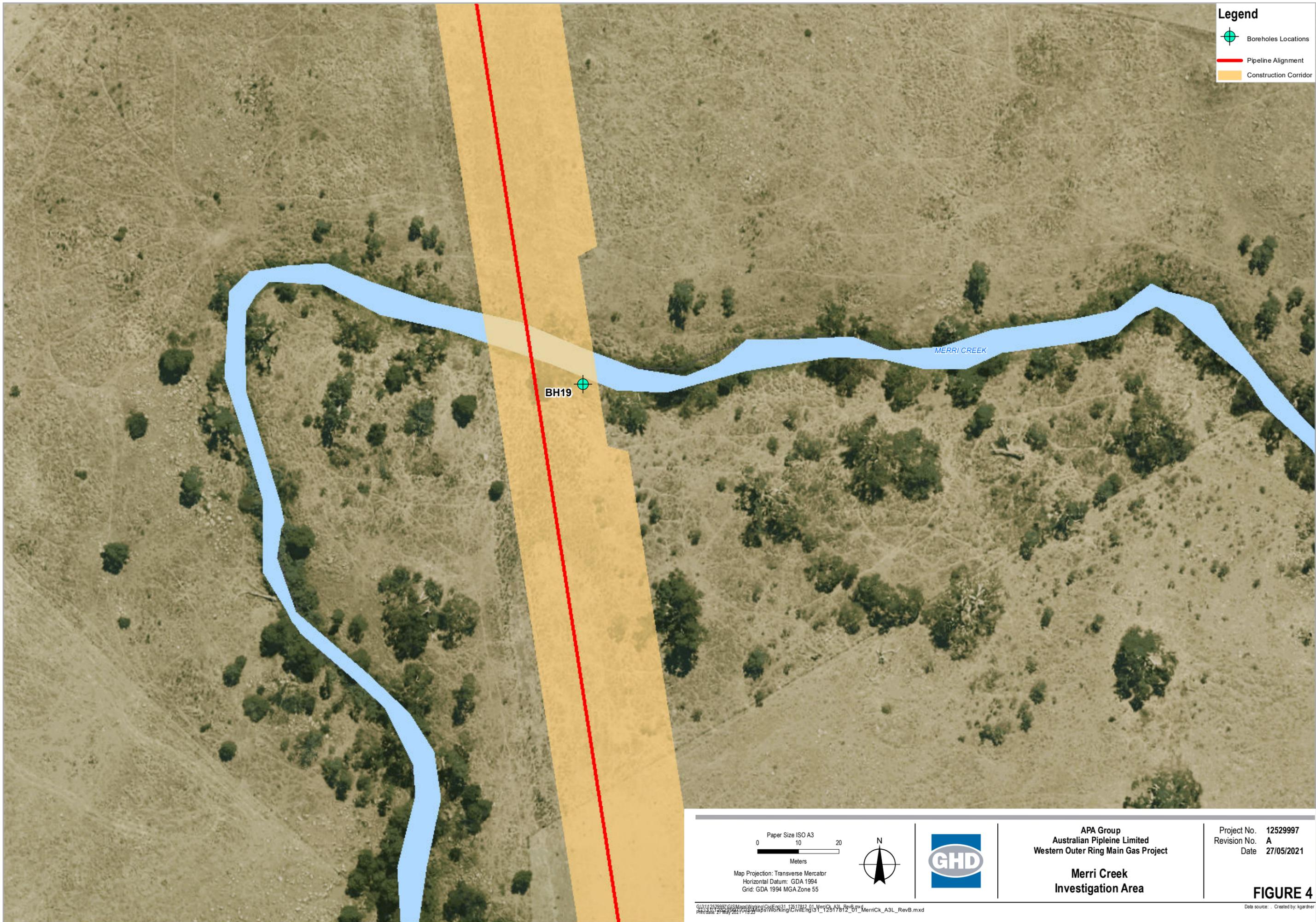
APA Group
 Australian Pipeline Limited
 Western Outer Ring Main Gas Project

**Diggers Rest Property
 Investigation Area**

Project No. 12529997
 Revision No. B
 Date 09/04/2021

FIGURE 3

Data source: APA, Alignment data, 2021; GHD, Test Locations, 2021; - Created by: kgardner



Legend

-  Boreholes Locations
-  Pipeline Alignment
-  Construction Corridor

<p>Paper Size ISO A3 0 10 20 Meters</p> <p>Map Projection: Transverse Mercator Horizontal Datum: GDA 1994 Grid: GDA 1994 MGA Zone 55</p>			<p>APA Group Australian Pipeline Limited Western Outer Ring Main Gas Project</p> <p>Merri Creek Investigation Area</p>	<p>Project No. 12529997 Revision No. A Date 27/05/2021</p>
<p>G:\31112529997\GIS\Map\Working\CivilEng\31_12517812_01_MerriCk_A3L_RevB.mxd Date: 27/05/2021</p>			<p>FIGURE 4</p> <p style="font-size: x-small;">Data source: . Created by: kgardner</p>	