

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

TECHNICAL NOTE NUMBER: TN 21

DATE: 29 September 2021

SUBJECT: Specialist Area: Contamination and waste management
Response to RFI # 69-72, 74-76, 78, 80, 82

SUMMARY This Technical Note provides responses to the request for information queries raised in relation to Technical Report E *Contamination* of the Western Outer Ring Main (WORM) Environment Effects Statement (EES).

REQUEST:

- 69. Explain how the suitability of potentially contaminated soils for re-use within the project area will be assessed.
- 70. Explain any constraints on the transportation or relocation of contaminated soils within the project area
- 71. Describe the performance criteria for assessing the adequacy of the process for monitoring, recording and tracking spoil and other waste handling.
- 72. Describe how discharges to water from the Project will be monitored and audited.
- 74. Clarify whether soil sampling beneath the rail crossings and reserves will be undertaken prior to construction to help inform risk and categorise waste soil produced during horizontal directional drilling.
- 75. Explain the management action that would be implemented if a site is found to be contaminated.
- 76. Explain the implications of leaving contaminated soils in situ for future clean-up of the pipeline corridor and adjacent areas.
- 78. Explain how landfill gas will be managed if intersected by pipeline works.
- 80. Confirm whether non-toxic drilling fluids will be used for all drilling.
- 82. Describe the contingency measures that will be implemented for responding to frac-out.

ATTACHMENTS: Mark up of EMM C1 and C9 (in addition to changes proposed in Technical Note 02 – EP Act update re Waste and Contamination)

NOTE:

Response to RFI# 69 – Assessment of suitability of potentially contaminated soils for re-use within the project area

- 1 In accordance with the NEPM ASC, potentially contaminated sites along the Project were identified during the EES process through desktop assessment and limited targeted site investigation as documented in Table 3.1 of Section 3.4.4 of the CEMP. The contractor may encounter other areas of potential unknown contamination along the Project during

construction works that were not identified during the targeted assessments undertaken as part of the EES. The contractor may identify these areas of potential contamination through visual and olfactory observation (e.g., imported fill, potential asbestos containing materials etc).

2 The EES did not constitute a detailed site investigation in accordance with NEPM ASC, or waste classification in accordance with EPA requirements. Therefore the contractor will need to have a procedure in place to assess if additional site assessment is required to inform appropriate management of any potentially unknown contaminated areas identified during construction to determine the suitability of these potentially contaminated soils for re-use within the Project area. The contractor will need to undertake this assessment in accordance with Environmental Management Measure (EMM) C1 (included in Section 13.3.5, Table 13.8 of the Construction Environment Management Plan (CEMP)). This EMM has been updated to reflect the new *Environment Protection Act 2017* (EP Act 2017) as documented in Technical Note 02 – EP Act update re Waste and Contamination. This EMM includes the development and implementation of a Spoil Management Plan by the contractor, which will include requirements and methods for reuse or disposal of spoil as a minimum: Assessing potentially contaminated spoil, in accordance with NEPM ASC, NEMP v2.0, EPA Publication 1828.2, IWRG 702 and other EPA guidance as appropriate. This would involve:

- Unexpected finds protocol to prevent cross contamination or migration, which requires segregation and containment of any potentially contaminated soil or water (e.g. stockpile separately in bunded area, stop excavation works etc.) until further assessment to determine contamination status can be completed.
- Additional soil sampling (either in-situ or once soil is stockpiled) and laboratory analysis of key identified potential contaminants by a National Association of Testing Authorities (NATA) accredited laboratory.
- Results being assessed against commercial/industrial land use criteria and other criteria as appropriate.
- If assessed as suitable for re-use, then re-use must still be completed in accordance with EP Act General Environmental Duty (GED) and Duty to Manage so that re-use does not pose an unacceptable risk to human health or the environment even if not contaminated (e.g. sediment in waterways).
- For soil that is contaminated, it may be re-used subject to the Duty to Manage, which may require additional controls and risk mitigation measures to ensure re-use does not pose an unacceptable risk to human health or the environment.
- Soil that cannot be reused without posing an unacceptable risk will need to be removed and disposed offsite to an appropriately EPA licensed facility.
- Considering the waste management hierarchy, which aims to reduce or eliminate wastes (to increase sustainability and reduce costs) the preference is to re-use spoil where practicable, with spoil that is unable to be reused to be disposed off-site as the last option.

Response to RFI# 70 – Constraints on transportation and/or relocation of contamination

3 Under the EP Act 2017 contaminated soils can be transported and relocated within the Project area subject to an overarching duty to manage the potential risks to human health and the environment associated with the material, both on and off site. This means that the appropriate controls must be implemented to manage the potential risks associated with that material through a management plan, and care would be taken to prevent contamination from being spread. Guidance on how to meet the duty to manage is provided in EPA Publication 1977.

4 As documented in Section 9.2.2 of the CEMP the contractor must generate their own environmental management plans in compliance with the CEMP. This includes a spoil

management plan for contaminated soil and potential acid sulfate soils. EMM C1 as amended in Annexure 1, outlines the spoil management measures and relevant guidelines to be followed for the handling, stockpiling and transport of contaminated spoil, including relocation of spoil within the project area, which includes:

- Conducting all spoil handling and transport for offsite disposal or relocation within the Project boundary in accordance with the Environment Protection Regulations 2021 (Vic), EPA Publication 1828.2 and EPA IWRG 702 as a minimum, including completing any applicable Waste Tracking records (or Declaration of Use), ensuring transporters are registered with EPA and that the offsite disposal site is to a Lawful Place.
- Managing PFAS-impacted soil (if any) in accordance with the PFAS NEMP and EPA guidance, including EPA Publications 1669.4, 1836 and 1968.1.
- If contaminated soil is to be retained on site the contractor must comply with the duty to notify (EPA) as required under Section 40 of the EP Act and associated Regulation 12 as outlined in Section 5.4 and Section 9.0 of EPA Publication 2008. This will be added to the CEMP in the Day 1 update.

Response to RFI# 71 – Performance criteria for assessing the adequacy of the process for monitoring, recording and tracking spoil and other waste handling

- 5 Programs for monitoring, recording and tracking spoil and waste to be implemented by the contractor are outlined in Section 12.2 of the CEMP, Table 12.1. The contractor is required to develop and implement an environmental monitoring program with monitoring requirements outlined in Table 12.1, including management of solid and liquid waste, construction spoil management, acid sulfate soils, landfill gas and vapour, and management of chemicals, fuels and hazardous materials. The monitoring programs would include implementation of the waste management hierarchy, as well as compliance with EPA requirements including EPA Publication 1834 Civil construction, building and demolition guide, and EPA Publication 1895 Managing Stockpiles. The Contractor's monitoring program would be reviewed for adequacy in accordance with the audit requirements described in Section 12.1 of the CEMP.

Response to RFI# 72 – Monitoring and auditing of discharges to water

- 6 As noted in Section 2.5.7 of the CEMP, dewatering of trenches due to rainfall will be treated prior to discharge into waterways (e.g. grass filtration), however no direct discharges to waterways are proposed as a part of the Project. The various measures are designed to ensure protection of water quality.
- 7 Discharges to water from the Project will be monitored to meet the requirements of the GED, specified within the EP Act 2017, and will be included in the assurance and auditing requirements listed in Section 12.1 of the CEMP, and criteria for performance monitoring outlined in Section 12.2 of the CEMP, Table 12.1. The requirements for discharges to groundwater and surface water are described in the paragraphs below.
- 8 For groundwater, in accordance with EMM GW3, a groundwater monitoring plan would be developed for construction as part of the CEMP and implemented to:
- Assess any impacts from construction activities (i.e. from drawdown during construction and recovery) which includes measuring groundwater levels and quality at key groundwater interaction areas when construction works are progressing in the immediate area (locations identified below), particularly the open trench creek crossings (Jacksons and Merri Creek).
 - Monitor groundwater quality during construction. Any dewatering is to comply with the site-specific groundwater disposal management plan (incorporated within the groundwater monitoring plan in Section 12.2 of the CEMP) and EP Act 2017 requirements. Monitoring is to assess for any site variability of the groundwater quality (e.g. compare baseline investigation findings with construction monitoring

outcomes for variations that require additional management measures (such as changing pH or salinity)). Parameters to be measured include groundwater levels, salinity, pH, EC, major ions, ammonia, nitrate, nitrite, total nitrogen and total kjeldahl nitrogen) (refer to Table 12.1 of the CEMP for further details).

- Groundwater monitoring would be undertaken at locations of dewatering and sites that are identified as areas of groundwater impact along the Project alignment in Technical report C *Groundwater* and the CEMP, Table 12.1. This includes:
 - Bendigo rail: KP 8.288 - 8.326
 - Unknown Creek/Tame St drain: KP 8.406 - 8.411
 - Jacksons Creek: KP 13.863 - 13.898
 - Deep Creek: KP 16.828 - 16.85
 - Donovans Lane: KP 40 – 41
 - North east Rail reserve: KP 40.925 - 40.959
 - Merri Creek: KP 42.639 - 42.655
 - Donnybrook Road: KP 46.5 - 47.5
- When dewatering occurs at locations identified above, monitoring of groundwater levels and quality would be required for the duration of dewatering works as defined in the groundwater monitoring plan (refer to Section 9.2.2 of the CEMP for the list of contractor management plans and Section 12.2, Table 12.1 for the performance monitoring requirements).

- 9 For surface water, as required by EMM SW5, the contractor will be required to monitor the performance of management measures to protect waterway health and biodiversity values. This will require monitoring to be undertaken before, during and after construction. This includes water quality monitoring and biodiversity monitoring at Jacksons Creek and Merri Creek, both upstream (approx. 100 m) and downstream (approx. 100 m) of areas of impact. Water quality monitoring will include both in-situ monitoring (i.e. turbidity, temperature, dissolved oxygen, pH, salinity) and laboratory testing (i.e. nutrients and heavy metals). During construction activities directly in the watercourse, daily in-situ monitoring will occur for indicators such as turbidity, temperature, dissolved oxygen, pH, and salinity both upstream and downstream from works. Comparisons of upstream and downstream conditions will be used to infer if there are downstream impacts. Refer to Section 12.2, Table 12.1 of the CEMP for further detail on surface water performance monitoring requirements.
- 10 As recommended by Mr McCowan in his evidence, EMM SW1 would also be updated to include more detail on what field testing is to be carried out for dewatering and what action is to be taken if the water cannot be treated to meet EPA discharge criteria.

Response to RFI# 74 – Soil sampling beneath the rail crossings and reserves

- 11 As documented in Section 6.3.1 of EES Technical Report E *Contamination*, the entry and exits pits for horizontal directional drilling (HDD) at the two railways are anticipated to be located outside of the rail reserves. Given contamination is likely to be limited to shallow soils within the rail reserves, sampling is not considered to be required unless shallow soils (less than 1 metre below surface) are to be intercepted by the Project.
- 12 APA has confirmed that shallow soils within the rail reserves will not be intercepted or disturbed by the Project as the construction methodology adopted will be boring under the rail reserves. Therefore the requirements for sampling of shallow soils by the contractor

outlined in Section 3.4.4, Table 3.1 of the CEMP to categorise the soil for onsite re-use or offsite disposal are no longer applicable. The CEMP will be updated to reflect this change.

Response to RFI# 75 – Management action that would be implemented if a site is found to be contaminated

- 13 If a site is found to be contaminated, the contractor is required to comply with requirements within EMMs C1 and C2, which requires contractors to identify, contain and manage unexpected contamination in accordance with applicable regulatory requirements. This includes EPA Publication 1828.2, and EPA IWRG 702 as a minimum. Notification of the EPA and / or others who may be impacted by this contamination in accordance with the EP Act 2017 and the Environment Protection Regulations 2021 would also be undertaken. As noted in Technical Note 02 – EP Act update re Waste and Contamination, the CEMP will be updated to include the duties imposed on persons in 'management or control' of contaminated land to notify the EPA and manage contaminated land. This is also required as a part of EMM C1.
- 14 EMM C2 requires that during construction, the spoil management measures referenced in EMM C1 must include requirements and methods to address and manage any contamination that was not expected during construction. Such material may be identified by visual or olfactory observations, or the presence of asbestos and other anthropogenic material. The spoil management measures must include contingency plans and appropriate responses in accordance with EPA guidelines. These must include, at a minimum:
- Cease ground disturbance at the unknown contamination location and within the immediate vicinity.
 - Assess site contamination and identify appropriate management action.
- 15 Refer to EMM C1 and C2 for further detail.

Response to RFI# 76 – Implications of leaving contaminated soils in situ for future clean-up of the pipeline corridor and adjacent areas

- 16 In accordance with EPA Publication 2008.1, if contaminated soil is to be retained on site, the contamination is notifiable under regulation 12. On-site retention of excavated surplus soil is notifiable if:
- it is not fill material
 - it is not an activity for which permission is required
 - it arises from contaminated land sourced on-site
 - there are contaminant(s) listed in NEPM (ASC) section 6 Schedule B1.
- 17 Others who may be impacted by the contamination and those in management or control (in an on-going capacity) must also be notified.
- 18 Distinguishing what soil can safely be retained will be framed by considerations of the specific risks posed by the contaminated land you manage. Any decision to retain contaminated soil on site must be consistent with your duty to manage risks of harm from contaminated land. Therefore, if contaminated soils are to be left in-situ, the potential risks they pose must be appropriately managed through an ongoing management plan that specifies the location and type of the contamination and the associated implemented controls. If appropriate mitigation can be achieved through management and the implemented controls then clean-up is not required. As long as APA did not cause the contamination and did not increase the risk posed by the contamination (e.g. by moving it to a more sensitive or exposed area) then they would not have obligations to manage or remediate the material going forward, except in their capacity to access their assets. The

location and type of contaminated soil must be documented in accordance with the requirements of EMM C1.

- 19 Under the EP Act 2017, if the risks associated with the contaminated material cannot be appropriately managed then it will not be able to be left in situ and clean-up will be required.

Response to RFI# 78 – Explain how landfill gas will be managed if intersected by pipeline works

- 20 Potential landfill gas within the vicinity of the Bulla Tip and Quarry (KP 14.85- KP 15.85) located in Bulla may impact on the construction of the Project. The section of the construction corridor that might be impacted is between KP 14 and KP 16. In this area, the construction corridor is situated approximately a minimum 165 metres away from the northern boundary of the Bulla Tip and Quarry.

- 21 If the construction in this area is impacted by landfill gas, in addition to the standard environmental mitigation measures as described in EMM C5 (addressing risks from vapour and ground gas intrusion), specific mitigation measures were recommended for the Bulla Landfill area (KP 15-KP 16).

These mitigation measures include:

- Securing of the excavation and stockpile area from the public and livestock including signage warning of open excavations.
 - Continuous monitoring of landfill gas conditions when any person is in the trench, or during hot works or works that could potentially produce a spark within the trench.
 - Setting of trigger values that require action within areas being trenched and including any temporary structures within the vicinity of the landfill. These must be developed in accordance with EPA Victoria Publication 788 Best Practice Management; Siting, design, operation and rehabilitation of landfills (landfill BPEM) and relevant occupational health and safety regulations and compliance codes.
 - Contingencies to address any breaches of trigger values including temporary cessation of work until a reappraisal of risks is conducted, additional monitoring at a higher frequency, implementation of additional safety measures and or vapour extraction systems in response to the risk assessment.
- 22 Based on the above additional mitigation measures, the residual impact for the risk from vapour and ground gas intrusion (including landfill gas) was assessed as low because:
- Real time continuous monitoring during construction, within 500 metres of the waste boundary in the landfill, allows the contractor to be aware of the current gas conditions within the trench and hence be aware of the potential impact to human health.
 - Setting of trigger values and appropriate contingencies allows the contractor to respond appropriately to gas conditions within the trench thereby significantly reducing the likelihood and consequence of health impacts from gas accumulation.

Response to RFI# 80 – Use of non-toxic drilling fluids for all drilling

- 23 In selecting the drilling fluids to be used for the Project, the contractor will be required to comply with EMM C9 – Management of drilling fluids as amended at Annexure 1 below. The contractor will need to document this as part of their environmental management plans (Section 9.2.2 of the CEMP). EMM C9 states that appropriate inert and non-toxic drilling fluids must be selected.

Response to RFI #82 – Contingency measures if frac out occurs

- 24 The impacts associated with potential frac-out occurring during construction are mitigated by EMMs, as documented in the CEMP Section 13.3 – Environmental management measures (Section 13.3.5 – Contamination) and Section 13.6 – Horizontal directional drilling. The key recommended environmental mitigation measures to minimise impacts from frac out, include:
- EMM D1 requires APA approval of the drill profile design, the work method statement and the proposed volumetric drilling fluid tracking program for major HDD works. Due to this EMM and the volumetric drilling program, frac-out would be picked up quickly.
 - EMM D2 requires the contractor to develop an inspection and test plan for quality control during the HDD activities. Due to this EMM, drilling would be stopped immediately so that loss of fluid would be contained.
 - EMM D6 requires appropriate spill response and clean up equipment to be onsite during HDD activities. If a spill / release occurs, work will cease and the Contingency Plan for HDD mud lease or fuel and or chemical released would be implemented. Refer to Section 9 of the CEMP for further details on the APA procedures and requirements on the construction contractor to develop contingency plans.
 - EMM C9 requires the contractor to implement measures for management of drilling fluids in accordance with the Environment Protection Regulations 2021.
- 25 Based on these EMMs, the contractor will be required to provide site specific contingency plans to confirm suitable mitigation measures to manage any potential frac out events where HDD works are proposed (refer to section 9.1 of the CEMP for further details on the contingency plan requirements).

Annexure 1

Changes to waste and contamination EMMs (Construction)

CONTAMINATION		
Ref.	Environmental controls	Project phase
C1	<p>Implement spoil management measures</p> <ul style="list-style-type: none"> • Prepare and implement spoil management measures in accordance with relevant regulations, standards and guidelines including EPA Publication 1834 Civil construction, building and demolition guide. The spoil management measures must be developed in consultation with the EPA Victoria and include processes and measures to manage all spoil types i.e. all excavated material. The main spoil types would include mostly uncontaminated soils and potentially small volumes of priority waste (PW), including Category D waste or soil containing asbestos only (SCAO), in the vicinity of the potential sources noted in Technical report E <i>Contamination</i>. <p>The spoil management measures must define roles and responsibilities and include requirements and methods for:</p> <p>General</p> <ul style="list-style-type: none"> • Manage contaminated land to minimise risk of harm to human health or the environment, including identification, investigation and assessment and carrying out clean up of that contamination to the extent reasonably practicable where the contamination presents a risk of harm. • Persons in management or control should also provide adequate information to anyone who may be affected by the contamination or who may become a person in management or control • Leaving contaminated soils in-situ to the extent possible, while complying with the requirements of the duty to manage contamination specified above. • Complying with applicable regulatory requirements including EPA Publication 1834 Civil construction, building and demolition guide and the ERS - Part 4 • Investigations in accordance with the Australian Standard AS 4482.1:2005 Guide to the investigation and sampling of sites with potentially contaminated soil, the ASC NEPM and the EPA Victoria Industrial Waste Resource Guidelines (IWRGs) • Assessment of any material imported to the site for use as backfill in accordance with EPA Publication 1828, and IWRG 702. Imported material must meet the 'Fill Material' criteria as defined in Table 2 of EPA Publication 1828. <p>Assessment</p> <ul style="list-style-type: none"> • Completing further soil investigations to assess soil quality for the analysis detailed in Technical report E <i>Contamination</i> prior to construction in order to inform the CEMP: <ul style="list-style-type: none"> – At the Diggers Rest (KP 9.95 - KP10.14), which is being used to store hundreds of wrecked cars, – A possible former quarry in Beveridge (KP 37.5) along the construction corridor to ascertain if the former quarry extents encroaches onto the Project – The retarding basin (KP 34-35.5) prior to any excavation in these areas. – Wollert Compressor Station (KP 50.78 to KP 51.045) – Shallow sediments in Jacksons Creek. • Following these further investigations, updating the CEMP to 	Pre-construction and construction

CONTAMINATION

Ref.	Environmental controls	Project phase
	<p>include areas of potential contaminated soils</p> <p>Remediation</p> <ul style="list-style-type: none"> • Identifying where any contaminated or hazardous material is exposed during construction and how it would be made safe for the site owner and the environment. Environmental values of land and ASC NEPM guidance on criteria protective of those environmental values must be considered for the land uses in these areas. • To the extent that non-aqueous phase liquid (eg oil, petrol, diesel and solvents) is present in soil or groundwater within the authorised project construction footprint and exposed during APA construction activities, it must be, so far as reasonably practicable: (a) cleaned up; and (b) if the source of the non-aqueous phase liquid is located on the land, the source of the liquid must be remove or controlled. <p>Unexpected contamination</p> <ul style="list-style-type: none"> • Identifying, containing and managing unexpected contamination in accordance with applicable regulatory requirements including EPA Publication 1828, and EPA IWRG 702 • Notification of EPA and / or others who may be impacted by this contamination in accordance with the <i>Environment Protection Act 2017</i> and the <i>Environment Protection Regulations 2021</i>. <p>Handling, stockpiling and transport</p> <ul style="list-style-type: none"> • Conducting all spoil handling and transport for offsite disposal or relocation within the Project boundary in accordance with the <i>Environment Protection Regulations 2021</i> (Vic), EPA Publication 1828, and EPA IWRG 702, including completing any applicable Waste Tracking records (or Declaration of Use), ensuring transporters are registered with EPA and that the offsite disposal site is to a Lawful Place. • Managing construction works which can lead to runoff of contaminated and uncontaminated soil from stockpiles and excavations into nearby waterways, in accordance with SW1 and SW4. • Regularly monitoring weather conditions and planning works accordingly to avoid or minimise impact to sensitive receptors from works during adverse weather (i.e. runoff from rainfall). • Implementing personal protective equipment and standard hygiene practices when handling contaminated spoil • Separating stockpiles of trench spoil into contaminated and uncontaminated soil. As both of these waste types can adversely impact the environment (e.g. through runoff to waterways), all stockpiles must be managed in accordance with EPA Victoria Publication 1834 Civil construction, building and demolition guide and EPA Publication 1895 Managing Stockpiles, 2020. • Where it is necessary to excavate contaminated soils, stockpiling these separately, with containment and treatment measures appropriate to the type of contamination present. This must include. <ul style="list-style-type: none"> – All stockpiles of potentially contaminated spoil must be appropriately secured, lined and bunded to prevent leaching – All stockpiles of potentially contaminated spoil must be appropriately covered and bunded to limit rainwater ingress, dust generation and contact by fauna – Stockpiling of contaminated soil must be kept to a minimum and removed to landfill or other use at the earliest opportunity • Handling and transport of contaminated spoil for off-site treatment/disposal in accordance with the <i>Environment</i> 	

CONTAMINATION

Ref.	Environmental controls	Project phase
	<p><i>Protection Regulations 2021 (Vic)</i>. Transport companies must hold relevant registrations or permits by EPA Victoria to carry contaminated soil and Waste Tracker documentation must be completed.</p> <ul style="list-style-type: none"> Managing PFAS-impacted soil (if any) in accordance with the PFAS NEMP and EPA guidance, including EPA Publications 1669, 1836 and 1968. Monitoring, recording and tracking spoil and other waste handling including but not limited to stockpile management, trucking and destination tracking, and sampling results. <p>Reuse or Disposal</p> <ul style="list-style-type: none"> Assessing potentially contaminated spoil , which is to be disposed of offsite, in accordance with NEPM ASC, NEMP v2.0, EPA Publication 1828.2, and IWRG 702 and other EPA guidance as appropriate. Considering the waste management hierarchy which aims to reduce or eliminate wastes (to increase sustainability and reduce costs) the preference is to re-use spoil where practicable including opportunities for reuse, with spoil that is unable to be reused to be disposed off-site as the last option removed from site via designated haulage routes Disposing drilling muds in accordance with the Environment Protection Regulations 2021 (Vic) and EPA Victoria Industrial Waste – Classification for Drilling Mud, Victoria Government Gazette G37 (or any subsequently updated document issued by EPA). 	
C9	<p>Management of drilling fluids</p> <p>Implement measures for management of drilling fluids including:</p> <ul style="list-style-type: none"> Making spill kits or similar available to contain spills on land; preventing runoff into surface water and drains. Identifying and implementing contingency measures when HDD activities are in the vicinity of waterway zones. Disposing drilling fluids in accordance with Environment Protection Regulations 2021 (Vic) and EPA Victoria Industrial Waste – Classification for Drilling Mud, Victoria Government Gazette G37. If HDD occurs through a potentially contaminated site, EPA Publications 1827 and 1828, and IWRG 702, must be followed for classification and offsite disposal, and ensuring any waste consigned for offsite disposal is sent to a Lawful Place. Selecting appropriate inert and non-toxic drilling fluids. 	Construction