



**Douglas Partners**  
Geotechnics | Environment | Groundwater

Report on  
Updated Contamination Assessment

Jumping Creek Estate Development  
Ellerton Drive, Queanbeyan

Prepared for  
Peet Limited

Project 88224.06  
September 2020

Integrated Practical Solutions





# Douglas Partners

Geotechnics | Environment | Groundwater

## Document History

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The undersigned, on behalf of Douglas Partners Pty Ltd, confirm that this document and all attached drawings, logs and test results have been checked and reviewed for errors, omissions and inaccuracies.

	Signature		Date
<b>Author</b>		Pete Storey	10 September 2020
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Source	Receptor	Transport Pathway	Comments
	R5	P4 and P6	DP considers that once remediation and validation has been completed, the area would likely be suitable for residential use.
	R6	P1	

## 17. Conclusions and Recommendations

### 17.1 Conclusions

DP have undertaken review of previous environmental works at the site and reviewed a request for further information from QPRC in order to allow a decision to be made regarding the DA submitted for the site. The DA relates to the subdivision of the site and construction of a residential estate.

The objectives of this updated contamination assessment were to review previous works, inspect the site to assess its current condition, undertake intrusive investigation of additional AECs and advise on the need for ongoing management and/or remediation in order to support the DA.

Documents included for review included archaeological assessments, previous contamination assessments and site audit report and site audit statement prepared by the Site Auditor. It is noted that approximately ten years have passed since previous contamination assessment and site audit report was prepared and national guidance relating to the assessment of contaminated land (ASC NEPM 1999, as amended 2013) has been updated since the previous works were undertaken

Review of Coffey (2010a) identified several AECs as detailed below:

- AEC1: Mine Site 1;
- AEC2: Mine Site 3;
- AEC3: Mine Site 4;
- AEC6: Former Possible Mineral Processing/Stockyard Area;
- AEC7: Former Sheep Dip; and
- AEC8: Former Kiln.

DP site inspections, request from QPRC for additional information and review of previous Archaeological Assessments identified the additional AECs:

- AEC4: Additional Mine Site; and
- AEC5: Items JCH 5, JCH 6 and JCH 13 (as described in NSW 2009);

In addition, several areas of minor waste dumping were identified on site including discarded car bodies and small quantities of building materials containing minor ACM fragments.

DP have assessed the results of the sampling conducted by Coffey (2010a) with site assessment criteria detailed in the ASC NEPM (1999, as amended 2013). The criteria selected were based on low density

residential land use, public open space land use and ecological receptors. Following assessment of the results, it was concluded that:

- An area of elevated metals concentrations exists within soil and rock at AEC2: Mine Site 3. This area of the site is proposed for public open space use and the concentrations exceeded the adopted HIL-C and EIL criteria;
- An area of elevated metals concentrations exists within soil and rock at AEC3: Mine Site 4. This area of the site is proposed for public open space use and the concentrations exceeded the adopted HIL-C and EIL criteria;
- An area of elevated metals concentrations exists within soil and rock in drainage sumps located at AEC6: Mineral processing area. This area of the site is proposed for low density residential use and the concentrations exceeded the adopted HIL-C and EIL criteria;
- An area of elevated zinc concentrations exists within the vicinity of sample RE18. The concentration exceeded the EIL criteria. This area is proposed for low density use, but is likely located within a proposed road reserve area;
- An area of elevated arsenic concentration exceeding the EIL is located within the vicinity of sample RE34. The area was delineated by Coffey by additional sampling;
- It is considered that AEC2 and AEC3 are not currently suitable for public open space use and remediation and management should be undertaken. It is noted that remediation of these areas is detailed in the Coffey RAP (2010b). DP considers the RAP should be updated to include regulatory framework and legislation changes implemented following its preparation. Following implementation of the RAP, DP considers it likely that these areas of the site could be made suitable for public open space use;
- It is considered that the areas of the drainage sumps within AEC6 is not currently suitable for residential use. It is also noted that remediation of these areas is detailed in the Coffey RAP (2010b). Following implementation of the RAP and successful validation, DP considers it likely that this area of the site could be made suitable for residential use; and
- Coffey did not undertake assessment of the sheep dip area, but a RAP (Coffey, 2009) has been prepared for remediation and validation of the area. Following implementation of the RAP and successful validation, DP considers it likely that this area of the site could be made suitable for residential use.

DP undertook additional sampling of areas identified as AECs since Coffey (2010a) was prepared. Following assessment of the results it was concluded that:

- An area of elevated metals concentrations exists within soil and rock in samples collected from AEC4: Additional Mine Site and AEC5: limestone quarry. The area of the site is proposed for residential use and the concentrations exceeded HIL-A and the EIL criteria for AEC4 and EIL criteria for AEC5. Although the area is proposed for residential use, the area will likely be located within a road corridor; and
- No elevated concentrations were reported within AEC5: JCH 13. No further management or remediation is required in this area.

## 17.2 Recommendations

DP makes the following recommendations following this assessment:

- The RAPs prepared by Coffey (2009 and 2010b) should be updated to reflect the regulatory framework and legislation changes that have occurred since the preparation of the RAPs;
- Coffey RAP (2010b) should be updated to include remediation and management details for AEC4: additional mine site, AEC5: limestone quarry and the area around sample RE34;
- Once the RAPs are updated, the remediation, validation and management actions detailed should be implemented. In areas where capping of soil and rock is recommended, site environmental management plans should be implemented;
- It is also recommended that a construction environmental management plan including an unexpected finds protocol be prepared and implemented during site development works to manage areas of contamination that may exist outside the areas identified in this report. DP considers this is an appropriate way of managing small, isolated areas of concern such as anthropogenic waste, car bodies and building and demolition waste that may be present across the site; and
- Soil and rock that requires off-site disposal should be assessed prior to removal from the site. Given the proximity of the site to the ACT, it is possible soil may be disposed of in the ACT. Material for disposal should be assessed with reference to NSW EPA Waste Classification Guidelines, Part 1 Classifying Waste (2014) or Environment ACT, ACT's Environmental Standards: Assessment & Classification of Liquid and Non-liquid Wastes (2000).

DP also broadly agrees with the following recommendations made in Coffey (2010a)

- *Restriction of access to the Mine Site 3 and Mine Site 4 areas in the short term to avoid unhealthy exposures to metal concentrations in these areas, as well as unsafe conditions associated with mine shafts, adits and other structures;*
- *The removal or management of physical hazards (such as mine shafts or other structures) associated with these areas;*

The findings of the Site Audit Report and Site Audit Statement indicated that subject to the implementation of the remediation outlined in the RAPs, the site would be suitable for the following uses:

- Residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry;
- Day care centre, preschool, primary school;
- Secondary school; and
- Park, recreational open space, playing field.

## 18. References

Abell, R.S. (1992). *Geology of Canberra Geological Series Sheet 8727*, 1:100 000. Canberra, Australia: Bureau of Mineral Resources Geology and Geophysics.