

Adran yr Economi a'r Seilwaith
Department for Economy and Infrastructure



Llywodraeth Cymru
Welsh Government

**THE CHESTER TO BANGOR TRUNK ROAD (A55) (JUNCTIONS 16 AND 16A
IMPROVEMENT REALIGNMENT AND SLIP ROADS) ORDER 202-**

**THE CHESTER TO BANGOR TRUNK ROAD (A55) (JUNCTIONS 16 AND 16A
IMPROVEMENT REALIGNMENT AND SLIP ROADS) (SIDE ROADS) ORDER 202-**

**THE WELSH MINISTERS (THE CHESTER TO BANGOR TRUNK ROAD (A55)
(JUNCTIONS 16 AND 16A IMPROVEMENT REALIGNMENT AND SLIP ROADS))
COMPULSORY PURCHASE ORDER 202-**

SUMMARY PROOF OF EVIDENCE

Note: See Document Reference WG 1.12.02 for full evidence and referencing

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WELSH GOVERNMENT, CONTAMINATED LAND

DOCUMENT REFERENCE: WG 1.12.01

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1. Author

- 1.1 I am Philip George Studds. I am a Director within the contaminated land practice at Ramboll UK Limited, an international multi-disciplinary consultancy. I am a Member of the Chartered Institution of Water and Environmental Management (MCIWEM), a Chartered Engineer (CEng), a Chartered Environmentalist (CEnv) and a Specialist in Land Condition (SiLC). I have a BSc Hons in Biology from York University, an MSc in Environmental Technology from Imperial College and a PhD in Environmental Geotechnics from Leeds University.
- 1.2 I am the Contaminated Land expert witness for the A55 Junctions 16 and 16a Improvements Scheme. My role is to consider the likely significant effects on and from contaminated land associated with the construction and operation of the Scheme.
- 1.3 The opinions expressed are my own unless I state otherwise. I have been assisted by colleagues from within the project team in the various tasks that are reported in this document. Colleagues are also presenting evidence within their specialist environmental expertise. Where a topic is covered in detail by the proof of evidence of another specialist, I provide a cross reference to the relevant proof.

2. Methodology, Baseline and Risk Assessment

- 2.1 The methodology outlined below presents the current guidance (England and Wales) for the assessment of contaminated land (Contaminated Land Risk Management) and was applied in the assessment given in both the ES Chapter 6 Geology and Soils and the supplementary information provided, Ramboll (Aug. 2021) A55 J16 ES Chapter 6 Geology & Soils - Additional Desk Based Review.
- a) Tier 1: Preliminary Risk Assessment (PRA) – first tier of risk assessment that develops the outline conceptual site model (CSM) and establishes whether there are any potentially unacceptable risks;
 - b) Tier 2: Generic Quantitative Risk Assessment (GQRA) – carried out using generic assessment criteria and assumptions to estimate risk; and
 - c) Tier 3: Detailed Quantitative Risk Assessment (DQRA) – carried out using detailed site specific information to estimate risk.
- 2.2 The conceptual site model showed that the overall risk classification is low;
- a) Recent ground investigation undertaken for the Scheme indicates that fill materials identified during historical investigations at the incinerator, gas works and refuse tip areas has been removed (or largely removed) and replaced during construction of the A55 which is consistent with information provided on the as-built drawings;
 - b) It should be noted that at the time the road was built (in the early 1980s) the 'normal' approach to dealing with contaminated land was to excavate the impacted soil and remove from site to a landfill, colloquially known as 'dig and dump'. It would have been typical for impacted soils to be consigned off site as 'contaminated' and/or 'geotechnically unsuitable' rather than retained. Removal was often a decision driven by geotechnical factors where the tendency was to remove rather than try to retain.
 - c) Whilst some evidence of contamination has been encountered within the made ground, in particular at the western end of the former gas works, the information obtained does not indicate the development area is likely to be having a significant impact on groundwater quality or that this would represent a risk to the sea. Results from groundwater testing indicate overall low levels of contamination;
 - d) The risks identified for the baseline and operation phases are considered to be similar based on the construction proposals. A higher risk could exist to surface water from run-off during construction without mitigation, although the works proposed in areas such the gas works, incinerator and refuse tip will only be shallow; and

- e) Ground investigation indicates the gas works, incinerator and refuse tip areas are underlain by cohesive glacial deposits which is likely to have limited the potential for vertical migration. A sea wall is present to the north of the railway lines along with sections identified as sloping masonry (concrete) which extend across the areas occupied by the former gas works and refuse tip and this will reduce the potential for migration and connection between shallow groundwater and the sea.
- 2.3 It is considered that the risks to controlled waters will be similar to the existing (baseline) situation, including the former gas and incineration areas, based on the construction proposals. These areas will be covered by tarmac which will significantly reduce infiltration of rain water through any impacted soils (if present) and also the underlying clays will reduce migration of any mobile contaminants.
- 2.4 No specific contaminated land mitigation measures are proposed. General mitigation measures to protect the general public and site workers during the works would be detailed in the Construction Environmental Management Plan (CEMP) to be prepared prior to the construction works commencing and developed to ensure full compliance with relevant and current policy, guidelines and best practice.
- 2.5 Following implementation of the mitigation measures outlined above, there are considered to be no residual significant effects during the construction or operational phase.
- 2.6 However, a contaminated land management strategy (remediation strategy) and earthworks specification will be required prior to commencement of the construction works which will include outline the proposals for the additional investigation in the area of the former gas works particularly in the area around WS202 where gas works type impacts were noted previously. The scope of the additional investigation will need to be agreed with Natural Resources Wales (NRW). This strategy will also include a watching brief protocol to address contamination should evidence of potential contamination be encountered during excavations and stockpiling.

3. Objections to the Scheme

- 3.1 Objections have been made by the NRW that raise matters that fall within the scope of my proof of evidence.
- 3.2 A follow up meeting with the NRW was held on 10 June 2021 to discuss the contaminated land issues and the outcome of this engagement is the submission of a supplementary desk based review report (Ramboll, 2021), specifically written to address the objections raised.
- 3.3 In conclusion, the revised conceptual site model demonstrated that it is highly unlikely that there are significant sources of contamination on site and the proposed development works will not affect the existing risks.
- 3.4 However, a contaminated land management strategy (remediation strategy) and earthworks specification will be required prior to commencement of the construction works which will include an outline of proposals for the additional investigation in the area of the former gas works. This strategy will also include a watching brief protocol to address contamination should evidence of potential contamination be encountered during excavations and stockpiling.

4. Conclusion and Declaration

- 4.1 My proof of evidence includes facts which I regard as being relevant to the opinions which I have expressed, and the Inquiry's attention has been drawn to any matter which would affect the validity of that opinion.
- 4.2 As a contaminated land expert I have reviewed available data and sought opinion and comment with the engineering and other environmental specialists in the team, to minimise impacts of the Scheme and to optimise the effectiveness of proposed mitigation.
- 4.3 In my opinion the Contaminated Land Assessment, has been carried out and published in accordance with legislation and professional guidance.
- 4.4 In my opinion the development of measures to mitigate the contaminated land effects of the Scheme are effective, justifiable and achievable.
- 4.5 I believe the facts I have stated in this proof of evidence are true and that the opinions expressed are correct.
- 4.6 I understand my duty to the Inquiry to assist it with matters within my expertise and believe that I have complied with that duty.