

# M25 junction 10/A3 Wisley interchange TR010030

## 6.5 Environmental Statement: Appendix 10.11 Risk and impact assessment

Regulation 5(2)(a)  
Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009



## Infrastructure Planning

### Planning Act 2008

#### The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (as amended)

### M25 junction 10/A3 Wisley interchange

#### The M25 junction 10/A3 Wisley interchange Development Consent Order 202[x ]

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#### 6.5 ENVIRONMENTAL STATEMENT: APPENDIX 10.11 RISK AND IMPACT ASSESSMENT

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<b>Regulation Number:</b>	Regulation 5(2)(a)
<b>Planning Inspectorate Scheme Reference</b>	TR010030
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# **Appendix 10.11 Risk and Impact Assessment**

## 10.1 Risk and Impact Assessment

Table 10.1.1: Land contamination risk assessment<sup>1</sup>

Source+A1:Q51	Receptor	Pathway	Baseline			Construction without mitigation			Mitigation measures	Construction with mitigation			Operation											
			Consequence of risk	Probability of risk	Classification of risk (assuming reasonable worst case)	Consequence of risk	Probability of risk	Classification of risk		Consequence of risk	Probability of risk	Classification of risk	Consequence of risk	Probability of risk	Classification of risk									
Potential sources of contamination (including soil, water, vapours and ground gases) within the Scheme include:  •historical pollution from vehicles using the current M25, A3, A245 and local access roads; •Made Ground/infill material of unknown quality associated with the construction of the M25, A3, A245 Byfleet Road, local access roads, Former Wisley Airfield, San Domenico site and other existing infrastructure; •material of unknown quality associated with the infilling/potential infilling of former water features and mineral extraction pits; •three historical landfills (understood to be inert fill); •three recorded pollution incidents (minor severity and occurred prior to 1999); •part of former Wisley Airfield and associated activities (historical GI identified some contamination); and •farms and agricultural land use.	Human Health (within the Scheme) •Construction workers and future site maintenance workers	Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust/fibres	Receptor not present on-site during baseline				Medium	Low likelihood	Moderate/Low Risk	GI and risk assessment as necessary to define risk. Remediation / removal of existing contamination if risk assessments deem necessary. Use of ventilated temporary structures during construction if risk assessments deem necessary. Use of appropriate hazard signage and / or ground gas protection measures within below ground chambers and ducts if risk assessments deem necessary. Implementation of measures in the EMP such as good management of stockpiles in accordance with Environment Agency Pollution Prevention Guidelines (PPG), implementation of pollution incident control e.g. plant drip trays and spill kits. Implementation of dust management systems. Risk Assessment and Method Statements (RAMS) to be completed prior to construction and risk management with appropriate PPE. See section 10.9 for further details.	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk								
		Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater					Medium	Low likelihood	Moderate/Low Risk		Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk								
		Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion					Severe	Unlikely	Moderate/Low Risk		Severe	Unlikely	Moderate/Low Risk	Severe	Unlikely	Moderate/Low Risk								
		Inhalation, ingestion and dermal contact with contaminants within surface water					Medium	Low likelihood	Moderate/Low Risk		Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk								
		Inhalation of vapours from contaminated soil and / or water					Medium	Low likelihood	Moderate/Low Risk		Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk								
	Human Health (within the Scheme) •Members of the public using public rights of way (non motorised users).	Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust/fibres	Medium	Low likelihood	Moderate/Low Risk	Receptor not present on-site during construction																		
		Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater	Medium	Low likelihood	Moderate/Low Risk														Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
		Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion	Severe	Unlikely	Moderate/Low Risk														Severe	Unlikely	Moderate/Low Risk	Severe	Unlikely	Moderate/Low Risk
		Inhalation, ingestion and dermal contact with contaminants within surface water	Medium	Low likelihood	Moderate/Low Risk														Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
		Inhalation of vapours from contaminated soil and / or water	Medium	Unlikely	Low Risk														Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
	Human Health (within the study area) •Local residents (including Elm Corner) •School children and staff (e.g. Feltonfleet School)	Inhalation, ingestion and dermal contact with contaminants in windblown soil-derived dust/fibres	Medium	Low likelihood	Moderate/Low Risk			Medium	Low likelihood		Moderate/Low Risk	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk							
		Inhalation, ingestion and dermal contact with contaminants within perched water	Medium	Unlikely	Low Risk			Medium	Unlikely		Low Risk	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk							

<sup>1</sup> Contains sensitive information

Source+A1:Q51	Receptor	Pathway	Baseline			Construction without mitigation			Mitigation measures	Construction with mitigation			Operation		
			Consequence of risk	Probability of risk	Classification of risk (assuming reasonable worst case)	Consequence of risk	Probability of risk	Classification of risk		Consequence of risk	Probability of risk	Classification of risk	Consequence of risk	Probability of risk	Classification of risk
	<ul style="list-style-type: none"> <li>Workers and visitors at nearby commercial premises and recreational facilities</li> <li>Members of the public using public rights of way (non motorised users).</li> </ul>	and shallow groundwater													
		Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion	Severe	Unlikely	<b>Moderate/Low Risk</b>	Severe	Unlikely	<b>Moderate/Low Risk</b>		Severe	Unlikely	<b>Moderate/Low Risk</b>	Severe	Unlikely	<b>Moderate/Low Risk</b>
		Inhalation, ingestion and dermal contact with contaminants within surface water	Medium	Unlikely	<b>Low Risk</b>	Medium	Low likelihood	<b>Moderate/Low Risk</b>		Medium	Unlikely	<b>Low Risk</b>	Medium	Unlikely	<b>Low Risk</b>
		Inhalation of vapours from contaminated soil and / or water	Medium	Unlikely	<b>Low Risk</b>	Medium	Unlikely	<b>Low Risk</b>		Medium	Unlikely	<b>Low Risk</b>	Medium	Unlikely	<b>Low Risk</b>
	<ul style="list-style-type: none"> <li>Controlled Waters (within the Scheme)</li> <li>Groundwater (superficial Principal and Secondary A aquifers and bedrock Secondary A aquifer)</li> <li>Surface water (Stratford Brook, River Mole, unnamed drains and ditches.</li> </ul>	Leaching / vertical migration of contaminants in soils to underlying groundwater	Medium	Likely	<b>Moderate Risk</b>	Medium	Likely	<b>Moderate Risk</b>	GI and risk assessment as necessary to define risk. Remediation / removal of existing contamination if risk assessments deem necessary. Controlled Waters PRA and use of appropriate piling methods. Implementation of measures in the EMP such as good management of stockpiles in accordance with Environment Agency PPG, implementation of pollution incident control e.g. plant drip trays and spill kits. Control of run off and implementation of dust management systems. See section 10.9 for further details.	Medium	Unlikely	<b>Low Risk</b>	Medium	Unlikely	<b>Low Risk</b>
		Vertical migration of contaminants via preferential pathways such as via piles to deeper groundwater	Medium	Unlikely	<b>Low Risk</b>	Medium	Likely	<b>Moderate Risk</b>		Medium	Unlikely	<b>Low Risk</b>	Medium	Unlikely	<b>Low Risk</b>
		Migration of contaminants entrained in surface water run-off	Medium	Low likelihood	<b>Moderate/Low Risk</b>	Medium	Likely	<b>Moderate Risk</b>		Medium	Low likelihood	<b>Moderate/Low Risk</b>	Medium	Unlikely	<b>Low Risk</b>
		Migration of contamination via surface waters	Medium	Low likelihood	<b>Moderate/Low Risk</b>	Medium	Likely	<b>Moderate Risk</b>		Medium	Low likelihood	<b>Moderate/Low Risk</b>	Medium	Unlikely	<b>Low Risk</b>
	<ul style="list-style-type: none"> <li>Controlled Waters (within the study area)</li> <li>Groundwater (Superficial Principal and Secondary A aquifers and bedrock Secondary A aquifer)</li> <li>Surface water (River Wey, Bolder Mere, Pond Farm Pond, Manor Pond and unnamed drains, ditches and ponds.</li> </ul>	Leaching/ vertical migration of contaminants in soils to underlying groundwater followed by lateral migration	Medium	Likely	<b>Moderate Risk</b>	Medium	Likely	<b>Moderate Risk</b>		Medium	Unlikely	<b>Low Risk</b>	Medium	Unlikely	<b>Low Risk</b>
		Vertical migration of contaminants via preferential pathways such as via piles to deeper groundwater followed by lateral migration	Medium	Unlikely	<b>Low Risk</b>	Medium	Likely	<b>Moderate Risk</b>		Medium	Unlikely	<b>Low Risk</b>	Medium	Unlikely	<b>Low Risk</b>
		Lateral migration of contamination in groundwater	Medium	Low likelihood	<b>Moderate/Low Risk</b>	Medium	Likely	<b>Moderate Risk</b>		Medium	Low likelihood	<b>Moderate/Low Risk</b>	Medium	Unlikely	<b>Low Risk</b>
		Migration of contaminants entrained in surface water run-off	Medium	Low likelihood	<b>Moderate/Low Risk</b>	Medium	Likely	<b>Moderate Risk</b>		Medium	Low likelihood	<b>Moderate/Low Risk</b>	Medium	Unlikely	<b>Low Risk</b>
		Migration of contamination via surface waters	Medium	Low likelihood	<b>Moderate/Low Risk</b>	Medium	Likely	<b>Moderate Risk</b>		Medium	Low likelihood	<b>Moderate/Low Risk</b>	Medium	Unlikely	<b>Low Risk</b>
	<ul style="list-style-type: none"> <li>Ecology</li> <li>Thames Basin Heath SPA, Ockham Common and Wisley Common SSSI, Ockham and Wisley LNR and Ancient Woodland.</li> </ul>	Leaching / vertical migration of contaminants followed by lateral migration of contamination in groundwater connected to bog/ surface water	Medium	Low likelihood	<b>Moderate/Low Risk</b>	Medium	Low likelihood	<b>Moderate/Low Risk</b>		Medium	Low likelihood	<b>Moderate/Low Risk</b>	Medium	Low likelihood	<b>Moderate/Low Risk</b>

Source+A1:Q51	Receptor	Pathway	Baseline			Construction without mitigation			Mitigation measures	Construction with mitigation			Operation			
			Consequence of risk	Probability of risk	Classification of risk (assuming reasonable worst case)	Consequence of risk	Probability of risk	Classification of risk		Consequence of risk	Probability of risk	Classification of risk	Consequence of risk	Probability of risk	Classification of risk	
		Migration of contaminants entrained in surface water run-off	Medium	Low likelihood	<b>Moderate/Low Risk</b>	Medium	Likely	<b>Moderate Risk</b>	accordance with EA PPG, implementation of pollution incident control e.g. plant drip trays and spill kits. Control of run off and implementation of dust management systems. See section 10.9 for further details.	Medium	Low likelihood	<b>Moderate/Low Risk</b>	Medium	Low likelihood	<b>Moderate/Low Risk</b>	
	Property (within the Scheme) •Piles and other foundations •Historic remains/structures and listed buildings •Underground services.	Chemical attack from aggressive chemical constituents in soil or groundwater	Medium	Unlikely	<b>Low Risk</b>	Medium	Low likelihood	<b>Moderate/Low Risk</b>	GI and risk assessment as necessary to define risks. Remediation / removal of existing contamination if risk assessments deem necessary. Appropriate assessment and design of services resistant to chemical attack if risk assessments deem necessary. Use of appropriate hazard signage and / or ground gas protection measures within below ground chambers and ducts if risk assessments deem necessary. See section 10.9 for further details.	Medium	Unlikely	<b>Low Risk</b>	Medium	Unlikely	<b>Low Risk</b>	
		Migration of ground gases or vapours along preferential pathways including permeable ground, services trenches and service entry points and accumulation in enclosed spaces such as services ducts or access points	Severe	Unlikely	<b>Moderate/Low Risk</b>	Severe	Unlikely	<b>Moderate/Low Risk</b>		Severe	Unlikely	<b>Moderate/Low Risk</b>	Severe	Unlikely	<b>Moderate/Low Risk</b>	
	Property (within the study area) •Residential, commercial and industrial properties •Historic remains/structures and listed buildings •Underground services.	Chemical attack from aggressive chemical constituents in soil or groundwater	Medium	Unlikely	<b>Low Risk</b>	Medium	Low likelihood	<b>Moderate/Low Risk</b>		Medium	Unlikely	<b>Low Risk</b>	Medium	Unlikely	<b>Low Risk</b>	
Migration of ground gases or vapours along preferential pathways including permeable ground, services trenches and service entry points and accumulation in enclosed spaces such as services ducts or access points		Severe	Unlikely	<b>Moderate/Low Risk</b>	Severe	Unlikely	<b>Moderate/Low Risk</b>	Severe		Unlikely	<b>Moderate/Low Risk</b>	Severe	Unlikely	<b>Moderate/Low Risk</b>		
Potential sources of contamination (including soil, water, vapours and ground gases) within the study area include:  •Made Ground/infill material of unknown quality associated with the construction of Feltonfleet School, the railway, RHS Wisley and other existing infrastructure; •material of unknown quality associated with the infilling/potential infilling of former water features and mineral extraction pits;	Human Health (within the Scheme) •Construction workers and future site maintenance workers.	Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust/fibres	Receptor not present on-site during baseline	Medium	Low likelihood	<b>Moderate/Low Risk</b>	GI and risk assessment as necessary to define risks. Use of ventilated temporary structures during construction if risk assessments deem necessary. Use of appropriate hazard signage and / or ground gas protection measures within below ground chambers and ducts if risk assessments deem necessary. RAMS to be completed prior to construction and risk management with appropriate PPE. See section 10.9 for further details.	Medium	Unlikely	<b>Low Risk</b>	Medium	Unlikely	<b>Low Risk</b>	Medium	Unlikely	<b>Low Risk</b>
		Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater		Medium	Low likelihood	<b>Moderate/Low Risk</b>		Medium	Low likelihood	<b>Moderate/Low Risk</b>	Medium	Low likelihood	<b>Moderate/Low Risk</b>	Medium	Low likelihood	<b>Moderate/Low Risk</b>
		Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion		Severe	Unlikely	<b>Moderate/Low Risk</b>		Severe	Unlikely	<b>Moderate/Low Risk</b>	Severe	Unlikely	<b>Moderate/Low Risk</b>	Severe	Unlikely	<b>Moderate/Low Risk</b>
		Inhalation, ingestion and dermal contact with contaminants within surface water		Medium	Low likelihood	<b>Moderate/Low Risk</b>		Medium	Low likelihood	<b>Moderate/Low Risk</b>	Medium	Low likelihood	<b>Moderate/Low Risk</b>	Medium	Low likelihood	<b>Moderate/Low Risk</b>
		Inhalation of vapours from contaminated soil and / or water		Medium	Low likelihood	<b>Moderate/Low Risk</b>		Medium	Low likelihood	<b>Moderate/Low Risk</b>	Medium	Low likelihood	<b>Moderate/Low Risk</b>	Medium	Low likelihood	<b>Moderate/Low Risk</b>

Source+A1:Q51	Receptor	Pathway	Baseline			Construction without mitigation			Mitigation measures	Construction with mitigation			Operation			
			Consequence of risk	Probability of risk	Classification of risk (assuming reasonable worst case)	Consequence of risk	Probability of risk	Classification of risk		Consequence of risk	Probability of risk	Classification of risk	Consequence of risk	Probability of risk	Classification of risk	
<ul style="list-style-type: none"> <li>• five recorded pollution incidents (minor severity and occurred prior to 1998);</li> <li>• wider area of the former Wisley Airfield and associated activities (historical GI identified some contamination);</li> <li>• farms and agricultural land use;</li> <li>• the railway;</li> <li>• five historical landfills; and</li> <li>• potentially contaminative land uses (current and historical), including vehicle service stations, electricity substation, sewage treatment, gas works, asphalt and coated macadam laying contractors, garden machinery services, vehicle dealers, wood and furniture polishers, picture frame renovators, pest control service, small business park and stationery printers.</li> </ul>	Human Health (within the Scheme) •Members of the public using public rights of way (non motorised users)	Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust/fibres	Medium	Unlikely	Low Risk	Receptor not present on-site during construction				Receptor not present on-site during construction				Medium	Unlikely	Low Risk
		Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater	Medium	Unlikely	Low Risk									Medium	Unlikely	Low Risk
		Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion	Severe	Unlikely	Moderate/Low Risk									Severe	Unlikely	Moderate/Low Risk
		Inhalation, ingestion and dermal contact with contaminants within surface water	Medium	Low likelihood	Moderate/Low Risk									Medium	Low likelihood	Moderate/Low Risk
		Inhalation of vapours from contaminated soil and / or water	Medium	Unlikely	Low Risk									Medium	Unlikely	Low Risk
	Controlled Waters (within the Scheme) •Groundwater (superficial Principal and Secondary A aquifers and bedrock Secondary A aquifer) •Surface water (Stratford Brook, River Mole, unnamed drains, ditches and ponds).	Leaching/ vertical migration of contaminants in soils to underlying groundwater followed by lateral migration	Medium	Low likelihood	Moderate/Low Risk	Medium	Low likelihood	Moderate/Low Risk	GI and risk assessment as necessary to define risks.	Medium	Low likelihood	Moderate/Low Risk	Medium	Low likelihood	Moderate/Low Risk	
		Vertical migration of contaminants via preferential pathways such as via piles to deeper groundwater followed by lateral migration	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk		Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk	
		Lateral migration of contamination in groundwater	Medium	Low likelihood	Moderate/Low Risk	Medium	Low likelihood	Moderate/Low Risk		Medium	Low likelihood	Moderate/Low Risk	Medium	Low likelihood	Moderate/Low Risk	
		Migration of contaminants entrained in surface water run-off	Medium	Low likelihood	Moderate/Low Risk	Medium	Low likelihood	Moderate/Low Risk		Medium	Low likelihood	Moderate/Low Risk	Medium	Low likelihood	Moderate/Low Risk	
		Migration of contamination via surface waters	Medium	Low likelihood	Moderate/Low Risk	Medium	Low likelihood	Moderate/Low Risk		Medium	Low likelihood	Moderate/Low Risk	Medium	Low likelihood	Moderate/Low Risk	
	Ecology •Thames Basin Heath SPA, Ockham Common and Wisley Common SSSI, Ockham and Wisley LNR and Ancient Woodland.	Leaching / vertical migration of contaminants followed by lateral migration of contamination in groundwater connected to bog/ surface water	Medium	Low likelihood	Moderate/Low Risk	Medium	Low likelihood	Moderate/Low Risk	GI and risk assessment as necessary to define risk. Remediation / removal of existing contamination if risk assessments deem necessary. Implementation of measures in the EMP such as good management of stockpiles in accordance with EA PPG, implementation of pollution incident control e.g. plant drip trays and spill kits. Control of run off and implementation of dust management systems. See section 10.9 for further details.	Medium	Low likelihood	Moderate/Low Risk	Medium	Low likelihood	Moderate/Low Risk	
		Migration of contaminants entrained in surface water run-off	Medium	Low likelihood	Moderate/Low Risk	Medium	Low likelihood	Moderate/Low Risk		Medium	Low likelihood	Moderate/Low Risk	Medium	Low likelihood	Moderate/Low Risk	



Source+A1:Q51	Receptor	Pathway	Baseline			Construction without mitigation			Mitigation measures	Construction with mitigation			Operation		
			Consequence of risk	Probability of risk	Classification of risk (assuming reasonable worst case)	Consequence of risk	Probability of risk	Classification of risk		Consequence of risk	Probability of risk	Classification of risk	Consequence of risk	Probability of risk	Classification of risk
	Property (within the Scheme) •Piles and other foundations •Historic remains/ structures and listed buildings •Underground services.	Chemical attack from aggressive chemical constituents in soil or groundwater	Medium	Low likelihood	<b>Moderate/Low Risk</b>	Medium	Low likelihood	<b>Moderate/Low Risk</b>	GI and risk assessment as necessary to define risks. Appropriate assessment and design of services resistant to chemical attack if risk assessments deem necessary. Use of appropriate hazard signage and / or ground gas protection measures within below ground chambers and ducts if risk assessments deem necessary. See section 10.9 for further details.	Medium	Low likelihood	<b>Moderate/Low Risk</b>	Medium	Low likelihood	<b>Moderate/Low Risk</b>
		Migration of ground gases or vapours along preferential pathways including permeable ground, services trenches and service entry points and accumulation in enclosed spaces such as services ducts or access points	Severe	Unlikely	<b>Moderate/Low Risk</b>	Severe	Unlikely	<b>Moderate/Low Risk</b>		Severe	Unlikely	<b>Moderate/Low Risk</b>	Severe	Unlikely	<b>Moderate/Low Risk</b>

**Table 10.1.2: Land contamination impact assessment<sup>2</sup>**

Source	Receptor	Pathway	Classification of risk (baseline)	Classification of risk (construction without mitigation)	Impact (construction without mitigation)	Classification of risk (construction with mitigation)	Impact (construction with mitigation)	Classification of risk (operation)	Impact (during operation phase assuming mitigation was implemented)		
Potential sources of contamination (including soil, water, vapours and ground gases) within the Scheme include:  •historical pollution from vehicles using the current M25, A3, A245 and local access roads; •Made Ground/infill material of unknown quality associated with the construction of the M25, A3, A245 Byfleet Road, local access roads, Former Wisley Airfield, San Domenico site and other existing infrastructure; •material of unknown quality associated with the infilling/potential infilling of former water features and mineral extraction pits; •three historical landfills (understood to be inert fill); •three recorded pollution incidents (minor severity and occurred prior to 1999); •part of former Wisley Airfield and associated activities (historical GI identified some contamination); and •farms and agricultural land use.	Human Health (within the Scheme) •Construction workers and future site maintenance workers	Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust/fibres	Receptor not present on-site during baseline	Moderate/Low Risk	<b>(Impact predicted to be moderate adverse given sensitivity of receptor)</b>	Low Risk	<b>(Impact predicted to be negligible given reduced likelihood of pathway being realised)</b>	Low Risk	<b>(Impact predicted to be negligible given reduced likelihood of pathway being realised)</b>		
		Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater		Moderate/Low Risk		Low Risk		Low Risk			
		Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion		Moderate/Low Risk		Moderate/Low Risk		Moderate/Low Risk			
		Inhalation, ingestion and dermal contact with contaminants within surface water		Moderate/Low Risk		Low Risk		Low Risk			
		Inhalation of vapours from contaminated soil and / or water		Moderate/Low Risk		Low Risk		Low Risk			
	Human Health (within the Scheme) •Members of the public using public rights of way (non motorised users).	Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust/fibres Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion Inhalation, ingestion and dermal contact with contaminants within surface water Inhalation of vapours from contaminated soil and / or water	Moderate/Low Risk	Receptor not present on-site during construction					Low Risk	Minor Beneficial	
			Moderate/Low Risk						Low Risk	Minor Beneficial	
			Moderate/Low Risk						Moderate/Low Risk	Negligible	
			Moderate/Low Risk						Low Risk	Minor Beneficial	
			Low Risk						Low Risk	Negligible	
	Human Health (within the study area) •Local residents (including Elm Corner) •School children and staff (e.g. Feltonfleet School) •Workers and visitors at nearby commercial premises and recreational facilities •Members of the public using public rights of way (non motorised users).	Inhalation, ingestion and dermal contact with contaminants in windblown soil-derived dust/fibres Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion Inhalation, ingestion and dermal contact with contaminants within surface water Inhalation of vapours from contaminated soil and / or water	Moderate/Low Risk	Moderate/Low Risk	Negligible	Low Risk	Minor Beneficial	Low Risk	Minor Beneficial		
			Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible		
			Moderate/Low Risk	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible		
			Low Risk	Moderate/Low Risk	Minor Adverse	Low Risk	Negligible	Low Risk	Negligible		
			Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible		
			Controlled Waters (within the Scheme) •Groundwater (superficial Principal and Secondary A aquifers and bedrock Secondary A aquifer) •Surface water (Stratford Brook, River Mole, unnamed drains and ditches.	Leaching / vertical migration of contaminants in soils to underlying groundwater Vertical migration of contaminants via preferential pathways such as via piles to deeper groundwater Migration of contaminants entrained in surface water run-off Migration of contamination via surface waters	Moderate Risk	Moderate Risk	Negligible	Low Risk	Moderate Beneficial	Low Risk	Moderate Beneficial
					Low Risk	Moderate Risk	Moderate Adverse	Low Risk	Negligible	Low Risk	Negligible
					Moderate/Low Risk	Moderate Risk	Minor Adverse	Moderate/Low Risk	Negligible	Low Risk	Minor Beneficial
					Moderate/Low Risk	Moderate Risk	Minor Adverse	Moderate/Low Risk	Negligible	Low Risk	Minor Beneficial
			Controlled Waters (within the study area) •Groundwater (Superficial Principal and Secondary A aquifers and bedrock Secondary A aquifer) •Surface water (River Wey, Bolder Mere, Pond Farm Pond, Manor Pond and unnamed drains, ditches and ponds.	Leaching/ vertical migration of contaminants in soils to underlying groundwater followed by lateral migration Vertical migration of contaminants via preferential pathways such as via piles to deeper groundwater followed by lateral migration Lateral migration of contamination in groundwater Migration of contaminants entrained in surface water run-off Migration of contamination via surface waters	Moderate Risk	Moderate Risk	Negligible	Low Risk	Moderate Beneficial	Low Risk	Moderate Beneficial
	Low Risk	Moderate Risk			Moderate Adverse	Low Risk	Negligible	Low Risk	Negligible		
	Moderate/Low Risk	Moderate Risk			Minor Adverse	Moderate/Low Risk	Negligible	Low Risk	Minor Beneficial		
	Moderate/Low Risk	Moderate Risk			Minor Adverse	Moderate/Low Risk	Negligible	Low Risk	Minor Beneficial		
	Moderate/Low Risk	Moderate Risk			Minor Adverse	Moderate/Low Risk	Negligible	Low Risk	Minor Beneficial		
	Ecology •Thames Basin Heath SPA, Ockham Common and Wisley Common SSSI, Ockham and Wisley LNR and Ancient Woodland.	Leaching / vertical migration of contaminants followed by lateral migration of contamination in groundwater connected to bog/ surface water Migration of contaminants entrained in surface water run-off	Moderate/Low Risk	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible		
Moderate/Low Risk			Moderate Risk	Minor Adverse	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible			

<sup>2</sup> Contains sensitive information

Source	Receptor	Pathway	Classification of risk (baseline)	Classification of risk (construction without mitigation)	Impact (construction without mitigation)	Classification of risk (construction with mitigation)	Impact (construction with mitigation)	Classification of risk (operation)	Impact (during operation phase assuming mitigation was implemented)	
	Property (within the Scheme) •Piles and other foundations •Historic remains/structures and listed buildings •Underground services.	Chemical attack from aggressive chemical constituents in soil or groundwater	Low Risk	Moderate/Low Risk	Minor Adverse	Low Risk	Negligible	Low Risk	Negligible	
		Migration of ground gases or vapours along preferential pathways including permeable ground, services trenches and service entry points and accumulation in enclosed spaces such as services ducts or access points	Moderate/Low Risk	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible	
	Property (within the study area) •Residential, commercial and industrial properties •Historic remains/structures and listed buildings •Underground services.	Chemical attack from aggressive chemical constituents in soil or groundwater	Low Risk	Moderate/Low Risk	Minor Adverse	Low Risk	Negligible	Low Risk	Negligible	
		Migration of ground gases or vapours along preferential pathways including permeable ground, services trenches and service entry points and accumulation in enclosed spaces such as services ducts or access points	Moderate/Low Risk	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible	
Potential sources of contamination (including soil, water, vapours and ground gases) within the study area include:  •Made Ground/infill material of unknown quality associated with the construction of Feltonfleet School, the railway, RHS Wisley and other existing infrastructure; •material of unknown quality associated with the infilling/potential infilling of former water features and mineral extraction pits; • five recorded pollution incidents (minor severity and occurred prior to 1998); •wider area of the former Wisley Airfield and associated activities (historical GI identified some contamination); •farms and agricultural land use; •the railway; •five historical landfills; and •potentially contaminative land uses (current and historical), including vehicle service stations, electricity substation, sewage treatment, gas works, asphalt and coated macadam laying contractors, garden machinery	Human Health (within the Scheme) •Construction workers and future site maintenance workers.	Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust/fibres	Receptor not present on-site during baseline	Moderate/Low Risk	(Impact predicted to be moderate adverse given sensitivity of receptor)	Low Risk	Impact predicted to be minor adverse given the mitigation measures	Low Risk	(Impact predicted to be negligible given reduced likelihood of pathway being realised)	
		Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater		Moderate/Low Risk		Moderate/Low Risk				
		Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion		Moderate/Low Risk		Moderate/Low Risk				
		Inhalation, ingestion and dermal contact with contaminants within surface water		Moderate/Low Risk		Moderate/Low Risk				
		Inhalation of vapours from contaminated soil and / or water		Moderate/Low Risk		Moderate/Low Risk				
	Human Health (within the Scheme) •Members of the public using public rights of way (non motorised users)	Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust/fibres	Low Risk	Receptor not present on-site during construction					Low Risk	Negligible
			Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater						Low Risk	Negligible
			Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion						Moderate/Low Risk	Negligible
			Inhalation, ingestion and dermal contact with contaminants within surface water						Moderate/Low Risk	Negligible
			Inhalation of vapours from contaminated soil and / or water						Low Risk	Negligible
	Controlled Waters (within the Scheme) •Groundwater (superficial Principal and Secondary A aquifers and bedrock Secondary A aquifer) •Surface water (Stratford Brook, River Mole, unnamed drains, ditches and ponds).	Leaching/ vertical migration of contaminants in soils to underlying groundwater followed by lateral migration	Moderate/Low Risk	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible	
		Vertical migration of contaminants via preferential pathways such as via piles to deeper groundwater followed by lateral migration	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible	
		Lateral migration of contamination in groundwater	Moderate/Low Risk	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible	
		Migration of contaminants entrained in surface water run-off	Moderate/Low Risk	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible	
		Migration of contamination via surface waters	Moderate/Low Risk	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible	
	Ecology •Thames Basin Heath SPA, Ockham Common and Wisley Common SSSI, Ockham and Wisley LNR and Ancient Woodland.	Leaching / vertical migration of contaminants followed by lateral migration of contamination in groundwater connected to bog/ surface water	Moderate/Low Risk	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible	
		Migration of contaminants entrained in surface water run-off	Moderate/Low Risk	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible	
	Property (within the Scheme) •Piles and other foundations •Historic remains/ structures and listed buildings •Underground services.	Chemical attack from aggressive chemical constituents in soil or groundwater	Moderate/Low Risk	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible	
		Migration of ground gases or vapours along preferential pathways including permeable ground, services trenches and service entry points and accumulation in enclosed spaces such as services ducts or access points	Moderate/Low Risk	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible	

Source	Receptor	Pathway	Classification of risk (baseline)	Classification of risk (construction without mitigation)	Impact (construction without mitigation)	Classification of risk (construction with mitigation)	Impact (construction with mitigation)	Classification of risk (operation)	Impact (during operation phase assuming mitigation was implemented)
services, vehicle dealers, wood and furniture polishers, picture frame renovators, pest control service, small business park and stationery printers.									

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