

The Wrexham (Gas Fired Power Station) Order

6.4.8 Volume 4: Environmental Statement Appendix 13.1: Assessment Tables

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(Applications: Prescribed Forms and Procedure) Regulations 2009

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Appendix A13 ◆ Ground Conditions

APPENDIX 13.1: TABLES

Table A13.1: Risk estimation: classification of probability

Classification	Definition of the probability of harm/pollution occurring
High Likelihood	The contaminant linkage exists and it is very likely to result in harm/pollution in the short term, and/or will almost inevitably result in harm/pollution in the long term, and/or there is current evidence of harm/pollution. Likelihood is defined as more likely than not and meets the definition of 'significant possibility' under Part 2A of EPA 1990.
Likely	The source, pathway and receptor exist for the contaminant linkage and it is probable that harm/pollution will occur. Circumstances are such that harm/pollution is not inevitable, but possible in the short term and likely over the long term. Likelihood is defined as reasonably possible and meets the definition of 'significant possibility' under Part 2A of EPA 1990.
Low Likelihood	The source, pathway and receptor exist and it is possible that harm/pollution could occur. Circumstances are such that harm/pollution is by no means certain in the long term and less likely in the short term.
Unlikely	The source, pathway and receptor exist for the contaminant linkage but it is improbable that harm/pollution will occur even in the long term.

Table A13.2: Risk estimation: classification of consequence

Classification	Definition of consequence
Human Receptors: Site Users	
Severe	Acute damage to human health based on the effects on the critical human health receptor. Exposure to radioactivity giving rise to doses that are equal to or exceed doses specified in Part 2A of EPA 1990. Concentrations of contaminants above appropriate site specific assessment criteria. Harm meets definition of 'significant harm' under Part 2A of EPA 1990.
Medium	Chronic damage to human health based on the effects on the critical human health receptor. Concentrations of contaminants above appropriate site specific assessment criteria. Harm meets definition of 'significant harm' under Part 2A of EPA 1990.
Mild	No appreciable impact on human health based on the potential effects on the critical human health receptor. Concentrations of contaminants above generic assessment criteria but below appropriate site specific assessment criteria.
Minor	No appreciable impact on human health based on the effects on the critical human health receptor. Concentrations of contaminants below appropriate

Classification	Definition of consequence
	generic assessment criteria.
Human Receptors: Site Construction Workers	
Severe	Exposure to hazardous substances resulting in a reportable death, major injury, 3-day injury or illness/disease under RIDDOR.
Medium	Exposure to hazardous substances resulting in a dangerous occurrence reportable under RIDDOR. Exposure to hazardous substances resulting in exceedance of a workplace exposure limit.
Mild	Exposure to hazardous substances resulting in limited effects such as headache, dizziness, nausea. Exposures below the workplace exposure limits. Not reportable under RIDDOR.
Minor	Minor exposure to hazardous substance resulting in no appreciable ill health effects.
Controlled Water Receptors	
Severe	Pollution of a principal aquifer within a source protection zone or potable supply characterised by a breach of drinking water standards. Pollution of a surface water course characterised by a breach of an EQS at a statutory monitoring location or resulting in a change in GQA grade of river reach. Discharge of a List I or List II substance to groundwater. Pollution meets Part 2A definition.
Medium	Pollution of a Principal aquifer outside a source protection zone or a Secondary A aquifer characterised by a breach of drinking water standards. Pollution of an industrial groundwater abstraction or irrigation supply that impairs its function. Substantial pollution but insufficient to result in a change in the GQA grade of river reach. Pollution meets Part 2A definition.
Mild	Low levels of pollution of a principal aquifer outside a source protection zone or an industrial abstraction, or pollution of a Secondary A aquifer. Low levels of pollution insufficient to result in a change in the GQA grade of river reach, pollution of a surface water course without a quality classification.
Minor	No appreciable pollution, or pollution of a low sensitivity receptor such as a Secondary B aquifer or a surface water course without a quality classification.
Ecosystem Receptors and Statutory Geological Sites	
Severe	For sites with designations as follows – Site of Special Scientific Interest, National Nature Reserve, Marine Nature Reserve, Special Protection Area (and potential sites), Special Area of Conservation (and candidate sites), PPG9 site or RAMSAR. Irreversible adverse change in the functioning of the ecological system or any species of special interest that forms part of that system. Concentrations of contaminants above appropriate site specific assessment criteria. Harm meets definition of ‘significant harm’ under Part 2A of EPA 1990.
Medium	For sites with designations as follows – Site of Special Scientific Interest, National Nature Reserve, Marine Nature Reserve, Special Protection Area (and potential sites), Special Area of Conservation (and candidate sites), PPG9 site or RAMSAR. Substantial adverse change in the functioning of the

Classification	Definition of consequence
	ecological system or any species of special interest that forms part of that system. Concentrations of contaminants above appropriate site specific assessment criteria. Harm meets definition of 'significant harm' under Part 2A of EPA 1990.
Mild	No appreciable harm to ecosystems or geological sites with statutory designations. Harm to ecosystems of a low sensitivity such as sites of local importance.
Minor	Limited harm to ecosystems of low sensitivity such as sites of local importance.
Property Receptors: Buildings, Foundations and Services	
Severe	Catastrophic damage to buildings, such as explosion. Catastrophic failure of foundations and services. Substantial damage to a Scheduled Ancient Monument significantly impairing the historic, architectural, traditional, artistic or archaeological interest by reason of which the monument is scheduled. Harm meets definition of 'significant harm' under Part 2A of EPA 1990.
Medium	Substantial damage to buildings and foundations rendering the structures unsafe. Substantial damage to services impairing their function. Significant damage to a Scheduled Ancient Monument significantly impairing the historic, architectural, traditional, artistic or archaeological interest by reason of which the monument is scheduled. Harm meets definition of 'significant harm' under Part 2A of EPA 1990.
Mild	Significant damage to buildings and foundations but not resulting in them being unsafe for occupation. Damage to services but not sufficient to impair their function. Damage to a Scheduled Ancient Monument but no significant impairment to the historic, architectural, traditional, artistic or archaeological interest by reason of which the monument is scheduled.
Minor	Easily repairable damage to buildings, foundations and services.
Property Receptors: Crops and Livestock	
Severe	Substantial loss in the value of crops or domestically-grown produce resulting from disease, death or other physical damage. Death to livestock, domesticated animals or wild animals subject to shooting or fishing rights. Harm meets definition of 'significant harm' under Part 2A of EPA 1990.
Medium	Substantial diminution in yield (over 20% reduction) of crops or domestically-grown produce resulting from disease, death or other physical damage. Serious disease or other serious physical damage to livestock, domesticated animals or wild animals subject to shooting or fishing rights. Harm meets definition of 'significant harm' under Part 2A of EPA 1990.
Mild	Harm to crops but not resulting in a substantial loss in value or diminution in yield (less than 20% reduction). Limited harm in terms of disease or other physical damage to livestock, domesticated animals or wild animals subject to shooting or fishing rights.
Minor	No appreciable harm, or harm to a low sensitivity receptor.

Table A13.3: Descriptions of classified risks (NHBC/Environment Agency R&D 66)

Classification	Description
6 (Very high risk)	There is a high probability that severe harm could arise to a designated receptor from an identified hazard at the site without remediation action OR there is evidence that severe harm to a designated receptor is already occurring. Realisation of that risk is likely to present a substantial liability to the site owner/or occupier. Investigation is required as a matter of urgency and remediation works likely to follow in the short-term.
5 (High risk)	Harm is likely to arise to a designated receptor from an identified hazard at the site without remediation action. Realisation of the risk is likely to present a substantial liability to the site owner/occupier. Investigation is required as a matter of urgency and remediation works likely to follow in the short-term.
4 (Moderate risk)	It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, and if any harm were to occur it is more likely, that the harm would be relatively mild. Further investigative work is normally required to clarify the risk and to determine the potential liability to site owner/occupier. Some remediation works may be required in the longer term.
2 (Low risk)	It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely at worst, that this harm if realised would normally be mild. It is unlikely that the site owner/or occupier would face substantial liabilities from such a risk. Further investigative work (which is likely to be limited) to clarify the risk may be required. Any subsequent remediation works are likely to be relatively limited.
1 (Very low risk)	It is a low possibility that harm could arise to a designated receptor, but it is likely at worst, that this harm if realised would normally be mild or minor.
No potential risk	There is no potential risk if no contaminant linkage has been established.

Table A13.4: Land contamination CSM and risk assessment during the baseline, construction and operation phases for the power station complex site

Source	Receptor	Pathway	Baseline			Construction without mitigation			Mitigation measures	Construction with mitigation			Operation with inherent mitigation but without additional mitigation			Mitigation measures	Operation with mitigation undertaken prior to and during construction		
			Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk
Within Order Limits (On-site) Fuels and chemicals from vehicles associated with the car park of the former fibre glass factory	<u>Human Health</u> Workers on adjacent sites	Dermal contact with and ingestion of contaminants in soils, soil-derived dusts and water.	Unlikely	Mild	Very low risk	Low likelihood	Mild	Low risk	Ground investigation, risk assessments and CEMP completed prior to construction. Principal contractor will provide a method statement as part of the CEMP to restrict access to site from public, manage dust.	Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk	Remediation if necessary prior to construction.	Unlikely	Mild	Very low risk
	<u>Human Health</u> Pedestrians using adjacent/nearby footpaths	Inhalation of contaminants in soil and soil derived dusts including asbestos. Leaching of contaminants to groundwater in underlying aquifers.	Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk		Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk		Unlikely	Mild	Very low risk
	<u>Human Health</u> Construction/maintenance workers	Migration of contaminated water through preferential pathways (such as deep foundations) to groundwater in underlying aquifers.	No risk at baseline stage.			High likelihood	Medium	Moderate risk	In addition to the above, construction workers to wear appropriate PPE.	Low likelihood	Mild	Low risk	Medium	Low risk	Low likelihood		Unlikely	Mild	Very low risk
	<u>Controlled Waters</u> Principal and Secondary A Bedrock Aquifers and Secondary A Superficial Aquifer	Leaching of contaminants to groundwater in underlying aquifers.	Low likelihood	Mild	Low risk	High likelihood	Mild	Moderate risk	Good management of stockpiles in accordance with EA Pollution Prevention Guideline, working at construction and demolition sites (PPG6) to reduce infiltration.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Remediation if necessary and piling design prior to construction.	Unlikely	Mild
		Migration of contaminated water through preferential pathways (such as deep foundations) to groundwater in underlying aquifers.	Low likelihood	Mild	Low risk	High likelihood	Mild	Moderate risk		Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Unlikely		Mild	Very low risk

Source	Receptor	Pathway	Baseline			Construction without mitigation			Mitigation measures	Construction with mitigation			Operation with inherent mitigation but without additional mitigation			Mitigation measures	Operation with mitigation undertaken prior to and during construction		
			Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk
	<u>Controlled Waters</u> On site ponds Drainage ditches adjacent to the site boundary	Lateral migration of contaminated groundwater with discharge to surface water as base flow.	Low likelihood	Mild	Low risk	Likely	Mild	Moderate/low risk	Principal contractor will provide a method statement as part of the CEMP to manage control of contaminant and pollutant run-off in accordance with PPG6. Surface water sampling before and during construction.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Remediation if necessary prior to construction.	Unlikely	Mild	Very low risk
		Discharge of contaminants entrained in surface water runoff followed by overland flow and discharge.	Low likelihood	Mild	Low risk	High likelihood	Mild	Moderate risk		Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Unlikely	Mild	Very low risk
	<u>Property</u> Existing services on site New infrastructure and services on site relating to Power Station Complex	Direct contact of services with contaminants in soil and shallow groundwater.	Low likelihood	Mild	Low risk	Low likelihood	Minor	Very low risk	N/A	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Appropriate design of services resistant to chemical attack.	Unlikely	Mild	Very low risk
		Migration of chemicals.	Low likelihood	Mild	Low risk	Likely	Mild	Moderate/low risk		Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Unlikely	Mild	Very low risk
Within Order Limits (On-site) Made Ground associated with construction and demolition activities	<u>Human Health</u> Workers on adjacent sites	Dermal contact with and ingestion of contaminants in soils, soil-derived dusts and water including the potential for asbestos.	Low likelihood	Mild	Low risk	Likely	Mild	Moderate/low risk	Ground investigation, risk assessments and CEMP completed prior to construction. Principal contractor will provide a method statement as part of	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Remediation if necessary prior to construction.	Unlikely	Mild	Very low risk

Source	Receptor	Pathway	Baseline			Construction without mitigation			Mitigation measures	Construction with mitigation			Operation with inherent mitigation but without additional mitigation			Mitigation measures	Operation with mitigation undertaken prior to and during construction		
			Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk
	Human Health Pedestrians using adjacent/nearby footpaths	Inhalation of contaminants in soil and soil derived dusts including asbestos. Leaching of contaminants to groundwater in underlying aquifers. Migration of contaminated water through preferential pathways (such as deep foundations) to groundwater in underlying aquifers.	Unlikely	Mild	Very low risk	Low likelihood	Mild	Low risk	the CEMP to restrict access to site from public, manage dust and asbestos fibres in Made Ground.	Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk	
	Human Health Construction/maintenance workers		No risk at baseline stage.			Likely	Mild	Moderate/low risk	In addition to the above, construction workers to wear appropriate PPE.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Unlikely	Mild	Very low risk	
	Controlled Waters Principal and Secondary A Bedrock Aquifers and Secondary A Superficial Aquifer	Leaching of contaminants to groundwater in underlying aquifers.	Low likelihood	Mild	Low risk	Likely	Mild	Moderate/low risk	Good management of stockpiles in accordance with EA Pollution Prevention Guideline, working at construction and demolition sites (PPG6) to reduce infiltration.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Remediation if necessary and piling design prior to construction.			
		Migration of contaminated water through preferential pathways (such as deep foundations) to groundwater in underlying aquifers.	Low likelihood	Mild	Low risk	Likely	Mild	Moderate/low risk		Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk				Unlikely

Source	Receptor	Pathway	Baseline			Construction without mitigation			Mitigation measures	Construction with mitigation			Operation with inherent mitigation but without additional mitigation			Mitigation measures	Operation with mitigation undertaken prior to and during construction		
			Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk
	<u>Controlled Waters</u> On site ponds Drainage ditches adjacent to the site boundary	Lateral migration of contaminated groundwater with discharge to surface water as base flow.	Low likelihood	Mild	Low risk	Likely	Mild	Moderate/low risk	Principal contractor will provide a method statement as part of the CEMP to manage control of contaminant and pollutant run-off in accordance with PPG6. Surface water sampling before and during construction.	Likely	Mild	Moderate/low risk	Low likelihood	Mild	Low risk	Remediation if necessary prior to construction.	Unlikely	Mild	Very low risk
		Discharge of contaminants entrained in surface water runoff followed by overland flow and discharge.	Low likelihood	Mild	Low risk	High likelihood	Mild	Moderate risk		Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Unlikely	Mild	Very low risk
	<u>Property</u> Existing services on site New infrastructure and services on site relating to Power Station Complex	Direct contact of services with contaminants in soil and shallow groundwater.	Low likelihood	Mild	Low risk	Low likelihood	Minor	Very low risk	N/A	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Appropriate design of services resistant to chemical attack.	Low likelihood	Mild	Low risk
		Migration of ground gas followed by accumulation and ignition.	Low likelihood	Mild	Low risk	Likely	Mild	Moderate/low risk	Gas monitoring	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Gas monitoring and mitigation measures incorporated into design of buildings and services if required.	Low likelihood	Mild	Low risk
Within Order Limits (On-site) Unexploded WWII ordnance	<u>Human Health</u> Workers on adjacent sites	Contact with unexploded ordnance.	Low likelihood	Mild	Low risk	Likely	Mild	Moderate/low risk	Ground investigation, risk assessments and CEMP completed prior to construction. Principal contractor will provide a method statement as part of the CEMP to restrict access to site from public.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Remediation if necessary prior to construction	Unlikely	Mild	Very low risk
	<u>Human Health</u> Pedestrians using adjacent/nearby footpaths		Unlikely	Mild	Very low risk	Low likelihood	Mild	Low risk		Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk		Unlikely	Mild	Very low risk

Source	Receptor	Pathway	Baseline			Construction without mitigation			Mitigation measures	Construction with mitigation			Operation with inherent mitigation but without additional mitigation			Mitigation measures	Operation with mitigation undertaken prior to and during construction		
			Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk
	Human Health Construction/ maintenance workers		No risk at baseline stage.			Low likelihood	Mild	Low risk		Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Low likelihood	Mild	Low risk
Outside of the Order Limits (Off-site) Fuels and chemicals associated with the former fibre glass factory	Human Health Workers on adjacent sites	Dermal contact with and ingestion of contaminants in soils, soil-derived dusts and water. Inhalation of contaminants in soil and soil derived dusts including asbestos.	Unlikely	Mild	Very low risk	Low likelihood	Mild	Low risk	Ground investigation, risk assessments and CEMP completed prior to construction. Principal contractor will provide a method statement as part of the CEMP to restrict access to site from public, manage dust.	Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk	Remediation if necessary prior to construction.	Unlikely	Mild	Very low risk
	Human Health Pedestrians using adjacent/nearby footpaths		Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk		Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk		Unlikely	Mild	Very low risk
	Human Health Construction/ maintenance workers		No risk at baseline stage.			High likelihood	Medium	Moderate risk	In addition to the above, construction workers to wear appropriate PPE.	Low likelihood	Medium	Low risk	Low likelihood	Medium	Low risk		Unlikely	Medium	Very low risk
	Controlled Waters Principal and Secondary A Bedrock Aquifers and Secondary A Superficial Aquifer	Leaching of contaminants to groundwater in underlying aquifers.	Low likelihood	Mild	Low risk	High likelihood	Mild	Moderate risk	Good management of stockpiles in accordance with EA Pollution Prevention Guideline, working at construction and demolition sites (PPG6) to reduce infiltration.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Remediation if necessary and piling design prior to construction.	Unlikely	Mild	Very low risk
		Migration of contaminated water through preferential pathways (such as deep foundations) to groundwater in underlying aquifers.	Low likelihood	Mild	Low risk	High likelihood	Mild	Moderate risk		Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Unlikely	Mild	Very low risk

Source	Receptor	Pathway	Baseline			Construction without mitigation			Mitigation measures	Construction with mitigation			Operation with inherent mitigation but without additional mitigation			Mitigation measures	Operation with mitigation undertaken prior to and during construction		
			Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk
	<u>Controlled Waters</u> On site ponds Drainage ditches adjacent to the site boundary	Lateral migration of contaminated groundwater with discharge to surface water as base flow.	Low likelihood	Mild	Low risk	Likely	Mild	Moderate/low risk	Principal contractor will provide a method statement as part of the CEMP to manage control of contaminant and pollutant run-off in accordance with PPG6. Surface water sampling before and during construction.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Remediation if necessary prior to construction.	Unlikely	Mild	Very low risk
		Discharge of contaminants entrained in surface water runoff followed by overland flow and discharge.	Low likelihood	Mild	Low risk	High likelihood	Mild	Moderate risk		Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Unlikely	Mild	Very low risk
	<u>Property</u> Existing services on site New infrastructure and services on site relating to Power Station Complex	Direct contact of services with contaminants in soil and shallow groundwater.	Low likelihood	Mild	Low risk	Low likelihood	Minor	Very low risk	N/A	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Appropriate design of services resistant to chemical attack.	Unlikely	Mild	Very low risk
		Migration of chemicals.	Low likelihood	Mild	Low risk	Likely	Mild	Moderate/low risk		Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Low likelihood	Mild	Low risk
Outside of the Order Limits (Off-site) PCBs and spillage of fuels and chemicals resulting from the maintenance and operation of the electricity substation	<u>Human Health</u> Workers on adjacent sites	Dermal contact with and ingestion of contaminants in soils, soil-derived dusts and water. Inhalation of contaminants in soil and soil derived dusts and water. Leaching of contaminants to groundwater in underlying aquifers.	Unlikely	Mild	Very low risk	Low likelihood	Mild	Low risk	Ground investigation, risk assessments and CEMP completed prior to construction. Principal contractor will provide a method statement as part of the CEMP to restrict access to site from public and manage dust.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Remediation if necessary prior to construction.	Unlikely	Mild	Very low risk

Source	Receptor	Pathway	Baseline			Construction without mitigation			Mitigation measures	Construction with mitigation			Operation with inherent mitigation but without additional mitigation			Mitigation measures	Operation with mitigation undertaken prior to and during construction		
			Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk
	Human Health Pedestrians using adjacent/nearby footpaths		Unlikely	Mild	Very low risk	Low likelihood	Mild	Low risk		Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk		Unlikely	Mild	Very low risk
	Human Health Construction/maintenance workers		No risk at baseline stage.			High likelihood	Mild	Moderate risk	In addition to the above, construction workers to wear appropriate PPE.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Unlikely	Mild	Very low risk
	Controlled Waters Principal and Secondary A Bedrock Aquifers and Secondary A Superficial Aquifer	Leaching of contaminants to groundwater in underlying aquifers.	Unlikely	Mild	Low risk	Unlikely	Mild	Low risk	Good management of stockpiles in accordance with EA Pollution Prevention Guideline, working at construction and demolition sites (PPG6) to reduce infiltration.	Unlikely	Mild	Low risk	Unlikely	Mild	Low risk	Remediation if necessary and piling design prior to construction.	Unlikely	Mild	Very low risk
		Migration of contaminated water through preferential pathways (such as deep foundations) to groundwater in underlying aquifers.	Unlikely	Mild	Low risk	Unlikely	Mild	Low risk		Unlikely	Mild	Low risk	Unlikely	Mild	Low risk		Unlikely	Mild	Very low risk
	Controlled Waters On site ponds Drainage ditches adjacent to the site boundary	Lateral migration of contaminated groundwater with discharge to surface water as base flow.	Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk	Principal contractor will provide a method statement as part of the CEMP to manage control of contaminant and pollutant run-off in accordance with PPG6. Surface water sampling before and during construction.	Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk	Remediation if necessary prior to construction.	Unlikely	Mild	Very low risk
		Discharge of contaminants entrained in surface water runoff followed by overland flow and discharge.	Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk		Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk		Unlikely	Mild	Very low risk

Source	Receptor	Pathway	Baseline			Construction without mitigation			Mitigation measures	Construction with mitigation			Operation with inherent mitigation but without additional mitigation			Mitigation measures	Operation with mitigation undertaken prior to and during construction				
			Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk		
Outside of Order Limits (Off-site) Possible fuel and oil leakage, and possible unexploded ordnance, from the munitions factory	<u>Human Health</u> Construction/maintenance workers	Dermal contact with and ingestion of contaminants in soil-derived dusts which may have migrated to site. Inhalation of contaminants in soil derived dusts which may have migrated to site. Leaching of contaminants	No risk at baseline stage.						None required specific to off-site source, on site ground investigation will identify contaminants which may have migrated to site.							Remediation if necessary prior to construction.					
	<u>Controlled Waters</u> Principal and Secondary A Bedrock Aquifers and Secondary A Superficial Aquifer	Migration of contaminants to site within shallow/perched groundwater followed by vertical migration to underlying aquifers.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Low likelihood	Mild	Low risk		
		Migration of contaminants to site within shallow/perched groundwater followed by migration through preferential pathways (such as deep foundations) to groundwater in underlying aquifers.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Low likelihood	Mild	Low risk		
	<u>Controlled Waters</u> On site ponds	Lateral migration of contaminated groundwater with discharge to surface water as base flow.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		On site ground investigation will identify any contaminants which may have migrated to site. Surface water sampling if necessary before and during construction.	Low likelihood	Mild	Low risk	Low likelihood	Mild		Low risk	Remediation if necessary prior to construction.	Low likelihood	Mild	Low risk
		Discharge of contaminants entrained in surface water runoff followed by overland flow and discharge.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk			Low likelihood	Mild	Low risk	Low likelihood	Mild		Low risk		Low likelihood	Mild	Low risk

Source	Receptor	Pathway	Baseline			Construction without mitigation			Mitigation measures	Construction with mitigation			Operation with inherent mitigation but without additional mitigation			Mitigation measures	Operation with mitigation undertaken prior to and during construction		
			Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk
	<u>Property</u> Existing services on site New infrastructure and services on site relating to Power Station Complex	Direct contact of services with contaminants in soil and shallow groundwater.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	N/A	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	If necessary, appropriate design of services resistant to chemical attack.	Low likelihood	Mild	Low risk
Outside of Order Limits (Off-site) Former railway tracks and associated fuel/chemical contaminants. Fuels and chemicals associated with the operation of the former Royal Ordnance Factory, Kellogg's Factory, Wrexham Industrial Estate and the Logistics Depot in the vicinity of the site (vehicles and equipment)	<u>Human Health</u> Construction/maintenance workers	Dermal contact with and ingestion of contaminants in soils, soil-derived dusts including asbestos and water which may have migrated to site. Inhalation of contaminants in soil and soil derived dusts including asbestos which have migrated to site. Leaching of contaminants.	No risk at baseline stage.						None required specific to off-site source, on site ground investigation will identify any contaminants which may have migrated to site.							Remediation if necessary prior to construction.			
						Likely	Mild	Moderate/low risk		Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Low likelihood	Mild	Low risk
	<u>Controlled Waters</u> Principal and Secondary A Bedrock Aquifers and Secondary A Superficial Aquifer	Leaching of contaminants to groundwater in underlying aquifers.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Low likelihood	Mild	Low risk
		Migration of contaminated water through preferential pathways (such as deep foundations) to groundwater in underlying aquifers.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Low likelihood	Mild	Low risk

Source	Receptor	Pathway	Baseline			Construction without mitigation			Mitigation measures	Construction with mitigation			Operation with inherent mitigation but without additional mitigation			Mitigation measures	Operation with mitigation undertaken prior to and during construction		
			Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk
	<u>Controlled Waters</u> On site ponds	Lateral migration of contaminated groundwater with discharge to surface water as base flow.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	On site ground investigation will identify any contaminants which may have migrated to site. Surface water sampling if necessary before and during construction.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Remediation if necessary prior to construction.	Low likelihood	Mild	Low risk
		Discharge of contaminants entrained in surface water runoff followed by overland flow and discharge.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Low likelihood	Mild	Low risk
	<u>Property</u> Existing services on site New infrastructure and services on site relating to Power Station Complex	Direct contact of services with contaminants in soil and shallow groundwater.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	N/A	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	If necessary, appropriate design of foundations and services resistant to chemical attack.	Low likelihood	Mild	Low risk
		Migration of ground gas leading to accumulation and ignition.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Gas monitoring.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Gas monitoring and mitigation measures incorporated into design of buildings and services if required.	Low likelihood	Mild
Outside of the Order Limits: Ground gas and leachate associated with B.I.C.C historic landfill	<u>Human Health</u> Workers on adjacent sites	Dermal contact with and ingestion of contaminants in soils, soil-derived dusts and water.	Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk	None required specific to off-site source, on site ground investigation will identify contaminants which may have migrated to site.	Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk	Remediation if necessary prior to construction.	Unlikely	Mild	Very low risk
	<u>Human Health</u> Pedestrians using adjacent/nearby footpaths	Inhalation of contaminants in soil and soil derived dusts including asbestos.	Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk		Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk		Unlikely	Mild	Very low risk
	<u>Human Health</u> Construction/maintenance workers		No risk at baseline stage.			Unlikely	Mild	Very low risk	Damping down to minimise dust, workers to wear appropriate PPE.	Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk		Unlikely	Mild	Very low risk

Source	Receptor	Pathway	Baseline			Construction without mitigation			Mitigation measures	Construction with mitigation			Operation with inherent mitigation but without additional mitigation			Mitigation measures	Operation with mitigation undertaken prior to and during construction		
			Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk
	Controlled Waters Principal and Secondary A Bedrock Aquifers and Secondary A Superficial Aquifer	Leaching of contaminants in leachate to groundwater in underlying aquifers.	Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk	None required specific to off-site source, on site ground investigation will identify contaminants which may have migrated to site.	Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk	Remediation if necessary prior to construction.	Unlikely	Mild	Very low risk
		Migration of contaminated leachate through preferential pathways (such as deep foundations) to groundwater in underlying aquifers.	Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk		Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk		Unlikely	Mild	Very low risk
	Controlled Waters On site ponds Drainage ditches adjacent to the site boundary	Lateral migration of contaminated groundwater with discharge to surface water as base flow.	Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk	On site ground investigation will identify any contaminants which may have migrated to site. Surface water sampling if necessary before and during construction.	Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk	Remediation if necessary prior to construction.	Unlikely	Mild	Very low risk
		Discharge of contaminants entrained in surface water runoff followed by overland flow and discharge.	Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk		Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk		Unlikely	Mild	Very low risk
	Property Existing services on site New infrastructure and services on site relating to Power Station Complex	Direct contact of services with contaminants in soil and shallow groundwater	Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk	N/A	Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk	If necessary, appropriate design of foundations and services resistant to chemical attack.	Unlikely	Mild	Very low risk
		Migration of ground gas into properties leading to accumulation and explosion.	Unlikely	Medium	Low risk	Unlikely	Medium	Low risk	Gas monitoring.	Unlikely	Medium	Low risk	Unlikely	Medium	Low risk		Gas monitoring and mitigation measures incorporated into design of buildings and services if required.	Unlikely	Medium

Table A13.5: Land contamination CSM and risk assessment during the baseline, construction and operation phases for the gas connection corridor and AGI

Source	Receptor	Pathway	Baseline			Construction without mitigation			Mitigation measures	Construction with mitigation			Operation with inherent mitigation but without additional mitigation			Mitigation measures Mitigation measures	Operation with mitigation undertaken prior to and during construction		
			Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk
Within and Outside of Order Limits (on- and off-site) Pesticides and herbicides from agricultural land uses	<u>Human Health</u> Workers on adjacent sites	Dermal contact with and ingestion of contaminants in soils, soil-derived dusts and water which have migrated to site.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	None required specific to off-site source, on site ground investigation will identify contaminants which may have migrated to site.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Ground investigation and risk assessment followed by remediation if necessary.	Unlikely	Mild	Very low risk
	<u>Human Health</u> Residents in adjacent properties		Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Unlikely	Mild	Very low risk
	<u>Human Health</u> Members of the public accessing open spaces along the length of the route	Unlikely	Mild	Very low risk	Low likelihood	Mild	Low risk	Unlikely		Mild	Very low risk	Unlikely	Mild	Very low risk	Unlikely		Mild	Very low risk	
	<u>Human Health</u> Construction/maintenance workers (including farmers assessing pipeline corridor and workers assessing lay down area)	Unlikely	Mild	Very low risk	Likely	Mild	Moderate/low risk	Damping down to minimise dust, workers to wear appropriate PPE.		Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Unlikely	Mild	Very low risk
	<u>Controlled Waters</u> Principal Bedrock Aquifer, Secondary A Bedrock Aquifer and Secondary A Superficial Aquifer	Low likelihood	Mild	Low risk	Likely	Mild	Moderate/ risk			None required specific to off-site source, on site ground investigation will identify any contaminants which may have migrated to site.	Low likelihood	Mild	Low risk	Low likelihood	Mild		Low risk	Remediation prior to construction if necessary.	Low likelihood

Source	Receptor	Pathway	Baseline			Construction without mitigation			Mitigation measures	Construction with mitigation			Operation with inherent mitigation but without additional mitigation			Mitigation measures	Operation with mitigation undertaken prior to and during construction		
			Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk
		Migration of contaminants to site within shallow/perched groundwater followed by migration through more permeable horizons to groundwater in underlying aquifers.	Low likelihood	Mild	Low risk	Likely	Mild	Moderate/ risk		Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Low likelihood	Mild	Low risk
	Controlled Waters Surface water ponds Ditches	Lateral migration of contaminated groundwater with discharge to surface water as base flow.	Low likelihood	Mild	Low risk	Likely	Mild	Moderate/low risk	On site ground investigation will identify any contaminants which may have migrated to site. Surface water sampling if necessary before and during construction.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Remediation if necessary prior to construction	Unlikely	Mild	Very low risk
		Discharge of contaminants entrained in surface water runoff followed by overland flow and discharge.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Ground investigation and risk assessment followed by remediation if necessary.	Unlikely	Mild
	Property Existing services on site	Direct contact of services with contaminants in soil and shallow groundwater.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	N/A	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	If necessary, appropriate design of services resistant to chemical attack.	Unlikely	Mild	Very low risk
	Property New gas pipeline and associated infrastructure	New infrastructure could be constructed in areas affected by contamination.	No risk at baseline stage			Unlikely	Mild	Very low risk	N/A	Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk	If necessary, appropriate design of foundations and services resistant to chemical attack.	Unlikely	Mild	Very low risk
	Property Crops and Livestock	Ingestion of contaminants in contaminated soil and groundwater by livestock Uptake of contaminants in contaminated soil and groundwater by crops.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Temporarily relocate livestock	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Remediation if necessary prior to construction.	Low likelihood	Mild	Low risk

Source	Receptor	Pathway	Baseline			Construction without mitigation			Mitigation measures	Construction with mitigation			Operation with inherent mitigation but without additional mitigation			Mitigation measures	Operation with mitigation undertaken prior to and during construction			
			Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk	
Within the Order Limits (on-site): Made Ground associated with the earth mounds and roads crossed by the pipeline route	Human Health Members of the public accessing open spaces along the length of the route	Dermal contact with and ingestion of contaminants in soils, soil-derived dusts including asbestos and water.	Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk	None required specific to off-site source, on site ground investigation will identify any contaminants which may have migrated to site.	Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk	Ground investigation and risk assessment followed by remediation if necessary.	Unlikely	Mild	Very low risk	
	Human Health Construction/maintenance workers	Inhalation of contaminants in soil and soil derived dusts including asbestos.	No risk at baseline stage.						Damping down to minimise dust, workers to wear appropriate PPE.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Remediation prior to construction if necessary.	Low likelihood	Mild	Low risk	
	Controlled Waters Principal Bedrock Aquifer, Secondary A Bedrock Aquifer and Secondary A Superficial Aquifer	Migration of contaminants within shallow/perched groundwater followed by vertical migration to underlying aquifers.		Low likelihood	Mild	Low risk	Likely	Mild	Moderate/low risk	None required specific to off-site source, on site ground investigation will identify any contaminants which may have migrated to site.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Remediation prior to construction if necessary.	Low likelihood	Mild	Low risk
				Low likelihood	Mild	Low risk	Likely	Mild	Moderate/low risk		Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Low likelihood	Mild	Low risk
	Controlled Waters Surface water ponds Ditches	Lateral migration of contaminated groundwater with discharge to surface water as base flow.		Low likelihood	Mild	Low risk	Likely	Mild	Moderate/low risk	On site ground investigation will identify any contaminants which may have migrated to site. Surface water sampling if necessary before and during construction.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Remediation if necessary prior to construction	Unlikely	Mild	Very low risk
		Discharge of contaminants entrained in surface water runoff followed by overland flow and discharge.		Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Unlikely	Mild	Very low risk

Source	Receptor	Pathway	Baseline			Construction without mitigation			Mitigation measures	Construction with mitigation			Operation with inherent mitigation but without additional mitigation			Mitigation measures	Operation with mitigation undertaken prior to and during construction		
			Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk
	<u>Property</u> Existing services on site	Direct contact of services with contaminants in soil and shallow groundwater.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	N/A	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	If necessary, appropriate design of foundations of services resistant to chemical attack.	Unlikely	Mild	Very low risk
		Migration of ground gas and vapours.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Gas (and vapour) monitoring.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Gas / vapour monitoring and mitigation measures incorporated into design of buildings and services if required.	Unlikely	Mild	Very low risk
	<u>Property</u> New gas pipeline and associated infrastructure	New infrastructure could be constructed in areas affected by contamination.	No risk at baseline.			Low likelihood	Mild	Low risk	N/A	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	If necessary, appropriate design of foundations and services resistant to chemical attack.	Unlikely	Mild	Very low risk
		<u>Property</u> Livestock and crops	Ingestion of contaminants in contaminated soil, water and crops. Uptake of contaminants in contaminated soil and groundwater.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Temporarily relocate livestock to alternative field for duration of the works.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Remediation if necessary prior to construction.	Unlikely	Mild
Within Order Limits (On-site) Unexploded WWII ordnance	<u>Human Health</u> Workers on adjacent sites	Contact with unexploded ordnance.	Low likelihood	Mild	Low risk	Likely	Mild	Moderate/low risk	Ground investigation, risk assessments and CEMP completed prior to construction. Principal contractor will provide a method statement as part of the CEMP to restrict access to site from public. Mild	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Remediation if necessary prior to construction.	Unlikely	Mild	Very low risk
	<u>Human Health</u> Pedestrians using adjacent/nearby footpaths		Unlikely	Mild	Very low risk	Low likelihood	Mild	Low risk		Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk		Unlikely	Mild	Very low risk

Source	Receptor	Pathway	Baseline			Construction without mitigation			Mitigation measures	Construction with mitigation			Operation with inherent mitigation but without additional mitigation			Mitigation measures	Operation with mitigation undertaken prior to and during construction			
			Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk	
	Human Health Construction/ maintenance workers		No risk at baseline stage.			Low likelihood	Mild	Low risk		Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Low likelihood	Mild	Low risk	
Outside of Order Limits (off-site) Hydrocarbons from fuel and oil storage e.g. Maelor Works (specifically gas production works), residential heating tanks and agricultural uses.	Human Health Members of the public accessing open spaces along the length of the route	Dermal contact with and ingestion of contaminants in soils, soil-derived dusts and water which have migrated to site.	Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk	None required specific to off-site source, on site ground investigation will identify any contaminants which may have migrated to site.	Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk	Remediation if necessary prior to construction.	Unlikely	Mild	Very low risk	
	Human Health Construction/ maintenance workers	Inhalation of contaminants in soil and soil derived dusts and water which may have migrated to site. Inhalation of vapours/ground gas.	No risk at baseline stage.			Likely	Mild	Moderate/low risk	Damping down to minimise dust, workers to wear appropriate PPE.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Low likelihood	Mild	Low risk	
	Controlled Waters Principal Bedrock Aquifer, Secondary A Bedrock Aquifer and Secondary A Superficial Aquifer		Migration of contaminants to site within shallow/perched groundwater followed by vertical migration to underlying aquifers.	Low likelihood	Mild	Low risk	Likely	Mild	Moderate/low risk	None required specific to off-site source, on site ground investigation will identify any contaminants which may have migrated to site.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Remediation if necessary prior to construction.	Low likelihood	Mild	Low risk
			Migration of contaminants to site within shallow/perched groundwater followed by migration through more permeable horizons to groundwater in underlying aquifers.	Low likelihood	Mild	Low risk	Likely	Mild	Moderate/low risk		Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Low likelihood	Mild	Low risk

Source	Receptor	Pathway	Baseline			Construction without mitigation			Mitigation measures	Construction with mitigation			Operation with inherent mitigation but without additional mitigation			Mitigation measures	Operation with mitigation undertaken prior to and during construction		
			Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk
	Controlled Waters Surface water ponds Ditches	Lateral migration of contaminated groundwater with discharge to surface water as base flow.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	On site ground investigation will identify any contaminants which may have migrated to site. Surface water sampling if necessary before and during construction.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Remediation if necessary prior to construction.	Unlikely	Mild	Very low risk
		Discharge of contaminants entrained in surface water runoff followed by overland flow and discharge.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Unlikely	Mild	Very low risk
Property Existing services on site		Direct contact of services with contaminants in soil and shallow groundwater.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	N/A	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	If necessary, appropriate design of services resistant to chemical attack.	Unlikely	Mild	Very low risk
		Migration of vapours/ground gas.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Vapour/gas monitoring.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Vapour/gas monitoring and mitigation measures incorporated into design of buildings and services if required.	Unlikely	Mild
Property New gas pipeline and associated infrastructure		New infrastructure could be constructed in areas affected by contamination.	No risk at baseline.			Low likelihood	Mild	Low risk	N/A	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	If necessary, appropriate design of foundations and services resistant to chemical attack.	Unlikely	Mild	Very low risk
		Migration of vapours/ground gas.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Vapour/gas monitoring.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Vapour/gas monitoring and mitigation measures incorporated into design of buildings and services if required.	Unlikely	Mild

Source	Receptor	Pathway	Baseline			Construction without mitigation			Mitigation measures	Construction with mitigation			Operation with inherent mitigation but without additional mitigation			Mitigation measures	Operation with mitigation undertaken prior to and during construction		
			Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk
	Property Livestock and crops	Ingestion of contaminants in contaminated soil, water and crops. Uptake of contaminants in contaminated soil and groundwater.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Temporarily relocate livestock to alternative field for duration of the works.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Remediation if necessary prior to construction.	Unlikely	Mild	Very low risk
Outside of Order Limits (off-site) Made Ground associated with existing structures e.g. Wrexham Industrial Park, Maelor Works	Human Health Members of the public accessing open spaces along the length of the route	Dermal contact with and ingestion of contaminants in soils, soil-derived dusts including asbestos and water which may have migrated to site.	Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk	None required specific to off-site source, on site ground investigation will identify any contaminants which may have migrated to site.	Unlikely	Mild	Very low risk	Unlikely	Mild	Very low risk	Ground investigation and risk assessment followed by remediation if necessary.	Unlikely	Mild	Very low risk
	Human Health Construction/maintenance workers	Inhalation of contaminants in soil and soil derived dusts including asbestos which may have migrated to site.	No risk at baseline stage.			Likely	Mild	Moderate/low risk	Damping down to minimise dust, workers to wear appropriate PPE.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Remediation prior to construction if necessary.	Low likelihood	Mild	Low risk
	Controlled Waters Principal Bedrock Aquifer, Secondary A Bedrock Aquifer and Secondary A Superficial Aquifer	Migration of contaminants to site within shallow/perched groundwater followed by vertical migration to underlying aquifers.	Low likelihood	Mild	Low risk	Likely	Mild	Moderate/low risk	None required specific to off-site source, on site ground investigation will identify any contaminants which may have migrated to site.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Remediation prior to construction if necessary.	Low likelihood	Mild	Low risk
	Migration of contaminants to site within shallow/perched groundwater followed by migration through more permeable horizons to groundwater in underlying aquifers.	Low likelihood	Mild	Low risk	Likely	Mild	Moderate/low risk	Low likelihood		Mild	Low risk	Low likelihood	Mild	Low risk	Low likelihood		Mild	Low risk	

Source	Receptor	Pathway	Baseline			Construction without mitigation			Mitigation measures	Construction with mitigation			Operation with inherent mitigation but without additional mitigation			Mitigation measures	Operation with mitigation undertaken prior to and during construction				
			Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk		
	Controlled Waters Surface water ponds Ditches	Lateral migration of contaminated groundwater with discharge to surface water as base flow.	Low likelihood	Mild	Low risk	Likely	Mild	Moderate/low risk	On site ground investigation will identify any contaminants which may have migrated to site. Surface water sampling if necessary before and during construction.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Remediation if necessary prior to construction	Unlikely	Mild	Very low risk		
		Discharge of contaminants entrained in surface water runoff followed by overland flow and discharge.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Unlikely	Mild	Very low risk		
	Property Existing services on site	Direct contact of services with contaminants in soil and shallow groundwater.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		N/A	Low likelihood	Mild	Low risk	Low likelihood	Mild		Low risk	If necessary, appropriate design of foundations of services resistant to chemical attack.	Unlikely	Mild	Very low risk
		Migration of vapours/ground gas.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Vapour/gas monitoring.	Low likelihood	Mild	Low risk	Low likelihood	Mild		Low risk		Vapour/gas monitoring and mitigation measures incorporated into design of buildings and services if required.	Unlikely	Mild
Property New gas pipeline and associated infrastructure	New infrastructure could be constructed in areas affected by contamination.	No risk at baseline.			Low likelihood	Mild	Low risk	N/A	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	If necessary, appropriate design of foundations and services resistant to chemical attack.	Unlikely	Mild	Very low risk			
	Migration of ground gas and vapours.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Gas (and vapour) monitoring.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Gas / vapour monitoring and mitigation measures incorporated into design of buildings and services if required.	Unlikely	Mild	Very low risk		

Source	Receptor	Pathway	Baseline			Construction without mitigation			Mitigation measures	Construction with mitigation			Operation with inherent mitigation but without additional mitigation			Mitigation measures	Operation with mitigation undertaken prior to and during construction		
			Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk
	Property Livestock and crops	Ingestion of contaminants in contaminated soil, water and crops. Uptake of contaminants in contaminated soil and groundwater.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Temporarily relocate livestock to alternative field for duration of the works.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Remediation if necessary prior to construction.	Unlikely	Mild	Very low risk
Outside of Order Limits (off-site) Ground gases and leachates from the B.I.C.C. historical landfill	Human Health Construction/ maintenance workers	Dermal contact with and ingestion of contaminants in soils, soil-derived dusts and water which have migrated to site. Inhalation of contaminants in soil and soil derived dusts which have migrated to site. Inhalation of ground gas which has migrated to site.	No risk at baseline stage			Low likelihood	Mild	Low risk	Damping down to minimise dust, workers to wear appropriate PPE. Care should be taken when working in enclosed spaces or in deep excavations in case of gas migration and accumulation (leading to ignition and asphyxiation) Risks to construction workers should be mitigated in accordance with relevant H&S and CDM regulations.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Ground investigation and risk assessment followed by remediation if necessary.	Unlikely	Mild	Very low risk
	Controlled Waters Principal Bedrock Aquifer, Secondary A Bedrock Aquifer and Secondary A Superficial Aquifer	Migration of leachate to site followed by leaching of contaminants to groundwater in underlying aquifers.	Low likelihood	Mild	Low risk	Likely	Mild	Moderate/low risk	None required specific to off-site source, on site ground investigation will identify any contaminants which may have migrated to site.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Ground investigation and risk assessment followed by remediation if necessary.	Low likelihood	Mild	Low risk
		Migration of leachate to site followed by migration through more permeable horizons to groundwater in underlying aquifers.	Low likelihood	Mild	Low risk	Likely	Mild	Moderate/low risk		Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk		Low likelihood	Mild	Low risk

Source	Receptor	Pathway	Baseline			Construction without mitigation			Mitigation measures	Construction with mitigation			Operation with inherent mitigation but without additional mitigation			Mitigation measures	Operation with mitigation undertaken prior to and during construction		
			Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk
	Controlled Waters Surface water ponds Ditches	Lateral migration of leachate to site followed by migration to groundwater with discharge to surface water as base flow.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Surface water sampling before and during construction.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Drainage design to be implemented during operation of the scheme to minimise risk to surface waters. Ground investigation and risk assessment followed by remediation if necessary.	Unlikely	Mild	Very low risk
	Property Existing services and structures on site	Direct contact of foundations and services with contaminants in soil and shallow groundwater.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Appropriate design of foundations and services resistant to chemical attack.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Appropriate design of foundations and services resistant to chemical attack.	Unlikely	Mild	Very low risk
		Migration of ground gas to existing structures and services through Made Ground.	Low likelihood	Mild	Low risk	Likely	Mild	Moderate/low risk	Gas monitoring.	Unlikely	Mild	Very low risk	Low likelihood	Mild	Low risk	Gas monitoring and mitigation measures incorporated into design of buildings and services if required.	Unlikely	Mild	Very low risk
	Property New gas pipeline and associated infrastructure	New infrastructure could be constructed in areas affected by contamination.	No risk at baseline.			Low likelihood	Mild	Low risk	Appropriate design of foundations and services resistant to chemical attack.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Ground investigation and risk assessment followed by remediation if necessary.	Unlikely	Mild	Very low risk
		Migration of ground gas to property and the new pipeline through Made Ground.	Low likelihood	Mild	Low risk	Likely	Mild	Moderate/low risk	Gas monitoring.	Unlikely	Mild	Very low risk	Low likelihood	Mild	Low risk	Gas monitoring and mitigation measures incorporated into design of buildings and services if required.	Unlikely	Mild	Very low risk

Source	Receptor	Pathway	Baseline			Construction without mitigation			Mitigation measures	Construction with mitigation			Operation with inherent mitigation but without additional mitigation			Mitigation measures Mitigation measures	Operation with mitigation undertaken prior to and during construction		
			Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk	Probability	Consequence	Risk		Probability	Consequence	Risk
	Property Livestock and crops	Ingestion of contaminants in contaminated soil, water and crops. Uptake of contaminants in contaminated soil and groundwater.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Temporarily relocate livestock to alternative field for duration of the works.	Low likelihood	Mild	Low risk	Low likelihood	Mild	Low risk	Remediation if necessary prior to construction.	Unlikely	Mild	Very low risk

Table A13.6: Construction Impact Assessment for Power Station Complex with mitigation

Source	Receptor	Potential contaminant linkage	Baseline (current) risk assessment	Construction phase risk assessment	Effect
<p><u>Within the Order Limits</u> Unexploded Ordnance from WWII bombing and general Mage Ground (including the presence of asbestos) from construction and demolition activity.</p>	<p><u>Human Health</u> Workers on adjacent sites</p>	<p>Dermal contact with and ingestion of contaminants in soils, soil-derived dusts and water including asbestos. Inhalation of contaminants in soil and soil derived dusts including asbestos.</p>	Low risk	Low risk	Neutral effect
	<p><u>Human Health</u> Pedestrians using adjacent/nearby footpaths</p>		Very low risk	Very low risk	Neutral effect
	<p><u>Human Health</u> Construction workers</p>	<p>Possible contact with unexploded ordnance.</p>	No risk at baseline stage	Low risk	Minor adverse effect
	<p><u>Controlled Waters</u> Principal and Secondary A Bedrock Aquifers and Secondary A Superficial Aquifer</p>	<p>Leaching of contaminants to groundwater in underlying aquifers.</p>	Low risk	Low risk	Neutral effect
		<p>Migration of contaminated water through preferential pathways (such as deep foundations) to groundwater in underlying aquifers.</p>	Low risk	Low risk	Neutral effect
	<p><u>Controlled Waters</u> On site ponds Drainage ditches adjacent to the site boundary</p>	<p>Lateral migration of contaminated groundwater with discharge to surface water as base flow.</p>	Low risk	Low risk	Neutral effect
		<p>Discharge of contaminants entrained in surface water runoff followed by overland flow and discharge.</p>	Low risk	Low risk	Neutral effect

Source	Receptor	Potential contaminant linkage	Baseline (current) risk assessment	Construction phase risk assessment	Effect
	<u>Property</u> Existing services site	Direct contact of services with contaminants in soil and shallow groundwater.	Low risk	Low risk	Neutral effect
		Migration of ground gas.	Low risk	Low risk	Neutral effect
<u>Outside of the Order Limits</u> Possible fuel, oil and chemical leakage from the munitions factory. Fuels/chemicals associated with the railway tracks. Fuels and chemicals associated with the operation of nearby Kellogg's Factory, Wrexham Industrial Estate and Logistics Warehouse Fuels and chemicals associated with the former fibreglass factory. PCBs from the substation. Possible unexploded ordnance from WWII bombing and the former Royal Ordnance	<u>Human Health</u> Construction workers	Dermal contact with and ingestion of contaminants in soils, soil-derived dusts and water which have migrated to site. Inhalation of contaminants in soil and soil derived dusts which have migrated to site. Inhalation of ground gas and vapours which have migrated to site.	No risk at baseline stage	Low risk	Minor adverse effect
	<u>Controlled Waters</u> Principal and Secondary A Bedrock Aquifers and Secondary A Superficial Aquifer	Migration of contaminants to site within shallow/perched groundwater followed by vertical migration to underlying aquifers.	Low risk	Low risk	Neutral effect
		Migration of contaminants to site within shallow/perched groundwater followed by migration through preferential pathways (such as deep foundations) to groundwater in underlying aquifers.	Low risk	Low risk	Neutral effect
<u>Controlled Waters</u> On site ponds	Lateral migration of contaminated groundwater with discharge to surface water as base flow.	Low risk	Low risk	Neutral effect	

Source	Receptor	Potential contaminant linkage	Baseline (current) risk assessment	Construction phase risk assessment	Effect
Factory. Ground gas and leachate from the former B.I.C.C Landfill.		Discharge of contaminants entrained in surface water runoff followed by overland flow and discharge.	Low risk	Low risk	Neutral effect
	<u>Property</u> Existing services on site	Direct contact of foundations and services with migrating contaminants in shallow groundwater.	Low risk	Low risk	Neutral effect
		Migration of ground gas.	Low risk	Low risk	Neutral effect

Table A13.7: Operation Impact Assessment for Power Station Complex with mitigation

Source	Receptor	Potential contaminant linkage	Baseline (current) risk assessment	Operation phase risk assessment	Effect
<u>Within the Order Limits</u> Unexploded Ordnance from WWII bombing and general Mage Ground (including the presence of asbestos) from construction and demolition activity.	<u>Human Health</u> Workers on adjacent sites within Wrexham Industrial Park	Dermal contact with and ingestion of contaminants in soils, soil-derived dusts and water. Inhalation of contaminants in soil and soil derived dusts including asbestos.	Very low risk	Very low risk	Neutral effect
	<u>Human Health</u> Pedestrians on adjoining footpaths		Very low risk	Very low risk	Neutral effect
	<u>Human Health</u> Workers at the new power station development		No risk at baseline stage	Very low risk	Minor adverse effect
	<u>Human Health</u> Maintenance workers at the new power station		No risk at baseline stage	Very low risk	Minor adverse effect

Source	Receptor	Potential contaminant linkage	Baseline (current) risk assessment	Operation phase risk assessment	Effect
	development				
	<u>Controlled Waters</u> Principal and Secondary A Bedrock Aquifers and Secondary A Superficial Aquifer	Migration of contaminants within shallow/perched groundwater followed by vertical migration to underlying aquifers.	Low risk	Very low risk	Minor beneficial effect
		Migration of contaminants within shallow/perched groundwater followed by migration through preferential pathways (such as deep foundations) to groundwater in underlying aquifers.	Moderate/low risk	Low risk	Minor beneficial effect
	<u>Controlled Waters</u> On site ponds Drainage ditches adjacent to the site boundary	Lateral migration of contaminated groundwater with discharge to surface water as base flow.	Low risk	Very low risk	Minor beneficial effect
		Discharge of contaminants entrained in surface water runoff followed by overland flow and discharge.	Low risk	Very low risk	Minor beneficial effect
	<u>Property</u> Existing services on site New services and infrastructure relating to the Power Station complex	Direct contact of foundations and services with contaminants in soil and shallow groundwater.	Low risk	Low risk	Neutral effect
		Migration of ground gas followed by accumulation and ignition.	Low risk	Low risk	Neutral effect
<u>Outside of the Order Limits</u>	<u>Human Health</u> Workers at the new power station	Dermal contact with and ingestion of contaminants in soils, soil-derived dusts and water	No risk at baseline stage	Very low risk	Minor adverse effect

Source	Receptor	Potential contaminant linkage	Baseline (current) risk assessment	Operation phase risk assessment	Effect
<p>Possible fuel, oil and chemical leakage from the munitions factory. Fuels/chemicals associated with the railway tracks. Fuels and chemicals associated with the operation of nearby Kellogg's Factory, Wrexham Industrial Estate and Logistics Warehouse. Fuels and chemicals associated with the former fibreglass factory. PCBs from the substation. Possible unexploded ordnance from WWII bombing and the former Royal Ordnance Factory. Ground gas and leachate from the former B.I.C.C Landfill.</p>	development	which have migrated to site.			
	<u>Human Health</u> Maintenance workers at the new power station development	Inhalation of contaminants in soil and soil derived dusts which have migrated to site. Inhalation of ground gas and vapours which have migrated to site.	No risk at baseline stage	Very low risk	Minor adverse effect
	<u>Controlled Waters</u> Principal and Secondary A Bedrock Aquifers and Secondary A Superficial Aquifer	Migration of contaminants to site within shallow/perched groundwater followed by vertical migration to underlying aquifers.	Low risk	Low risk	Neutral effect
		Migration of contaminants to site within shallow/perched groundwater followed by migration through preferential pathways (such as deep foundations) to groundwater in underlying aquifers.	Low risk	Low risk	Neutral effect
	<u>Controlled Waters</u> On site ponds	Lateral migration of contaminated groundwater with discharge to surface water as base flow.	Low risk	Low risk	Neutral effect
		Discharge of contaminants entrained in surface water runoff followed by overland flow and discharge.	Low risk	Low risk	Neutral effect

Source	Receptor	Potential contaminant linkage	Baseline (current) risk assessment	Operation phase risk assessment	Effect
	<u>Property</u> Existing services on site New services and infrastructure relating to the Power Station Complex	Direct contact of foundations and services with migrating contaminants in shallow groundwater.	Low risk	Low risk	Neutral effect
		Migration of ground gas followed by accumulation and ignition.	Low risk	Low risk	Neutral effect

Table A13.8: Construction Impact Assessment for Gas Connection Route and AGI with mitigation

Source	Receptor	Potential contaminant linkage	Baseline (current) risk assessment	Construction phase risk assessment	Effect
<p><u>Within the Order Limits</u> Pesticides, herbicides and fuel/oils relating to agricultural land. Possible unexploded ordnance from WWII bombing. Gas production works at Maelor Works. Made Ground associated with the mounds on site and existing structures i.e. roads crossed by the Scheme.</p>	<u>Human Health</u> Workers on adjacent sites	<p>Dermal contact with and ingestion of contaminants in soils, soil-derived dusts including water. Inhalation of contaminants in soil and soil derived dusts including asbestos.</p>	Low risk	Low risk	Neutral effect
	<u>Human Health</u> Residents of the property along the gas connection route		Low risk	Low risk	Neutral effect
	<u>Human Health</u> Members of the public accessing adjacent land		Very low risk	Very low risk	Neutral effect
	<u>Human Health</u> Construction workers (including farmers accessing the pipeline corridor and workers accessing the AGI laydown area)	<p>Dermal contact with and ingestion of contaminants in soils, soil-derived dusts and water. Inhalation of contaminants in soil and soil derived dusts. Contact with shallow contaminated groundwater in</p>	Low risk	Low risk	Minor adverse effect

Source	Receptor	Potential contaminant linkage	Baseline (current) risk assessment	Construction phase risk assessment	Effect
		excavations.			
	<u>Controlled Waters</u> Principal and Secondary A Bedrock Aquifers and Secondary A Superficial Aquifer	Leaching of contaminants to groundwater in underlying aquifers.	Low risk	Low risk	Neutral effect
		Migration of contaminated water through preferential pathways (such as deep foundations) to groundwater in underlying aquifers.	Low risk	Low risk	Neutral effect
	<u>Controlled Waters</u> Surface water ponds Ditches	Lateral migration of contaminated groundwater with discharge to surface water as base flow.	Low risk	Low risk	Neutral effect
		Discharge of contaminants entrained in surface water runoff followed by overland flow and discharge.	Low risk	Low risk	Neutral effect
	<u>Property</u> Existing services on site	Direct contact of services with contaminants in soil and shallow groundwater.	Low risk	Low risk	Neutral effect
		Migration of ground gas.	Low risk	Low risk	Neutral effect
	<u>Property</u> New gas pipeline and associated infrastructure	New infrastructure could be constructed in areas affected by contamination.	No risk at baseline	Very low risk	Minor adverse effect
	<u>Property</u> Livestock and crops	Ingestion of contaminants in contaminated soil, water and crops. Uptake of contaminants in	Low risk	Low risk	Neutral effect

Source	Receptor	Potential contaminant linkage	Baseline (current) risk assessment	Construction phase risk assessment	Effect
		contaminated soil and groundwater.			
<p><u>Outside of Order Limits</u> Pesticides, herbicides and fuel/oils relating to agricultural land. Hydrocarbons from fuel/oil storage on agricultural land. Ground gas and leachate from historical B.I.C.C landfill. Made Ground associated with off-site structures i.e. Maelor Works, Wrexham Industrial Estate. Fuel and oil from storage tanks i.e. agricultural, Maelor Works.</p>	<p><u>Human Health</u> Members of the public accessing adjacent land</p>	<p>Dermal contact with and ingestion of contaminants in soils, soil-derived dusts including asbestos and water. Inhalation of contaminants in soil and soil derived dusts including asbestos, and gas/vapours.</p>	Very low risk	Very low risk	Neutral effect
	<p><u>Human Health</u> Construction workers (including farmers accessing the pipeline corridor and workers accessing the AGI laydown area)</p>	<p>Dermal contact with and ingestion of contaminants in soils, soil-derived dusts and water. Inhalation of contaminants in soil and soil-derived dusts including asbestos, and gas/vapours. Contact with shallow contaminated groundwater in excavations.</p>	Low risk	Low risk	Neutral effect
	<p><u>Controlled Waters</u> Principal and Secondary A Bedrock Aquifers and Secondary A Superficial Aquifer</p>	<p>Migration of leachate to site followed by leaching of contaminants to groundwater in underlying aquifers.</p>	Low risk	Low risk	Neutral effect
		<p>Migration of leachate to site followed by migration through preferential pathways (such as deep foundations) to groundwater in underlying aquifers.</p>	Low risk	Low risk	Neutral effect
	<p><u>Controlled Waters</u></p>	<p>Lateral migration of leachate to</p>	Low risk	Low risk	Neutral effect

Source	Receptor	Potential contaminant linkage	Baseline (current) risk assessment	Construction phase risk assessment	Effect
	Surface water ponds Ditches	site followed by migration to groundwater with discharge to surface water as base flow.			
		Discharge of contaminants entrained in surface water runoff followed by overland flow and discharge.	Low risk	Low risk	Neutral effect
	<u>Property</u> Existing services on site	Direct contact of foundations and services with migrating contaminants in shallow groundwater.	Low risk	Low risk	Neutral effect
		Migration of ground gas.	Low risk	Low risk	Neutral effect
	<u>Property</u> New gas pipeline and associated infrastructure	New infrastructure could be constructed in areas affected by contamination.	No risk at baseline	Low risk	Minor adverse effect
	<u>Property</u> Livestock and crops	Ingestion of contaminants in contaminated soil, water and crops. Uptake of contaminants in contaminated soil and groundwater.	Low risk	Low risk	Neutral effect

Table A13.9: Operation Impact Assessment for Gas Connection Route and AGI with mitigation

Source	Receptor	Potential contaminant linkage	Baseline (current) risk assessment	Operation phase risk assessment	Effect
<p>Within the Order Limits Pesticides, herbicides and fuel/oils relating to agricultural land. Possible unexploded ordnance from WWII bombing. Gas production works at Maelor Works. Made Ground associated with the mounds on site and existing structures i.e. roads crossed by the Scheme.</p>	<u>Human Health</u> Workers on adjacent sites	<p>Dermal contact with and ingestion of contaminants in soils, soil-derived dusts and water which have migrated to site. Inhalation of contaminants in soil and soil derived dusts which have migrated to site.</p>	Very low risk	Very low risk	Minor beneficial effect
	<u>Human Health</u> Residents of the property along the gas connection route		Very low risk	Very low risk	Neutral effect
	<u>Human Health</u> Members of the public accessing adjacent land		Very low risk	Very low risk	Neutral effect
	<u>Human Health</u> Maintenance workers/workers at AGI compound (including farmers accessing the pipeline corridor and workers accessing the AGI laydown area)		Low risk	Low risk	Neutral effect
	<u>Controlled Waters</u> Principal and Secondary A Bedrock Aquifers and Secondary A Superficial Aquifer	Leaching of contaminants to groundwater in underlying aquifers.	Low risk	Low risk	Neutral effect
		Migration of contaminated water through more permeable horizons to groundwater in underlying aquifers.	Low risk	Low risk	Neutral effect

Source	Receptor	Potential contaminant linkage	Baseline (current) risk assessment	Operation phase risk assessment	Effect
	<u>Controlled Waters</u> Surface waters of the River Clywedog and ponds/ditches	Lateral migration of contaminated groundwater with discharge to surface water as base flow.	Low risk	Very low risk	Minor beneficial effects
		Discharge of contaminants entrained in surface water runoff followed by overland flow and discharge.	Low risk	Very low risk	Minor beneficial effect
	<u>Property</u> Existing services on site	Direct contact of services with contaminants in soil and shallow groundwater.	Low risk	Very low risk	Minor beneficial effects
		Migration of ground gas leading to accumulation and ignition.	Low risk	Very low risk	Minor beneficial effects
	<u>Property</u> New gas pipeline and associated infrastructure	New infrastructure could be constructed in areas affected by contamination.	No risk at baseline	Very low risk	Minor adverse effect
	<u>Property</u> Livestock and crops	Ingestion of contaminants in contaminated soil, water and crops. Uptake of contaminants in contaminated soil and groundwater.	Low risk	Low risk	Neutral effect
<u>Outside of Order Limits</u> Pesticides, herbicides and fuel/oils relating to agricultural land. Hydrocarbons from fuel/oil storage on	<u>Human Health</u> Members of the public accessing adjacent land	Dermal contact with and ingestion of contaminants in soils, soil-derived dusts and water which have migrated to site. Inhalation of contaminants in soil and soil derived dusts and water	Very low risk	Very low risk	Neutral effect
	<u>Human Health</u> Maintenance workers/site workers at		Low	Low risk	Neutral effect

Source	Receptor	Potential contaminant linkage	Baseline (current) risk assessment	Operation phase risk assessment	Effect
agricultural land. Ground gas and leachate from historical B.I.C.C landfill. Made Ground associated with off-site structures i.e. Maelor Works, Wrexham Industrial Estate. Fuel and oil from storage tanks i.e. agricultural, Maelor Works.	AGI compound (including farmers accessing the pipeline corridor and workers accessing the AGI laydown area)	which may have migrated to site. Inhalation of vapours.			
	<u>Controlled Waters</u> Principal and Secondary A Bedrock Aquifers and Secondary A Superficial Aquifer	Leaching of contaminants to groundwater in underlying aquifers.	Low risk	Low risk	Neutral effect
		Migration of contaminated water through more permeable horizons to groundwater in underlying aquifers.	Low risk	Low risk	Neutral effect
	<u>Controlled Waters</u> Surface water ponds Ditches	Lateral migration of contaminated groundwater with discharge to surface water as base flow.	Low risk	Very low risk	Minor beneficial effects
	<u>Property</u> Existing and new buildings on site, including foundations, services etc.	Discharge of contaminants entrained in surface water runoff followed by overland flow and discharge.	Low risk	Very low risk	Minor beneficial effect
		Direct contact of foundations and services with contaminants in soil and shallow groundwater.	Low risk	Very low risk	Minor beneficial effects
	<u>Property</u> New gas pipeline and associated infrastructure	Migration of ground gas.	No risk at baseline	Very low risk	Minor adverse effects
	<u>Property</u>	Ingestion of contaminants in	Low risk	Low risk	Neutral effect

Source	Receptor	Potential contaminant linkage	Baseline (current) risk assessment	Operation phase risk assessment	Effect
	Livestock and crops	contaminated soil, water and crops. Uptake of contaminants in contaminated soil and groundwater.			