

ENVIRONMENTAL STATEMENT (VOLUME III)

Appendix 13.2 – ES Risk Record (Tracked Change)

HyNet Carbon Dioxide Pipeline DCO

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 – Regulations 5(2)(a)

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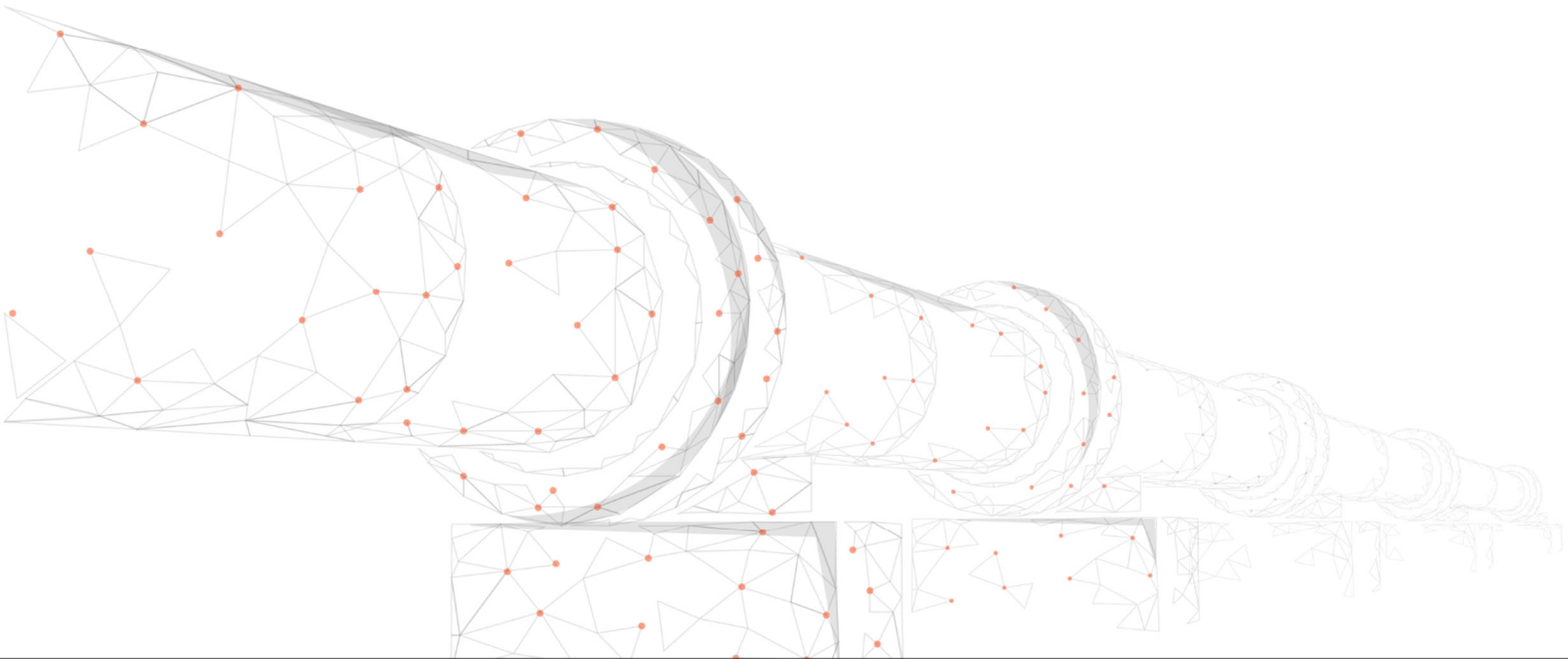
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PUBLICHyNet Carbon Dioxide Pipeline

Environmental Statement (Volume III)

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APPENDIX 13-2 – RISK RECORD FOR SCREENED IN MAJOR EVENTS

The Long List in **Appendix 13-1 Major Accidents and Disasters Long List (Volume III)**, presents all of the MA&D Event categories and types which have been considered as part of the assessment. Those MA&D types which could not be scoped out have been further assessed, the output of which is presented in **Table 1.1 below. Table 1 below. Table 1** is a record of all potential MA&D events considered as part of the Environmental Statement (ES) assessment process.

Table 1.1-Table 1 – ES Risk Record

Risk Record Entry Number	MA&D Event Category	MA&D Event Type	Section of DCO Proposed Development	Hazard Description	Applicable Stages (Construction, Operation, Maintenance)*	Risk Description	Hazard Sources and/or Pathways	Documentation in which the event is/will be addressed	Reasonable worst consequence if event did occur and receptor(s)	Air Quality	Climate	People and Communities	Biodiversity	Cultural Heritage	Geology and Soils	Landscape and Visual	Noise and Vibration	Transport	Material Resources	Road Drainage and the Water Environment	Mitigation	Could this constitute a major accident or disaster?	Justification	Is this ALARP with existing mitigation?	Clarification
1	Malicious Attacks	Fire and/or explosion or release of harmful gas	Route wide	Unexploded ordnance	C	During ground investigation or construction encountering UXO.	Presence of unexploded ordnance	Ground Conditions Report. CDM Register. UXO Risk Assessment.	Fire and/or explosion affects neighbouring property and/or those people in the immediate area.			X	X	X							A desk based UXO assessment has been commissioned for the Newbuild Infrastructure Boundary and identified no significant sources of Unexploded Ordnance (UXO) hazard. Provide possible procedures, protocols and training required during the construction phase.	N	The reasonable worst consequence of this event does not meet the criteria of a major accident. The only potential receptors of harm are construction/maintenance workers.	N/A	Not identified as a potential major accident/disaster event.

Risk Record Entry Number	MA&D Event Category	MA&D Event Type	Section of DCO Proposed Development	Hazard Description	Applicable Stages (Construction, Operation, Maintenance)*	Risk Description	Hazard Sources and/or Pathways	Documentation in which the event is/will be addressed	Reasonable worst consequence if event did occur and receptor(s)	Air Quality	Climate	People and Communities	Biodiversity	Cultural Heritage	Geology and Soils	Landscape and Visual	Noise and Vibration	Transport	Material Resources	Road Drainage and the Water Environment	Mitigation	Could this constitute a major accident or disaster?	Justification	Is this ALARP with existing mitigation?	Clarification
2	Utilities failure	Fire and/or explosion or release of harmful gas	Route wide	Presence of underground services/utilities - gas, electricity.	C	Striking of underground services/utilities	Presence of existing utilities within the DCO Proposed Development area which are nearby to residential receptors.	CDM register. Construction Phase H&S plan. Hazard studies carried out at detailed design stage. Method Statements.	Fire and/or explosion affects neighbouring property and/or members of the public.			X	X	X							Location of utilities is obtained from the statutory undertakers and how the DCO Proposed Development will affect the utilities is discussed and any diversions required are highlighted. This information is then used in the detailed design of the DCO Proposed Development. Positive identification of all the utilities prior to starting work on site. Further work required to identify and design utility diversions, prior to construction phase.	Y	Could cause loss of life or permanent injury to multiple members of the public; or significant structural property damage.	Y	Considered to be ALARP if all mitigation measures outlined are correctly implemented.

3	Risk Record Entry Number	MA&D Event Category	MA&D Event Type	Section of DCO Proposed Development	Hazard Description	Applicable Stages (Construction, Operation, Maintenance)*	Risk Description	Hazard Sources and/or Pathways	Documentation in which the event is/will be addressed	Reasonable worst consequence if event did occur and receptor(s)	Air Quality	Climate	People and Communities	Biodiversity	Cultural Heritage	Geology and Soils	Landscape and Visual	Noise and Vibration	Transport	Material Resources	Road Drainage and the Water Environment	Mitigation	Could this constitute a major accident or disaster?	Justification	Is this ALARP with existing mitigation?	Clarification
		Utilities failure	Harm to people	Route wide	Over-Head HV power lines cross the route of the DCO Proposed Development.	C	Inadvertent contact with HV power transmission cables.	HV electricity	CDM register. Hazard studies carried out at detailed design stage. Construction Phase H&S Plan. Method Statements.	Death and/or injury to construction workers.			X								HV overhead power lines do not need to be diverted. However, there is a potential need to provide protection measures during construction phase.	N	The reasonable worst consequence of this event does not meet the criteria of a major accident. The only potential receptors of harm are construction workers.	N/A	Not identified as a potential major accident/disaster event.	

Risk Record Entry Number	MA&D Event Category	MA&D Event Type	Section of DCO Proposed Development	Hazard Description	Applicable Stages (Construction, Operation, Maintenance)*	Risk Description	Hazard Sources and/or Pathways	Documentation in which the event is/will be addressed	Reasonable worst consequence if event did occur and receptor(s)	Air Quality	Climate	People and Communities	Biodiversity	Cultural Heritage	Geology and Soils	Landscape and Visual	Noise and Vibration	Transport	Material Resources	Road Drainage and the Water Environment	Mitigation	Could this constitute a major accident or disaster?	Justification	Is this ALARP with existing mitigation?	Clarification
4	Utilities failure	Harm to people	Route Wide	Historical Wayleave records are inconsistent in the position of actual presence of utilities crossing the DCO Proposed Development boundary.	C	Striking of underground services/utilities	Presence of existing utilities within the DCO Proposed Development area which are nearby to residential receptors.	CDM register. Hazard studies carried out at detailed design stage. Construction Phase H&S Plan. Method Statements.	Death and/or injury to construction workers.			X	X	X							<p>4. <u>1)</u> Seek clarification from utility owners of the presence and location of all utilities.</p> <p>2. <u>2)</u> Review of existing records/condition surveys.</p> <p><u>3)</u> Additional surveys being undertaken by specialist contractor.</p> <p>3. CAT scan and GPR surveys.</p> <p>Trial pits. <u>4)</u> <u>Undertake appropriate levels of utility searches accordance with BSI – PAS 128:2022</u></p>	N	The reasonable worst consequence of this event does not meet the criteria of a major accident. The only potential receptors of harm are construction workers.	N/A	Not identified as a potential major accident/disaster event.

Risk Record Entry Number	MA&D Event Category	MA&D Event Type	Section of DCO Proposed Development	Hazard Description	Applicable Stages (Construction, Operation, Maintenance)*	Risk Description	Hazard Sources and/or Pathways	Documentation in which the event is/will be addressed	Reasonable worst consequence if event did occur and receptor(s)	Air Quality	Climate	People and Communities	Biodiversity	Cultural Heritage	Geology and Soils	Landscape and Visual	Noise and Vibration	Transport	Material Resources	Road Drainage and the Water Environment	Mitigation	Could this constitute a major accident or disaster?	Justification	Is this ALARP with existing mitigation?	Clarification
5	Utilities failure	Loss of power	Route wide	Presence of underground services/utilities -sewers, gas, electricity, potable water, telecoms/data and surface/storm water drainage.	C	Striking of underground services/utilities	Presence of electricity cables along route (route crossings)	CDM register. Hazard studies carried out at detailed design stage. Construction Phase H&S Plan. Method statements.	Loss of power affects neighbouring property and/or members of the public.			X									<p>Location of utilities is obtained from the statutory undertakers and how the DCO Proposed Development will affect the utilities is discussed and any diversions required are highlighted. This information is then used in the detailed design of the DCO Proposed Development.</p> <p>Positive identification of all the utilities prior to starting work on site.</p> <p>Further work required to identify and design utility diversions, prior to construction phase.</p>	N	Unlikely to cause community wide power outage or damage to infrastructure which could cause a MA&D.	N/A	Not identified as a potential major accident/disaster event.

Risk Record Entry Number	MA&D Event Category	MA&D Event Type	Section of DCO Proposed Development	Hazard Description	Applicable Stages (Construction, Operation, Maintenance)*	Risk Description	Hazard Sources and/or Pathways	Documentation in which the event is/will be addressed	Reasonable worst consequence if event did occur and receptor(s)	Air Quality	Climate	People and Communities	Biodiversity	Cultural Heritage	Geology and Soils	Landscape and Visual	Noise and Vibration	Transport	Material Resources	Road Drainage and the Water Environment	Mitigation	Could this constitute a major accident or disaster?	Justification	Is this ALARP with existing mitigation?	Clarification
6	Pollution accident	Fire and/or explosion or release of harmful gas	Route wide	Loss of containment event involving an AGI and/or pipeline and/or block valve.	O, M	Large scale release of CO ₂ resulting from a loss of containment event involving an AGI and/or pipeline and/or block valve.	Pipeline/AGI/ BVS containing CO ₂ , air dispersion of CO ₂ gas cloud.	Dedicated studies undertaken to assess the likelihood and consequences of a large CO ₂ release. HAZID studies during FEED and detailed design.	CO ₂ toxicity and fogging hazard affects neighbouring properties and/or those people in the immediate area.	X	X	X									<p>Continuous monitoring of pressure and flow. On detection of a potential leak, the Carbon Dioxide Pipeline will be automatically shut down and isolated to minimise the volume of CO₂ released.</p> <p>The Newbuild Carbon Dioxide Pipeline will be constructed to appropriate design standards.</p> <p>Management systems will be in place for preventative maintenance including pipeline inspection and integrity checks.</p>	Y	Could cause loss of life or permanent injury which requires ongoing disability support.	Y	Considered to be ALARP if all mitigation measures outlined are correctly implemented.

Risk Record Entry Number	MA&D Event Category	MA&D Event Type	Section of DCO Proposed Development	Hazard Description	Applicable Stages (Construction, Operation, Maintenance)*	Risk Description	Hazard Sources and/or Pathways	Documentation in which the event is/will be addressed	Reasonable worst consequence if event did occur and receptor(s)	Air Quality	Climate	People and Communities	Biodiversity	Cultural Heritage	Geology and Soils	Landscape and Visual	Noise and Vibration	Transport	Material Resources	Road Drainage and the Water Environment	Mitigation	Could this constitute a major accident or disaster?	Justification	Is this ALARP with existing mitigation?	Clarification
7	Industrial and urban accidents	Fire and/or explosion or release of harmful gas	Stanlow AGI	Fire and/or explosion at the Stanlow Refinery Plant.	O, M	Damage to AGI equipment which could potentially lead to a loss of containment of CO ₂ for a limited period of time.	AGI containing CO ₂ , air dispersion of CO ₂ gas cloud.	Dedicated studies undertaken to assess the likelihood and consequences of a large CO ₂ release. HAZID studies during FEED and detailed design. AGI Emergency Plan.	CO ₂ toxicity and fogging hazard affects neighbouring property and/or those people in the immediate area.	X	X	X									Stanlow Refinery Plant site emergency plan to control/contain the initiating event to prevent/reduce the risk of spread to the AGI. Interface management procedures between the undertaker and Stanlow Refinery Plant. Leak detection and emergency shutdown system installed on the CO ₂ transmission system.	Y	Could cause loss of life or permanent injury which requires ongoing disability support.	Y	Considered to be ALARP if all mitigation measures outlined are correctly implemented.

Risk Record Entry Number	MA&D Event Category	MA&D Event Type	Section of DCO Proposed Development	Hazard Description	Applicable Stages (Construction, Operation, Maintenance)*	Risk Description	Hazard Sources and/or Pathways	Documentation in which the event is/will be addressed	Reasonable worst consequence if event did occur and receptor(s)	Air Quality	Climate	People and Communities	Biodiversity	Cultural Heritage	Geology and Soils	Landscape and Visual	Noise and Vibration	Transport	Material Resources	Road Drainage and the Water Environment	Mitigation	Could this constitute a major accident or disaster?	Justification	Is this ALARP with existing mitigation?	Clarification
8	Industrial and urban accidents	Fire and/or explosion or release of harmful gas	Stanlow AGI	Fire and/or explosion at the Stanlow Refinery Plant.	C	Exposure of construction staff to a release from Stanlow Refinery Plant.	Release from Stanlow Refinery Plant dispersing through the air.	Stanlow Refinery Plant Off-site emergency plan. Construction phase Emergency Plan.	Harm to small number of construction workers.			X									Stanlow Refinery Plant site emergency plan to control/contain the event to prevent/reduce the risk to construction personnel.	N	The reasonable worst consequence of this event does not meet the criteria of a major accident. The only potential receptors of harm are construction/maintenance workers.	N/A	Not identified as a potential major accident/disaster event.
9	Industrial and urban accidents	Fire and/or explosion or release of harmful gas	Ince AGI	Loss of containment of ammonia from CF Fertiliser Plant.	C, O, M	Exposure to a toxic gas cloud dispersing from CF Fertiliser Plant.	Toxic gas cloud from CF Fertiliser Plant dispersing through the air.	CF Fertiliser Plant Off-site emergency plan. AGI Emergency Plan.	Harm to small number of construction/maintenance workers.			X									CF Fertiliser Plant site/off-site emergency plan to control/contain the initiating event to prevent/reduce the risk of spread to the AGI. AGI site emergency plan. Interface management procedures between the undertaker and CF Fertilisers.	N	The reasonable worst consequence of this event does not meet the criteria of a major accident. The only potential receptors of harm are construction/maintenance workers.	N/A	Not identified as a potential major accident/disaster event.

Risk Record Entry Number	MA&D Event Category	MA&D Event Type	Section of DCO Proposed Development	Hazard Description	Applicable Stages (Construction, Operation, Maintenance)*	Risk Description	Hazard Sources and/or Pathways	Documentation in which the event is/will be addressed	Reasonable worst consequence if event did occur and receptor(s)	Air Quality	Climate	People and Communities	Biodiversity	Cultural Heritage	Geology and Soils	Landscape and Visual	Noise and Vibration	Transport	Material Resources	Road Drainage and the Water Environment	Mitigation	Could this constitute a major accident or disaster?	Justification	Is this ALARP with existing mitigation?	Clarification
10	Industrial and urban accidents	Fire and/or explosion or release of harmful gas	Ince AGI	Explosion at CF Fertiliser Plant.	O, M	Damage to AGI equipment which could potentially lead to a loss of containment of CO ₂ for a limited period of time.	AGI containing CO ₂ , air dispersion of CO ₂ gas cloud.	Dedicated studies undertaken to assess the likelihood and consequences of a large CO ₂ release. HAZID studies during FEED and detailed design. AGI Emergency Plan.	CO ₂ toxicity and fogging hazard affects neighbouring property and/or those people in the immediate area.	X	X	X									CF Fertiliser Plant site/off-site emergency plan to control/contain the initiating event to prevent/reduce the risk of spread to the AGI. Interface management procedures between the undertaker and CF Fertilisers. Leak detection and emergency shutdown system installed on the CO ₂ transmission system.	Y	Could cause loss of life or permanent injury which requires ongoing disability support.	Y	Considered to be ALARP if all mitigation measures outlined are correctly implemented.

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11	Hydrology	Harm to people	Route wide	Impact from construction activities alongside watercourses and flood zone 3.	C	The DCO Proposed Development crosses Flood Zone 3 and a very limited extent of Flood Zone 2. The three BVSS along the Stanlow AGI to Flint AGI Pipeline are all within Flood Zone 1.	Flooding Excavations	CDM register. Construction Phase H&S Plan. Method statements. CEMP.	Harm to small number of construction workers.			X								X	Where possible, storage of materials or Construction Compounds would not be located within the active fluvial and tidal floodplain. Construction material would be controlled near watercourses. At trenched crossings of watercourses, there would be a control of flows to avoid an increase of flood risk. There would be temporary drainage solutions to control runoff and protect surface water drainage patterns. Potential groundwater flooding in excavations would be controlled. Emergency planning procedures for construction workers would be implemented in case of risk of flooding, as appropriate.	N	The reasonable worst consequence of this event does not meet the criteria of a major accident. The only potential receptors of harm are construction workers.	N/A	Not identified as a potential major accident/disaster event.

Risk Record Entry Number	MA&D Event Category	MA&D Event Type	Section of DCO Proposed Development	Hazard Description	Applicable Stages (Construction, Operation, Maintenance)*	Risk Description	Hazard Sources and/or Pathways	Documentation in which the event is/will be addressed	Reasonable worst consequence if event did occur and receptor(s)	Air Quality	Climate	People and Communities	Biodiversity	Cultural Heritage	Geology and Soils	Landscape and Visual	Noise and Vibration	Transport	Material Resources	Road Drainage and the Water Environment	Mitigation	Could this constitute a major accident or disaster?	Justification	Is this ALARP with existing mitigation?	Clarification
12	Hydrology	Fire and/or explosion or release of harmful gas	Route wide	Flooding	O, M	Erosion of support below pipeline leading to pipeline failure.	Flooding	Flood Risk Assessment. Emergency plan.	CO ₂ toxicity and fogging hazard affects neighbouring property and/or those people in the immediate area.			X								X	<p>Geotechnical ground investigation informing the design of the Newbuild Carbon Dioxide Pipeline and the underlying support structure beneath the Newbuild Carbon Dioxide Pipeline.</p> <p>Continuous monitoring of pressure and flow.</p> <p>On detection of a potential leak, the Carbon Dioxide-</p> <p>Pipeline will be automatically shut down and isolated to minimise the volume of CO₂ released.</p> <p>The Newbuild Carbon Dioxide Pipeline will be constructed to appropriate design standards.</p> <p>Management systems will be in place for preventative maintenance including pipeline inspection and integrity checks.</p>	Y	Could cause loss of life or permanent injury which requires ongoing disability support.	Y	Considered to be ALARP if all mitigation measures outlined are correctly implemented.

Risk Record Entry Number	MA&D Event Category	MA&D Event Type	Section of DCO Proposed Development	Hazard Description	Applicable Stages (Construction, Operation, Maintenance)*	Risk Description	Hazard Sources and/or Pathways	Documentation in which the event is/will be addressed	Reasonable worst consequence if event did occur and receptor(s)	Air Quality	Climate	People and Communities	Biodiversity	Cultural Heritage	Geology and Soils	Landscape and Visual	Noise and Vibration	Transport	Material Resources	Road Drainage and the Water Environment	Mitigation	Could this constitute a major accident or disaster?	Justification	Is this ALARP with existing mitigation?	Clarification
13	Hydrology	Extreme weather (flood)	Ince AGI, Stanlow AGI, Northop Hall AGI, Flint AGI and BVS: Rock Bank, Mullington and Astor Hill	Flooding of AGI or BVS.	O, M	Risk to personnel	Flooding	Flood Risk Assessment. Emergency plan.	Minor flood damage to equipment.											X	An Outline Surface Water Drainage Strategy has been produced for the DCO Proposed Development which includes drainage design for the AGIs and BVSs. Flood risk at AGIs and BVSs would be managed for operation and maintenance, through design such as raising finished floor levels, and appropriate procedures e.g., development of suitable emergency procedure.	N	The reasonable worst consequence of this event does not meet the criteria of a major accident. Nuisance only.	N/A	Not identified as a potential major accident/disaster event.

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14	Industrial and urban accidents	Harm to people	Ince AGI, Stanlow AGI, Northop Hall AGI, Flint AGI and BVS: Rock Bank, Mallicote and Astor Hill	Installing electrical connections (e.g. between the AGIs/BVS and incoming power supplies).	C	Electrocution risk to personnel	Electricity	CDM register. Construction Phase H&S Plan.	Death and/or injury to construction workers and/or National Grid personnel			X									Guidance provided by National Grid to be adhered to.	N	The reasonable worst consequence of this event does not meet the criteria of a major accident. The only potential receptors of harm are construction workers and National Grid staff.	N/A	Not identified as a potential major accident/disaster event.

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15	Industrial and urban accidents	Harm to people	Rock Bank BVS	CLH Pipeline System (CLH-PS) Limited with fuel storage and distribution	O, M	Fire and/or explosion at fuel storage facility impacts the Rock Bank BVS resulting in a loss of containment event at the BVS and subsequent release of CO ₂ .	BVS containing CO ₂ , air dispersion of CO ₂ gas cloud.	Dedicated studies undertaken to assess the likelihood and consequences of a large CO ₂ release. HAZID studies during FEED and detailed design. BVS Emergency Plan.	CO ₂ toxicity and fogging hazard affects neighbouring property and/or those people in the immediate area.	X	X	X									CLH Pipeline System site/off-site emergency plan to control/contain the initiating event to prevent/reduce the risk of spread to the BVS. Leak detection and emergency shutdown system installed on the CO ₂ transmission system.	Y	Could cause loss of life or permanent injury which requires ongoing disability support.	Y	Considered to be ALARP if all mitigation measures outlined are correctly implemented.

Risk Record Entry Number	MA&D Event Category	MA&D Event Type	Section of DCO Proposed Development	Hazard Description	Applicable Stages (Construction, Operation, Maintenance)*	Risk Description	Hazard Sources and/or Pathways	Documentation in which the event is/will be addressed	Reasonable worst consequence if event did occur and receptor(s)	Air Quality	Climate	People and Communities	Biodiversity	Cultural Heritage	Geology and Soils	Landscape and Visual	Noise and Vibration	Transport	Material Resources	Road Drainage and the Water Environment	Mitigation	Could this constitute a major accident or disaster?	Justification	Is this ALARP with existing mitigation?	Clarification
16	Industrial and urban accidents	Spillage or longer term seepage of pollutants into ground/watercourse	Route wide	Loss of containment from a MAH pipeline.	C	Damage to a third party MAH pipeline.	Construction work associated with the CO ₂ pipeline in close proximity to third party MAH pipelines.	CDM register. Construction Phase H&S Plan. Pipeline operators safety report.	Contamination of ground and/or water supply.						X					X	<p>1) Seek clarification from pipeline owners of the presence and location of pipelines.</p> <p>1. CAT scan and GPR surveys.</p> <p>2. Trial pits.</p> <p>2) undertake appropriate levels of utility searches in accordance with BSI - PAS 128:2022.</p> <p>3) The pipelines should have been designed and constructed in accordance with British Standard 8010 – Code of Practice for Pipelines (BS 8010) and the Pipelines Act 1962.</p> <p>4) Close coordination and cooperation between all parties involved.</p>	Y	Could cause permanent or long-lasting damage to environmental receptor(s) that cannot be restored through minor clean-up and restoration efforts.	Y	Considered to be ALARP if all mitigation measures outlined are correctly implemented.

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17	Industrial and urban accidents	Ground collapse	Route wide	Presence of unrecorded mine workings.	C, O, M	Collapse of mine workings.	Historical mine workings.	Ground Conditions Report. CDM Register. Mining Risk Assessment.	Death and/or injury to construction/maintenance workers.			X	X		X						Shallow coal mining related stability issues to be assessed and addressed in line with best practice guidance (CIRIA C758D Abandoned Mine Workings Manual) that is accepted by the Coal Authority.	N	The reasonable worst consequence of this event does not meet the criteria of a major accident. The only potential receptors of harm are construction/maintenance workers.	N/A	Not identified as a potential major accident/disaster event.
18	Industrial and urban accidents	Fire and/or explosion or release of harmful gas	Route wide	Loss of containment from Carbon Dioxide Pipeline.	O, M	Large scale release of CO ₂ resulting from a loss of containment event involving the CO ₂ pipeline.	Intrusive work by 3rd parties e.g. farmers, construction works.	Dedicated studies undertaken to assess the likelihood and consequences of a large CO ₂ release. HAZID studies during FEED and detailed design. Carbon Dioxide Pipeline Emergency Plan.	CO ₂ toxicity and fogging hazard affects neighbouring property and/or those people in the immediate area.	X	X	X									The Carbon Dioxide Pipeline system will be: <ul style="list-style-type: none"> - Fitted with a leak detection and emergency shut down system. - Buried below ground. - Provided with enhanced wall thickness at identified risk areas. - Provided with corrosion / cathodic protection systems (coating damage). - Operated, Maintained and Inspected (Piggable) to ensure continued integrity and in compliance with relevant codes, standards and regulations. - Provided with additional protection at key crossings e.g. motorways. - Provided with pipeline tape markers and pipeline surface markers. 	Y	Could cause loss of life or permanent injury which requires ongoing disability support.	Y	Considered to be ALARP if all mitigation measures outlined are correctly implemented.

Risk Record Entry Number	MA&D Event Category	MA&D Event Type	Section of DCO Proposed Development	Hazard Description	Applicable Stages (Construction, Operation, Maintenance)*	Risk Description	Hazard Sources and/or Pathways	Documentation in which the event is/will be addressed	Reasonable worst consequence if event did occur and receptor(s)	Air Quality	Climate	People and Communities	Biodiversity	Cultural Heritage	Geology and Soils	Landscape and Visual	Noise and Vibration	Transport	Material Resources	Road Drainage and the Water Environment	Mitigation	Could this constitute a major accident or disaster?	Justification	Is this ALARP with existing mitigation?	Clarification
19	Industrial and urban accidents	Ground collapse	Route wide	Presence of unrecorded mine/quarry workings.	O, M	Collapse of mine/quarry workings damaging the CO ₂ pipeline or BVS resulting in a loss of containment event.	Historical mine/mineral extraction workings	Coal Mining Risk Assessment. Ground Conditions Report.	CO ₂ toxicity and fogging hazard affects neighbouring property and/or those people in the immediate area.	X	X	X									Shallow coal mining related stability issues to be assessed and addressed in line with best practice guidance (CIRIA C758D Abandoned Mine Workings Manual) that is accepted by the Coal Authority. Leak detection and emergency shutdown system installed on the CO ₂ transmission system.	Y	Could cause loss of life or permanent injury which requires ongoing disability support.	Y	Considered to be ALARP if all mitigation measures outlined are correctly implemented.

Risk Record Entry Number	MA&D Event Category	MA&D Event Type	Section of DCO Proposed Development	Hazard Description	Applicable Stages (Construction, Operation, Maintenance)*	Risk Description	Hazard Sources and/or Pathways	Documentation in which the event is/will be addressed	Reasonable worst consequence if event did occur and receptor(s)	Air Quality	Climate	People and Communities	Biodiversity	Cultural Heritage	Geology and Soils	Landscape and Visual	Noise and Vibration	Transport	Material Resources	Road Drainage and the Water Environment	Mitigation	Could this constitute a major accident or disaster?	Justification	Is this ALARP with existing mitigation?	Clarification	
20	<u>Pollution accidents</u>	<u>Land pollution accident</u>	<u>Hollywell Road (slurry tank)</u>	<u>Loss of containment from the slurry tank.</u>	C	<u>Damage to the slurry tank.</u>	<u>Construction work associated with the CO₂ pipeline in close proximity to the slurry tank.</u>	<u>CDM register</u> <u>Construction phase health and safety plan</u>	<u>Contamination of ground and/or water supply</u>						X						X	<u>1) Close coordination and cooperation between all parties involved.</u> <u>2) Identification of potential risks in the CDM risk register with appropriate mitigation measures defined.</u> <u>3) An exclusion zone will be designated around the slurry tank and an appropriate safety barrier/fence installed to prevent accidental damage to the tank during construction works.</u> <u>4) Construction traffic management plan.</u> <u>5) Construction phase emergency plan.</u>	Y	<u>Could cause permanent or long-lasting damage to environmental receptor(s) that cannot be restored through minor clean-up and restoration efforts.</u>	Y	<u>Considered to be ALARP if all mitigation measures outlined are correctly implemented.</u>

Risk Record Entry Number	MA&D Event Category	MA&D Event Type	Section of DCO Proposed Development	Hazard Description	Applicable Stages (Construction, Operation, Maintenance)*	Risk Description	Hazard Sources and/or Pathways	Documentation in which the event is/will be addressed	Reasonable worst consequence if event did occur and receptor(s)	Air Quality	Climate	People and Communities	Biodiversity	Cultural Heritage	Geology and Soils	Landscape and Visual	Noise and Vibration	Transport	Material Resources	Road Drainage and the Water Environment	Mitigation	Could this constitute a major accident or disaster?	Justification	Is this ALARP with existing mitigation?	Clarification	
<u>21</u>	<u>Pollution accidents</u>	<u>Water pollution accident</u>	<u>Hollywell Road (slurry tank)</u>	<u>Loss of containment from the slurry tank.</u>	<u>C</u>	<u>Damage to the slurry tank.</u>	<u>Construction work associated with the CO₂ pipeline in close proximity to the slurry tank.</u>	<u>CDM register</u> <u>Construction phase health and safety plan</u>	<u>Contamination of Wepre Brook</u>				<u>X</u>		<u>X</u>						<u>X</u>	<u>1) Close coordination and cooperation between all parties involved.</u> <u>2) Identification of potential risks in the CDM risk register with appropriate mitigation measures defined.</u> <u>3) An exclusion zone will be designated around the slurry tank and an appropriate safety barrier/fence installed to prevent accidental damage to the tank during construction works.</u> <u>4) Construction traffic management plan.</u> <u>5) Construction phase emergency plan.</u>	<u>Y</u>	<u>Could cause permanent or long-lasting damage to environmental receptor(s) that cannot be restored through minor clean-up and restoration efforts.</u>	<u>Y</u>	<u>Considered to be ALARP if all mitigation measures outlined are correctly implemented.</u>
<u>22</u>	<u>Industrial and urban accidents</u>	<u>Fire</u>	<u>Hollywell Road (slurry tank)</u>	<u>Damage during construction activities/decommissioning and/or removal of the slurry tank.</u>	<u>C</u>	<u>Release of methane gas</u>	<u>Presence of methane gas in the slurry tank</u>	<u>CDM register.</u> <u>Construction Phase H&S Plan.</u>	<u>Fire and/or explosion affects neighbouring property and/or members of the public.</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>		<u>X</u>					<u>X</u>	<u>1) Identification of potential risks in the CDM risk register with appropriate mitigation measures defined.</u> <u>2) Implement a safe system of work (including risk assessment and method statement).</u> <u>3) Construction phase emergency plan.</u>	<u>Y</u>	<u>Could cause loss of life or permanent injury to multiple members of the public; or significant structural property damage.</u>	<u>Y</u>	<u>Considered to be ALARP if all mitigation measures outlined are correctly implemented.</u>	

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23	Pollution accidents	Land pollution accidents	Hollywell Road (slurry tank)	Loss of containment from the slurry tank during decommissioning.	IC	Release of slurry resulting from decommissioning/demolition of the slurry tank.	Presence of slurry in the tank.	CDM register. Construction Phase H&S Plan	Contamination of ground and/or water supply						X						X	1) Identification of potential risks in the CDM risk register with appropriate mitigation measures defined. 2) Implement a safe system of work (including risk assessment and method statement). 3) Construction phase emergency plan.	Y	Could cause permanent or long-lasting damage to environmental receptor(s) that cannot be restored through minor clean-up and restoration efforts.	Y	Considered to be ALARP if all mitigation measures outlined are correctly implemented.
24	Pollution accidents	Water pollution accidents	Hollywell Road (slurry tank)	Loss of containment from the slurry tank during decommissioning.	IC	Release of slurry resulting from decommissioning/demolition of the slurry tank.	Presence of slurry in the tank.	CDM register. Construction Phase H&S Plan	Contamination of Wepre Brook				X		X						X	1) Identification of potential risks in the CDM risk register with appropriate mitigation measures defined. 2) Implement a safe system of work (including risk assessment and method statement). 3) Construction phase emergency plan.	Y	Could cause permanent or long-lasting damage to environmental receptor(s) that cannot be restored through minor clean-up and restoration efforts.	Y	Considered to be ALARP if all mitigation measures outlined are correctly implemented.

Risk Record Entry Number	MA&D Event Category	MA&D Event Type	Section of DCO Proposed Development	Hazard Description	Applicable Stages (Construction, Operation, Maintenance)*	Risk Description	Hazard Sources and/or Pathways	Documentation in which the event is/will be addressed	Reasonable worst consequence if event did occur and receptor(s)	Air Quality	Climate	People and Communities	Biodiversity	Cultural Heritage	Geology and Soils	Landscape and Visual	Noise and Vibration	Transport	Material Resources	Road Drainage and the Water Environment	Mitigation	Could this constitute a major accident or disaster?	Justification	Is this ALARP with existing mitigation?	Clarification	
25	Hydrology	Water pollution accidents	Wood Farm Centralised Compound and River Dee Centralised Compound	Impact from construction activities within the floodplain.	C	Presence of Centralised Compounds in the floodplain of the Tidal River Dee	Flooding.	CDM register. Flood Risk Assessment Emergency Plan. CEMP.	Contamination of the River Dee.				X		X						X	The Centralised Compounds will be provided with hardstanding. Where possible, minimise volume and duration of stored materials within the active fluvial and tidal floodplain. Construction material would be controlled near watercourses. At trenched crossings of watercourses, there would be a control of flows to avoid an increase of flood risk. There would be temporary drainage solutions to control runoff and protect surface water drainage patterns. Liquid materials will be provided with secondary containment.	Y	Could cause permanent or long-lasting damage to environmental receptor(s) that cannot be restored through minor clean-up and restoration efforts.	Y	Considered to be ALARP if all mitigation measures outlined are correctly implemented.

*Applicable Stages (C=Construction, O=Operational, M=Maintenance)