



## Appendix 5.1 Summary of Previous Assessments

### A5.1 Phase I Environmental Due Diligence Report

A Phase I Environmental Due Diligence Report (Fairhurst, 2015) was undertaken to review the site based on historic maps, site plans, a site walkover and consultations with statutory authorities in order to create an initial conceptual site model (CSM) which was used to inform the scope of an intrusive Phase II ground investigation for both geotechnical and environmental purposes. The initial CSM is shown in **Table 1**.



Table 1 : Preliminary Conceptual Site Model

Source	CoC's	Potential Pathways	Potential Receptors	Assessment	Likelihood of Occurrence	Severity of Consequences	Action / Investigation Required		
Quarrying	Heavy Metals	Ingestion, inhalation, direct contact, permeation of water-supply pipework	Human: End-users	<b>Quarrying-</b> the Waste Management Plan at the site indicates that all Peat and silt materials should be buried onsite. As such, it is considered that these materials may have given rise to the organic generation of ground gases which may affect the proposed development	High	Moderate	Yes-intrusive ground investigation and follow up monitoring works in accordance with		
Fuel Storage	Fuels & Oils			<b>Fuel Storage-</b> As previously identified, fuel storage was historically undertaken in various areas of the site. The size, type, composition, age and previous condition of any tanks onsite is unknown and as such a potential contamination risk must be considered, however this risk is considered to be low to moderate in nature.	Moderate	Moderate			
Vehicle Servicing Building	Benzene Toluene Ethylbenzene Xylene (BTEX) Polychlorinated Biphenyls (PCBs) Polycyclic Aromatic Hydrocarbons (PAHs)			<b>Vehicle Servicing Building-</b> Some fuel and oil storage has been undertaken within the vehicle servicing building. Some staining of the ground within this feature was noted; however this appeared to be confined to the concrete floor slab. There is a potential for cracks in the floor slab to permit contamination migration into the underlying soils/groundwater. This is considered to be of low to moderate risk however requires further investigation nevertheless.	Low	Moderate		BS10175, CLR 11 and CIRIA C665	
Site Office Building	Polychlorinated Biphenyls (PCBs) Polycyclic Aromatic Hydrocarbons (PAHs)			<b>Site Office Building-</b> This building was suspected to be clad with Asbestos Containing Materials (ACMs). There is a potential for these materials to have been broken / damaged and subsequently deposited into the surrounding surface soils. The risk associated with this is considered to be relatively low / moderate in nature however merits further investigation.	Low	High			
Burning Area Fly-tipping	Hydrocarbons (PAHs)								
Silt Ponds	Volatile Organic Compounds (VOCs)								
Settlement Pond	Semi-Volatile Organic Compounds (SVOC)								
Electricity Substation	Sulphate/Sulphite (SO <sub>3</sub> / SO <sub>4</sub> )								
Suspected Underground Septic Tank	pH Asbestos								



Source	CoC's	Potential Pathways	Potential Receptors	Assessment	Likelihood of Occurrence	Severity of Consequences	Action / Investigation Required
Offsite Diesel Spillage	Ground Gas & Vapour			<b>Materials Burning/Fly-tipping-</b> Small areas of burned materials and fly-tipping were noted across the site. These are considered unlikely to represent significant contamination, however may represent areas of localised contamination which require further investigation.	High	Moderate	
				<b>Silt Ponds/Settlement Ponds-</b> It is considered that these features have to potential to allow contaminants to leach into the underlying soils and groundwater across the site. These also present a potential ground gas and vapour risk associated with the generation of ground gases from the organic materials present within these features.	Moderate	High	
				<b>Electricity Substation-</b> The condition of the electricity substation and former diesel generator is not fully known, however some staining of the surface soils surrounding this feature was noted, indicating some leakage has occurred.	High	Moderate	
				<b>Suspected Underground Septic Tank-</b> The composition and condition of the underground septic tank is unknown, therefore there is a potential for leakages of contaminants to have occurred into the underlying soil and groundwater. It is also considered that the pipelines connected to this tank may provide a pathway for contamination migration towards the various receptors at the site.	Low	High	
				<b>Offsite Diesel Spillage-</b> The volume of offsite diesel spillage was considered to be relatively low, however this may present an offsite ground gas and vapour source.	High	Low	
Japanese Knotweed			Humans: Construction and Maintenance	Potential pollutant linkages to construction and maintenance workers can be mitigated through the appropriate use of Personal Protective Equipment (PPE) and Safe Systems of Work.	Moderate	High	



Source	CoC's	Potential Pathways	Potential Receptors	Assessment	Likelihood of Occurrence	Severity of Consequences	Action / Investigation Required
			Workers				
		Run-off, leaching, migration to groundwater and surface water	The Water Environment	A risk to groundwater could exist if leachable contamination is present at the site associated with the identified potential contamination sources. As there is an onsite surface water feature, a risk would be feasible, however at present is likely to be relatively low/moderate in nature.	Moderate	Moderate	
		Direct contact with ground contamination	Building fabric and services	A significant risk could exist if the ground is contaminated.	Moderate	Moderate	
		Accumulation of Ground Gas / Vapours within buildings and service conduits		<p>A potential exists for ground gas / vapour from made ground or degrading hydrocarbon spills within the soils pooling underneath buildings and within service trenches and/or voids within the site. A significant risk could exist if the ground is contaminated. At present the risk is considered to be relatively moderate in nature.</p> <p>A further risk to buildings and services is present due to Japanese Knotweed. This has the potential to grow below the ground surface and damage subsurface foundations etc.</p>			

## A5.2 Intrusive Phase II Ground Investigation

Intrusive Phase II ground Investigation was designed by Fairhurst and conducted by BAM Richies with the aim of testing the preliminary CSM and identifying potential abnormal geotechnical and geo-environmental constraints on the site. The investigation comprised a series of positions targeted to potential areas of contamination as identified during an earlier site walkover, as summarised in **Table 2**. These positions consisted of 16 rota-sonic boreholes, 59 mechanically excavated trial pits and 16 hand excavated trial pits. The investigation positions were located across the entire site area, and also an area outside the site boundary, located to the south-east of the site.

**Table 2 : Rationale for Environmental Ground Investigation Purposes**

Position no.	Approximate Spacing	Contaminant Source	Pollutant Linkage	Receptor
RBH06, RBH09, RBH11, RBH12, RBH13, RBH14, TP21, TP34, TP36 to TP39, TP43, TP44, TP60, TP61	All Positions Targeted to areas of current and historic fuel storage surrounding features on approximate 10m grid to identify possible contamination and permit long term monitoring	Current / former fuel storage areas	Dermal contact / inhalation (inc. vapours)/ ingestion of contaminated soils	Humans (end users)
RBH06, RBH09, RBH11, RBH12, RBH13, RBH14	RBH06, RBH09, RBH11, RBH12 Targeted to identify possible deep groundwater contamination. Designed to investigate the potential presence of DNAPL and permit long term monitoring RBH13, RBH14 Targeted down groundwater gradient from features to identify possible groundwater contamination	Current / former fuel storage areas	Leaching / movement in pore space / migration to Surface Water Environment	Groundwater / Surface Water Environment
RBH06, RBH09, RBH11, RBH12, RBH13, RBH14	RBH06, RBH09, RBH11, RBH12 Targeted to areas immediately surrounding current and historic fuel storage areas to identify possible presence of ground gases and vapours RBH13, RBH14 Targeted to areas down-gradient of current and historic fuel storage areas to identify possible ground and vapour migration from these features	Current / former fuel storage areas	Accumulation of Ground Gas & Vapours within buildings and service conduits	Building, Fabric & Services
All Positions	All Positions Series of targeted and non-targeted positions on 25m to	Made Ground	Dermal contact / inhalation (inc. vapours) / ingestion	Humans (end users)

Position no.	Approximate Spacing	Contaminant Source	Pollutant Linkage	Receptor
	50m grid across site area to assess potential for contamination within Made Ground deposits		of contaminated soils	
RBH01 to RBH16	RBH01 to RBH16	Made Ground	Leaching / movement in pore space / migration to Surface Water Environment	Groundwater / Surface Water Environment
	Positions placed on approximate 25m grid across proposed development area to identify possible groundwater contamination			
RBH01 to RBH16	RBH01 to RBH16	Made Ground	Accumulation of Ground Gas & Vapours within buildings and service conduits	Building, Fabric & Services
	Positions placed on approximate 25m grid to identify possible ground gas and vapour contamination associated with Made Ground			
RBH12, TP43, TP44, TP46, TP47	All Positions	Site Office	Outdoor inhalation of dust (Asbestos fibres)	Humans (end users)
	Positions targeted to surround location of existing office building to potentially identify present of Asbestos Containing Materials (ACMs) within surrounding soils			
TP04, TP08, TP15, TP39, TP40, TP42, TP47, TP49, TP50	All Positions	Materials burning/fly-tipping	Dermal contact / inhalation (inc. vapours) / ingestion of contaminated soils	Humans (end users)
	Positions targeted to locations of identified materials burning / fly-tipping to identify possible contamination			
RBH14, RBH15	All Positions	Materials burning/fly-tipping	Leaching / movement in pore space / migration to Surface Water Environment	Groundwater / Surface Water Environment
	Targeted down groundwater gradient of fly-tipping area to assess if contamination leaching into groundwater and contamination migration has occurred			
RBH14, RBH15	RBH14, RBH15	Materials Burning / fly-tipping	Accumulation of Ground Gas & Vapours within buildings and service conduits	Surface Water Environment
	Targeted down gradient of fly-tipping area to assess if ground gases have arisen associated with feature			Surface Water Environment
RBH02, RBH04, RBH06, RBH07, RBH12	All Positions	Silt Ponds / Sediment Pond	Inhalation of Ground Gas & Vapours	Humans (end users)
	Placed in area of silt settlement ponds on approximate 25m grid		Accumulation of Ground Gas &	Building, Fabric &

Position no.	Approximate Spacing	Contaminant Source	Pollutant Linkage	Receptor
	to assess potential organic generating potential of ground gases and vapours from these features		Vapours within buildings and service conduits	Services
RBH13	RBH13	Offsite Sources	Inhalation of Ground Gas & Vapours	Humans (end users)
	Targeted down gradient of offsite diesel spillage in each direction to assess potential of ground gas and vapour migration onto site		Accumulation of Ground Gas & Vapours within buildings and service conduits	Building, Fabric & Services

All positions were undertaken to investigate the potential pollutant linkages identified in the Preliminary CSM. At each position two soil samples were collected, one sample between ground level and 0.20mbgl and one sample between 0.20mbgl and 1.00mbgl to demonstrate that vertical contamination migration into deeper natural deposits had not occurred. In addition, further samples were taken if visual/olfactory contamination was identified. Selected samples obtained during the investigation were tested for the full agreed testing suite as outlined in **Table 3**. Furthermore, soil samples were taken in selected locations along the likely route of water supply pipes at approximate pipe invert levels (1.20mbgl) to permit UK Water Industry Research (UKWIR) chemical analysis in accordance with Scottish Water guidelines to allow an assessment of water supply pipe materials to be made.

**Table 3 : Environmental Sampling and Testing Regime**

Position no.	Contaminant Source	Sampling Regime (mbgl)	Contaminants of Concern for Groundwater	Contaminants of Concern Soil
RBH6,RBH11, RBH12, RBH13, RBH14, TP21, TP34, TP43, TP44, TP60, TP61	Current/former fuel storage areas	- 0.00 – 0.20 - 0.20 – 1.00  Further samples if visual/olfactory contamination is identified	Heavy Metals, Fuels & Oils, BTEX, PAHs	Heavy Metals, Fuels & Oils, BTEX, PAHs, VOCs / SVOCs, Asbestos, pH, SO <sub>4</sub> , Ground Gas & Vapours
TP36 to TP38	Electricity Substation		VOCs/SVOCs, pH	Heavy Metals, Fuels & Oils, BTEX, PAHs, VOCs / SVOCs, PCBs, Asbestos, pH, SO <sub>4</sub> , Ground Gas & Vapours
TP04, TP08, TP15, TP39, TP40, TP42, TP47, TP49, TP50	Materials burning / fly-tipping		Heavy Metals, Fuels & Oils, BTEX, PAHs	Heavy Metals, Fuels & Oils, PAHs, Asbestos, pH, SO <sub>4</sub> , Ground Gas & Vapours
RBH02, RBH04, RBH06	Silt Ponds / Sediment Pond		VOCs / SVOCs, PCBs, pH	Heavy Metals, Fuels & Oils, BTEX, PAHs, VOCs / SVOCs, Asbestos, pH, SO <sub>4</sub> , Organic Matter, Ground Gas & Vapours
RBH7,RBH12, TP21, TP25 to TP27, TP34	Site Office		Heavy Metals, Fuels & Oils, PAHs, pH	Asbestos

Position no.	Contaminant Source	Sampling Regime (mbgl)	Contaminants of Concern for Groundwater	Contaminants of Concern Soil
All Remaining Boreholes	Made Ground; offsite sources		Heavy Metals, Fuels & Oils, BTEX, PAHs	Ground Gas & Vapours

Fifteen boreholes were completed with groundwater and gas monitoring installations. Groundwater level data were collected on 7 January 2016 and 10 February 2016, while gas monitoring was undertaken on six occasions between 7 January 2016 and 29 February 2016. Eight of the trial pits were used for infiltration testing.

In order to fully assess the risk to groundwater and surface water at the site, two rounds of water sampling and subsequent chemical analysis were undertaken on the boreholes drilled as part of the investigation works. The locations of all exploratory positions are presented in **Figure 5.1**.

Samples of soils and encountered groundwater were collected and sent to Exova Ltd for chemical analysis.

The resultant data was then screened against generic assessment criteria (GAC), derived from various published standards, in order to put the data into context and form part of the risk assessment. This is known as a Tier 1 assessment, and depending on the results of the Tier 1 analysis further tiers of assessment may be deemed necessary.

The rationale for the selection of the chosen criteria is discussed below.

#### A5.2.1 Criteria for Soil Assessment

Human health risk assessment was undertaken in accordance with the approach currently advocated by the Environment Agency (EA) and Defra in England and Wales, using the CLEA (Contaminated Land Exposure Assessment) model. The model evaluates the risks to human health from contaminants via different pathways for a range of land use scenarios based on a detailed review of published research. The model was used to produce GAC, known as Soil Guideline Values (SGVs) for four standard land use scenarios (residential with gardens, residential without gardens, commercial/industrial and allotments) and for a range of contaminants. Current contaminated land guidance documents are also available to download at the following UK Government web pages:

- <https://www.gov.uk/contaminated-land/overview>; and
- <https://www.gov.uk/government/collections/land-contamination-technical-guidance>.

In 2014, Category 4 Screening Levels (C4SLs) were published by Defra for use in the assessment of 'Contaminated Land' under Part 2A of the Environmental Protection Act 1990. The Statutory Guidance includes four categories of contaminated land, ranging from Category 4 (low risk) to Category 1 (significant / high risk). C4SLs for six specific contaminants including the metals hexavalent chromium, cadmium, arsenic and lead were produced for the four existing land use scenarios plus an additional two land use scenarios (Public Open Space (POS) near residential housing and POS parks); they supersede the SGVs for these contaminants. C4SLs are low risk levels which are not representative of significant possibility of significant harm (SPoSH) and as such, if the C4SLs are not exceeded, land can be demonstrated as being in Category 4 and cannot be determined as 'Contaminated Land' for the standard land uses. Exceedance of a C4SL indicates that further assessment is required. These guideline values adopted a Low Level of Toxicological Concern (LLTC) as the benchmark for toxicological impact.

In 2015 Suitable 4 Use Levels (S4ULs) were published by Land Quality Management Ltd (LQM) and the Chartered Institute of Environmental Health (CIEH) and are underpinned by a 'minimal or tolerable risk' basis as defined in the Environment Agency's Science Report SR2 rather than LLTC. These values are more conservative (i.e. lower) than C4SLs and are largely based on new modelling assumptions and end uses (residential, POS, and POS parks) introduced during the C4SL project. The S4ULs are not recognised by



Defra, but are widely used as precautionary screening values. In this study, S4ULs have been used as the principal screening criteria, but where S4UL's are not available then other recognised scientific and authoritative criteria have been used, in accordance with EA guidance. The hierarchy of guidelines used is as follows:

- Updated Land Quality Management Suitable for Use Levels (2015) (LQM S4UL's) (Commercial);
- Department of Environment, Farming and Rural Affairs Category 4 Screening Levels (2014) (DEFRA C4SL) (Commercial);
- Environment Agency Soil Guideline Values (SGV) (Commercial);
- CL:AIRE (Dec 2009) The Soil Generic Assessment Criteria for Human Health Risk Assessment (CLRE) (Commercial); and
- for assessing risk from Asbestos fibres, ICRC 64/85 Asbestos on Contaminated Sites (1990).

#### **A5.2.2 Criteria for Water Environment Assessment**

Analysis results from the collected groundwater samples were screened against GAC values derived from both groundwater resource protection values (RPVs) and surface water environmental quality standards (EQS).

For assessing the risk to groundwater, the guidance from SEPA document WAT\_PS\_10 SEPA was adopted. SEPA have provided a position that, if the concentration of a hazardous substance in a discharge (or input) is less than the minimum reporting value (MRV), the input is regarded as automatically meeting the Article 2 (b) 'de-minimus' requirement of the GWD and exemption 6 (3) (b) of the GWDD. Therefore the MRV was used as a Tier 1 Assessment Criteria for the site, as reported in WAT-PS-10-01. In the absence of values within WAT-PS-10-01, World Health Organisation (WHO) values for drinking water were used to assess the risk from Petroleum Hydrocarbons, as they form the basis for the WAT PS 10-01 Resource Protection Values (RPVs) for light Aromatic Hydrocarbon fractions. Considering their use in WAT PS 10-01 for this species of contaminant, it is considered that their use for parent/sister compounds is appropriate.

Based upon WAT-PS-10-01 it is likely that the site meets the criteria for a Major Discharge Zone, therefore, the assessment point for groundwater quality is likely to be the surface water receptor and dictated by the species present within the water body.

Therefore a comparison between the groundwater concentrations and surface water EQS (SEPA Supporting Guidance document: WAT-SG-53, 2014) was also undertaken.

#### **A5.2.3 Criteria for Ground Gas Assessment and Volatile Organic Compounds (VOCs)**

Risk based Gas Screening Values included in CIRIA C665 and BS 8485:2015 were utilised to assess the values for levels of ground gases measured at the site and the levels of depleted Oxygen.

### **A5.3 Tier 1 Risk Assessment**

#### **A5.3.1 Soils (Human Health Assessment – Commercial Land Use Scenario)**

No exceedances above the Tier 1 GAC values for a commercial end-use were identified from the soil samples tested.

#### **A5.3.2 Groundwater Environment**

Six exceedances of groundwater GAC values were identified in groundwater samples collected from two borehole locations as summarised in **Table 4**.

**Table 4 : Summary of Exceedances of Groundwater GAC Values**

Analyte	Max Concentration (µg/l)	Location	Assessment Criteria (µg/l)	Pass/Fail	Further Assessment
Benzo(a)Pyrene	0.02	RBH01	0.01	Fail	Yes
TPH Aliphatic C6-8	6507	RBH10	300	Fail	Yes
TPH Aromatic C10-12	512	RBH10	100	Fail	Yes
TPH Aromatic C12-16	4070	RBH10	100	Fail	Yes
TPH Aromatic C16-21	5680	RBH10	90	Fail	Yes
TPH Aromatic C31-35	1870	RBH10	90	Fail	Yes

As shown in **Table 4**, the exceedance recorded in RBH01 was marginal and was only recorded in one of the two visits where water quality samples were collected. RBH10 is sited at the approximate location of an historic diesel generator (Fairhurst 2016), and exceedances were recorded for various hydrocarbon fractions. It was noted that based upon the Total Petroleum Hydrocarbon Working Group Series Volume 3, concentrations of hydrocarbon fractions TPH Aromatic C12-16 and TPH Aromatic C16-21 were above solubility limits and therefore hydrocarbon sheens/free product is likely to be present on site in this area.

### A5.3.3 Surface Water Environment

Exceedances of surface water EQS values were identified in groundwater samples for thirty-five determinands as summarised in **Table 5**.

**Table 5 : Summary of Exceedances of Surface Water GAC Values**

Analyte	Max Concentration (µg/l)	Location	Assessment Criteria (µg/l)	Pass/Fail	Further Assessment
Cadmium	0.20	RBH11	0.08	Fail	Yes
	0.09	RBH12		Fail	Yes
	0.49	RBH03		Fail	Yes
	0.13	RBH07		Fail	Yes
Chromium	7.32	RBH01	4.7	Fail	Yes
	4.81	RBH02		Fail	Yes
Copper	24.72	RBH06	6.0	Fail	Yes
Mercury	0.06	RBH01	0.05	Fail	Yes
	0.16	RBH02		Fail	Yes
	0.31	RBH13		Fail	Yes
Zinc	11.2	RBH05	8.0	Fail	Yes
	19.4	RBH06		Fail	Yes

Analyte	Max Concentration (µg/l)	Location	Assessment Criteria (µg/l)	Pass/Fail	Further Assessment
Naphthalene	29.6	RBH10	1.2	Fail	Yes
	1.73	RBH01		Fail	Yes
	2.37	RBH03		Fail	Yes
	2.97	RBH07		Fail	Yes
	101	RBH10		Fail	Yes
Anthracene	0.18	RBH01	0.10	Fail	Yes
	0.19	RBH03		Fail	Yes
Fluoranthene	0.13	RBH01	0.10	Fail	Yes
	018	RBH03		Fail	Yes
	4.86	RBH10		Fail	Yes
TPH Aliphatic C6-8	6507	RBH10	20	Fail	Yes
TPH Aliphatic C8-10	43	RBH10	20	Fail	Yes
TPH Aliphatic C10-12	95	RBH10	20	Fail	Yes
	32	RBH10		Fail	Yes
TPH Aliphatic C12-16	177	RBH10	20	Fail	Yes
	138	RBH10		Fail	Yes
TPH Aromatic C8-C10	52	RBH10	20	Fail	Yes
TPH Aromatic C10-12	25	RBH10	20	Fail	Yes
	512	RBH10		Fail	Yes
TPH Aromatic C10-12	45	RBH10	20	Fail	Yes
	4070	RBH10		Fail	Yes
TPH Aromatic C16-21	5680	RBH10	20	Fail	Yes
TPH Aromatic C21-35	1870	RBH10	20	Fail	Yes

#### A5.3.4 Ground Gas and Vapours

Elevated levels of Carbon Dioxide and elevated gas flow rates were identified during the post fieldwork monitoring, and a subsequent ground gas assessment made in accordance with CIRIA C665 concluded that a 'Characteristic Situation 2' was present on site. Elevated VOC concentrations, when compared to the Health and Safety Executive's (HSE) Occupational Long term Exposure Limit to Volatile Organic Compounds, were also identified on site.

It should be noted that subsequent consultation with Highland Council revealed that they would prefer to have seen the VOC risk assessment carried out using CLEA methodology.



#### A5.4 Updated Conceptual Site Model

This information was used to update the CSM and provide recommendations for further assessment. The updated CSM is shown in **Table 6**.



Table 6 : Updated Conceptual Site Model After Assessment of Ground Investigation Data

Source	CoC's	Potential Pathways	Potential Receptors	Assessment	Potential Severity	Potential Probability	Risk Class	Remediation Required
Contaminated Made Ground Leaching into groundwater environment and pore space migration to surface water environment	Cadmium (dissolved)	Direct Contact with Contaminated Soils, Inhalation & ingestion	End-users	No exceedances above Tier 1 Generic Assessment Criteria for a Commercial end-use were identified from the soil samples tested and as such no further action is required.	Moderate	Moderate	Low	No
	Chromium (dissolved)							
Buried Peat deposits & made Ground (Source of Ground Gases)	Copper (dissolved)	Leaching & Migration to groundwater and surface water	Groundwater Environment	A number of TPH exceedances were identified in the second monitoring visit in RBH10 which is at the former location of the diesel generator. These may present a complete pollutant linkage if groundwater is encountered during earthworks or deep basement excavations in this area.	Moderate	Moderate	Moderate	Yes- Regulatory liaison required to determine if further risk assessment/ remediation is required
	Mercury (dissolved)		Surface Water Environment	Various exceedances above Surface Water criteria were identified for a number of determinants over both monitoring visits. A complete pollutant linkage is unlikely however remains possible.				
Spilled Fuel / Oils (Elevated VOC)	Petroleum Hydrocarbons	Accumulation of vapours within buildings and service conduits	End Users Construction and Maintenance Workers	Post fieldwork monitoring identified elevated levels of Carbon Dioxide (max 5.7%), VOCs (max 39.5ppm) and Hydrogen Sulphide (max 22.0ppm). It is considered that a potential complete pollutant linkage is present with regards to ground gas and VOCs.	Severe	Severe	Severe	Yes- CS2 Ground Gas, VOC and H <sub>2</sub> S Defence System required in all structures
	PAHs							
	Ground Gas (Elevated Carbon Dioxide)	Direct Contact with Contaminated Soils	Building, Fabric and Services	A UKWIR assessment undertaken at the site identified that due to elevated levels of Amines, PVC or Barrier type water supply pipes should be used for the Proposed Development.	Severe	Severe	Severe	Yes- PVC or Barrier type water supply pipes to be used

Kyleakin Fish Feed Plant  
Environmental Statement



Source	CoC's	Potential Pathways	Potential Receptors	Assessment	Potential Severity	Potential Probability	Risk Class	Remediation Required
	Elevated VOC							