

REGISTER OF ENVIRONMENTAL ASPECTS AND IMPACTS Version 1 July 2009

Key Activities and Code

a)	Demolitions works	v)	Working in environmentally sensitive areas (habitat, species, etc)
b)	Asbestos removal	w)	Deep drainage
c)	Piling works	x)	Services into site
d)	Site Clearance / re-grade levels	y)	Cutting works – use of Stihl saw and floor saws
e)	Major earth moving and haulage	z)	Soft landscaping works
f)	Removal / remediation of contaminated land	aa)	Chemical use and storage (powders)
g)	Ground consolidation works – chemical	bb)	Stockpile storage
h)	Steel Erect	cc)	General site activities and materials storage
i)	Concrete works / pour	dd)	Office activities
j)	Roof works	ee)	Use of plant and machinery
k)	Scaffolding	ff)	Use and storage of fuels and oils
l)	Dry lining / partitions	gg)	Use and storage of chemicals (liquids)
m)	M & E works	hh)	Use of energy
n)	Glazing works	ii)	Use of water
o)	Plastering works	jj)	Materials haulage to site
p)	Mechanical excavation	kk)	Kit erect
q)	Disposal of excavation materials	ll)	Removal of invasive species
r)	Formation of footpath, carriageway	mm)	Blockwork / brickwork
s)	Blacktop laying	nn)	Wastes removal from sites
t)	Sports field construction		
u)	Design works		

Explanatory note:

Control marked X means SMG can control the aspect

Influence marked X means that SMG can reasonably expect to influence the aspect

Legal requirement marked X means that the aspect is covered by a legal requirement.

Normal / Abnormal / Emergency marked X means that the aspect will have an impact under normal operating conditions and / or abnormal as appropriate and / or emergency conditions as appropriate.

Significant is marked and rated S for significant and N for not significant.

Detailed Descriptions of Aspects and Impacts

AIR EMISSIONS - DUSTS

AIR EMISSIONS – GASES, LIQUIDS, VAPOURS

EMISSIONS TO WATER

EMISSIONS TO LAND – CONTROLLED WASTES

NOISE AND VIBRATION EMISSIONS

SPECIAL WASTES EMISSIONS

LOCAL ENVIRONMENT

ENERGY USE AND ASSOCIATED CO2 EMISSIONS

AIR EMISSIONS – DUSTS

No	Aspect Description & Activity Covered	Control	Influence	Aspect Direct or Indirect	Impacts	Activities, Products and Services (code)	Legal requirement	Normal	Abnormal	Emergency Significance level = N or S	
Air Emissions – Dusts											
1.	Dust emissions arising from excavation	X	X	Direct	Under section III of the Environmental Protection Act 1990, dust can be classified as a statutory nuisance if it is a nuisance or if it is prejudicial to health. Dust provoke and aggravate respiratory disorders and thereby cause harm to human health.	Activity - excavation and break out works (a,s,e,f,p,q,t,w,x,z)	X		X	X	2x3 =6 N
2.	Dust emissions from cutting works	X	X	Direct	Under section III of the Environmental Protection Act 1990, dust can be classified as a statutory nuisance if it is a nuisance or if it is prejudicial to health. Dust provoke and aggravate respiratory disorders and thereby cause harm to human health. Under COSHH and HSW Act 1974 silica dusts from granites and sandstones recognised carcinogen.	Activity - cutting stone and road / footpath surfaces (a,mm,r)	X	X	X	X	3x3 =9 S
3.	Dust emissions from hauling activities	X	X	Direct	Under section III of the Environmental Protection Act 1990, dust can be classified as a statutory nuisance if it is a nuisance or if it is prejudicial to health. Dust provoke and aggravate respiratory disorders and thereby cause harm to human health.	Hauling excavation / soil from site and materials to site (e,ii)	X		X	X	2x3 =6 N
4.	Dust emissions from site in dry conditions.	X	X	Direct	Under section III of the Environmental Protection Act 1990, dust can be classified as a statutory nuisance if it is a nuisance or if it is prejudicial to health. Dust provoke and aggravate respiratory disorders and thereby cause harm to human health.	General site activities and materials storage (cc,bb,a,p,w,d,a,w,x)	X		X	X	1x2 =2 N
5.	Dusts from powders – cements, grouts, etc.	X	X	Direct	Under section III of the Environmental Protection Act 1990, dust can be classified as a statutory nuisance if it is a nuisance or if it is prejudicial to health. Dust provoke and aggravate respiratory disorders and thereby cause harm to human health. Powders are also corrosive to eye and respiratory systems and controlled under COSHH.	Mixing operations for mortar / grouts, etc. (mm,o,g)	X		X	X	1x2 =2 N

No	Aspect Description & Activity Covered	Control	Influence	Aspect Direct or Indirect	Impacts	Activities, Products and Services (code)	Legal requirement	Normal	Abnormal	Emergency Significance	level = N or S
6.	Dusts from demolition works	X	X	Direct	Under section III of the Environmental Protection Act 1990, dust can be classified as a statutory nuisance if it is a nuisance or if it is prejudicial to health. Dust provoke and aggravate respiratory disorders and thereby cause harm to human health.	Demolition works (a,d)	X	X	X	X	3x3 1-9 S

AIR EMISSIONS – LIQUIDS, GASES, VAPOURS

No	Aspect Description	Control	Influence	Aspect Direct or Indirect	Impacts	Activities, Products and Services (code)	Legal requirement	Normal	Abnormal	Emergency Significance level	
Air Emissions – aerosols / gases / vapours											
1.	Vapours / gases from line marking burn off, etc	X	X	Direct (contractor)	Under section III of the Environmental Protection Act 1990, noxious vapours / gases can be classified as a statutory nuisance if it is a nuisance or if it is prejudicial to health. Noxious vapours gases can provoke and aggravate respiratory disorders and thereby cause harm to human health.	Line burn off with thermal lance – undertaken by contractor. (s)	X	X	X	X	2x2 =4 N
2.	Solvent vapours from tar / blacktop	X	X	direct	Under section III of the Environmental Protection Act 1990, noxious vapours / gases can be classified as a statutory nuisance if it is a nuisance or if it is prejudicial to health. Noxious vapours gases can provoke and aggravate respiratory disorders and thereby cause harm to human health.	Laying of blacktop sub base and wearing layer. Solvent from tar (r,s)	X			X	2X2 =4 N
3.	Solvent vapours from aerosol sprays Gases from spent paslode cartridges	X	X	direct	Under section III of the Environmental Protection Act 1990, noxious vapours / gases can be classified as a statutory nuisance if it is a nuisance or if it is prejudicial to health. Noxious vapours gases can provoke and aggravate respiratory disorders and thereby cause harm to human health. Empty containers are a special waste and segregated for recycling.	From general joinery works. From marking out and setting out operations (kk,j).	X		X	X	2X2 =4 N
4.	Emissions from shutter release agents / admixtures	X	X	direct	Under section III of the Environmental Protection Act 1990, noxious vapours / gases can be classified as a statutory nuisance if it is a nuisance or if it is prejudicial to health. Noxious vapours gases can provoke and aggravate respiratory disorders and thereby cause harm to human health.	From concrete works (i)	X		X	X	2X2 =4 N

EMISSIONS TO WATER

No	Aspect Description	Control	Influence	Aspect Direct or Indirect	Impacts	Activities, Products and Services (code)	Legal requirement	Normal	Abnormal	Emergency Significance level
Emissions to water courses										
1.	Site clearance and vegetation strip followed by heavy rain creating silt run off	X	X	Direct	Silt run off can cause high suspended solids and silt loading to be emitted into controlled waters. This has a suffocating effect on fish and other aquatic organisms and can create a blanket effect on the river beds destroying small invertebrates and spawning grounds. Such emissions are tightly controlled via the Controlled Activities Regulations.	Site strip / clearance (d,bb,e,p,v)	X		X	X 3X3=9 S
2.	Stock / earth piles can be the cause of site run off during periods of heavy rain	X	X	Direct	Silt run off can cause high suspended solids and silt loading to be emitted into controlled waters. This has a suffocating effect on fish and other aquatic organisms and can create a blanket effect on the river beds destroying small invertebrates and spawning grounds. Such emissions are tightly controlled via the Controlled Activities Regulations.	Soil / stockpile storage. Major earth moving (bb,e)	X		X	X 3X3=9 S
3.	Run off from concrete works during heavy rain. Should be limited as works will be covered to protect product.	X	X	Direct	Silt run off can cause high suspended solids and silt loading to be emitted into controlled waters as well as Cr metals. This has a suffocating effect on fish and other aquatic organisms and can create a blanket effect on the river beds destroying small invertebrates and spawning grounds. Such emissions are tightly controlled via the Controlled Activities Regulations.	Concrete works (i)	X		X	X 2X3=6 N
4.	Run off from wheel washing on major earth works projects. Control via enclosed wash bay system or brush.	X	X	Direct	Silt run off can cause high suspended solids and silt loading to be emitted into controlled waters. This has a suffocating effect on fish and other aquatic organisms and can create a blanket effect on the river beds destroying small invertebrates and spawning grounds. Such emissions are tightly controlled via the Controlled Activities Regulations.	Major earth works (e,f,g,ee)	X		X	X 3X3=9 S
5.	Run off from mud on road entering drainage system.	X	X	Direct	Silt run off can cause high suspended solids and silt loading to be emitted into controlled waters. This has a suffocating effect on fish and other aquatic organisms and can create a blanket effect on the river beds destroying small invertebrates and spawning grounds. Such emissions are tightly controlled via the Controlled Activities Regulations.	Major earth works and haulage (e,f,g,ee)	X		X	X 3X3=9 S

No	Aspect Description	Control	Influence	Aspect Direct or Indirect	Impacts	Activities, Products and Services (code)	Legal requirement	Normal	Abnormal	Emergency Significance level	
6.	Water emissions from de-watering / pump out operations	X	X	Direct	Silt run off can cause high suspended solids and silt loading to be emitted into controlled waters. This has a suffocating effect on fish and other aquatic organisms and can create a blanket effect on the river beds destroying small invertebrates and spawning grounds. Such emissions are tightly controlled via the Controlled Activities Regulations. Very dependant upon volumes and proposed discharge points.	General site activities, pump put excavations / earth works, etc. (d,e,f,g,i,t,cc)	X		X	X	3X3 =9 S
7.	Emissions from stored oil / fuel on site. Drums, tanked and containerised	X	X	Direct	Oil and fuels can be very damaging and pervasive in the natural water - environment to both aquatic and mammalian life. The Oil Storage Regulations place controls on oil storage in relation to secondary containment amongst others.	Use and storage of fuels and oils (ff)	X		X	X	3X4 =12 S
8.	Chemical storage	X	X	Direct	Certain chemicals can be very damaging and pervasive in the natural water - environment to both aquatic and mammalian life. The MSDS gives an indication as to the appropriate storage requirements for the relevant chemical. The COPA and CAR may apply in the event of discharge.	Use and storage of chemicals (aa)	X		X	X	2X3 =6

EMISSIONS TO LAND – CONTROLLED WASTES

No	Aspect Description	Control	Influence	Aspect Direct or Indirect	Impacts	Activities, Products and Services (code)	Legal requirement	Normal	Abnormal	Emergency Significance	level
Waste emissions to land – controlled wastes											
1.	Clean top / sub soil from site strip / site re-grade.	X	X	Direct	Top / sub soil from a site is a controlled waste and must be taken to a fully licensed land fill site capable of taking such wastes. This will take up landfill capacity which may be better utilised. Such waste is subject to a system of transfer notes under the EPA Duty of Care. Alternatively an exemption may be in place with SEPA / EA which will allow clean soil to be re-used on another location.	Site clearance / site re-grade. (d,e,z,t, nn)	X	X	X	X	2X3 =6 N
2.	Contaminated top / sub soil from site strip re-grade	X	X	Direct	Contaminated top / sub soil from a site may be a special waste dependant upon the analysis and must be taken to a fully licensed land fill site capable of taking such wastes. This may take up landfill capacity which may be better utilised. Such waste is subject to a system of pre-notification and consent notes under the Special Wastes Regs / Hazardous wastes regs. .	Contaminated land remediation. (f,ll,nn)	X	X	X	X	2X4 =8 S
3.	Inert material from excavation / break out/ footpath, carriageway construction, etc.	X	X	Direct	Inert materials from site are re-used on site where ever possible as fill / level materials. In all other instances where inert material is destined fro landfill, such materials are a controlled waste and subject to standard Duty of Care controls, although This will take up landfill capacity which may be better utilised	Excavation / demolition works (a,d,e,w,mm,nn)	X	X	X	X	2X3 =6 N
4.	Timber taken from kit erect, palletised materials, etc.	X	X	Direct	Timber is usually a segregated waste stream which is intended for recycling and this will be reflected in the SWM plan. Alternatively the waste management contractor may segregate at a waste transfer station. If going on a standard waste skip then the timber is controlled waste and subject to the Duty of Care and transfer notes, etc. If destined for general landfill then this may tale up space which may be better utilised.	Kit erect, joinery, materials delivery (kk, j, jj)	X	X			1X1 =1 N
5.	Office wastes from construction sites – paper polythene, etc	X	X	Direct	Office waste enters the general waste stream as a controlled waste and is destined for landfill and subject to the Duty of Care and transfer note system, etc.	General office activities on site. (DD)	X	X			1X1 =1 N

No	Aspect Description	Control	Influence	Aspect Direct or Indirect	Impacts	Activities, Products and Services (code)	Legal requirement	Normal	Abnormal	Emergency Significance level	
6.	Green wastes from site clearance	X	X	Direct	Green wastes from site is a controlled waste and must be taken to a fully licensed land fill site capable of taking such wastes Such waste is subject to a system of transfer notes. Some type of waste can be chipped and spread on site. This is an active waste which will de-gas in the landfill and contribute to CO2 emissions.	General site clearance of trees / shrubs etc. (d)	X	X	X	X	2x2 =4 N
7.	Plasterboard wastes from dry lining and plaster works	x	x	Direct	Plasterboard wastes are a biodegradable waste which must be separated in England and Wales and sent to a landfill dedicated cell. In Scotland the waste is treated as a controlled active waste. There are recycling streams for plasterboard waste that may be commercially viable given project locations.	Dry lining / fit out (l,m,o)	x	x			2x3 =6 N
8.	Metal from steel erect, fit out works, etc	x	x	Direct	Metals are an inert waste that are fully recyclable stream, landfill of metals takes up capacity that would otherwise be better used.	Steel erect, M&E fit out works, etc. (h,l,m)	x	x			1x1 =1 N

NOISE AND VIBRATION EMISSIONS

No	Aspect Description	Control	Influence	Aspect Direct or Indirect	Impacts	Activities, Products and Services (code)	Legal requirement	Normal	Abnormal	Emergency Significance	level
Noise and Vibration Emissions											
1.	Piling works generating noise and vibration.	X	X	Direct	Impacts are very dependant upon the type of piling being undertaken Noise is controlled under section III of the Environmental Protection Act 1990 in that it can generate a statutory nuisance. Vibration can cause damage to nearby buildings, bridges and structures.	Piling works (c)	X	X	X	X	2X3 =6 N
2.	Excavation works in built environment generating noise and vibration	X	X	Direct	Impacts are dependant upon the type of works being undertaken Noise is controlled under section III of the Environmental Protection Act 1990 in that it can generate a statutory nuisance. Restrictions normally exist on working hours to minimise the risk from such works.	Excavation works in built environment (a,c,e,f,q,p,w,x)	X	X	X	X	3X3 =9 S
3.	Use of Stihl saws and floor saws	X	X	Direct	Impacts are dependant upon the type of works being undertaken Noise is controlled under section III of the Environmental Protection Act 1990 in that it can generate a statutory nuisance. Restrictions normally exist on working hours to minimise the risk from such works and in some instances a set aside area may be created in the site compound to cut risk further.	Cutting of materials (y)	X	X	X	X	3X3 =9 S
4.	Use of plant and machinery	X	X	Direct	Noise is controlled under section III of the Environmental Protection Act 1990 in that it can generate a statutory nuisance. All plant and equipment is subject to routine maintenance to ensure noise levels are kept as low as practicable.	Use of plant and machinery (ee)	X	X	X	X	2X3 =6 N

SPECIAL WASTES EMISSIONS

No	Aspect Description	Control	Influence	Aspect Direct or Indirect	Impacts	Activities, Products and Services (code)	Legal requirement	Normal	Abnormal	Emergency Significance	level
Waste emissions to land – special wastes											
1.	Contaminated top / sub soil from site strip re-grade	X	X	Direct	Contaminated top / sub soil from a site may be a special waste dependant upon the analysis and must be taken to a fully licensed land fill site capable of taking such wastes Such waste is subject to a system of pre-notification and consignment notes.	Contaminated land remediation. (f,ll)	X	X	X	X	3X3 =9 S
2.	Contaminated fuels / oils	X	X	Direct	Drums of fuel / oils may become contaminated with water during the course of a project. These will require to be disposed of as a special waste subject to consignment notes and pre-notification to SEPA.	General site activities (cc,ff)	X	X	X	X	3X3 =9 S
3.	Chemical stock (out of date concrete / mortar additives, etc)	X	X	Direct	On longer term projects there may be excess stock / out of date additives, etc These should be dispose of as Special Waste subject to consignment notes and pre-notification to SEPA.	General site activities (cc)	X		X	X	1X3 =3 N

LOCAL ENVIRONMENT

No	Aspect Description	Control	Influence	Aspect Direct or Indirect	Impacts	Activities, Products and Services (code)	Legal requirement	Normal	Abnormal	Emergency Significance level	
Disturbance of local environment, flora and fauna											
1.	Site strip re-grade causing disturbance to local environment flora and fauna.	X	X	Direct	Local site strip can cause damage to local flora and fauna (e.g. badgers, foxes, newts, etc) which may be in breach of the Wildlife Act. These are carefully controlled and monitored by client specialist and direct advice taken regarding control measures where required..	Site strip / prep and re-grade (d,e,f,cc)	X	X	X	X	2X4 =8 S
2.	Dewatering projects pumping water from local wetland habitats	X	X	Direct	Local areas may have rare populations of amphibians (smooth and great crested newts) disturbance of which may be in breach of the Wildlife Act. These are carefully controlled and monitored by client specialist and direct advice taken and implemented regarding control measures.	Site de-watering (O)	X	X	X	X	3X3 =9 S
3.	General site operations being undertaken which may disturb local population in built environment.	X	X	Direct	Mostly a statutory nuisance type impact controlled under Section III of the Environmental Protection Act 1990. Workings hours, methods, neighbourhood notification / consultation and site layout are agreed in advance to mitigate any such risks.	General works within built environment (DD)	X	X	X	X	2X2 =N
4.	Design aspects impacting upon local environment	X	X	Direct, although can be indirect	Local build styles / features can impact upon aesthetics of local environment. Failure to incorporate environmental initiatives / environmentally sensitive / pro-active features into finished site / project design.	Design aspects (u)	X	X			1x1 =1 N

ENERGY USE AND ASSOCIATED CO2 EMISSIONS

No	Aspect Description	Control	Influence	Aspect Direct or Indirect	Impacts	Activities, Products and Services (code)	Legal requirement	Normal	Abnormal	Emergency Significance	level
Use of energy – gas, electricity, oils & fuels											
1.	General site operations being undertaken.	X	X	Indirect	Use of electrical power on site – not an intensive electrical power use operation generally speaking limited to general office site activities.	General site and office activities (cc)		X	X	X	1X1 =1 N
2.	Design works	x	x	Direct, although can be indirect	Failure to capitalize and design in waste reduction strategies at a very early design stage for the construction project and failure to embrace all reasonable practicable solutions for ongoing energy usage in the building / structures – including heat sources, lighting, water supplies, etc.	Project Construction and finished product. (u)	x	x			2x2 =4 N
3.	Haulage of soil / materials from site	x	x	Direct	Fuel use and subsequent vehicle emissions can add to CO2 levels. The use of local companies minimises this impact as well as embracing recycling and re-use strategies to minimise load numbers hauling from site.	Haulage of material from site (nn,a,b,d,e,f,q)	x	x	x		2x2 =4 N
4.	Haulage of building materials to sites	x	x	Direct	Fuel use and subsequent vehicle emissions can add to CO2 levels. The use of local companies minimises this impact as well as embracing recycling / re-use strategies to minimise load numbers hauling to site.	Haulage of materials to site (jj)	x	x			2x2 =4 N

APPENDIX ONE

Environmental Risk Rating Matrix and Significance Test
Risk = Probability x Severity

RISK RATING (R) Likelihood (L) x Severity (S)		HAZARD SEVERITY (S)				
		(1) Negligible Negligible harm to environment	(2) Slight Minor environmental incident	(3) Moderate Injury leading to a moderate environmental incident	(4) High Involving a major incident (major spill / chemical release/ fish kill)	(5) Very High Catastrophic incident impacting more than one media
LIKELIHOOD OCCURRENCE (L)	(1) Very Unlikely A freak combination of factors would be required to create an environmental incident.	LOW	LOW	LOW	LOW	MEDIUM
	(2) Unlikely A rare combination of factors would be required to create an environmental incident.	LOW	LOW	LOW	MEDIUM	MEDIUM
	(3) Possible Could happen when additional factors are present but otherwise unlikely to occur	LOW	LOW	MEDIUM	MEDIUM	HIGH
	(4) Likely Not certain to happen but an additional factor may result in an incident	LOW	MEDIUM	MEDIUM	HIGH	HIGH
	(5) Very Likely Almost inevitable that an incident would result	MEDIUM	MEDIUM	HIGH	HIGH	HIGH

LOW RISK

Deemed not to be significant within company EMS.

MEDIUM RISK

Deemed significant within the context of company EMS.

HIGH RISK

Deemed significant within context of company EMS.
Activity should be redefined or further control measures put in place to reduce risk. The controls should be re-assessed for adequacy prior to task commencement.