



PROJECT:

**Vartry Water Supply Project - Water Treatment Plant &
Reservoir Upgrade Contract**

(IW Ref 16/085)

DOCUMENT:

ENVIRONMENTAL ASPECTS & IMPACTS

Document Control Sheet

Client:	Irish Water
Project Title:	Vartry Water Supply Project – Water Treatment Plant & Reservoir Upgrade Contract (IW Ref 16/085)
Document Title:	Environmental Aspects and Impacts
Filename:	VAR-VEO-ZZ-ZZ-RG-Z-0004_Environmental Aspects & Impacts

Document Revision			Document Verification		
Issue Date (DD/MM/YY)	Revision Code	Suitability Code	Author (Initials)	Reviewer (Initials)	Approver (Initials)
27/08/2018	P01.01	S0	TS	RL	CMG
25/09/2018	P01	S3	TS	KMQ	MB

Aspects Risk Assessment - Aspects and Impacts Register Vartry WTW

Environmental Aspects/Impacts Register

Site: VARTRY WTP Activity/Aspect	Activity:																	Activity Ranking	Aspect Risk Rating								
	Energy Use	Resource Use	Waste	Noise	Air	Ground Pollution	Visual	Vibration	Odour											Pests and Vermin	Litter	Traffic/Highway	Ecology	Water	Climate	Material Assets	Legislative Breach
Energy Use Plant & Equipment /Construction Machinery	1	1	0	0	1	0	0	1	0									0	0	0	0	1	0	0	0	5	LOW
Chemical Use	1	1	1	0	1	1	0	0	0									1	1	1	1	1	0	0	1	11	Mod
Office & Administration	1	1	1	0	0	0	1	0	0									1	1	0	0	0	1	1	1	9	Mod
Laboratory	1	1	1	0	0	0	0	0	1									1	1	0	0	1	0	0	2	9	Mod
Sludge Management	1	1	1	1	1	0	1	0	1									0	0	1	0	0	0	0	1	9	Mod
Grounds Maintenance	0	1	1	1	1	1	0	0	0									1	0	0	1	1	0	0	1	9	Mod
Potable Water Treatment Process	1	1	1	1	0	1	0	0	0									1	1	0	1	1	0	0	1	10	Mod
Noise	1	1	1	1	0	0	0	1	0									0	0	1	1	0	0	1	1	9	Mod
Construction Activities	1	1	1	1	1	1	0	1	0									1	1	1	1	1	1	1	1	15	High
Protection of Water Sources	0	1	1	0	1	1	1	0	0									1	1	1	0	1	0	1	1	11	Mod
Waste Management	1	1	1	1	1	0	1	0	1									1	1	1	1	1	1	1	1	15	High
Protection of Fauna & Habitats	0	1	1	0	1	1	1	0	0									1	1	1	1	1	0	1	1	12	Mod
																										0	
																										0	
																										0	
																										0	
																										0	
																										0	
																										0	
Total Effect	9	12	11	6	8	6	5	3	3								9	8	7	7	9	3	6	12	124		



Aspects Risk Assessment - Aspects and Impacts Register VARTRY WTP

Veolia Workplace Aspect Assessment Worksheet

Workplace:	VARTRY WTP	Assessed by:	Tadhg Donnelly	Reviewed by:	Caroline McGee				
ASPECT/ASPECT	Sheet 1	Date:	Apr-17	Date:	Apr-17				
Product	Yes	ENERGY USE PLANT & EQUIPMENT & CONSTRUCTION MACHINERY							
Service	No								
Activity	No								
Abnormal	No								
Impact	Hazard	Risk Level Before Controls			Hazard/Risk Control Measures (Existing and New)	Residual Risk Level - After Controls			Sign-off complete
		L	C	R		L	C	R	
For each Aspect consider the consequences for the following Impact	For each impact describe the nature of the impact and the environmental hazard which may develop as a consequence in the absence of control measures.	Likelihood x Consequence = Risk Level				Likelihood x Consequence = Risk Level			
Energy Use	Electricity use for operating plant and equipment including electrical equipment for maintenance, management of lighting and electrical systems. Electricity use to run plant and machinery including office equipment eg computers etc.	4	2	8	Training is provided efficient use of tools and equipment to ensure that tools are only plugged in and used when required. Planned preventative maintenance and inspections on equipment used increases efficiency. Energy efficient tools are used where possible. The team encourage sites where possible to use energy efficient equipment. Power meter on the incoming power supply	1	1	1	
Resource Use	Water from the river is used as the main resource, could lead to low level, or low flow conditions	3	2	6	Automated flow control in use, river monitoring station downstream of inlet which monitors flow and level, Low flow alarms activated.	1	1	1	
Waste	N/A	0	0	0		0	0	0	
Noise	N/A	0	0	0		0	0	0	
Air	Release of halogenated compounds from refrigeration and air conditioning units	4	2	8	Planned preventative maintenance minimises release to atmosphere. Switching off of units when not in use or required. All hazardous waste is disposed of in correct manner	1	1	1	
Ground Pollution	N/A	0	0	0		0	0	0	
Visual	N/A	0	0	0		0	0	0	
Vibration	N/A	2	1	1	Planned preventative maintenance and switching off of units when not in use or required.	1	1	1	
Odour	N/A	0	0	0		0	0	0	
Pests & Vermin	N/A	0	0	0		0	0	0	
Litter	N/A	0	0	0		0	0	0	
Traffic & Highway	N/A	0	0	0		0	0	0	
Ecology	N/A	0	0	0		0	0	0	
Water									
Contamination	Fuelling may leak to leaks / spills	2	2	4	Designated area for fuelling plant	1	1	1	
Climate	N/A	0	0	0		0	0	0	
Material Assets	N/A	0	0	0		0	0	0	
Legislative Breach	N/A	0	0	0		0	0	0	



Aspects Risk Assessment - Aspects and Impacts Register VARTRY WTP

Veolia Workplace Aspect Assessment Worksheet

Workplace:	VARTRY WTP	Assessed by:	Tadhg Donnelly			Reviewed by:	Caroline McGee			
ASPECT	Sheet 2	Date:	03-Apr-17			Date:	03-Apr-17			
Product	Yes	CHEMICAL MANAGEMENT								
Service	No									
Activity	Yes									
Abnormal	No									
Impact	Hazard	Risk Level Before Controls			Hazard/Risk Control Measures (Existing and New)	Residual Risk Level - After Controls			Sign-off complete	
		L	C	R		L	C	R		
<i>For each Aspect consider the consequences for the following Impact</i>		<i>For each impact describe the nature of the impact and the environmental hazard which may develop as a consequence.</i>			<i>L ikelihood x C onsequence = R isk Level</i>			<i>L ikelihood x C onsequence = R isk Level</i>		
Energy Use	Energy required for level sensors, and pumping at operations.	2	2	4	Power meter on incoming mains supply, HMI control and VSD's on all dosing pumps	1	1	1		
Resource Use	Chemical supplied by external contractor, dosing based on raw water requirements	3	2	6	Chemical tanks have level sensors, all chemical deliveries are supervised in accordance with Veolia procedures. Dosing is done via HMI and automated setpoints. Flow meters installed to ensure no over/under dosing	1	1	1		
Waste	Chemicals are a hazardous waste, and tanks require cleaning, resulting in large volumes of chemical waste. Any spillages during deliveries or equipment failure is regarded as waste	3	3	9	All chemicals are stored in banded tanks, and banded IBC's with level sensors and deliveries are supervised to ensure no spills. All waste removed by chemical waste contractor. Operators are trained in chemical spill management, SDS and COSHH assessments are available at all bulk containment areas, Underground catchment pits available adjacent to all chemical storage areas. Visual bund checks are undertaken and recorded	1	1	1		
Noise	N/A	0	0	0		0	0	0		
Air	In the case of spillage or accidental mixing of chemicals an air plume may form from certain chemicals used in the treatment process. Lack of delivery supervision could result in the transfer of the wrong chemical into a tank/IBC resulting in toxic gas emissions	2	4	8	All chemicals are stored in banded tanks and banded IBC's. Deliveries are supervised, and paperwork is checked according to the chemical delivery checklist provided. Samples are taken of Aluminium Sulphate during and prior to every delivery. Spills can be contained in underground catchment pits. Spill kits are provided	1	1	1		
Ground Pollution	In case of spillage, chemicals may enter the water course causing contamination of the water sources and may affect aquatic and plant life and water quality	2	4	8	All chemicals are stored in banded tanks and banded IBC's. Deliveries are supervised, and paperwork is checked according to the chemical delivery checklist provided. Samples are taken of water to ensure quality is not affected. Spills can be contained in underground catchment pits Spill kits are provided. Sampling will be undertaken in the event of a spill entering the water course/grounds. Chemical waste is removed by an approved Hazardous Waste Contractor and a Waste Transfer Form is provided and retained at the workplace	1	1	1		
Visual	N/A									
Vibration	N/A	0	0	0		0	0	0		
Odour	N/A	0	0	0		0	0	0		
Pests & Vermin	Pests could damage the chemical dosing lines, or the electrical cables for the level sensors	2	3	6	Sub-contractor employed on site for pest control. All chemicals dosing lines sealed in PVC pipework, monthly visual checks on all chemical dosing lines	1	1	1		
Litter	Litter may collect within chemical bunds, leaves etc will build up during winter months	2	2	4	Monthly bund inspection to clear any litter/debris. Water is removed from bunds and sampled before disposal	1	1	1		
Traffic & Highway	Chemical deliveries are via Bulk Tanker /articulated lorry, access to site may be compromised, high volumes of traffic	2	3	6	All chemical deliveries are supervised. Drivers must comply with site rules regarding wheel chocks during deliveries. Deliveries are ordered as per Veolia requests, so multiple deliveries at one time can be avoided. Entrance gate is automated, and site is off the main highway, with ample parking space and turning area.	1	1	1		

	Hazardous chemicals could have detrimental effects in the case of an uncontrolled spillage or release.				All chemicals are stored in bunded tanks, and bunded IBC's with level sensors Chemical deliveries are undertaken by trained ADR drivers. Deliveries are supervised to ensure no spills. All waste removed by chemical waste contractor WTF provided. Veolia Operators are trained in chemical spill management, SDS and COSHH assessments are available at all bulk containment areas, Underground catchment pits available adjacent to all chemical storage areas.				
Ecology		3	4	12		1	1	1	
	Chemicals are dosed into raw water for treatment process. Uncontrolled dosing or spillage could effect final water quality, or pollute receiving waters. Chemical containers may leak causing contamination of land /water				All chemicals are stored in bunded tanks, and bunded IBC's with level sensors and deliveries are supervised to ensure no spills. Operators are trained in chemical spill management, SDS and COSHH assessments are available at all bulk containment areas, Underground catchment pits available adjacent to all chemical storage areas. Dosing is controlled via HMI and operator adjustable setpoints. Alarms are available for final water quality parameters and sampling regime in place				
Water Contamination		3	3	9		1	1	1	
	N/A								
Climate									
Material Assets	N/A								
	Incorrect chemical dosing could impact on and breach SI278 of 2007 (Drinking Water Regs) wrt water quality. Compliance with DBO contract with the client (Irish Water) on water quality. Discharge/Permit consents				Calibrated Flow meter on the Aluminium Sulphate dosing, level sensors on chemical storage can indicate over/under dosing. Continuous water quality monitors are available at all stages of the treatment process, and are alarmed to indicate a issue with water quality. Plant will shut down automatically if water quality is in breach of the limits. Sampling and testing regime is implemented . In the unlikely event of an incident it will be fully investigated for root cause record and details provided to the client in line with Incident Reporting requirements. Incidents are also escalated through Veolia Incident Escalation Protocol and Crisis Hotline (Ireland)				
Legislative Breach		3	3	9		1	1	1	

Aspects Risk Assessment - Aspects and Impacts Register VARTRY WTP

Veolia Workplace Aspect Assessment Worksheet											
Workplace:		VARTRY WTP		Assessed by:		Tadhg Donnelly		Reviewed by:		Caroline McGee	
ASPECT		Sheet 3		Date:		03-Apr-17		Date:		03-Apr-17	
Product		No		OFFICE & ADMINISTRATION							
Service		No									
Activity		Yes									
Abnormal		No									
Impact	Hazard	Risk Level Before Controls			Hazard/Risk Control Measures (Existing and New)	Residual Risk Level - After Controls			Sign-off complete		
		L	C	R		L	C	R			
<i>For each Aspect consider the consequences for the following Impact</i>		<i>L likelihood x C consequence = Risk Level</i>			<i>For each hazard / risk list the existing or required control measures to be applied- Refer to Hazard Control Hierarchy and justify why control measure was selected.</i>			<i>L likelihood x C consequence = Risk Level</i>			
Energy Use	Use of electricity to run office equipment and workplace lighting	2	1	2	Energy saving lighting fittings used. Turn off lights when not in use. External lighting is on sensors	1	1	1			
Resource Use	use of water in relation to welfare & sanitary facilities	2	1	2	Consider fitment of restrictors on taps to control water flow.	1	1	1			
Waste	Increase in waste. Lack of segregation of waste categories. Recycling policies not considered	2	2	4	Waste is segregated and containers labelled. Recycling policy is implemented	1	1	1			
Noise	N/A	0	0	0		0	0	0			
Air	M/A	0	0	0		0	0	0			
Ground Pollution	N/A	0	0	0		0	0	0			
Visual	Buildings and surrounding area not maintained, Poor public image	1	1	1	Planned maintenance programme in place.	1	1	1			
Vibration	N/A	0	0	0		0	0	0			
Odour	N/A	0	0	0		0	0	0			
Pests & Vermin	Vermin contamination, health effects	2	1	2	Pest prevention policy implemented on site. Good housekeeping policy in place and food waste is disposed off safely	1	1	1			
Litter	Visual disturbance, poor public image, poor housekeeping controls	1	2	2	Housekeeping controls in place on CMMS	1	1	1			
Traffic & Highway	N/A	0	0	0		0	0	0			
Ecology	n/a	0	0	0		0	0	0			
Water Contamination	N/A	0	0	0		0	0	0			
Climate	Temperature not regulated or controlled in work environment increase in fuel use	2	2	4	Thermostats fitted. Good insulation provided	1	1	1			
Material Assets	Equipment not maintained	2	2	4	PPM in place and monitored	1	1	1			
Legislative Breach	Breach of contractual obligations	1	1	1	Contract requirements are noted and complied with	1	1	1			

Aspects Risk Assessment - Aspects and Impacts Register: VARTRY WTP

Veolia Workplace Aspect Assessment Worksheet

Workplace: VARTRY WTP		Assessed by: Tadhg Donnelly		Reviewed by: Caroline McGee					
ASPECT: Sheet 4		Date: 03-Apr-17		Date: 03-Apr-17					
Product	Yes/No	LABORATORY							
Service	Yes/No								
Activity	Yes/No								
Abnormal	Yes/No								
Impact	Hazard	Risk Level Before Controls			Hazard/Risk Control Measures (Existing and New)	Residual Risk Level - After Controls			Sign-off complete
		L	C	R		L	C	R	
<i>For each Aspect consider the consequences for the following Impact</i>		<i>Likelihood x Consequence = Risk Level</i>			<i>For each hazard / risk list the existing or required control measures to be applied- Refer to Hazard Control Hierarchy and justify why control measure was selected.</i>			<i>Likelihood x Consequence = Risk Level</i>	
Energy Use	Energy required for the equipment in the lab, lighting, storage etc	2	2	4	Power meter on incoming mains supply, equipment shuts down after period of inactivity. All lights/equipment shut down and turned off at night	1	1	1	
Resource Use	Chemicals are used in water testing, water used for cleaning	3	2	6	Chemicals are included in a chemical inventory, which is updated monthly. Water is supplied from site potable water supply.	1	1	1	
Waste	Lab waste is generated from routine testing, and mixing of chemicals. Spillages must be contained.	2	3	6	All waste is stored in a sealed blue drum, which is periodically removed by chemical waste contractor. Operators are trained in chemical spill management, SDS and COSHH assessments are available. Floor is sealed, and all spills are contained using spill kit available in lab	1	1	1	
Noise	N/A								
Air	N/A								
Ground Pollution	N/A								
Visual	N/A								
Vibration	N/A	0	0	0		0	0	0	
Odour	In the case of spillage, an air plume may form, in case of accidental mixing, some chemicals could form an odourous air plume	3	2	6	Fume cupboard available for analysis where air may be compromised due to fumes. Low level fumes are produced, which are extracted to atmosphere. Fume cupboard is calibrated annually	1	1	1	
Pests & Vermin	Pests could damage the boundary of the lab, or could spread disease to personnel working in the lab	3	2	6	Sub-contractor employed on site for pest control. Lab is within administration building which is sealed and locked at night	1	1	1	
Litter	Litter may arise from lab personnel, or from packaging of chemicals	2	3	6	Recycling and general waste bins are provided. No food or drink allowed in lab. Area is to be kept clean and tidy	1	1	1	
Traffic & Highway	N/A	0	0	0		0	0	0	
Ecology	N/A	0	0	0		0	0	0	
Water Contamination	Chemical waste is washed down sinks into drains and water courses.	3	3	9	Controlled work environment with trained lab personnel. Waste is disposed off safely including samples.	1	1	1	
Climate	N/A	0	0	0		0	0	0	
Material Assets	N/A	0	0	0		0	0	0	
Legislative Breach	Analysis is used to determine final water quality, and breaches of SI278 of 2007 (Drinking Water Regs). Veolia also has to honour the DBO contract with the client (Irish Water) on water quality.	3	4	12	Lab personnel are competent and trained in working within a laboratory. Continuous water quality monitors are available at all stages of the treatment process, and are alarmed to indicate a issue with water quality. Plant will shut down automatically if water quality is in breach of the limits. Lab tests are used to verify these monitors	2	1	2	

Aspects Risk Assessment - Aspects and Impacts Register VARTRY WTP

Veolia Workplace Aspect Assessment Worksheet										
Workplace:		VARTRY WTP		Assessed by:		Tadhg Donnelly		Reviewed by:		Caroline McGee
ASPECT		Sheet 5		Date:		03-Apr-17		Date:		03/04/2017
Product	Yes	SLUDGE MANAGEMENT								
Service	Yes									
Activity	Yes									
Abnormal	/No									
Impact	Hazard	Risk Level Before Controls			Hazard/Risk Control Measures (Existing and New)	Residual Risk Level - After Controls			Sign-off complete	
		L	C	R		L	C	R		
<i>For each Aspect consider the consequences for the following Impact</i>		<i>For each impact describe the nature of the impact and the environmental hazard which may develop as a consequence.</i>			<i>Likelihood x C consequence = Risk Level</i>			<i>Likelihood x C consequence = Risk Level</i>		
Energy Use	Centrifuges/sludge de-watering equipment are high users of energy	2	3	6	Equipment is operated via dedicated HMI's and VSD's which control power demand. All equipment is operated via operator-adjustable setpoints. Power meters supplied at mains incoming power.	1	2	2		
Resource Use	High consumer of water for polymer preparation and cleaning activities	2	2	4	Site service water used for cleaning. All cleaning is carried out once per day, centrate and filtrate are recycled through sludge treatment systems, including washwater	1	1	1		
Waste	Solid sludge produced from sludge de-watering activities is taken for disposal	2	2	4	Aluminium sludge is taken for composting or landfill, lime sludge is taken for land-spreading. All waste collections are recorded and transported according to Veolia procedures	1	1	1		
Noise	Sludge de-watering equipment such as centrifuges and belt presses are very noisy	2	2	4	PPE is provided for employees, equipment operated during working hours to reduce noise impacts on neighbours	1	1	1		
Air	Dust from dried sludge can impact on receiving air	2	2	4	Aluminium sludge is stored in sealed containers, and augers and drives are sealed. Lime sludge area is kept clean to minimise dust. Sludge collection lorries are covered.	1	1	1		
Ground Pollution	N/A	0	0	0		0	0	0		
Visual	Lime Sludge is stored in an open building, and can change colour.	2	1	2	Site is located away from visual amenities, with no unauthorised access.	1	1	1		
Vibration	N/A	0	0	0		0	0	0		
Odour	If sludge is stored for long periods, it could produce some odours	2	2	4	Regular collections and cleaning of storage tanks and areas prevent odour	1	1	1		
Pests & Vermin	N/A	0	0	0		0	0	0		
Litter	N/A	0	0	0		0	0	0		
Traffic & Highway	Sludge collected via HGV's and tractor and trailers.	2	1	2	with turning areas and parking spaces available. Tractors and trailers are	1	1	1		
Ecology	N/A	0	0	0		0	0	0		
Water Contamination	In the case of spillage, alum and lime sludge could impact on groundwater	0	0	0	Aluminium sludge is stored in sealed containers, and augers and drives are sealed. Collections are carried out according to Veolia procedures.	0	0	0		
Climate	N/A	0	0	0		0	0	0		
Material Assets	N/A	0	0	0		0	0	0		
Legislative Breach	Alum sludge is not to be spread on land in accordance with the EPA	1	2	2	Aluminium sludge is not allowed to be spread on land, so is therefore sent to landfill or composting. All filtrate or centrate is recycled through the sludge de-watering system	1	1	1		

Aspects Risk Assessment - Aspects and Impacts Register VARTRY WTP

Veolia Workplace Aspect Assessment Worksheet											
Workplace:		VARTRY WTP		Assessed by:		Tadhg Donnelly		Reviewed by:		Caroline McGee	
ASPECT		Sheet 6		Date:		03-Apr-17		Date:		03-Apr-17	
Product		No		GROUNDS MAINTENANCE							
Service		No									
Activity		Yes									
Abnormal		No									
Impact	Hazard	Risk Level Before Controls			Hazard/Risk Control Measures (Existing and New) <small>For each hazard / risk list the existing or required control measures to be applied- Refer to Hazard Control Hierarchy and justify why control measure was selected.</small>	Residual Risk Level - After Controls			Sign-off complete		
		L	C	R		L	C	R			
<small>For each Aspect consider the consequences for the following Impact</small>	<small>For each impact describe the nature of the impact and the environmental hazard which may develop as a consequence.</small>	<small>Likelihood x C onsequence = Risk Level</small>				<small>Likelihood x C onsequence = Risk Level</small>					
Energy Use	N/A	0	0	0		0	0	0			
Resource Use	All equipment is powered via petrol or diesel motors	2	2	4	Equipment is used only as required, and has a regular maintenance schedule	1	1	1			
Waste	Grass cuttings, weeds, litter collection and dead shrubs	2	2	4	Grass is mulched on site, all shrubs are removed to landfill. Litter is collected and stored in general waste bins provided on site, and recyclable bin where applicable	1	1	1			
Noise	Machinery is noisy for grass-cutting and strimmer operation	2	2	4	PPE is used by operators during landscaping works. Noise monitoring is taken during works and recorded.	1	1	1			
Air	Diesel and Petrol emissions, plumes from pesticides	2	2	4	Low levels of diesels are used. Only trained staff allowed to use pesticides, and must have correct PPE available	1	1	1			
Ground Pollution	Pesticides could impact on ground water and soil quality	3	3	9	Pesticides only used in controlled areas, organic pesticides used in areas close to open water. Hard surfaces only are sprayed, other areas are strimmed	1	1	1			
Visual	Poor landscaping can lead to aesthetically displeasing impacts	2	2	4	Landscaping carried out during construction phase and will be continued for operations	0	0	0			
Vibration	N/A	0	0	0		0	0	0			
Odour	N/A	0	0	0		0	0	0			
Pests & Vermin	Toxic bait can lead to pollution of surrounding area and water supplies	3	2	6	Non-toxic bait is used for pest control, only indicator controls are used, unless required.	1	1	1			
Litter	N/A	0	0	0		0	0	0			
Traffic & Highway	N/A	0	0	0		0	0	0			
Ecology	Pesticides could impact on ground water and soil quality. Pest control poison could lead to water pollution	2	2	4	Only non-toxic baits are used. Only organic pesticides allowed in areas close to open water. Pesticides and bait is only used by trained personnel.	1	1	1			
Water Contamination	Pesticides could impact on ground water quality. Pest control poison	2	2	4	Only non-toxic baits are used. Only organic pesticides allowed in areas close	1	1	1			
Climate	N/A	0	0	0		0	0	0			
Material Assets	N/A	0	0	0		0	0	0			
Legislative Breach	Untrained staff using pesticides	3	3	9	EPA guidelines work with pesticides are followed, only trained staff use approved pest control and weed control measures	1	1	1			

Aspects Risk Assessment - Aspects and Impacts Register VARTRY WTP

Veolia Workplace Aspect Assessment Worksheet									
Workplace: VARTRY WTP		Assessed by: Tadhg Donnelly		Reviewed by: Caroline McGee		ASPECT: Sheet 7		Date: 03-Apr-17	
Product	No	POTABLE WATER TREATMENT PROCESS							
Service	No								
Activity	Yes/No								
Abnormal	No								
Impact	Hazard	Risk Level Before Controls			Hazard/Risk Control Measures (Existing and New) <small>For each hazard / risk list the existing or required control measures to be applied- Refer to Hazard Control Hierarchy and justify why control measure was selected.</small>	Residual Risk Level - After Controls			Sign-off complete
		L	C	R		L	C	R	
<small>For each Aspect consider the consequences for the following Impact</small>	<small>For each impact describe the nature of the impact and the environmental hazard which may develop as a consequence.</small>	<small>Likelihood x C consequence = Risk Level</small>				<small>Likelihood x C consequence = Risk Level</small>			
Energy Use	Increased emissions, increased spending on electricity	4	3	12	Electricity meters installed on incoming lines and readings recorded monthly. VSD's installed on relevant equipment, dy/night energy saving operational	1	1	1	
Resource Use	Increased water losses on site	4	2	8	Flow meters on service water lines, readings taken daily and recorded. Water losses kept to below 5% through management regimes	1	1	1	
Waste	Increased wastes going to landfill, increased spending, environmental pollution	4	4	16	Wastes segregated from recyclables, collected by reputable waste company	1	1	1	
Noise	impacts of noise on neighbours, complaints issued, poor image of	3	3	9	Site is away from sensitive receptors, all moving parts are greased	1	1	1	
Air	N/A	0	0	0		0	0	0	
Ground Pollution	Environmental pollution, pollution of water sources, health impacts	3	3	9	All chemicals banded. Designated soak aways and catchment areas for refuelling and washing of vehicles during construction.	1	1	1	
Visual	N/A	0	0	0		0	0	0	
Vibration	N/A	0	0	0		0	0	0	
Odour	N/A					0	0	0	
Pests & Vermin	Vermin contamination, health effects	3	3	9	Pest control employed on site	1	1	1	
Litter	Visual disturbance, poor public image, poor housekeeping controls	2	2	4	Housekeeping controls in place on CMMS. Daily litter picks	1	1	1	
Traffic & Highway	N/A	0	0	0		0	0	0	
Ecology	Impact on rivers adjacent to each site, fish kills, decreased wildlife	3	3	9	Ecology assesment completed, grasslands cut, site is enclosed to prevent access from animals	1	1	1	
Water Contamination	Impact on treated water quality, health effects, failure to comply with regulations, loss of contract	2	4	8	All chemicals are banded, water is tested regularly, continuous monitoring on final water quality. Waste management plan in place. Audits/inspections of works area	1	1	1	
Climate	N/A	0	0	0		0	0	0	
Material Assets	N/A	0	0	0		0	0	0	
Legislative Breach	Loss of contract, fines,	3	3	9	Discharge licenses and consents are not exceeded supported with monitoring and other systems in place to prevent breaches	1	1	1	

Aspects Risk Assessment - Aspects and Impacts Register VARTRY WTP

Veolia Workplace Aspect Assessment Worksheet											
Workplace:		VARTRY WTP		Assessed by:		Tadhg Donnelly		Reviewed by:		Caroline McGee	
ASPECT:		Sheet 8		Date:		03-Apr-17		Date:		03-Apr-17	
Product	No	NOISE Sound levels measured at the site boundaries during construction will not exceed stated limits below: Nighttime 20.00pm to 08.00am must not exceed 45 dBLAeq Hourly during night time Daytime 08.00am to 20.00pm must not exceed 55 dBLAeq Hourly during daytime									
Service	No										
Activity	Yes										
Abnormal	No										
Impact	Hazard	Risk Level Before Controls			Hazard/Risk Control Measures (Existing and New)	Residual Risk Level - After Controls			Sign-off complete		
		L	C	R		L	C	R			
<i>For each Aspect consider the consequences for the following impact</i>		<i>Likelihood x C onsequence = Risk Level</i>			<i>For each hazard / risk list the existing or required control measures to be applied- Refer to Hazard Control Hierarchy and justify why control measure was selected.</i>			<i>Likelihood x C onsequence = Risk Level</i>			
Energy Use	In the case of mains power failure, generator is available. Motors, pumps, and operational equipment can be noisy when plant is operational. Shutter doors could shake in windy conditions	2	2	4	Generator is contained in an internal purpose-built building with noise attenuating barriers, and only operated when required. Generators that are external, will be located away from Noise sensitive locations.	1	1	1			
Resource Use	Raw and treated water pumps are very noisy	3	2	6	PPE is available for personnel working in areas of high noise levels. Regular maintenance is required on all pumps to ensure noise levels are kept to a minimum	1	1	1			
Waste	Sludge is transferred from centrifuge and belt presses via augers and screws which can be noisy if not oiled. Domestic waste is collected via HGV trucks which create traffic noise	2	2	4	All augers and drives are greased according to maintenance schedule. Collections are scheduled for day-time hours to minimise noise impact on neighbours	1	1	1			
Noise	Plant operates 24 hours per day, resulting in low level noise at all times. Construction activities will generate noise	2	2	4	Noise is monitored at external boundary, and recorded. All noise complaints are recorded and dealt within the RIVO system. Facility maintenance system is in operation to ensure plant and equipment is greased and serviced to minimise noise release	1	1	1			
Air	N/A	0	0	0		0	0	0			
Ground Pollution	N/A	0	0	0		0	0	0			
Visual	N/A	0	0	0		0	0	0			
Vibration	Centrifuge can cause increased vibration. Can impact on human health, and increase noise levels above acceptable levels	2	2	4	PPE is available for operators, and centrifuge is contained within a sealed room to reduce noise impacts. Centrifuge only operated during daylight to reduce impact on neighbours	1	1	1			
Odour	N/A	0	0	0		0	0	0			
Pests & Vermin	N/A	0	0	0		0	0	0			
Litter	N/A	0	0	0		0	0	0			
Traffic & Highway	Increased traffic from deliveries and plant operational can lead to noise complaints	2	2	4	Deliveries are controlled, and staged to avoid increased traffic volumes. Site is off public highway with ample parking to reduce impact on local areas	1	1	1			
Ecology	Noise can effect birds and wildlife within the area.	2	2	4	All augers and drives are greased according to maintenance schedule. Plant and machinery is contained within buildings	1	1	1			
Water Contamination	N/A	0	0	0		0	0	0			
Climate	N/A	0	0	0		0	0	0			
Material Assets	Increased traffic from deliveries and plant operational can lead to noise complaints. Noise complaints could have detrimental effect to the area and Veolia's public image	2	2	4	All augers and drives are greased according to maintenance schedule. Plant and machinery is contained within buildings. Deliveries are controlled, and staged to avoid increased traffic volumes. Site is off public highway with ample parking to reduce impact on local areas	1	1	1			
Legislative Breach	In case of noise breaches, there may be health impacts to employees and affected neighbours. Contract noise levels are exceeded	2	2	4	Noise is controlled via maintenance of plant /equipment /noise monitoring where required. Ear protection zones created where a risk is identified	1	1	1			



Aspects Risk Assessment - Aspects and Impacts Register VARTRY WTP

Veolia Workplace Aspect Assessment Worksheet									
Workplace: VARTRY WTP		Assessed by: Tadhg Donnelly			Reviewed by: Caroline McGee				
ASPECT: Sheet 9		Date: Apr-17			Date: 03-Apr-17				
Product	Yes	CONSTRUCTION ACTIVITIES Various work activities that may have an environmental impact							
Service	No								
Activity	Yes								
Abnormal	No								
Impact	Hazard	Risk Level Before Controls			Hazard/Risk Control Measures (Existing and New) <small>For each hazard / risk list the existing or required control measures to be applied- Refer to Hazard Control Hierarchy and justify why control measure was selected.</small>	Residual Risk Level - After Controls			Sign-off complete
		L	C	R		L	C	R	
<small>For each Aspect consider the consequences for the following Impact</small>		<small>L likelihood x C consequence = Risk Level</small>				<small>L likelihood x C consequence = Risk Level</small>			
Energy Use	Installation of workplace lighting internal & external	2	2	4	Use of natural lighting is optimised. Lighting will be fitted with sensors in darkness to activate when movement is detected. Energy efficient lighting provided. Buildings will be energy rated. Thermostat controlled heating will be installed	1	1	1	
Resource Use	Materials used to construct buildings, roads and other structures as part of the project. Use of natural resources such as wood	3	3	9	Sustainable sources are used. Recycling of exusting plant and equipment where suitable. Procurement policies ensure contractors are in line with Sustainable growth & corporate social responsibility	1	1	1	
Waste	Waste generated from land clearance, excavations, packing from materials	3	3	9	Waste Management Plan in place. Approved waste contractors used with current consents and permits. Waste is separated and labelled. WTF are retained. Recycling policy in place	1	1	1	
Noise	Work related activities will produce noise i.e. land clearance, breaking of rock and heavy materials to create roads and accesses	3	3	9	Maintenance of plant /machinery. Work is undertaken within defined times. Noise monitoring is undertaken	1	1	1	
Air	Fuel emmissions from plant / machinery operating/ Dust emissons from work activities	3	2	6	Maintenance of plant /machinery. Plant/machinery is powered down when not in use. Dust suppression techniques (wetting down) will be used and dust levels will be monitored	1	1	1	
Ground Pollution	Run-offs from soil, washings from vehicles, potential risk of leaks/spillages of hazardous substances	3	3	9	Designated washdown areas. Bunding and containment of hazardous substances. Daily checks to ensure there is no visual evidence of spills/leaks. Spill kits and absorbent clean up materials provided. SDS provided . No digging permitted in close proximity to water ways /courses	1	1	1	
Visual	Lack of housekeeping poor image	2	3	6	Clean as You Go policy must be followed. Waste is removed and daily site inspections	1	1	1	
Vibration	When plant/machinery is being used for particular activities	2	3	6	Maintenance of plant/equipment. PPE for users. Levels are not exceed and are checked through monitoring	1	1	1	
Odour	N/a	0	0	0		0	0	0	
Pests & Vermin	Lack of housekeeping and disturbance of habitats during ecavations	2	3	6	Pest prevention policy implemented. Good housekeeping practices are applied	1	1	1	
Litter	Waste generated from land clearance, excavations, packing from materials	3	3	9	Waste Management Plan in place. Approved waste contractors used with current consents and permits. Waste is separated and labelled. WTF are retained. Recycling policy in place	1	1	1	
Traffic & Highway	Deliveries of materials to site & removal of soll and waste	3	3	9	Traffic Management Plan in place. Controlled traffic movements to prevent build up and congestion	1	1	1	

Ecology	Damage to environmental as a result of construction activities, damage to protected species from excavations/ disturbance of ground and woodlands/ fish during spawning season	3	3	9	Biodiversity is key in relation to location of works/new structures/ Protection measures will be applied to minimise disturbance of habitats. Environmental Assessment undertaken. Archaeology studies referred to and in the event of disturbance safe dig practices will be applied	1	1	1
Water Contamination	Run-offs from soil, washings from vehicles, potential risk of leaks/spillages of hazardous substances	3	3	9	Designated washdown areas. Bunding and containment of hazardous substances. Daily checks to ensure there is no visual evidence of spills/leaks. Spill kits and absorbent clean up materials provided. SDS provided . No digging permitted in close proximity to water ways /courses. Water sampling is undertaken.	1	1	1
Climate	Flooding risk	2	3	6	Design of workplace and equipment minimise risk. Visual inspections undertaken	1	1	1
Material Assets	Poor maintenance	2	3	6	Design and finish off structures allows for safe maintenance. Equipment is maintained in good condition	1	1	1
Legislative Breach	Breaches of Planning. Related construction & environmental legislation	3	3	9	Environmental Management plan developed for project duration and monitoring for compliance to ensure licenses/permits are not breached	1	1	1



Aspects Risk Assessment - Aspects and Impacts Register VARTRY WTP

Veolia Workplace Aspect Assessment Worksheet

Workplace:		VARTRY WTP		Assessed by:		Tadhg Donnelly		Reviewed by:		Caroline McGee	
ASPECT		Sheet 10		Date:		Apr-17		Date:		03-Apr-17	
Product	Yes/No	PROTECTION OF WATER COURSES									
Service	Yes/No										
Activity	Yes/No										
Abnormal	Yes/No										
Impact	Hazard	Risk Level Before Controls			Hazard/Risk Control Measures (Existing and New)	Residual Risk Level - After Controls			Sign-off complete		
		L	C	R		L	C	R			
<i>For each Aspect consider the consequences for the following Impact</i>		<i>Likelihood x C onsequence = Risk Level</i>			<i>For each hazard / risk list the existing or required control measures to be applied- Refer to Hazard Control Hierarchy and justify why control measure was selected.</i>			<i>Likelihood x C onsequence = Risk Level</i>			
Energy Use	n/a	0	0	0		0	0	0			
Resource Use	Water taken from rivers for construction activities/operation of plant /machinery	3	3	9	Sustainable sources are used for water supply for construction activities.	1	1	1			
Waste	Waste generated from land clearance, excavations, packing from materials	3	3	9	Waste Management Plan in place. Approved waste contractors used with current consents and permits. Waste is separated and labelled. WTF are retained. Recycling policy in place	1	1	1			
Noise	n/a	0	0	0		0	0	0			
Air	Fuel emissions from plant / machinery operating/ Dust emissions from work activities	3	2	6	Burning is not permitted.	1	1	1			
Ground Pollution	Run-offs from soil, washings from vehicles, potential risk of leaks/spillages of hazardous substances	3	3	9	Designated washdown areas. Bunding and containment of hazardous substances. Daily checks to ensure there is no visual evidence of spills/leaks. Spill kits and absorbent clean up materials provided. SDS provided . No digging permitted in close proximity to water ways /courses	1	1	1			
Visual	Poor image of company /client	2	3	6	Policies/procedures in place to ensure project is managed in a controlled manner. Communications maintained with interested parties	1	1	1			
Vibration	n/a	0	0	0		0	0	0			
Odour	n/a	0	0	0		0	0	0			
Pests & Vermin	Lack of housekeeping and disturbance of habitats during ecavations	3	3	9	Pest prevention policy implemented. Good housekeeping practices are applied	1	1	1			
Litter	ineffective waste management /poor housekeeing	2	3	6	Waste Management Plan in place. Approved waste contractors used with current consents and permits. Waste is separated and labelled. WTF are retained. Recycling policy in place	1	1	1			
Traffic & Highway	Work undertaken near water courses from construction of new accesses	3	3	9	Traffic Management Plan in place. Controlled traffic movements to prevent build up and congestion	1	1	1			
Ecology	Removal of landscape/disturbance of soil and existing habitats	3	2	6	Biodiversity is key in relation to location of works/new structures/ Protection measures will be applied to minimise disturbance of habitats. Environmental Assessment undertaken. Archaeology studies referred to and in the event of disturbance safe dig practices will be applied	0	0	0			

Water Contamination	Ineffective treatment of the water supply. Water quality is affected due to infiltration from construction related activities	3	4	12	Waste process water (arising from settlement of backwash water and from sludge supernatant) will be collected and treated. All necessary sampling and testing as required by the EPA drinking water requirements for monitoring. A hydrocarbon interceptor will be installed on the outlet from the chemical delivery area to reduce the risk of pollution of nearby watercourses.	1	1	1
Climate	n/a	0	0	0		0	0	0
Material Assets	Poor maintenance	3	3	9	Design and finish off structures allows for safe maintenance. Equipment is maintained in good condition	1	1	1
Legislative Breach	Breach of environmental legislation/prosecution by the Fisheries. Breach of discharge consents/licenses requirements	3	4	12	Monitoring and sampling regime is undertaken. EMP is reviewed and updated in line with work activities	1	1	1

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Date: 05/15

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Owner: P. Farrow

Reference: ENV/2/004/001

Aspects Risk Assessment - Aspects and Impacts Register VARTRY WTP

Veolia Workplace Aspect Assessment Worksheet											
Workplace:		Varray WTP		Assessed by:		Tadhg Donnelly		Reviewed by:		Caroline McGee	
ASPECT		Sheet 11		Date:		03-Apr-17		Date:		03-Apr-17	
Product	Yes/No										
Service	Yes/No										
Activity	Yes/No										
Abnormal	Yes/No										
WASTE MANAGEMENT											
Impact	Hazard	Risk Level Before Controls			Hazard/Risk Control Measures (Existing and New)	Residual Risk Level - After Controls			Sign-off complete		
		L	C	R		L	C	R			
<i>For each Aspect consider the consequences for the following Impact</i>		<i>Likelihood x C onsequence = Risk Level</i>			<i>For each hazard / risk list the existing or required control measures to be applied- Refer to Hazard Control Hierarchy and justify why control measure was selected.</i>			<i>Likelihood x C onsequence = Risk Level</i>			
Energy Use	Fuel /Diesel/oil is used in construction vehicles	3	2	6	Waste oil/fuel is collected in secure containers and removed from site .Maintenance of equipment ensures optimised use of equipment	1	1	1			
Resource Use	Washing down of work areas/ cleaning of access routes	3	3	9	Containment areas and bunding. Opportunities to recycle water are utilised	1	1	1			
Waste	Waste is generated at all levels of construction through to operations	3	3	9	Waste Management Plan in place. Approved waste contractors used with current consents and permits. Waste is separated and labelled. WTF are retained. Recycling policy in place	1	1	1			
Noise	Work related activities will produce noise i.e land clearance, breaking of rock and heavy materials to create roads and accesses. Nuisances /disturbances	2	3	6	Maintenance of plant /machinery. Work is undertaken within defined times. Noise monitoring is undertaken	1	1	1			
Air	Fuel emissions from plant / machinery operating/ Dust emissions from work activities	3	3	9		1	1	1			
Ground Pollution	Discarding of work related materials/incorrect bunding	3	4	12		0	0	0			
Visual	Lack of housekeeping poor image	3	2	6	Clean as You Go policy must be followed. Waste is removed and daily site inspections	1	1	1			
Vibration	N/A	0	0	0		0	0	0			
Odour	Lack of waste management - build up of waste matter	2	2	4	Waste Management Plan in place. Approved waste contractors used with current consents and permits. Waste is separated and labelled. WTF are retained. Recycling policy in place	1	1	1			
Pests & Vermin	Litter/ discarded food related material encouraging vermin	2	3	6	Pest control policy is implemented	1	1	1			
Litter	Discarding of materials/packaging /illegal dumping	2	2	4	Approved waste contractors used with current consents and permits. Waste is separated and labelled. WTF are retained. Recycling policy in place	1	1	1			
Traffic & Highway	Increased traffic movements during deliveries and removals	3	3	9	Deliveries are controlled to avoid build up of traffic. Traffic Management Plan in place	1	1	1			
Ecology	Incorrect disposal of waste may affect surrounding environment	2	2	4	Compliance with Waste Management Plan	1	1	1			
Water Contamination	Run-offs from soil, washings from vehicles, potential risk of leaks/spillages of hazardous substances	3	3	9	Designated wash-down areas. Bunding and containment of hazardous substances. Daily checks to ensure there is no visual evidence of spills/leaks. Spill kits and absorbent clean up materials provided. SDS provided. No digging permitted in close proximity to water ways /courses. Water sampling is undertaken	1	1	1			
Climate	Wind conditions may result in waste material being dispersed	2	2	4	Waste is stored in secure receptacles prior to removal	1	1	1			
Material Assets	Poor maintenance	2	2	4	Design and finish off structures allows for safe maintenance. Equipment is maintained in good condition	1	1	1			
Legislative Breach	Breach of Waste Regulations	3	3	9	Approved Waste Removal contractors used and WTF retained	1	1	1			



Aspects Risk Assessment - Aspects and Impacts Register Vartry WTW

Veolia Workplace Aspect Assessment Worksheet											
Workplace:		VARTRY WTP		Assessed by:		Tadhg Donnelly		Reviewed by:		Caroline McGee	
ASPECT		Sheet 12		Date:		03-Apr-17		Date:		03-Apr-17	
Product	Yes/No	PROTECTION OF FLORA & HABITATS The following surveys are noted Topographical Survey. Ecological Screening Assessment. Invasive Species Survey. Archaeological Impact Assessment.									
Service	Yes/No										
Activity	Yes/No										
Abnormal	Yes/No										
Impact	Hazard	Risk Level Before Controls			Hazard/Risk Control Measures (Existing and New) <i>For each hazard / risk list the existing or required control measures to be applied- Refer to Hazard Control Hierarchy and justify why control measure was selected.</i>	Residual Risk Level - After Controls			Sign-off complete		
		L	C	R		L	C	R			
<i>For each Aspect consider the consequences for the following Impact</i>		<i>For each impact describe the nature of the impact and the environmental hazard which may develop as a consequence.</i>			<i>Likelihood x C onsequence = Risk Level</i>			<i>Likelihood x C Consequence = Risk Level</i>			
Energy Use	n/a	0	0	0				0	0	0	
Resource Use	Water taken from rivers for construction activities/operation of plant /machinery	3	3	9	Sustainable sources are used for supply of water for construction activities.			1	1	1	
Waste	Waste generated from land clearance, excavations, packing from materials	3	3	9	Waste Management Plan in place. Approved waste contractors used with current consents and permits. Waste is separated and labelled. WTF are retained. Recycling policy in place			1	1	1	
Noise	n/a	0	0	0				0	0	0	
Air	Fuel emissions from plant / machinery operating/ Dust emissions from work activities	3	3	9	Maintenance of plant /machinery. Plant/machinery is powered down when not in use. Dust suppression techniques (wetting down) will be used and dust levels will be monitored. Burning is not permitted			1	1	1	
Ground Pollution	Run-offs from soil, washings from vehicles, potential risk of leaks/spillages of hazardous substances	3	3	9	Designated washdown areas. Bunding and containment of hazardous substances. Daily checks to ensure there is no visual evidence of spills/leaks. Spill kits and absorbent clean up materials provided. SDS provided. No digging permitted in close proximity to water ways /courses			1	1	1	
Visual	Poor public image lack of duty of care	2	3	6	Clean as You Go policy must be followed. Waste is removed and daily site inspections			1	1	1	
Vibration	n/a	0	0	0				0	0	0	
Odour	n/a	0	0	0				0	0	0	
Pests & Vermin	Lack of housekeeping and disturbance of habitats during excavations	3	3	9	Pest prevention policy implemented. Good housekeeping practices are applied			1	1	1	
Litter	Waste generated from land clearance, excavations, packing from materials	3	3	9	Waste Management Plan in place. Approved waste contractors used with current consents and permits. Waste is separated and labelled. WTF are retained. Recycling policy in place			1	1	1	
Traffic & Highway	Deliveries of materials to site & removal of soil and waste	3	3	9	Traffic Management Plan in place. Controlled traffic movements to prevent build up and congestion			1	1	1	
Ecology	Removal of landscape/disturbance of soil and existing habitats	3	2	6	No hedgerow removal should take place during the bird breeding season, which is defined in the Act as the period from 1st March to 31st August. Other specific requirements are detailed within the EMP.			1	1	1	
Water Contamination	Uncontrolled release of a hazardous substance/ soil disturbance /silt entering water	3	2	6	Sampling points will be provided and maintained			1	1	1	
Climate	n.a	0	0	0				0	0	0	
Material Assets	Lack of maintenance of equipment resulting in break down of controls	2	2	4	Planned Preventative maintenance checks in place. Visual monitoring			1	1	1	

Legislative Breach	Breach of environmental /fisheries legislation	2	2	4	Monitoring and sampling regime is undertaken. EMP is reviewed and updated in line with work activities	1	1	1	
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