

SITE NAME: Maple Lodge STW
DATE: Aug-23

ODOUR RISK ASSESSMENT

Process Stage	Process Unit	UWWT/STC	Normal			Abnormal			Nearest Customer/ Receptor	Offensive-ness (0-5)	Likelihood of Impact (0-5)	Odour Risk (<5 Low, >15 High)	Odour Impact	Mitigation Measures (see OMP for further information)	Residual Odour Impact (L/M/H)	Responsibility for Mitigation Measures	Customer Communication Needed?	Notes
			Odour Description	Constant/ Intermittent/ Occasional/ Rare	Event Description	Likelihood of Event, Frequent/ Rare/ Planned	Length of Time of Release											
ADD EXTRA ROWS BELOW THIS ROW IF REQUIRED											0	-	-	-	-	-		
Raw Materials e.g antifoam, polymer	Sludge Treatment	STC	Chemical	C				Grand Union Canal	2	2	4	Low	Contained materials - stored in IBCs.		TM			
Works Inlet	Incoming Sewers & Reception Wet Well	UWWT	Sewage	C				Grand Union Canal	3	1	3	Low	Timely reporting of any abnormal discharge to the STW. Visually checked daily.	-	TM	-		
Works Inlet	Incoming Sewers & Reception Wet Well	UWWT	Septic sewage		Septic feed. Spillage.	R	Hours	Grand Union Canal	4	2	8	Medium	Clear up. Isolate. Process monitoring. Carried out by site ops ASAP.	L	TM	N		
Works Inlet	Cess Reception, Discharge, Wash down & Drainage	UWWT/STC	Septic sewage	C				Maple Lodge Close	4	1	4	Low	Daily checks by ops. Ensure tankers coupled correctly	-	Tech 1s	-		
Works Inlet	Cess Reception, Discharge, Wash down & Drainage	UWWT/STC	Septic sewage		Spillage. Blockage.	R	Hours	Maple Lodge Close	4	1	4	Low	Immediate clean up to be arranged by site ops.	L	TM	N		
Works Inlet	Pumping Station	UWWT	Septic sewage		OCU fails	R	Days	Maple Lodge Close	4	3	12	Medium	repair OCU. SAP job to be raised to contractor.	M	TM	N		
Storm Separation	Storm & Balancing Tanks	UWWT	Sewage.	I				Maple Lodge Close, Springwell Lane, GUC	3	2	6	Medium	Ensuring Amajets are operational.	-	TM	-	Fitted with Amajets.	
Storm Separation	Storm & Balancing Tanks	UWWT	Sewage.		Failure of Amajets, sludge build-up.	R	Weeks	Maple Lodge Close, Springwell Lane, GUC	4	2	8	Medium	Repair Amajets. Wash down. In the event of a failure of the Amajet cleaning system, it is necessary to implement manual cleaning of the tank, employing the system of valves, or by tanker, to wash the tanks out. This will be carried out as required.	L	TM	Y		
Preliminary Treatment	Screens & Screening Conditioning, Drainage & Rag Skip Management	UWWT	Sewage	C				Grand Union Canal	3	1	3	Low	Regular site checks, immediate clean ups of any spillages/blockages. Containerised skips. There is an extensive arrangement of screens and conveyance chutes feeding the Washpackers. Prompt action is taken to deal with breakdowns and/or blockages, to offset significant disruption caused by the build-up of screenings and associated spin-off problems with odour, rodents etc	-	Tech 1s	-		
Preliminary Treatment	Screens & Screening Conditioning, Drainage & Rag Skip Management	UWWT	Sewage		Screens/ Washpacter block, fail.	R	Weeks	Grand Union Canal	4	2	8	Medium	Repair, Unblock. To be carried out by site maintenance team.	L	TM	N		
Preliminary Treatment	Screens & Screening Conditioning, Drainage & Rag Skip Management	UWWT	Sewage		Enclosed skip unit failure.	R	Days	Grand Union Canal	4	2	8	Medium	Replace and ensure skips are serviced in a timely manner by Biffa (max. 3 days storage time for a full skip)	L	TM	N		

Preliminary Treatment	Grit Removal Equipment, Drainage & Grit Skip Management	UWWT	Acrid	C				Grand Union Canal	3	1	3	Low	Grit is collected on a drained concrete slab rather than a skip. This is removed at least twice weekly to avoid odours and rodent nuisance.	-	Tech 1s	-	
Preliminary Treatment	Grit Removal Equipment, Drainage & Grit Skip Management	UWWT	Acrid		Grit allowed to build up on slab.	R	Days	Grand Union Canal	3	2	6	Medium	Remove grit from site by tech 1s and put into skips. Skips to be organised by Biffa.	L	TM	N	
Crude Sewage Transfer	Flow & Distribution to Primary Settlement Tanks - Chemical Dosing	UWWT	Sewage	C				Grand Union Canal	3	1	3	Low	Ferric sulphate dosing system, for P removal. Ferric dosing has the benefit of suppressing odour generation in the sludge. The status of the dosing system is checked every shift.	-	PCE	-	
Crude Sewage Transfer	Flow & Distribution to Primary Settlement Tanks - Chemical Dosing	UWWT	Sewage		Failure of dosing system	R	Days	Grand Union Canal	3	2	6	Medium	Repair to be carried out by M&E team and contracted via order raised on SAP if required.	L	PCE	N	
Primary Settlement	Primary Settlement Tanks	UWWT	Sewage	C				Maple Lodge Close, Springwell Lane, GUC	3	1	3	Low	Timely clean up of any spillages by ops. Routine checks carried out by ops.	-	PCE	-	Plinth area where the desludging pumps are located has a tendency to collect spilled material. This requires washdown by tankers as required
Primary Settlement	Primary Settlement Tanks	UWWT	Sewage		Scaper Failure	R	Hours	Maple Lodge Close, Springwell Lane, GUC	4	2	8	Medium	All scrapers are required to be operational. Failure to operate will require PSTs to be taken out of service unless they can be repaired within hours.	L	PCE & TM	N	
Primary Settlement	Primary Settlement Tanks	UWWT	Sewage		Rising sludge due to failure of desludge or scum removal (below),	R	Weeks	Maple Lodge Close, Springwell Lane, GUC	4	2	8	Medium	Empty tank. Scum removal is carried out using a tanker if the descumming system fails or is blocked. Desludging is carried out by over-pumping if the desludge system fails or is blocked.	L	PCE	N	
Primary Settlement	Fats, Oil & Grease Scum Removal System	UWWT	Foul	C				Maple Lodge Close, Springwell Lane, GUC	3	1	3	Low	Periodic checks (daily) carried out by tech 1s and any issues reported to control room.	-	Tech 1s	-	
Primary Settlement	Fats, Oil & Grease Scum Removal System	UWWT	Foul		Blockage, Bridge failure.	R	Weeks	Maple Lodge Close, Springwell Lane, GUC	3	2	6	Medium	Tanker to clear - tanker to be arranged by logistics department. Repair plant - carried out by site maintenance team.	L	PCE	N	
Primary Settlement	Primary Raw Desludge Pumping	UWWT	Sludge	C				Maple Lodge Close, Springwell Lane, GUC	4	1	4	Low	Periodic checks (daily) carried out by tech 1s and any issues reported to control room.	-	PCE	-	
Primary Settlement	Primary Raw Desludge Pumping	UWWT	Sludge		Blockage, Bridge failure, Pump failure.	F	Hours	Maple Lodge Close, Springwell Lane, GUC	4	1	4	Medium	Repair, Overpump. Take off line. Unblock - to be carried out by site ops team	M	PCE	N	
Settled Sewage Transfer	Flow & Distribution to Secondary Treatment	UWWT	None	C					0	0	0	-		-	-	-	Underground
Secondary Treatment (Biological)	Activated Sludge Plant Lanes & Zones	UWWT	Earthy	C				Grand Union Canal	2	1	2	Low	Ensuring blower availability is optimum to prevent build up.	-	PCE	-	
Secondary Treatment (Biological)	Activated Sludge Plant Lanes & Zones	UWWT	Earthy		Blower/ aeration failure.	R	Hours	Grand Union Canal	3	1	3	Low	Standby capacity ensuring LV blowers are used where HV's have failed and visa versa.	L	PCE	N	

Secondary Treatment (Biological)	Activated Sludge Plant Lanes & Zones	UWWT	Earthy		Crust formation (anoxic zone)	R	Days	Grand Union Canal	3	1	3	Low	Aeration lane mixers to be maintained and any failures to be addressed ASAP.	L	TM	N	
Secondary Treatment (Biological)	Flow & Distribution to Secondary Settlement	UWWT	Sludge	C				Grand Union Canal	3	1	3	Low	Daily checks to be carried out by site ops and cleared using site tanker if required.	-	Tech 1	-	
Secondary Settlement	Final Settlement Tanks	UWWT	Earthy	C				Grand Union Canal	0	0	0	-		-	-	-	Ensure all bellmouths are kept clear with free flowing FSTs
Secondary Settlement	Final Settlement Tanks	UWWT	Earthy		Empty tank collects stagnant water, scum.	R	Days	Grand Union Canal	3	1	3	Low	Empty tank and clear any sludge	L	TM	N	
Secondary Settlement	RAS Chambers & Pumping	UWWT	Earthy	C				Grand Union Canal	2	1	2	Low	Daily checks to be carried out by site ops and cleared using site tanker if required.	-	Tech 1	-	
Secondary Settlement	SAS Chambers & Pumping	UWWT	Earthy	C				Grand Union Canal	2	1	2	Low	Daily checks to be carried out by site ops and cleared using site tanker if required.	-	Tech 1	-	
Secondary Settlement	SAS Chambers & Pumping	UWWT	Earthy		Scum build-up on SAS south.	R	Days	Grand Union Canal	3	2	6	Medium	Chamber to be cleared using site tanker.	L	TM	N	
Tertiary Treatment	Low head Sand Filters	UWWT	None	C				Grand Union Canal	0	0	0	-	-	-	Tech 1	-	Daily checks carried out by operators.
Tertiary Treatment	Back Wash Returns	UWWT	Earthy	C				Grand Union Canal	1	1	1	Low	Daily checks to be carried out by site ops and cleared using site tanker if required.	-	Tech 1	-	
Final Effluent	Specify Type	UWWT	None	C					0	0	0	Low	-	-	-	-	
Sludge Imports	Sludge Reception, Screening, Wash down & Drainage	STC	Sludge	O				Grand Union Canal	2	1	2	Low	General housekeeping. Ensure drains are kept clear. Ensure tankers coupled correctly	-	-	-	Rare occurrence - only if pipework fails
Sludge Imports	Sludge Reception, Screening, Wash down & Drainage	STC	Sludge		Spillages.	R	Hours	Grand Union Canal	3	1	3	Low	Clear up ASAP	L	Tech 1	N	Rare occurrence - only if pipework fails
Sludge Imports	Screening Skip Management	STC	Sludge	O				Grand Union Canal	3	2	6	Medium	Ensure skips are serviced regularly. BIFFA collect skips daily.	-	TM / Contractor	-	
Sludge Imports	Screening Skip Management	STC	Sludge		Left too long.	R	Weeks	Grand Union Canal	4	2	8	Medium	Chase contractor to collect skips. Ultimately site ops can move skips if required.	L	TM	N	
Sludge Conditioning (Indigenous)	Primary Raw Sludge Thickening & Pumping	STC	Sludge	C				Grand Union Canal	4	1	4	Low	Uncovered. Controlled by SCADA. Viewed by CCTV. PFT desludge volumes and DS content are monitored to ensure performance levels.	-	-	-	
Sludge Conditioning (Indigenous)	Primary Raw Sludge Thickening & Pumping	STC	Septic sludge.	C	Scraper failure. Sludge inversion. Pump failure.	R	Days	Grand Union Canal	4	1	4	Low	Fix, drain, recommission. Tech 1s to assist with drain down and M&E team to assist with repair.	M	Tech 1 & M&E	N	
Sludge Conditioning (Indigenous)	Primary Raw Sludge Thickening & Pumping	STC	Septic sludge.	C	Blockage.	R	Days	Grand Union Canal	4	1	4	Low	Team to drain down tanks and jet lines.	M	TM	N	
Sludge Conditioning (Indigenous)	SAS Thickening & Pumping	STC	Earthy	O				Grand Union Canal	3	1	3	Low	Enclosed in ventilated building. Internal fans.	-	Tech 1	-	
Sludge Conditioning (Indigenous)	SAS Thickening & Pumping	STC	Earthy		Plant failure	R	Hours	Grand Union Canal	3	1	3	Low	Immediately stop processing SAS. Promptly emptied. Fix to be arranged by M&E team.	L	TM	N	
Sludge Conditioning (Indigenous)	Sludge Blending & Mixing	STC	Sludge	C				Grand Union Canal	4	3	12	Medium	Includes imports. Uncovered. Air mixing. This tank feeds all eight digesters and therefore any issues are dealt with immediately.	-	Tech 1	-	
Sludge Conditioning (Indigenous)	Sludge Blending & Mixing	STC	Sludge		Blockage.	R	Hours	Grand Union Canal	4	3	12	Medium	Prompt action to drain out tanks. M&E team to work on fix.	L	Tech 1 & M&E	N	
Sludge Conditioning (Indigenous)	Return Liquors	STC	Sludge	O				Grand Union Canal	3	1	3	Low	Small surface area of well. Below ground level, uncovered.	-	Tech 1	-	
Sludge Treatment	Primary Digestion and floating roof gas storage	STC	Gas	I				Grand Union Canal	3	1	3	Low	Ensuring housekeeping is regular.	-	Tech 1	-	
Sludge Treatment	Primary Digestion and floating roof gas storage	STC	Gas		Vents blowing.	R	Days	Grand Union Canal	4	1	4	Low	Reduce digester feed. Prevent build up of gas.	L	PCE	N	
Sludge Treatment	Primary Digestion and floating roof gas storage	STC	Gas		Spillage due to limpet blockage.	R	Hours	Grand Union Canal	4	2	8	Medium	Digester feed to be reduced and tech 1s organise immediate unblock.	-	Tech 1	-	Small chambers. Localised.
Sludge Treatment	Secondary Digestion and Mixing	STC	Earthy	C				Maple Lodge Close, Springwell Lane, GUC	3	1	3	Low	Measure levels using ultrasonic. Housekeeping. Timely and effective fill and spill times.	-	PCE	-	
Sludge Dewatering	Centrifuge	STC	None	C				Maple Lodge Close	0	0	0	-	Closed system.	-	-	-	
Sludge Dewatering	Centrate Liquor Return	STC	Ammoniacal	C				Maple Lodge Close	3	1	3	Low	Liquor return well is monitored by SCADA. Any high levels are picked up by control room and responded to.	-	PCE	-	

Sludge Dewatering	Centrate Liquor Return	STC	Ammoniacal		Line blocks and causes spillage.	R	Hours	Maple Lodge Close	3	2	6	Medium	Inhibited. Overpump. Clear lines. To be actioned by ops ASAP.	L	PCE	N	
Sludge Storage & Movements	Cake Pad & Drainage	STC	Sludge cake	C				Maple Lodge Close	2	3	6	Medium	Ensure cake pad is not over filled. Storage capacity is limited to less than four weeks; therefore movement of sludge cake is almost continuous. Cake in storage forms a crust after a day or two reducing risk of odour. Odour prevented during handling by limited drop heights, tipper trucks deposit sludge onto pad from height of less than 2m. No additional turning or handling during cake storage. If long-term storage was needed temporary covers would be considered. Recessed cake pad provides wind barrier.	-	Biorecycling	-	
Sludge Storage & Movements	Cake Pad & Drainage (including cake imports)	STC	Sludge cake	C	Blocked drainage.	R	Days	Maple Lodge Close	2	3	6	Medium	Unblock and clear to be carried out by ops.	L	TM	N	
Sludge Storage & Movements	Cake Pad & Drainage (including cake imports)	STC	Sludge cake	C	Stockpile full.	R	Weeks	Maple Lodge Close	2	4	8	Medium	Implement cake removal with Biorecycling Team to include out of hours removal also.	M	PM, Biorecycling	N	
Cake imports	Cake imports	STC	Sludge Cake					Maple Lodge Close	2	3	6	Medium	Ensure cake pad is not over filled. Storage capacity is limited to less than four weeks; therefore movement of sludge cake is almost continuous. Pre-acceptance checks on incoming digested cake. Cake in storage forms a crust after a day or two reducing risk of odour. No additional turning or handling during cake storage. If long-term storage was needed temporary covers would be considered. Recessed cake pad provides wind barrier.	-	Biorecycling	-	
Sludge Storage & Movements	Vehicle Movements & Wash Down	STC	Sludge cake	R				Maple Lodge Close	1	1	1	Low	Cover wagons. Wheelwash.	L	Biosolids	N	
Biogas Systems	CHP Plant	STC	Exhaust gases	C				Site based employees	1	1	1	Low	Raised exhaust flume. All biogas processed through CHPs or contained within digesters.	-	PCE	-	CHP engines and boilers are subject to regular maintenance to maintain maximum use of outlets
Biogas Systems	Boilers	STC	None	R				Maple Lodge Close, Springwell Lane, GUC	0	0	0	-		-	PCE	-	Primary biogas processed through CHPs. CHP engines and boilers are subject to regular maintenance to maintain maximum use of outlets.
Biogas Systems	Waste Gas Burner	STC	None	R				Grand Union Canal	0	0	0	-		-	PCE	-	Biogas normally processed through CHPs or boilers
Power Generation	Standby Generators	STC	Exhaust gases	R					2	2	4	Low	Upwards facing exhaust stack		PCE		Only run in emergency
Odour Control Packages	OCU biofilter	UWWTD	None	C				Maple Lodge Close	3	0	0	Low	This unit is regularly checked to ensure that the fans are operational and the covers to the reception well are closed.	-	Tech 1 / Contractors	-	Monthly performance checks by specialist Framework agreed contractors.
Odour Control Packages	Filter bed	UWWTD	Septic sewage		Failure	R	Weeks	Maple Lodge Close	4	3	12	Medium	Monthly performance checks by specialist Framework agreed contractors. Contractor to replace media and fan if required. Order raised via SAP and tracked through planning meetings.	M	TM	Y	