SITE NAME: **Bishops Stortford STW** **ODOUR RISK ASSESSMENT**

		Normal		Abnormal												
Process Stage	**Process Unit**	**Odour Description**	**Constant/ Intermittent/ Occasional/ Rare**	**Event Description**	**Likelihood of Event Frequent/ Rare/ Planned**	**Length of Time of Release**	**Nearest Customer/ Receptor**	**Offensive-ness (0-5)**	**Likelihood of Impact (0-5)**	**Odour Risk (<5 Low, >15 High)**	**Odour Impact**	**Mitigation Measures (For more info see OMP)**	**Residual Odour Impact (L/M/H)**	**Responsibility for Mitigation Measures**	**Customer Communication Needed?**	**Notes**
ADD EXTRA ROWS BELOW THIS ROW IF REQUIRED																
Works Inlet	Incoming Sewers & Reception Wet Well	Sewage	C				Jenkins Lane	3	1	3	Low	•Cess tanks discharge into an open chamber. Particularly odorous waste should be discharged below the surface. •In the event of a PST being emptied, provision must be made to eliminate the risk of odours becoming a nuisance. •Raw sludge imports are discharged into inlet; every effort is made to eliminate the risk of odours becoming a nuisance.	-	-	-	Incoming SPS's discharge into open chamber.
Works Inlet	Cess Reception, Discharge, Wash down & Drainage	Sewage	I				Jenkins Lane	3	1	3	Low	Good general housekeeping, manual cleaning available.	-	-	-	Cess tankers discharge into same chamber as SPS's.
Works Inlet	Cess Reception, Discharge, Wash down & Drainage	Sewage		Foul sewage. Spillage.	R	Hours	Jenkins Lane	4	2	8	Medium	Consider submerging discharge or covering chamber.	M	TM	N	Septic wastes could cause odour nuisance due to cascade.
Preliminary Treatment	Screens & Screening Conditioning, Drainage & Rag Skip Management	Sewage	C				Jenkins Lane	3	1	3	Low	•Skips are not overfilled; they removed from site as soon as they are full. •Spillages of screenings are cleared as soon as practicable. •Ferric dosing is carried out upstream of the PSTs; this is for P removal, but also serves to suppress odour production. further downstream, notably in the PSTs and in the sludge stream. Good general housekeeping	-	-	-	
Preliminary Treatment	Screens & Screening Conditioning, Drainage & Rag Skip Management	Sewage		Spillages. Overfilled skips.	F	Days	Jenkins Lane	3	2	6	Medium	Clear spillage. Replace skips.Contractors contacted for removal of skips	L	TM	N	
Preliminary Treatment	Grit Removal Equipment, Drainage & Grit Skip Management	Sewage	C				Jenkins Lane	2	1	2	Low	Regular removal from contractors. Skips are not overfilled; they removed from site as soon as they are full.	-	-	-	
Crude Sewage Transfer	Flow & Distribution to Primary Settlement Tanks	Sewage	C				Jenkins Lane	2	1	2	Low	Ferric dosing monitored regularly.	-	Tech 1	-	Ferric dosing chamber.
Crude Sewage Transfer	Flow & Distribution to Primary Settlement Tanks	Sewage		Flooding due to high flows	F	Days	Jenkins Lane	2	1	2	Low	Clear up/ washdown.	L	-	-	New drainage system in hand.
Primary Settlement	Primary Settlement Tanks	Sewage	C				Jenkins Lane	2	1	2	Low	In the event of a PST needing to be emptied, measures are taken to ensure that no odour nuisance occurs either in the tank or the Works Inlet (see above> •Any empty tank will be washed down. •In the event of a blockage or breakdown in the desludge pumps or pipelines, potential odour emissions will be kept to a minimum: - e.g. consider isolating the tank, overpump etc. Sludge blankets monitored. Weirs maintained.	-	-	-	
Primary Settlement	Primary Settlement Tanks	Septic sewage.		Scraper stopped. Blockage.	R	Days	Jenkins Lane	3	1	3	Low	Repair plant. Unblock.	L	TM	N	
Primary Settlement	Primary Settlement Tanks	Septic sewage.		Pump failure.	P	Days	Jenkins Lane	3	3	9	Medium	Re-route to pipe work - lessens build up.	L	TM	N	
Primary Settlement	Primary Settlement Tanks	Septic sewage.		Tank emptied	P	Weeks	Jenkins Lane	4	3	12	Medium	Controlled discharge. Consider covering inlet or submerge discharge. Wash tank.	M	TM	N	
Primary Settlement	Fats, Oil & Grease Scum Removal System	Sewage	O				Jenkins Lane	2	1	2	Low	Daily checks as per site rounds.	-	Tech 1	-	
Primary Settlement	Fats, Oil & Grease Scum Removal System	Septic sewage.		Blockage	R	Weeks	Jenkins Lane	2	1	2	Low	Unblock.	L	TM	N	
Primary Settlement	Primary Raw Desludge Pumping	Fresh sludge.	C				Jenkins Lane	2	1	2	Low	Daily checks as per site rounds.	-	-	-	
Primary Settlement	Primary Raw Desludge Pumping	Sludge.		Pump failure. Blockages.	F	Days	Jenkins Lane	3	3	9	Medium	Repair plant. Unblock. Re-route to pipe work.	M	TM	N	

Settled Sewage Transfer	Flow & Distribution to Secondary Treatment	Earthy	C				Jenkins Lane	2	1	2	Low	Enlcosed in pipes. Daily checks as per site rounds.	-	-	-	
Secondary Treatment (Biological)	Activated Sludge Plant Lanes & Zones	Earthy	C				Jenkins Lane	2	1	2	Low	•In hot or damp conditions, should there be potential for odour nuisance, and then the air mixing system will be temporarily switched off. •Hose down tank if left empty.	-	-	-	
Secondary Treatment (Biological)	Activated Sludge Plant Lanes & Zones	Earthy		Blower failure (low DO).	R	Hours	Jenkins Lane	3	2	6	Medium	Repair plant.	L	TM	N	
Secondary Treatment (Biological)	Activated Sludge Plant Lanes & Zones	Earthy		Crusting on surface.	R	Weeks	Jenkins Lane	3	2	6	Medium	Maintain mixers.	L	TM	N	
Secondary Treatment (Biological)	Flow & Distribution to Secondary Settlement	Earthy	C				Jenkins Lane	1	1	1	Low	Enlcosed in pipes. Daily checks as per site rounds.	-	-	-	
Secondary Settlement	Final Settlement Tanks	Earthy	C				Jenkins Lane	1	0	0	Low	Daily checks as per site rounds.	-	-	-	
Secondary Settlement	Scum Removal System	Earthy	C				Jenkins Lane	1	0	0	Low	daily checks as per site rounds.	-	-	-	
Secondary Settlement	Scum Removal System	Earthy		Rising sludge.	R	Weeks	Jenkins Lane	2	2	4	Low	Mallard. Manual cleaning, hose down. Process investigation.	L	TM	N	
Secondary Settlement	RAS Chambers & Pumping	Earthy	I				Jenkins Lane	1	1	1	Low	Daily check as per effluent rounds.	-	tech 1	-	
Secondary Settlement	SAS Chambers & Pumping	Earthy	C				Jenkins Lane	0	1	0	Low	-	-	-	-	
Secondary Settlement	SAS Chambers & Pumping	Earthy		Crust build up	R	Days	Jenkins Lane	0	1	0	Low	General routine maintenance	L	-	-	
Tertiary Treatment	Disc filters	None.	C				Jenkins Lane	0	0	0	N/A	-	-	-	-	
Tertiary Treatment	Back Wash Returns	Earthy	C				Jenkins Lane	1	0	0	Low	-	-	-	-	
Final Effluent	Specify Type	None.	C				Jenkins Lane	0	0	0	N/A	-	-	-	-	
Sludge Imports	Sludge Reception, Screening, Wash down & Drainage	Sludge.	I				Jenkins Lane	4	1	4	Low	•These are discharged into the Work Inlet – see above. •Spillages will be washed down immediately.	-	-	-	Into inlet upstream of inlet works.
Sludge Imports	Sludge Reception, Screening, Wash down & Drainage	Sludge		Adverse weather	R	Hours	Jenkins Lane	4	3	12	Medium	Avoid imports during adverse conditions. Discharge below water level.	H	TM	N	Alternative proposals under consideration.
Sludge Imports	Skip Management	N/A					Jenkins Lane			0	N/A	-	-	-	-	See Works Inlet above
Sludge Conditioning (Indigenous)	Primary Raw/SAS Sludge Thickening & Pumping	Sludge.	C				Jenkins Lane	3	2	6	Medium	•All inspection hatches must be kept closed. •The air from the thickeners and holding tanks must be vented at all times to the OCU. •Spillages will be washed down within a working day.	-	-	-	Buffer tank and enclosed belt thickeners to OCU. Quite central, distant from fenceline.
Sludge Conditioning (Indigenous)	Primary Raw/SAS Sludge Thickening & Pumping	Sludge.		Hatches left open.	R	Hours	Jenkins Lane	4	2	8	Medium	Keep hatches closed. Check OCU.	M	TM	N	
Sludge Conditioning (Indigenous)	Primary Raw/SAS Sludge Thickening & Pumping	Sludge.		Sludge spillage.	F	Hours	Jenkins Lane	4	1	4	Low	Clear spillage.	L	TM	N	
Sludge Conditioning (Indigenous)	Primary Raw/SAS Sludge Thickening & Pumping	Sludge.		Plant failure. Blockages.	F	Days	Jenkins Lane	4	1	4	Low	Repair plant. Unblock.	L	TM	N	
Sludge Conditioning (Indigenous)	SAS Thickening & Pumping	N/A. Co-thickened. See above.								0	N/A	N/A	-	-	-	SAS mixed with raw
Sludge Conditioning (Indigenous)	Sludge Blending & Mixing	N/A. Co-thickened. See above.								0	N/A	N/A	-	-	-	
Sludge Conditioning (Indigenous)	Return Liquors and return liquors well	Sludge.	C				Jenkins Lane	3	1	3	Low	Enclosed in pipes. Daily checks. Clean spillages imediately	-	-	-	Open return liqours well
Sludge Conditioning (Indigenous)	Return Liquors and return liquors well	Sludge.		Plant failure. Blockages.	R	Days	Jenkins Lane	3	1	3	Low	Repair plant. Unblock.	L	TM	N	
Sludge Treatment	Primary Digestion	Digested sludge.	C				Jenkins Lane, Hallingbury Road.	3	1	3	Low	Enclosed.	-	-	-	

Sludge Treatment	Primary Digestion	Digested sludge.		Sludge feed line burst.	R	Hours	Jenkins Lane, Hallingbury Road.	2	2	4	Low	Repair sludge line and clean up spillage ASAP	L	TM	N	
Sludge Treatment	Secondary Digestion	Digested sludge.	C				Jenkins Lane, Hallingbury Road.	2	2	4	Low	Daily checks as per sludge rounds.	-	-	-	
Sludge Treatment	Secondary Digestion	Digested sludge.		Retention time reduced - sludge not fully digested	R	Days	Jenkins Lane, Hallingbury Road.	2	2	4	Low	Constantly monitor retention time	L	TM	N	
Sludge Dewatering	Sludge Feed Tank	Digested sludge.	C				Jenkins Lane, Hallingbury Road.	2	2	4	Low	Daily checks as per sludge rounds. High spill alarms	-	-	-	
Sludge Dewatering	Beltpress	Digested sludge.	C				Jenkins Lane, Hallingbury Road.	2	2	4	Low	Inside ventilated building. Daily checks as per sludge rounds.	-	-	-	Inside ventilated building.
Sludge Dewatering	Beltpress	Digested sludge.		Belt press failure	R	Days	Jenkins Lane, Hallingbury Road.	2	2	4	Low	Use an alternative belt, repair plant	L	TM	N	
Sludge Dewatering	Liquor Return	Digested sludge.	C				Jenkins Lane, Hallingbury Road.	2	1	2	Low	Underground in pipes.	-	-	-	
Sludge Dewatering	Liquor Return	Digested sludge.		Bloackages	R	Days	Jenkins Lane, Hallingbury Road.	2	1	2	Low	Unblock, and clean area.	L	TM	N	
Sludge Storage & Movements	Cake Pad & Drainage	Digested sludge.	C				Jenkins Lane, Hallingbury Road.	2	2	4	Low	•Every effort is made to avoid excessive movements of cake, which might cause odour generation. •Sludge movement will be terminated if adverse conditions prevail. •All sludge cake is transported in covered wagons. The covers remain in place at all times other than during loading.	-	-	-	
Sludge Storage & Movements	Cake Pad & Drainage	Digested sludge.		Adverse weather	R	Days	Jenkins Lane, Hallingbury Road.	2	2	4	Low	Continuos monitoring.	L	-	-	Unlikely to be a problem except when being moved, see below.
Sludge Storage & Movements	Imported cake storage	Various, depending on materials.		Various sludge types stored on site.	R	Months	Jenkins Lane, Hallingbury Road. Pig Lane.	4	4	16	High	Use of portable OCUs. Responsibility of Biorecycling team.	H	Biorecylcling.	Y	
Sludge Storage & Movements	Vehicle Movements & Wash Down	Digested sludge.	I				Jenkins Lane, Hallingbury Road.	2	2	4	Low	Manual cleaning on cake pad and area cleans.	-	-	-	Vehicle movements.
Sludge Storage & Movements	Vehicle Movements & Wash Down	Digested sludge.		Cake disturbance. Cake left uncovered in trucks.	P	Hours	Jenkins Lane, Hallingbury Road.	3	4	12	Medium	Reported and address to avoid reoccurance.	M	Biorecylcling.	N	
Biogas Systems	Biogas Storage	Biogas	R				Hallingbury Road	2	1	2	Low	Biogas storage and gas lines are checked daily to ensure there are no gas emissions.	-	-	-	
Biogas Systems	Biogas Storage	Biogas		Gas release.	R	Hours	Hallingbury Road	2	2	4	Low	Isolate and divert to Waste Gas Burner.	M	TM	Y	May need to inform EA.
Biogas Systems	CHP	Exhaust gas.	R				Hallingbury Road	2	1	2	Low	Maintained by CHP team	-	-	-	
Biogas Systems	CHP	Exhaust gas.		Mains failure.	R	Hours	Hallingbury Road	2	1	2	Low	CHP automatically shuts off. Use of generator/flare	L	-	-	
Biogas Systems	Boilers	None.					Hallingbury Road	0	0	0	N/A	Checked on daily rounds, serviced every 6 months	-	-	-	
Biogas Systems	Waste Gas Burner	Exhaust gas.	R				Hallingbury Road	1	0	0	Low		-	-	-	
Biogas Systems	Waste Gas Burner	Exhaust gas.		Fails to ignite when required.	R	Hours	Hallingbury Road	3	1	3	Low	Isolate. Repair.	L	TM	N	
Power Generation	Standby Generators	Exhaust gas.	R				Hallingbury Road	1	0	0	Low					
Odour Control Packages	Gas scrubber (Sludge holding tanks)	None.					Jenkins Lane	0	0	0	N/A	-	-	-	-	Raw sludge thickening & Buffer Tank.
Odour Control Packages	Gas scrubber (Sludge holding tanks)	Sludge		Failure of fans, spray, media.	R	Weeks	Jenkins Lane	4	2	8	Medium	Repair.	M	TM	N	
Sludge Treatment	Emergency Liquid Sludge Storage Tank	Raw Sludge		Used for raw sludge	R	Months	Jenkins Lane	5	5	25	High	Move sludge off site or process it as soon as practically possible	L	-	-	
Sludge Treatment	Emergency Liquid Sludge Storage Tank	Digested Sludge		Used for digested sludge	R	Months	Jenkins Lane	2	2	4	Low	Move sludge off site or process it as soon as practically possible	L	-	-	

SITE NAME: **Bishops Stortford STW** **CRITICAL ODOUR ISSUES**

		Normal		Abnormal												
Process Stage	**Process Unit**	**Odour Description**	**Constant/ Intermittent/ Occasional/ Rare**	**Event Description**	**Likelihood of Event Frequent/ Rare/ Planned**	**Length of Time of Release**	**Nearest Customer/ Receptor**	**Offensive-ness (0-5)**	**Likelihood of Impact (0-5)**	**Odour Risk (<5 Low, >15 High)**	**Odour Impact**	**Mitigation Measures**	**Residual Odour Impact (L/M/H)**	**Responsibility for Mitigation Measures**	**Customer Communication Needed?**	**Notes**
Primary Settlement	Primary Settlement Tanks	Septic sewage.		Tank emptied	P	Weeks	Jenkins Lane	4	3	12	Medium	Controlled discharge. Consider covering inlet or submerge discharge. Wash tank.	M	TM	N	
Sludge Imports	Sludge Reception, Screening, Wash down & Drainage	Sludge		Adverse weather	R	Hours	Jenkins Lane	4	3	12	Medium	Avoid imports during adverse conditions. Discharge below water level. Cover inlet area.	H	TM	N	Alternative proposals under consideration.
Sludge Storage & Movements	Imported cake storage	Various, depending on materials.		Various sludge types stored on site.	R	Months	Jenkins Lane, Hallingbury Road. Pig Lane.	4	4	16	High	Use of portable OCUs. Responsibility of Biorecycling team	H	Biorecylcling.	Y	
Sludge Storage & Movements	Vehicle Movements & Wash Down	Digested sludge.		Cake disturbance. Cake left uncovered in trucks.	P	Hours	Jenkins Lane, Hallingbury Road.	3	4	12	Medium	Reported and address to avoid reoccurance. Responsibility of Biorecycling team	M	Biorecylcling.	N	
Sludge Treatment	Emergency Liquid Sludge Storage Tank	Raw Sludge		Used for raw sludge	R	Months	Jenkins Lane	5	5	25	High	Move sludge off site or process it as soon as practically possible	L	Tech 1s	Y	