

SITE NAME: Bishops Stortford STW

ODOUR RISK ASSESSMENT

Date Nov-23

| Process Stage | Process Unit | Legislation | Normal | | | Abnormal | | | 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/MH) | 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 | | | | | | | | | | | | | | | | | | |
| Works Inlet | Incoming Sewers & Reception Wet Well | UWWTD | 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 | UWWTD/EPR | 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 | UWWTD/EPR | 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 | UWWTD | 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 | UWWTD | 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 | UWWTD | 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 | UWWTD | 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 | UWWTD | 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 | UWWTD | 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 | UWWTD | Septic sewage. | | Scraper stopped. Blockage. | R | Days | Jenkins Lane | 3 | 1 | 3 | Low | Repair plant. Unblock. | L | TM | N | | |
| Primary Settlement | Primary Settlement Tanks | UWWTD | 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 | UWWTD | 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 | UWWTD | Sewage | O | | | | Jenkins Lane | 2 | 1 | 2 | Low | Daily checks as per site rounds. | - | Tech 1 | - | | |
| Primary Settlement | Fats, Oil & Grease Scum Removal System | UWWTD | Septic sewage. | | Blockage | R | Weeks | Jenkins Lane | 2 | 1 | 2 | Low | Unblock. | L | TM | N | | |
| Primary Settlement | Primary Raw Desludge Pumping | UWWTD | Fresh sludge. | C | | | | Jenkins Lane | 2 | 1 | 2 | Low | Daily checks as per site rounds. | - | - | - | | |
| Primary Settlement | Primary Raw Desludge Pumping | UWWTD | 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 | UWWTD | Earthy | C | | | | Jenkins Lane | 2 | 1 | 2 | Low | Enclosed in pipes. Daily checks as per site rounds. | - | - | - | | |

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|----------------------------------|---|-------|-------------------------------|---|---------------------------|---|-------|---------------------------------|---|---|----|--------|--|---|--------|---|--|
| Secondary Treatment (Biological) | Activated Sludge Plant Lanes & Zones | UWWTD | 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 | UWWTD | 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 | UWWTD | 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 | UWWTD | Earthy | C | | | | Jenkins Lane | 1 | 1 | 1 | Low | Enclosed in pipes. Daily checks as per site rounds. | - | - | - | |
| Secondary Settlement | Final Settlement Tanks | UWWTD | Earthy | C | | | | Jenkins Lane | 1 | 0 | 0 | Low | Daily checks as per site rounds. | - | - | - | |
| Secondary Settlement | Scum Removal System | UWWTD | Earthy | C | | | | Jenkins Lane | 1 | 0 | 0 | Low | daily checks as per site rounds. | - | - | - | |
| Secondary Settlement | Scum Removal System | UWWTD | 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 | UWWTD | Earthy | I | | | | Jenkins Lane | 1 | 1 | 1 | Low | Daily check as per effluent rounds. | - | tech 1 | - | |
| Secondary Settlement | SAS Chambers & Pumping | UWWTD | Earthy | C | | | | Jenkins Lane | 0 | 1 | 0 | Low | - | - | - | - | |
| Secondary Settlement | SAS Chambers & Pumping | UWWTD | Earthy | | Crust build up | R | Days | Jenkins Lane | 0 | 1 | 0 | Low | General routine maintenance | L | - | - | |
| Tertiary Treatment | Disc filters | UWWTD | None. | C | | | | Jenkins Lane | 0 | 0 | 0 | N/A | - | - | - | - | |
| Tertiary Treatment | Back Wash Returns | UWWTD | Earthy | C | | | | Jenkins Lane | 1 | 0 | 0 | Low | - | - | - | - | |
| Final Effluent | Specify Type | UWWTD | None. | C | | | | Jenkins Lane | 0 | 0 | 0 | N/A | - | - | - | - | |
| Sludge Imports | Sludge Reception, Screening, Wash down & Drainage | EPR | 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 | EPR | 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 | EPR | N/A | | | | | Jenkins Lane | | | 0 | N/A | - | - | - | - | See Works Inlet above |
| Sludge Conditioning (Indigenous) | Primary Raw/SAS Sludge Thickening & Pumping | EPR | 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 fence-line. |
| Sludge Conditioning (Indigenous) | Primary Raw/SAS Sludge Thickening & Pumping | EPR | 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 | EPR | 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 | EPR | Sludge. | | Plant failure. Blockages. | F | Days | Jenkins Lane | 4 | 1 | 4 | Low | Repair plant. Unblock. | L | TM | N | |
| Sludge Conditioning (Indigenous) | SAS Thickening & Pumping | EPR | N/A. Co-thickened. See above. | | | | | | | | 0 | N/A | N/A | - | - | - | SAS mixed with raw |
| Sludge Conditioning (Indigenous) | Sludge Blending & Mixing | EPR | N/A. Co-thickened. See above. | | | | | | | | 0 | N/A | N/A | - | - | - | |
| Sludge Conditioning (Indigenous) | Return Liquors and return liquors well | EPR | Sludge. | C | | | | Jenkins Lane | 3 | 1 | 3 | Low | Enclosed in pipes. Daily checks. Clean spillages immediately | - | - | - | Open return liquors well |
| Sludge Conditioning (Indigenous) | Return Liquors and return liquors well | EPR | Sludge. | | Plant failure. Blockages. | R | Days | Jenkins Lane | 3 | 1 | 3 | Low | Repair plant. Unblock. | L | TM | N | |
| Sludge Treatment | Primary Digestion | EPR | Digested sludge. | C | | | | Jenkins Lane, Hallingbury Road. | 3 | 1 | 3 | Low | Enclosed. | - | - | - | |
| Sludge Treatment | Primary Digestion | EPR | 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 | EPR | Digested sludge. | C | | | | Jenkins Lane, Hallingbury Road. | 2 | 2 | 4 | Low | Daily checks as per sludge rounds. | - | - | - | |

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|----------------------------|--|-----|----------------------------------|---|--|---|--------|---|---|---|----|--------|---|---|---------------|---|--|
| Sludge Treatment | Secondary Digestion | EPR | 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 | Digested sludge buffer tank | EPR | Digested sludge. | C | | | | Jenkins Lane, Hallingbury Road. | 2 | 2 | 4 | Low | Daily checks as per sludge rounds. High spill alarms | - | - | - | |
| Sludge Dewatering | Beltpress | EPR | 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 | EPR | 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 | EPR | Digested sludge. | C | | | | Jenkins Lane, Hallingbury Road. | 2 | 1 | 2 | Low | Underground in pipes. | - | - | - | |
| Sludge Dewatering | Liquor Return | EPR | Digested sludge. | | Blockages | R | Days | Jenkins Lane, Hallingbury Road. | 2 | 1 | 2 | Low | Unblock, and clean area. | L | TM | N | |
| Sludge Storage & Movements | Cake Pad & Drainage (including cake imports) | EPR | Digested sludge. | C | | | | Jenkins Lane, Hallingbury Road. | 2 | 2 | 4 | Low | <ul style="list-style-type: none"> •Every effort is made to avoid excessive movements of cake, which might cause odour generation. Cake in storage forms a crust after a day or two reducing risk of odour. No additional turning or handling during cake storage. Subject to pre acceptance checks. Tipper truck drop height less than 2m. •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 | EPR | Digested sludge. | | Adverse weather | R | Days | Jenkins Lane, Hallingbury Road. | 2 | 2 | 4 | Low | Continuous monitoring. | L | - | - | Unlikely to be a problem except when being moved, see below. |
| Sludge Storage & Movements | Imported cake storage | EPR | Various, depending on materials. | | Various sludge types stored on site. | R | Months | Jenkins Lane, Hallingbury Road, Pig Lane. | 4 | 4 | 16 | High | Consider use of portable OCU's. Responsibility of Biorecycling team. | H | Biorecycling. | Y | |
| Sludge Storage & Movements | Vehicle Movements & Wash Down | EPR | 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 | EPR | Digested sludge. | | Cake disturbance. Cake left uncovered in trucks. | P | Hours | Jenkins Lane, Hallingbury Road. | 3 | 4 | 12 | Medium | Reported and address to avoid recurrence. | M | Biorecycling. | N | |
| Biogas Systems | Biogas Storage | EPR | 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 | EPR | 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 | EPR | Exhaust gas. | R | | | | Hallingbury Road | 2 | 1 | 2 | Low | Maintained by CHP team | - | - | - | |
| Biogas Systems | CHP | EPR | Exhaust gas. | | Mains failure. | R | Hours | Hallingbury Road | 2 | 1 | 2 | Low | CHP automatically shuts off. Use of generator/flare | L | - | - | |
| Biogas Systems | Boilers | EPR | None. | | | | | Hallingbury Road | 0 | 0 | 0 | N/A | Checked on daily rounds, serviced every 6 months | - | - | - | |
| Biogas Systems | Waste Gas Burner | EPR | Exhaust gas. | R | | | | Hallingbury Road | 1 | 0 | 0 | Low | | - | - | - | |
| Biogas Systems | Waste Gas Burner | EPR | Exhaust gas. | | Fails to ignite when required. | R | Hours | Hallingbury Road | 3 | 1 | 3 | Low | Isolate. Repair. | L | TM | N | |
| Power Generation | Standby Generators | EPR | Exhaust gas. | R | | | | Hallingbury Road | 1 | 0 | 0 | Low | | - | - | - | |
| Odour Control Packages | Gas scrubber (Sludge holding tanks) | EPR | None. | | | | | Jenkins Lane | 0 | 0 | 0 | N/A | - | - | - | - | Raw sludge thickening & Buffer Tank. |
| Odour Control Packages | Gas scrubber (Sludge holding tanks) | EPR | Sludge | | Failure of fans, spray, media. | R | Weeks | Jenkins Lane | 4 | 2 | 8 | Medium | Repair. | M | TM | N | |
| Sludge Treatment | Contingency Tanks | EPR | 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 | Contingency Tanks | EPR | 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 | - | - | |