Local Operating Procedure (LOP)

Site	Alfreton
Title	Accident and Incident Management Plan

Purpose	In accordance with condition 1.1 of Environmental Permit EPR/WEX286796 for Alfreton Sewage Treatment Works, held by Severn Trent Water Ltd (Severn Trent), there is a requirement to implement and maintain an accident management plan and an incident response plan. The following accident management plan has been written in accordance with the Environment Agency guidance on Develop a management system: environmental permits and H1 Environmental Risk Assessment principles. The incident response plan has been consolidated with the accident management plan for the convenience of the user. An Incident Response Plan is necessary since Severn Trent sites have the potential to cause significant environmental harm. Not all risks can be eliminated through the Accident Management Plan, so the Incident Response Plan has been added in order to direct Customer Operations, Local Resilience Forums, and other emergency responders to information on the local residual risks. This plan should enable STW employees to: • Clearly understand who needs to be contacted during an emergency; • Identify possible risks to the environment that are present on site; and • Identify other sources of information that are available regarding risks to the environment.
Who	All members of staff at Alfreton Severn Trent Water Ltd.

Must Have (H&S, Quality, Quantity, Environment, Training, Resources)
N/A
Remember – 'Stop, Think, Take 20'

Summary Must Do
This document must be updated if the following changes are identified: 1. Addition or loss of a risk; 2. Change in mitigation strategies; 3. Change in likelihood of exposure; 4. Change in consequence; 5. Change in contact details; or 6. Change in incident response.

1 Emergency Contacts

Following an assessment of the severity and nature of an incident, site management may trigger the Strategic Incident Management Plan which provides additional resources to manage an incident.

For any other queries, please refer to the Security Team below:

Resilience Specialist, Security and Resilience Team - DETAILS REDACTED FOR EA ISSUE

Security and Resilience Lead - DETAILS REDACTED FOR EA ISSUE

See Table 1.1 for the internal and external contact numbers for Alfreton STW.

Table 1.1 - Internal and External Alfreton Contact Numbers

External Contacts		
Contact	Office Hours Number	Out of Hours Number
Emergency Services (Fire/Police/Ambulance)	112 (Call 888 From STW landlines)	112 (Call 888 From STW landlines)
Local Police	01773 730 215	101 (non-emergency)
Police anti-terrorist hotline	0800 789 321	0800 789 321
Local Hospital/NHS trust	(Ripley Hospital) 01773 743 456	111
Environmental Regulator Incident Hotline	0800 80 70 60 (24 hour service)	0800 80 70 60 (24 hour service)
Environmental Regulator Local Contact	(Lichfield) 0370 850 6506	0800 80 70 60 (24 hour service)
Local Authority Emergency Planning Dept	(Amber Valley) 01773 570 222	01773 841 414
Floodline	0345 988 1188 (24 hour service)	0345 988 1188 (24 hour service)
Energy Company – Western Power	0800 678 105	Emergency: 105
Highways Agency	0300 123 5000	0300 123 5000
Canal & River Trust	Serious Pollution: 0800 47 999 47 Incident Reporting: 0303 040 4040	0303 040 4040
Network Rail	0845 711 4141	British Transport Police: 0800 40 50 40
Waste Management Contractor		
Specialist Clean Up Contractor		
Asbestos Management Contractor		
Internal Contacts		
STW Manager		
STW Senior Technician		
WWR Business Lead East	DETAILS REDACTED FOR EA ISSUE	
Managing Director		
Environmental Permit Team Lead		
Environment, Regs & Permits Business Lead		
Health & Safety Manager		
Bioresources Area Manager		
Bioresources Business lead		
Fire Warden		

2 Site Permit Background

2.1 Location

The Alfreton Sewage Treatment Works is located at Rodgers Lane, Alfreton, DE55 7FF, National Grid reference SK41275682. What3Words reference for the entrance of the site ///suffer.casual.belly.

2.2 Operations

The sewage works receives domestic sewage and trade effluent from local industries via the public sewerage system. The site also accepts Tankered Trade Waste, Tankered Domestic Waste and interworks sludge. The permitted wastes are restricted to non-hazardous sludges that fall under waste in liquid form and wastewater as described in the Urban Wastewater Treatment Directive (UWWTD).

Wastes are treated aerobically via the Urban Wastewater treatment route (either on this site or prior to import from satellite sites), then treated anaerobically through Digesters. The activities at the works also include the combustion of biogases in one Combined Heat and Power (CHP) spark ignition engine and three auxiliary dual fuel boilers.

Full details of site operations and maintenance are described fully within our management system.

The activities covered by permit EPR/WEX286796 can be found in Schedule 1 of the permit.

3 Identification of Hazards and Consequent Risk

3.1 Vulnerability of Site to Contamination

A summary of environmental receptors in the vicinity of the site is detailed in Table 3.1. Receptors sensitivity has been used to assess level of mitigation required in Appendix A: Accident Management Risk Table in order to maintain a low likelihood of exposure.

Table 3.1 – Local Receptors and Sensitivity

Receptor Type	Receptor(s)	Sensitivity	Reasoning
Groundwater	Unproductive designation for superficial drift and Secondary A aquifer for bedrock designation.	Low	The site does not sit within a total catchment zone for SPZ
Surface Water	Alfreton Brook	Medium	Alfreton Brook is located 55m north of the site. Access to the cake pad is located east of the main road on the site, 80m from the brook. A wheel wash is utilised on the cake pad, however some digested cake residue is present on the road leading to the brook.
Ecological	Shaw Wood (AW) Replanted woodland (AW)	Low	There are no LNRs or SSSIs within 2km of the site. There are two patches of ancient woodland (AW) within 5km of the site. Shaw Wood is 3km south west and another patch with no name is 2.8km south. There are no Ramsar sites, SPAs or SACs within 10km of the site.
Local Population	Residential and commercial areas	Medium	The site is bounded to the north, east and west by agricultural land. There is a small pump station 125m north of the site and farm buildings 480m north west. The site is bounded to the south by an industrial site (mostly a crane yard) and a patch of allotments lies 115m south after a dense patch of trees. Residential buildings are located 240m south of the site as part of the town of Alfreton.

3.2 Accident Risk Assessment

The methodology employed for the accident risk assessment is based on the H1 methodology and the results are included below in Appendix A: Accident Management Risk Table.

Appendix A: Accident Management Risk Table provides an environmental risk assessment of the worst-case accidents. There are a considerable number of safeguards against such events described in the risk mitigation column.

The hazards within works that could potentially result in an adverse effect on the environment have been identified. It should be noted that the initiator for the events has not necessarily been identified. For example for a fire, the specific source of ignition has not always been considered, rather a general assessment of the likelihood of the event.

The descriptors associated with each ranking are listed in Accident and Incident management Plan Standard Operating Procedure (SOP), giving a resulting level of likelihood (L) and consequence (C) of a hazard.

In order to evaluate the resultant risks posed by the site, a risk assessment matrix (Accident and Incident management Plan (SOP) has been used. By reading down the rows to the appropriate likelihood level of a hazard, then across the columns to intersect with the appropriate consequence (C) level, the overall assessment of the hazard is identified. Appendix Three describes the basis on how these levels are interpreted.

Appendix A: Accident Management Risk Table contains the Accident Risk Assessment table. Click the link below for direction to a specific risk:

1. Contact with machinery;
2. Major Fire - air pollution, smoke, odour;
3. Minor Fire - air pollution, smoke, odour;
4. Failure to contain firewater;
5. Vandalism;
6. Flooding from rivers / stream / canal / groundwater;
7. Flooding due to drain blockages and / or excessive rainfall causing localised on-site surface water flooding;
8. Major vehicle accident leading to significant loss of fuel oil, coolant or engine oil, or transported product;
9. Significant loss of Fuel, oil, chemicals, materials during a delivery – through overfill, delivery line rupture etc.
10. Misconnection of tanker offloading hoses;
11. Damage to tank (accidental rupture, vehicle impact, failure or vandalism) leading to significant inventory loss.;
12. Failure of storage tank, pipe rupture (raw materials, chemicals, fuels, product);
13. Spillage / leak of chemicals, fuel / oil, etc during handling / transfer;
14. Spillage of sludge during transfer / handling activities;
15. Failure of sludge, storage tanks / digester tanks e.g. tank overtopping, pipework leaks;
16. Failure of underground pipework (e.g. fuel, chemicals, sludge, site drains);
17. Buildup of H_2S in confined space;
18. Significant leak of biogas following failure of containment of digestor or gas holder;
19. Failure of flare leading to a buildup of biogas and possible fire / explosion;
20. Failure of dewatering activities leading to deposit on cake pad or escape from building of sludge with lower than normal dry solid content;
21. Excessive odour generation from processing operations;
22. Failure of Bearing / pump / machinery etc leading to excessive noise;
23. Equipment breakdown;
24. Enforced shutdown;
25. Bad weather (heat, cold, wind);
26. Plane crash;
27. Terrorist event;
28. Loss of electrical power to the installation, leading to loss of pumps, control systems;
29. Gas leak from PRV or pipework failure;
30. Failure of secondary / tertiary containment; and
31. Unidentified container contents.

4 Conclusions of the Accident Risk Assessment

The accident risk assessment does not identify any unacceptable risks from the site due to the contained nature of the works and a considerable number of mitigating measures, both management and physical.

As part of a Severn Trent wide review, a number of actions are taking place to further improve the management and containment of our AD Sites.

5 Incident Management Plan

The Incident Response Plan has been based on the pollution prevention guidance written by the Environment Agency for Pollution Incident Response Planning (PPG21).

An Incident Response Plan is necessary since Severn Trent sites have the potential to cause significant environmental harm.

The objective of this plan is to be used by Operators, Maintainers, SD Managers etc. in the event of finding a spillage, fire or flood on site. Flow charts for these events can be found in Appendix B: Incident Response Plans.

See Alfreton Fire Response Plan for details regarding Fire Alarms and Evacuation Plans.

Appendix A: Accident Management Risk Table

What harm can be caused?			Managing the Risk	Assessing the risk		
Source	Receptor	Pathway	Controls	Likelihood of exposure	Consequence	What is the residual risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor	Risk Mitigation	How probable is this contact?	What is the harm that can be caused?	What is the risk that still remains?
1. Contact with machinery	Local population or livestock gaining unauthorised access to the installation. Bodily harm	Direct contact	100052 SITE SECURITY STANDARD Risk mitigated by following the security standard. Direct contact is minimised by activity being carried out within enclosed digesters. Banksmen are used when appropriate and vehicles have reversing alarms.	Highly unlikely	Severe	Low provided procedures are followed
2. Major Fire - air pollution, smoke, odour	Local population. Respiratory irritation, illness and nuisance, injury to emergency workers, staff, arsonists. Ground and ground water. Ecological receptors	Windblown dispersion. Spillages and direct run off from site and from drainage system	100088 FIRE SAFETY STANDARD 100102 OFFICE SAFETY STANDARD COSHH RESPOSITORY ON WATERPEDIA (see related documents) 100082 MANAGING SUBSTANCES HAZARDOUS TO HEALTH STANDARD 200711 NON INFRA POLLUTION RESPONSE SOP 100048 STANDARD FOR THE ACCEPTANCE AND STORAGE OF CHEMICALS USED ON WASTE WATER NON INFRA SITES 100162 ISOLATION OF ENERGY AND EQUIPMENT The CHP engine feeds are fitted with a slam shut valve, which is activated by gas and temperature sensors in the engine container. The container also has forced air ventilation to prevent the formation of an explosive atmosphere. Fire alarm systems installed and maintained. Automatic cut off valve to biogas supply using a fusable link, electric temperature sensor, flame arrestors, etc.	Very unlikely	Medium	Low to medium provided procedures are followed

What harm can be caused?			Managing the Risk	Assessing the risk		
Source	Receptor	Pathway	Controls	Likelihood of exposure	Consequence	What is the residual risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor	Risk Mitigation	How probable is this contact?	What is the harm that can be caused?	What is the risk that still remains?
			All employees will undergo training relevant to their role in fire prevention, use of fire extinguishers and emergency procedures. There are named Fire Wardens. Hot work on site should be appropriately authorized prior to commencement. All sites are non-smoking. Smoking is only permitted in designated areas. A formal permit to work system will be in place to ensure appropriate precautions are taken and approval obtained. Follow site Emergency Plan and inform relevant authorities.			
3. Minor Fire - air pollution, smoke, odour	Local population. Respiratory irritation, illness and nuisance, injury to emergency works, staff, arsonists. Ground and ground water. Ecological receptors.	Windblown dispersion. Spillages and direct run off from site and from drainage system	See above for major fire.	Low likelihood	Medium	Low provided procedures are followed
4. Failure to contain firewater	Local water courses. Ground and Groundwater	Surface water drainage system.	100088 FIRE SAFETY STANDARD 100102 OFFICE SAFETY STANDARD COSHH RESPOSITORY ON WATERPEDIA (see related documents)	Low likelihood	Medium	Low provided procedures are followed.

What harm can be caused?			Managing the Risk	Assessing the risk		
Source	Receptor	Pathway	Controls	Likelihood of exposure	Consequence	What is the residual risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor	Risk Mitigation	How probable is this contact?	What is the harm that can be caused?	What is the risk that still remains?
		Diffusion into ground.	100082 MANAGING SUBSTANCES HAZARDOUS TO HEALTH STANDARD 200711 NON INFRA POLLUTION RESPONSE SOP 100048 STANDARD FOR THE ACCEPTANCE AND STORAGE OF CHEMICALS USED ON WASTE WATER NON INFRA SITES 100162 ISOLATION OF ENERGY AND EQUIPMENT Fire prevention measures above. Drainage of wider sewage treatment works contained and directed to the head of the works. All manholes and drainage points lead back to the works. Drain covers are available in spill kits located by oils and chemicals in the event of fire water contamination of oils/chemicals. Follow site Emergency Plan and inform relevant authorities			
5. Vandalism	Local population. Ecological receptors. Local water courses. Ground and groundwater.	Windblown dispersion. Surface water drainage system. Diffusion into ground.	100052 SITE SECURITY STANDARD Site security measures are in place including perimeter fence with controlled access gates. Regular inspection of perimeter fences. Site permanently manned. Address any specific equipment damage. Reinstate and review security measures.	Low likelihood	Medium	Low as management techniques are used
6. Flooding from rivers / stream / canal / groundwater	Local water courses. Ground and groundwater.	Surface water drainage system. Diffusion into ground.	305933 FLOOD EMERGENCY RESPONSE PLAN The site is located in flood zone 1 (1 in 1000 or less chance of flooding) General wider works designed to minimize risk of localized works flooding due to storm surges. Inform the EA.	Low likelihood	Mild	Low as management techniques are used

What harm can be caused?			Managing the Risk	Assessing the risk		
Source	Receptor	Pathway	Controls	Likelihood of exposure	Consequence	What is the residual risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor	Risk Mitigation	How probable is this contact?	What is the harm that can be caused?	What is the risk that still remains?
			Take appropriate corrective and preventative actions to minimize environmental impact. If the installation is in imminent danger of flooding or a flood alert has been issued, all electrical supplies in the affected area will be isolated. If possible, all stocks of fuel will be removed from the area at risk. Personnel will not attempt to enter a flooded area until a risk assessment has been undertaken or the flood has subsided. Personnel will follow instructions issued by supervisors, managers or other competent persons. Samples of floodwater will be obtained to determine whether it is contaminated. If the floodwater is not contaminated, it will be pumped to surface water. If contamination is shown to be present, the Environment Agency will be consulted before removal. Following remedial action to clear the flood water, an approved contractor will check all affected electrical supplies.			
7. Flooding due to drain blockages and / or excessive rainfall causing localised on-site surface water flooding	Local water courses. Ground and groundwater.	Surface water drainage system. Diffusion into ground.	100052 SITE STANDARDS Regular checks including drains and hardstanding. Spill response material including booms available to manage water If the installation is in imminent danger of flooding or a flood alert has been issued, all electrical supplies in the affected area will be isolated. If possible, all stocks of fuel will be removed from the area at risk. Personnel will not attempt to enter a flooded area until a risk assessment has been undertaken or the flood has subsided. Personnel will follow instructions issued by supervisors, managers or other competent persons.	Likely	Minor	Low as management techniques are used

What harm can be caused?			Managing the Risk	Assessing the risk		
Source	Receptor	Pathway	Controls	Likelihood of exposure	Consequence	What is the residual risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor	Risk Mitigation	How probable is this contact?	What is the harm that can be caused?	What is the risk that still remains?
			Samples of floodwater will be obtained to determine whether it is contaminated. If the floodwater is not contaminated, it will be pumped to surface water. If contamination is shown to be present, the Environment Agency will be consulted before removal. Following remedial action to clear the flood water, an approved contractor will check all affected electrical supplies.			
8. Major vehicle accident leading to significant loss of fuel oil, coolant or engine oil, or transported product	Local water courses. Ground and groundwater, Localised fumes, bodily injury	Surface water drainage system. Diffusion into ground and air, physical contact	202325 SPILL RESPONSE SOP 100044 WASTE MANAGEMENT STANDARD COSHH RESPOSITORY ON WATERPEDIA (see related documents) 100082 MANAGING SUBSTANCES HAZARDOUS TO HEALTH STANDARD 100116 WORKPLACE STANDARDS 100107 TRAFFIC MANAGMENT ON MANNED SITES, DEPOTS AND OFFICES STANDARD 100097 MANAGING CONTRACTORS AND SUPPLIERS STANDARD 100088 FIRE SAFETY STANDARD 200711 NON INFRA POLLUTION RESPONSE SOP 100048 STANDARD FOR THE ACCEPTANCE AND STORAGE OF CHEMICALS USED ON WASTE WATER NON INFRA SITES Spill kits are available insitu where chemicals and oil are stored. These will be used to cover drains if necessary to prevent spills retuning to the head of the works and remedy the spill. Vehicle speed is low due to small size of site. Speed limit restrictions are currently in place as part of the sites traffic management plan – which also includes a one-way system. Most drivers are familiar with the site – routine deliveries. Road vehicles are very robust and designed to withstand high-speed collisions.	Highly unlikely	Severe	Low as management techniques are used

What harm can be caused?			Managing the Risk	Assessing the risk		
Source	Receptor	Pathway	Controls	Likelihood of exposure	Consequence	What is the residual risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor	Risk Mitigation	How probable is this contact?	What is the harm that can be caused?	What is the risk that still remains?
			Any evidence of sizeable spillage or leakage would be reported to the Site Manager or his deputy for appropriate remedial action. All operators are trained in spillage management. STW have a 24hr external response service for emergency clean-up.			
9. Significant loss of Fuel, oil, chemicals, materials during a delivery – through overfill, delivery line rupture etc.	Local water courses. Ground and groundwater. Localised fumes, bodily injury	Surface water drainage system. Diffusion into ground and air, physical contact	204720, 204721, 204911, 204721, 204722 CHEMICAL DELIVERY SOPS COSHH RESPOSITORY ON WATERPEDIA (see related documents) 100044 WASTE MANAGEMENT STANDARD 100082 MANAGING SUBSTANCES HAZARDOUS TO HEALTH STANDARD 100116 WORKPLACE STANDARDS 100088 FIRE SAFETY STANDARD 100097 MANAGING CONTRACTORS AND SUPPLIERS STANDARD 200711 NON INFRA POLLUTION RESPONSE SOP 202325 CHEMICAL SPILL GUIDANCE SOP 204344 EMS SPILL KIIT SOP 100048 STANDARD FOR THE ACCEPTANCE AND STORAGE OF CHEMICALS USED ON WASTE WATER NON INFRA SITES All polluting materials delivered to site will be unloaded by suitably competent employees from the delivery company, and overseen by a designated competent operative. Oil and chemicals are stored in secondary containment via steel double walled storage tanks or bund. Regular visual inspection of containment. Records of all deliveries are kept. Tanks are checked for capacity before filling. All road tanker on and off loading points are locked to ensure use by authorised personnel only. The fill/dispensing connection point is kept locked and is within the outer tank.	Likely	Mild	Low as management techniques are used

What harm can be caused?			Managing the Risk	Assessing the risk		
Source	Receptor	Pathway	Controls	Likelihood of exposure	Consequence	What is the residual risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor	Risk Mitigation	How probable is this contact?	What is the harm that can be caused?	What is the risk that still remains?
			The tanker on and off loading area is concrete hard standing. If a tank was overwhelmed or leak occurs outside of a bund the drainage of the wider sewage treatment works is contained. Spill kits are available insitu where chemicals and oil are stored. These will be used to cover drains if necessary to prevent spills retuning to the head of the works and remedy the spill. Any evidence of sizeable spillage or leakage would be reported to the Site Manager or his deputy for appropriate remedial action. All operators are trained in spillage management. STW have a 24hr external response service for emergency clean-up.			
10. Misconnection of tanker offloading hoses	Local water courses. Ground and groundwater, local population	Overtopping, failure of digestion process	204720, 204721, 204911, 204721, 204722 CHEMICAL DELIVERY SOPS COSHH RESPOSITORY ON WATERPEDIA (see related documents) 100044 WASTE MANAGEMENT STANDARD 100082 MANAGING SUBSTANCES HAZARDOUS TO HEALTH STANDARD 100116 WORKPLACE STANDARDS 100088 FIRE SAFETY STANDARD 100097 MANAGING CONTRACTORS AND SUPPLIERS STANDARD 200711 NON INFRA POLLUTION RESPONSE SOP 202325 CHEMICAL SPILL GUIDANCE SOP 204344 EMS SPILL KIIT SOP 100048 STANDARD FOR THE ACCEPTANCE AND STORAGE OF CHEMICALS USED ON WASTE WATER NON INFRA SITES Pre-acceptance and acceptance testing. Hoses are provided on-site to be used by the tankers to mitigate against misconnection.	Likely	Mild	Low as management techniques are used

What harm can be caused?			Managing the Risk	Assessing the risk		
Source	Receptor	Pathway	Controls	Likelihood of exposure	Consequence	What is the residual risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor	Risk Mitigation	How probable is this contact?	What is the harm that can be caused?	What is the risk that still remains?
			All polluting materials delivered to site will be unloaded by suitably competent employees from the delivery company, and overseen by a designated competent operative. Oil and chemicals are stored in secondary containment via steel double walled storage tanks or bunds where required. Regular visual inspection of containment. Records of all deliveries are kept. Tanks are checked for capacity before filling. All road tanker on and off-loading points are locked to ensure use by authorised personnel only. The fill/dispensing connection point is kept locked and is within the outer tank. The tanker on and off-loading area is concrete hard standing. If a tank was overwhelmed or leak occurs outside of a bund the drainage of the wider sewage treatment works is contained. Spill kits are available insitu where chemicals and oil are stored. These will be used to cover drains if necessary to prevent spills retuning to the head of the works and remedy the spill. Any evidence of sizeable spillage or leakage would be reported to the Site Manager or his deputy for appropriate remedial action. All operators are trained in spillage management. STW have a 24hr external response service for emergency clean-up.			
11. Damage to tank (accidental rupture, vehicle impact, failure or vandalism) leading to significant inventory loss.	Local water courses. Ground and groundwater.	Surface water drainage system. Diffusion into ground.	204720, 204721, 204911, 204721, 204722 CHEMICAL DELIVERY SOPS COSHH RESPOSITORY ON WATERPEDIA (see related documents) 100044 WASTE MANAGEMENT STANDARD 200711 NON INFRA POLLUTION RESPONSE SOP 202325 CHEMICAL SPILL GUIDANCE SOP 204344 EMS SPILL KIIT SOP 100048 STANDARD FOR THE ACCEPTANCE AND STORAGE OF CHEMICALS USED ON WASTE WATER NON INFRA SITES	Low likelihood	Medium	Low as management techniques are used

What harm can be caused?			Managing the Risk	Assessing the risk		
Source	Receptor	Pathway	Controls	Likelihood of exposure	Consequence	What is the residual risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor	Risk Mitigation	How probable is this contact?	What is the harm that can be caused?	What is the risk that still remains?
			All polluting materials delivered to site will be unloaded by suitably competent employees from the delivery company, and overseen by a designated competent operative. Oil and chemicals are stored in secondary containment via steel double walled storage tanks or bund where required. Regular visual inspection of containment. Records of all deliveries are kept. Tanks are checked for capacity before filling. All road tanker on and off-loading points are locked to ensure use by authorised personnel only. The fill/dispensing connection point is kept locked and is within the outer tank. The tanker on and off-loading area is concrete hard standing. If a tank was overwhelmed or leak occurs outside of a bund the drainage of the wider sewage treatment works is contained. Spill kits are available insitu where chemicals and oil are stored. These will be used to cover drains if necessary to prevent spills retuning to the head of the works and remedy the spill. Any evidence of sizeable spillage or leakage would be reported to the Site Manager or his deputy for appropriate remedial action. All operators are trained in spillage management. STW have a 24hr external response service for emergency clean-up.			
12. Failure of storage tank, pipe rupture (raw materials, chemicals, fuels, product)	Local water courses. Ground and groundwater.	Surface water drainage system. Diffusion into ground.	204720, 204721, 204911, 204721, 204722 CHEMICAL DELIVERY SOPS COSHH RESPOSITORY ON WATERPEDIA (see related documents) 100044 WASTE MANAGEMENT STANDARD 200711 NON INFRA POLLUTION RESPONSE SOP 202325 CHEMICAL SPILL GUIDANCE SOP 204344 EMS SPILL KIIT SOP	Low likelihood	Medium	Low as management techniques are used

What harm can be caused?			Managing the Risk	Assessing the risk		
Source	Receptor	Pathway	Controls	Likelihood of exposure	Consequence	What is the residual risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor	Risk Mitigation	How probable is this contact?	What is the harm that can be caused?	What is the risk that still remains?
			100048 STANDARD FOR THE ACCEPTANCE AND STORAGE OF CHEMICALS USED ON WASTE WATER NON INFRA SITES All polluting materials delivered to site will be unloaded by suitably competent employees from the delivery company, and overseen by a designated competent operative. Oil and chemicals are stored in secondary containment via steel double walled storage tanks or bund where required. Regular visual inspection of containment. Records of all deliveries are kept. Tanks are checked for capacity before filling. All road tanker on and off-loading points are locked to ensure use by authorised personnel only. The fill/dispensing connection point is kept locked and is within the outer tank. The tanker on and off-loading area is concrete hard standing. If a tank was overwhelmed or leak occurs outside of a bund the drainage of the wider sewage treatment works is contained. Spill kits are available insitu where chemicals and oil are stored. These will be used to cover drains if necessary to prevent spills retuning to the head of the works and remedy the spill. Any evidence of sizeable spillage or leakage would be reported to the Site Manager or his deputy for appropriate remedial action. All operators are trained in spillage management. STW have a 24hr external response service for emergency clean-up.			
13. Spillage / leak of chemicals, fuel / oil, etc during handling / transfer	Local water courses. Ground and groundwater.	Surface water drainage system. Diffusion into ground.	COSHH RESPOSITORY ON WATERPEDIA (see related documents) 100044 WASTE MANAGEMENT STANDARD 100097 MANAGING CONTRACTORS AND SUPPLIERS STANDARD 100088 FIRE SAFETY STANDARD 200711 NON INFRA POLLUTION RESPONSE SOP	Likely	Mild	Low as management techniques are used

What harm can be caused?			Managing the Risk	Assessing the risk		
Source	Receptor	Pathway	Controls	Likelihood of exposure	Consequence	What is the residual risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor	Risk Mitigation	How probable is this contact?	What is the harm that can be caused?	What is the risk that still remains?
			202325 CHEMICAL SPILL GUIDANCE SOP Hoses are provided on-site to be used by the tankers to mitigate against misconnection. Oil and chemicals are stored in a secondary containment via steel double walled storage tanks or bund where required. Regular visual inspection of containment. If a tank was overwhelmed or leak occurs outside of a bund the drainage of the wider sewage treatment works is contained. Spill kits are available insitu where chemicals and oil are stored. These will be used to cover drains if necessary to prevent spills retuning to the head of the works and remedy the spill. Any evidence of sizeable spillage or leakage would be reported to the Site Manager or his deputy for appropriate remedial action. All operators are trained in spillage management. STW have a 24hr external response service for emergency clean-up. The CHP engine is containerised, the unit also has a low-pressure sensor on the coolant system. All drummed material storage areas have secondary containment. Bulk antifoam is stored in 1000 litre IBC units within suitable drip trays. Polymer is stored in a self-contained unit and all pipe work is dual walled.			
14. Spillage of sludge during transfer / handling activities	Local water courses. Ground and groundwater.	Surface water drainage system. Diffusion into ground.	COSHH RESPOSITORY ON WATERPEDIA (see related documents) 100044 WASTE MANAGEMENT STANDARD 100088 FIRE SAFETY STANDARD 100097 MANAGING CONTRACTORS AND SUPPLIERS STANDARD 200711 NON INFRA POLLUTION RESPONSE SOP 202325 CHEMICAL SPILL GUIDANCE SOP	Likely	Minor	Low

What harm can be caused?			Managing the Risk	Assessing the risk		
Source	Receptor	Pathway	Controls	Likelihood of exposure	Consequence	What is the residual risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor	Risk Mitigation	How probable is this contact?	What is the harm that can be caused?	What is the risk that still remains?
			Hoses are provided on-site to be used by the tankers to mitigate against misconnection. Provision of secondary containment via steel double walled storage tanks. Regular inspection of containment. If a leak occurs the drainage of the wider sewage treatment works is contained and spill directed to the head of the works. Any evidence of sizeable spillage or leakage would be reported to the Site Manager or his deputy for appropriate remedial action. All operators are trained in spillage management and spill kits are available on site. STW have a 24hr external response service for emergency clean-up.			
15. Failure of sludge, storage tanks / digester tanks e.g. tank overtopping, pipework leaks	Local water courses. Ground and groundwater.	Surface water drainage system. Diffusion into ground.	COSHH RESPOSITORY ON WATERPEDIA (see related documents) 100044 WASTE MANAGEMENT STANDARD 100088 FIRE SAFETY STANDARD 100097 MANAGING CONTRACTORS AND SUPPLIERS STANDARD 200711 NON INFRA POLLUTION RESPONSE SOP 202325 CHEMICAL SPILL GUIDANCE SOP 204344 EMS SPILL KIIT SOP 100048 STANDARD FOR THE ACCEPTANCE AND STORAGE OF CHEMICALS USED ON WASTE WATER NON INFRA SITES Hoses are provided on-site to be used by the tankers to mitigate against misconnection. Regular infrastructure visual inspections including pipework and tanks and planned preventive maintenance system in place.	Low likelihood	Medium	Low as management techniques are used

What harm can be caused?			Managing the Risk	Assessing the risk		
Source	Receptor	Pathway	Controls	Likelihood of exposure	Consequence	What is the residual risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor	Risk Mitigation	How probable is this contact?	What is the harm that can be caused?	What is the risk that still remains?
			High level alarms on all tanks and digesters. Digester foaming is monitored and anti-foam added as required. Primary digesters subject to periodic grit removal as required. Any evidence of sizeable spillage or leakage would be reported to the Site Manager or his deputy for appropriate remedial action. All operators are trained in spillage management and spill kits are available on site. All drains lead to the head of the works. Spilled sludge can be directed to drains. STW have a 24hr external response service for emergency clean-up.			
16. Failure of underground pipework (e.g. fuel, chemicals, sludge, site drains)	Ground and groundwater	Infiltration / percolation through ground	COSHH RESPOSITORY ON WATERPEDIA (see related documents) 100044 WASTE MANAGEMENT STANDARD 100088 FIRE SAFETY STANDARD 100097 MANAGING CONTRACTORS AND SUPPLIERS STANDARD 200711 NON INFRA POLLUTION RESPONSE SOP 202325 CHEMICAL SPILL GUIDANCE SOP 204344 EMS SPILL KIIT SOP 100048 STANDARD FOR THE ACCEPTANCE AND STORAGE OF CHEMICALS USED ON WASTE WATER NON INFRA SITES Regular infrastructure inspections including visible pipework and tanks and planned preventive maintenance system in place. Any evidence of leakage including staining to ground would be reported to the Site Manager or his deputy for appropriate remedial action. All operators are trained in spillage management. STW have a 24hr external response service for emergency clean-up. Site is not within a groundwater SPZ.	Low likelihood	Medium	Low as management techniques are used

What harm can be caused?			Managing the Risk	Assessing the risk		
Source	Receptor	Pathway	Controls	Likelihood of exposure	Consequence	What is the residual risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor	Risk Mitigation	How probable is this contact?	What is the harm that can be caused?	What is the risk that still remains?
17. Buildup of H_2S in confined space	Local population, staff, emergency workers, ecological receptors	Windblown dispersion.	100247 ABOVE GROUND HYDROGEN SULPHIDE STANDARD 100104 PPE 100121 DSEAR STANDARD Staff are trained to carry out risk assessment prior to the entry of potentially hazardous spaces. Staff are provided with and trained in the use of personal gas monitors. There is a regular calibration program for gas monitors. Continuous process monitoring to identify abnormal conditions that could result in buildup of H2S. Repair and maintenance teams on 24hr standby.	Low likelihood	Medium	Low as management techniques are used
18. Significant leak of biogas following failure of containment of digestor or gas holder	Local population. Contribution to climate change.	Windblown dispersion.	100121 DSEAR STANDARD 100088 FIRE SAFETY STANDARD 204717 Digester Emergency Alarms Guide Guarding of exposed pipework. Regular maintenance inspections. Pressure is monitored 24/7 by operations control centre. Any alarms initiated are actioned immediately. Vent gas through flare if possible. Inform EA and emergency services. Invoke Site Emergency Plan.	Highly unlikely	Severe	Moderate / Low as management techniques are used
19. Failure of flare leading to a buildup of biogas and possible fire / explosion	Local population, respiratory irritation, illness and nuisance,	Windblown dispersion. Spillages and direct run off from site and from	100121 DSEAR STANDARD 100088 FIRE SAFETY STANDARD 100102 OFFICE SAFETY STANDARD COSHH RESPOSITORY ON WATERPEDIA (see related documents) 100097 MANAGING CONTRACTORS AND SUPPLIERS STANDARD 200711 NON INFRA POLLUTION RESPONSE SOP	Low likelihood	Medium	Low as management techniques are used

What harm can be caused?			Managing the Risk	Assessing the risk		
Source	Receptor	Pathway	Controls	Likelihood of exposure	Consequence	What is the residual risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor	Risk Mitigation	How probable is this contact?	What is the harm that can be caused?	What is the risk that still remains?
	injury to emergency works, staff, arsonists. Ground and groundwater	drainage system	202325 CHEMICAL SPILL GUIDANCE SOP 100162 ISOLATION OF ENERGY AND EQUIPMENT The engine feed is fitted with a slam shut valve, which is activated by gas and temperature sensors in the engine container. The container also has forced air ventilation to prevent the formation of an explosive atmosphere. Fire alarm systems installed and maintained. Automatic cut off valve to biogas supply using a fusable link, electric temperature sensor, flame arrestors, etc. All employees will undergo training relevant to their role in fire prevention, use of fire extinguishers and emergency procedures. There are named Fire Wardens. All sites are non-smoking. Smoking is only permitted in designated areas. A formal permit to work system will be in place to ensure appropriate precautions are taken and approval obtained. Pressure release valves automatically operate to reduce pressure.			
20. Failure of dewatering activities leading to deposit on cake pad or escape from building of sludge with lower than normal dry solid content	Local water courses. Ground and groundwater.	Surface water drainage system. Diffusion into ground.	Repair and maintenance teams on 24hr standby. Scheduled inspection, repair and maintenance tasks, with a central tracking system for completion and escalation. Remote alarm systems. Secondary and tertiary containment in case of loss of containment. Drainage of wider sewage treatment works contained and directed to the head of the works.	Low likelihood	Medium	Low as management techniques are used
21. Excessive odour generation	Local population.	Windblown dispersion.	100269 ASSET STANDARD ODOUR TREATMENT AND CONTROL PLANTS	Likely	Mild	Low as management

What harm can be caused?			Managing the Risk	Assessing the risk		
Source	Receptor	Pathway	Controls	Likelihood of exposure	Consequence	What is the residual risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor	Risk Mitigation	How probable is this contact?	What is the harm that can be caused?	What is the risk that still remains?
from processing operations		Loss of amenity	SITE ODOUR MANAGEMENT PLAN (If available) All odourous materials are stored in enclosed systems where possible. Complaints handing process. Appropriate odour control units are installed as according to the engineering standards. There have been odour complaints within the last 12 months. Preventative maintenance programme and cleaning regime. Identify source of odour. If issues arise from the acceptance of tanker delivered materials, these would be diverted from the site in the future. In the event of a fault take corrective action. Review as appropriate.			techniques are used
22. Failure of Bearing / pump / machinery etc leading to excessive noise	Local population	Air dispersion	Complaints handing process. Repair and maintenance teams on 24hr standby. Planned preventative maintenance in place.	Low likelihood	Mild	Low as management techniques are used
23. Equipment breakdown	Local water courses. Ground and groundwater. Air emissions	Surface water drainage system. Diffusion into ground.	Repair and maintenance teams on 24hr standby. Scheduled inspection, repair and maintenance tasks, with a central tracking system for completion and escalation. Remote alarm systems. Secondary and tertiary containment in case of loss of containment. Start-up/shutdown procedures. Control of contractors. The specific consequences of equipment breakdown (fire, spillage etc) are dealt with above.	Low likelihood	Medium	Low as management techniques are used
24. Enforced shutdown	Local water courses.	Surface water drainage	Repair and maintenance teams on 24hr standby.	Highly Unlikely	Medium	Low as management

What harm can be caused?			Managing the Risk	Assessing the risk		
Source	Receptor	Pathway	Controls	Likelihood of exposure	Consequence	What is the residual risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor	Risk Mitigation	How probable is this contact?	What is the harm that can be caused?	What is the risk that still remains?
	Ground and groundwater.	system. Diffusion into ground.	Scheduled inspection, repair and maintenance tasks, with a central tracking system for completion and escalation. Remote alarm systems. Secondary and tertiary containment in case of loss of containment. Start-up/shutdown procedures. Control of contractors.			techniques are used
25. Bad weather (heat, cold, wind)	Local water courses. Ground and groundwater.	Surface water drainage system. Diffusion into ground.	Known issues regarding the effect of colder temperatures on the efficacy of water-based processes. Severn Trent policies are in place to mitigate against permit breaches. Repair and maintenance teams on 24hr standby. Scheduled inspection, repair and maintenance tasks, with a central tracking system for completion and escalation. Remote alarm systems. Secondary and tertiary containment in case of loss of containment. Start-up/shutdown procedures.	Likely	Minor	Low
26. Plane crash	Local water courses. Ground and groundwater, local population	Surface water drainage system. Diffusion into ground, windborne.	100088 FIRE SAFETY STANDARD 200711 NON INFRA POLLUTION RESPONSE SOP 100089 FIRST AID AT WORK STANDARD Emergency services and management would be contacted. Staff would follow emergency services and management guidance if an event were to occur.	Highly Unlikely	Severe	Low as management techniques are used
27. Terrorist event	Local water courses. Ground and groundwater, local population	Surface water drainage system. Diffusion into ground, windborne.	100052 SECURITY STANDARD 100088 FIRE SAFETY STANDARD 100089 FIRST AID AT WORK STANDARD Security is maintained throughout the site minimising unauthorised access to the site, chemicals and assets.	Highly Unlikely	Severe	Low as management techniques are used

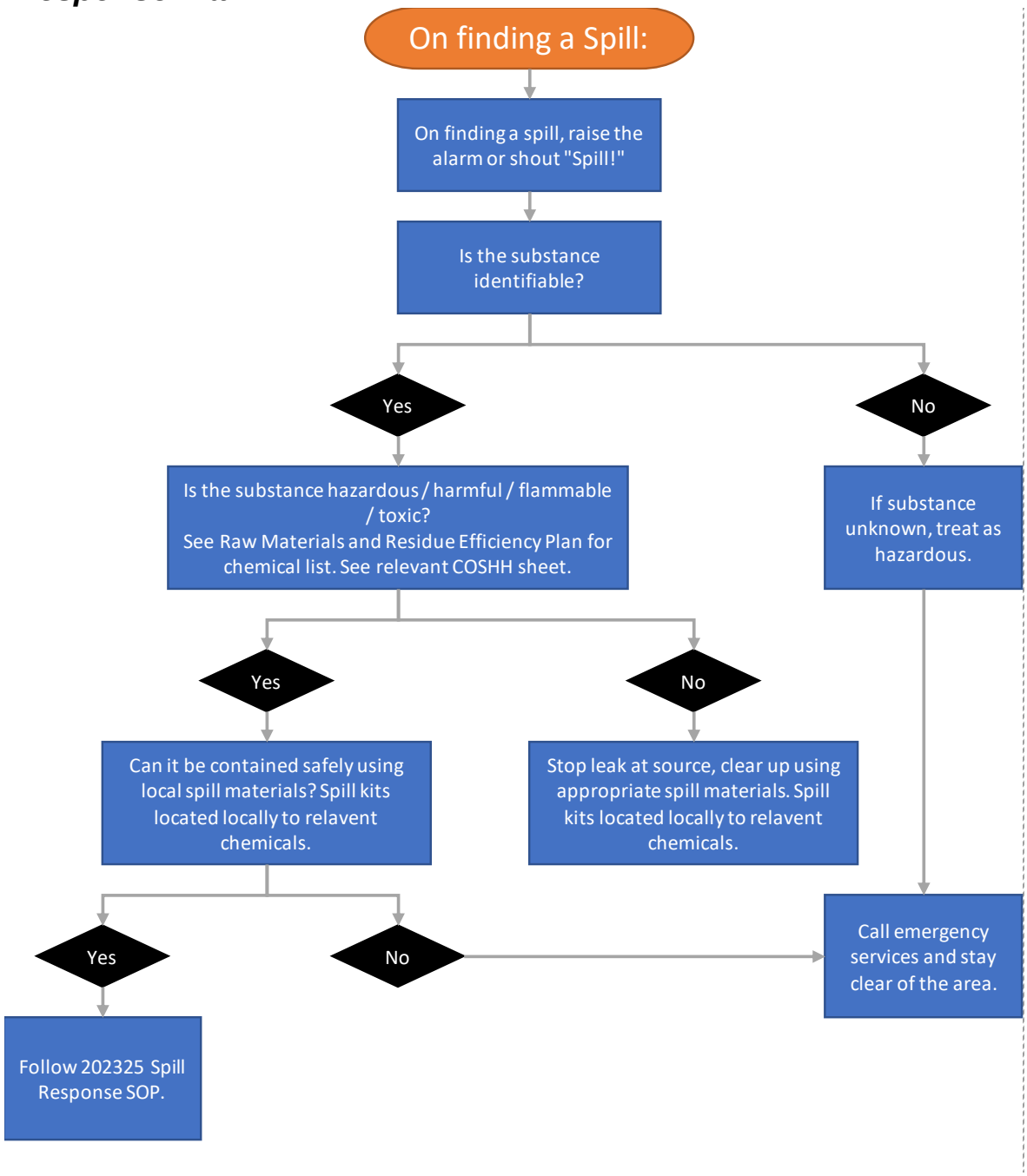
What harm can be caused?			Managing the Risk	Assessing the risk		
Source	Receptor	Pathway	Controls	Likelihood of exposure	Consequence	What is the residual risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor	Risk Mitigation	How probable is this contact?	What is the harm that can be caused?	What is the risk that still remains?
			Staff would notify management of anything suspicious, the emergency services would be contacted. Staff would follow management guidance and emergency services if an event were to occur.			
28. Loss of electrical power to the installation, leading to loss of pumps, control systems	Local water courses. Ground and groundwater	Surface water drainage system. Diffusion into ground	100088 FIRE SAFETY STANDARD 200711 NON INFRA POLLUTION RESPONSE SOP 100097 MANAGING CONTRACTORS AND SUPPLIERS STANDARD There are two incoming power supplies to the site. CHP engine produce power for the site so nothing will be switched off. Repair and maintenance teams on 24hr standby. Failsafe systems in place to ensure that sludge remains insitu. Scheduled inspection, repair and maintenance tasks, with a central tracking system for completion and escalation. Remote alarm systems. Start-up/shutdown procedure.	Likely	Minor	Negligible as management techniques are used
29. Gas leak from PRV or pipework failure	Local population	Air dispersion	Instrumentation to measure gas pressure linked to telemetry alarms and will generate a site visit and investigation (including out of hours). The CHP engine also have high and low gas pressure trips. PRVs are periodically inspected. There is a regular inspection schedule for digesters by competent persons – records are kept of this.	Low likelihood	Medium	Low as management techniques are used
30. Failure of secondary / tertiary containment	Local water courses. Ground and groundwater.	Surface water drainage system. Diffusion into ground.	COSHH RESPOSITORY ON WATERPEDIA (see related documents) 100044 WASTE MANAGEMENT STANDARD 100097 MANAGING CONTRACTORS AND SUPPLIERS STANDARD 100116 WORKPLACE STANDARDS 100107 TRAFFIC MANAGEMENT ON MANNED SITES, DEPOTS AND OFFICES STANDARD	Highly Unlikely	Medium	Low as management techniques are used

What harm can be caused?			Managing the Risk	Assessing the risk		
Source	Receptor	Pathway	Controls	Likelihood of exposure	Consequence	What is the residual risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor	Risk Mitigation	How probable is this contact?	What is the harm that can be caused?	What is the risk that still remains?
		Windblown dispersion	100097 MANAGING CONTRACTORS AND SUPPLIERS STANDARD 100088 FIRE SAFETY STANDARD 200711 NON INFRA POLLUTION RESPONSE SOP 202325 CHEMICAL SPILL GUIDANCE SOP 204344 EMS SPILL KIIT SOP Fill and dispensing points are kept locked. Regular inspections take place, with a centrally run system for repairs and escalation. Remote alarm systems in place. Tanks are located on concrete hard standing with adjacent areas either tarmac or concrete hard standing, which is kept in good condition. Drainage of wider sewage treatment works contained and directed to the head of the works. Any evidence of spillage or leakage would be reported to the Site Manager or his deputy for appropriate remedial action. All operators are trained in spillage management and spill kits are available on site. STW have a 24hr external response service for emergency clean-up.			
31. Unidentified container contents	Local water courses. Ground and groundwater.	Surface water drainage system. Diffusion into ground.	100052 SITE STANDARDS COSHH RESPOSITORY ON WATERPEDIA (see related documents) 100044 WASTE MANAGEMENT STANDARD 100082 MANAGING SUBSTANCES HAZARDOUS TO HEALTH STANDARD 100088 FIRE SAFETY STANDARD 200711 NON INFRA POLLUTION RESPONSE SOP 202325 CHEMICAL SPILL GUIDANCE SOP 204344 EMS SPILL KIIT SOP	Low	Medium	Low as management techniques are used

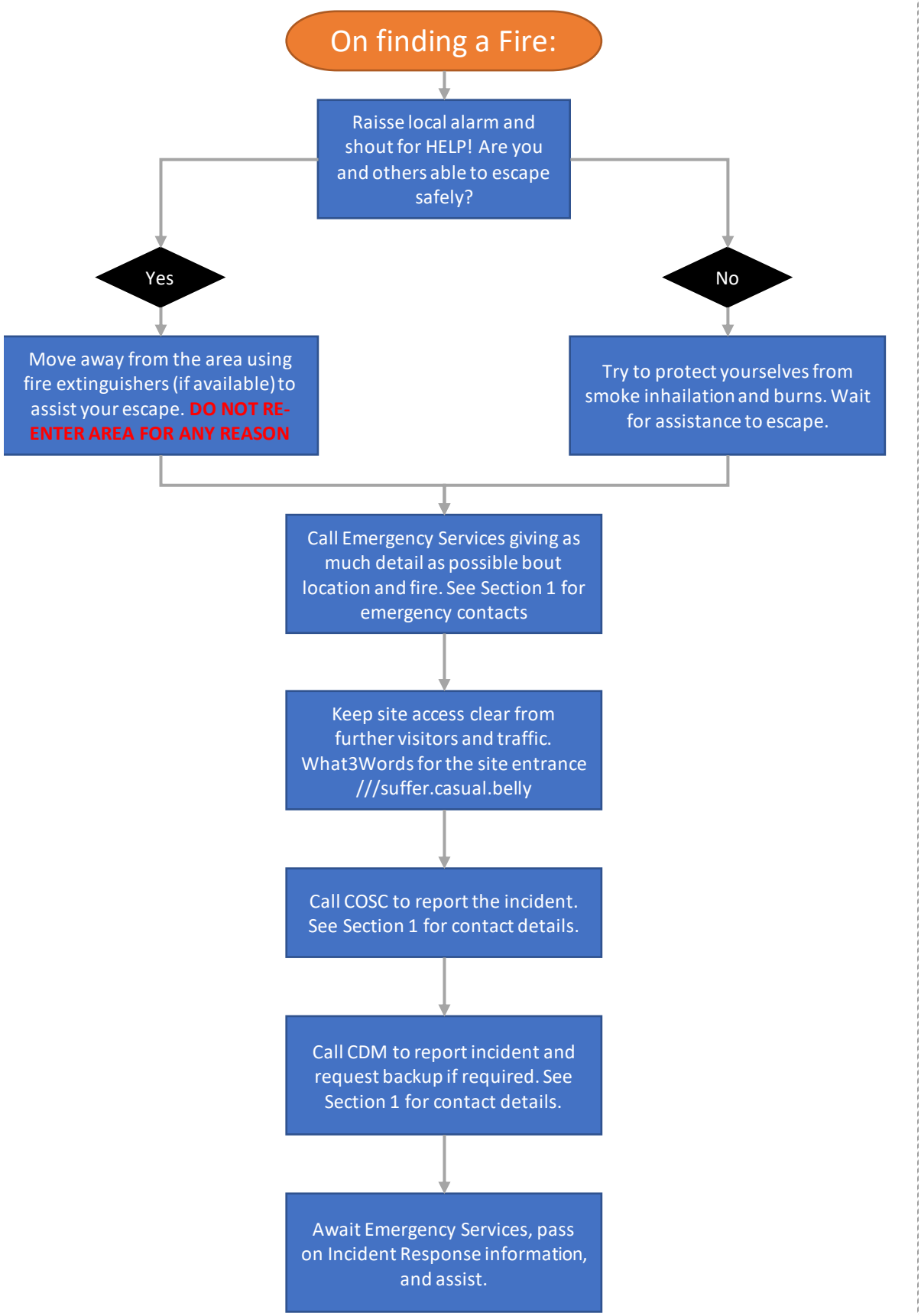
What harm can be caused?			Managing the Risk	Assessing the risk		
Source	Receptor	Pathway	Controls	Likelihood of exposure	Consequence	What is the residual risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor	Risk Mitigation	How probable is this contact?	What is the harm that can be caused?	What is the risk that still remains?
			100048 STANDARD FOR THE ACCEPTANCE AND STORAGE OF CHEMICALS USED ON WASTE WATER NON INFRA SITES In the event a tank contains a substance which is unknown, seek to identify what the substance is. If possible, remove the substance from the site to an appropriately permitted hazardous waste facility. Any evidence of spillage or leakage would be reported to the Site Manager or his deputy for appropriate remedial action. All operators are trained in spillage management and spill kits are available on site. STW have a 24hr external response service for emergency clean-up.			

Appendix B: Incident Response Plans

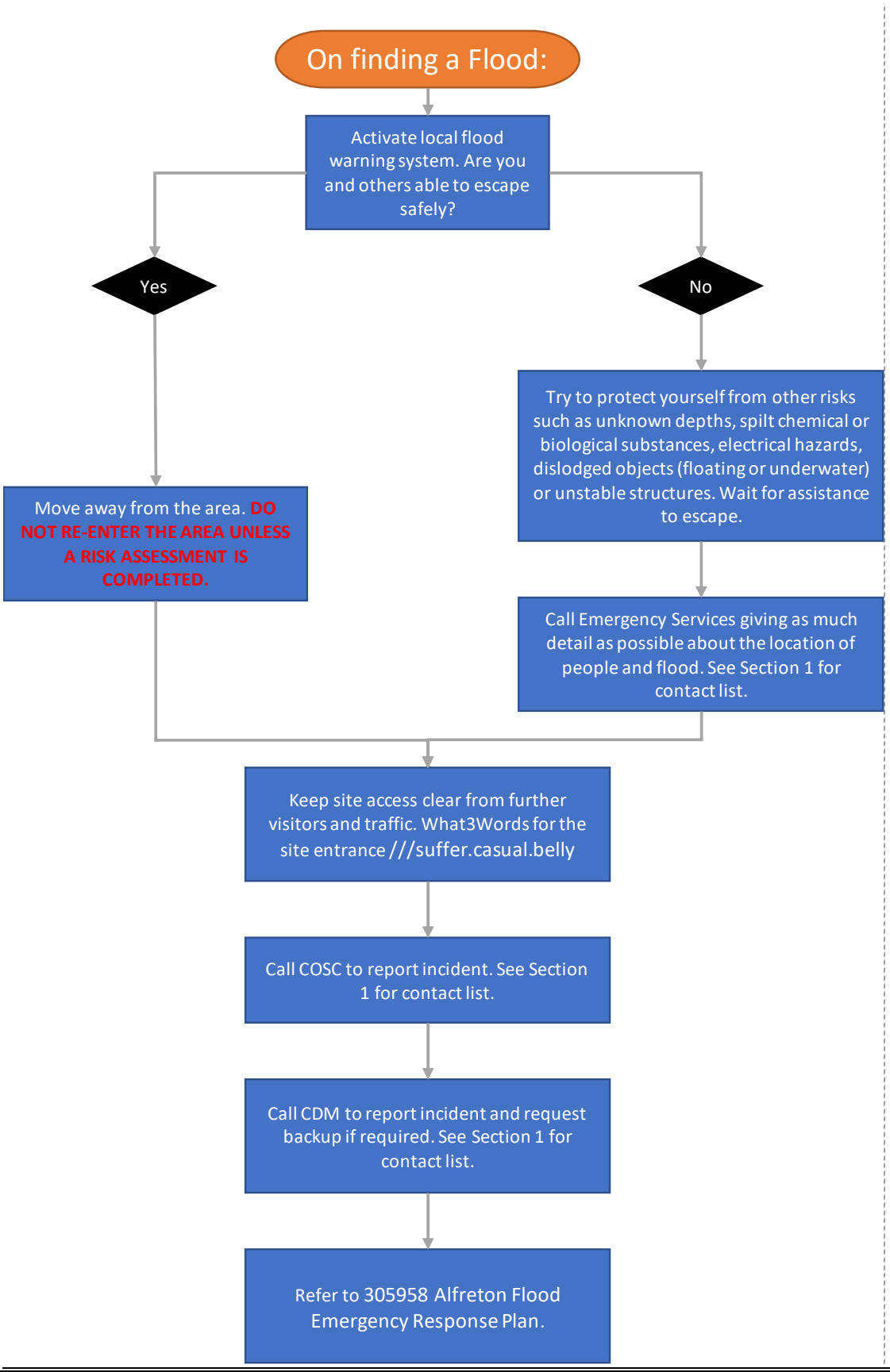
Spill Response Plan



Fire Response Plan



Flood Response Plan



Records, Appendices & References

The following documents can be used in conjunction with this Accident and Incident Management Plan:

- Alfreton Site Infrastructure Plan
- 305958 Alfreton Flood Emergency Response Plan
- Alfreton Fire Risk Assessment (See red folder on site)
- 202325 Spill Response SOP
- DSEAR Risk Assessment (See related links on Waterpedia)
- Schedule 5 (See related links on Waterpedia)
- 100088 Fire Safety Standard

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Version	Date	Reviewers names	Approvers names	Reason for Review	Supported doc changes	Communications
1.0	07/01/2022			Document creation		
2.0						

Summary of changes	
1.0	Document creation
2.0	

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