Odour Management Plan

Aldbrough Hydrogen Pathfinder

PREPARED FOR
SSE Hornsea Ltd

DATE
11th November 2025

REFERENCE
0653313

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SIGNATURE PAGE

Odour Management Plan

Aldbrough Hydrogen Pathfinder

0653313

Russell Cullen
Partner

Environmental Resources Management
Limited
2nd Floor Exchequer Court
33 St Mary Axe
London

T +44 (0) 20 3206 5200

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ACRONYMS AND ABBREVIATIONS

Acronym	Description
AHP	Aldbrough Hydrogen Pathfinder
AGS	Aldbrough Gas Storage
BAT	Best Available Techniques
DCS	Document Control System
EMS	Environmental Management System
ERM	Environmental Resources Management Limited
ESD	Emergency Shutdown Device
ha	Hectares
H_2S	Hydrogen Sulphide
IBC	Intermediate Bulk Container
km	Kilometres
m	Metres
m^3	Cubic Metres
NH_3	Ammonia
NO_x	Oxides of Nitrogen
OCGT	Open Cycle Gas Turbine
OMG	Odour Management Plan
PC	Process Contribution
ppm	Parts per million
SCR	Selective Catalytic Reduction
SO_2	Sulphur Dioxide
SSE	SSE Hornsea Limited
µg	Micrograms

1. INTRODUCTION

Environmental Resources Management Limited (ERM) has been commissioned by SSE Hornsea Ltd (SSE) to produce an Odour Management Plan (OMP) for the proposed Aldbrough Hydrogen Pathfinder (AHP) Project. The AHP facility will be operated at SSE's Aldbrough Gas Storage (AGS) site on Garton Road, East Riding of Yorkshire (hereafter referred to as the 'Site').

This version of the OMP has been written to support the environmental permit application for the Site, which requires a bespoke installation permit. It is a live document, and SSE will regularly review the effectiveness of this OMP.

This document takes account of current legislation and regulatory guidance, and proposed activities at the Site.

SSE is committed to ensuring that any odour control equipment at the Site is designed, operated and maintained appropriately so that it controls odour effectively at all times. As the site operator, SSE understands and accepts its responsibilities for controlling odour impact.

The aims of the OMP are to:

- Identify activities with the potential for odour generation and location of sensitive receptors.
- Minimise the likelihood of odour emissions from site and reduce potential impact.
- Develop and implement an effective odour management strategy.
- Reduce risk of odour releasing incidents or accidents by anticipating them and planning accordingly.

1.1 SITE DESCRIPTION

The AHP project will be constructed within the boundary of SSE's AGS facility and will utilise approximately 3 ha of the AGS land. Location and the EP installation boundary of the Site is shown in Figure 1.1.

The existing AGS site at Garton Road, Aldbrough (Grid Reference TA 260370) is situated approximately 12 km north-east of Hull and approximately 21 km east of Beverley, in the county of East Riding of Yorkshire. It is located approximately 2.5 km south-east of the village of Aldbrough, with the hamlet of East Newton approximately 1 km away to the north-east and the village of Garton approximately 2 km away to the south.

The Site lies within a rural-urban fringe area with occasional manmade industrial features, including the AGS site.

The primary activity taking place at the Site is the combustion of hydrogen and natural gas in an Open Cycle Gas Turbine (OCGT) to produce electricity. There are several additional activities associated with the combustion activity including electrolytic hydrogen production, hydrogen storage, water treatment, groundwater abstraction, cooling and flaring.

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PROJECT: 0653313	CHECKED: TR
DATE: 10/03/2025	APPROVED: BT

Figure 1.1
Site Location

ERM sse

PROJECTION: British National Grid

Path: \\uksprdgisfs01\Data\London\Projects\0653313 - Project Accelerator\Maps\0653313 - Project Accelerator - A01.aprx\0653313 - Pathfinder - Site Context - Site Location - A01

1.2 MAINTENANCE AND REVIEW OF OMP

The OMP is a live document which forms part of the wider Environmental Management System (EMS) for the site. All controlled EMS documents are held within an online system. Documentation is controlled through an integrated Document Control System (DCS). The Director of Gas Storage holds overall responsibility for implementation of the OMP.

This OMP will be reviewed every three years, or sooner if any of the following occur:

- if there have been odour complaints;
- if there are relevant changes to the site operations, infrastructure, or management

Operational staff will be made aware of the OMP as part of their induction training and refresher training to ensure all control measures are understood and implemented.

A complaints management procedure will be implemented, which will include logging, investigating and following up on any odour complaints and monitoring (see Section 5).

1.3 RELEVANT SECTOR GUIDANCE ON WHICH THIS OMP IS BASED

The following industry reference documents have been considered during the drafting of this OMP:

- Best Available Techniques (BAT) reference document for Common Waste Water and Waste Gas Treatment/Management Systems in the Chemical Sector, 2016
- EA Guidance for Speciality Inorganic Chemicals Sector (EPR 4.03), 2009
- EA Technical Guidance Note H4 Odour Management, 2011
- Environment Agency Develop a management system: environmental permits, 2016
- Environment Agency Control and monitor emissions for your environmental permit, 2016

2. RECEPTORS

Sensitive receptors are defined based on the likelihood of human exposure and the potential for nuisance or health impacts. There receptors are typically where people live, work or spend significant time, and where they have a reasonable expectation of a high level of amenity.

The site lies within a rural area with the closest residential approximately 400 m east of the Site. Figure 2.2

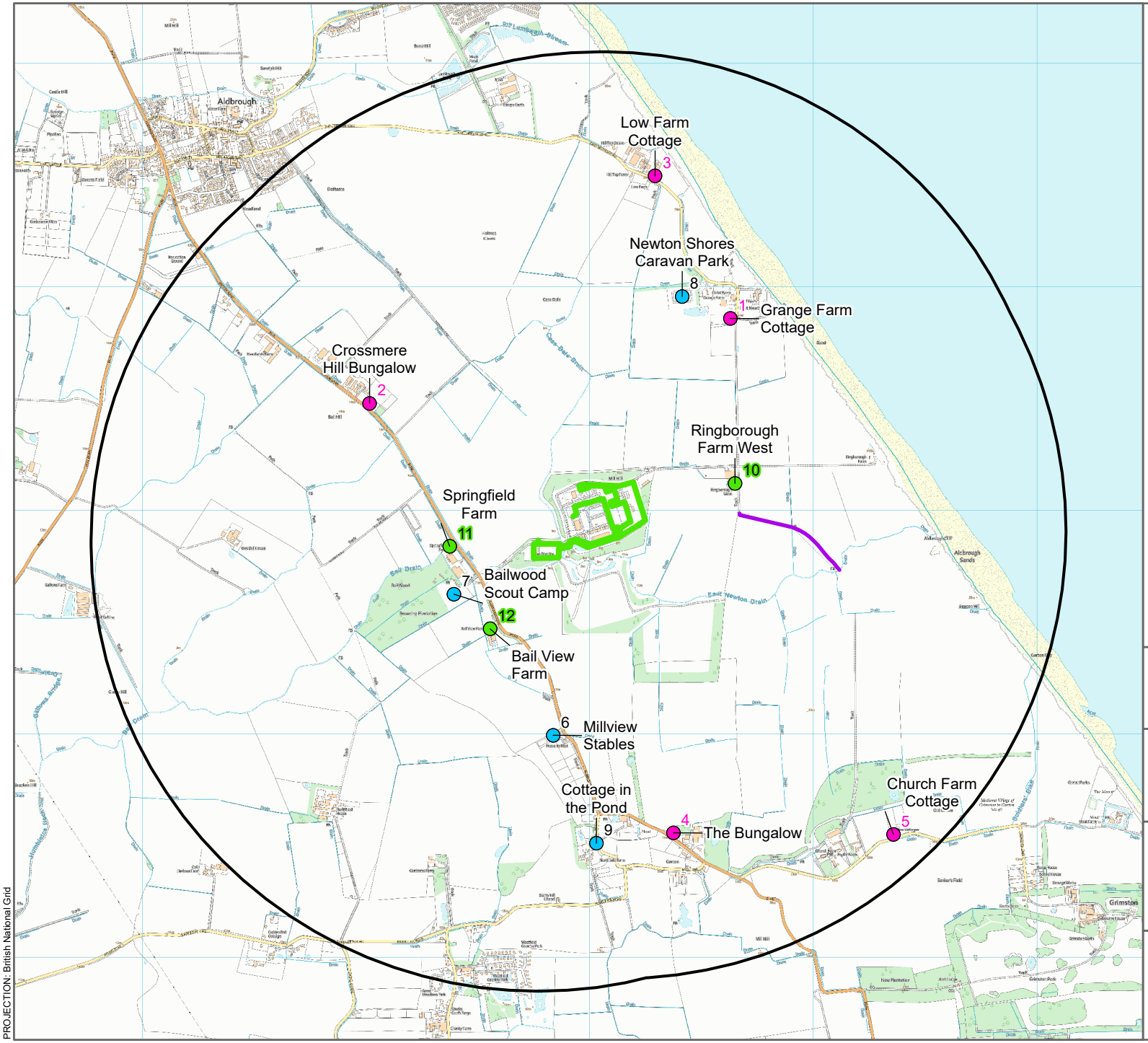
2.1 RECEPTOR LIST

All sensitive human receptors within 2 km of the Site are listed in Table 2.1 and presented in Figure 2.1.

TABLE 2.1 - NEAREST SENSITIVE RECEPTORS WITHIN 2 KM OF THE SITE

Receptor Reference	Description	Approximate Distance to Site boundary (m)	Direction	Sensitivity to odour low (e.g. footpath/ road) Medium (e.g. industrial/commercial workplace) High (e.g. housing/pub/hotel etc.)
Site				
-	Site Workers	Onsite	-	Medium
-	Site visitors	Onsite	-	Medium
Residential				
1	Grange Farm Cottage	850	NE	High
2	Crossmere Hill Bungalow	1,000	NW	High
3	Low Farm House Cottage	1,300	N	High
4	The Bungalow	1,300	S	High
5	Church Farm Cottage	1,800	SE	High
Recreational				
6	Millview Stables	800	S	Medium
7	Bailwood Scout Camp	400	SW	Medium
8	Newton Shores Caravan Park	850	NE	Medium
9	Cottage in the Pond	1300	S	Medium
Agricultural				
10	Ringborough Farm West	400	E	Low
11	Springfield Farm	400	W	Low
12	Bail View Farm	400	SW	Low

Receptor Reference	Description	Approximate Distance to Site boundary (m)	Direction	Sensitivity to odour low (e.g. footpath/ road) Medium (e.g. industrial/commercial workplace) High (e.g. housing/pub/hotel etc.)
Public rights of water				
-	Albrough Bridleway No 16	400	S	Low



Proposed Installation Boundary

Proposed Installation Boundary 2 km Buffer

Public Rights of Way

Human Sensitive Receptors

- Humans and Property
- Recreational
- Agricultural

0 250 500 750 1,000

Metres

N

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Figure 2.1
Human Sensitive Receptors

PROJECTION: British National Grid

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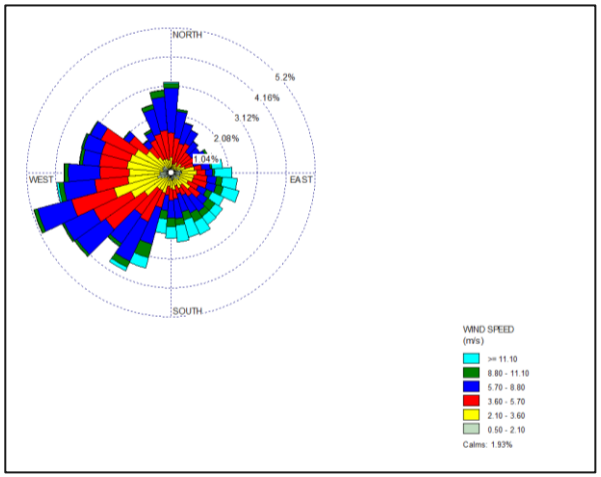
2.2 WINDROSE AND SOURCE OF WEATHER DATA

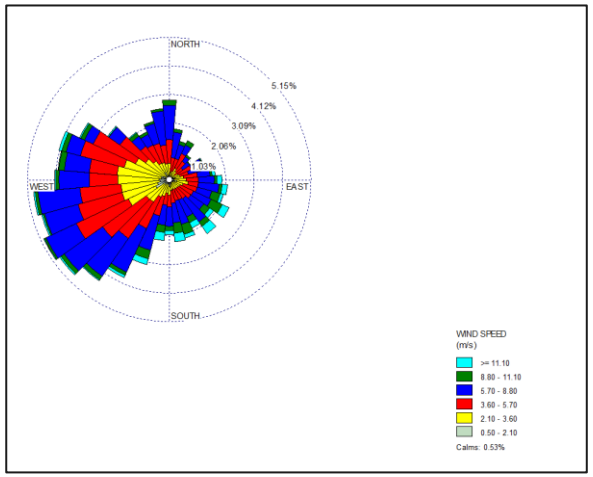
The pathway by which odours may impact upon receptor locations is a result of atmospheric dispersion. In general, high wind speeds lead to emitted odour being rapidly dispersed and diluted due to turbulence, and low wind speeds inhibit the dilution of odours.

The nearest meteorological recording station is the Bridlington meteorological recording station, approximately 30 km north of the Site. Wind speed and direction data have been used for the years 2018 to 2022 as presented in Figure 2.2 below. As shown, the prevailing wind direction is from the South-west sector, winds from all other directions occur less frequently. As a result, the potential impact of emission is likely to be greater to the north-east.

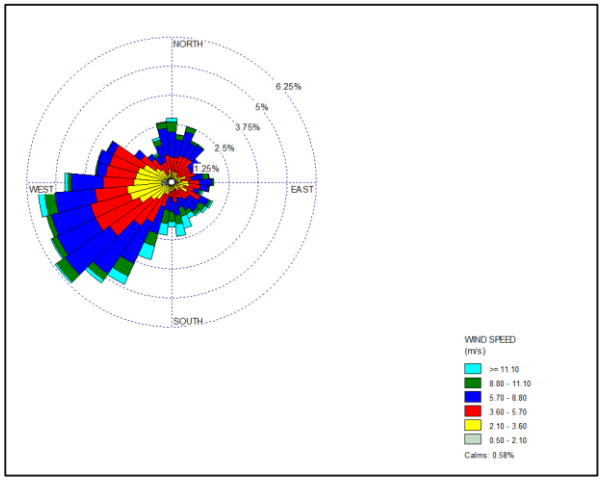
FIGURE 2.2 – WINDROSE FOR BRIDLINGTON



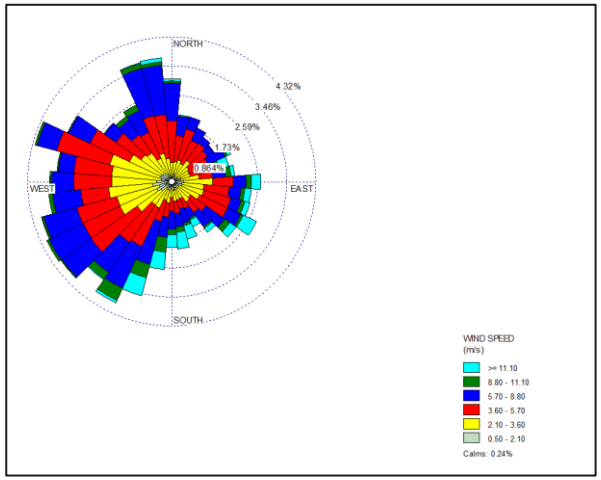
2018



2019



2020



2021

3. SOURCE OF ODOUR AND SITE PROCESSES

It is the purpose of this OMP to ensure that the sensitive receptors identified in Table 2.1, do not perceive odour from the site that causes an unacceptable impact upon amenity. EA guidance requires assessment not only to address 'normal operation', but to consider 'worst case emissions and exposure scenarios'.

The likelihood and frequency of exposure to odour arising from the site is determined by the magnitude of release, the prevailing meteorological conditions, and the distance and direction of receptors in relation to the site.

This section describes the activities that are proposed to be undertaken at the site, that are considered to have the potential to cause odour. This is accompanied by a qualitative odour risk assessment (Appendix A) which identifies potential odour sources. Those activities identified as having a medium-high risk in the Odour Risk Assessment have been used to inform the proposed control measures and monitoring in Section4.

3.1 ODOROUS MATERIALS ENTERING AND LEAVING THE SITE

Deliveries of raw materials and waste to/from Site will be made by road. It is not expected that materials entering and leaving the site will result in odour impact as they will be in sealed containers and integrity will be checked.

3.2 ODOROUS MATERIALS

Potential sources of odour are listed in Table 3.1.

The plant is designed to mitigate any fugitive emissions; hence odours are not expected to arise from storage of materials on site.

TABLE 3.1 – ODOUR SOURCES

Process or activity	Plant or equipment	Odorous and potentially odorous material	Location of odorous materials onsite	Odour potential (H/M/L Risk) (see Appendix A)	Maximum quantity on site at any given day
Cavern Dewatering (temporary)	Degassing tanks	Hydrogen sulphide (H_2S)	ALD1 Well Pad	Medium	Up to 1 ppm in air at surface of degassing tank
		Sludge	ALD1 Well Pad	Low	Continuous process within 2 x 150 m^3 tanks.
Demin Plant	Sodium hydroxide tank	Sodium Hypochlorite	Demin plant	Low	1.04 m^3
	IBC	Sodium bisulphite	Demin plant	Low	1.04 m^3
SCR Abatement System	SCR system including ammonia storage	NH_3	Adjacent to OCGT	Low	20 m^3
Emergency firewater	Diesel day tank	Diesel	Northwest of the site	Low	<0.5 m^3
Well maintenance	IBC	Phosphorylated oxyalkylated polyol (KD40)	Within buildings	Low	1.04 m^3
Maintenance activities	N/A – not for a specific plant or equipment.	Oils, greases and chemical cleaning fluids	Within buildings	Low	<0.2 m3 per substance
Solid waste from onsite activities	Front end loader wheelie bins, temporary skips, hazardous waste containers, used drums & IBCs	General solid waste, dry mixed recyclables, solid process waste, waste/spent chemicals, empty chemical containers	Yard area Designated collection area for IBCs Designated hazardous waste storage area	Low	Approx. 2 general waste bins, 2 dry mixed recyclable bins
Solid waste from onsite activities	Hazardous waste containers, Drums & IBCs	Glycol water mix and laboratory reagents Degreaser wash fluid, waste oils and wash water	Designated collection area for IBCs Designated hazardous waste storage area	Low	2-5 hazardous waste containers (Typically none – only during periodic events)

3.3 ODOUR RELEASES

Cavern Degassing Tanks

Effluent from cavern dewatering may include dissolved gases, including H_2S. The cavern dewatering effluent will pass through two above ground open top Degassing Tanks, which provide residence time for degassing of the cavern water prior to discharge to the North Sea. This is a temporary activity during cavern dewatering, which would occur during the first 12 months of operation. The gases released will vent to atmosphere. H_2S monitoring will be installed local to the tanks. If the H_2S level exceeds 1 ppm, then the dewatering process will stop and a temporary flare will be connected to dispose of the waste gases.

Since there is the potential for H_2S to be present in concentrations of up to 1 ppm, and the odour threshold[1] for H_2S is approximately 0.011 ppm, there is the potential for odour nuisance. Due to the proximity to nearby residential receptors, the risk of odour is considered to be **Medium.**

Temporary H_2S Flare

If a high level of H_2S is detected at the Degassing Tanks, it is proposed to route these gases to a temporary (rental) flare package to dispose of the H_2S. H_2S will be oxidised to SO_2 by flaring.

Flaring is not expected to be required for the full duration of the dewatering activity and indeed may not be required at all. As such, the risk of odour from the flare is considered to be **Low** and has not been considered any further in this OMP.

SCR injection

The OCGT uses an SCR system for NOx abatement. The SCR system injects ammonia into the exhaust gases, therefore there is the potential for ammonia slip. The release of ammonia has been considered in the Air Quality Impact Assessment. The Process Contribution (PC) of ammonia from the OCGT stack (scenario 2) was modelled to be 2.59 µg/m^3 (0.003 ppm), which is significantly lower than the odour threshold of 5 ppm, therefore it is unlikely to be detected. On this basis the potential for odour is considered **Low** and not considered any further in this OMP.

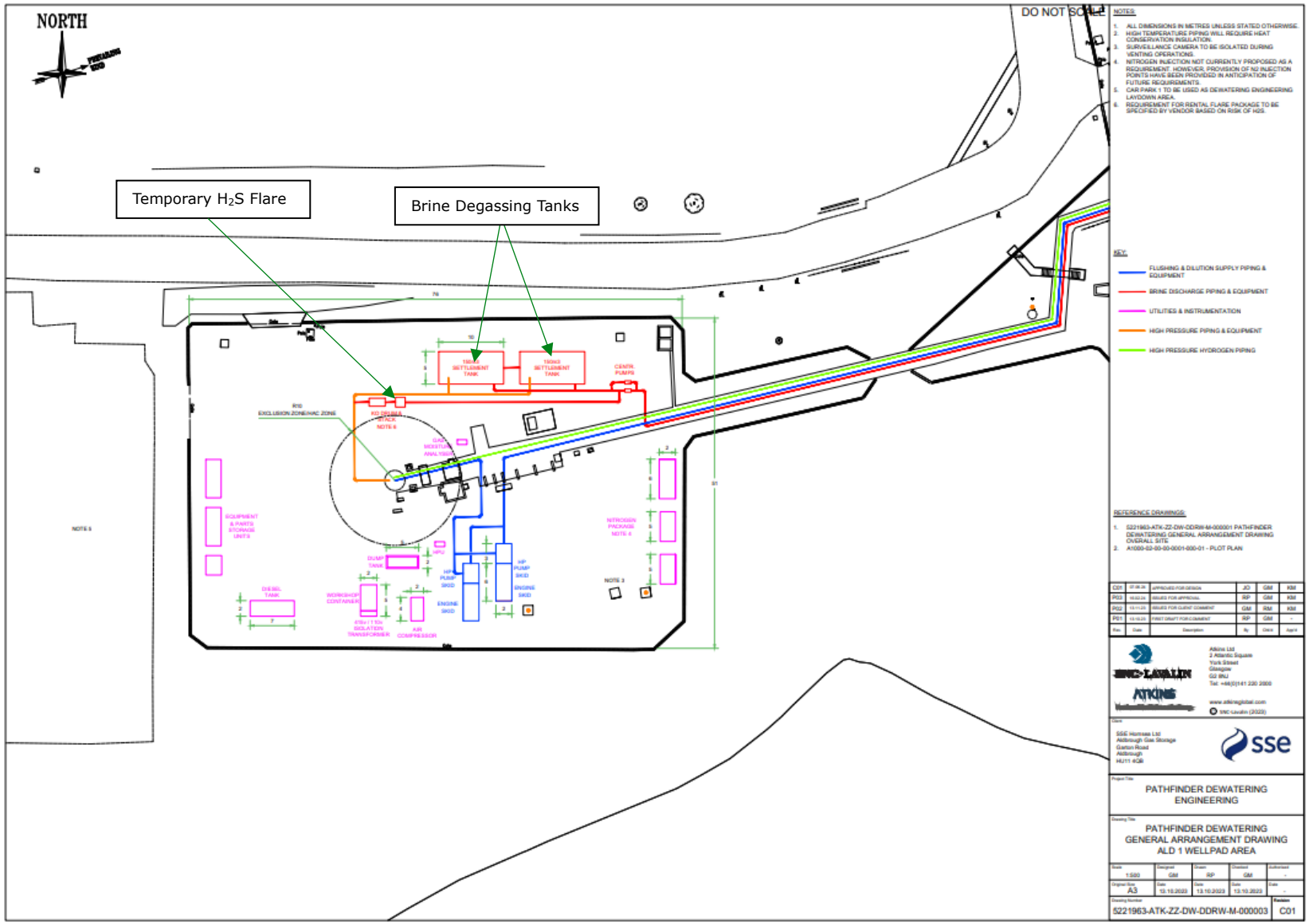
Selection of chemical additives in process

Finally, there are minimal/low quantities of chemical additives to the process that are odorous or contain odour-causing materials. Therefore, inadvertent generation of odorous products or by-products is not anticipated. On this basis the potential for odour is considered **Low** and not considered any further in this OMP.

Figure 3.1 presents the site layout and location of potentially medium-high odorous sources.

[1] Hydrogen sulphide: toxicological overview - GOV.UK

FIGURE 3.1 - SITE PLAN SHOWING ODOROUS SOURCE LOCATIONS/EMISSIONS/STORAGE



3.4 ODOUR MODELLING

No specific odour modelling for the Site is proposed at this time. The Site does not meet the criteria for the listed suggestions for odour modelling according to EA H4 guidance:

- *To predict the impact of a new proposal*. Impact of odour is considered low at the site based on the odour risk assessment covered in this proposal.
- *To assist in the investigation of the cause of odour complaints*. No odour complaints have been received for the site.
- *To compare the cost effectiveness of odour mitigation options.* SSE at the time of the permit application is not seeking to implement additional odour mitigation measures that require capital investment.
- *To work out emission limits for point source emissions.* The Site presents a low odour risk to sensitive receptors and an odour control strategy will be in operation, which will be compliant with design standards or as specified in the Environmental permit.
- *To indicate how much improvement is needed or size abatement equipment.* No odour complaints have been received at the site location to date.
- *To calculate a suitable chimney height to provide an acceptable exposure at receptors*. The proposed stack heights are fixed structures, and the temporary flare will not be permanent. Since the Site is low risk of odour, it is not justified to alter the design of odour control structures.

4. CONTROL MEASURES AND PROCESS MONITORING

4.1 APPROPRIATE MEASURES/BAT

The appropriate measures/BAT employed at the Site are detailed in Table 4.1 below.

TABLE 4.1 – APPROPRIATE TECHNIQUE / BAT

Odour and potentially odorous process/material	Control measures (Appropriate Measure/BAT)	Monitoring frequency	Monitoring procedure and optimum process parameters	Trigger level	Action taken if outside optimum process parameters
Temporary Degassing Tank (H_2S emissions)	• Odour mitigation includes proposed UV treatment of water used for cavern rewatering to minimise bacterial activity and reduce the potential for H_2S formation. • H_2S detector/s will be appropriately positioned at the brine degassing tanks to monitor for potential exposure around the tank. Should these instruments detect high H_2S levels, an Emergency Shut Down Device (ESD) trip of the dewatering process will take place. This will stop booster and HP pumps, stop the injection of H_2, shut in all wellhead ESD valves and stop the brine discharge pumps to allow a temporary flare to be connected and employed. • Operational monitoring will be conducted, including sniff tests. • All sampling, monitoring and reporting will be carried out in accordance with the environmental permit by a technically competent representative.	Daily operator rounds to identify any malodour. Continuous monitoring of H_2S adjacent to Degassing Tanks.	It is the duty of the operational staff to conduct daily operator rounds, including reporting and recording of odours. All records of odour monitoring are retained.	Identification of malodour during site inspection H_2S level at Degassing Tanks >1 ppm	Should the results of odour monitoring and/or high levels of H_2S be detected identified during site inspection and operation, an incident report will be raised, investigation investigated, and corrective actions identified.

5. ODOUR REPORTING

5.1 COMPLAINTS PROCEDURE

The existing AGS Site has a complaints procedure that includes measures to deal with complaints including the following;

- Receipt of complaint
- Recording the complaint
- Investigation of the complaint
- Contact with the complainant(s) and other external parties
- Post investigation
- Reporting
- Records

This complaints procedure will also be used for the AHP activities and is provided in Appendix B. In the event of an odour complaint, the duty production engineer will ensure that an onsite sniff test is carried out and recorded using the Odour Diary form (Appendix C) as part of the investigation.

Where a complaint is substantiated, the EA would be informed of the event and any remedial actions identified and implemented.

5.2 COMMUNITY ENGAGEMENT

Site contact details and emergency (out-of-hours) numbers are displayed at the Site entrance gate. Direct feedback to the Site will be encouraged in relation to any perceived odour issues associated with operational activities.

SSE's primary point of contact for odour management issues and complaints will be the Duty Production Engineer. The Operations Manager (or Director of Gas Storage in their absence)would conduct a review of the complaint and more detailed investigation as defined within the complaints procedure. The Director of Operations would review the outcome of the complaint investigation.

SSE will respond to odour complaints promptly and keep complainant informed of the outcome of investigations where possible. Odour complaints will be assigned to an operative familiar with the site operations who will follow SSEs complaints procedure.

5.3 PROACTIVE ODOUR MONITORING

The Site operations team will conduct daily monitoring at the AGS site boundary (north, east, south and west) during the dewatering activities (i.e. first 12 months of operation) when a higher risk of odour has been identified. During this period, the Site Operations team will record findings in the operational logbook. Any site odours detected during the site walkover will be recorded in an odour diary (see Appendix C) and investigated by staff through the SSE incident management and investigation system (SEARS). Their investigation will ensure that all applicable odour control measures are implemented and operated correctly.

In addition to this, during cavern rewatering and dewatering, H_2S monitoring will be installed adjacent to the brine degassing tanks. Should these instruments detect high H_2S levels, an

Emergency Shut Down Device (ESD) trip of the dewatering process will take place. This will stop booster and HP pumps, stop the injection of H_2, shut in all wellhead ESD valves and stop the brine discharge pumps to allow a temporary flare to be connected and employed.

5.4 REACTIVE ODOUR MONITORING

Should an odour report from a sensitive receptor be identified, the duty production engineer will ensure that an onsite sniff test is carried out and recorded in an odour diary (see Appendix C). An investigation of all odour control measures will be undertaken to ensure they are operating correctly. Any remedial action will be taken where necessary.

6. ABNORMAL EVENTS

Below outlines the anticipated 'abnormal events' at the Site and the associated recovery steps to address these events.

As part of SHE management system, SSE will integrate emergency planning and response which will include risks associated with incidents that could potentially have health and safety and/or environmental effects and the control measures to be taken to minimise the impact.

TABLE 6.1 – ABNORMAL EVENTS

Abnormal event	Recovery steps
Equipment failure or breakdown	In the unlikely event that there is failure or breakdown of equipment, there may be an increased potential for fugitive odour emissions. In this instance, appropriate repair work will be undertaken by site engineers or a specialist contractor as a matter of urgency. All plant and equipment will undergo proactive maintenance and inspection, and regularly serviced in accordance with the manufacturer's recommendations and planned maintenance procedures to minimise breakdown. In the event of a prolonged failure of site infrastructure, there is the capacity to shut in the well and equipment to prevent further release of well fluids.
Fire and/or explosions	A fire onsite may lead to exposure of odorous materials to atmosphere. The site will activate actions in accordance with the site Fire risk procedures. If required following a fire, operations will cease in the affected area until all plant and infrastructure are restored. Following a fire, all plant would be inspected, replaced and repaired.
Adverse weather conditions	In the event of adverse weather conditions which promote generation of odour and inhibit effective dispersion, operational intensity will reduce until more favourable meteorological conditions return.
Staff unavailable	Staff unavailability may affect facility operations. If this was the case, emergency cover would be arranged to ensure onsite operations are maintained.

In the event of Site incident or emergency, the Site's Emergency Response Plan will be followed, including any appropriate notification, escalation and emergency command arrangements.

In the event of an environmental accident or incident, the Operations Manager (or deputy) will notify the Environment Agency as soon as practicably possible using the emergency 24 hour incident hotline (0800 80 70 60). The Operations Manager will also notify the Regulatory Officer should any complaints be received directly to the Site and advise what remedial measures have been undertaken.

APPENDIX A ODOUR RISK ASSESSMENT

An odour risk assessment has been produced to support the permit application. This has included identification of sources, pathways and receptors and is presented in the table below. The risk assessment used the following risk matrix.

Severity	Consequences			Increasing Likelihood					
	Impact	People	Environment	Almost Never (A)	Hardly Ever (B)	Unlikely (C)	Possible (D)	Likely (E)	Almost Certain (F)
				Never heard of in the industry / work type	Heard of in the industry / work type	Occurred within SSE	Occurs several times within SSE	Occurs on site	Occurs several times on site
1	Incidental	• Slight Injury • Slight Heath Effect	• Incidental Environmental Impact	1 - Low Risk	1 - Low Risk	1 - Low Risk	1 - Low Risk	2 - Medium Risk	2 - Medium Risk
2	Minor	• Minor Injury (medical treatment < 3 days lost time) • Reversible Health Effect • Restriction to work activity	• Minor Environmental Impact • Minor Permit breach	1 - Low Risk	1 - Low Risk	1 - Low Risk	2 - Medium Risk	2 - Medium Risk	3 - High Risk
3	Serious	• Serious Injury (reportable) • Lost time injury (>3 days) • Irreversible Health Effect	• Serious Environmental Impact • Serious Permit breach • Prohibited activity	1 - Low Risk	1 - Low Risk	2 - Medium Risk	2 - Medium Risk	3 - High Risk	3 - High Risk
4	Major	• 1 – 3 fatalities • Serious disability • Life Threatening Health effects	• Major Environmental Breach • Major Permit breach	1 - Low Risk	2 - Medium Risk	2 - Medium Risk	3 - High Risk	3 - High Risk	4 – Very High Risk
5	Severe	• 4 – 9 fatalities • Serious disability • Life Threatening Health effects	• Impact of national environmental significance	2 - Medium Risk	2 - Medium Risk	3 - High Risk	3 - High Risk	4 – Very High Risk	4 – Very High Risk
6	Catastrophic	• > 10 fatalities • Serious disability • Life Threatening Health effects	• Impact of international environmental significance	2 - Medium Risk	3 - High Risk	3 - High Risk	4 – Very High Risk	4 – Very High Risk	4 – Very High Risk

Scenario	Potential odour release point	Odour Emission	Pathway	Receptor	Likelihood of exposure	Consequence of exposure	Overall risk	Risk Management	Residual Risk
Normal Operations									
Release of diffuse emissions from brine degassing tanks	Degassing Tanks	H_2S	Dispersion through the air	See receptor table	Possible	Minor	Medium	• Proposed UV treatment of the water used for cavern rewatering injection to minimise bacterial activity and reduce potential for H_2S formation. • H_2S monitoring local to Degassing Tanks. If H_2S exceeds 1 ppm then dewatering will be stopped and temporary flare connected to dispose of waste gases.	Low
Release of fugitive emissions from Brine degassing tanks	Cavern degassing tank vent	H_2S	Dispersion through the air	See receptor table	Possible	Minor	Medium	• Should these instruments detect high H_2S levels, an Emergency Shut Down Device (ESD) trip of the dewatering process will take place. This will stop booster and HP pumps, stop the injection of H_2, shut in all wellhead ESD valves and stop the brine discharge pumps to allow a temporary flare to be connected and employed. • Where high levels of H_2S are detected in brine degassing tanks, the gas to the flare will pass through a Knock-out drum to remove liquid prior to flaring of the gases.	Low
Ammonia slip in OCGT flue gas	OCGT Stack	NH_3	Dispersion through the air	See receptor table	Possible	Incidental	Low	• Risk of odour from ammonia slip is considered low as described Section 13 of the Supporting Information Document submitted with the permit application. • Control system automatically controls ammonia injection according to NO_x load in flue gases. • Ammonia is continuously monitored in stack emissions and linked to DCS operator alarm system.	Low
Storage of general waste	Wheelie bins, waste skips	General waste	Dispersion through the air	See receptor table	Hardley ever	Incidental	Low	• Housekeeping is given a high priority as company policy. • Waste will be stored in a designated area onsite prior to disposal. The storage area will contain, where possible, enclosed skips for the containment, storage and collection of waste products. To ensure that the potential reactions between waste products and degradation of waste is reduced or eliminated, waste will be segregated and stored in specific storage areas prior to offsite disposal.	Low
Storage of odorous waste products	Waste receptables including: • Waste containers • Waste storage tanks (IBCs/drums)	• Sludge • Sodium bisulphite • Carbohydrazine • Sodium Hypochlorite • Other oils, greases and chemical cleaning fluids • Well treatment fluids	Dispersion through the air	See receptor table	Hardley every	Incidental	Low	• Housekeeping is given a high priority as company policy. • Waste will be stored in a designated area onsite prior to disposal. The storage area will contain, where possible, enclosed skips for the containment, storage and collection of waste products. To ensure that the potential reactions between waste products and degradation of waste is reduced or eliminated, waste will be segregated and stored in specific storage areas prior to offsite disposal.	Low

Scenario	Potential odour release point	Odour Emission	Pathway	Receptor	Likelihood of exposure	Consequence of exposure	Overall risk	Risk Management	Residual Risk
								• Solid process waste stored in temporary skips and are expected to be of very limited quantities (typically none). • General solid waste will be in the sealed containers and very small volumes to be stored on site. • All sludge waste will be treated and disposed offsite.	
Abnormal or Emergency Operations									
Temporary H_2S flare during dewatering	H_2S flare	SO_2	Dispersion through the air	See receptor table	Possible	Incidental	Low	• Operation of the H_2S flare will only be used in situations when the entrained H_2S gas content is too high in the degassing tanks and poses a safety risk. • Flaring will be kept to a minimum whilst ensuring safe operation.	Low
Loss of containment of odorous products	Loss of containment/ damage/vandalism to tanks and bunds, spillage during loading/ offloading	• Sodium bisulphite • Carbohydrazine • Sodium Hypochlorite • Other oils, greases and chemical cleaning fluids • Well treatment fluids • Diesel • Ammonia	Dispersion through the air	See receptor table	Unlikely	Minor	Low	• Chemicals used in water treatment are expected to be of very limited quantities and stored in IBCs. • Aqueous ammonia will be stored in a bunded container and storage will be designed to mitigate odour emissions by transfer of displaced vapour back to delivery tanker. • Risk management techniques are primarily by prevention of loss of containment and fugitive release of emissions. • Regular preventative maintenance as part of the EMS will ensure that integrity of drainage systems, plant and pipework and containment is maintained throughout the lifetime of the Site operations.	Low

APPENDIX B AGS HANDLING COMPLAINTS PROCEDURE

Applies to: **Gas Storage**	**Handling Complaints**	**WI-UGGS-SHE-001-005**
Classification: **Internal**	Uncontrolled if printed	Rev: 1.04

The author / owner of this document is:	**This document has been approved for Issue by:**	**Date of Issue:**	**Review Date:**
C Ellerby	M Gillatt	October 2022	October 2025

Summary

Why do we need this Instruction?

This document describes how to deal with a complaint received from the general public regarding SSE's Gas Storage sites. Effective management of external complaints provides opportunities to improve performance through preventive actions and helps to maintain the sites' position as a good neighbour in the local community.

Scope, Deviation and Review

Scope	This Work Instruction shall be applied to Gas Storage.
Deviation	Deviations from this Instruction shall be agreed in writing with the Director of Gas Storage.
Review	The SHE Manager shall review the working and current applicability of this instruction every three years as a minimum.

Definitions

The following are definitions adopted by Gas Storage in addition to those in REF-GEN-SHE-001-102:

N/A

Process

Requirements

1. Receipt of the Complaint

1.1. Individuals receiving telephoned complaints shall record them on:

- Part A of Complaint Record Form FO-UGGS-SHE-001-005-001; or
- The SEARS system

1.2. They shall inform the caller that action will be taken and that they should expect a call within the hour (do not provide the Control Room number to the public).

1.3. They shall provide details of the complaint to the Duty Production Engineer, who shall:

- Evaluate it;
- Complete Part B of the Complaints Form or add further details to the

SEARS report as appropriate; and

- Arrange for the complaint to be dealt with.

1.4. Individuals receiving written (letter or e-mail) complaints shall forward them to the Operations Manager, who shall:

- Evaluate the complaint;
- Input the details onto a copy of the Complaints Form or into the SEARS system; and
- Arrange for the complaint to be dealt with.

1.5. In the event of a complainant arriving at the site to register a complaint in person:

- No access should be allowed to the site without the prior permission of the Duty Production Engineer;
- The complainant should be put in contact with the Duty Production Engineer.

1.6. Regardless of the complainant's demeanour or the nature of the complaint, the complainant should be dealt with at all times in a courteous and professional manner.

2. Recording the Complaint

2.1. The person receiving the complaint shall record as many of the following details as possible on **Part A** of the Complaints Form or on the SEAR:

- The name of the complainant;
- The address of the complainant;
- The telephone number of the complainant (if applicable);
- The time and date when the complaint was received;
- Whether the complaint was made by telephone, by letter, by e-mail, or in person;
- A full description of the nature of the complaint; which should include:
  - The duration of the alleged complaint; and
  - The location of the complainant(s) at the time of the alleged complaint.

2.2. The person receiving the complaint shall forward it to the Duty Production Engineer or Operations Manager as identified above, who shall complete **Part B** of the Complaints Form or add the following information into SEARs:

- The wind speed and direction/weather conditions at the time of the alleged complaint;
- The operating status of the plant and any problems that may be the potential cause of the complaint;
- The reason causing the complaint (if known);

- Whether it was possible to rectify the complaint and if so the action taken and time of complaint resolved;
- Time of return call to the complainant;
- Record of the call.

2.3. If further action is required, they shall state the name of the person who is to resolve the complaint on the form and inform them of the requirements.

2.4. They shall forward all complaints to the Operations Manager (or in their absence, the Director of Gas Storage) for information.

2.5. If the complaint requires further action, they shall complete **Part C** of the Complaints Form or add the following information into the SEARs system.

- The actions taken by the person resolving the complaint;
- The close out date;
- Confirmation by the person resolving the complaint that it has been resolved.

2.6. For complaints recorded on the Complaint Form, the Director of Gas Storage or nominated deputy shall sign **Part D** to confirm that the complaint has been resolved.

2.7. For complaints recorded on the SEARS system, the person undertaking the investigation shall inform the Director of Gas Storage or nominated deputy when the SEAR investigation is raised and when it is closed out to allow them to confirm that it has been resolved.

2.8. All completed complaint forms shall be filed by the Operations Manager.

3. Investigation of Complaint

3.1. The Duty Production Engineer shall:

- Immediately investigate the complaint;
- Take steps to identify and, where practicable, address the cause of the complaint as soon as possible;
- Record details in the Shift Log of:
  - The immediate action taken to address the cause of the complaint (including any contact with the complainant);
  - Any further actions to be taken or checks to be carried out (including any contact with the complainant).

4. Contact with the Complainant(s) and Other External Parties

4.1. The Operations Manager should arrange for a visit to take place to the complainant:

- In cases where the source of the complaint is not obvious; or
- Where required to obtain evidence.

4.2. "Feedback" contact with the complainant should be undertaken as judged necessary to reassure the complainant or to demonstrate the site's concern about such reports.

4.3. At no time during or subsequent to the investigations should any verbal or written statement be made by any member of SSE Hornsea Ltd staff that could be construed as an admission of liability.

4.4. Complainants insisting on making a claim for damage should be advised to do so in writing to the Director of Gas Storage.

5. Post Investigation

5.1. The relevant department for the complaint will:

- Evaluate the investigation findings with the Operations Manager; and
- Ensure that all corrective/preventive actions arising from the investigation are entered onto the Complaints Form or SEARs record.

5.2. The Director of Gas Storage or nominated deputy shall ensure that the corrective and/or preventive actions identified are addressed.

6. Reporting

6.1. Suspected regulatory breaches shall be reported immediately to the Director of Gas Storage or nominated deputy. Any subsequent reporting and notification requirements under statutory provisions or company policy will be determined by the SHE Manager and Director of Gas Storage.

7. Records

7.1. Operations Managers shall hold completed copies of the Complaints Form in a folder at each location.

Recommendations	• None

Accountabilities	
Intent	To define roles and responsibilities to help ensure that individuals understand the roles required and their involvement to ensure compliance with this instruction.
Requirements	The **Director of Gas Storage** is responsible for: • The correct implementation of this instruction; • Reviewing the handling of complaints dealt with through this instruction and initiating any further action necessary such as improvements to instructions. **Operations Managers** are responsible for:

- Initiating any further action necessary in response to complaints such as statutory reporting.

Duty Production Engineers are responsible for:

- The immediate investigation of complaints and taking any necessary actions to validate and resolve these.

All personnel are responsible for:

- Dealing with and gathering details from complainants who contact the site in person or by telephone;
- Recording details of complaints and passing these to the Duty Production Engineer without delay.

Reference

Key references required to follow this Instruction:

N/A

APPENDIX C ODOUR DIARY FORM

Odour Diary						
Name:				Telephone Number:		
Address:						
Location of odour, if not at above address (indoors, outside):						
Weather conditions (i.e., dry, rain, fog, snow etc.):						
Temperature (very warm, warm, mild, cold or degrees if known):						
Wind strength (none, light, steady, strong, gusting):						
Wind direction (e.g. from NE):						
What does it smell like? How unpleasant is it? Do you consider this smell offensive?						
Intensity – How strong was it? (see below 1 – 5):						
How long did go on for? (time):						
Was it constant or intermittent in this period:						
What do believe the source/cause to be?						
Any actions taken or other comments:						

Intensity

0 No odour	3 Distinct odour	5 Very strong odour
1 Very faint odour	4 Strong odour	6 Extremely strong odour
2 Faint odour		

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ERM's London Office

2nd Floor Exchequer Court
33 St Mary Axe
London
EC3A 8AA

T +44 (0) 20 3206 5200

www.erm.com