Environmental Management Plan

Elgas Newcastle

November 2021

REVISION HISTORY

Document Number: 165-ELNEW_EMP_Environmental Management Plan

Version	Date	Author/Reviewer	Approved by	Description of Changes
1.0	01/05/20	Patrick Egan	Lewis Nottidge	Documents developed for new site operations
1.1	29/06/20	Patrick Egan	Lewis Nottidge	Updated information to Section 6,10,12 and additional Appendices C, D, E , F, G
1.2	06.08.20	Patrick Egan	Lewis Nottidge	Updated information to Section 6,10,12 and additional Appendices C, D, E, F, G
1.3	02.11.21	David Russell	Patrick Egan	Updated information to: 4.1 Hours of Operation 6.4 Contact details of nearest neighbours Appendix A ELGAS HEALTH, SAFETY & ENVIRONMENT POLICY Appendix C ELGNEW-HSE-115 ELGAS Newcastle (Kooragang) Emergency Plan (V1.3 November 2021) Appendix D SOP_300_008_NEW_Depot_Traffic Management Plan (V1.3)

Contents

REVISION HISTORY 2
Contents 4
1. Introduction 5
2. EMP Objectives 5
3. Site Overview 6
4. Elgas Operations Overview 6
5. EMP and Environmental Management System 7
6. Roles and Responsibilities 8
7. Environmental Commitments 10
8. Environment, Health and Safety Policies 11
9. Aspects and Impacts & Performance Targets and Objectives 11
10. Non-Conformance Procedure 12
11. Document Control 13
12. Environmental Complaints Procedure 13
13. Hazardous Materials Management 14
14. Emergency Response Plan 14
15. Internal Audits 14
Appendix A 15
ELGAS HEALTH, SAFETY & ENVIRONMENT POLICY 15
Appendix B 16
ELGAS SAFETY MANAGEMENT SYSTEM ENVIRONMENTAL MANAGEMENT 16
Appendix C 21
ELGNEW-HSE-115 ELGAS Newcastle (Kooragang) Emergency Plan (V1.2 August 2020) 21
Appendix D 73
SOP_300_008_NEW_Depot_Traffic Management Plan (V1.1) 73
Appendix E 89
ELGAS Newcastle Flood Emergency Response Plan 89
Appendix F 1020
ELGAS Water Management Statement 100
Appendix G 101
Mosquito Management Plan – Elgas LPG Storage Facility 101

1. Introduction

Elgas Newcastle Depot, herein referred to as Elgas, operates a 100 kL LPG above ground bulk tank at Egret St, Kooragang Island, NSW for the storage of propane gas which is subsequently transferred to road tankers and cylinders, and then finally to LPG customers.

The facility was developed by Sovechles Nominees Pty Ltd. The proposed site falls within the leased land in Kooragang, managed by the Port of Newcastle. Under the NSW Three Ports State Environmental Planning Policy (SEPP) (2), the Minister for Planning is the determining authority for the development.

This document is a record of Elgas Environmental Management Plan (EMP) for the facility.

2. EMP Objectives

The objectives of the EMP is to outline the activities performed onsite, outline Elgas' environmental responsibilities, and communicate these responsibilities to relevant governing bodies. The EMP considers and measures environmental risks associated with operations carried out within the Elgas boundary.

The specific objectives of this EMP are to ensure the following:

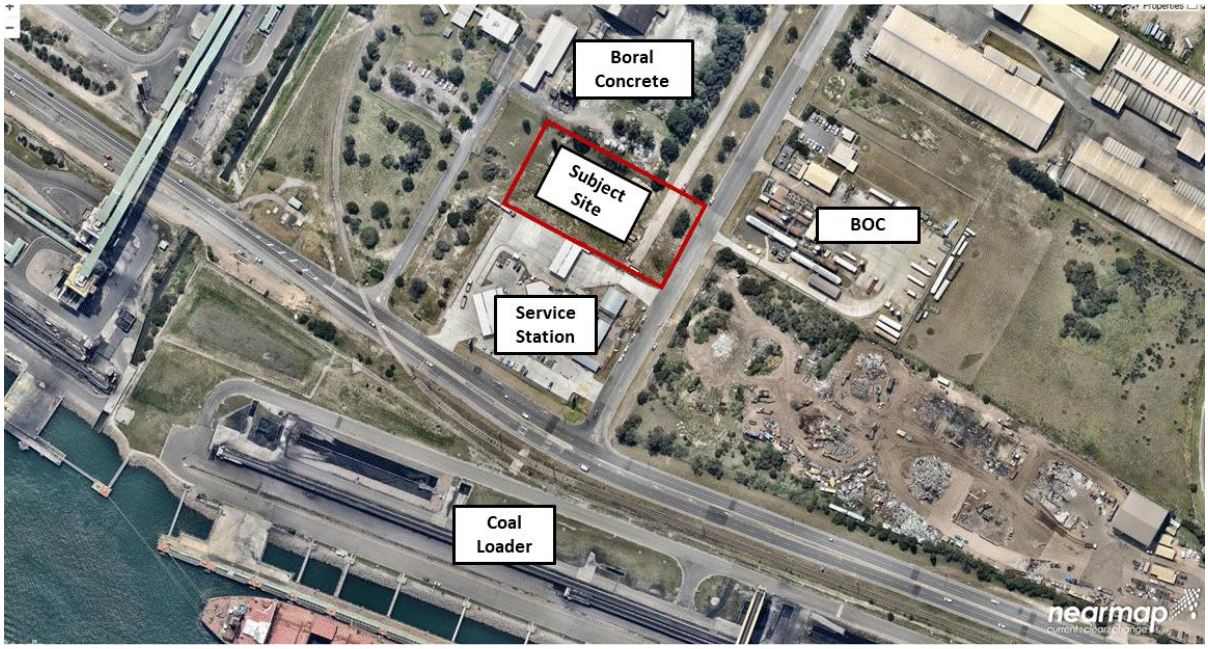
- All relevant environmental conditions from the development consent for Development Application SDD 8448 are followed,
- Elgas is compliant with all applicable environmental legislation;
- That all site activities are carried out with due diligence; and
- That Elgas operates in line with the company's internal Environmental Management System (ELGGEN-HSE-114 Environmental Management) and associated procedures.

The Environmental Management System (ELGGEN-HSE-114) document outlines the procedures to avoid or minimise the identified risks, and contain actions to take if a problem transpires. All procedures are communicated to employees through onsite training, and all procedures and will be reviewed and updated every 3 years or as required by an independent audit of site activities. Further, communication of the environmental system will be undertaken through monthly safety meetings and communicated on the shared drive and through emails to all employees.

3. Site Overview

Elgas Limited (Elgas) is the leading Liquefied Petroleum Gas (LPG) supplier and distributor throughout Australia and New Zealand with over 250,000 customers. Elgas is a member of The Linde Group, a world leading gases and engineering company with almost 48,000 employees working in more than 100 countries worldwide. Elgas Ltd proposes to operate a Liquefied Petroleum Gas (LPG) storage and cylinder filling loading facility at Part of 130 Cormorant Road (Corner of Egret Street), Kooragang, NSW.

The facility will be developed by Sovechles Nominees Pty Ltd. The proposed site falls within the leased land in Kooragang, managed by the Port of Newcastle. Under the NSW Three Ports State Environmental Planning Policy (SEPP) (2), the Minister for Planning is the determining authority for the development.



Site Location Map

4. Elgas Operations Overview

4.1 Hours of Operation

ELGAS Newcastle (Kooragang) Depot is approved to operate 24 hours a day, 7 days a week.

4.2 LPG Bulk Storage

The main storage consists of 1 x 100KL above ground tank located at the centre of the site, along with associated LPG pump, compressor and pipework. The storage tank has fendolite fire protection.

4.3 Road Tanker Loading Bay

There is one loading bay. The loading bay is used for loading of Elgas LPG tankers and unloading of LPG supply tanker from / to the main storage tanks. LPG road tankers are loaded and unloaded using the site LPG vapour compressor.

4.4 Cylinder Filling and Storage

The LPG cylinder filling is carried out on the cylinder dock utilizing cylinder filling scale located at the rear of the building. LPG cylinders are stored on the cylinder dock) and cylinder storage along northern and southern boundaries.

4.5 Tanker & Cylinder Truck Parking

LPG delivery tankers are parked overnight in a dedicated truck parking area located in the norther corner of the site. Cylinder truck parking at cylinder loading bay.

4.6 Fire Protection

The site is protected by an underground fire water main pipe that supplies the five fire hydrants, two fire monitors, and 5 hose reels on site.

5. EMP and Environmental Management System

The EMP considers and measures environmental risks associated with operations carried out within the Elgas boundary. As a result of an environmental risk assessment, Elgas also possesses an Environmental Management System (ELGGEN-HSE-114) implemented onsite which is made up of procedures, documents and forms (see Appendix B).

The ELGGEN-HSE-114 document outline procedures to avoid or minimise the risks identified at Elgas, and contain actions to take if a problem transpires. All procedures are communicated to employees through onsite training, and all procedures of ELGGEN-HSE-114 will be reviewed and updated every three (3) year or as required through an internal audit or otherwise. The EMP, ELGGEN-HSE-114 and associated documents are kept onsite in the administration building, and are made available to interested parties upon request.

6. Roles and Responsibilities

The Site Manager is the key person responsible for the coordination and compliance of environmental and occupational health, as explained in Safety Management System Element 12- ELGGEN -14 Environmental Management. The Site Manager's responsibilities include, but are not limited to:

- Administering the EMP
- Providing the appropriate resources and staff training to ensure all aspects of the EMP are implemented
- Liaising with relevant statutory authorities
- Managing environmental projects at the site
- Managing complaints and recommendations associated with the facility
- Developing and implementing environmental measures and procedures at Elgas to minimise environmental risks
- Undertaking environmental audits of the facility as necessary
- Complying with all identified and relevant legal and environmental requirements
- Managing the ELGGEN-HSE-114, and ensuring procedures are in use, reviewed and updated as required.

6.1 Immediate Threat to Human Health or the Environment Protection

On determining that an incident is a notifiable incident the Site Manager (or equivalent representative) must immediately notify relevant authorities.

Contact Numbers if there is an Immediate Threat to Human Health or the Environment

Local Authorities	Contact Phone Number	Contact Email
Fire and rescue NSW	000	
Environmental Protection Authority	131 555	
Public Health Unit Newcastle Office	02 4924 6477 (John Hunter Hospital) Ask for Public Health Officer on Call	
Safework NSW	13 10 50	
Port of Newcastle (Port wide Emergency Reporting Line	02 43293890	info@portofnewcastle.com.au
Newcastle City Council	02 4974 2000	
ELGAS Emergency	1800 819 783	

6.2 No Immediate Threat to Human Health or the Environment Protection

Contact Numbers if there is no Immediate Threat to Human Health or the Environment

Local Authorities	Contact Phone Number	Contact Email
Environmental Protection Authority	131 555	
Public Health Unit Newcastle Office	02 4924 6477 (John Hunter Hospital) Ask for Public Health Officer on Call	
Safework NSW	13 10 50	
Port of Newcastle (Port wide Emergency Reporting Line	02 43293890	info@portofnewcastle.com.au
Newcastle City Council	02 4974 2000	
ELGAS Emergency	1800 819 783	

6.3 Communication with Neighbours and Local Community

The Site Manager (or equivalent representative) shall determine requirements for community notification following the methodology as required.

- Early warning by telephone notification to nearest and other neighbours that maybe affected over the subsequent 24 hour period
- Regular updates to nearest neighbours and other neighbours who may have been notified in the early wring notification
- Updates to the broader local community if affected by newsletters, ELGAS media statements etc.

Information provided will be relevant to the incident and may include details such as:

- The type of incident that has occurred
- The potential impacts to neighbours and the community
- ELGAS representative contact details
- Any advice or recommendations based on the incident type and scale

6.4 Contact details if communication is required with nearest neighbours

Surrounding Occupier	Contact Phone Number	Contact Email Address
SHELL	[redacted]	
BOC Limited		
Barrington Bakery		
KFC		
Car Wash		
BORAL Concrete		
Kooragang Service Centre (Above & Beyond Property Management)		
Origin Energy		
SIMS Metal Management		
Newcastle Coal Infrastructure Group (NCIG)		

7. Environmental Commitments

Elgas is committed to obtain and maintain all necessary licences, permits and approvals for its facilities. This EMP reviews the environmental management, practices and procedures that are required under the licences, permits and approvals for the Facility. It reviews Elgas' current policies and procedures against those stipulated by Development Application SDD 8448, for the facility.

8. Environment, Health and Safety Policies

Elgas is committed to achieving community environmental goals to become ecologically sustainable and will seek to lead by example and establish standards of environmental excellence. Elgas have implemented 'The Elgas Health, Safety and Environment Policy', which applies to all its Australian-based operations.

The site environmental policy (Appendix A) is available in Elgas OSMS only and intranet. The Environmental Policy and associated ELGGEN-HSE-114 document ensures that Elgas' business activities will be conducted in a manner that protects the environment and the health and safety of all employees, contractors and the Elgas site at Kooragang Island.

The EMP and all associated ELGGEN-HSE-114 document is located in the administration building and are available for viewing upon request. Coordination of site environmental programs is achieved through training completed by all employees, and the use of and continual improvement of the ELGGEN-HSE-114.

9. Aspects and Impacts & Performance Targets and Objectives

The implementation of the targets and objectives and any non-conformances will be reported as part of the Environmental Audit, as specified in ELGGEN-HSE-114 document.

Key environmental performance indicators for the Elgas site include:

- Conformance with the all environmental commitments outlined in the EMP
- Comply with all applicable legislation
- Continually review and update ELGGEN-HSE-114 policies

During the three-yearly audit of the facility, the following environmental performance and objectives will be completed:

- Review the list of significant environmental aspects.
- Compare current performance with compliance figures to determine if there are impacts which are not complying. These rates the highest in priority of improvement.
- Compare current performance with industry standards to determine where improvements can be made to greatest effect.

10. Non-Conformance Procedure

In the event of a non-conformance within the ELGGEN-HSE-114 or an environmental requirement, a non-conformance report form is filled out in accordance with ELGGEN-HSE-118 - Corrective Actions.

Further, in accordance with ELGAS LPG Facility Kooragang (SSD 8448), Condition C10, the Department must be notified in writing to compliance@planning.nsw.gov.au immediately after ELGAS becomes aware of an incident. The notification must identify the development (including the development application number and the name of the development if it has one), and set out the location and nature of the incident. Subsequent notification requirements must be given and reports submitted in accordance with the requirements set out in Appendix 3 (SSD 8448) – Incident Notification and Reporting Requirements.

Written Incident Notification requirements to the Department of Planning and Environment NSW

1. A written notification addressing the requirements set out below will be emailed to the Department at the following address: compliance@planning.nsw.gov.au within seven days after ELGAS becomes aware of an incident. Notification is required to be given under this condition even if ELGAS fails to give the notification under Condition C11 (SSD 8448), or, having given such notification, subsequently forms the view that an incident has not occurred.
2. Written notification of an incident must:
    a. Identify the development and application number;
    b. Provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident);
    c. Identify how the incident was detected;
    d. Identify when ELGAS became aware of the incident;
    e. Identify any actual or potential non-compliance with conditions of consent;
    f. Describe what immediate steps were taken in relation to the incident;
    g. Identify further action(s) that will be taken relation to the incident; and
    h. Identify a project contact for further communication regarding the incident.
3. Within 30 days of the date on which the incident occurred or has otherwise agreed to by the Planning Secretary, ELGAS will provide the Planning Secretary and any relevant public authorities (as determined by the Planning Secretary) with a detailed report of the incident addressing all requirements below, and such further reports as maybe requested
4. The incident Report will include:
    a. A summary of the incident;
    b. Outcomes of an incident investigation, including identification of the cause of the incident;
    c. Details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent reoccurrence; and
    d. Details of any communication with other stakeholders regarding the incident

11. Document Control

All the internal and external documents included under the scope of the Elgas EMP are classified as commercially sensitive. Therefore, they are confidential and cannot be disclosed to either the public or Government authorities, unless specifically requested.

A copy of Elgas' policies such as the 'Elgas Health, Safety and Environment Policy' commitments, along with other ELGAS policies are displayed onsite.

12. Environmental Complaints Procedure

The procedure for recording environmental complaints and maintaining public relations is found in ELGGEN-HSE-114 document.

Upon recording the environmental complaint, Elgas must then investigate whether an environmental incident occurred, and if so must, where practicable, take action to stop the incident from occurring again. The Information regarding complaints that must be recorded include:

- The date and time of the complaint;
- The method by which the complaint was made;
- Any personal details of the complainant;
- The nature of the complaint;
- The action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
- If no action was taken by the licensee, the reasons why no action was taken.

Extra information such as plant status may be included if the Site Manager deems it necessary or relevant.

A record of the complaint must be kept at the site in a specific file for 4 years. If the complaint was found to be due to an environmental incident within the site, a record of this will need to be reported to the EPA.

12.1 Receipt of Complaints for ELGAS

Complaints can be received by ELGAS via phone, in post or person, email or website.

Phone: 131 161

Via post or in person
ELGAS Newcastle
130 Cormorant Road, Kooragang NSW 2340
(Entry via Egret Street)

Email: newcastle@elgas.com.au
Web: enter ELGAS Complaints Resolution portal via:
www.elgas.com.au/resources/complaints-complaint-resolution

13. Hazardous Materials Management

Hazardous materials stored onsite will be retained in appropriately in containers, in accordance with relevant codes and standards.

14. Emergency Response Plan

An Emergency Response Plan (ELGNEW-HSE-115 – Newcastle (Kooragang) Emergency Plan) specific to the Elgas site has been developed and implemented. The plan details the actions to be taken, and assigned responsibilities for responses to environmental incidents and emergencies relating to the operation of the facility.

The ERP including actions, responsibilities and reporting requirements is incorporated in the site induction training. The site induction will also detail the use of incident report forms in the event of a near-miss or observed hazard. The induction form will be located within the reception area and signed off by contractors entering the site.

15. Internal Audits

To confirm the status of Elgas' environmental performance in accordance with the EMP, environmental compliance with licence and approval conditions, regular, systematic audits should be undertaken.

Carrying out environmental audits will help to identify any environmental compliance and management system implementation gaps.

Appendix A

ELGAS HEALTH, SAFETY & ENVIRONMENT POLICY

Health, Safety and Environment Policy

At ELGAS, our goal is to get *Everyone Home Safely,* every day. This includes our people, contractors, customers, and the community. We'll focus on preventing injuries and ill-health to provide a safe and healthy workplace. We'll also play our part as a responsible business by meeting our environmental responsibilities and adopting sustainable practices, *making our world more productive*

We'll achieve this by

- Living our Safety Principles and Life Saving Rules
- Controlling hazards and managing HSE Risks
- Meeting HSE requirements including our legal and regulatory obligations
- Strong Leadership and working together to continuously improve safety and wellbeing
- Setting objectives that support improvement in performance and safety culture
- Engaging all our people through consultation, communication and improvement activities
- Learning from incidents and encouraging our people to take initiatives to improve safety
- Establishing safe work practices and training our people in these processes
- Building and operating safe, secure, efficient and environmentally responsible facilities
- Helping customers safely handle and use LPG
- Being prepared for emergency situations when they arise

By working together and taking care of each other we can get Everyone Home Safely

EVERYONE HOME SAFELY

Anthony Gilbert
Head of ELGAS

HSE-POL-001-ELG: Health, Safety and Environment Policy
Version 2.0 December 2020

Appendix B

ELGAS SAFETY MANAGEMENT SYSTEM ENVIRONMENTAL MANAGEMENT

ELGGEN-HSE-114 - Environmental Management

ELGAS

A Member of The Linde Group

Safety Management System Element 12 - Environmental Management

Contents

1.0 Purpose and Scope 2
1.1 Scope 2
1.2 Audience 2
1.3 Review Period 2
2.0 Responsibilities 2
3.0 Key Requirements 2
3.1 Environmental Risk Assessment 2
3.2 Waste Management 2
3.3 National Pollutant Inventory Reporting (Australia Only) 3
4.0 Consultation and Information 3
5.0 Verification and Performance Monitoring 3
6.0 References 3
7.0 Document Information 3
7.1 About Document 3
7.2 Change History 3
8.0 Appendix 4
8.1 Regulator Contacts 4
8.2 Internal Audit Checklist 5
INTERNAL AUDIT CHECKLIST ENVIRONMENTAL MANAGEMENT 5

A Member of The Linde Group

1.0 Purpose and Scope

This document describes the requirements and responsibilities for management of any impacts on the environment relating to the design, operation and maintenance of ELGAS branches.

1.1 Scope

This document applies to ELGAS sites across Australia and New Zealand.

1.2 Audience

This document is applicable to staff as a guide for understanding the requirements of the ELGAS Safety Management System.

1.3 Review Period

Review of this document is required every five years, or sooner upon major changes in legislation, Regulatory Body requirements, or management directive.

2.0 Responsibilities

It is the responsibility of the Depot Operations Manager to ensure that Environmental Hazards are identified, assessed, managed and documented across ELGAS site within their region.

It is the responsibility of all workers to understand the requirements of their role in identifying, assessing, documenting and managing all environmental hazards.

3.0 Key Requirements

3.1 Environmental Risk Assessment

The environmental hazards and risks arising from the activities controlled on site, or activities they can be expected to influence, are systematically identified and assessed.

The measures in place and/or proposed to control the risk from potential hazardous events and environmental hazards are recorded and, where required, additional control measures are identified to reduce the risk as far as practicable and in all cases to below defined acceptable levels.

The environmental hazards and risks for the site are recorded in the Hazard Register as per ELGGEN-HSE-102 *Risk & Hazard Management*.

3.2 Waste Management

The sources of all waste streams are identified, characterized and quantified and the material hazards, environmental impact.

SDS's are obtained and made available to all people who may come into contact with all potentially hazardous waste streams where there is a foreseeable risk of exposure to employees, contractors or the general public. Control measures are implemented to, as far as practicable, minimize the risk to people and the environment from hazardous wastes.

Waste management options are investigated during the design of new plants and major modifications to existing plants.

Waste transport, treatment and disposal contractors who handle hazardous or prescribed wastes are checked prior to appointment to ensure they are appropriately licensed and have suitable facilities and procedures.

A Member of The Linde Group

Procedures for off-site waste transport and processing include emergency response arrangements to control the associated risks (at least up to the point of any transfer of ownership).

Records of all waste streams and their destinations are retained for a defined period. Records of hazardous and prescribed waste shipments and copies of contracts for the treatment, recycling and disposal of hazardous or prescribed wastes are retained indefinitely as per ELGGEN-HSE-113 *Document Management*.

3.3 National Pollutant Inventory Reporting (Australia Only)

The National Pollutant Inventory (NPI) is tracking pollution across Australia, and ensuring that the community has access to information about the emission and transfer of toxic substances which may affect them locally.

ELGAS Energy sites are required to assist with the collection of data for addition to an ELGAS submission to the NPI in September for the previous reporting period, 1 July to 31st June. Data collection may include, but not limited to, number of cylinders filled, number of bobtail deliveries out, number of forklift cylinders used on site and amount of electricity used on site.

4.0 Consultation and Information

All site personnel affected by environmental impacts of site operations are consulted during the development of procedures and equipment to deal with the impact.

Site safety information, manuals, standards, codes and risk assessments are stored and are accessible to all site personnel as per ELGAS OSMS *Safety Information Bookshelf Requirements*, and ELGAS OSMS *Safety Filing Cabinet Requirements*.

5.0 Verification and Performance Monitoring

This procedure can reviewed by the Site Management, following completion of the Internal Audit Checklist (Attachment 2) to verify the implementation of the procedure.
There are no specific performance measures currently monitored for this procedure.

6.0 References

HSE-POL-001 ELGAS Health Safety and Environment Policy
ELGGEN-HSE-102 Risk & Hazard Management
ELGGEN-HSE-113 Document Management

7.0 Document Information

7.1 About Document

Version	Date	Author	Reviewer/s	Approver/Owner
1.0	15/12/2016	L Walsh	Mark Brunker Hughan Kennedy	Steve Reynolds
2.0	Oct 19	Liana Walsh		Chris Beston

7.2 Change History

Version	Date	Description of Change
1.0	15/12/2016	Initial Version
2.0	Oct 19	Scope change to include all ELGAS sites

A Member of The Linde Group

8.0 Appendix

8.1 Regulator Contacts

State	Name	Contact
QLD EPA		1300 130 372
NSW EPA	Pollution Hotline	131 555
ACT EPA		13 22 81.
VIC EPA		1300 372 842
TAS EPA		1800 005 171
SA EPA	Pollution and Environment Incident Reporting/ Complaints	(08) 8204 2004
NT EPA	Pollution Hotline	1800 064 567
WA Dept. of Environmental Regulation	Pollution Watch Hotline	1300 784 782
NZ	Depends on council area, to follow up Pollution events are reported via Local Councils http://www.localcouncils.govt.nz/lgip.nsf/wpg_URL/Profiles-Index	See link for general council contact numbers

ELGAS

A Member of The Linde Group

8.2 Internal Audit Checklist

INTERNAL AUDIT CHECKLIST ENVIRONMENTAL MANAGEMENT

Audit No. _____ Date: _____ Auditor(s): _____

Section	Item	Compliance	Remarks
3.1 (a)	Are the environmental hazards and risks arising from the site activities systematically identified and assessed?		
3.1 (b)	Are the measures in place and/or proposed to control the risk from potential hazardous events recorded and, where required, additional control measures identified to reduce the risk as far as practicable and in all cases to below defined acceptable levels?		
3.1 (c)	Are the environmental hazards and risks recorded in the site Hazard Register?		
3.2 (a)	Have all waste streams been identified, characterized and quantified? Have the material hazards associated with each waste stream been identified? Has the environmental risk of each waste stream been assessed? Has the cost of management of each waste stream been assessed?		
3.2 (b)	Have SDS's been obtained for all wastes where there is a foreseeable risk of exposure to employees, contractors or the general public? Have hazardous substances assessments been made for those wastes?		
3.2 (c)	Have waste management options been adequately investigated during the design of all new or modified plants?		

ELGGEN-HSE-114 Environmental Management Page 5 of 5
Uncontrolled Copy – Do not Use After printing V 2.0 Oct 2019

Appendix C

ELGNEW-HSE-115 ELGAS Newcastle (Kooragang) Emergency Plan (V1.3 November 2021)

A Member of The Linde Group

Newcastle (Kooragang) Emergency Plan

Reviewed:	Operations Manager:	Signature:
October 2021	Patrick Egan	

A Member of The Linde Group

Table of Contents

1.0 Purpose and Scope 4
1.1 Purpose 4
1.2 Scope 4
1.3 Target Audience 4
1.4 Review Period 4
1.5 Definitions 5
2.0 General Site Description 6
2.1 Site Location 6
2.2 Immediate Neighbours 7
2.3 Site Operations 8
2.3.1 LPG Bulk Storage 8
2.3.2 Road Tanker Loading Bay 8
2.3.3 Cylinder Filling and Storage 8
2.3.4 Tanker & Cylinder Truck Parking 9
2.3.5 Emergency Shutdown Devices (ESD) 9
2.3.6 Fire Protection 9
2.3.7 ELGAS Emergency Assembly Point 9
2.3.8 Neighbour Emergency Assembly Point 9
2.4 Personnel on Site 10
2.5 List of Dangerous Goods Handled Onsite 11
Bulk Storage 11
Transport Storage 11
Group 1 or Class 2.1 Package Storage 11
Other Packaged Storage 11
3.0 Site Contact Details 12
4.0 Roles and Responsibilities 12
4.1 Emergency Control Organisation 12
4.2 External Authorities 15
5.0 Emergency Telephone Numbers 15
6.0 Emergency Response 15
6.1 General Emergency Response and Escalation 15
6.2 Types of Emergencies Onsite 16
6.3 Emergency Response Procedures 17
6.4 Emergency Response Facilities incl. Information Sources 18
6.5 Termination of Emergencies 19

A Member of The Linde Group

6.6 After-Hours Emergency Procedure 19
7.0 Investigation and Communication 19
7.1 Incident Debrief, Investigation, Reporting and Review 19
7.2 Statutory Investigation 19
7.3 Stakeholder Communication 20
8.0 Emergency Response Training 20
8.1 Training 20
8.2 Emergency Plan Testing 20
9.0 Consultation and Information 20
10.0 Verification and Performance Monitoring 21
11.0 References 21
12.0 Document Information 22
12.1 About Document 22
12.2 Change History 22
Appendix 1 – Newcastle Emergency Team Member List 23
Appendix 2 – Emergency Organisation Role Cards 24
Emergency Telephone Numbers 29
Appendix 3 – Emergency Response Procedures 32

ELGAS
A Member of The Linde Group

1.0 Purpose and Scope

1.1 Purpose

This document describes the actions to be taken during an emergency on the ELGAS Newcastle site.

The purpose of this Site Emergency Plan is to detail the approved procedures to be carried out and provide a managed response by site personnel to on- and off-site emergency incidents (including off-site consequences).

It recognises the importance of a structured response and the use of different levels of incident management.

This document should be read in conjunction with ELGGEN-HSE-115-Emergency Management

1.2 Scope

This document applies during an emergency on the ELGAS Newcastle site

1.3 Target Audience

The intended audience is all management and workers at the site, and in particular those with key roles in the implementation and function of this Emergency Plan

1.4 Review Period

This document, and site-specific Emergency Plans, are reviewed, and revised where required, under the following circumstances:

- At the direction of regulatory bodies,
- Before a modification to the site which may impact emergency management*,
- When new information becomes available about relevant risks in the workplace or potential controls
- When a concern is raised by a worker or HSR in relation to a relevant risk
- After an emergency event or drill which indicates a deficiency in the Emergency Plan, or
- When an annual internal audit (attachment 1), MHF review or other audit process indicates an opportunity for improvement.

*Modifications may include changes to: work practice or procedure; work environment; hazardous substances types or storage limits; processes which impact productivity or cost. Such modifications are managed through ELGGEN-HSE-104-Management of Change.

An annual review of contact details (external and internal) must be conducted to ensure currency

A Member of The Linde Group

1.5 Definitions

Emergency

An emergency is an unplanned or unwanted event, on or off site, involving ELGAS products, services, property or people.

Examples of an Emergency

Examples of an emergency may include one or more of the following events:

- Medical emergency/injury – requiring outside emergency services,
- Fire or explosion – any uncontrolled ignition
- Major leak – any leak threatening personal injury, environmental damage, property/equipment damage, or the creation of a hazardous atmosphere
- External threats, for example: armed hold-up, bushfire, neighbour fire, or bomb threat.

Pollution Incident

A pollution incident is defined as "*an incident or set of circumstances during or as a consequence of which there is or is likely to be a leak, spill or other escape or deposit of a substance, as a result of which pollution has occurred, is occurring or is likely to occur. It includes an incident or set of circumstances in which a substance has been placed or disposed of on premises, but it does not include an incident or set of circumstances involving only the emission of any noise.*"

A pollution incident may be required to be reported if there is a risk of 'material harm to the environment' defined as:

- "The incident involved actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial", or
- "It results in actual or potential loss or property damage to an amount or amounts in aggregate exceeding $10,000.00 (or such other amounts as is prescribed by the regulations)", and
- "Loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate, or make good harm to the environment."

This definition and reporting requirements will vary from jurisdiction to jurisdiction. Refer to regulator websites and ELGGEN-HSE-114 - Environmental Management for further detail.

Worker

The term 'worker' on an ELGAS site typically relates to the employees and contractors who perform work for ELGAS. The term is derived from WHS legislation and holds that meaning even in states which have not adopted the WHS model laws.

"If safe to do so" means that you:

- have checked the surrounding environment
- are trained for the emergency task(s)
- are wearing appropriate Personal Protective Equipment (PPE)
- have a safe means of escape
- can take appropriate action without undue risk to yourself or others
- do not be a hero

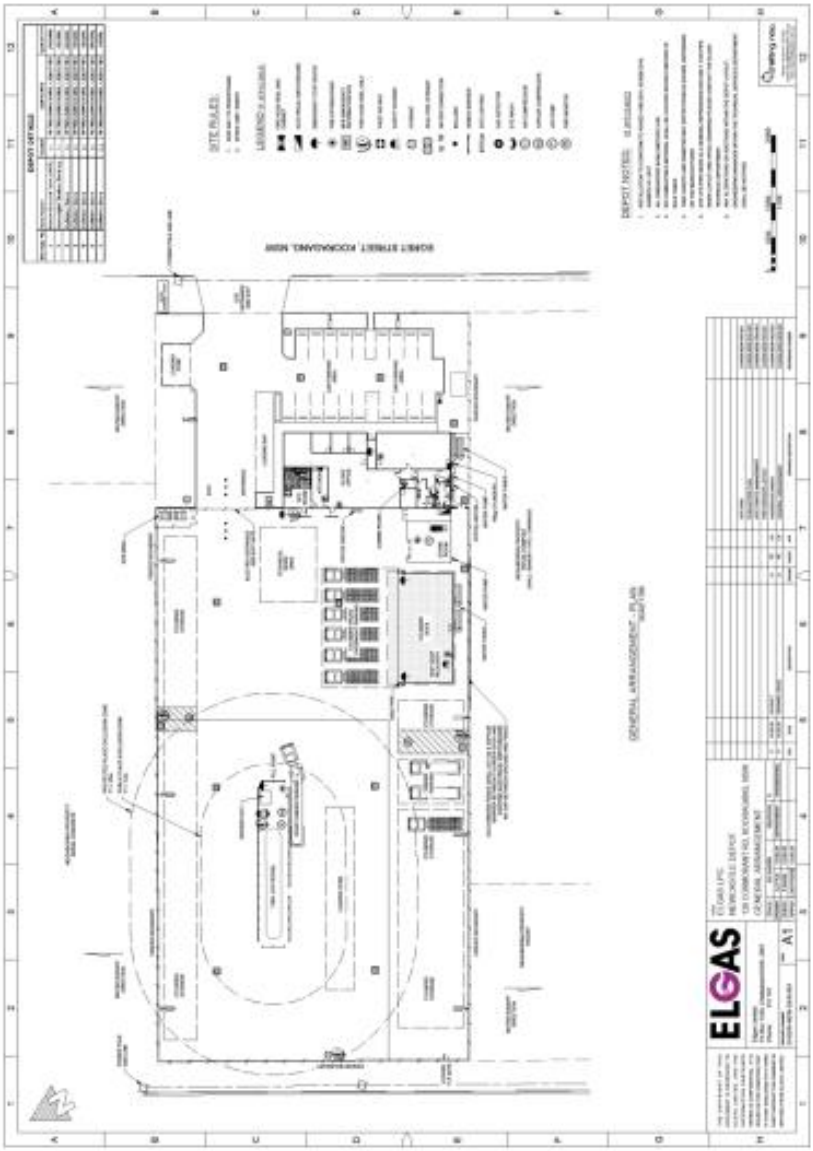
ELGAS

A Member of The Linde Group

2.0 General Site Description

2.1 Site Location

- 130 Cormorant Road, (Entry via Egret Street) , Kooragang NSW 2304



ELGAS
A Member of The Linde Group

2.2 Immediate Neighbours

Occupier	Description of land use	Potentially hazardous inventories on site	Distance from
SHELL (Retail)	Retail Fuel	330 KL Mixed Fuels U/G Storage - Class 3 Flammable 17kl LPG Storage (U/G) – Class 2.1 Flammable 20 KL AdBLUE (U/G) -	< 500 meters
BOC Limited	Industrial Gas Storage & Processing	Above Ground Tank Storage 2 x 200 KL & 3 x 460 KL CO2 Refrigerated(A/G) Storage 1 x 25 KL CO2 (A/G) Storage 1 x 15 KL Argon Refrigerated (A/G) Storage 1 x 30 KL Oxygen (A/G) Storage – Class 2.2 1 x 100 KL & 1 x 45 KL Nitrogen (A/G) Storage – Class 2.2 (Non Flammable Compressed Gas) Mixed Cylinder Store 11000 L – Class 2.2 Non Flammable Compressed Gasses 800 L - Class 2.1 Flammable Gases, Liquefied	< 500 meters
BORAL Cement	Cement & Concrete Storage	Nil	< 500 meters
Origin Energy	LPG Storage & Handling	2 x 100 KL LPG Storage (U/G) – Class 2.1 Flammable 30 KL LPG Cylinder Storage – Class 2.1 Flammable	500 meters
SIMS Metal	Scrap Metal Management	3 KL LPG Storage – Class 2.1 Flammable	> 500 meters
Newcastle Coal Infrastructure Group (NCIG)	Coal Storage & Handling	Nil	> 500 meters

A Member of The Linde Group

Contact details if communication is required with nearest neighbours

Surrounding Occupier	Contact Phone Number	Contact Email Address
SHELL	[redacted]	
BOC Limited		
BORAL Concrete		
Origin Energy		
Newcastle Coal Infrastructure Group (NCIG)		
Barrington Bakery		
KFC		
Car Wash		

2.3 Site Operations

2.3.1 LPG Bulk Storage

The main storage consists of 1 x 100KL above ground tanks located at the centre of the site, along with associated LPG pump, compressor and pipework. The storage tank has fendolite fire protection.

2.3.2 Road Tanker Loading Bay

There is one loading bay. The loading bay is used for loading of Elgas LPG tankers and unloading of LPG supply tanker from / to the main storage tanks. LPG road tankers are loaded / unloaded using the site LPG vapour compressor. A "Deadman" system is in operation to manifest the presence of the operator as active and onsite and monitor all loading/unloading. In case of no activation of 'Deadman System' after 5 minutes, all LPG transfer operations onsite will shut down, and an SMS alert will be sent to site management.

2.3.3 Cylinder Filling and Storage

The LPG cylinder filling is carried out on the cylinder dock utilizing cylinder filling scale located at the rear of the building. LPG cylinders are stored on the cylinder dock) and cylinder storage along northern and southern boundaries.

ELGAS

A Member of The Linde Group

2.3.4 Tanker & Cylinder Truck Parking

LPG delivery tankers are parked overnight in a dedicated truck parking area located in the norther corner of the site. Cylinder truck parking at cylinder loading bay.

2.3.5 Emergency Shutdown Devices (ESD)

The site has five ESD locations

- 1 x Bulk Fillpoint Loading Bay
- 2 x Cylinder Dock (at each egress point)
- 1 x Pedestrian Exit Gate
- 1 x Administration Building main exit door

Activation of an ESD will shut down all power supply and pneumatic air supply to LPG Bulk Fillpoint and Cylinder Filling zones. An SMS alert will be sent to site management.

2.3.6 Fire Protection

The site is protected by an underground fire water main pipe that supplies the five fire hydrants, two fire monitors, and five hose reels on site. Office area has 4 x extinguishers, depot area has 3 x extinguishers.

2.3.7 ELGAS Emergency Assembly Point

The site Emergency Assembly Point is at the main entrance driveway at Egret Street (right side of driveway – vacant land)

2.3.8 Neighbour Emergency Assembly Point

- **Shell Retail Precinct: Emergency Contact Number:1800033111**
  First Evacuation Point is on vacant lot next to site on Cormorant Rd,
  Second Evacuation Point is at the end of truck forecourt on Egret St.

- **BOC: Emergency Contact Number: 1800 653 572:**
  First Evacuation Point: Egret Street (directly opposite Gate 2),
  Second Evacuation Point: Rear Eastern Boundary Fence (to be used if directed by BOC Area Warden)

- **ORIGIN Emergency Contact Number: 1800 808 526**
  Emergency Assembly Area A (Primary): Grass verge near entry barrier
  Emergency Assembly Area B: Outside Property 150m South of Egret St Entrance
  Emergency Assembly Area C: Outside Property 150m North of Egret St Entrance

- **BORAL Emergency Contact Number:** 02 4920 1030 (Office) & 02 4928 1922 (Weigh Bridge)
  Emergency muster point #1
  Visitor carpark at rear of depot (Cormorant Rd end)
  Emergency muster point #2

Depot entry driveway off Egret St

- **SIMS Emergency Contact Number:**
  Yard Manager 0400 449 510 or SHECS Manager 0488 415 300.
  Emergency Assembly Area: Main Entrance at Cormorant Road

2.4 Personnel on Site

- **LPG Storage and Handling facility of bulk and cylinder LPG product.**
- **Branch management and administration onsite**
- **Operations are authourised 24 hours per day, 7 days per week.**

Typical Operations on site include:

Area – Main Office

Day/Time	0800 – 1700	1700 – 2300	2300 – 0800
Weekday	6-11	NIL	NIL
Saturday	NIL	NIL	NIL
Sunday	NIL	NIL	NIL

Area – Cylinder Test / Filling Shed / Depot Yard

Day/Time	0600 – 1700	1700 – 2300	2300 – 0500
Weekday	1 - 7	NIL	NIL
Saturday	NIL	NIL	NIL
Sunday	NIL	NIL	NIL

Area – Tanker Fill

Day/Time	0500 – 1700	1700 – 2300	2300 – 0500
Weekday	1-3	1 -3	1
Saturday	NIL	NIL	NIL
Sunday	NIL	NIL	NIL

Lone Worker Management

The sites operates the following to monitor loan worker movements and welfare

- 'Deadman System Control' at BULK Fillpoint
- CCTV System (24hr/7day) with remote access available to management and security monitoring services
- Secure electronic card & PIN access to the site
- Resettable Break Glass Emergency Exit Release Button at Pedestrian Exit Gate

ELGAS
A Member of The Linde Group

2.5 List of Dangerous Goods Handled Onsite

Bulk Storage

Tank ID Number	Product Name	Product Class	PG	UN No.	Type	Design Capacity	Typical Quantity
Storage 1	LP Gas	2.1	n/a	1075	a/g	100000 L	85000 L

Transport Storage

Tank ID Number	Product Name	Product Class	PG	UN No.	Type	Design Capacity	Typical Quantity
Storage 2	LP Gas	2.1	n/a	1075	Road Tankers	38000 L	36000 L

Group 1 or Class 2.1 Package Storage

	Dangerous Goods				Storage		
Storage Area ID	Name	Class	PG	UN No.	Storage Type	Max Capacity	Typical Quantity
Storage 3	LP Gas	2.1	n/a	1075	Cylinder Store	40000 L	34000 L
Storage 4	LP Gas	2.1	n/a	1075	Cylinder Store	150000 L	127500 L
Storage 5	LP Gas	2.1	n/a	1075	Cylinder Store	20000 L	17000 L

Other Packaged Storage

	Dangerous Goods				Storage		
Storage Area ID	Name	Class	PG	UN No.	Storage Type	Max Capacity	Typical Quantity
Storage 6 Dock	Paint Aerosol Can	2.1	n/a	1950	Flame Safe Cabinet	60 Units 21 Kg	20 Units 7 kg
Storage 7 Site Shed	Paint Aerosol Can	2.1	n/a	1950	Flame Safe Cabinet	120 Units 42 Kg	120 Units 42 kg

A Member of The Linde Group

3.0 Site Contact Details

Role	Name	Phone	After Hrs phone
ELGAS Emergency Contact	ELGAS 24hr Emergency Phone Line	[redacted]	
Site Emergency Coordinator	David Russell Patrick Egan		
Area Warden	Toby Travalos		
First Aider	David Russell Justin Pugh		
Communications Officer	Ainsley Tritton		
Local Delivery Contractor (LPG Cylinders)	Novagas Martin Lusis		
Local Delivery Contractor (Cylinders	RIVET Scheduling		

4.0 Roles and Responsibilities

4.1 Emergency Control Organisation

Emergency Team roles must be allocated to appropriate site personnel, ideally with a second person to fill in should the nominated person be absent. The Depot Operations Manager shall maintain a list of the site personnel who have been allocated to roles (see appendix 1 for sample). Individual responsibilities are noted below, and 'Role Cards', which list only the responsibilities in the event of an incident have been included in the appendices (see appendix 2)

Site Emergency Coordinator (WHITE CAP)

The Site Emergency Coordinator (SEC) must:

- Assume a coordinating role in the event of an emergency.
- Have a sound knowledge of:
  - hazards
  - likely consequences
  - procedures and application of the Emergency Plan
- Ensure evacuation drills are conducted every 6 months
- Conduct a debriefing session following evacuation drills
- Review and update the Emergency Plan
- Schedule fire-fighting equipment training
- Ensure fire-fighting equipment is inspected regularly

A Member of The Linde Group

In the event of an emergency, the Site Emergency Coordinator shall be responsible for ensuring:

- Ensure Site Shutdown complete via ESD activation
- Emergency services have been contacted as appropriate, and assistance is provided
- Decisions to evacuate site are taken promptly
- The emergency site/area is secure
- Immediate security issues are addressed
- The situation is controlled/contained to prevent escalation of the emergency
- The assessment of hazards and risks as emergency situation unfolds

Area Warden (RED CAP)

In the event of an emergency, the Area Warden(s) shall:

- Ensure the Site Emergency Coordinator is alerted to the emergency as soon as possible
- Liaise with the Site Emergency Coordinator throughout the emergency, and act on their directions
- Ensure work area is secured including the safe shut down of equipment (if safe to do so)
- Evacuate as necessary or on direction of Site Emergency Coordinator
- Direct personnel to the designated Emergency Assembly Area by the safest route
- Carry out a quick check of all rooms including toilets and so on to ensure no one is left behind (if safe to do so)
- Warden takes Visitors Log Book from Reception to the Emergency Assembly Area (Admin wardens)
- Conduct a roll call of personnel including visitors and contractors at the Emergency Assembly Area
- Report any missing or injured personnel to the Site Emergency Coordinator
- Account for staff in areas which cannot be checked due to the incident
- Ensure personnel remain at the Emergency Assembly Area for further instruction from the Site Emergency Coordinator
- Confirm "all clear" from Emergency Coordinator (that it is safe to return to work) and then instruct personnel to return to work
- Participate in debrief sessions

First Aider (GREEN CAP)

In the event of an evacuation, the First Aider(s) shall:

- Collect emergency first aid equipment on the way to the Emergency Assembly Area
- Determine an appropriate location away from the emergency area to treat persons requiring first aid
- Render first aid as required in accordance with training
- Follow directions of the Site Emergency Coordinator and Emergency Services personnel
- Advise the Site Emergency Coordinator of any medical concerns
- Participate in debrief sessions (at least 1 representative of first aiders group)

NB – First aiders should not perform other roles in the Emergency Team as it may interfere with their primary duties

A Member of The Linde Group

Gate Keeper

In the event of an evacuation, the Gate Keeper(s) shall:

- Control access of personnel and vehicles on and off site in accordance with the directions of the Site Emergency Coordinator
- Maintain clear access of site entrance for Emergency Services
- Await arrival of Emergency Services and assist them if requested
- Notify Site Emergency Coordinator of the arrival of Emergency Services
- Provide assistance to the Site Emergency Coordinator as required
- Participate in debrief sessions (at least 1 representative of gate keepers group)

Employees, Contractors and Visitors

In the event of an evacuation, Employees, Contractors and Visitors shall:

- Shut down site and secure the plant, if safe to do so via ESD Activation
- Cease any telephone conversations
- Save current computer data and shut it down, if safe to do so
- Secure critical records and personal effects, if safe to do so
- Evacuate to the primary Emergency Assembly Area under direction of the Area Warden
- Follow the direction of the Area Warden at the Emergency Assembly Area
- Remain in the Emergency Assembly Area (or alternate Emergency Assembly Area if directed to go there) until the all clear is given

Communications Officer

In the event of an emergency, the Communications Officer shall:

- Under the direction of the Site Emergency Coordinator, communicate with:
  - Emergency Services
  - Local ELGAS Management
  - The National Service Centre
  - Neighbours

Script to use with 000 phone call

"My name is .....I am calling from ELGAS Newcastle, we are a Dangerous Goods Facility storing Cylinder and BULK LPG.

We have..... (state emergency) .....

Our address is 130 Cormorant Road, Kooragang Island, entry via Egret Street.

- Record details of communications conducted
- Participate in debrief sessions

ELGAS
A Member of The Linde Group

4.2 External Authorities

Emergency Services assume command and control of the emergency when they arrive on site. The Emergency Control Organisation must communicate and coordinate activities with Emergency Services at the site.

5.0 Emergency Telephone Numbers

Role	Agency	Phone	Time to site
Emergency	Local Fire Brigade	000	5 Mins
Emergency	Local Police Station	02 49266599	15 Mins
Emergency	Local Ambulance	000	10 Mins
ELGAS -National Process and Compliance Manager	ELGAS HSE	Steve Reynolds 0401 987 730	On request
Local Government	Local Council	02 4974 2000	On request
Environmental	Environmental Protection Agency	131 555	On request

6.0 Emergency Response

6.1 General Emergency Response and Escalation

There are three levels of emergency covered by this Plan, as described in the table below.

All Site Emergencies and External Emergencies must be reported immediately to the ELGAS 24 Hour Emergency Phone line on 1800 819 783, followed by reporting to Site Management. The operator will assist in coordination with Emergency Services. All Minor Incidents must be immediately reported to Site Management.

MINOR INCIDENT	SITE EMERGENCY	EXTERNAL EMERGENCY
An emergency where the impacts on people, property and the environment: - Are expected to be confined to a specific location within the facility and no escalation is expected	An emergency where the impacts on people, property and the environment: - Are expected to spread to or affect all parts of the facility, but not off-site	An emergency where the impacts on people, property and the environment: - Are expected to impact both within the facility and beyond the boundary of the facility
Emergency Services **MAY BE REQUIRED**	Emergency Services **SHOULD BE REQUIRED**	Emergency Services **WILL BE REQUIRED**
Examples: - Ruptured drum in paint store - Leaking flange or seal	Examples: - Localised minor fire - Pipe rupture	Examples: - A bomb threat - Large LPG fire

The response to an emergency on site may change if the emergency situation escalates. If escalation is required beyond the site, SEC will arrange for the National Service Centre to be contacted.

ELGAS

A Member of The Linde Group

6.2 Types of Emergencies Onsite

The table below summarises the types of emergencies could occur on site.

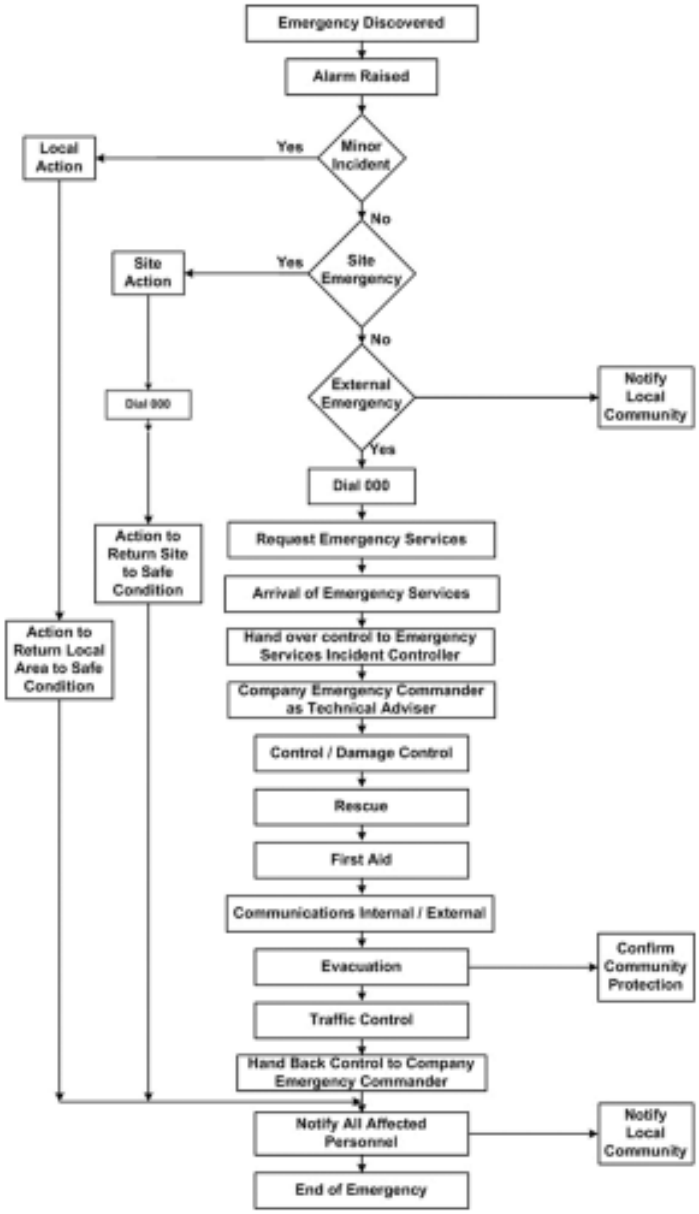
Type of Emergency	Potential Consequences
1. Release and/or Fire from Bulk LPG Vessel	Jet fire or flash fire, with no offsite impact expected. Duration of incident dependent on effectiveness of isolations, and size of release. BLEVE or UCVE, if large release, with potential offsite impact, but of short duration. Projectiles from ruptured gas cylinders, with potential offsite impact.
2. Release and/or Fire from LPG Cylinder	Jet fire or flash fire, with no offsite impact expected. Duration of incident dependent on effectiveness of isolations, and size of release. BLEVE or UCVE, if large release, with potential offsite impact, but of short duration. Projectiles from ruptured gas cylinders, with potential offsite impact.
3. Release and Fire of Flammable Liquid (Paint, Thinners)	No off-site impacts expected. Flammable liquids stored in designated storage cupboards.
4. Fire on Site	Damage to site infrastructure, but escalation from involvement of site materials is not expected.
5. LPG Vehicle Accident	Damage to Tanker, Cylinder Truck or site infrastructure with potential for minor release of LP Gas due to low vehicle speeds on site.
6. Medical Emergency	Personal injury to site personnel or visitors, treated by site first aiders, or outside medical assistance.
7. Civil Disturbance	Potential, though unlikely, public demonstration outside of ELGAS site that could result in personnel injury or minor property damage.
8. Bomb Threat	Potential, though unlikely, any threat must be considered credible unless specific information to the contrary is available. Inside or outside of ELGAS site that could result in personnel injury or property damage.
9. Vandalism and Theft	Potential for theft or vandalism resulting in minor property damage. Bomb threat / terrorism incident could cause damage to site infrastructure with potential for release of LP Gas resulting in fire or explosion, and off-site impact.
10. Environmental Incident	Potential for minor incident from release of vehicle fuel or lubricants, or flammable liquids to site drains.
11. Cyclone / Severe Weather Warning	Damage to site infrastructure, and potential personnel injury from debris.
12. Flood Emergency Warning	Damage to site infrastructure, and potential personnel injury from flooding water, debris.
13. Emergency on Neighbouring Property	Neighbour: Potential emergency
14. Declaration of a Pandemic	A pandemic is not a medical emergency, but requires substantial preparation in advance and sustained vigilance throughout on three fronts, as Regulatory requirements (usually Department of Health) may change quickly and often

Specific emergency response procedures for potential Major Incidents as well as general emergencies on site are provided in Appendix 3.

ELGAS
A Member of The Linde Group

6.3 Emergency Response Procedures

The following flowchart shows the expected sequence of events for an emergency response on site, depending on the scale of the emergency.



Immediate Response to an Emergency requiring evacuation

Normal Hours:

On becoming aware of an emergency situation, or potential emergency, on site the nearest site personnel shall report the situation to the SEC, who will make an assessment of the level of emergency and the response actions required, which could include:

- activate the site evacuation alarm and enact the site emergency plan
- shutdown site operations
- evacuate site personnel to a safe assembly point
- notify emergency services
- account for all site personnel in advance of emergency services arrival
- provide rescue and first aid assistance to injured personnel
- notify National Service Centre
- notify neighbours

After Hours:

When an automated alarm is activated on this site, an alarm message is automatically sent to the security monitoring services, who will then notify the nominated ELGAS site personnel on call, and notify the emergency services. National Service Centre may also be phoned directly on 1800 819 783.

6.4 Emergency Response Facilities incl. Information Sources

Response Facility	Location	Maintenance/review frequency
Emergency Exit Break glass)	Pedestrian Gate	Monthly
Fire extinguishers	Various	6 monthly
Fire monitors	Mid North & South Boundaries	6 monthly
Safety Data sheets	Emergency Information box at gate	5 Yearly
DG Manifest	HAZMAT Box – Front Entrance	Annual
Safety Shower	Rear Cylinder Dock & Bulk Fill Point	6 monthly
Spill kit	Outside – Forklift Parking Bay	Annual
First aid equipment	Operations Room	Annual

6.5 Termination of Emergencies

At the conclusion of the emergency, when the site is handed back to ELGAS site personnel from the Emergency Services Incident Controller, the SEC shall review the site to determine whether it is in a fit state for normal operations to recommence.

The SEC must ensure that:

- Incident scenes are left undisturbed, where statutory investigations will be undertaken, or are very likely to be undertaken
- Incident scenes are left undisturbed, or relevant evidence recorded and collected for internal investigation.
- Where site facilities are not in a fit state to recommence operations, the reasons for the decision and remediation options are reported to Senior Management as soon as possible.
- The 'all clear' is communicated to site staff clearly and promptly along with any restrictions related to operations which cannot recommence for safety or investigative reasons.

6.6 After-Hours Emergency Procedure

When the sight is lightly manned, such as outside normal business hours the Emergency Control Organisation may be a single person. In this case, they become the SEC, and carry out the duties detailed on the 'Lone Emergency Coordinator Role Card' (see appendix 2).

Again, all Site Emergencies and External Emergencies must be reported immediately to the ELGAS 24 Hour Emergency Phone line on 1800 819 783, followed by reporting to Site Management. The operator will assist in coordination with Emergency Services. All Minor Incidents must be immediately reported to Site Management.

7.0 Investigation and Communication

7.1 Incident Debrief, Investigation, Reporting and Review

Following the termination of the emergency, the SEC shall co-ordinate a formal debrief of the incident with the Emergency Control Organisation members and other relevant personnel (eg witnesses, Managers, Emergency Services personnel) to identify potential learnings. The debrief shall also allocate responsibilities for reporting of the incident into Synergi/Intelex, preservation of evidence, clean-up and other activities.

Investigation into the incident shall be conducted in line with ELGGEN-HSE-117-Incident Management.

7.2 Statutory Investigation

Statutory authorities may choose to undertake an investigation following an emergency situation. Typically, this follows the management decision to report an incident to the statutory authority under 'notifiable incident' provisions in WHS/OHS legislation. Reporting of notifiable incidents is covered on regulator websites, which are listed in LIMSS Chapter IMS-02-07-RSP. Statutory authorities may also become aware of incidents through Emergency Services or 3rd party contact.

Incident scenes must be preserved for statutory investigators under preservation of evidence provisions, until such times as the scene is released back to ELGAS by the statutory investigator. Evidence to be preserved may include items such as the incident scene, plant areas, equipment, documents and data. It is the responsibility of the Manager of the site to ensure preservation of evidence requirements are complied with. Un-released incident scenes may only be disturbed to: assist an injured person; remove a deceased person; make an area safe to avoid another notifiable incident; or facilitate a police investigation.

A Member of The Linde Group

7.3 Stakeholder Communication

Following the debrief, the SEC shall (personally or by delegation) communicate necessary information related to the incident to:

- Senior Management
- The National Service Centre
- The Line Manager responsible for the site
- National HSE.

In consultation with Senior Management / HSE the SEC may also be authorised to communicate specific information to neighbours. There must be no comment, admission or public statement to the media by any person other than Senior Management, or nominated responsible officer

8.0 Emergency Response Training

8.1 Training

General emergency and evacuation procedures are advised to all personnel via the Site Induction training.

8.2 Emergency Plan Testing

The following requirements relate to the testing of the site Emergency Plan.

- An emergency exercise (including evacuation drill) is conducted on a six-monthly basis.
- At least every third emergency exercise will involve the local Emergency Services, where they are available and willing to participate.
- The emergency exercises must be designed and conducted to test the response capabilities of the emergency command structure, communications system, and local emergency services providers.
- The Site Emergency Coordinator, where practical, shall notify all neighbouring companies 24 hours prior to the commencement of the emergency exercise.

Emergency exercises should be conducted at varying times to test the adequacy of the emergency procedures during and after normal working hours, and on weekends or holidays.

Emergency exercise scenarios must be varied from exercise to exercise in order to ensure testing of all aspects of the emergency plan over a two year period. The scenarios must be developed taking into account any feedback received from Emergency Services during the preparation of the safety case (MHF sites only).

Records of emergency tests will be maintained in accordance with ELGGEN-HSE-113-Documentation Management

9.0 Consultation and Information

This site Emergency Plan has been developed in consultation with:

- Relevant site personnel
- National Health Safety and Environment Team as required
- Emergency Services
- Neighbouring sites.

Records of this consultation may be located through the Plant Dossier

10.0 Verification and Performance Monitoring

The following performance measures are monitored to indicate compliance with this procedure as per *ELGGEN-HSE-120 – HSE Performance Monitoring*:

- No. of emergency exercises completed.

11.0 References

AS 1851.1 – Maintenance of fire protection equipment – Portable fire extinguishers and fire blankets
AS 1851.3 – Maintenance of fire protection equipment – Automatic fire sprinkler systems
AS 1851.4 – Maintenance of fire protection equipment – Fire hydrant installations
AS 1851.15 – Maintenance of fire protection equipment – Local fire alarm systems
AS/NZS 1715:1994 – Selection, use and maintenance of respiratory protective devices
ELGGEN-HSE-113 - Documentation Management
ELGGEN-HSE-114 - Environmental Management
ELGGEN-HSE-117 – Incident Management
ELGGEN-HSE-118 – Corrective Actions
ELGGEN-HSE-120 – HSE Performance Monitoring

A Member of The Linde Group

12.0 Document Information

12.1 About Document

Version	Date	Author	Reviewer/s	Approver/Owner
V1.0	15.05.20	Liana Walsh	Patrick Egan	Patrick Egan
V1.1	29.06.20	Liana Walsh	Patrick Egan	Patrick Egan
V1.2	06.08.20	Liana Walsh	Patrick Egan Chris Beston	Chris Beston
V1.3	10.09.20	Liana Walsh	Patrick Egan Chris Beston	Patrick Egan
V1.4	02.11.21	Liana Walsh	Patrick Egan Davis Russell	Patrick Egan

12.2 Change History

Version	Date	Description of Change
V1.0	15.05.20	Site Occupation
V1.1	29.06.20	Updated details to Section 2.1 & 2.2
V1.2	06.08.20	Updated details to Section 6.2 & Appendix 3
V1.3	10.09.20	Updated details to Section 2.2, 2.3, 2.4, 4.1, 5.0, 6.1, 6.2, 6.3, 6.6 & Appendix 3
V1.4	02.11.21	Updated details to Section 2.2, 2.3, 2.4, 3.0 & Appendix 3: 3-6, 3-12,3-14

A Member of The Linde Group

Appendix 1 – Newcastle Emergency Team Member List

Role	Allocated to	If allocated person is absent
Site Emergency Coordinator	[redacted]	
Area Warden (Area A)		
Area Warden (Area B)		
First Aider		
Gate Keeper		
Public and Media Relations		
Communications		

Date Issued: _____

Signed _____

Notes:

- Add role titles as appropriate
- One person may be allocated more than one role if necessary
- More than one person may be allocated as First Aiders, or as Gate Keepers (where multiple site entries are involved)
- First aiders should not be allocated additional roles unless it is clear no injuries have occurred

ELGAS
A Member of The Linde Group

Appendix 2 – Emergency Organisation Role Cards

Roles & Responsibilities

The role cards below list the roles required in the Emergency Team in the event of an emergency.

Notes on the use of Role Cards:

1. Role Cards are to be stored with equipment used in the event of a site emergency, such as identification tabards/caps.
2. One role card is to be provided for each role requiring a Role card, including provision for multiple holders of the same role (eg there may be several Area Wardens)
3. The Site Emergency Coordinator hands out the Role Cards to members of the Emergency Team
4. Emergency Team members may be issues more than one card if required
5. If there are too few Emergency Team Members on site to manage the Emergency, then the 'Lone Emergency Coordinator' role card is to be utilised (it is not to be used in other circumstances)
6. The use of Role Cards must be practiced during emergency drills to enable familiarisation with different roles, and ensuring the cards adequately cover the needs of the site
7. Role Cards may be utilised as checklists during an emergency (or emergency drill) and ticked off or annotated during the emergency response process. This will facilitate the Formal Debrief process which follows the emergency (or emergency drill). Consider storing the Role card sheets attached to clipboards, with a pen attached to each.
8. Role cards do not contain all of the responsibilities listed in section 3.3, only those which are relevant from the time Role cards are distributed to Emergency Team Members

A Member of The Linde Group

Site Emergency Coordinator (SEC) Role Card

Site Emergency Coordinator responsibilities:

Responsibility	Complete?	Time
Ensure Site Shutdown complete via ESD activation		
Emergency services have been contacted as appropriate		
Decisions to evacuate site has been taken and clearly communicated		
Site Emergency Team role cards are distributed and actions commenced		
Evacuation confirmed as complete		
The emergency site/area is secure from inadvertent entry and interference (eg by assigning Gatekeepers to locations)		
The situation is controlled/contained to prevent escalation of the emergency		
Hazards and risks arising as emergency situation unfolds are assessed and dealt with		
Instruct evacuation to secondary Assembly Area if required		
Site control assumed by Emergency Services on arrival		
Site declared safe and 'all clear' given (in consultation with Emergency Services where they are involved)		
Emergency debrief meeting convened		

Mark off responsibilities above as they are completed.

Use the remainder of the sheet and overleaf for notes, including name, date and signature

A Member of The Linde Group

Area Warden Role Card

Area Warden responsibilities:

Responsibility	Complete?	Time
Work area is secured including the safe shut down of equipment (if safe to do so)		
Work area is evacuated in accordance with alarms or on direction of the Site Emergency Coordinator (SEC)		
Personnel are evacuated to the designated Emergency Assembly Area by the safest route		
A room check is conducted if safe to do so (including toilets etc) to ensure no one is left behind		
Visitors Log Book is taken from Reception to the Emergency Assembly Area (Admin wardens)		
Conduct a roll call of personnel including visitors and contractors at the Emergency Assembly Area		
Report outcome of roll call to SEC: all accounted for / any missing or injured personnel		
Ensure personnel remain at the Emergency Assembly Area for further instruction from SEC		
Move personnel to secondary Assembly Area if instructed by the SEC		
Confirm "all clear" from SEC and then instruct personnel to return to work		
Participate in debrief session		

Mark off responsibilities above as they are completed.

Use the remainder of the sheet and overleaf for notes, including name, date and signature

A Member of The Linde Group

First Aider Role Card

First Aider responsibilities:

Responsibility	Complete?	Time
Collect emergency first aid equipment on the way to the Emergency Assembly Area		
Determine an appropriate location away from the emergency area to treat persons requiring first aid		
Render first aid as required in accordance with training		
Follow directions of the Site Emergency Coordinator and Emergency Services personnel		
Advise the Site Emergency Coordinator of any medical concerns		
Participate in debrief session (1 representative of first aiders group)		

Mark off responsibilities above as they are completed.

Use the remainder of the sheet and overleaf for notes, including name, date and signature

A Member of The Linde Group

Gate Keeper Role Card

Gate Keeper responsibilities:

Responsibility	Complete?	Time
Control access of personnel and vehicles on and off site in accordance with the directions of the Site Emergency Coordinator		
Maintain clear access of site entrance for Emergency Services		
Await arrival of Emergency Services and assist them if requested		
Notify Site Emergency Coordinator of the arrival of Emergency Services		
Provide assistance to the Site Emergency Coordinator as required		
Participate in debrief session (1 representative of gate keepers group)		

Mark off responsibilities above as they are completed.

Use the remainder of the sheet and overleaf for notes, including name, date and signature

ELGAS

A Member of The Linde Group

Communications Officer Role Card

Communications Officer responsibilities:

Responsibility	Complete?	Time
• Under the direction of the Site Emergency Coordinator, communicate with- o Emergency Services o Local ELGAS Management o Neighbours		
Record details of communications conducted		
Participate in debrief session, including the taking of minutes		
Collation and storage of emergency information such as minutes, emergency services reports and filled in role cards		

Mark off responsibilities above as they are completed

Script to use with 000 phone call

'My name is ..... I am calling from ELGAS Newcastle, we are a Dangerous Goods Facility Storing Cylinder and BULK LPG.

We have ..... (state emergency) ....

Our address is 130 Cormorant Road, Kooragang Island, entry via Egret Street.

Emergency Telephone Numbers

Role	Agency	Phone	Time to site
ELGAS Emergency Line	ELGAS Emergency	1800 819 783	
Emergency	Local Fire Brigade	000	5 Mins
Emergency	Local Police Station	02 49266599	15 Mins
Emergency	Local Ambulance	000	10 Mins
ELGAS -National Process and Compliance Manager	ELGAS HSE	Steve Reynolds 0401 987 730	On request
Local Government	Local Council	02 4974 2000	On request
Environmental	Environmental Protection Agency	131 555	On request

Local ELGAS Management

Role	Name	Phone	After Hrs phone
Site Emergency Coordinator	[redacted]		
Area Warden			
First Aider			
Communications Officer			
Local Delivery Contractor (LPG Cylinders)			
Local Delivery Contractor (Cylinders			

Contact details if communication is required with nearest neighbours

Surrounding Occupier	Contact Phone Number	Contact Email Address
SHELL	[redacted]	
BOC Limited		
BORAL Concrete		
Origin Energy		
Newcastle Coal Infrastructure Group (NCIG)		
Barrington Bakery		
KFC		
Car Wash		

ELGAS
A Member of The Linde Group

Lone Emergency Coordinator Role Card

Lone Emergency Coordinator responsibilities:

Responsibility	Complete?	Time
Emergency services have been contacted as appropriate		
Decisions to evacuate site has been taken and clearly communicated (eg use of break glass alarm)		
Evacuation confirmed as complete		
First aid is rendered to any affected personnel		
Site control assumed by Emergency Services on arrival		
Communicate incident with National Service Centre		
Communicate incident with neighbours (use Communications Officer role card when time and priority permits)		
Site declared safe and 'all clear' given (in consultation with Emergency Services)		
Participate in debrief session		

Mark off responsibilities above as they are completed.

Use the remainder of the sheet and overleaf for notes, including name, date and signature

A Member of The Linde Group

Appendix 3 – Emergency Response Procedures

EMERGENCY PROCEDURE 3 - 1

Release and/or Fire from Bulk LPG Vessel

In the case of a release or fire from a Bulk LPG Vessel (Storage Tank, or Tanker) the following immediate actions must be taken by the nearest trained person on site:

1) Press the nearest Break Glass Alarm (BGA).
2) Shut down all operating equipment on site.
3) Notify the SEC and arrange for evacuation of site personnel to the safe assembly area.
4) Call the Fire Brigade on 000.
5) Notify neighbours if required.

and if competent to do so with current training and experience:

6) Shut off gas supply to the fire.
7) Operate first attack fire suppression equipment such as hand held portable fire extinguishers and fire hose reels. Activate firewater monitors to cool exposed storage vessels as required.

Notes:

1. If the leakage cannot be shut off at the source it is **not** an advantage to put out the flame because of the possibility of re-ignition and atmospheric explosion. The fire should only be put out if it is known that the leakage can immediately be stopped.
2. It is important to keep all surfaces exposed to the fire cool with water, both to prevent weakening of the metal and also to regulate the rate of gas generation/pressure build-up thereby reducing the intensity of the fire. Particular attention should be given to areas of direct flame impingement. Failure is more likely to occur if flame impingement is above the liquid level. Note that water deluge or monitor systems are not designed to put out the fire. They are to provide cooling for the tanks, cylinders, pipes, tankers, etc., and prevent rupture due to loss of strength of the steel.
3. A BLEVE failure of a tank or tanker results in a large fireball, depending on the size of the vessel, but only for a short duration (typically less than 30 seconds). Evacuate at least 250 metres from the fire if the tank cannot be kept cool. Note that this is well beyond the site boundaries. (Refer to the BLEVE hazard ranges in *Section 1.9 - Figure 5 of this Emergency Plan*.)
4. The Bulk Storage Tank does have Fendolite Protective Coating to reduce susceptibility to flame impingement and BLEVE failure. The firewater monitor cooling sprays should therefore be directed at exposed aboveground vessels to prevent an escalation of the emergency.

ELGAS
A Member of The Linde Group

EMERGENCY PROCEDURE 3 - 2

Release and/or Fire from LPG Cylinder

In the case of a release or fire from an LPG Cylinder the following immediate actions must be taken by the nearest trained person on site:

1) Press the nearest Emergency Stop Device (ESD).
2) Shut down all operating equipment on site.
3) Notify the SEC to consider for evacuation of site personnel to the safe assembly area.
4) Call the Fire Brigade on 000 if outside assistance is required.
5) Notify neighbours if they could be affected by the incident.

and if competent to do so with current training and experience:

6) Shut off gas supply to the fire.
7) Operate first attack fire suppression equipment such as hand held portable fire extinguishers and fire hose reels. Activate firewater monitors to cool exposed storage vessels.

Notes:

1. If the leakage cannot be shut off at the source it is **not** an advantage to put out the flame because of the possibility of re-ignition and atmospheric explosion. The fire should only be put out if it is known that the leakage can immediately be stopped.
2. It is important to keep all surfaces exposed to the fire cool with water, both to prevent weakening of the metal and also to regulate the rate of gas generation/pressure build-up thereby reducing the intensity of the fire. Particular attention should be given to areas of direct flame impingement. Failure is more likely to occur if flame impingement is above the liquid level. Note that water deluge or monitor systems are not designed to put out the fire. They are to provide cooling for the tanks, cylinders, pipes, tankers, etc., and prevent rupture due to loss of strength of the steel.
3. Cylinders which are close to a fire but not contributing to it should be removed to a safe area if instructed by the SEC or Area Warden. Care must be taken not to damage the valves and fittings.
4. Similarly, vehicles and trailers should be removed to a safer area if instructed by the SEC or Area Warden.
5. Care should be taken to avoid jets of flame which may come from the relief valve on a cylinder or pipeline after being ignited by the heat of the fire.
6. The consequences of a fire involving cylinders on site have the potential for off-site impact from projectiles if cylinders rupture.

A Member of The Linde Group

EMERGENCY PROCEDURE 3 - 3

Release and Fire of Flammable Liquid (Paint, Thinners)

In the case of a release and fire of flammable liquids, the following immediate actions must be taken by the nearest trained person on site:

1) Press the nearest Emergency Stop Device (ESD).
2) Shut down all operating equipment in the area.
3) Notify the SEC to consider for evacuation of site personnel to the safe assembly area.
4) Call the Fire Brigade on 000 if outside assistance is required.
5) Notify neighbours if they could be affected by the incident.

and if competent to do so with current training and experience:

6) Operate first attack fire suppression equipment such as hand held portable fire extinguishers and fire hose reels.
7) Contain the released flammable liquid and firefighting water runoff to prevent it from getting in to the site drainage system and potentially getting off-site e.g. by sand bags and portable spill kits.

Notes:

1. It is important to contain the release of flammable liquid and extinguish the fire as soon as possible, if safe to do so, to prevent an escalation of the fire onto adjacent LPG cylinders around the area, or into the site drainage system.
2. Cylinders which are close to a fire but not contributing to it should be removed to a safe area if instructed by the SEC or Area Warden. Care must be taken not to damage the valves and fittings.
3. Similarly, vehicles and trailers should be removed to a safer area if instructed by the SEC or Area Warden.
4. Care should be taken to avoid jets of flame which may come from the relief valve on a cylinder or pipeline after being ignited by the heat of the fire.
5. The consequences of a flammable liquid fire should be confined to the site itself i.e. no off-site impact expected, although there may be potential for the released flammable liquid or firefighting water to get off-site in the site drainage system.

ELGAS
A Member of The Linde Group

EMERGENCY PROCEDURE 3 – 4

Fire on site

In the case of a fire the following immediate actions must be taken by the nearest trained person on site:

1) Press one of the Emergency Stop Devices (ESD).
2) Notify the local fire authority.
3) Consider evacuation.
4) Notify neighbours.

and if competent to do so with current training and experience:

5) Shut off gas supply to the fire.
6) Operate first attack fire suppression equipment such as hand held portable fire extinguishers and fire hose reels. Use water to cool gas storages as required.
7) Move all vehicles out of the plant.

Notes:

1. If the leakage cannot be shut off at the source it is **not** an advantage to put out the flame because of the possibility of re-ignition and atmospheric explosion. The fire should only be put out if it is known that the leakage can immediately be stopped.
2. It is important to keep all surfaces exposed to the fire cool with water, both to prevent weakening of the metal and also to regulate the rate of gas generation/pressure build-up thereby reducing the intensity of the fire. Particular attention should be given to areas of direct flame impingement. Failure is more likely to occur if flame impingement is above the liquid level. Note that water deluge or monitor systems are not designed to put out the fire. They are to provide cooling for the tanks, cylinders, pipes, tankers, etc., and prevent rupture due to loss of strength of the steel.
3. Evacuate at least 250 metres from the fire if the tank cannot be kept cool.
4. Cylinders which are close to a fire but not contributing to it should be removed to a safe area if instructed by the SEC or Area Warden. Care must be taken not to damage the valves and fittings.
5. Similarly, vehicles and trailers should be removed to a safer area if instructed by the SEC or Area Warden.
6. Care should be taken to avoid jets of flame which may come from the relief valve on a cylinder or pipeline after being ignited by the heat of the fire.

Off Site Fire / Bush Fire

If instructed by the SEC or Area Warden, the site shall be stood down, emergency services shall be made aware of situation and all site personnel evacuated to the Emergency Assembly Point.

ELGAS
A Member of The Linde Group

EMERGENCY PROCEDURE 3 – 6

Medical Emergency

A medical emergency on site can involve an injury to the person, or a personal medical condition e.g. heart attack or fit.

In the event of a medical emergency the following immediate actions must be taken by the nearest trained person on site:

1) Rescue any people in immediate danger. Note that the injured person must only be moved if danger is threatening and the danger cannot be removed.
2) Notify the SEC and/or the First Aid Officer.
3) Provide First Aid treatment to the injured person and decide whether an Ambulance is required.
4) If an Ambulance is to be called, then the First Aid Officer shall designate a third party to ensure that the site gate is opened, to stay at the gate until the Ambulance arrives and to direct the Ambulance to the injured person.
5) The SEC must be aware of any hazardous area restrictions on site and must operate the nearest Emergency Stop Device (ESD) as a precaution if deemed necessary.
6) Await the arrival of the Ambulance and provide assistance as required.

Notes:

1. Details of all injuries on site should be recorded in the Site Accident/Incident book.
2. Specialised medical treatment is required for the treatment of Super Cold Contact Injuries (cold burns). Refer to the following instruction sheet for dealing with Super Cold Contact Injuries.
3. For emergency medical assistance, contact:
   - Poisons Information Centre on 131 126 (24 hr)
   - John Hunter Hospital Emergency – 4921 3000
   - Calvary Mater Hospital Emergency – 4921 1211

A Member of The Linde Group

EMERGENCY PROCEDURE 3 - 5

LPG Vehicle Accident

An LPG Vehicle accident on site could involve an LPG Tanker or LPG Cylinder Delivery Truck. The procedure does not apply specifically to an LPG-powered car or forklift truck, although the principles would still apply. An LPG Vehicle collision could result in a loss of containment from damaged pipework or vessel (e.g. cylinders), or a personal injury to the driver(s). Vehicle mechanical damage from the impact without loss of containment is the most likely outcome because of the slow vehicle speeds on site. LPG Vehicles can also be damaged, with potential for escalation of an incident, if exposed to fire or other external threat e.g. bomb.

In the case of an LPG vehicle accident the following immediate actions must be taken by the nearest trained person:

1) If the LPG Vehicle is involved in a traffic collision, shutdown the engine and check on the condition of the driver.
2) If the LPG Vehicle is involved in a minor fire then attack the fire with portable fire extinguishers.
3) Notify the SEC of the incident.
4) If the LPG Vehicle is involved in a major fire then evacuate all exposed personnel to the Emergency Assembly Point. Push the Tanker ESD button and activate a site BGA pushbutton.
5) Check the LPG Vehicle for damage. If there is an LPG leak, treat the emergency as per LPG Leak Emergency Procedure.
6) If the driver has suffered a personal injury, render first aid if qualified to do so and call for Ambulance on '000'. Remain with the injured person until the Ambulance arrives.
7) Await the arrival of the emergency services and assist with their response to the incident, as required.

Notes:

1. For recovery of damaged ELGAS LPG Tankers or Cylinder Trucks on site, advise the NSC of the incident (1800 819 783) and request that they follow procedures as set out in ELGAS "Emergency Response Procedure Manual for Tankers Rendered Immobile Due to an Incident" or "Emergency Response Procedure Manual for Cylinder Carrying Trucks Rendered Immobile Due to an Incident".
2. For recovery of damaged LPG Tankers or Cylinder Trucks belonging to third parties, while on site, contact the emergency response number shown on the Emergency Information Placard on the vehicle and request their assistance.
3. A damaged LPG Vehicle, unfit for normal duty, must not be taken away from site while still containing LPG, unless authorised by a member of the Police or a dangerous goods inspector.

A Member of The Linde Group

EMERGENCY PROCEDURE 3 – 6

Medical Emergency

A medical emergency on site can involve an injury to the person, or a personal medical condition e.g. heart attack or fit.

In the event of a medical emergency the following immediate actions must be taken by the nearest trained person on site:

1) Rescue any people in immediate danger. Note that the injured person must only be moved if danger is threatening and the danger cannot be removed.
2) Notify the SEC and/or the First Aid Officer.
3) Provide First Aid treatment to the injured person and decide whether an Ambulance is required.
4) If an Ambulance is to be called, then the First Aid Officer shall designate a third party to ensure that the site gate is opened, to stay at the gate until the Ambulance arrives and to direct the Ambulance to the injured person.
5) The SEC must be aware of any hazardous area restrictions on site and must operate the nearest Emergency Stop Device (ESD) as a precaution if deemed necessary.
6) Await the arrival of the Ambulance and provide assistance as required.

Notes:

1. Details of all injuries on site should be recorded in the Site Accident/Incident book.
2. Specialised medical treatment is required for the treatment of Super Cold Contact Injuries (cold burns). Refer to the following instruction sheet for dealing with Super Cold Contact Injuries.
3. For emergency medical assistance, contact:
   - Poisons Information Centre on 131 126 (24 hr)
   - John Hunter Hospital Emergency – 4921 3000
   - Calvary Mater Hospital Emergency – 4921 1211

ELGAS

A Member of The Linde Group

NSW Ambulance Medical Emergency Plan
To be completed and located near first aid kit(s) and with reception.

NSW Ambulance

Medical Emergency Plan

1 If a medical **emergency** occurs at your workplace, every second counts!

Call Triple Zero (000) immediately and ask for AMBULANCE

000 EMERGENCY

2
- You will be asked a series of questions by the NSW Ambulance Call Taker which will assist us to provide the most appropriate response to your **emergency**.
- Once you have answered these don't hang up, stay on the phone as the NSW Ambulance Call Taker can provide you with further first aid instructions or assistance if required.
- Keep the contact phone number you gave the NSW Ambulance Call Taker free in case they have to call back.

Write your organisation's address and contact details below before it is needed in an **emergency**.

3
- Suburb:
- Street name and number: For large buildings, identify a prominent meeting point.
- Nearest cross street: If in a rural area, note identifiable landmarks.
- Emergency vehicle access point: For rural addresses, GPS location (gates, house, landing strip etc).
- Phone number you are calling from:
- First Aid Officer: Contact your workplace first aid officer on telephone number:
- Emergency vehicle meeting point: Ask a co-worker to meet the paramedics at the following meeting point:
- Access
  - For rural addresses or locations hard to find, have someone wait outside the building/location to wave the ambulance down.
  - Leave the front light on at night or use marker ribbons, vehicle hazard or other lights to indicate entry gate or incident site.
  - Clear hallways of obstructions to allow paramedics easy access.
  - Reserve goods and services lift if required for stretcher access.
  - Advise your receptionist that an ambulance has been called. Reception telephone number:

If there is a dangerous incident, serious injury or illness, or a death, you must report it to SafeWork NSW immediately and notify your insurer within 48 hours. Call **131 050**.

NSW | SafeWork NSW

A Member of The Linde Group

INSTRUCTION TO DRIVERS AND CUSTOMERS
First-Aid Procedures for Dealing with Super Cold Contact Injuries

Contact temperatures are usually below -30°C and tissue contact at this temperature results in snap freezing of the affected area causing damage similar to a heat burn. Also, unprotected parts of the skin which come in contact with equipment at below zero temperatures may stick fast and then flesh may be torn on removal.

As Liquefied Petroleum Gas (LPG) has a boiling point of -42°C, direct bodily contact with LPG in its liquid state must be avoided, as the above type of injury could occur. Other examples of liquefied gases are liquid nitrogen, oxygen and argon which have boiling points below -183°C.

Immediate Treatment

Remove any clothing splashed by LPG and place injured person (or self) in a warm area as soon as possible.

Cold injuries must be **rapidly** rewarmed to body heat. **Do not** allow to thaw slowly.

Exposure Area

Small Exposure: Foot, leg, hand

Bathe affected part with warm water (NOT HOT) preferably 33-35°C, immersing if possible.

Large areas: Truck or multiple areas

Immerse in bath of warm water preferably 33-35°C. (If tepid water unavailable, tap water will do, but take care as prolonged immersing may cause a cooling hypothermia.)

Eyes:

Immediately hold eyes open and wash continuously with water for 15 minutes. Seek medial attention. Thawing of the frozen tissue can cause intense pain and shock may occur.

Loosen any article of clothing that is not frozen but may restrict blood circulation or respiration.

Gently cover or drape injured area with dry, sterile dressings or sheet. Do not restrict blood circulation.

Give warm **non-alcoholic** liquids.

Seek medical attention for all but the most superficial "frostbite" injuries.

DO NOT apply direct heat or cold such as heat lamps, hot water, snow or ice to the affected parts.

Take this information card or the brochure with you to the Medical Centre or Hospital

ELGAS

A Member of The Linde Group

ELGAS

A Member of The Linde Group

EMERGENCY PROCEDURE 3 - 7

Civil Disturbance

A civil disturbance can include a public demonstration, public protest or public assembly at or around the ELGAS site which can obstruct the normal business of the site, including unauthorised entry onto site posing a safety risk.

In the event of civil disturbance the following immediate actions must be taken by the nearest trained person on site:

1) Notify the SEC who must assess the situation and decide whether Police attendance is required.
2) (SEC to notify the Police on 000 of the situation and request their assistance, as required.)
3) Restrict unauthorised access to the site.
4) Contact the ELGAS 24hr Call Centre on 1800 819 783 and report the incident. Request that they notify ELGAS emergency response personnel as per their emergency response procedures, and set up an incident log. Secure business records and office.
5) Activate the nearest Emergency Stop Device (ESD) if necessary to maintain safety on site.
6) Await the arrival of the Police and provide assistance as required.

Demonstration or Protest Details:

A public demonstration, public protest, or public assembly at or adjacent to an ELGAS depot or office will cause disruption, anxiety, media attention and possibly property damage. Poor planning for such inevitable events may lead to injuries to personnel, on and off the site / office.Pre-planning is an essential step in minimising the risks involved in any demonstration or protest.

There are two levels of demonstration or protest:

a. the sanctioned (legal) demonstration in which permission has been granted by State Authority, Local Council or Police with the release of prior warnings, often to a much wider area surrounding the planned protest; and
b. a surprise demonstration (illegal), where an individual or group of people attempt to cause disruption and gain media exposure for their cause(s).

Pre-planning for a planned demonstration must include:

a. which Police Local Area Command, or Authority is in control of security of the area during the demonstration. It is likely that Police / Authorities will close large areas and streets well in advance of the planned demonstration and this will impact on people entering and leaving the depot / office, as well vehicle movements. People and vehicles trapped in closed streets must be avoided;
b. what are the relevant contact numbers, emails or website addresses. Consider using SMS messages multiple addresses for communications, which are more efficient than phone calls;
c. which personnel can work away from the depot / office;
d. which personnel can be locked inside secure buildings on site or nearby;
e. which services (transport, contractors, suppliers) must be warned to stay away for the duration and aftermath of the disturbance;
f. back-up communication systems to send and receive updates, including an all-clear; and
g. what steps can be taken to reduce the impact on customers.

Pre-planning for a surprise demonstration must include:

a. documented contact details for the Police Local Area Command;
b. a planned process to move personnel to secure buildings and lock down;

c. systems to rapidly and safely shutdown and isolate plant equipment; and
d. communication system to send and receive updates, including an all-clear.

In any demonstration or protest;

a. ELGAS personnel must not become involved in any way with any part of the demonstration, including interaction with the media. All media inquiries must be channelled through Media Office, North Ryde NSW;
b. any disturbance must be reported to the Police (Local Area Command), who may be unaware of a surprise demonstration in progress;
c. no threat to person or property is acceptable, and all such threats must be reported immediately to the Police by the person first observing the incident.
d. Emergency evacuation may be unsafe due to the possibility of people and vehicles being detained by protestors and caught in violent actions by protestors. An emergency lockdown ("stay-put" approach) will be significantly safer, and includes;
    - advising all personnel on site that a lockdown is in progress, to remain within buildings, lock down where possible and strongly discourage any attempts by personnel to leave the site;
    - advising all incoming transport to divert away from the area until advised to return;
    - locking all external gates with chains and locks. Disable all electronic gates before chaining closed;
    - locking all external doors to buildings on site; and
    - maintaining communications with Police and personnel on site. This includes receiving the all-clear from Police / State Authorities / Emergency Services and relaying the message to all site personnel.

After any demonstration or protest has concluded it is essential that;

a. all personnel be checked for injury, anxiety or stress;
b. plant, buildings and vehicles be checked for damage, with any damage to be documented and reported to Police, and Insurers;
c. the site or depot is returned to full operation only when sufficient personnel are present to do so; and
d. a Police report is requested by the depot or office to assist in planning for future events, and lodgment (evidence) with insurers as required.

Note:

The SEC shall prepare a report of the incident as per the site Incident Management procedure.

A Member of The Linde Group

EMERGENCY PROCEDURE 3 - 8

Bomb Threat

Any threat must be considered credible unless specific information to the contrary is available. If the threat is deemed credible the following immediate actions must be taken by the SEC or delegate:

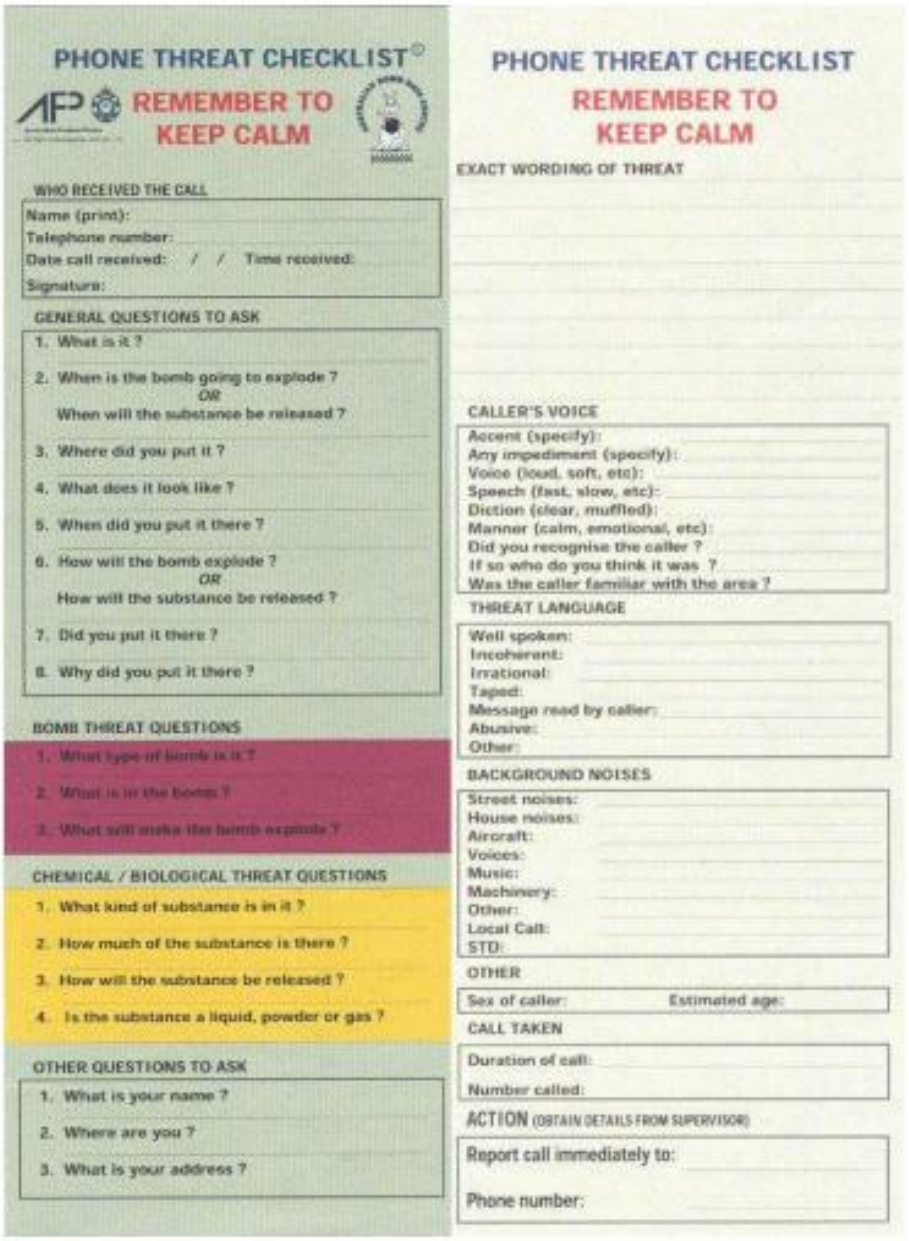
1) The site must be stood down.
2) Alarms shall not be sounded.
3) Emergency Services must be notified immediately.
4) All site personnel must be evacuated to the Emergency Assembly Point, or as instructed by the SEC or Area Warden.
5) Wardens must let any drivers or other personnel likely to arrive at the depot know of the threat and advise them to delay their return until the threat has passed.

Note:

Anybody who receives a bomb threat shall use the following "Phone Threat Checklist" to record details of the caller and the threat. All depot staff must be familiar with this document.

ELGAS

A Member of The Linde Group



PHONE THREAT CHECKLIST

REMEMBER TO KEEP CALM

WHO RECEIVED THE CALL

Name (print):
Telephone number:
Date call received: / / Time received:
Signature:

GENERAL QUESTIONS TO ASK

1. What is it ?
2. When is the bomb going to explode ?
   OR
   When will the substance be released ?
3. Where did you put it ?
4. What does it look like ?
5. When did you put it there ?
6. How will the bomb explode ?
   OR
   How will the substance be released ?
7. Did you put it there ?
8. Why did you put it there ?

BOMB THREAT QUESTIONS

1. What type of bomb is it ?
2. What is in the bomb ?
3. What will make the bomb explode ?

CHEMICAL / BIOLOGICAL THREAT QUESTIONS

1. What kind of substance is in it ?
2. How much of the substance is there ?
3. How will the substance be released ?
4. Is the substance a liquid, powder or gas ?

OTHER QUESTIONS TO ASK

1. What is your name ?
2. Where are you ?
3. What is your address ?

PHONE THREAT CHECKLIST

REMEMBER TO KEEP CALM

EXACT WORDING OF THREAT

CALLER'S VOICE

Accent (specify):
Any impediment (specify):
Voice (loud, soft, etc):
Speech (fast, slow, etc):
Diction (clear, muffled):
Manner (calm, emotional, etc):
Did you recognise the caller ?
If so who do you think it was ?
Was the caller familiar with the area ?

THREAT LANGUAGE

Well spoken:
Incoherent:
Irrational:
Taped:
Message read by caller:
Abusive:
Other:

BACKGROUND NOISES

Street noises:
House noises:
Aircraft:
Voices:
Music:
Machinery:
Other:
Local Call:
STD:

OTHER

Sex of caller: Estimated age:

CALL TAKEN

Duration of call:
Number called:

ACTION (OBTAIN DETAILS FROM SUPERVISOR)

Report call immediately to:

Phone number:

ELGAS
A Member of The Linde Group

EMERGENCY PROCEDURE 3 - 9

Vandalism and Theft

In cases of vandalism or theft, the SEC shall ensure that all work is stood down and entry to site is refused to non-essential services (including gas-deliveries) until the site is confirmed as safe.

Notes:

1. When vandalism or theft has occurred or is expected, the site must be shut down until a comprehensive check of all safety equipment has been carried out. This includes checking:
   - All gas storage and pipelines must be checked for visible damage (bends, breaks ...)
   - All valves must be checked for damage and position.
   - All gauges and fittings must be checked for damage.
   - All pressure relief valves must be checked for damage and obstructions.
   - All fire hydrants, hoses and extinguishers must be checked for interference and damage.
   - Any vehicles or machinery kept on site must be checked for damage / obstructions.
   - All process equipment, including filler guns and hoses must be checked for damage.
   - First aid stocks must be checked.
   - Operability of phone lines and other emergency communication must be assessed.
2. The Area Warden for each area must review damage to their own areas but only once a technically competent person has reviewed the status of gas bearing and safety equipment.
3. Until site has been deemed safe, access to site shall be restricted to nominated persons only (Wardens, inspectors, maintenance, and Police).
4. The risk associated with an act of Theft is the possible damage to safety equipment or compromise to security systems. Theft in itself is not an emergency, but may reduce site security by keys or codes 'falling in to the wrong hands' and safety systems having been bypassed. If a break-in has occurred, site security must be reviewed and a change of codes and locks may be necessary.
5. The SEC shall prepare a report of the incident as per the site Incident Management procedure.

A Member of The Linde Group

EMERGENCY PROCEDURE 3 - 10

Environmental Incident

An environmental incident on site can include an oil or fuel spill that could run into the storm water drains and off-site.

The priority for ELGAS emergency response to this type of incident is to prevent any spill of contaminants from entering the storm water drainage system, while preventing any personnel exposure to hazardous substances that may be involved.

In the event of an oil or fuel spill, the following immediate actions must be taken by the nearest trained person on site:

1) Contain the spill and prevent any hazardous material from entering the site storm water drainage system.
2) Notify the SEC, who will make an assessment of the situation and decide whether emergency services attendance is required.
3) If instructed by the SEC or Area Warden, call the Fire Brigade on 000 and request their assistance.
4) Contact the ELGAS 24hr Call Centre on 1800 819 783 to report the incident and request they start an incident log.
5) Notify the responsible authorities if the spill is likely to get off-site:
   - EPA Hotline on 1300 130 372 (24 hr)
6) Notify immediate neighbours if they are likely to be affected by the spill. This may be done by the ELGAS Call Centre if requested.
7) Await the arrival of the Fire Brigade and provide assistance as required.
8) Liaise with emergency services and authorities as required to get the 'All Clear' to arrange clean up.
9) Arrange for cleanup of the spill.

Note:

The SEC shall prepare a report of the incident as per the site Incident Management procedure.

A Member of The Linde Group

EMERGENCY PROCEDURE 3 - 11

Cyclone / Severe Weather Warning

Where severe weather warnings are current, the SEC shall consider whether the site should be stood down (operations and transfers should cease), and all transport vehicles (tanker and cylinder trucks) should be securely parked.

If instructed by the SEC or Area Warden, the nearest trained person on site shall:

1) Close manual valves on all major storages and pipes.
2) Securely park all tanker and cylinder trucks.

Notes:

1. If instructed by the SEC or Area Warden, site personnel shall be sent home until operations can be resumed.
2. After a cyclone or other severe weather the site may be compromised and safety checks shall be made before operations can be resumed.
3. A power failure to site will cause the gates to not operate and manual procedures will need to be initiated

ELGAS
A Member of The Linde Group

EMERGENCY PROCEDURE 3 - 12

Flood Emergency Warning

Where flood warnings are current, the SEC (Site Emergency Controller) shall consider (with advice from NSW SES and assisting authorities) whether the site should be stood down (operations and transfers should cease), and all transport vehicles (tanker and cylinder trucks), equipment and loose items should be removed to higher ground

If instructed by the SEC or Area Warden, the nearest trained person on site shall:

1) Ensure Site Plant has been deactivated
2) Ensure Electrical Power has been isolated (turned off) at site
3) Close manual valves on all major storages and pipes.
4) Coordinate removal of all tanker and cylinder trucks.
5) Consider and coordinate removal of equipment and loose items from site

Notes:

1. If instructed by the SEC or Area Warden, site personnel shall be sent home until operations can be resumed.
2. After a flood event the site may be compromised and safety checks shall be made before operations can be resumed.
3. A power failure to site will cause the gates to not operate and manual procedures will need to be initiated

Further guidance and preparation as per:

ELGAS Newcastle Flood Emergency Response Plan (V1.0 August 2020)

ELGAS

A Member of The Linde Group

EMERGENCY PROCEDURE 3 - 13

Emergency on Neighbouring Property

Where an emergency exists at a neighbouring site, the SEC or delegate must contact the neighbouring site to ascertain:

1) The nature of incident.
2) If evacuation is necessary.
3) Safe evacuation distance and direction, or "Shelter-in-Place".
4) Recommended safety precautions (Keep indoors? Turn off air-conditioning? Turn off ignition sources? First Aid treatment applicable).

If instructed by the SEC or Area Warden, then all work must be stood down and site personnel evacuated to the Emergency Assembly Point, or as instructed.

Notes:

1. The SEC must keep in contact with the neighbouring site until the emergency situation has been declared as "All Clear".
2. The following 'Shelter-in-Place' advice should be followed by all personnel on site until further instructions are given by the SEC.

A Member of The Linde Group

EMERGENCY PROCEDURE 3 - 14

Declaration of a Pandemic

A pandemic is not a medical emergency but requires substantial preparation in advance and sustained vigilance throughout on three fronts, as Regulatory requirements (usually Department of Health) may change quickly and often.

The three active fronts include;

1. strict adherence to State Health Authority requirements, which may include work from home or other, social distancing, wearing of additional PPE (eg masks), increased or changed personal hygiene habits (eg hand sanitiser use), compliance to virus testing requirements (temperature checks on site, testing clinics), engagement in large-scale vaccination programs and on-going tracking and traceability processes (eg QR codes, logging of names and contact details) inside and outside the workplace. This strict adherence demands pre-planned lines of communication from trusted sources to Depot personnel, and avoidance of speculative social media;
2. strict application of the above requirements to all sections of the workplace - employees, contractors and agency personnel, with frequent updates on the pandemic, and related requirements; and
3. rigorous extension of the above requirements to any engagement by site personnel with the general public and customers, and any people who are required to visit the site.

As part of the preparation, each Depot and Office must have;

- a prepared drill to be executed in the event of a worker becoming ill while at work and
- a prepared drill to be executed in the event a worker tests positive after being at work. These procedures may involve the procurement of external testing and treatment agencies.

(1) A pandemic may create a medical emergency where an ill or suspected infected employee or contractor must be isolated, stabilised and medevac'd from the workplace to an isolation ward in a hospital / health centre. This is then followed by isolation and testing of close-contact personnel, deep cleaning of relevant workplaces and health / symptom monitoring of present personnel, and notification to the relevant authorities.

These procedures must be installed and proven in advance (drills / exercises will assist).

Throughout the pandemic, careful attention must be given to:

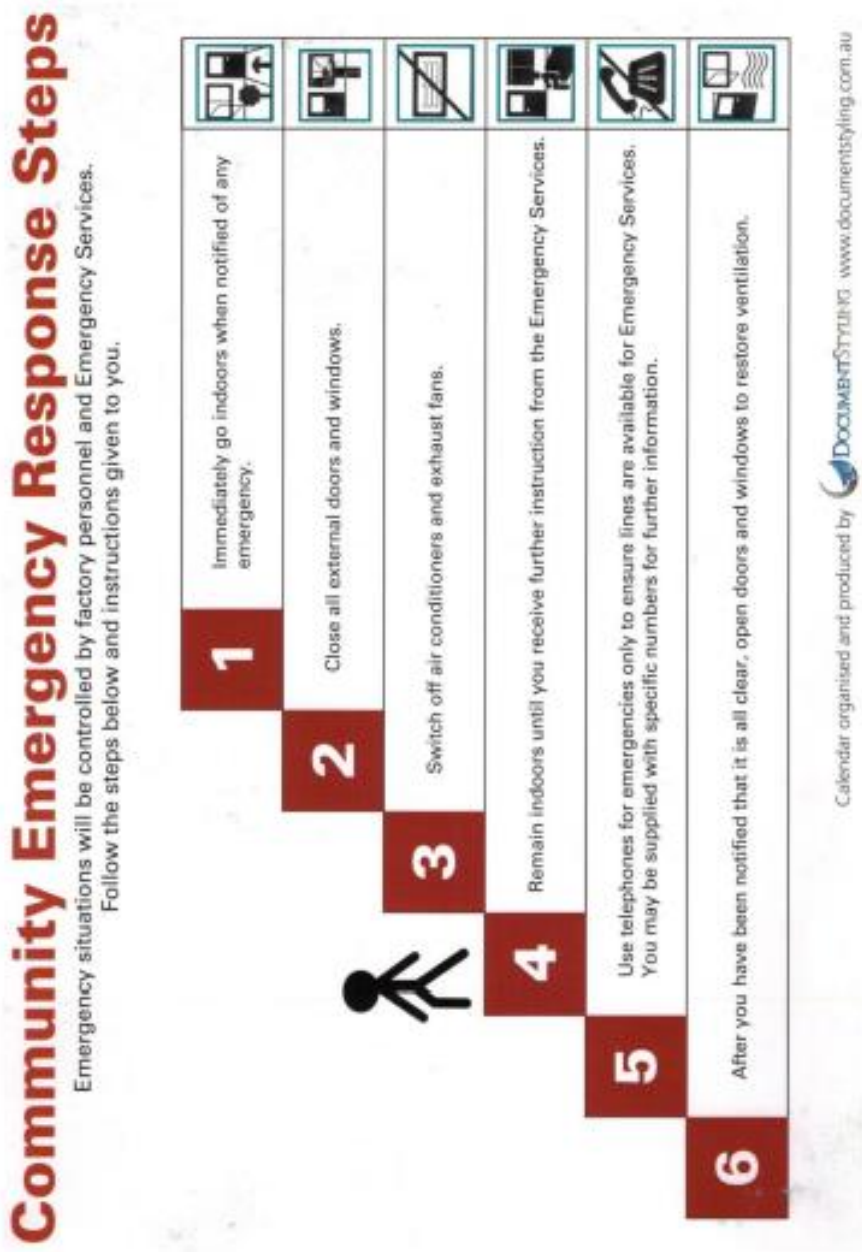
a. supplies of consumables (PPE, masks, hand sanitiser etc) being accessible to all;
b. sufficient personnel in the depot or office to sustain operations without burnout;
c. compliance to the raft of requirements by all personnel, on site and off site; and
d. mental health of all workers in all locations.

Note:

Further guidance will be offered by ELAGS HSE and information available via ELGAS Intranet.

ELGAS

ELGAS
A Member of The Linde Group



ELGNEW-HSE-115 –
Newcastle (Kooragang) Emergency Plan
Uncontrolled if printed – check currency of version

Page 51 of 51
V 1.4 November 2021

Appendix D
SOP_300_008_NEW_Depot_Traffic Management Plan (V1.3)

A Member of The Linde Group

Code/Name	SOP_300_008_NEW_Depot_Traffic Management Plan		
Approved by	Patrick Egan	Signature	

Operational Traffic Management Plan

Elgas Depot - 130 Cormorant Road, Kooragang NSW.

1. Purpose

The purpose of this Traffic Management Plan is to outline what is part of the Standard Operating Procedure (SOP). Elgas and this plan will ensure the safe and effective management of traffic and vehicular flow at the Newcastle Depot.

This Traffic Management Plan (TMP) has been developed using the current site plans & layouts that have been previously completed and approved by the Department of Planning, Industry and Environment and in conjunction with the Port of Newcastle & RMS.

2. Legends

Safety Precautions are in red
Process Critical tasks are in Blue
Environmental Precautions in Green

3. Scope

The audience of this SOP is all drivers entering the site and all personnel involved in traffic, forklift, or pedestrian movement at the Newcastle Depot.

4. Definition

The terms used in this document are defined as follows:
- Personnel includes all employees, contractors and visitors

5. Personal Protective Equipment

The following PPE is mandated – Anti-static COTTON only for all operational staff:

a) Safety footwear (steel-toe capped footwear) – As per AS/NZS 2210.1 :2010
b) Long sleeved cotton drill shirt and long cotton drill trousers
c) Hi-Vis vest / Clothing – As per AS/NZS 4602.1:2011
d) * Safety glasses – As per AS/NZS 1336:2014 – mandated in all hazardous zones
e) * Safety gloves – specific for the task/s required on site
f) *Hearing Protection – As per AS/NZS 1270:2002 – specific for the task/s required on site

V 1.3 02/11/2021 WARNING: If this document is printed, check its validity. Page 1 of 15

The following are mandatory for all persons

*The following are task specific requirements

6. General Safety

The following safety precautions are to be used when undertaking the activities detailed in this SOP:

a) Site and area specific rules and signage are to be observed and obeyed at all times.
b) Personnel are to use correct manual handling techniques at all times.
c) Ignition sources – Use of mobile phones only permitted in the office and amenities area, not in the yard. The office and amenities area is marked on the attached site map. Smoking is not permitted on this site.
d) All personnel must be familiar with and comply with site emergency procedures.
e) All personnel must have completed the site induction.

All vehicles entering the depot must comply with all traffic management signs and directions contained in this SOP.

7. Pedestrian Controls

The following safety precautions are to be used when undertaking the activities detailed in this SOP:

- Where possible pedestrians must remain on designated walkways when moving between locations. Pedestrians may leave walkway if it is necessary to undertake work activities in the area.
- All pedestrians **must** give way to all plant travelling on the site. Pedestrians **must not** walk within three (3) metres of an operating forklift or truck.
- All pedestrians **must** remain vigilant and give way to all operating forklifts.
- All pedestrians need to make "eye-to-eye" contact with the forklift operator before proceeding past/near any forklift.
- Pedestrians entering the site admin office off Egret Street can use designated paved access off grassed area at front of site.

A Member of the Linde Group

8. Heavy Vehicle Routes for Bulk Deliveries

8.1 Approved B-Double Route & Road Hierarchy

The approved B-Double route for delivery of LPG, from Elgas Cavern facility in Port Botany, to the subject site involves travel form Port Botany onto the M1 and travel M1 until it ends at John Renshaw Drive, then turn right through to Hexham to Industrial Drive, left at Tourle Street and follow road onto Cormorant Road with a left hand turn into Egret Street then travel 180m down Egret street and then a left hand turn into the site. See Page 13 detailing Approved B-Double Route including specific road details and maps.

8.2 Specialist Transport Carrier

Elgas have commissioned Rivet Transport Pty Ltd to conduct all their bulk LPG to the subject site. Rivet Transport are experienced in the heavy vehicle transport and specialise in LPG gas deliveries.

8.3 Specific Transport Routes

Rivet are responsible to follow the designated B-Double route to and from the subject site for all LPG deliveries at all times.

8.4 Impacts on Other Road users

To reduce the impact on other road users Bulk LPG deliveries are regularly schedule outside of normal business hours. This will also reduce the likelihood of traffic conflict as there will be minimal road users at that time. The anticipated number of regular bulk deliveries each week are expected to be 3 to 5 deliveries

9. Road Network

9.1 Current Road Network

Observations show that the road network in the vicinity of the subject site operates well, with few delays or congestion for existing road users. Minimal queueing may be observed travelling westbound along Cormorant Road during peak periods, resulting in a significant drop of speed below the posted limit as traffic flows through this area.

The duplication of the Tourle Street bridge has provided a significant improvement to the current road network removing this pinch point and increasing road capacity. Egret Street traffic flow is low and currently services other industry including Boral, BOC, Port Waratah Coal and Newcastle Coal Infrastructure Group, as well as the Coles Service Station.

9.2 Impacts & Conflict on Current Road Network with other Users

The major impact of the development would be associated with the potential increase in traffic movements at the intersection of Egret Street and Cormorant Road. This is a T-Intersection, with Cormorant Road being the priority road. It is located on a straight (vertical and horizontal alignments) section of road and provides good visibility in both directions.

With observations of the current intersection operation, and the accident data provided by the RMS, it is considered the minor increase in traffic flow from the proposed development will have a minimal impact upon road safety at the intersection of Egret Street and Cormorant Road.

A Member of The Linde Group

10. Traffic Management

10.1 Ingress/Egress

All vehicles must enter and exit the site in a forward direction, with no queuing onto Egret Street. There is adequate distance allowed for all vehicles (including B-doubles) to fit wholly within the site prior to entering through gates to the rear of the site. Refer Fig 1.1

10.2 Vehicle Parking – Heavy Vehicles

All heavy vehicles assigned to the Newcastle Depot must use designated parking bays allocated at the rear of the depot at all times. No parking in Egret Street. Refer Fig. 1.3.

10.3 Vehicle Parking – Employees Staff

All staff working or visiting the Newcastle Depot must use designated staff & visitor parking in front of main administration building. With no parking in Egret Street. Refer Fig.3.1.

10.4 Delivery Vehicles & Waste Bin Collection

All delivery vehicles must park in allocated areas on the northern side of main administration building. Prior to leaving all vehicles must use turning bay prior to exiting site so their vehicle can exit the site in a forwardly direction. With no parking in Egret Street.

10.5 Loading & Unloading of Materials – Main Administration Building

Deliveries to main administration building must take place at the front of the site in the area identified as Exterior Loading Bay shown in Fig. 2.1. All loading and unloading of vehicles must take place wholly within the site and in designated areas. With no parking in Egret Street.

10.6 Loading & Unloading of Materials – Main Depot at Rear

Deliveries to the depot compound can only be completed once access has been approved and entry is through gates as shown in Fig. 1.1. All loading and unloading of vehicles must take place wholly within the site and in designated areas. With no parking in Egret Street.

10.7 Bulk LPG Deliveries

Bulk LPG deliveries can only be completed once access has been approved and entry is through gates as shown in Fig.1.1. Bulk LPG tanker must park in allocated position as shown in D-NSW-NEW-TRA-001_0 (Traffic Management Plan), with no parking in Egret Street.

10.8 Delivery & Transport Vehicles

Delivery vehicles entering and exiting the site must have all their loads covered where applicable and safely secured at all times. Please note, the Newcastle Depot has concrete pavement provided to all vehicular areas as required.

A Member of The Linde Group

10.9 Turning & Access Areas

All LPG cylinders stored at the Newcastle Depot and must be allocated in the designated storage areas as shown in Fig 5.1 to allow for clear traffication and to keep any obstacles including other vehicles out of the way.

10.10 Forklifts

Forklifts are operated at Newcastle Depot and operators must observe 3mtr separation from pedestrians

10.11 Cars / Utes

General parking is available for customers and staff. Where possible, cars should **not** be brought into operational areas. I.e. inside the gate.

All non-traditional (non LPG) and customer deliveries/pickups require the vehicle to park in the designated loading zone, outside of the depot compound.

If a delivery/pickup is required with the depot compound, the driver will require to sign the visitor registered and be accompanied by an authorised person. Once load is secure and customer has parked outside operational area, sign out of the 'Site Register' is required. (Non LPG Delivery drivers & Customers must adhere to site PPE requirements).

A valid reason is required to access the site with a car and the duration in operational areas is to be kept to a minimum. Examples include when an item is to be picked up or dropped off, or an employee or contractor is working from their vehicle. Once the task is completed, the car is to leave the operational area and park in the car park provided.

Where an Elgas employee or contractor is required to drive a private/passenger/work car into an operational area they **must**:

- Have completed the Newcastle Induction Program
- Notify the Plant Manager or Reception before entering the site
- Obey posted speed limits, traffic management controls, and procedures detailed in this SOP
- Park vehicles clear of hazards, thoroughfares, and not on a walkway area
- Park in designated areas as directed

10.12 ELGAS Vehicles

Elgas vehicles may only be operated on site by persons who have completed the ELGAS Induction Program and must comply with the requirements of this SOP at all times. Categories include:

- Bulk trucks
- Cylinder trucks
- BOC delivery trucks
- Waste management trucks
- Recycling trucks
- Utilities and other small vehicles

10.13 Cranes

The loading and unloading of trucks with cranes is very rarely undertaken at the Elgas Newcastle Depot, however should it be necessary, then it is to be undertaken by suitably trained and qualified persons. This activity is controlled with lifting permits and is not considered part of the traffic management plan.

11. Related Documents

- Elgas LTD Newcastle Site Rules and Regulations
- ELGNEW-HSE-115 (ELGAS Newcastle (Kooragang) Emergency Plan
- D-NSW-NEW-TRA-001_0 (Traffic Management Plan)
- SOP_106_008_NEW_Traditional_Cylinder – Load & Unload
- SOP_203_008_NEW_Tanker - Load
- SOP_206_008_NEW_Tanker – Unload With Truck Mounted Pump
- Site drawing Traffic Management layout as attached

12. General Operational Traffic Management Instructions

- ELGAS Newcastle Depot (Kooragang) is approved to operate 24 hours a day, 7 days a week
- These instructions apply to all vehicles visiting and or entering the site. All drivers are to observe the general safety precautions and traffic management rules detailed in this plan.
- These instructions should be read with reference to the Traffic Management Plan site drawing which is attached.
- Drivers are responsible for safely loading and unloading their trucks.
- Drivers must comply with the PPE Requirements for the Newcastle Depot and the terms and conditions of their contract.
- The majority of gas cylinder loading/unloading operations will be undertaken around the cylinder filling dock. This is designed to minimise the amount of travel the forklifts will need to undertake in order to place the freight.
- General truck loading/unloading operations (e.g. new LPG cylinders) will be undertaken in a pedestrian-free area that minimises the impact on production operations. A review of hazards must be undertaken to verify the need for additional controls, including isolation of the loading/unloading area (e.g. witches hats/ cones).

⚠	All traffic exiting the site must adhere to the local traffic directions and posted guidance as per the Port of Newcastle and NSW RMS. Traffic exiting LEFT from the site will follow local roads. All traffic exiting RIGHT from the site, will enter the intersection of Egret Street & Cormorant Road and MUST turn LEFT as sign posted.

SOP_300_008_NEW_Depot_Traffic Management Plan

A Member of the Linde Group

Step	Procedure	Image
1. Traffic Management Plan	1.1. All vehicles to enter via designated entry driveway Site Entry to Newcastle Elgas Plant via Egret Street	
	Drivers MUST obey all posted, road & site signs –Newcastle Plant speed limit is 10km/hour	
	Drivers MUST remain vigilant due to pedestrians operating in the area – Do NOT enter or drive close to the areas where witches hats and/or cones are located	
	It may be necessary to wait for the other trucks or customer vehicles to complete manoeuvres prior to proceeding	
	1.2. Follow into operational zone with caution This flow is displayed on the attached Traffic Management Plan drawing	 D-NSW-NEW-TRA-001_0 (Traffic Management Plan)
	Do NOT: • Overtake other vehicles • Exceed 10km/hr	
Step	Procedure	Image

V 1.3 02/11/2021 WARNING: If this document is printed, check its validity. Page 7 of 15

In the event that the unloading bay is not safely accessible, wait until the area is clear prior to proceeding

Do NOT drive around vehicles parked in the unloading bay - wait for clearance before proceeding

1.3. Drive to designated unloading/loading area

Cylinder Unload Bay - In the event that all parking bays are occupied, stay in the vehicle until a bay is clear and then proceed

All VEHICLE TO REVERSE PARK FOR LOADING/UNLOADING

Tanker Load/Unload Bay - In the event that all parking bays are occupied, stay in the vehicle until a bay is clear and then proceed

1.4. For detailed procedures Refer to:

SOP_106_008_NEW_Depot_
Traditional Cylinder – Load & Unload.

SOP_203_008_NEW_Depot_
Tanker - Load

SOP_206_008_NEW_Depot_
Tanker – Unload

SOP_300_008_NEW_Depot_Traffic Management Plan

A Member of The Linde Group

Step	Procedure	Image
	1.5. Exiting Vehicles, must follow the traffic flow as per Newcastle Traffic Management Layout on Page 11 Site Exit – Newcastle Elgas Plant Tankers & Linehaul onto Egret Street	
2. Loading Bay	2.1 All vehicles delivering or picking up non LPG products/parcels are to use designated loading, exterior to the depot compound Exterior Loading Bay	
3. Staff & Visitor Parking	3.1 All staff and visitors to park in designated vehicle parking at front of the main building, exterior to the depot compound Staff & Visitor Parking	

V 1.3 02/11/2021 WARNING: If this document is printed, check its validity. Page 9 of 15

SOP_300_008_NEW_Depot_Traffic Management Plan

A Member of the Linde Group

Step	Procedure	Image
4. Linehaul Loading Bay	4.1. LPG Cylinder/Cage Linehaul Delivery Vehicle parking/loading Bay adjacent to aboveground LPG tank. Cylinder/Cage Linehaul Loading Bay	
5. Turning & Access Area	5.1. All LPG cylinders are to be stored in allocated areas to allow for turning and access. All storage areas are clearly marked to assist with site traffic management and maintain turning and access areas	

13. Records

N/A

14. Document Information

14.1 Further Supporting Documents

- SECA Solutions Traffic Impact Assessment (27.07.17)
- DA Approved Site Plans and Traffic Flow
  - 14 - 002 - GA - 01 - Rev DA3
  - 14 - 002 - TS - 01 - Rev DA3
  - 14 - 002 - TS - 01 - Rev DA3
  - 14 - 002 - TS - 01 - Rev DA3
- ELGAS – Approved B Double Route (Port Botany to Egret Street depot entry)

V 1.3 02/11/2021 WARNING: If this document is printed, check its validity. Page 10 of 15

14.2 About Document

Version	Date	Author	Reviewer/s	Approver/Owner
1.0	18.05.20	Patrick Egan	Patrick Egan Adam Brady	Patrick Egan
1.1	27.06.20	Patrick Egan	Patrick Egan Adam Brady	Patrick Egan
1.2	06.08.20	Patrick Egan	Patrick Egan Adam Brady	Patrick Egan
1.3	02.11.21	Patrick Egan	Patrick Egan David Russell	Patrick Egan

14.3 Review Period

Review, if necessary, of this document is required at least once every 5 years, or sooner as triggered by legislative changes or corrective action.

14.4 Monitoring Measures

ELGAS completes quarterly Elgas Contractor Safety and Compliance Reviews with transport contractors (records kept for 5 years). The ultimate aim is to constantly monitor and improve transport safety performance by identifying gaps and implementing plans to close them. Combined with driver risk profiling and management, depot traffic management is discussed and monitored via this review in conjunction with day to day site management, site safety meetings (details and attendance records maintained) and site CCTV.

14.5 Responsibilities

The Regional Depot Operations Manager or Transport Operations Manager (as appropriate) are responsible for the implementation of the key requirements of this procedure in conjunction with site management.

14.6 Document Author and Reviewer Details

Patrick Egan (ELGAS NNSW Regional Depot Operations Manager)

- Sept 2011 – Oct 2015 – ELGAS Newcastle/Hunter Valley - Branch Manager
- Nov 2015 - Aug 2016 – ELGAS NNSW Regional Operations Manager (Transport & Depot)
- Sept 2016 – Present – ELGAS NNSW Regional Depot Operations Manager

Adam Brady (ELGAS NNSW Regional Transport Operations Manager)

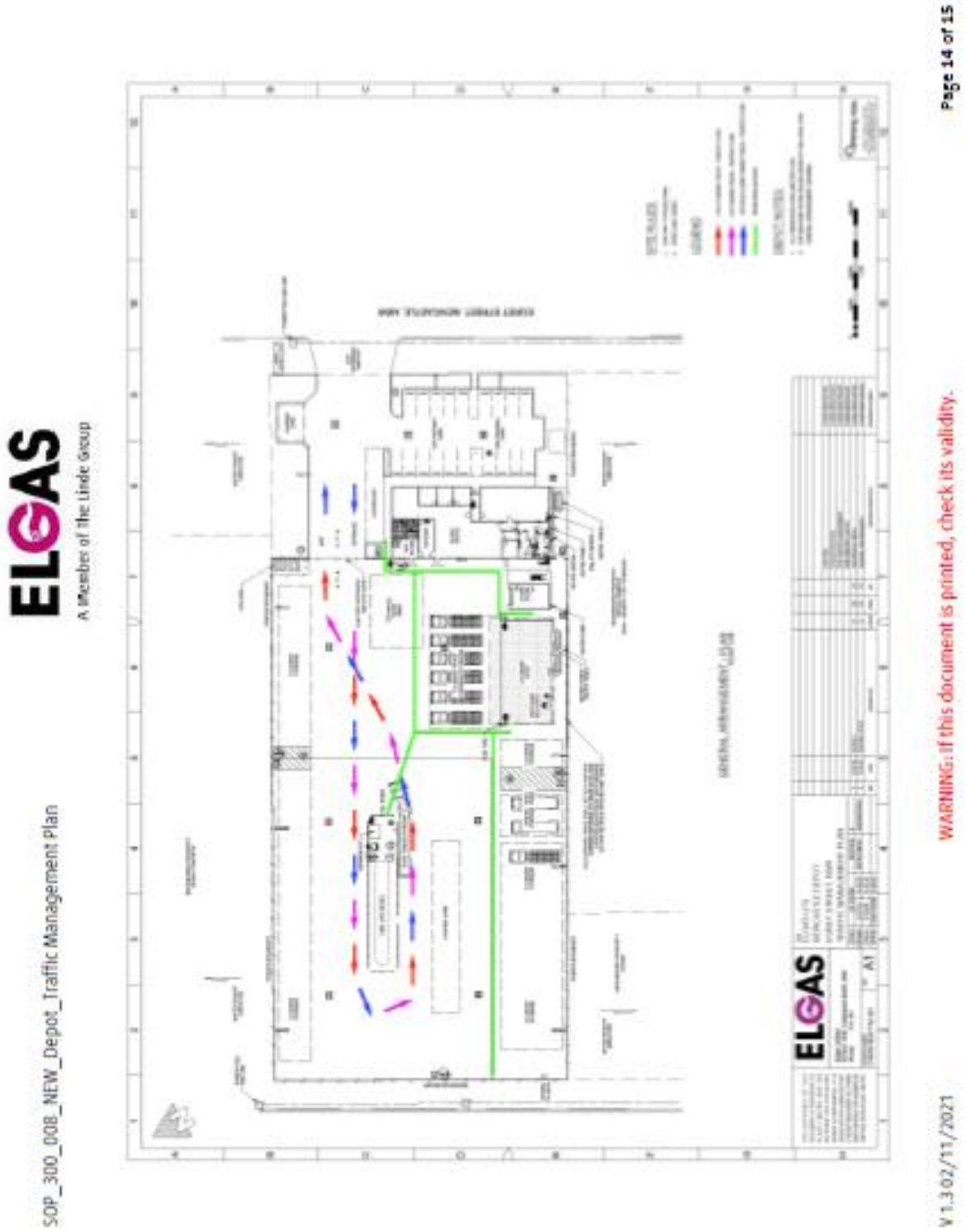
- Jan 2015 – Oct 2017 - Veolia (Commercial Services), Arndell Park— Operations Manager
- Oct 2017 – Present – ELGAS NNSW Regional Transport Operations Manager

14.7 Change History

Version	Date	Description
1.0	18.05.20	Original Issue
1.1	27.06.20	Additional details in sections 14.2 (Author / Reviewer Qualifications and Experience). 14.3 Review Period, 14.4 Responsibilities
1.2	06.08.20	Additional details in sections and Experience),14.4 (Monitoring Measures), 14.6 (Author / Reviewer Qualifications), 14.7 (Change History)
1.3	02.11.21	Additional details in section 12: Approved to Operate 24/7 and site pictures

SOP_300_008_NEW_Depot_Traffic Management Plan

A Member of The Linde Group


ELGAS
A Member of The Linde Group
SOP_300_008_NEW_Depot_Traffic Management Plan
Page 14 of 15
WARNING: If this document is printed, check its validity.
V 1.3 02/11/2021

ELGAS

Elgas Ltd

Gate B 41 Charlotte Road

Port Botany

NSW 2036

PO Box 108 Matraville

10 July 2017

Route for Environmental and Impact Statement

To whom it may concern,

Elgas Ltd contract Rivet Transport Pty (ABN 37 112 151 694) to transport LPG product on its behalf.

Below is a current approved B Double Route to the proposed Elgas Depot in Egret Street, Kooragang Island.

Glenn Gorham Bulk Distribution Manager Midstream

Elgas Limited

P: + 61 2 8586 4538 | **F:** + 61 2 9666 6420 | **M:** + 61(0)417 247 150

A Member Of The Linde Group

Website: http://www.elgas.com.au

Email: glenn.gorham@elgas.com.au

ELGAS

Approved B Double route to Egret Street Newcastle.

Appendix E

ELGAS Newcastle Flood Emergency Response Plan

ELGAS Newcastle

Flood Emergency Response Plan

August 2020

REVISION HISTORY

Version	Date	Author	Approved by	Description of Changes
1.0	06.08.20	Patrick Egan	Lewis Nottidge	Document developed for site operations

Contents

REVISION HISTORY 2
Contents 3
1. Introduction 4
2. Flood Emergency Response Plan Objectives 4
3. Site Flood Rating and Risk 4
4. Site Flood Warnings 5
5. Evacuation Orders 7
6. During the Flood Event 9
7. After the Flood Event 10
8. All Clear 11
NSW SES Flood Fact Sheet – All Clear 11
Appendix A 12
City of Newcastle Flood Information Certificate No: 2014/59 12

1. Introduction

Elgas Newcastle Depot, herein referred to as Elgas, operates a 100 kL LPG above ground bulk tank at Egret St, Kooragang Island, NSW for the storage of propane gas which is subsequently transferred to road tankers and cylinders, and then finally to LPG customers.

The facility was developed by Sovechles Nominees Pty Ltd. The proposed site falls within the leased land in Kooragang, managed by the Port of Newcastle. Under the NSW Three Ports State Environmental Planning Policy (SEPP) (2), the Minister for Planning is the determining authority for the development.

This document is a record of Elgas Flood Management Plan for the facility.

2. Flood Emergency Response Plan Objectives

The objectives of the Flood Emergency Response Plan is to outline the process required when a flood warning has been issued for the site and surrounding neighbours.

The specific objectives of this Flood Emergency Response Plan are to ensure the following:

- Understand the site flood rating and risk associated with the site
- Understand flood warning procedures
- Understand procedures during:
  - Evacuation Orders
  - During Flood
  - After Flood
  - All Clear Order

3. Site Flood Rating and Risk

As per City of Newcastle Flood information Certificate 2014/59, the site at 130 Cormorant Road is located in a flood prone area and could be affected by Hunter River Flooding.

Hunter River Flooding

Is any part of the site affected by a floodway?	No
Is any part of the site affected by a Flood storage area?	No
Estimated 1% Annual Exceedance Probability event level: (equivalent to the *"Defined Flood Level"* in the Building Code of Australia)	Not Affected
Highest Property Hazard Category	N/A
Estimated Probable Maximum Flood Level	4.40m AHD
Highest Life Hazard Category	L1 (H3)

Source: Appendix A: City of Newcastle Flood information Certificate 2014/59

The likelihood of a flood is > 1 in 100 years.

4. Site Flood Warnings

The official flood warning products include:

- Flood Watch is issued by the Bureau of Meteorology and provides a 'heads up' that flooding is likely.
- Flood Warning is issued by the Bureau of Meteorology and warns a community of flooding at a predicted height, time and location.
- Flood Bulletin is issued by the NSW SES to warn a community of flooding at a predicted height, time and location and the expected risks, impacts, consequences and the safest actions to take.
- Evacuation Warning is issued by the NSW SES to warn a community of the potential to evacuate properties, risks to life and property and the safest actions to take.
- Evacuation Order is issued by the NSW SES to immediately evacuate at risk sections of the community from a flood threatened area and advises the safest actions to take.
- All Clear is issued by the NSW SES to advise the evacuated community that it is safe for people to return to the area and any residual risks.

Monitor your flood situation

You may not always receive an official warning before floods begin to impact you, therefore it is important to be aware of the flood situation in your local area.

Monitor the local situation by personally witnessing the height and rate at which floodwaters are rising; maintaining contact with other people in your local community and local radio stations to receive and share updates on the flood situation.

The State Emergency Service (SES) responds to floods when they happen. The SES manages preparation measures and the coordination of immediate recovery. If you require emergency assistance please call SES on 132 500.

The Newcastle SES Local Controller, with the assistance of City Of Newcastle, is responsible for ensuring Newcastle residents are aware of the flood threat in their area, and how to respond.

Key Contacts

Flood Warnings - BOM	Bureau of Meteorology http://www.bom.gov.au/nsw/warnings
Flood Warnings - Local Radio	ABC Newcastle AM 1233
In case of flooding	State Emergency Service Ph: 132 500
Road blockages, fallen trees and other local asset issues	Council Emergency Line Ph: 02 4974 2000
Emergency Assistance	NSW Police, Ambulance and Fire Ph: 000
Strategic Flood Management enquires	Integrated Water Cycle Engineer Ph: 02 4974 2888
Development and Planning enquires	NCC Customer Enquiry Centre, City Administration Centre 282 King Street, Newcastle Ph: 02 4974 2000
Flood Information certificates	NCC Customer Enquiry Centre, City Administration Centre 282 King Street, Newcastle Ph: 02 4974 2000

City of Newcastle Flood Alert Service

All site management and personnel are encourage to register online for the City of Newcastle flood alert service.

City of Newcastle completed a 12 month trial of the flash flood alert service in Wallsend in June 2016. A minor flood event occurred in January 2016, which was sufficient in testing the alert service to its full potential. The results of the trial were positive and the registered users commended the service and expressed their approval to see it continue in a recent survey.

As a result Council endorsed making the alert service permanent and offering it free of charge to registered users. The service has now been expanded so that it can provide similar alerts in other flood affected areas of Newcastle. The alert service is managed by Early Warning Network (EWN).

https://www.newcastle.nsw.gov.au/floodalert

The site is located in Zone 8 (Stockton, Kooragang, Carrington and Wickham) – City of Newcastle Flood Alert Register.

5. Evacuation Orders

Flood Emergency Warning

Where flood warnings are current, the SEC (Site Emergency Controller) shall consider (with advice from NSW SES and assisting authorities) whether the site should be stood down (operations and transfers should cease), and all transport vehicles (tanker and cylinder trucks), equipment and loose items should be removed to higher ground

If instructed by the SEC or Area Warden, the nearest trained person on site shall:

1. Ensure Site Plant has been deactivated
2. Ensure Electrical Power has been isolated (turned off) at site
3. Close manual valves on all major storages and pipes
4. Coordinate removal of all tanker and cylinder trucks
5. Consider and coordinate removal of equipment and loose items from site

Notes:

1. If instructed by the SEC or Area Warden, site personnel shall be sent home until operations can be resumed.
2. After a flood event the site may be compromised and safety checks shall be made before operations can be resumed.
3. A power failure to site will cause the gates to not operate and manual procedures will need to be initiated

Roles and Responsibilities

The Site Manager and/or SEC are the key person(s) responsible for the coordination of the Flood Management Plan.

NSW SES and assisting authorities will determine evacuation orders and all clear orders after the flood event.

NSW SES Flood Fact Sheet – Evacuation to All Clear

FloodSafe

FloodSafe Factsheet

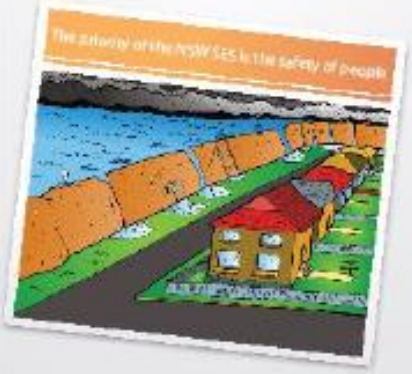
Evacuation Order to All Clear

Important steps between an Evacuation Order and an All Clear!

When you are required to evacuate, the NSW SES will issue an Evacuation Order advising people of what to do and where to go. Once it is safe for those people affected by this Evacuation Order to return to properties, the NSW SES will issue an 'All Clear'.

For some residents it is a nervous wait between the Evacuation Order and the All Clear. As those affected people are often anxious to return to their properties, assess the damage and begin the clean up.

However prior to declaring the area safe for residents to return to properties, there are a number of important assessments that must be made by agencies including the NSW SES, NSW Department of Public Works, Department of Housing, the local council, electricity and gas suppliers, and other organisations.



These assessments include but may not be limited to:

- The floodwater affecting the community has subsided to a safe level
- Floodwater has subsided to below the safe working level of a levee
- The health of the community is not affected by sewage and other pollutants
- The safety of the community is not affected by damaged infrastructure such as electricity or gas
- Any other significant safety issue

FOR EMERGENCY HELP IN FLOODS AND STORMS CALL 132 500

For more info: www.ses.nsw.gov.au

Find us on: Follow us on: See us on:

NRMA INSURANCE

6. During the Flood Event

NSW SES Flood Fact Sheet – During a Flood

FloodSafe

FloodSafe Fact Sheet

During a Flood

How will I be warned that flooding is about to happen?

A Flood Warning is issued by the Bureau of Meteorology when flooding is about to happen or is happening.

Flood Warnings provide a predicted flood level and time at which a river will reach that level.

Flood Warnings are issued in relation to flood gauges which are situated at a certain point on a river.

Call 132 500 for emergency help in floods and storms

How do I prepare when flooding is about to happen?

- Never drive, ride or walk through floodwater
- Listen to your local radio station for information, updates and advice
- Locate and check you Emergency Kit
- Move pets and agisted animals to high ground
- Stack possessions, records, stock or equipment on benches and tables, placing electrical items on top
- Secure objects that are likely to float and cause damage
- Relocate waste containers, chemicals and poisons well above floor level
- Activate your Home or Business FloodSafe Plan
- Keep in contact with your neighbours and make sure they are aware of the Flood Warning
- Be prepared to evacuate if advised by emergency services
- Act early as roads may become congested or close

FOR EMERGENCY HELP IN FLOODS AND STORMS CALL 132 500

For more info: www.ses.nsw.gov.au

Find us on: Follow us on: See us on:

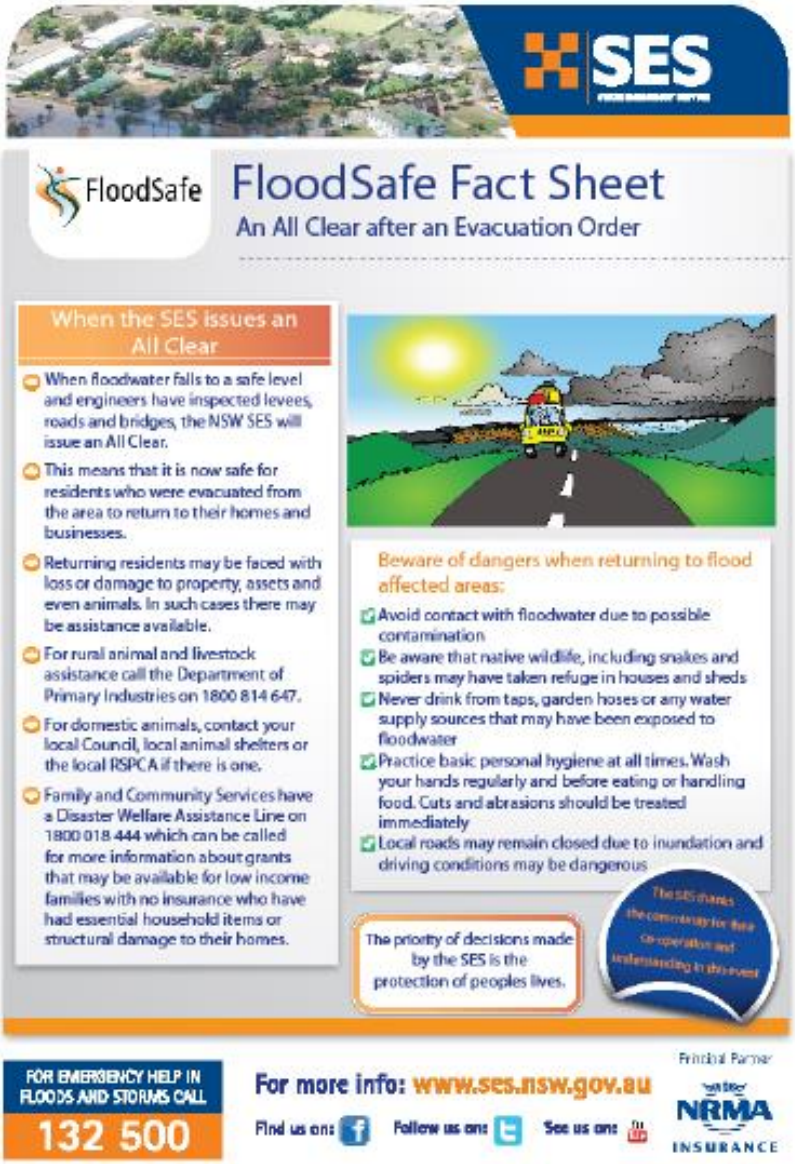
NRMA INSURANCE

7. After the Flood Event

NSW SES Flood Fact Sheet – After a Flood

8. All Clear

NSW SES Flood Fact Sheet – All Clear



Appendix A
City of Newcastle Flood Information Certificate No: 2014/59

Future City: APE&CTE

5 March 2014

The City of Newcastle

PO Box 489 Newcastle NSW 2300 Australia
Phone 02 4974 2000
Facsimile 02 4974 2222
Email mail@ncc.nsw.gov.au
www.newcastle.nsw.gov.au

Sovechles Developments P/L
P.O Box 3131
MEREWETHER NSW 2291

Dear Sir/Madam

Flood Information Certificate No:	2014/59
Property:	Lot: 10 DP: 1144748, Lot: 11 DP: 1144748
	130 Cormorant Road Kooragang

Thank you for your recent enquiry regarding flood behaviour at the above property. This letter confirms the property is located in a flood prone area. The pertinent features of the flood behaviour are estimated as follows:

Hunter River Flooding

Is any part of the site affected by a floodway?	No
Is any part of the site affected by a flood storage area?	No
Estimated 1% Annual Exceedence Probability event level: (equivalent to the "*Defined Flood Level*" in the Building Code of Australia)	Not Affected
Highest Property Hazard Category	N/A
Estimated Probable Maximum Flood Level	4.40m AHD
Highest Life Hazard Category	L1 (H3)

The flood study from which the above information is derived is part of a Newcastle City Wide Floodplain Management Plan. The above advice may change in the future, however the advice is based on the best information held by Council at the time of issue of this certificate.

The Newcastle Development Control Plan 2012 addresses the issues of flood management for new development. You can view the development control plan at www.newcastle.nsw.gov.au. In summary, the following requirements apply for all future development applications on the site.

Page 1 of 2

Development in a floodway is not generally allowable due to likely redistribution of flood water.	Not Applicable
Filling of a flood storage area by more than 20% is not generally allowable due to redistribution of flood water.	Not Applicable
Minimum floor level for occupiable rooms in a new development on this site is: (equivalent to the "*Flood Hazard Level*" in the Building Code of Australia)	Not Applicable
Is onsite flood refuge required?	No

Council holds no information concerning floor levels of existing structures on the site. Site levels and floor levels should be verified by survey based on the Australian Height Datum.

Please note that:

1. No assessment of the lot's suitability for the purposes of making an application for a complying development certificate under the General Housing Code or Rural Housing Code of *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*, or for a Secondary Dwelling under *State Environmental Planning Policy (Affordable Rental Housing) 2009*, has been made. This type of flood information can also be obtained from Council via a Flood Information Application. There are two services provided by Council relating to Complying Development flood criteria, as follows:

   a) Identification of lots affected by any of the flood control lot exclusions identified in subclause 3.36C(2) or 3A.38(2) of *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*. If this information is required, select Box 4. b) (i) on the Flood Information Application form and pay the required fee.

   b) An assessment of a proposal for development of the lot for compliance with the requirements of subclause 3.36C(3) or 3A.38(3) of *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*. If this information is required, select Box 4. b) (ii) on the Flood Information Application form, submit plans and other relevant documentation for the proposal and pay the required fee.

2. The information contained in this certificate may alter in the future. The applicant should at all times ensure the currency of this information.

Should you require any further clarification please contact A Peddie on 4974 2788.

A. Peddie

Alastair Peddie MIEAust, CPEng
Senior Development Officer (Engineering)
Development & Building Services

Page 2 of 2

Appendix F
ELGAS Water Management Statement

Elgas Limited ACN 002 749 260
22 Holbeche Road
Blacktown, NSW 2148
PO Box 1110, Blacktown, NSW 2148
Phone: 131 161
Mobile: 0412 014 508
Email: surujpaul.ramjas@elgas.com.au

June 30, 2020

To Whom It May Concern

Re: Elgas New Kooragang Depot – Water Usage

This is to confirm that the entire Elgas Kooragang Depot at 130 Cormorant Road, Kooragang Island, NSW 2304, does not use, or require, any water above or below ground water as part of its operations, with the exception of water that is used in its general internal amenities and for the fire system.

There are NO truck wash areas, or any operational need to use water above ground within the confines of the depot.

In line with the above, Elgas does not have a Water Management Plan, that would have otherwise be relevant.

Yours sincerely

Surujpaul Ramjas
[MIEAust, MEng Sc, B Sc, CPEng, NER, IntPE(Aus)]
NSW Project & Safety Engineer
MOBILE: 61 (0) 412 014 508
OFFICE: 61(0)2 9672 0735

Elgas Ltd.
22 Holbeche Road
Blacktown NSW 2148, Australia

Email: surujpaul.ramjas@elgas.com.au

Appendix G

Mosquito Management Plan – Elgas LPG Storage Facility

Mosquito Management Plan

Elgas LPG Storage Facility
130 Cormorant Road Kooragang

Prepared by:
CRAIG CABLE
Senior Consultant
42 Ravenshaw Street
The Junction 2291
T: 0418 218950

Prepared for:
ELGAS Ltd
130 Cormorant Road
Kooragang NSW 2304
Contact: Patrick Egan
T: 0401 987 757

1

E: craigcable@bigpond.com E: patrick.egan@elgas.com.au

Contents

PREAMBLE 4

1.0 INTRODUCTION 5

2.0 MOSQUITO ECOLOGY 6

2.1 Aedes vigilax 8

2.2 *Aedes alternans* 9

2.3 *Culex sitiens* 9

2.4 *Culex sitiens* 9

2.5 *Coquillettidia* 9

3.0 SITE ASSESSMENT 10

4.0 OPERATION PROCEDURES & METHODS TO REDUCE MOSQUITO NUMBERS 11

4.1 Maintenance of the gardens and grounds 11

4.2 Maintenance by Employees 11

4.3 Biological Control 11

4.4 Chemical Control 12

4.5 Current Offer 13

4.6 Self Protection from Mosquito Bites 13

5.0 SUMMARY 13

Tables

Table 1 Habit factors of notable mosquito species..... 8

Table 2 Risk Assessment for Potential Mosquito Breeding Sites..... 10

Plates

Plate 1 Portion of four mosquito categories at four locations within the Lower Hunter and Mid-North Coast region of NSW (Webb and Russell 2009) 6

Plate 2 The lifecycle of the Mosquito including eggs, four larval stages, pupae and adult (Webb and Russell2009) 7

PREAMBLE

This Mosquito Management Plan (MMP) has been prepared for Elgas ltd for their new LPG Gas Storage facility on land at 130 Cormorant Road Kooragang.

A variety of mosquito species have been recognised within the Port Stephens Local Government Area that not only cause distress to people, but are vectors for diseases such as Ross River Fever.

Management strategies to reduce the mosquito populations within and surrounding the site, as well as preventing direct bites from mosquitoes for employees and visitors of the operation have been recommended. Management measures include:

- Maintenance of gardens and grounds;
- Maintenance by employees;
- Biological control;
- Chemical control;
- Self-protection from mosquito bites.

These management measures if undertaken successfully will help in the reduction of mosquito abundance across the site and bring awareness to those people working and staying at the resort in personal mosquito protection measures.

It is also noted that the majority of the staff employed on site will be working indoors in an office environment and are at very low risk. The workers that will be usually be working outside need to have Personal Protective clothing at all times due to the nature of the product they will be working therefore resulting in minimal exposure to direct mosquito bites. In addition to the above the entire external operational area of the site is positioned on a concrete pavement surface therefore almost eliminated breeding areas for mosquitos.

1.0 Introduction

This plan aims to provide general information regarding mosquitoes, the importance of treatments and the process treatments that Elgas will need to undertake to maximise success of reducing the mosquito population and to minimise environmental harm.

It also aims to aid in the identification of potential mosquito breeding grounds within and adjacent to the site.

The MMP identifies specific objectives and goals, which include:

- Increase awareness of employees and occupants of their personal responsibilities of protection from mosquitoes and reducing breeding sites for mosquitoes; and
- Measures to keep mosquito populations to acceptable levels through various forms of treatment and control.

2.0 Mosquito Ecology

Mosquitoes are an important component of wetland ecosystems as they recycle nutrients, provide food for birds, bats, amphibians, fish and macro invertebrates and pollinate some plants. Kooragang Island is a mix of large expanses of industrial activity and extensive wetlands It is these wetlands which are prime breeding grounds for various mosquito species

The Kooragang Island region contains over 23 species of mosquitoes (**Appendix 1**). These are predominately either Estuarine or Freshwater mosquitoes as identifies in plate 1

Living with Mosquitoes in the Lower Hunter & Mid North coast region of NSW, 2nd Edition December 2009

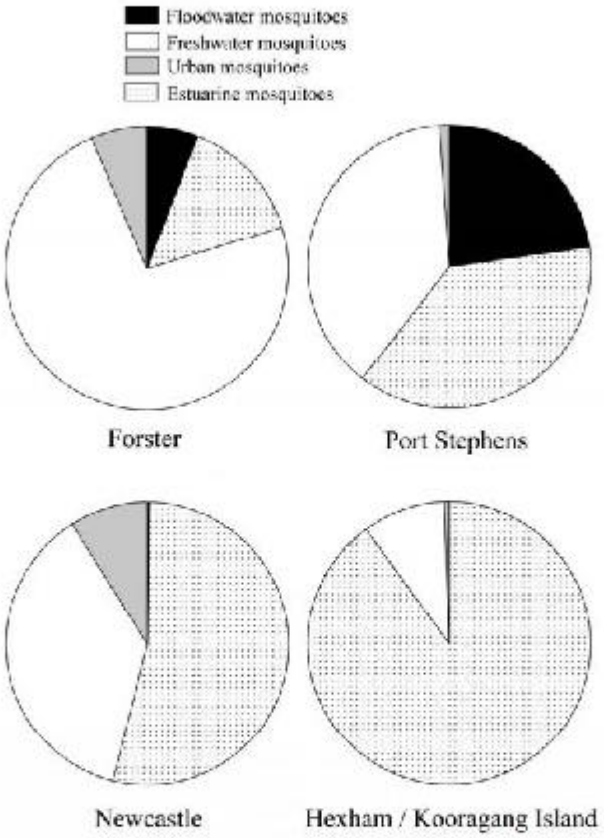


Plate 1: Portion of four mosquito categories at four locations within the Lower Hunter and Mid-North Coast region of NSW (Webb and Russell 2009)

There are five main mosquitoes' species that could be associated with the site at Kooragang Island and are namely,

a) *Estuarine Mosquitoes*
   i. *Aedes vigilax*
   ii. Aedes alternans
   iii. Culex sitiens

b) Freshwater Mosquitoes
   i. Culex annulirostris

7

ii. Coquillettidia linealis

Of the relatively short-lived life of a mosquito, the lifecycle consists of four distinct stages: eggs, larvae, pupae and adults (Plate 1).

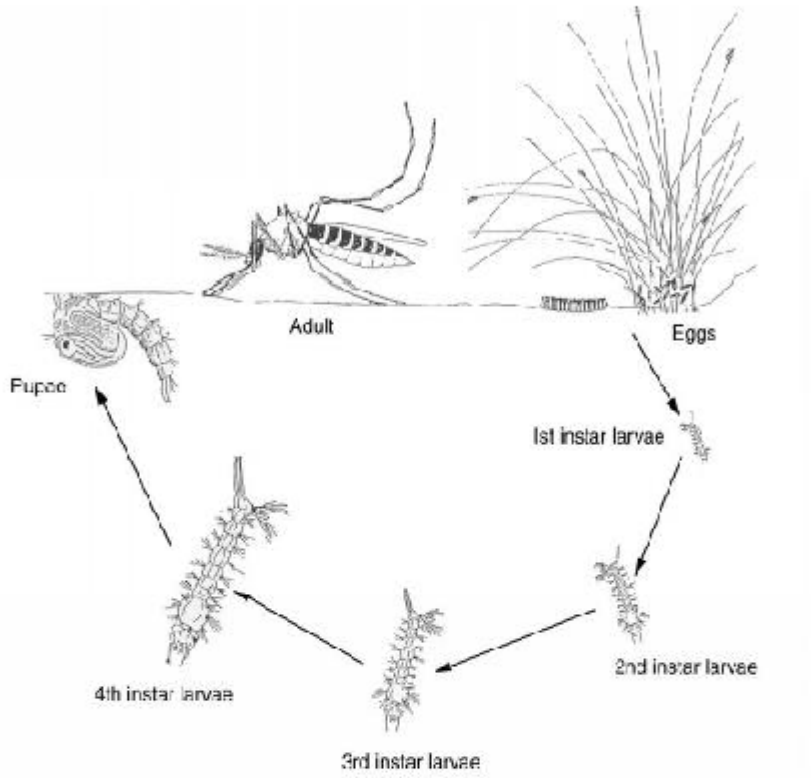


Plate 2: The lifecycle of the Mosquito including eggs, four larval stages, pupae and adult (Webb and Russell 2009)

Adults lay fifty to several hundred eggs on or around water bodies, depending on the species, and all require water for their complete development (Webb and Russell 2009). Water bodies can include natural and manmade varieties such as wetlands, temporary pools after rainfall or water holding containers (tins, plastic tubs, tyres etc).

Larvae are entirely aquatic, feeding on microscopic organisms, decaying vegetation or bottom detritus. Larvae are commonly found just beneath the water surface film because they breathe air using a siphon attached to the tail end of the body that penetrates the surface. The average larval development time is five to seven days and is dependent on factors such as temperature,

food availability, larval crowding, persistence of water and predation by both fish and macro invertebrates.

Pupae remain mobile in the water column but do not feed. Inside the body casing of a pupa, larval tissues break down, developing into the adult. On emerging from the pupal case, adults remain on the water surface until they are strong enough to fly. Both male and female mosquitoes feed on nectar. However, most females also require a blood meal to produce eggs (Webb and Russell 2009). Adults reach sexual maturity in one to two days. Temperature, fluctuating climate, tidal flow and irrigation practices are also influential for mosquito breeding. Breeding is more abundant in warmer seasons and numbers peak in mid-spring through to autumn.

Of the notable species of concern to the site, **Table 1** outlines various factors relating to the habit for each Species

Table 1 Habit factors of notable mosquito species

Mosquito Species	Larval Habitat	Pest status	Activity
Ae. Vigilax	Temporary estuarine	Major biting pest and vector	Nov – Apr
Ae. Alternans	Temporary estuarine & brackish	Biting pest close to breeding habitat	Nov – Apr
Cx. Sitiens	Semi-perm. estuarine	Biting pest close to breeding habitat	Feb – Apr
Cq. Linealis	Permanent freshwater	Biting pest close to breeding habitat	Nov – Mar
Cx. annulirostris	Permanent & temporary freshwater	Major biting pest and vector	Jan – Mar

2.1 *Aedes vigilax*

This species is a dark, medium sized mosquito with pale bands on the legs. The larvae of this species are usually associated with tidally influenced saltmarsh and mangrove habitats, but can also utilise other saline and brackish water habitats such as flooded sedge lands and forests (eg. Casuarina spp. and Melaleuca spp.). Eggs are laid at the base of vegetation and/or on damp soil and can tolerate desiccation for many months.

Larvae are tolerant of a wide range of salinities and have been collected from highly saline (>40ppk) saltmarsh pools to freshwater flooded grasslands. Population increases of this species are closely linked to the inundation of habitats by the highest tides of each month, and/or major rainfall events, and the adults can disperse great distances (> 10 km) from breeding habitats. The species is a severe nuisance biting pest.

2.2 *Aedes alternans*

This species is a very large, sandy coloured mosquito commonly known as The Hexham Grey or Scotch Grey. The larvae of this mosquito are predatory on other mosquito larvae and aquatic invertebrates. Although this species causes significant nuisance biting close to breeding habitats, it is not considered an important arbovirus vector. Population increases of this species are linked to the same tidal and rainfall inundations that trigger increases in Ae. vigilax populations, consequently, the abundance of Ae. alternans is usually overshadowed by Ae. vigilax beyond some particular localities. This species is categorised as a Floodwater Mosquito as the larvae are associated with ephemeral ground

2.3 *Culex. Sitiens*

Culex sitiens is a dark, medium sized mosquito, usually abundant during the late summer and early autumn. The larvae of this species are commonly found, often in large numbers, in permanently inundated saline to brackish habitats, including saltmarsh and mangrove habitats. This species does not disperse far from breeding habitats and is not considered a significant pest or vector, primarily as it is a bird-feeding mosquito. On occasion, exceptionally large populations of immature mosquitoes may be detected in estuarine wetlands during late Summer and early Autumn.

2.4 *Coquillettidia linealis*

Coquillettidia linealis is a medium sized, dark mosquito with golden scales on the thorax. This species is common along the NSW coast and, while it is generally not a serious pest, there is the potential for this species to be an occasionally significant nuisance biter although little is known of its role in arbovirus transmission. The larval biology of this species differs markedly from most other mosquitoes in the region. The Page 13 Living with Mosquitoes in the Lower Hunter & Mid North coast region of NSW, 2nd Edition December 2009 larvae have a modified siphon that, instead of connecting to the water/air interface to breathe, attaches to the roots and/or stems of aquatic vegetation to obtain air. The larval developmental period is temperature dependent and may be as long as many months. In the Hunter region of NSW, it is thought that the species has two major peaks of abundance, one in early spring and another in mid-Summer.

2.5 *Culex annulirostris*

Culex annulirostris is a medium sized, light to dark coloured mosquito with a banded proboscis. This species is the major nuisance biting and vector species throughout inland areas of NSW, particularly in the major river basins and irrigation areas.

Larvae are commonly collected from a range of freshwater habitats from flooded grasslands to permanent, well-vegetated wetlands. While the importance of this species is generally overshadowed by estuarine mosquitoes in coastal areas, this mosquito is becoming of greater concern as constructed freshwater wetlands are increasingly incorporated into urban developments along the NSW coast.

3.0 Site Assessment

The site has been assessed for the potential for mosquitoes to occur. As previously discussed, the abovementioned species can be grouped into one of two habitats: Estuarine and Freshwater Mosquitoes.

The site currently has a new concrete pavement through all external areas with no surface water or areas where water will pond. The site has no existing vegetation in place and other then the required new landscaping positioned at the front of the site there will be minimal areas where mosquitoes to breed and therefor the Elgas offer would be considered a low risk.

Although the site is considered low risk, the initial assessment found that the local area may be affected by:

Estuarine Mosquitoes

The most common mosquito associated with this environment is *Aedes vigilax*. This species is one of the most common in the Hunter and Mid North Coast region. Large populations of this species occur during the summer months and can travel many kilometres from estuarine environments. The mosquito is known to be a major biting pest. This type of mosquito is likely to be the most common on site as a result of the Hunter Wetlands National Park to the north and east of the site.

Freshwater Mosquitoes

Areas of Freshwater associated with the Wetlands National Park and any areas of pooled rain or domestic water offer habitat for this mosquito type. Whilst many of the freshwater mosquitoes pose no threat to the community, there are some species that can become a nuisance such as *Coquillettidia linealis*.

Table 2 assesses the risk for potential breeding grounds for mosquitoes.

Table 2 Risk Assessment for Potential Mosquito Breeding Sites

Type of Risk	Risk Level	Comments
Hunter Wetlands	HIGH	These are stagnant water bodies and are favoured by mosquitoes as breeding grounds. They are therefore regarded as a high-risk area.
Stormwater Drains	MODERATE	The charged stormwater pits have the potential to be a moderate risk for mosquito breeding.
Open Space	LOW TO MODERATE	Any items that can contain water after rainfall

4.0 OPERATION PROCEDURES & METHODS TO REDUCE MOSQUITO NUMBERS

There are a number of methods in reducing mosquito numbers around the facility and minimising the effect they will have on future employees and occupants. Physical and biological controls options have been discussed below. Mosquitoes will be active during the summer months and are greatest in numbers during the two to three-week period following high tides and/or major rainfall events.

4.1 Maintenance of the gardens and grounds

Maintenance of the grounds and gardens help to reduce the breeding grounds for mosquitoes. Removing an available breeding site is more effective than killing mosquitoes because it breaks the breeding cycle.

Mosquitoes need as little as three tablespoons of water to lay eggs, and mosquito eggs can hatch in as little as three days. It is strongly advised that standing water within the site is removed. Employees are encouraged to identify trouble spots (Mosquito Breeding Sites) – anywhere there is water that stands for more than three days.

4.2 Maintenance by Employees

Employees are to be made aware of potential breeding sites (i.e. they breed in still fresh or salty water) for mosquitoes. Sources of breeding sites for mosquitoes could be:

- Clogged gutters
- Open drains
- Open water containers
- Landscape areas
- Trays under pot plants
- Areas where water ponds
- Hardstand areas

Employees are to reduce breeding sites around the workplace by following some of the following steps:

- Removing all opportunities for water to collect (e.g. tins, jars, ash trays and other rubbish items and all depressions in the ground that may hold water);
- During the peak breeding season of November to April regularly flush through the water in the charged stormwater pits;
- Screen all openings to tanks or other large containers with wire gauze no coarser than 1mm mesh;
- Install a door closers or spring-loaded door closer so that all doors close quickly;
- Do not leave doors and windows open without screens in place;
- Keep roof gutters in good repair and regularly remove leaves and debris so that pools do not form and trim trees to prevent leaves and debris from blocking roof gutters;
- Avoid growing plants in the landscaped gardens with leaves that can trap water eg. Bromeliads.

4.3 Biological Control

Biological control of mosquito populations is generally achieved to some degree through predation by other organisms. Natural predators of mosquitoes include fish, predacious mosquito larvae, other insects, crustaceans, spiders, fungal diseases, nematodes, protozoans, aquatic birds, amphibians, microbats and some reptiles.

Macroinvertebrates, such as waterbugs (*Hemiptera*), dytiscidae beetle larvae (*Coleoptera*), dragonflies (*Anisoptera*) and damselflies (*Zygoptera*) are generally more successful predators

of mosquito larvae than fish in heavily vegetated areas (Chester 1990). When a system is not heavily vegetated, fish and some larvicides derived from bacteria are generally the most effective means of controlling mosquito numbers.

4.4 Chemical Control

Chemical control can be an effective method in reducing mosquito numbers, however chemicals can also have detrimental effects on environmental and human health. It is most commonly used when mosquito numbers are quite large and disease is a risk to society.

There are various commercial chemical controls that are appropriate for different habitats. These chemical controls work on an adult and larvae. Choosing appropriate chemicals for various habitats is important as to minimise the effect upon the environment. For example, slow release formation chemicals have less impact upon the environment, as they require less application.

The effect on non-target species must also be considered before using any chemical on mosquito populations so as not to place other native flora and fauna at risk.

Bacillus thuringiensis israelensis

If mosquitoes reach nuisance levels, an environmentally friendly mosquito control product containing the bacterium *Bacillus thuringiensis israelensis* (BTI) could be considered. BTI produces a protein crystal which contains a number of microscopic pro-toxins that when ingested are capable of destroying the gut wall and killing mosquito larvae. BTI is highly specific to mosquito larvae and very few non-target effects have been recorded. Some disadvantages include its efficacy is reduced in habitats with high organic content and when larval populations are young or near pupation (1st and 4th instar respectively) (Webb and Russell 2009).

Methoprene (or ALTOSID) is a synthetic mimic of juvenile hormone produced in insect endocrine systems and has been shown to be effective in Australian urban environments without adversely affecting non-target organisms (Webb and Russell 2009). This product interrupts the developmental stages of mosquito larvae preventing them from becoming adults.

Temephos (or ABATE) **should be avoided** as it has known adverse effects on non-target species including birds, fish and some invertebrates particularly in estuarine environments.

4.5 Current Offer

The Elgas offer includes the following to aid in the reduction of mosquito breeding sites.

- Stormwater retention and drains are designed to be self-draining and have the siltation depth shallow enough to encourage evaporative drying.
- There are 2 drains that are fully charged as detailed in the approved stormwater design.
- Rainwater tanks entry points are sealed and/or screened to prevent mosquito breeding.

4.6 Self Protection from Mosquito Bites

To prevent not only a mosquito bite that irritates the skin, self-protection measures can be an effective measure to prevent the spread of disease. Employees of the facility can protect themselves from mosquito bites by:

- Avoiding outdoor activity during the time of day mosquitoes are most active - one hour before and one hour after sunset.
- Using mosquito repellents with at least 20% DEET (about 10% DEET for children age 2-12). Care should be taken to read and adhere to directions for use associated with each product.
- Checking doors and windows to ensure they close properly and make sure screens are in good repair.
- Wearing PPE which includes long sleeves, long pants, safety boots (which are all required to meet the safety standards at the site)

Employees can take responsibility for personal protection by reducing contact with mosquitoes. This will be optimised if the employees are educated on mosquito behaviour, such as peak seasons and times of activity, and the disease transmission cycle. This can be done through a pamphlet distributed to employees

5.0 SUMMARY

This Management Plan identifies the key breeding habitat areas and aims to minimise the effects that these insects may have on employees and visitors to the Elgas offer.

An assessment of the subject site found there where to be no known areas that would be suitable for mosquito breeding pre-construction and now the development has been completed the majority on the site is covered with concrete pavement.

The following strategies are aimed at reducing mosquito populations and the effect that populations can potentially have on people.

Recommended Management options as detailed in this plan have been assessed include:

- Maintenance of gardens and grounds;
- Maintenance by employees;
- Biological control;
- Chemical control;
- Self-protection from mosquito bites.

It is also noted that the majority of the staff employed on site will be working indoors in an office environment and are at very low risk.

The workers that will be usually working outside need to have Personal Protective Equipment and clothing on at all times due to the nature of the product they will be working with, therefore greatly reducing the likelihood of bites etc.

Regardless of the control strategies implemented, mosquitoes will always be locally active during warmer months of the year, but we would access this site as a low risk.