



Mobil Yarraville Terminal Safety Case Overview 2007



Commitment to the Yarraville Terminal 2007 Safety Case

Mobil Oil Australia Pty Ltd (“Mobil”) is committed to operating the Yarraville Terminal (“Terminal”) with concern for the safety of all people working at the site and the surrounding community, in compliance with all local laws and meeting community expectations.

The Safety Case has been an opportunity for the Terminal to critically examine all aspects of its operation. The Safety Case development process has enhanced the Terminal’s commitment to flawless operation.

The Safety Case assures the community that the Terminal has the processes, equipment and professional people to operate safely and meet all statutory authority requirements.

Implementation of the opportunities identified through the Safety Case development will enable the Terminal to continue operating to very high standards of reliability, safety and environmental performance.

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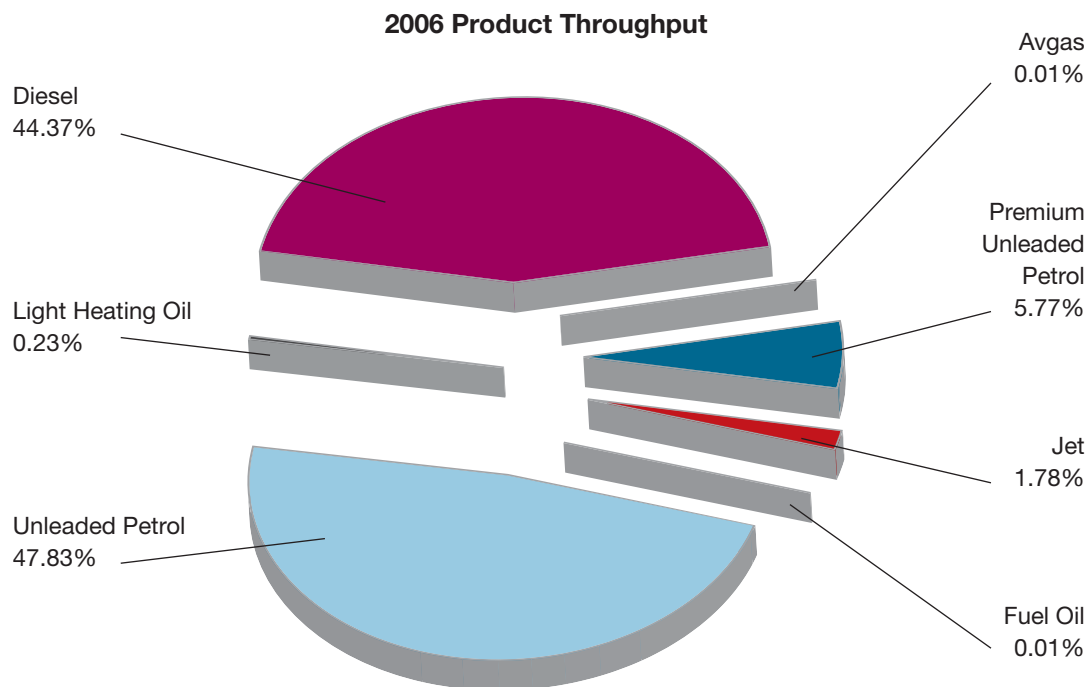
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History

- 1895** Mobil's predecessor, Vacuum Oil Company, establishes an agency in Melbourne for the distribution of oils and greases.
- 1926** The Terminal is constructed as a distribution depot for packaged fuel and oil shipped in from overseas.
- 1943** The Terminal is upgraded to accommodate production from the future Altona Refinery.
- 1949** Altona Refinery commences operation, as a joint venture between Vacuum Oil Company (later Mobil) and Standard Oil Company (later Exxon/Esso).
- 1962** Standard Vacuum Company changes its name to Petroleum Refineries Australia.
- 1970** The original oil wharf is replaced with Holden Dock and the current Terminal administration building is completed.
- 1987** The Terminal's lube facilities are expanded and Holden Dock upgraded.
- 1999** Exxon and Mobil merge globally to form ExxonMobil.
- 2000** Safety Case Outline submitted.
- 2002** First Conjoint Safety Case submitted and MHF licence awarded.
- 2004** Fuels distribution business separated from refining, and managed under Australia and New Zealand network.
- 2005** Lead replacement fuel no longer produced by Mobil or stored at Yarraville Terminal.
- 2006** Yarraville Terminal converts to 1ppm (parts per million) benzene in gasoline to meet new government requirements.
- 2007** Yarraville Terminal Safety Case Revision submitted and MHF 5 year unconditional licence awarded.

Product Throughput

Bulk fuels throughput for 2006 is shown on the chart below.



Note Premium Unleaded Petrol was moved from Spotswood Terminal to Yarraville Terminal in 2007.

Schedule 9 Materials

Schedule 9 of the Occupational Health and Safety Regulations 2007 specifies threshold quantities for major hazard facilities. Not all products at the Terminal are classified as Schedule 9 materials. The following table identifies the majority of Schedule 9 materials onsite and includes gasoline, avgas and jet fuel.

| MATERIAL | DESCRIPTION |
|---------------------|--|
| Flammable Materials | Liquids which meet the criteria for Class 3 Packing Group I Materials |
| Flammable Materials | Liquids which meet the criteria for Class 3 Packing Group II or III |

There are other Schedule 9 materials mentioned in the Safety Case for the Terminal, however they are in small quantities and are not considered substantial enough to be included in the overview.

Yarraville Terminal's Safety, Health and Environment Policies

Mobil is a subsidiary of Exxon Mobil Corporation and has adopted the ExxonMobil Safety, Health and Environment policies and systems which are therefore applicable to operations at the Terminal.

Safety

It is the Policy of the Company and its affiliates to conduct business in a manner that protects the safety of employees, others involved in its operations, customers, and the public.

The Company and its affiliates will strive to prevent all accidents, injuries, and occupational illnesses through the active participation of every employee. The Company and its affiliates are committed to continuous efforts to identify and eliminate or manage safety risks associated with its activities.

Accordingly, the policy is to:

- design and maintain facilities, establish management systems, provide training and conduct operations in a manner that safeguards people and property;
- respond quickly, effectively, and with care to emergencies or accidents resulting from its operations, cooperating with industry organizations and authorized government agencies;
- comply with all applicable laws and regulations, and apply responsible standards where law and regulations do not exist;
- work with government agencies and others to develop responsible laws, regulations, and standards based on sound science and consideration of risk;
- conduct and support research to extend knowledge about the safety effects of its operations, promptly applying significant findings and, as appropriate, sharing them with employees, contractors, government agencies, and others who might be affected;
- stress to all employees, contractors, and others working in its behalf their responsibility and accountability for safe performance on the job and encourage safe behaviour off the job;
- undertake appropriate reviews and evaluations of its operations to measure progress and to ensure compliance with this policy.

Health

It is the Policy of the Company and its affiliates to:

- identify and evaluate health risks related to its operations that potentially affect its employees, contractors or the public;
- implement programs and appropriate protective measures to control such risks, including appropriate monitoring of its potentially affected employees;
- communicate in a reasonable manner to potentially affected individuals or organizations and the scientific community, knowledge about health risks gained from its health programs and related studies;
- determine at the time of employment and thereafter, as appropriate, the medical fitness of employees to do their work without undue risk to themselves or others;
- provide or arrange for medical services necessary for the treatment of employee occupational illness or injuries and for the handling of medical emergencies;
- comply with all applicable laws and regulations, and apply responsible standards where laws and regulations do not exist;
- work with government agencies and others to develop responsible laws, regulations and standards based on sound science and consideration of risk;
- conduct and support research to extend knowledge about the health effects of its operations;
- undertake appropriate reviews and evaluations of its operations to measure progress and to ensure compliance with this policy;
- provide voluntary health promotion programs designed to enhance employees' well being, productivity, and personal safety. These programs should supplement, but not interfere with, the responsibility of employees for their own health care or their relationship with personal physicians. Information about employees obtained through the implementation of these programs should be considered confidential and should not be revealed to non-medical personnel except: at the request of the employee concerned, when required by law, when dictated by overriding public health considerations, or when necessary to implement the guidelines of the Alcohol and Drug Use Policy.

Environment

It is the Policy of the Company and its affiliates to conduct business in a manner that is compatible with the balanced environmental and economic needs of the communities in which they operate. The Company and its affiliates are committed to continuous efforts to improve environmental performance throughout its operations.

Accordingly, the policy is to:

- comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist;
- encourage concern and respect for the environment, emphasize every employee's responsibility in environmental performance and ensure appropriate operating practices and training;
- work with government and industry groups to foster timely development of effective environmental laws and regulations based on sound science and considering risks, costs and benefits, including effects on energy and product supply;
- manage its business with the goal of preventing incidents and of controlling emissions and wastes to below harmful levels; design, operate and maintain facilities to this end;
- respond quickly and effectively to incidents resulting from its operations, cooperating with industry organizations and authorized government agencies;
- conduct and support research to improve understanding of the impact of its business on the environment, to improve methods of environmental protection, and to enhance its capability to make operations and products compatible with the environment;
- communicate with the public on environmental matters and share its experience with others to facilitate improvements in industry performance;
- undertake appropriate reviews and evaluations of its operations to measure progress and to ensure compliance with this policy.

Product Safety

It is the Policy of the Company and its affiliates to:

- identify and manage risks associated with its products and not manufacture or sell products when it is not possible through proper design, procedures, and practices to provide an appropriate level of safety for people and the environment;
- specify precautions required in handling, transporting, using, and disposing of its products and take reasonable steps to communicate them to employees, customers, and others who might be affected;
- comply with all applicable laws and regulations and apply responsible standards where laws and regulations do not exist;
- work with government agencies and others, as appropriate, to develop responsible laws, regulations, and standards based on sound science and consideration of risk;
- include identification and control of potentially adverse health, safety, and environmental effects as priority considerations in the planning and development of products;
- conduct and support research to extend knowledge about the health, safety and environmental effects of its products, promptly applying significant findings and, as appropriate, sharing them with its employees, contractors, customers, the scientific community, government agencies, and the public;
- undertake appropriate reviews and evaluations of its operations to measure progress and to ensure compliance with this policy.

The Occupational Health & Safety Regulations 2007

Purpose

The Victorian Occupational Health and Safety Regulations 2007 came into operation on 19 June 2007. These regulations replaced the Occupational Health and Safety (Major Hazards Facilities) Regulations 2001. These regulations can be obtained from the Worksafe website (www.workcover.vic.gov.au).

*The objective of these Regulations is to provide for the safe operation of **major hazard facilities** in order to:*

- (a) *Reduce the likelihood of a **major incident** occurring;*
- (b) *Reduce the consequences to health and safety and damage to property in the event of a major incident.*

The Yarraville Terminal is registered under these regulations as a Major Hazard Facility due to the volume of flammable liquids stored at the site.

Safety Case

Under the Occupational Health and Safety Regulations the operator of a MHF must produce a Safety Case. A Safety Case is a written document in which the operator of a major hazard site describes the potential incidents which might occur at the site, the measures in place to prevent a major incident and also how it would deal with a situation should such an incident occur.

The Safety Case must demonstrate that incident prevention and management measures are appropriate and adequate, and that risks have been controlled as far as practicable.

A Safety Case is written following a full examination of the facility's activities, the potential for major incidents and the risk control measures in place.

Scope

The Yarraville Terminal Safety Case covers the Yarraville Terminal and Holden Dock.

Local Community

The Occupational Health and Safety Regulations require Mobil Yarraville Terminal to inform the local community about the safety of its operations. Regulation 5.2.24 (1) (2) & (3) (Local Community) of the OH&S Regulations details how the information to be provided. It is a requirement that a summary of the Yarraville Terminal Safety Case is available to the community. In addition to this document, information on the Safety Case Review has been presented to the Yarraville Terminal Community Liaison Committee (CLC) meetings in 2006 and 2007.

The Yarraville Terminal hosts a CLC for the sharing of information with the local community. This includes representatives from the Council, EPA, local residents and the Terminal. The CLC has been operating for more than three years and meets several times annually to provide the community with a means of communicating with Mobil on Yarraville Terminal issues.

Incident Preparedness and Response

Overview

Mobil Yarraville Terminal is well prepared to handle foreseeable incidents. Critical to the Terminal's response strategy are regularly exercised collaborative arrangements with local council, Victoria Police, Port of Melbourne Corporation, Metropolitan Ambulance Service (MAS) and the Metropolitan Fire and Emergency Services Board (MFESB).

Potential Major Incidents

The Occupational Health and Safety Regulations define a Major Incident as an uncontrolled incident, including an emission, loss of containment, escape, fire, explosion or release of energy that

- (a) involves Schedule 9 materials; and
- (b) poses a serious and immediate risk to health and safety.

The potential Major Incidents captured under the Occupational Health and Safety Regulations that have been identified at the Terminal have potential offsite consequences. The controls and training in place at the Terminal ensure any potential for offsite consequence is minimised.

Potential Major Incidents that may occur at the Terminal are:

- Loss of Containment – Pumps
- Loss of Containment – Fuels Storage Tanks
- Loss of Containment – Wharf
- Loss of Containment – Fuels Pipelines
- Loss of Containment – Tanker Truck Fill Stand
- Loss of Containment – Vapour Recovery Unit
- Loss of Containment – Refined Oil Store
- Loss of Containment – Lubes Storage Tanks
- Loss of Containment – Site Services

The most credible scenario that has the potential for offsite impacts has been modelled for the northern, eastern, southern and western boundaries. This information has been presented in Appendix 3.

Training

Incident preparedness and response training has been designed and implemented to equip all appropriate Terminal personnel with the knowledge and skills required for appropriate initial response. A training schedule has been formulated to ensure effective implementation occurs across all areas of the Terminal and includes:

- field exercises;
- desktop exercises;
- integrated exercises between field and management response teams;
- an induction program;
- trial emergency evacuations.

To ensure the quality and currency of response plans, procedures and training, a comprehensive review and debrief of completed training and any actual emergency incidents is undertaken on a periodic basis.

Equipment and Facilities

Equipment and facilities available on site at the Terminal to be used in the event of an emergency include:

- communications equipment;
- incident support centre from which incident support is co-ordinated;
- fire suppression and control systems (e.g. foam dispensing equipment and fire water systems);
- ancillary equipment (e.g. personal protective equipment);

To ensure that on site emergency response equipment and facilities are effective when called on for use, an ongoing program of inspection, testing, maintenance and replacement is in place.

Collaborative Arrangements

A key element in the successful response to a Terminal emergency is the role of the MFESB. In acknowledgment of this, Mobil Yarraville Terminal has sought to build strong ties with MFESB jointly undertaking integrated planning, training and information sharing.

The Terminal also maintains relationships with other organisations likely to be involved in an emergency response incident such Victoria Police, EPA, Port of Melbourne Corporation, Victorian Ambulance Service, Worksafe, Hobsons Bay City Council and Marybyrnong City Council.

Resources are also available on a mutual aid basis from organisations such as Mobil's Altona Refinery and the Port of Melbourne Corporation.

Community Response

In the event of an incident occurring with offsite impact, the Victoria Police have responsibility for evacuation in consultation with the Terminal and MFESB Incident Controller.

The police, if needed, will use the electronic media including commercial radio stations 3AW (693 AM), ABC (774 AM) and local community radio station Stereo 974 (97.4 FM) to broadcast information and advice to the community.

The Terminal also uses 'telephone trees' for early notification to key community contacts including members of the CLC, local schools and kindergartens.

The local Council is kept informed of incidents and can provide information.

Community feedback on incident investigations is given as part of the Community Liaison Council (CLC) meetings.

Contact can also be made directly via the 24 hour Environmental Hotline.

Sirens at the Yarraville Terminal are sounded to alert on-site personnel only. People in the community do not need to take action in response to the sounding of these sirens. In the case of an emergency, Police and Emergency Services personnel will direct community members if any action is required.

Safety Case Summary

General

Part 5.2 of the Occupational Health and Safety Regulations 2007 requires operators of Major Hazard Facilities (MHF) to prepare a Safety Case. A MHF is defined as a facility with hazardous material above defined threshold quantities, detailed in Schedule 9 of the Regulations. The Mobil Yarraville Terminal is registered as a MHF and after preparing and submitting a Safety Case, was granted its original 5 year licence in 2002. Following an extensive review as part of the licence renewal process in 2007 an updated Safety Case has been prepared and submitted to the Victorian WorkCover Authority (VWA). VWA have subsequently granted the Terminal a further 5 year unconditional licence.

The Safety Case demonstrates how the Mobil Yarraville Terminal is being managed safely to ensure that health and safety risks are reduced so far as is practicable and the potential damage to property or the environment is minimised.

In order to achieve this, the following processes have been implemented:

- Identify all hazards that may lead to a potential major incident;
- Assess the likelihood and consequences of the potential major incident;
- Identify the controls in place to prevent and mitigate the potential major incident and identify any additional controls that can further reduce the risk so far as is practicable;
- Ensure that the Safety Management System (SMS) controls and monitors these risks; and
- Eliminate or reduce the health and safety risk so far as is practicable (SFAP).

The Safety Case includes the following components:

1. **Facility Description**
2. **Safety Management System Description**
3. **Safety Assessment** – What the potential major incidents, risks and controls are.
4. **Safety Controls** – Details the control measures and how their effectiveness is maintained.
5. **Emergency Response** – Action to be taken in the event of a major incident.

Offsite risks to nearby neighbours that could be impacted by a potential major incident are also examined in the Safety Case. Risks to nearby neighbours have been significantly reduced as part of Safety Case work.

In addition, the Mobil Yarraville Terminal Safety Case includes an assessment of the potential for other 'coordinated MHF sites' to impact the safety of the Yarraville Terminal or any impact on those sites from the Yarraville Terminal.

The 'coordinated sites' (nominated by WorkCover) are:

- Mobil Refining Australia Pty Ltd, Altona Refinery;
- Caltex Pty Ltd, Newport Terminal;
- The Shell Company of Australia Pty Ltd, Newport Terminal.

Safety Assessment and Safety Controls

The Safety Assessment demonstrates how potential major hazards are identified and associated risks assessed.

Facility modifications and changes to procedures are made where required to reduce risk SFAP.

For example, the role that procedures play in the process is shown in **Figure 1** below.

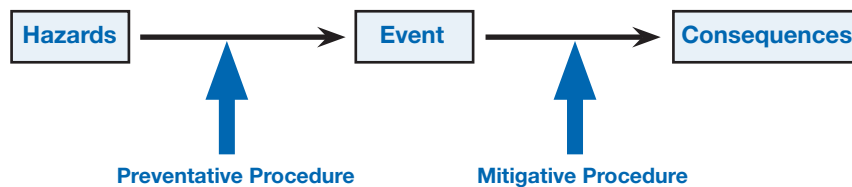


Fig. 1: Preventative and Mitigative Procedures

A preventative procedure is designed to stop a potential major incident from occurring. An example of a preventative procedure is regular inspections of equipment that reduce so far as is practicable the likelihood of a loss of containment incident.

A mitigative procedure is designed to reduce the severity of the consequences. An example of a mitigative procedure would be an emergency response procedure that minimises the severity of the incident by ensuring appropriate and timely responses.

A hazard is a potential physical or chemical process, procedure or circumstance which could result in a potential Major Incident.

An event is an occurrence related to equipment performance or human action, or an occurrence external to the system that causes system upset. In this document an event is either the cause of or a contributor to an incident or accident, or is a response to an accident's initiating event.

A consequence is the outcome of an event or incident expressed qualitatively or quantitatively, being loss, injury, disadvantage or gain.

Operations Integrity Management System

The Yarraville Terminal uses the ExxonMobil Operations Integrity Management System (OIMS) as the Safety Management System at the site.

ExxonMobil's approach to managing its operations in a manner which is sensitive to safety, health, and the environment is embedded in OIMS.

OIMS conforms to all requirements of AS/NZS ISO 9002: Quality Systems – Model for quality assurance in production, installation and servicing.

OIMS is used both to ensure compliance with laws and regulations and to drive Safety Health & Environment (SHE) improvements of a non-regulatory nature sought by management.

OIMS consists of 11 primary elements.

OIMS 11 Elements



Within these elements, ExxonMobil has specified over 60 expectations regarding the standards and practices. To meet these OIMS expectations, the Yarraville Terminal has developed 21 systems.

21 systems support OIMS at the Terminal and focus on:

Management Commitment

Processes to achieve common and sustainable SHE management processes and leadership.

Regulatory Compliance

Processes by which regulatory compliance is achieved.

Personnel

Processes for employee selection, personnel changes, placement and ongoing assessment.

Training

The identification of individual training needs and the development of programs to satisfy these.

Community Relations

Processes for ensuring effective community consultation and interaction.

Operations Interface Management

Processes for the identification and assessment of all interfaces with other ExxonMobil or third party assets.

Incident Investigation

Incident reporting and investigation processes.

Environmental Protection

The management and minimisation of wastes and emissions, and processes for environmental improvement.

Occupational Health

Processes for the management of occupational health risks.

Third Party Selection and Evaluation

Ensuring that contractors are aligned with the Terminal's SHE standards and work to them.

Personnel Safety

The processes to ensure safe work practices.

Work Permit

The proactive identification and management of potential hazards prior to the commencement of work.

Information and Documentation

Processes to ensure employees and others have access to engineering drawings and other information regarding Terminal operation, capabilities and potential SHE hazards.

Operations and Maintenance Procedures

Processes to ensure operations are within defined operational and regulatory limits. Includes Operating and Maintenance Procedures, Operating Limits, Shift Handover, Alarm Management, Internal Interfaces and Site Security.

Mechanical Integrity

Processes for the inspection and reliability of Terminal fixed and rotating equipment.

Critical Equipment

Processes for the identification, testing and periodic maintenance of Terminal critical safety equipment.

Management of Change

The process to manage changes and provides a structure for understanding the effects of change.

Risk Management

The identification and management of potential hazards.

Emergency Response

The playing-out of potential emergency scenarios and capability testing of equipment and personnel.

OIMS Assessment and Improvement

The processes and assessment requirements to achieve continuous OIMS improvement.

Facilities Design and Construction

The standards and procedures for managing facility design, construction and start-up activities.

Appendix 1 Locality Plan - Terminal Area



Figure 0.1: Locality Plan - Yarrville Terminal Area

LEGEND

- = CLOSELY-LOCATED MAJOR HAZARDOUS FACILITY
- = MOBIL SITE
- = KNOWN POTENTIALLY HAZARDOUS INVENTORY
- = STAGING POINT FOR EMERGENCY SERVICES

Appendix 2 Major Hazard Facility Licence

Licence to Operate a Major Hazard Facility

Occupational Health and Safety Act 2004, Occupational Health and Safety Regulations 2007

This licence is issued to the operator

Mobil Oil Australia Pty Ltd
Yarraville Terminal
Francis Street
Yarraville Victoria 3013

ACN: 004 052 984

and authorises the facility located at

Yarraville Terminal
Cnr Hyde & Francis Streets
Yarraville
Victoria

to operate as a Major Hazard Facility

The Schedule 9 materials authorised by this licence are specified in Attachment 1


| Licence Number | Date Granted | Effective Date | Expiry Date |
|----------------|------------------|-----------------|-----------------|
| MHL 024/03 | 27 November 2007 | 5 December 2007 | 4 December 2012 |

Conditions:

No Conditions.

Pieter Rienks Director Hazard Management Division 30 November 2007





Attachment 1 to MHL 024/03

List of Schedule 9 materials authorised by this licence

Extracted from Table 1 of Schedule 9
Occupational Health and Safety Regulations 2007

| MATERIAL | UN Nos INCLUDED UNDER NAME |
|----------|----------------------------|
| Nil | Nil |

Extracted from Table 2 of Schedule 9
Occupational Health and Safety Regulations 2007

| MATERIAL | DESCRIPTION |
|---------------------|--|
| Flammable Materials | Liquids which meet the criteria for Class 3 Packing Group I Materials |
| Flammable Materials | Liquids which meet the criteria for Class 3 Packing Group II or III |

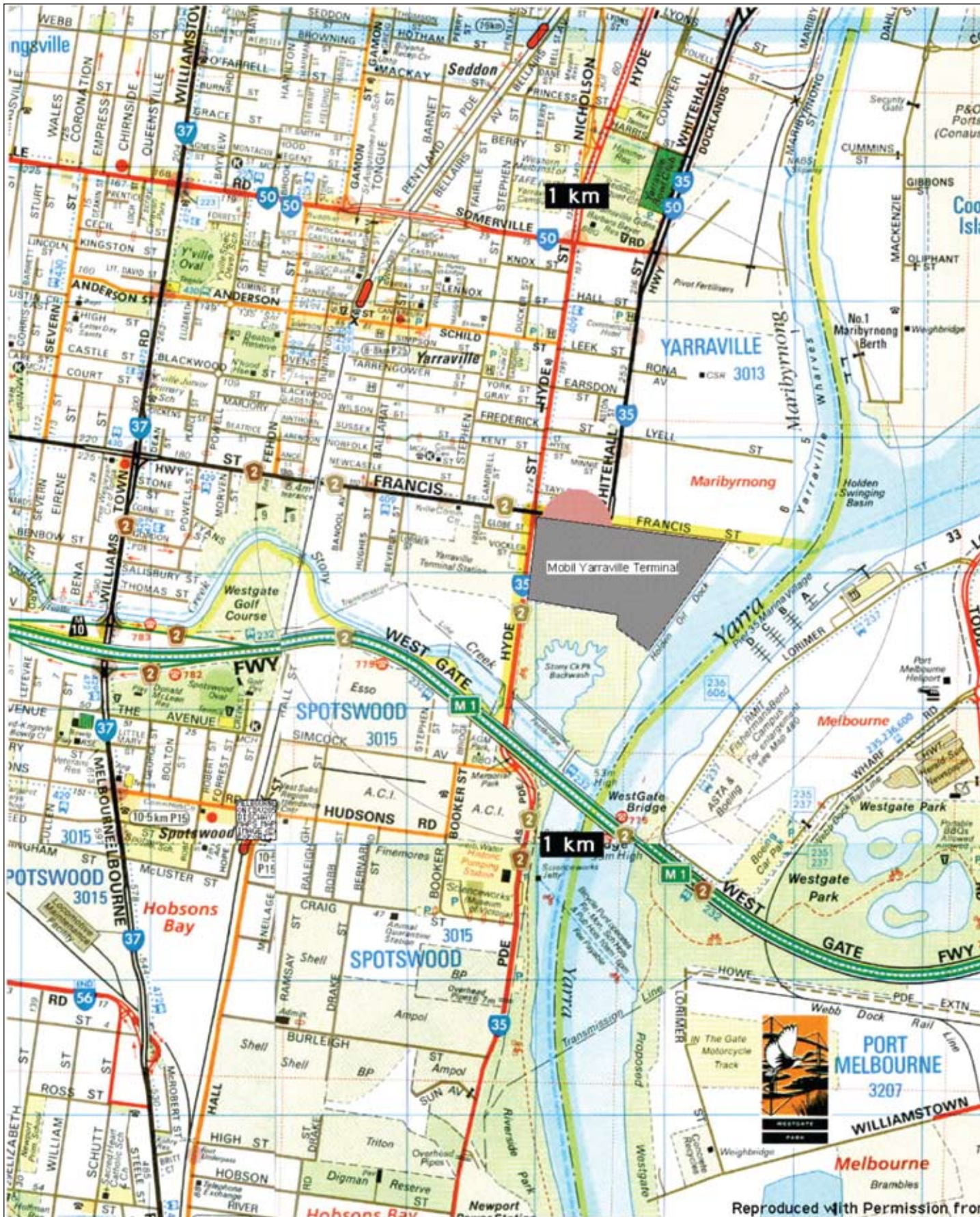
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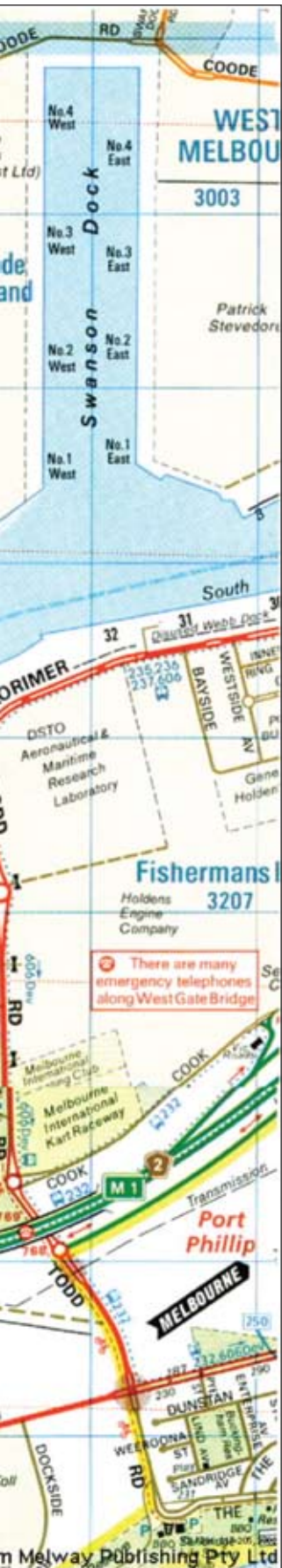
The small quantities of other Schedule 9 materials mentioned in the Safety Case are noted.

Pieter Rienks Director Hazard Management Division 30 November 2007



Appendix 3 Magnitude of Major Incident - Northern Boundary





INCIDENT ACTION PLANS

3.2 MAJOR INCIDENT SCENARIO PLANS

3.2.1 YARRAVILLE TERMINAL CREDIBLE SCENARIO – NORTHERN BOUNDARY DATA

Release Data

Product: Gasoline

UN Number: 1203

Class: 3

HazChem: 3[Y]E

Release Mass: 3,358 t Pressure: atmospheric

Spill Equilibrium Diameter: 67 m

Heat Flux: 4.7 kW/m²

Criteria

Heat Radiation (4.7 kW/m²): The heat radiation that will cause pain in 15-20 seconds and injury after 30 seconds exposure.

Contour – Heat Radiation Extent

The extent of the release modelled to the heat radiation criteria at average weather conditions.

Average Weather Conditions

Temperature: 15.3 °C

Wind Speed: 4.08 m/s

Humidity: 50 %

Legend

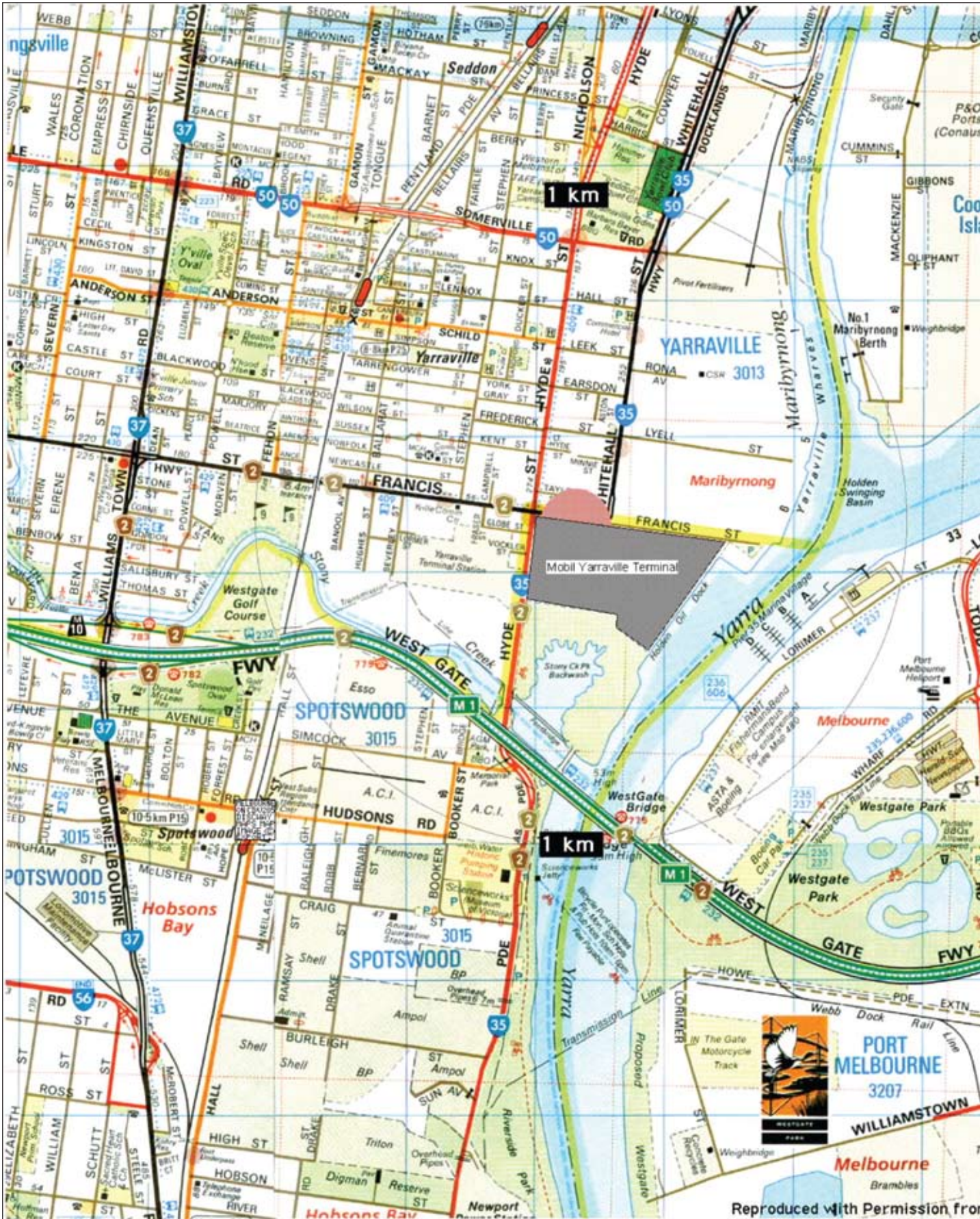


Heat radiation extent

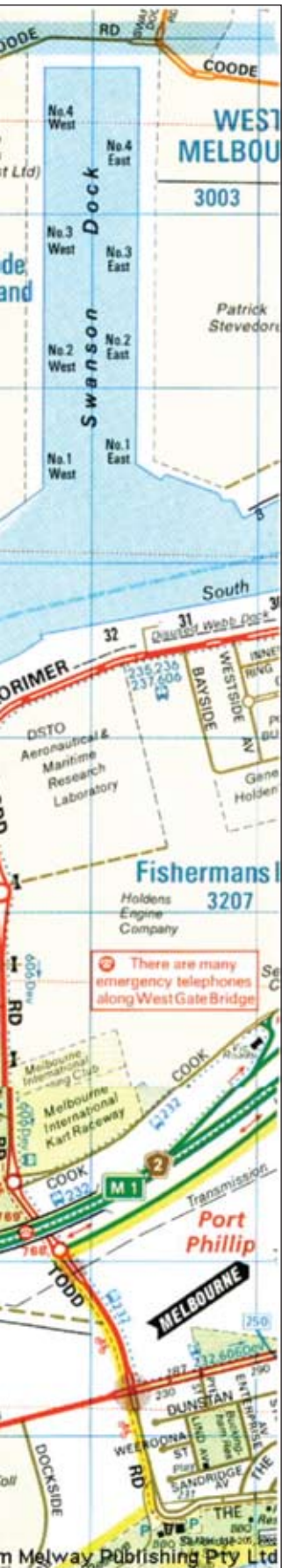


1 km Distance from release origin

Magnitude of Major Incident - Southern Boundary



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3. INCIDENT ACTION PLANS

3.2.2 MAJOR INCIDENT SCENARIO PLANS YARRAVILLE TERMINAL – SOUTHERN BOUNDARY

Release Data

Product: Gasoline

UN Number: 1203

Class: 3

HazChem: 3[Y]E

Release Mass: 39 t Pressure: atmospheric

Spill Equilibrium Diameter: 37 m

Heat Flux: 4.7 kW/m²

Criteria

Heat Radiation (4.7 kW/m²): The heat radiation that will cause pain in 15-20 seconds and injury after 30 seconds exposure.

Contour – Heat Radiation Extent

The extent of the release modelled to the heat radiation criteria at average weather conditions.

Average Weather Conditions

Temperature: 15.3 °C

Wind Speed: 4.08 m/s

Humidity: 50 %

Legend

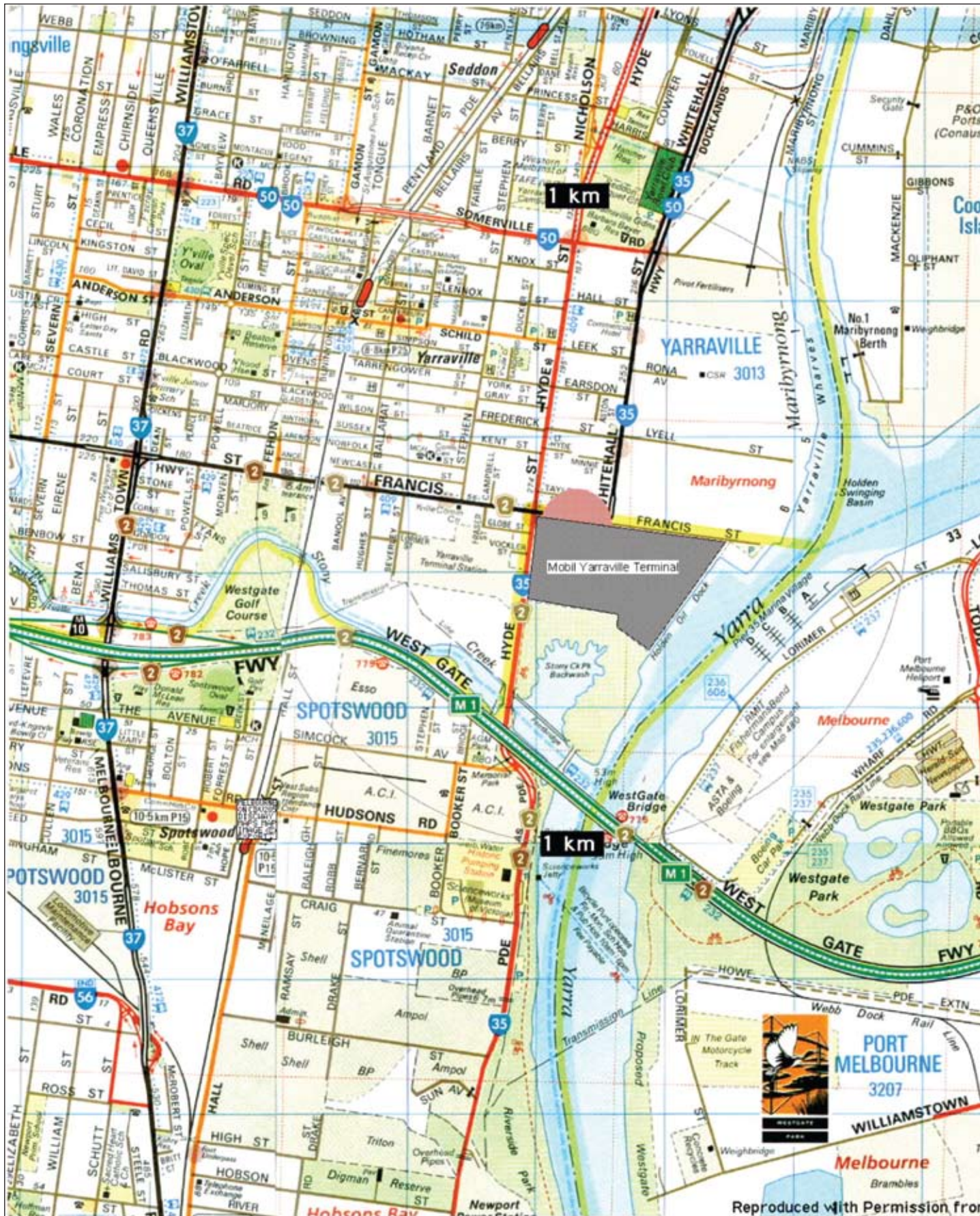


Heat radiation extent

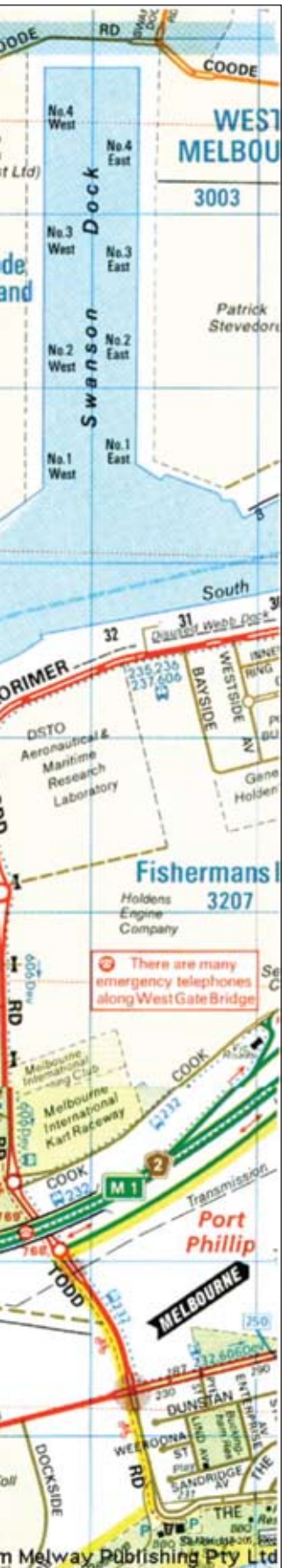


Distance from release origin

Magnitude of Major Incident - Western Boundary



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3. INCIDENT ACTION PLANS

3.2 MAJOR INCIDENT SCENARIO PLANS

3.2.3 CREDIBLE SCENARIO YARRAVILLE TERMINAL - WESTERN BOUNDARY DATA

Release Data

Product: Gasoline

UN Number: 1203

Class: 3

HazChem: 3[Y]E

Release Mass: 6,116 t Pressure: atmospheric

Spill Equilibrium Diameter: 62 m

Heat Flux: 4.7 kW/m²

Criteria

Heat Radiation (4.7 kW/m²): The heat radiation that will cause pain in 15-20 seconds and injury after 30 seconds exposure.

Contour - Heat Radiation Extent

The extent of the release modelled to the heat radiation criteria at average weather conditions.

Average Weather Conditions

Temperature: 15.3 °C

Wind Speed: 4.08 m/s

Humidity: 50 %

Legend

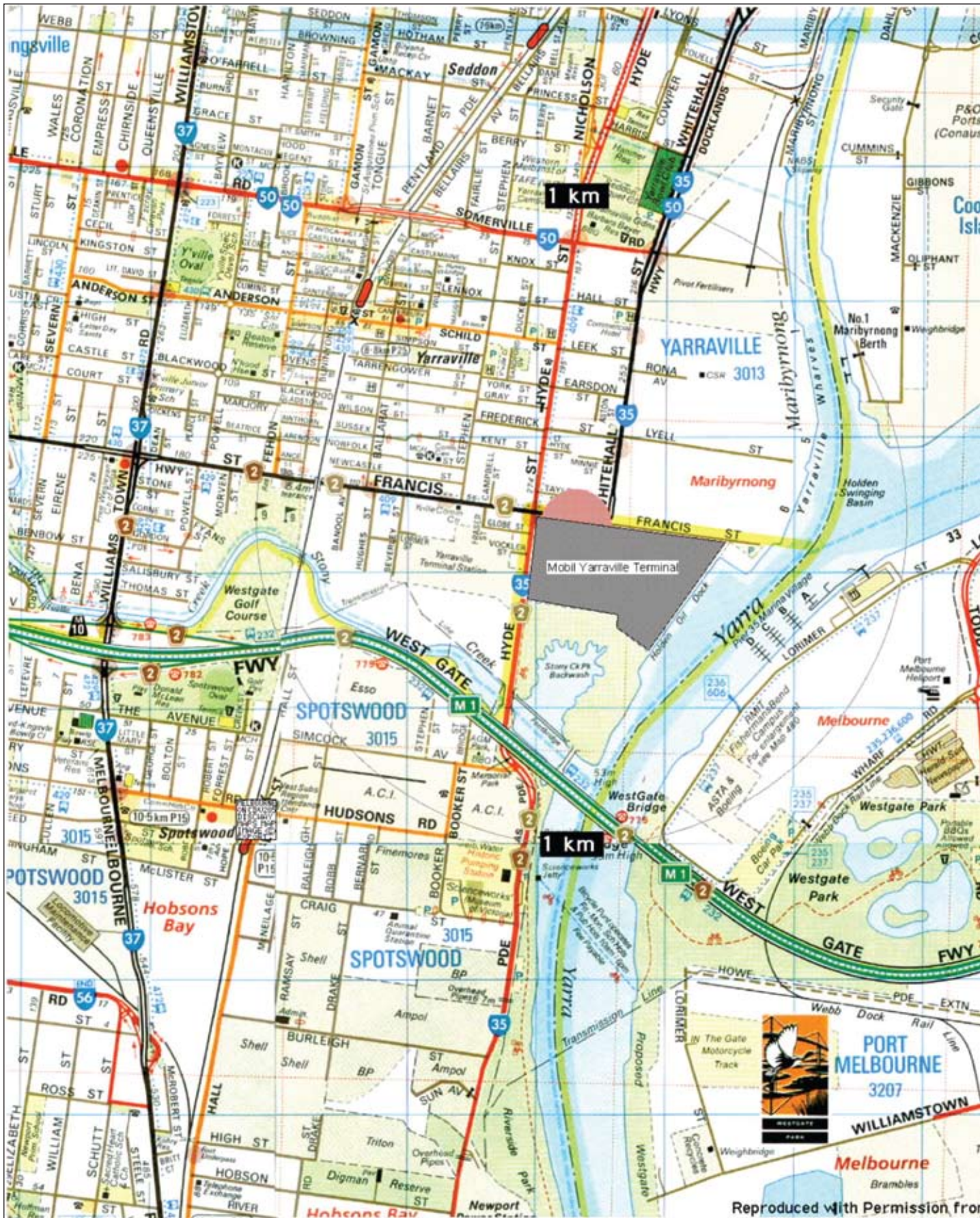


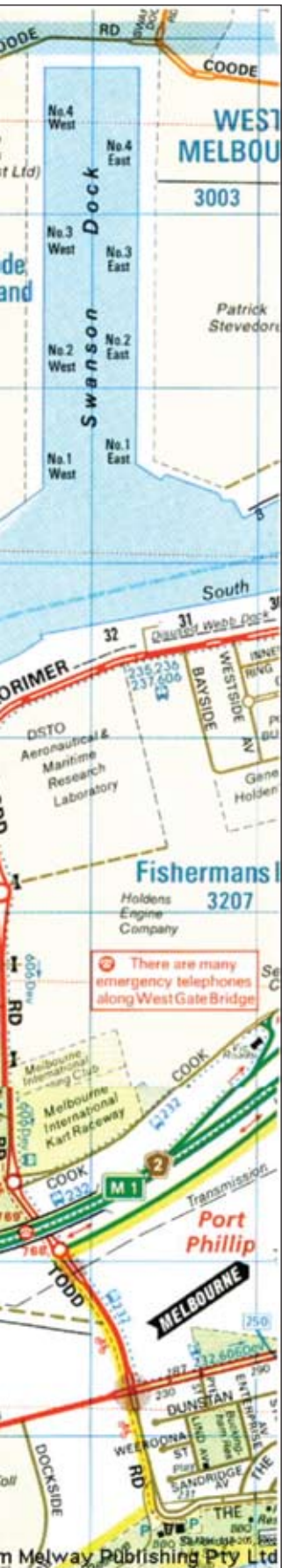
Heat radiation extent



Distance from release origin

Magnitude of Major Incident - Eastern Boundary





3. INCIDENT ACTION PLANS

3.2 MAJOR INCIDENT SCENARIO PLANS

3.2.4 CREDIBLE SCENARIO YARRAVILLE TERMINAL – EASTERN BOUNDARY DATA

Release Data

Product: Gasoline
 UN Number: 1203
 Class: 3
 HazChem: 3[Y]E

Release Mass: 1.5 t Pressure: atmospheric
 Spill Equilibrium Diameter: 16 m

Heat Flux: 4.7 kW/m²

Criteria

Heat Radiation (4.7 kW/m²): The heat radiation that will cause pain in 15-20 seconds and injury after 30 seconds exposure.

Contour – Heat Radiation Extent

The extent of the release modelled to the heat radiation criteria at average weather conditions.

Average Weather Conditions

Temperature: 15.3 °C
 Wind Speed: 4.08 m/s
 Humidity: 50 %

Legend

- Heat radiation extent
- 1 km Distance from release origin

Glossary

| | |
|-----------------------------|---|
| ALARP | As Low As Reasonably Practicable. Measure of risk after implementation of control measures that eliminate or reduce risks to as low as practicable. Is applied consistent with the definition “so far as is practicable” used in the MHF Regulations. |
| CONSEQUENCE | The outcome of an event or incident expressed qualitatively or quantitatively, being loss, injury, disadvantage or gain. |
| CONTROL MEASURE | Measures for prevention or mitigation of a potential Major Incident by reducing the likelihood of a potential Major Incident and/or of reducing the magnitude or severity of the consequences. |
| HAZARD | Potential physical or chemical process, procedure or circumstance which could result in a potential Major Incident. |
| HAZID | Hazard Identification. |
| INCIDENT | A specific event or extended situation that has an undesirable and unintended impact on the safety or health of people, on property, or on the environment. |
| LIKELIHOOD | A qualitative description of probability and frequency. |
| LOCAL COMMUNITY | Local community includes members of the general public who reside in, or are in management and control of workplaces, or of places where persons gather for recreational, cultural, or sporting purpose, located in the surrounding area, whose health or safety could be adversely affected by a major incident at the facility. |
| MAJOR INCIDENT | An uncontrolled incident, including an emission, loss of containment, escape, fire, explosion or release of energy, that: a) involves Schedule 9 materials; and b) poses a serious and immediate risk to health and safety. |
| MHF | Major Hazard Facility. |
| OH&S REGULATIONS | Occupational Health and Safety Regulations 2007. |
| MITIGATION | Measures implemented in advance of an unplanned event aimed at decreasing or eliminating its impacts. |
| OIMS | Operations Integrity Management System. |
| RISK | A product of the likelihood of a potential Major Incident and the severity of associated consequences to persons both on site and offsite. |
| SAFETY CASE | Means a Safety Case prepared or revised under Section 5.2.5 of the Occupational Health and Safety Regulations 2007. |
| SAFETY ASSESSMENT | A process of: Potential Major Incident and hazard (cause) identification (HAZID) process Risk Assessment Control Measures analysis ALARP Assessment |
| SCHEDULE 9 MATERIALS | Occupational Health and Safety Regulations 2007 Materials at Major Hazard facilities (and their threshold quantity). |
| SFAP | So Far As is Practicable. |

