

WORKS APPROVAL

issued under Section 19B of the Environment Protection Act 1970

This works approval allows the occupier to construct works at the premises subject to the attached conditions.

OCCUPIER: TERMINALS PTY LTD

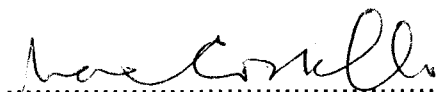
REGISTERED ADDRESS: SUITE 2G, 559A QUEENSBERRY ST, NORTH
MELBOURNE 3051

PREMISES ADDRESS: 40 WHARF RD, CORIO VIC 3214

APPROVAL NUMBER: WA57306

DATE OF ISSUE: 17 MAY 2005

DATE OF AMENDMENT: 23 SEPTEMBER 2005



MAXWELL KEITH COSTELLO
MANAGER AUTHORITY DECISIONS

THIS WORKS APPROVAL HAS BEEN AMENDED
PURSUANT TO THE ORDERS OF THE VICTORIAN
CIVIL AND ADMINISTRATIVE TRIBUNAL MADE ON
23 SEPTEMBER 2005 IN MATTER NUMBER
P1354/2005.

**Works
Description**

This approval applies to a premises where bulk chemicals are unloaded from ships, stored and filled to road tankers. It allows for the construction of a dockside receiving and storage facility for 1,3 butadiene ("butadiene").

**Works
Approval
Objectives**

The works approval holder shall adopt the following objectives for the protection of the environment:

- meet environmental quality requirements for all segments of the environment. This includes meeting the general provisions of the *Environment Protection Act 1970*, State environment protection policies, and Industrial waste management policies. In particular,
 - ◆ *Industrial waste management policy (Prescribed Industrial Waste);*
 - ◆ *State environment protection policy (Waters of Victoria);*
 - ◆ *State environment protection policy (Groundwaters of Victoria);*
 - ◆ *State environment protection policy (Air Quality Management);*
 - ◆ *State environment protection policy (Noise from Commerce, Industry and Trade)*
- operate in accordance with good environmental practice at all times; and
- take opportunities to minimise waste and continuously improve environmental performance.

**Works
Approval
Structure**

This approval consists of the following parts.

1. *General Conditions*
 - includes conditions relating the works to the application, and specifies a date for the expiry of the approval
2. *Works Conditions*
 - conditions which relate to construction of works necessary for protecting the environment
3. *Reporting Conditions*
 - conditions requiring the submission of technical reports to EPA
4. *Plan of Premises*
 - plan of the premises covered by this works approval

1. GENERAL CONDITIONS

- 1.1. The works must be constructed in accordance with the works approval application submitted on 24 December 2004 and additional information dated 21, 22 and 27 April 2004 except that in the event of any inconsistency arising between the application and the conditions of this works approval the conditions of this works approval shall apply.
- 1.2. This works approval will expire:
 - a) on the issue or amendment of a licence relating to all works covered by the works approval; or
 - b) on the issue of written notification from EPA confirming that all works covered by the works approval are complete and that no licence or licence amendment is required to operate the works; or
 - c) two years from the date of issue unless the works have been commenced by that date to the satisfaction of EPA.
- 1.3. This works approval will not take effect until a copy of any permit which is required under the Planning and Environment Act 1987 is served on the Authority by the applicant.
- 1.4. The occupier must construct the works in conformance with the details contained in Condition 1.1 and the layout specified in the attached plan of premises unless otherwise approved in writing by EPA.

2. WORKS CONDITIONS

AIR

- 2.1. The occupier must install a butadiene storage sphere with a minimum design pressure of 350 kPag.
- 2.2. The occupier must install a combustion system capable of combusting vapours resulting from the storage or handling of butadiene so that:
 - a) the temperature of the gases exiting the combustion chamber is at least 982 degrees Celsius or other temperature as agreed by EPA in writing; and
 - b) the average residence time of the gases in the combustion chamber is at least 1.0 second.
- 2.3. The combustion system referred to in condition 2.2 must have a minimum destruction efficiency of 99.6% for butadiene.
- 2.4. The combustion system referred to in condition 2.2 must be fitted with burners that minimise the generation of oxides of nitrogen.
- 2.5. The combustion system referred to in condition 2.2 must be sized to combust sufficient vapours from the sphere such that the pressure and temperature of sphere contents can be maintained constant when no refrigeration is available.
- 2.6. The occupier must install vapour return lines that are capable of returning to the sphere, all vapours generated during the truck filling of butadiene.
- 2.7. The occupier must construct the combustor exhaust stack to discharge wastes so that:
 - a) the minimum height is 15 m and the maximum diameter is 0.6 m;
 - b) the outlet of the stack will allow free vertical discharge of wastes;
 - c) the stack is clearly labelled "Discharge Point No 1"; and
 - d) provisions for sampling are included in accordance with EPA Publication No 440.1 "A guide to the sampling and analysis of air emissions and air quality".
- 2.8. The occupier must install a device capable of continuously and accurately measuring and recording the temperature and flow rate of the gases exiting the combustion system referred to in condition 2.2.
- 2.9. The occupier must install a device capable of activating an audible and visible alarm that warns the operator whenever the temperature of the combustion system referred to in condition 2.2 is less than 982 degrees Celsius or other temperature as agreed in writing by the EPA.
- 2.10. The occupier must install suitably rated rupture discs below the emergency relief valves fitted to any vessel in butadiene service.
- 2.11. The occupier must install on the butadiene sphere a device capable of providing and recording a continuous measurement of the pressure in the sphere vapour space with such measurement to be displayed in the control system.
- 2.12. The occupier must install a device capable of activating an audible and visible alarm that warns the operator whenever the pressure in the butadiene sphere is outside a defined operating range.

- 2.13. The occupier must install facilities, to the satisfaction of EPA, such that the alarms referred to in condition 2.12 will activate the emergency response procedures.
- 2.14. The occupier must install on the butadiene sphere two independent level measuring devices capable of continuously measuring and recording the liquid level in the tank.
- 2.15. The occupier must install the level measuring devices in condition 2.14 so that:
- a) one will provide a continuous level record and a visible and audible high level alarm; and
 - b) the other activates a visible and audible high high level alarm.

Bunding / fire bank

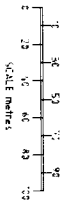
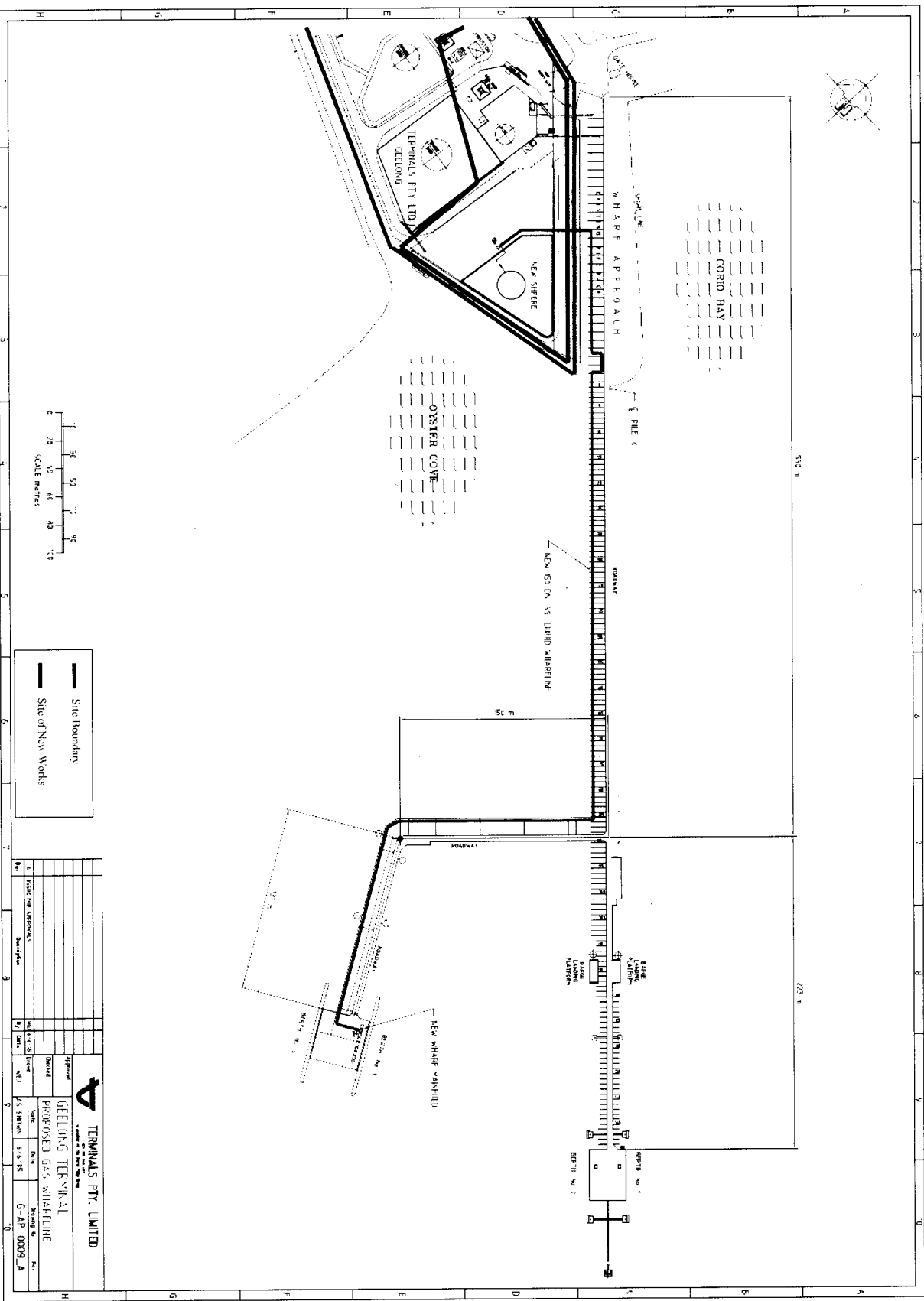
- 2.16. The occupier must install the butadiene sphere in a banded area so that:
- a) the base and walls of the banded area are hard surfaced and sealed;
 - b) the base and walls of the banded area are free from fissures, gaps and cracks;
 - c) the surface of the base of each banded area is graded with at least a 1% slope towards a sump;
 - d) the capacity of the banded area is at least 4000 cubic metres; and
 - e) water from the bund discharges via a valve which is normally kept locked.
- 2.17. The occupier must install an uninterruptible power supply that will maintain continuous operation of the critical tank instrumentation and control systems for at least 20 minutes.
- 2.18. The occupier must install works to allow the use of the alternative methods of butadiene sphere evacuation as determined by the study required by condition 3.8.

3. REPORTING CONDITIONS

- 3.1. The occupier must submit an environment improvement plan (EIP) to EPA for approval in writing, prior to the commencement of works, that addresses the construction phase of the project. This EIP must include but not be limited to consideration of:
- a) an identification of all potential risks to the environment posed by the construction phase of the project;
 - b) a proposal to ensure that the construction of the proposed works is carried out in accordance with EPA Publication No 480 "*Environmental Guidelines for Major Construction Sites*";
 - c) a proposal for the management of construction and commissioning at the terminal that minimises all potential risks to the environment during these phases; and
 - d) an incident reporting plan which details the circumstances under which the occupier is to notify EPA of any spills, leaks or non-routine discharges to the environment; and
 - e) an emergency response plan which includes details of an annual communication plan to residents within the broader North Geelong/Corio area.
- 3.2. The construction phase of the project must be performed in accordance with the EIP referred to in condition 3.1 as approved by EPA from time to time.
- 3.3. The occupier must provide to EPA a copy of a written guarantee from the selected supplier of the combustion system referred to in condition 2.2 that states that the combustion system will achieve a minimum destruction efficiency of 99.6% for butadiene.
- 3.4. Prior to commissioning the works, the occupier must provide to EPA, a copy of a Fire Safety Study, that has been completed to the satisfaction of the CFA and the Victorian WorkCover Authority.
- 3.5. Prior to commissioning the works, the occupier must submit an updated leak detection and repair program to EPA for approval. This program must include but not be limited to:
- a) the detection and remediation of fugitive butadiene air emissions; and
 - b) the detection and remediation of butadiene spills and leaks.
- 3.6. The occupier must submit a report from a HAZOP study that has been completed to the satisfaction of EPA prior to construction or as otherwise agreed in writing by EPA.
- 3.7. The occupier must submit final Piping and Instrument Drawings (P&IDs), plans and specifications for the combustor to EPA for approval prior to the commencement of construction of that equipment.

- 3.8. The occupier must submit to EPA by 1 July 2005 a technical report comparing the relative merits of the alternative methods of sphere purging for maintenance, including but not limited to use of water displacement, nitrogen purging and cryogenic chiller "GRS" system. The report should also consider using the proposed refrigeration system to condense butadiene from any butadiene-rich stream directed to the combustor.
- 3.9. The occupier must submit to EPA for approval prior to commissioning:
- an updated integrity management/preventative maintenance system,
 - an updated stormwater/bundwater/firewater management procedure, and
 - a finalised emergency response procedure.
- 3.10. The occupier must submit a full assessment of the impact of the project on compliance with State environment protection policy N1 (Noise from Commerce, Industry and Trade).
- 3.11. The occupier must undertake baseline and operational ambient air monitoring for butadiene and report to EPA in accordance with the following:
- Background Concentrations
 - Samples will be collected at four locations within the community on five separate occasions including at least the first occasion on which the combustor is in operation.
 - Potential monitoring locations, subject to approval of property owners and leaseholders, and appropriate monitoring equipment security arrangements, include the following:
 - Geelong Grammar School;
 - Corio Health Centre;
 - Rosewell Primary School;
 - North Shore Primary School;
 - Corio Village Community Health Centre.
 - Monitoring programme results will be used to supplement available 1,3-butadiene concentration data from EPAV for the Corio area, for comparison with data for Melbourne and other Australian cities.
 - Worst Case Emission Monitoring
 - Monitoring of butadiene concentrations will be conducted during "worst case" emission events (wharf line purging after ship unloading) until such time as monitoring conditions are included in the amended licence.
 - Three locations will be monitored:
 - upwind from the combustor (1 location);
 - downwind from the combustor (2 locations).

- iii) Downwind sampling locations will be determined by modelling the dispersal of emissions to air from the combustor utilising the forecast temperature, wind speed and wind direction on the anticipated sampling date.
 - iv) The modelling will be conducted on the day prior to the anticipated sampling date, using the AUSPLUME gaussian plume dispersion model, in accordance with the requirements of the State environment protection policy (Air Quality Management), and published modelling guidelines.
 - v) The predicted 9.00 a.m. and 3.00 p.m. peak ground level concentration contours will be used to select the two sampling locations, at or beyond the Terminals Pty Ltd site boundary.
 - vi) Exact sampling locations will be dependent on site availability, property owner/leaseholder approval and equipment security.
- c) Monitoring Methodology
- i) Sampling will be conducted utilising evacuated SUMMA electropolished stainless steel canisters, in accordance with U.S. Environmental Protection Agency Method Nos TO14A and TO15.
 - ii) Samples will be collected in accordance with EPA protocol.
 - iii) Analysis for butadiene will be by a gas chromatograph equipped with a mass spectrometer (GC/MS).
 - iv) The results must be made available to the Terminals Geelong Community Consultative Meeting at the next meeting.



Site Boundary
 Site of New Works

| No. | Issue | Description | Date | By | For |
|-----|-------|-------------|------|----|-----|
| 1 | Issue | Issue | | | |
| 2 | Issue | Issue | | | |
| 3 | Issue | Issue | | | |
| 4 | Issue | Issue | | | |
| 5 | Issue | Issue | | | |
| 6 | Issue | Issue | | | |
| 7 | Issue | Issue | | | |
| 8 | Issue | Issue | | | |
| 9 | Issue | Issue | | | |
| 10 | Issue | Issue | | | |

A TERMINALS PTY. LIMITED
 GEELONG TERMINAL
 PROPOSED GCS WHARFLINE
 Scale: 1:500
 Date: 6/2/95
 Drawing No: G-AP-0009_A