AIR QUALITY ASSESSMENT

Klekies Pty Ltd
Proposed relocation of used oil transfer station

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Prepared for
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1. INTRODUCTION

This report has been prepared by Holmes Air Sciences for Klekies Pty Ltd who are proposing to establish a used oil transfer station in St Marys, NSW. The proposed establishment would replace an existing facility currently located in West Gosford, NSW. This report provides a qualitative air quality assessment of the likelihood of odour emissions and associated impacts on nearby residences from the proposed operations.

2. REVIEW OF ON-SITE OPERATIONS

2.1 Introduction

The proposed used oil transfer station would be located at 85 Christie Street, St Marys, NSW. The surrounding land use is mainly industrial/rural. The closest residences are approximately 800 m southwest of the proposed site. **Figure 1** shows the proposed location of the site and the closest residences.

The proposed development would involve installation of 9 above ground metal storage tanks ranging in capacity from 55,000L to 120,000L with an overall tank capacity of approximately 530,000L. It is unlikely that any more than 200,000L would be stored on the site at any one time.

The proposed site layout is shown in **Figure 2**.

Six trucks in the range of 8-10 tonnes would operate from the site, collecting used oil from a range of customers including motor repairers, car dealerships and transport yards and then transporting it back to site. A bulk tanker would then transfer the collected oil to refinery in Wagga Wagga. This transfer would occur 3-4 times per week.

Very limited treatment would occur on site. The treatment would be limited to pre-heating (80-90^{o}C) of a small percentage of the oil to assist with the settling and removal of water from the oil. The removed water would be disposed of in an approved manner. A small oil heater would be installed for this purpose.

3. EMISSION SOURCES

3.1 Introduction

The main sources of emissions to air on the site would be from the following sources:

1. Fugitive odour emissions from tanker loading
2. Fugitive odour emissions from sources such as pump and seal leak
3. Fugitive odour emissions from the tanks holding liquids
4. Vehicle engine emissions from idling of collection trucks transferring and loading

3.1.1 Fugitive odour emissions from tank loading

A site inspection of the current operation at Gosford included observation of a tank loading procedure. It was concluded that odorous discharges from tanker loading would be minimal.

3.1.2 Fugitive site emissions

Regular shift inspections are carried out in order to detect the occurrence of fugitive emission from sources such as pump and seal leaks in order to identify the cause and have it fixed.

3.1.3 Fugitive odour emissions from the tanks holding liquids

All tanks odour-emitting potential will have activated carbon canisters fitted to their vents and will therefore not be a source of emissions.

4. LOCAL DISPERSION CONDITIONS

This section describes the dispersion meteorology in the study area.

Meteorological data are collected at the NSW DEC monitoring station in St Marys which is located approximately 6 km south of the proposed site. Annual and seasonal windroses prepared from hourly data for 2005 are shown in **Figure 3**.

On annual basis, winds are predominantly from the south and south-south-west with a smaller percentage of winds from the north and the north-north-west. The proportion of winds from the north and north-north-west are the most predominant during the winter months.

The site located to the north-east of the closet residences and therefore the predominant wind direction is away from the residences.

5. ODOUR IMPACTS DISCUSSION

Odour has not been a source of complaint from neighbouring properties at the current West Gosford site which has been operating for 15 years. There are mixed industrial sites surrounding the current operations, offices within 200 m of the site, and residences approximately 600 m to the north-east of the site.

A number of actions are proposed to reduce emissions from odorous activities at the site. In summary the actions are:

1. Carbon canisters would be fitted to all tanks containing low volatile liquids.
2. Regular shift inspections would be carried out in order to detect the occurrence of fugitive emission from sources such as seal leaks in order to identify the cause and have it fixed.
3. The pre-heating to assist with the settling and removal of water from the oil will be limited to 90^{o}C which is below the temperature of volatilisation.

An inspection of the current operation demonstrated the transfer of oil from tanker to storage tank. The odour emissions from this operation were considered to be low and unlikely to cause significant nuisance to the surrounding area. This is borne out by the fact that there are no noted complaints from the operations at the site that has been operating for 15 years.

6. CONSTRUCTION IMPACTS

Dust would be generated from earthworks associated with the construction of the proposed establishment of the used oil transfer station. The total amount of dust would depend on the silt and moisture content in the soil and the types of operation being carried out. The most likely equipment to be used would include bulldozers, scrapers, excavators, graders, concrete trucks, backhoes, rollers, jackhammers and haul trucks. The major sources of dust would be bulldozers, scrapers, excavators and wind erosion from the exposed surfaces.

It is intended to prepare a detailed mitigation plan as discussed below. One of the most important features in terms of dust impacts is to identify dust sensitive industries/receptors in the area. In addition, industries which may be sensitive to the release of spores from earthworks would need to be identified.

The NSW DEC has reviewed the environmental hazards associated with construction/excavation sites and prepared a general document containing safeguards to protect the environment during such activities. Many of these safeguards relate to controlling water pollution and run off. However, these procedures frequently help in the control of air pollution. The recommendations of the DEC are those which would in general need to be implemented along the route and include:

- watering of haul roads and sealing of roads where possible;
- wind breaks composed of earth banks and other screens to protect areas by reducing capacity of the wind to raise dust;
- trucks entering and leaving the site should be well maintained in accordance with the manufacturer's specification to comply with all relevant regulations. Fines may be imposed on vehicles which do not comply with smoke emission standards. Truck movement should be controlled on site and restricted to designated roadways. Truck wheel washes or other dust removal procedures should be installed to minimise transport of dust offsite; and
- if necessary, amending of construction during periods of high wind covering watering/revegetating of stockpiles and exposed areas.

It is intended that an Air Quality Management Plan (AQMP) be developed. The general principles of the AQMP, which would be part of an overall Environmental Management Plan (EMP) are listed below.

- All disturbed areas would be stabilised as soon as practicable to prevent or minimise wind blown dust;
- All unsealed trafficable areas would be kept sufficiently damp during working hours to minimise wind blown or traffic generated dust emissions;
- Water sprays, sprinklers and water carts would be employed if needed to adequately dampen stockpiles, work areas and exposed soils to prevent the emission of dust from the site;

- Stockpiles and handling areas would be maintained in a condition which minimised wind blown or traffic generated dust. Areas that may be inaccessible by water carts would be kept in a condition which minimised wind blown or traffic generated dust using other means;

- All equipment for dust control would be kept in good operating condition. The equipment would be operable at all times with the exception of shutdowns required for maintenance. Construction equipment would be properly maintained to ensure exhaust emissions comply with the Protection of the Environment Operations (POEO) Act;

- Silt would be removed from behind filter fences and other erosion control structures on a regular basis, so that collected silt did not become a source of dust;

- Any dust, soil or mud deposited on public roads by sub contractors construction activities and vehicle movements would be removed immediately and disposed of appropriately.

7. CONCLUSIONS

A qualitative assessment has been carried out to assess the potential for impacts on local air quality due to the proposed establishment of a used oil transfer station at St Marys, NSW. The establishment of the station at St Marys will replace a station that has been operating in West Gosford for 15 years.

The proposed installation of carbon canisters will limit the potential for fugitive emissions from the tanks.

Odour is not a nuisance from the West Gosford site and based on the information available, odour impacts are not anticipated to cause a nuisance to the residences close to the proposed St Marys site.

FIGURES

Figure 1: Proposed site location and closest residences

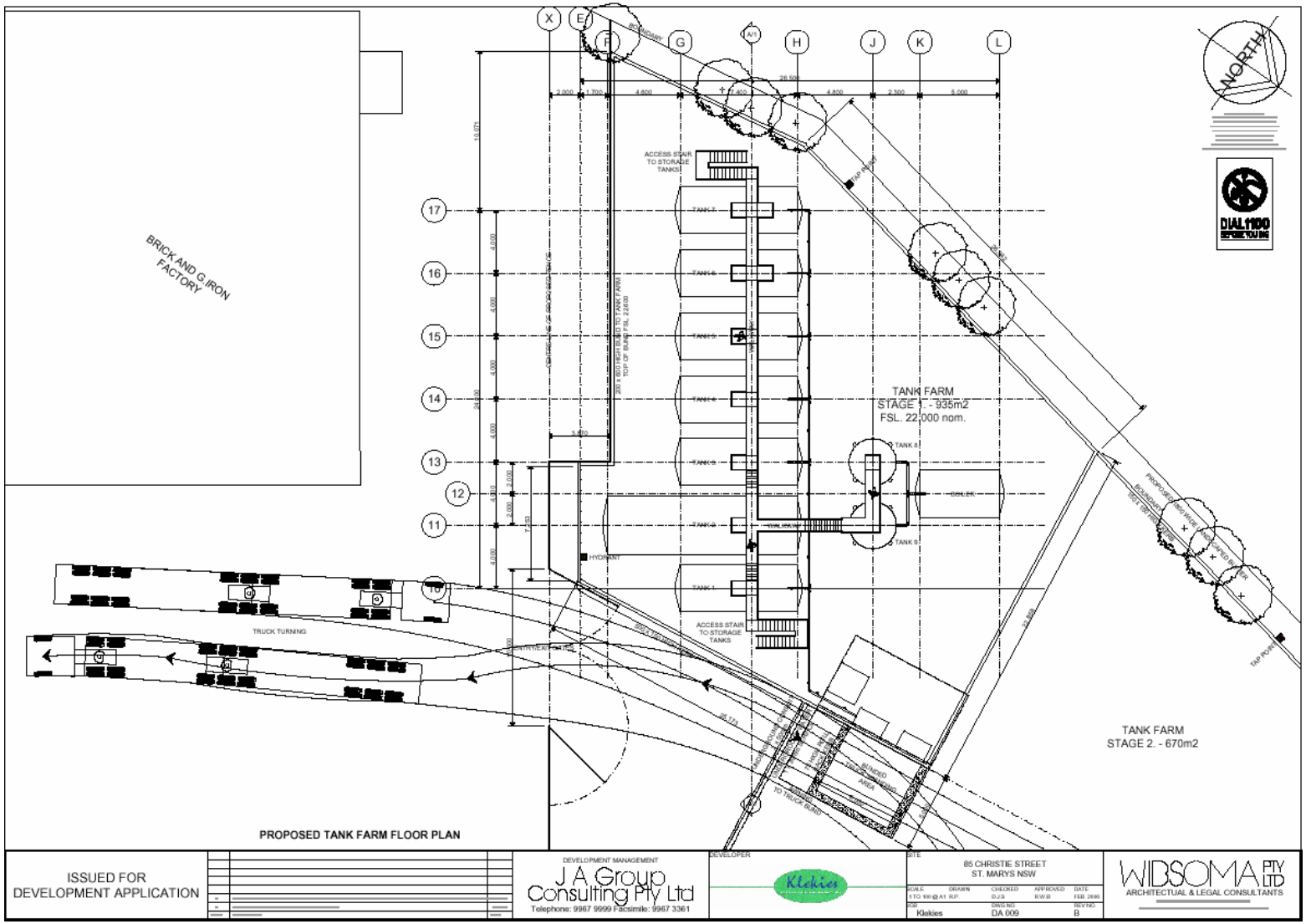

Figure 2: Proposed site layout

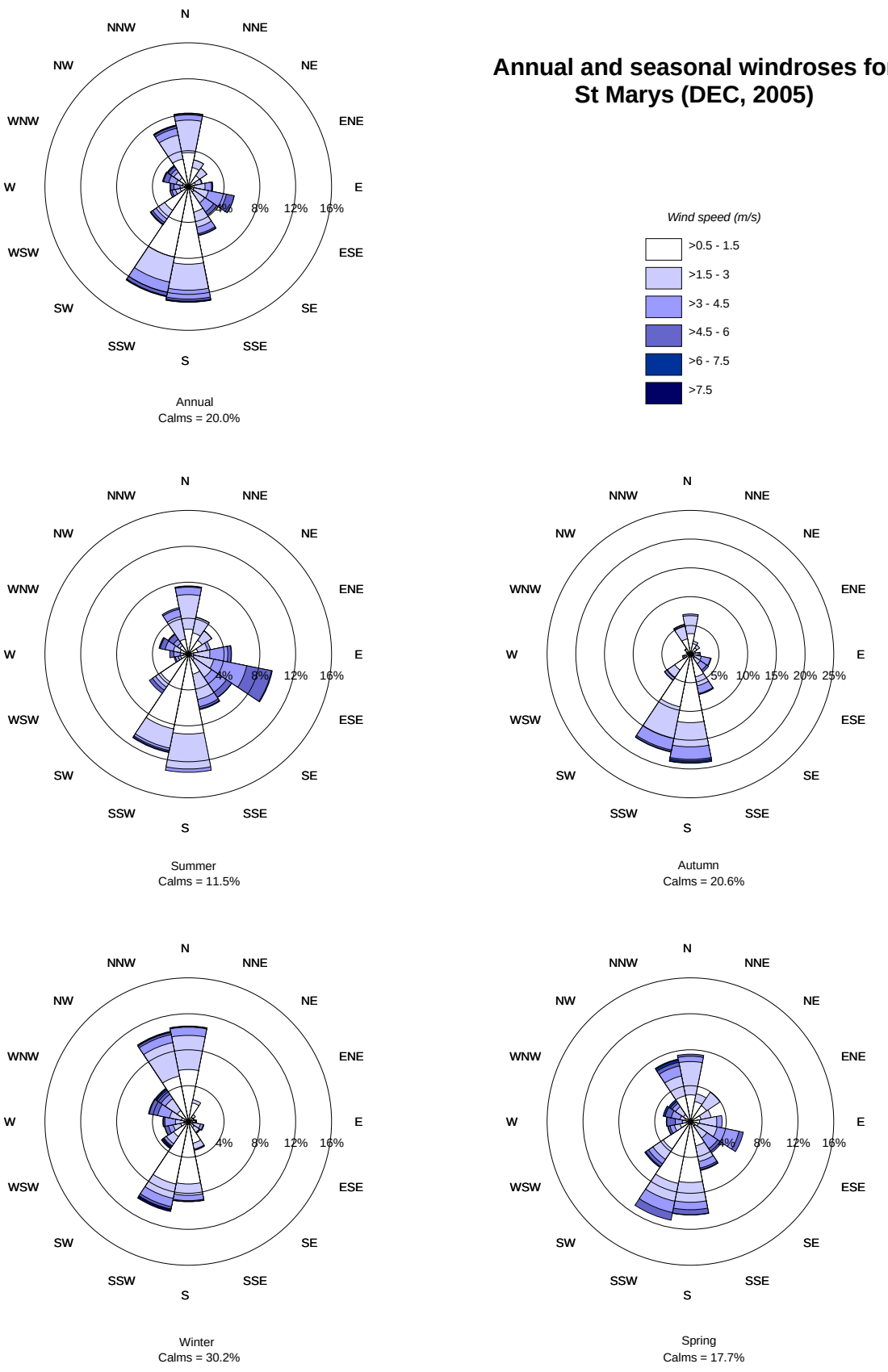

Figure 3: Annual and seasonal windroses for St Marys (DEC, 2005)