

Ref: RCE-19006

27 May 2019

APP Property and Infrastructure Specialists  
Level 7, 116 Miller Street  
North Sydney NSW 2060

**Attention: Mr. Michael Terrett**

**RE: Qantas Group Flight Training Centre - DGHS Consultancy Services**

Dear Michael,

Thank you for your inquiry regarding the potential impact of the proposed Qantas Flight Training Centre at 297 King Street Mascot, in relation to the high-pressure Dangerous Goods and gas pipelines that may be located in the vicinity of the proposed training centre site.

As noted in the Secretary's Environmental Assessment Requirements (SEARs), the Department of Planning and Environment (DPE) it has been identified that there are "...high pressure dangerous goods or gas pipelines within or in the vicinity of the development...". The SEARs require a report on the consultation outcomes with operators the pipelines indicated above, including any requirements under Australian Standard AS 2885 Pipelines – Gas and liquid petroleum, and how these will be delivered or implemented.

A Consultants Advice Notice (CAN) has been prepared with regards to the high-pressure pipelines in the vicinity of the proposed development (attached). This CAN identified two potential high pressure gas pipelines within the vicinity of the proposed development; the Jemena 3500 kPa Natural Gas Pipeline and the Qenos Ethylene Pipeline (currently shut down and not operating).

The results of the CAN indicates that the proposed development will have no impact on the high-pressure dangerous good or gas pipelines located within the Mascot area. Operators of high pressure dangerous goods or gas pipelines (Jemena and Qenos), within the vicinity of the proposed Qantas development, have both "cleared" the facility construction.

The attached CAN is fairly self-explanatory, however, if you have any queries regarding the assessment in the attached document, please call me on the mobile (0411 659 309)

Yours faithfully,

**RiskCon Engineering Pty Ltd**

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**Steve Sylvester**

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## CONSULTANTS ADVICE NOTICE

<b>Project:</b>	Qantas Flight Training Centre, 297 King Street Mascot, NSW	<b>Ref No.:</b>	RCE-19006
<b>From:</b>	Steve Sylvester	<b>Date:</b>	27 May 2019
		<b>Issue:</b>	Revision 1
	<b>Attention</b>	<b>Company</b>	<b>Email/Fax</b>
<b>To:</b>	Michael Terrett	APP Property and Infrastructure Specialists	michael.terrett@app.com.au
<b>RE: Qantas Group Flight Training Centre - High Pressure Dangerous Goods or Gas Pipelines Assessment</b>			

### TABLE OF CONTENTS

<b>1. INTRODUCTION</b>	<b>2</b>
1.1 Background	2
1.2 Objectives	2
1.3 Scope	2
<b>2. METHODOLOGY</b>	<b>2</b>
<b>3. BRIEF DESCRIPTION</b>	<b>3</b>
3.1 Site Regional Location and Surrounding Land Uses	3
3.2 Qantas Flight Training Centre	4
<b>4. HIGH PRESSURE GAS PIPELINE OR DANGEROUS GOODS REVIEW</b>	<b>5</b>
4.1 High Pressure Dangerous Goods or Gas Pipeline Identification	5
4.2 Liquid Pipelines in the Vicinity of the Qantas Flight Training Centre Development	7
4.3 HP Gas Pipeline in the Vicinity of the Qantas Flight Training Centre Development	8
4.4 Underground Services Associated with the Proposed Development	10
<b>5. CONCLUSIONS</b>	<b>13</b>
<b>6. RECOMMENDATIONS</b>	<b>13</b>
<b>7. REFERENCES</b>	<b>13</b>
<b>8. GLOSSARY &amp; ABBREVIATIONS</b>	<b>14</b>

### APPENDICES

- A Dial Before You Dig" Response from Freyssinet
- B Freyssinet Patrolman Response to Pipeline Location Queries

### List of Figures

3.1 Location of the Proposed Qantas Flight Training Centre in Mascot, NSW	4
3.2 Location of the Proposed Development in Mascot, NSW in Relation to King Street	5
4.1 "Dial Before You Dig" Information for 297 King Street, Mascot NSW	6
4.2 Jemena 559 ST 3500 kPa Gas Pipeline Location in relation to 297 King Street, Mascot NSW (Qantas Flight Training Centre)	11
4.3 Underground Services Drawing - Proposed Qantas Flight Training Centre Development	12

## **1. INTRODUCTION**

### **1.1. Background**

Qantas proposes to develop a flight training centre near Sydney Kingsford Smith Airport at 297 King Street, Mascot, NSW. The site will be predominantly for the use of flight training facilities, however, it has been identified by the Department of Planning and Environment (DPE) that the site may be located within the vicinity of existing high pressure dangerous goods or gas pipelines. In the event the pipelines are located within the construction area of the proposed development, there is a potential that excavation associated with the construction may impact the pipelines causing damage, leaks and potential ignitions of flammable materials.

As part of the Secretary's Environmental Assessment Requirements (SEARs), there is a requirement to consult with all operators of high-pressure dangerous goods or gas pipelines within or in the vicinity of the development with regards to requirements under Australian Standard AS2885 Pipelines – Gas and liquid petroleum and to provide sufficient details on how these outcomes will be delivered or implemented.

RiskCon Engineering Pty Ltd (RiskCon) has been commissioned by Qantas Airways Ltd (Qantas) to prepare this report in accordance with the technical requirements of the Secretary's Environmental Assessment Requirements (SEARs), and in support of the **SSD 10154** for the development of a new flight training centre at 297 King Street, Mascot.

### **1.2. Objectives**

The objectives of the study are to:

- Identify the location of high-pressure dangerous goods or gas pipelines within or in the vicinity of the proposed development;
- Consult with the operators of the identified pipelines and determine the potential impact of the development on the pipeline(s);
- Where there is potential for impact of the development on the pipelines, determine how the safeguards will meet the requirements of AS 2885 (Ref.1);
- Make recommendations for increased safeguards, where required, to ensure the risks are controlled to so far as is reasonably practicable; and
- Report on the findings of the study in support of the Development Application for the Qantas flight training centre.

### **1.3. Scope**

The scope of work is for the identification of high-pressure dangerous goods or gas pipelines on or within the vicinity of the proposed Qantas flight training centre development and to consult with the pipeline operators to ensure appropriate safeguards have been implemented to meet the requirements of AS 2885 (Ref.1). The scope of work is for the Qantas flight training centre development at 297 King Street, Macot, NSW only and does not include any other Qantas development projects.

## **2. METHODOLOGY**

The methodology used in this assessment is as follows;

- Identify the high-pressure dangerous goods or gas pipelines on or within the vicinity of the proposed development using the “dial before you dig” organisation;
- Contact the high-pressure dangerous goods or gas pipeline operators, identified from the “Dial before you dig” inquiry, and consult on the potential impacts of the proposed Qantas flight training centre development (the Development) on the specific pipeline;
- Obtain details, from each operator, of the requirements associated with the impacts of the Development on pipeline operations and any safeguards required during the Development process; and
- Report on the findings of the assessment including recommendations from operators regarding required safeguards during the Development process.

### **3. BRIEF DESCRIPTION**

#### **3.1. Site Regional Location and Surrounding Land Uses.**

The site is located at 297 King Street, Mascot and comprises land known as Lots 2 & 4 DP 234489, Lot 1 DP 202747, Lot B DP 164829 and Lot 133 DP 659434. The site is identified in **Figure 3.1**.

Key features of the site are as follows:

- The site is approximately 5.417ha and is an irregular shape. It is approximately 240m in length and maintains a variable width of between approximately 321m in the northern portion of the site and approximately 93m along the King Street frontage (refer to Figure 1).
- The site possesses a relatively level slope across the site. An open Sydney Water drainage channel bisects the northern portion of the site in an east-west direction. There are some isolated changes in level immediately adjacent to this channel. A Site Survey Plan accompanies the application which details the topographic characteristics of the site.
- Multiple mature Plane Trees are scattered throughout the site. A variety of native and exotic trees and vegetation also exist around the perimeter of the site which help screen the site from surrounding uses.
- Site improvements include at-grade car parking for Qantas staff, an industrial shed to store spare aviation parts, a substation, a disused gatehouse, a Sydney Water Asset with two driveways over it, the Qantas catering facility and Qantas tri-generation plant.
- The site forms part of a larger land holding under the ownership of Qantas that generally extends between Qantas Drive to the west, Ewan Street to the south, Coward Street to the north, with the Qantas “Corporate Campus” fronting Bourke Road.
- Vehicular access to the site from the local road network is available from King Street. The site has intra-campus connections along the northern boundary in the form of two connecting driveways in the north-eastern and north-western corner of the site along the northern boundary which link it to the broader Mascot Campus.
- The site is located within the Bayside LGA.





**Figure 3.1: Location of the Proposed Qantas Flight Training Centre in Mascot, NSW**

Key features of the locality are:

- North: The site is bounded to the north low scale industrial development, beyond which is Coward Street. Further north of the site is the Mascot Town Centre which is characterised by transport-oriented development including high density mixed-use development focussed around the Mascot Train Station.
- East: The site is bordered to the east by commercial development including a newly completed Travelodge hotel which includes a commercial car park. Additional commercial development to the east includes the Ibis Hotel and Pullman Sydney Airport fronting O’Riordan Street.
- South: The site is bounded to the south by King Street, beyond which is Qantas owned at-grade car parking and other industrial uses. Further south is the Botany Freight Rail Line and Qantas Drive beyond which is the Domestic Terminal at Sydney Airport.
- West: The site is bordered to the west by the Botany Freight Rail Line and Qantas Drive, beyond which lies Sydney Kingsford Smith Airport and the Qantas Jetbase (location of the current Flight Training Centre).

## 3.2. Qantas Flight Training Centre

### 3.2.1. Brief Description of Site Layout and Operations

Safety is Qantas’ first priority. The flight training centre is a key pillar of this value. The facility enables pilots and flight crews to undertake periodic testing to meet regulatory requirements by

simulating both aircraft and emergency procedural environments. The Project seeks consent for the construction and operation of a new flight training centre, and associated ancillary uses including a multi-deck car park. The Project is comprised of the following uses:

### **Flight Training Centre**

**Figure 3.2** shows the proposed Qantas Flight The proposed flight training centre will occupy the southern portion of the site. It is a building that comprises 4 core elements as follows:

An emergency procedures hall that contains;

- cabin evacuation emergency trainers,
- an evacuation training pool,
- door trainers,
- fire trainers,
- slide descent towers,
- security room,
- aviation medicine training and equipment rooms.
- A flight training centre that contains:
  - a flight training hall with 14 bays that will house aircraft simulators,
  - integrated procedures training rooms, computer rooms, a maintenance workshop, storerooms, multiple de-briefing and briefing rooms, pilot's lounge and a shared lounge.
- Teaching Space that contains:
  - Training rooms,
  - Classrooms and two computer-based exam rooms.
- Office Space
  - Office space for staff and associated shared amenities including multiple small, medium and large meeting rooms, think tank rooms, informal meeting spaces, a video room and lunch/tea room.
- Ancillary spaces including the reception area at the ground floor, toilets, roof plant and vertical circulation. The external ground floor layout will include a loading dock, at-grade car parking for approximately 35 spaces and a bus drop-off zone at the northern site boundary.

### **Car Park**

The proposed multi-deck car park will be located to the north-east of the flight training centre and adjacent to the existing Qantas catering facility and tri-generation plant (not shown in **Figure 3.2**). Vehicle access to the car park will be provided via King Street, Kent Road and from Qantas Drive via the existing catering bridge.



**Figure 3.2: Location of the Proposed Development in Mascot, NSW in relation to King St.**

## 4. HIGH PRESSURE DANGEROUS GOODS OR GAS PIPELINES REVIEW

### 4.1. High Pressure Dangerous Goods or Gas Pipeline Identification

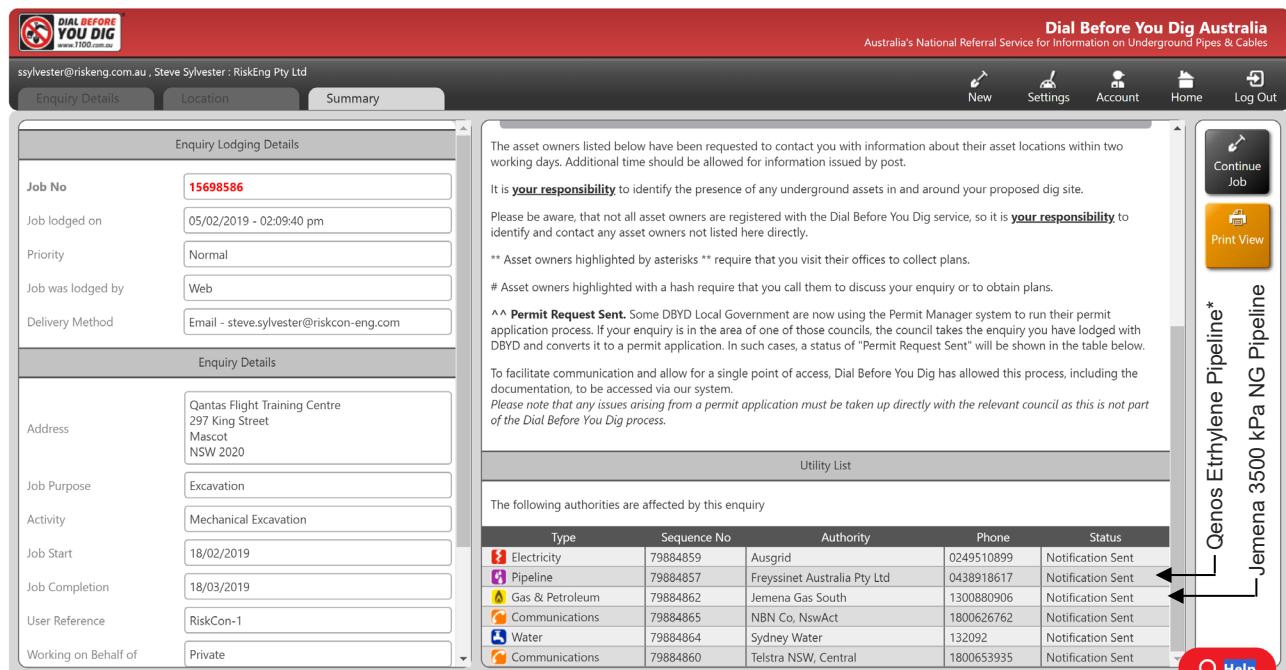
In order to identify whether there are any high-pressure dangerous goods or gas pipelines in the vicinity of the Development, the “Dial before you dig” organisation was contacted. An inquiry was lodged with this organisation who replied with the details listed in **Figure 4.1**.

There were only two high pressure dangerous goods or gas pipelines identified in the immediate vicinity of the proposed Qantas flight training centre development:

- High pressure (3,500 kPa) Natural Gas Pipeline operated by Jemena; and
- High Pressure (currently not operating) ethylene gas pipeline owned by Qenos.

Whilst other pipelines were identified, these are some considerable distance from the proposed Qantas flight training centre development and construction at the development site would have no impact on these pipelines. **Figure 4.1** shows the two pipelines identified by the dial before you dig search.





**Enquiry Lodging Details**

Job No: 15698586  
 Job lodged on: 05/02/2019 - 02:09:40 pm  
 Priority: Normal  
 Job was lodged by: Web  
 Delivery Method: Email - steve.sylvester@riskcon-eng.com

**Enquiry Details**

Address: Qantas Flight Training Centre  
 297 King Street  
 Mascot  
 NSW 2020  
 Job Purpose: Excavation  
 Activity: Mechanical Excavation  
 Job Start: 18/02/2019  
 Job Completion: 18/03/2019  
 User Reference: RiskCon-1  
 Working on Behalf of: Private

**Utility List**

The following authorities are affected by this enquiry

Type	Sequence No	Authority	Phone	Status
Electricity	79884859	Ausgrid	0249510899	Notification Sent
Pipeline	79884857	Freyssinet Australia Pty Ltd	0438918617	Notification Sent
Gas & Petroleum	79884862	Jemena Gas South	1300880906	Notification Sent
Communications	79884865	NBN Co, NswAct	1800626762	Notification Sent
Water	79884864	Sydney Water	132092	Notification Sent
Communications	79884860	Telstra NSW, Central	1800653935	Notification Sent

**Qenos Ethylene Pipeline\***  
 Jemena 3500 kPa NG Pipeline

\* Note: the Qenos ethylene pipeline is currently not operating, Qenos indicate there are no immediate plans to recommission the line

**Figure 4.1: “Dial Before You Dig” Information for 297 King Street, Mascot NSW**

It can be seen from the section listed “authorities affected” by the proposed Development, the following services are located in the vicinity of the property.

- Electricity – the operator is Ausgrid, who supply electrical services to the site. Electricity is not-classified as a high pressure dangerous good or gas pipeline, hence, there is no further assessment for this service.
- Ethylene Pipeline – Freyssinet is a company that is contracted to operate an ethylene pipeline on behalf of Qenos, who are located in the Banksmeadow area. Freyssinet is a pipeline patrol and maintenance organisation, but does not own the ethylene pipeline in the Mascot area for which they are tasked to patrol/maintain, the pipeline ownership rests with Qenos.

Qenos were contacted regarding pipeline ownership and it was identified that Freyssinet were the contracted organisation for pipeline patrol and maintenance. Qenos also indicated that Freyssinet were the appropriate organisation for providing information with regards to the ethylene pipeline. Details of communication with Qenos is provided in **Attachment B**.

Freyssinet were contacted with regards to the pipelines in the vicinity of the proposed development, the reply from Freyssinet to inquiries provided a contact number for information on the location of pipelines in the Mascot area operated by the following companies;

- Mobil Oil Australia Pty Ltd (Mobil) [liquids pipeline];
- Jemena [3500 kPa natural gas pipeline];
- Qenos Pty Ltd (Qenos) [ethylene pipeline]; and
- Vopak Terminals Australia Pty Ltd (Vopak) [liquids pipeline].

In its reply, to the “Dial before you dig” inquiry, Freyssinet indicated that Mobil, Jemena, Qenos and Vopak require notification of any work that is conducted within 5m of the pipelines. Where



such work is required, these companies must provide approval prior to commencement of works and monitoring of works during the development.

Contact was made with the Freyssinet area “Patrol” Operator who provided details of the location of the pipelines operated by Mobil and Vopak. A detailed review of these pipelines has been performed in **Section 4.2**.

- Gas Pipeline – The Jemena high pressure gas pipeline No. 559 ST 3500 kPa was identified to be located along the eastern side of Qantas drive, between the edge of the roadway and the Sydenham to Botany Rail Corridor. The operator of the pipeline, Jemena, was contacted regarding the pipeline location in relation to the proposed Development and information regarding the risks associated with the proposed Development. A detailed review of this pipeline has been performed in **Section 4.3**.

In addition to the high pressure gas pipeline installed within the rail corridor, there are other lower pressure gas systems installed for supply to residential and commercial premises in the Alexandria area. These pipelines are installed under roadways and footpaths, including Bourke Road, O’Riordan Street and King Street. An underground services plan of the Bourke Road, O’Riordan Street and King Street area has been included at **Figure 4.4**. It can be seen from this figure that the gas supply pipelines are well clear of the proposed development site. The low pressure gas pipeline terminates about 20m from the boundary of the proposed development (across Kings Street). There is no plan to excavate in the King Street area, beyond the development site boundary, as part of the proposed project. Hence, there will be no impact to other pipelines in the Bourke Road, O’Riordan Street and Kings Road areas.

- Ethylene Pipeline – contact was made with the Freyssinet patrol and maintenance personnel with regards to the Qenos ethylene pipeline. The Freyssinet operator indicated that the ethylene pipeline was currently not operating and was in “maintenance” mode, meaning the pipeline may be brought on line at any time, but is not currently transporting gas. Discussion with the owner, Qenos, indicated that there were no immediate plans to bring the pipeline back to an operating state. Notwithstanding this, an assessment of the potential for the proposed Qantas development to impact the ethylene pipeline was conducted and is performed in **Section 4.4**.
- Communications – The National Broadband Network (NBN) is installed in the area where the proposed development is located. The NBN is not-classified as a high pressure dangerous good or gas pipeline, hence, there is no further assessment for this service.
- Water – water services are supplied to the site and are located in the area where the proposed development is located. Water is not-classified as a high pressure dangerous good or gas pipeline, hence, there is no further assessment for this service.
- Communications – Telstra telephone network is installed in the area where the proposed development is located. The telephone is not-classified as a high pressure dangerous good or gas pipeline, hence, there is no further assessment for this service.

There were no other services, liquid or gas pipelines identified by the “Dial before you dig” organisation. Based on the above details, the only organisations identified to be involved with the operation of high-pressure dangerous goods or gas pipelines in the Mascot area are:

- Mobil Oil Australia Pty Ltd (Mobil) – liquid pipeline;

- Qenos Pty Ltd (Qenos) – Ethylene gas pipeline;
- Vopak Terminals Australia Pty Ltd (Vopak) – liquid pipeline; and
- Jemena – high pressure gas pipeline (No. 559 ST 3500 kPa).

The liquid and gas pipelines are assessed in detail below.

#### 4.2. Liquid Pipelines in the Vicinity of the Qantas Flight Training Centre Development

As noted in **Section 4.1**, Freyssinet, the pipeline monitoring organisation, is responsible for monitoring the Qenos, Mobil and Vopak pipelines that are located in the Mascot/Botany Area. In response to the “dial before you dig” inquiry, Freyssinet issued an e-mail indicating their responsibility for monitoring these pipeline (see **Appendix A**).

A follow up e-mail was then sent to the Freyssinet “Patrolman” to confirm that the Vopak and Mobil pipelines are not in the vicinity of the proposed Qantas development site. The response (included at **Appendix B**) indicates that there are no other high-pressure dangerous goods or gas pipelines in the vicinity of the proposed Qantas Flight Training Centre. In discussion with the Freyssinet “Patrolman” the following pipelines were identified.

- Mobil Pipeline - The Mobil Terminal, located at Coal Pier Road in Banksmeadow has closed and is no longer in operation. Hence, the pipeline from the Bulk Liquids Berth at Port Botany to the terminal is no longer operating. The Mobil Terminal was located about 4 kms from the Qantas development.
- Vopak Pipelines – Vopak also operates pipelines from its Botany Terminal to the Bulk Liquids Berths at Port Botany. However, these pipelines run along the shore line of Botany Bay and are not installed near the Qantas development. These pipelines are located over 5 kms from the Qantas development.
- Other Bulk Liquids Pipelines – the Sydney Ports Bulk Liquids Berth is located in the Port Botany area, however, all facilities and pipelines are located well over 4 kms from the proposed Qantas development, hence, there is no impact on these pipelines from the construction of the Flight Training Centre.

Based on the investigation into high pressure dangerous goods or gas pipelines in the vicinity of the proposed Qantas Flight Training Centre, only two pipelines have been identified to be close to the property at 297 King Street, Mascot; the Qenos Gas Pipeline and the Jemena 559 ST 3500 kPa gas pipeline. The analysis of potential impacts on this pipeline as a result of the Qantas Flight Centre Development are provided in **Section 4.3**.

#### 4.3. HP Natural Gas Pipeline in the Vicinity of the Qantas Flight Training Centre Development

A request for details on the Jemena 559 ST 3500 kPa pipeline (the gas pipeline) was submitted to Jemena, who provided a map of the pipeline location with regards to the proposed Development. **Figure 4.2** is provided to show the location of the pipeline.

It can be seen from **Figure 4.2** that the closest point of the pipeline to the proposed Development is 32 m, at the south west corner of the site.

Consultation with Jemena, regarding the proximity of the gas pipeline was held to determine whether Jemena had any issues with the proposed development and whether construction operations associated with the development would impact on the gas pipeline. Jemena replied in writing (see **Appendix C**) stating that they had no concerns regarding the proposed development and considered the development to be sufficient distance from the pipeline not to have any impact during the development and operations period. Clearance for the Development construction has been provided by Jemena.

Notwithstanding this, an analysis has been conducted regarding the types of incidents and events that may impact a buried gas pipeline in order to confirm such incidents and events, as a result of the proposed Development, cannot cause impact to the Jemena 559 ST 3500 kPa pipeline.

The European Gas Pipeline Incident Data Group (EGIG) collects and published a range of data in relation to high pressure gas pipelines. The EGIG comprises a group of major gas pipeline operators and related organisations in Europe and has collected data in relation to gas pipelines (operations, failures, etc.) over a 50-year period with over 4 million km.yr exposure to operation of gas pipelines. Hence, based on the vast experience available within this organisation, incidents that may affect the Jemena pipeline from the proposed Qantas Flight Training Centre Development have been selected for review.

The EGIG (Ref.2) reports on the types of events that result in pipeline failure leading to loss of gas containment from the pipeline. The list of events, extracted from the EGIG report (Ref.2) is provided below. An assessment of each incident/event is also made to indicate whether the specific incident/event could impact the gas pipeline.

- External Interference – excavations resulting in equipment impact to the pipeline. Excavations at the proposed development will all occur within the Development boundary (shown in **Figure 4.2**). Hence, as the closest excavation will be over 32m from the pipeline, there is no potential for impact to the pipeline from external interference. Both Jemena and Freyssinet confirm this assessment and have provided “clearance” for the Qantas flight training centre development.
- Hot-Tap by Error – work on adjacent pipelines in the same pipeline corridor resulting in identification of the wrong pipeline and hot tap to the gas pipeline. The Development will not access the pipeline trench or corridor and no work will be conducted within 32m of the pipeline, hence, there will be no potential for incorrectly selecting the pipeline (i.e. hot-tap by error).
- Corrosion – external or internal corrosion resulting in loss of pipeline thickness and pipeline failure. The construction operations at the Development will have no impact on pipeline internal/external corrosion. Notwithstanding this, Jemena indicated that the pipeline is regularly internally “pigged” with an intelligent “pig” that performs corrosion detection along with a number of other condition monitoring functions.
- Ground Movement – subsidence as a result of earthquake or excavations close by causing ground collapse around the pipeline. Earthquake may have an impact on the pipeline, however, the proposed Development has no influence on earthquake in the Mascot area. Excavation in close proximity to the pipeline may lead to land subsidence adjacent to the pipeline resulting in exposure of the pipeline and loss of pipeline support. A review of the proposed construction activities at the Development indicates the only excavations at the site will be for building foundation and connection of services. Excavation would typically not extend further than 1.5 to 2m below ground. It is noted that the closest point of the Development site to the pipeline is

32m, hence, collapse of a trench on site would not result in subsidence of the pipeline support or ground cover. The separation distance is adequate to eliminate this hazard.

- Construction Defect – incorrect weld installation (weld failure), poor ground preparation (i.e. pipeline bed contains rocks which damage the external corrosion protection) or poor overfill preparation (rocks in the overfill impacting the external corrosion protection). The proposed Development has no influence over construction defects that may have occurred when the pipeline was constructed.
- Material Defect – incorrect pipeline material selected for the specific application or poor material qualities not detected at time of pipeline section manufacture (i.e. poor-quality metallurgical assurance). The proposed Development has no influence over pipeline material selection or manufacture that may have occurred when the pipeline was constructed.
- Other Incidents – lightening impacts to the pipeline causing materials failure or maintenance induced failures (e.g. work on the pipeline leads to loss of containment during the project or after work is complete due to failure to complete the work correctly). The proposed Development has no influence over lightening impact or maintenance activities associated with the pipeline.

Based on the above analysis, the proposed Development is considered to be sufficiently separated from the 559 ST 3500 kPa pipeline so as not to have any impact on the pipeline position or operation. This is supported by the communications from Jemena & Freyssinet in the Appendices to this CAN.

#### **4.4. Ethylene Gas Pipeline in the Vicinity of the Qantas Flight Training Centre Development**

A request for details regarding the ethylene pipeline was submitted to Freyssinet and Qenos, who provided details of the pipeline and a map showing the pipeline location with regards to the proposed development. **Figure 4.2** is provided to show the location of the pipeline.

It can be seen from **Figure 4.2** that the closest point of the pipeline to the proposed Development is >34 m, at the south west corner of the site. Consultation with Qenos and Freyssinet, regarding the proximity of the ethylene pipeline, was held to determine whether Qenos/Freyssinet had any issues with the proposed development and whether construction operations associated with the development would impact on the gas pipeline. Both Qenos and Freyssinet replied in writing (see **Appendix B**) stating that they had no concerns regarding the proposed development and considered the development to be sufficient distance from the pipeline not to have any impact during the development and operations period. Clearance for the Development construction has been provided by both Qenos and Freyssinet.

The detailed analysis conducted for the Jemena gas pipeline in Section 4.3 (i.e. the EGPIDG review) also applies to the ethylene pipeline, noting these two pipelines are close to each other in the pipeline easement.

Based on the replies from Qenos and Freyssinet, the potential impact analysis conducted in **Section 4.2** (which also applies to the ethylene pipeline), and the location of the pipeline >34 m from the development site, the ethylene pipeline will not be impacted by the proposed Qantas flight training centre development.

#### **4.5. Underground Services Associated with the Proposed Development**

Notwithstanding the assessment conducted in the previous sections of this study, and the results of the assessment indicating that there is no impact to high pressure dangerous goods

or gas pipelines, it is noted that other underground services may be located within the property (e.g. low-pressure gas, water, power, communications, etc.).

Whilst not required under the SEARs, a brief review of the potential for impact to underground services at the proposed development site was conducted. It was identified that Qantas has maintained a detailed underground services register for all its properties in the Mascot area (including public areas, roads and rail corridors) and, hence, the location of underground services is well understood. **Figure 4.3** shows an underground services layout for the Development and the areas close to the site. This has been extracted from a larger drawing of the Qantas Mascot facilities. It can be seen from this figure that the only services impacted by the site are drains (stormwater) and electrical power. There are no other underground services currently installed on the Development site.

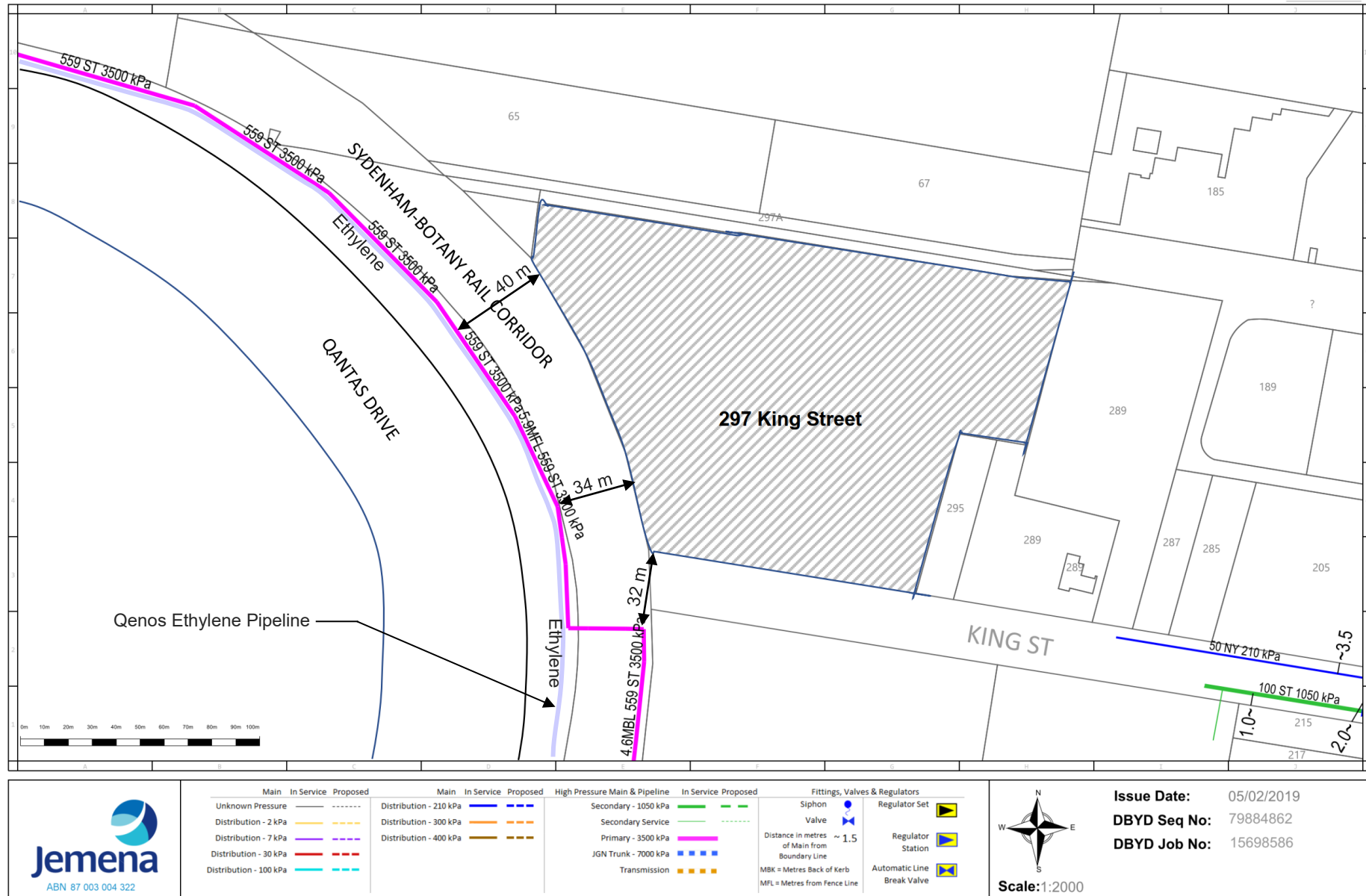
Further, it can be seen that the only major pipelines located close to the proposed development are:

- the Jemena 559 ST 3500 kPa gas pipeline; and
- the Qenos ethylene gas pipeline (patrolled and maintained by Freyssinet).

There are no other high-pressure dangerous goods or gas pipelines on or within the vicinity of the site.

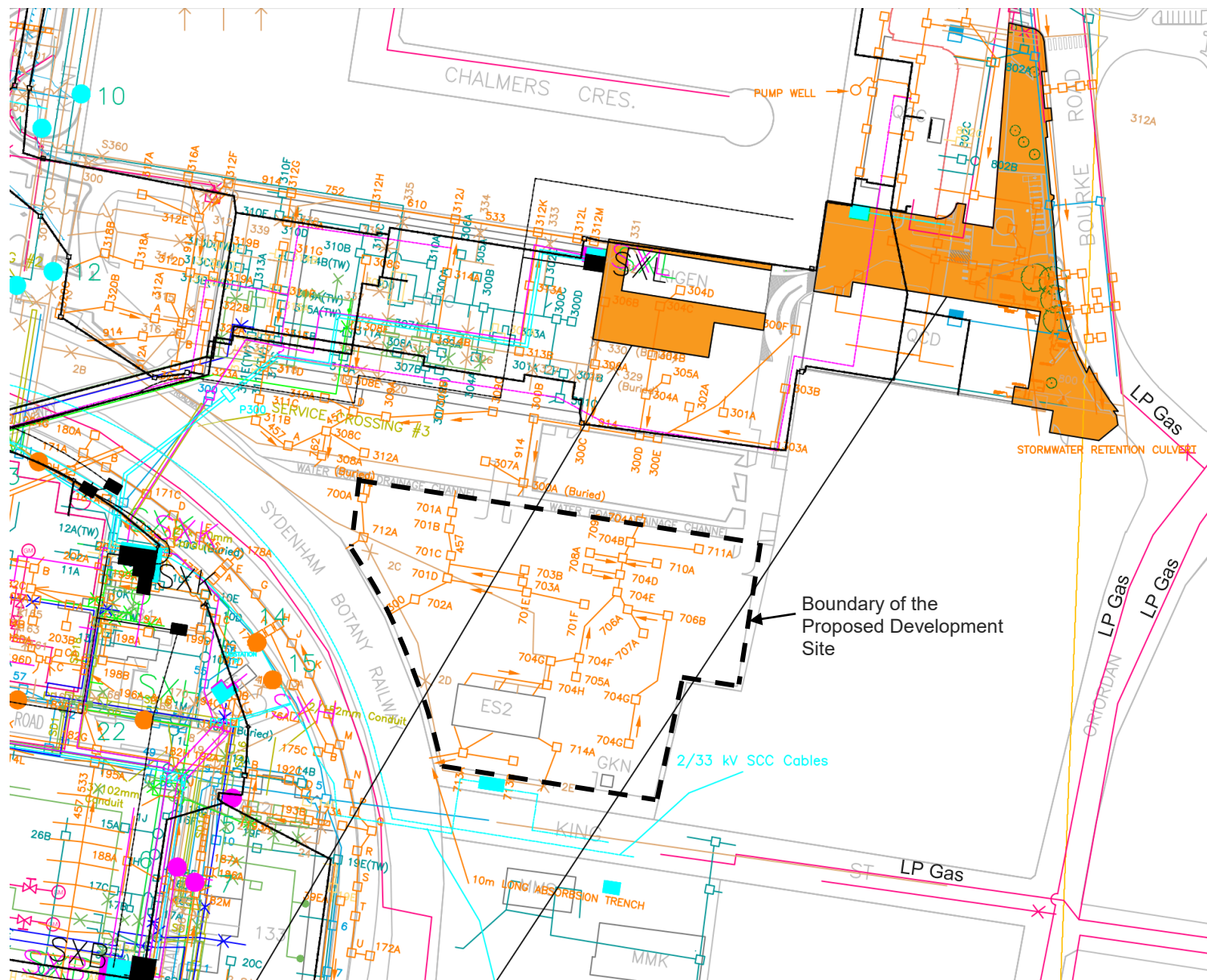
As Qantas has maintained an up-to-date underground services plan of the facility (and surrounding areas), no recommendations are made with regards to excavations at the Development site.





**Figure 4.2: Jemena 559 ST 3500 kPa Gas Pipeline Location in relation to 297 King Street, Mascot NSW (Qantas Flight Training Centre)**

14



**Figure 4.4 Underground Services Drawing – Wider Alexandria Area (Bourke Road and O’Riordan Street)**



## 5. Conclusions

The high-pressure dangerous goods and gas pipeline (the pipelines) review and consultation study conducted for the proposed Qantas flight training centre development (the Development), at 297 King Street, Mascot, has been assessed for the potential impact to the pipelines in the vicinity of the proposed Development.

It was identified that there are four high pressure dangerous goods or gas pipelines in the Mascot area which may be impacted by the proposed Development, these are:

- Mobil Oil Australia Pty Ltd (Mobil) – liquid pipeline (terminal & pipeline no longer in use);
- Qenos Pty Ltd (Qenos) – Ethylene gas pipeline
- Vopak Terminals Australia Pty Ltd (Vopak) – liquid pipeline from Vopak to Sydney Ports Bulk Liquids Berth; and
- Jemena – high pressure gas pipeline (No. 559 ST 3500 kPa), adjacent to Qantas Drive and the Sydenham to Botany Rail Corridor.

The Mobil and Vopak pipelines are all located around the specific Mobil and Vopak sites and are over 4 kms from the facility, hence, there will be no impact to these pipelines from the proposed Development. It is noted that the Mobil Terminal, located at Coal Pier Road, Banksmeadow, is no longer operational, hence, the pipeline from the Terminal to the Port Botany Bulk Liquids Berth is no longer used. However, the Jemena high pressure gas pipeline and Qenos Ethylene gas pipeline is located adjacent to the Sydenham to Botany Rail Corridor and within 32m of the closest point of the proposed Development to the pipeline. Consultation was held with Freyssinet, Qenos, Jemena and RiskCon Engineering Pty Ltd (the consultants engaged by APP & Qantas to review the impacts to the pipeline(s)) and it was identified that there would be no impact to the Jemena & Qenos pipelines as a result of the proposed Development (see **Appendices B & C**).

It is therefore concluded that there will be no impact to the high-pressure dangerous goods or gas pipelines in the Mascot area from the development of the Qantas Flight Training Centre at 297 King Street, Mascot.

## 6. RECOMMENDATIONS

Should it be identified that, during the ongoing development process, excavations or underground works are required outside the boundary of the Development site on the western or southern sides, it is recommended that consultation with Jemena and Qenos be implemented to ensure excavations remain clear of the Jemena 559 ST 3500 kPa pipeline and Qenos ethylene pipeline located adjacent to the Sydenham to Botany Rail Corridor.

## 7. REFERENCES

1. AS 2885 (various parts), Pipelines – Gas and liquid petroleum, Standards Association of Australia;
2. EGIG – Gas Pipeline Incidents, 10<sup>th</sup> Report of the European Gas Pipeline Incident Data Group (period 1970 – 2016), Document No. VA 17.R.0395 – March 2018.

## 8. GLOSSARY & ABBREVIATIONS

TERM	DEFINITION
AS	Australian Standard
CAN	Consultants Advice Notice
DP	Deposited Plan
DPE	Department of Planning and Environment
EGIG	European Gas Pipeline Incident Data Group
Jetbase	Qantas leased land within the boundaries of Sydney Kingsford Smith Airport.
kms	kilometres
kPa	kilo Pascals
LGA	Local Government Area
m	metres
Mascot Campus	<p>Over 19ha of Qantas Airways Limited controlled land in Mascot to the north of Sydney Kingsford Smith Airport consisting of freehold and leased land.</p> <p>The following lots are owned by Qantas: Lot 133 DP 659434; Lots 4 &amp; 5 DP 38594 Lot 23 DP 883548; Lots 1 &amp; 2 DP 738342; Lot 3 DP 230355; Lot 4 DP 537339; Lots 2 &amp; 4 DP 234489; Lot 4 234489; Lot 1 DP 81210; Lot 1 DP 202093; Lot 1 DP 721562; Lot 2 DP 510447; Lot 1 DP 445957; Lot B DP 164829 and Lot 1 DP 202747 and equates to 16.5ha of land.</p> <p>The following lots are leased by Qantas: Lot 14 DP 1199594 and Lot 2 DP 792885 and equates to 2.7ha of land.</p>
SEARs	Secretary's Environmental Assessment Requirements
Sydney Gateway Project	A RMS Project including a road and rail component that is intended to increase capacity and improve connections to the ports to assist with growth in passenger, freight and commuter movements across the region, by expanding and improving the existing road and freight rail networks.
The Project	The construction of a new Flight Training Centre and ancillary uses to replace the existing facility on the Qantas Jetbase that will be impacted by RMS' Sydney Gateway Project.
The Site	Qantas Airways Limited owned land in Mascot to the north of Sydney Kingsford Smith Airport consisting of Lots 2 & 4 DP 234489, Lot 1 DP 202747, Lot B DP 164829 and Lot 133 DP 659434. Current site improvements include including at-grade car parking for Qantas staff, an industrial shed to store spare aviation parts, a substation, a disused gatehouse, a Sydney Water Asset with two driveways over it, the Qantas catering facility and Qantas tri-generation plant.



## APPENDIX A

### “DIAL BEFORE YOU DIG” RESPONSE FROM FREYSSINET

**DANGER**

**High Pressure Pipeline's or HV Cables is in the vicinity of your proposed works**

Freyssinet Australia Pty Ltd patrol and monitor High Pressure Multi Products Pipelines on behalf of Mobil Oil Australia PTY LTD, Qenos Pty Ltd, Vopak Terminal Sydney Pty Ltd.

**Please Note** Our clients do not allow us to provide drawings until works are thoroughly investigated to ensure the continued safe operation of the high pressure multi products pipelines.

#### **WARNINGS:**

- All information provided to you is **ONLY VALID FOR 30 DAYS** from the date of issue
- Pipelines/Services must be located by Freyssinet.
- A Site Visit and Locating (by wand) of the pipeline/services will be performed at **NO COST** to you. Please allow up to 3 working days when booking in a site visit

Please contact our Pipeline Patrolman Mr Ryszard Juszcak between 8:00AM to 4:00PM on Mobile 0438 168 750 to ensure works remain clear of the services maintained by Freyssinet Australia Pty Ltd at this location.

No works are to be carried out within 5 metres of the High Pressure Multi Products Pipelines without the approval of the Pipelines Owners.

The High Pressure Mobil/Qenos/Vopak High Pressure Multi Products Pipelines or Orica HV Cables. are located in this area.  
If required a site meeting should be held with you to show you the location of the pipeline.

At this site meeting Freyssinet Australia Pty Ltd will carry out pipe location of the pipeline for you and advise you of the pipeline requirements.  
This pipe location will record approximate locations and depths of the Mobil/Qenos/Vopak High Pressure Multi Products Pipelines for you.

Any required works to be carried out within 5 metres of the High Pressure Mobil/Qenos/Vopak Pty Ltd will require approval from the pipeline owners and Freyssinet Australia Pty Ltd will assist you with these requirements.

All approved works carried out within 5 metres of the High Pressure Multi Products Pipelines Mobil/Qenos/Vopak must be monitored on site by the Pipeline Owners or Freyssinet Australia Pty Ltd.

Please contact our Pipeline Patrolman Mr Ryszard Juszcak between 8:00AM to 4:00PM on Mobile 0438 168 750 for more details.







Or email [rjuszcak@freyssinet.com.au](mailto:rjuszcak@freyssinet.com.au)

Kind Regards,

Terence Tjandra BE (Civil)  
Project Engineer, Freyssinet Technical Services  
Mobile: 0438 091 924

## APPENDIX B

### FREYSSINET PATROLMAN RESPONSE TO PIPELINE LOCATION QUERIES





Re: Development Qantas Flight Training Centre 297 King Str...

File

Message

Help

 Tell me what you want to do





Fri 24/05/2019 14:53


Mark.Walker@qenos.com

Re: Development Qantas Flight Training Centre 297 King Street Mascot NSW 2020

To

 Steve Sylvester

 You replied to this message on 25/05/2019 13:47.



Hi Steve,

I have reviewed the pipeline location with regards to the proposed Qantas Flight Training Centre as advised by our contractor Freyssinet.

I note that the construction at the Qantas development site will not occur within the Ethylene Pipeline corridor or pipeline easement. It is physically on the other side of the rail corridor.

Therefore there will be no impact on the Ethylene Pipeline as a result of the proposed Qantas development..

Based on this, Qenos as Owner of the Ethylene Pipeline gives its clearance for the Qantas facility construction.

Regards,







Mark Walker

mob: 0418 522 326

Off Site Storages and Pipelines Manager,  
Olefines Plant Botany


16-20 Beauchamp Road  
Matraville, NSW 2036

Qenos





Re: DBYD JOB:15698586 SEQ:79884857 - Qantas Flight Training Centre...

File Message Help Tell me what you want to do



Thu 14/02/2019 11:52  
**JUSZCZAK Ryszard** <rjuszczak@freysinet.com.au>  
Re: DBYD JOB:15698586 SEQ:79884857 - Qantas Flight Training Centre 297 King Street Mascot NSW

To  Steve Sylvester  
 You replied to this message on 14/02/2019 11:54.

Hi Steven,

I already gave you clearance in this area and over there is only Qenos pipe. No Vopak or Mobile pipelines in this location.

Sent from my iPad  
Regards

Ryszard JUSZCZAK - Pipeline Services Technician  
Freysinet Australia Pty Ltd

Level 3,13-15 Lyonpark Road,Macquarie Park NSW 2113  
Mob: 0438 168 750  
[www.freysinet.com.au](http://www.freysinet.com.au)

On 12 Feb 2019, at 17:40, Steve Sylvester <[steve.sylvester@riskcon-eng.com](mailto:steve.sylvester@riskcon-eng.com)> wrote:

Ryszard,  
I note in the "standard" e-mail from Terence, there is an indication that there could be liquid pipelines from Mobil and Vopak in the Mascot/Botany Area, could you let me know if pipelines from these facilities are installed along the rail corridor or are they located in the port area near the Vopak/Mobil sites.  
Many Thanks  
Steve

**From:** JUSZCZAK Ryszard <[rjuszczak@freysinet.com.au](mailto:rjuszczak@freysinet.com.au)>

**Sent:** Tuesday, 12 February 2019 14:22

**To:** Steve Sylvester <[steve.sylvester@riskcon-eng.com](mailto:steve.sylvester@riskcon-eng.com)>

**Subject:** Re: DBYD JOB:15698586 SEQ:79884857 - Qantas Flight Training Centre 297 King Street Mascot NSW 2020

Hi Steve,

Your proposed Qantas Flight Training Centre is clear with Freysinet.  
Qenos HP Gas Pipeline is on other side of a railway or partially inside.  
Any changes to proposed location please do not hesitate to contact me again.

Sent from my iPad  
Regards

Ryszard JUSZCZAK - Pipeline Services Technician  
Freysinet Australia Pty Ltd

Level 3,13-15 Lyonpark Road,Macquarie Park NSW 2113  
Mob: 0438 168 750  
[www.freysinet.com.au](http://www.freysinet.com.au)

On 11 Feb 2019, at 16:08, Steve Sylvester <[steve.sylvester@riskcon-eng.com](mailto:steve.sylvester@riskcon-eng.com)> wrote:

Ryszard,

Thanks for your reply to my call. Based on the e-mail below I understand there are potentially three pipelines operated by Qenos, Mobil and Vopak in the Botany/Mascot area. The site where the works are proposed is shown on the attached drawing (297 King Street, Mascot). I have also included a Google Area Map showing the site location with regards to the rail corridor and King Street.

I note in the e-mail below that any work within 5m of the proposed Vopak/Qenos/Mobil pipelines will require monitoring by the pipeline owners or Freysinet. However, I believe that based on the Qantas Flight Training Centre Project, all construction will be well clear of the pipelines and certainly within the site fence indicated, there will be **no work in the rail corridor**.







If you could let me know if there are any concerns regarding the pipelines, based on the proposed project, so I can include this in my response to the Department of Planning and Environment, who have raised queries regarding these pipelines.

If you need any more information please call me direct on 0411 659 309 or send me an e-mail request and I will respond with further information.


Regards  
Steve

# APPENDIX C




## JEMENA RESPONSE TO QUERIES REGARDING THE 559 ST 3500 kPa HIGH PRESSURE GAS PIPELINE







RE: Qantas Flight Training Centre - Message (HTML)

File
Message
Help
Tell me what you want to do



Mon 18/02/2019 08:10  
**Danny Guerrero** <Danny.Guerrera@jemena.com.au>  
RE: Qantas Flight Training Centre

To  Steve Sylvester  
Cc  Terrett, Michael;  Peter Smith

Action Items
+ Get more add-ins

Hi Steve

In reference to your email dated the 16<sup>th</sup> of February 2019, and the proposed training centre near the Jemena Gas Networks main.



In reference to your plan, Jemena advises that while at this time Jemena Networks has 559mm primary gas main in the subject area we do give permission for works to proceed.

In view of the close proximity and size of the works, as a minimum requirement we require a separation from edge of excavation to the gas main of 1m. Further, shoring may be required to stabilise the zone of influence and to minimise risk to the pipeline.

Duty of care exists to ensure there is no compromise to the integrity of the Jemena asset during this procedure due to the existing ground conditions that currently exist. Of special note please make sure that no loadings are applied to the gas main which includes all truck and excavator logistics.

It is imperative that a pipeline patrol officer be present to supervise all works in the locality of interest to Jemena. Contact should be made with our pipeline coordinator of [Infrastructureprotection@jemena.com.au](mailto:Infrastructureprotection@jemena.com.au) to arrange accordingly.

Regards  
**Danny Guerrero**  
Property Coordinator  
Property Team  
**Jemena**  
Level 12, 99 Walker Street, North Sydney 2060  
PO Box 1220, North Sydney 2060  
(02) 9867 7149  
[danny.guerrera@jemena.com.au](mailto:danny.guerrera@jemena.com.au) | [www.jemena.com.au](http://www.jemena.com.au)

From: Steve Sylvester <steve.sylvester@riskcon.com.au>  
Sent: Monday, 18 February 2019 8:10 AM  
To: Danny Guerrero <Danny.Guerrera@jemena.com.au>  
Subject: RE: Qantas Flight Training Centre - Message (HTML)