Caltex Australia Petroleum Pty Ltd 14-Nov-2019

Modification Report

Kurnell Refinery Conversion Project SSD 5544 Modification 6

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Client: Caltex Australia Petroleum Pty Ltd

ABN: 17000007876

Prepared by

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Job No.: 60584702

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Quality Information

Document	Modification Report
Ref	60584702
Date	14-Nov-2019
Prepared by	Liam Buxton
Reviewed by	William Miles

Revision History

Rev	Revision Date	Details	Authorised		
			Name/Position Signature		
В	14-Nov-2019	Final	William Miles CEnvP - IA Associate Director - Environment	YM	

Statement of Validity

Submission of Modification Report

Prepared as Modification to Development Consent SSD 5544 under S.96 (1A) of the *Environmental Planning and Assessment Act 1979.*

Submission of Environmental Impact Statement prepared by:

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In respect of:

Applicant and Land Details

Applicant	Caltex Refineries (NSW) Pty Ltd 2 Solander Street, Kurnell, NSW, 2231
Subject	Caltex is seeking consent to modify the Kurnell Refinery Conversion Project (SSD 5544) under Part 4 of the <i>Environmental Planning and Assessment Act 1979.</i>
Project Summary	The proposed modification proposes to amend Condition B7B of the Conditions of Consent (as modified) to extend the duration of ACS Management Works from 30 November 2019 to 31 March 2020 (SSD 5544 MOD6)
Lot and DP	Lot 56/ DP 908; Lot D/ DP 361103; Part Lot 123/ DP 8135; Lot 62/ DP 908; Lot G/ DP 361103; Part Lot 125/ DP 8135; Part Lot 12/ DP 7632 ; Lot K/ DP 362655; Lot 77/ DP 9564; Lot 190/ DP 7632; Lot 570/ DP 752064; Lot 81/ DP 9564; Lot 44/ DP 8135; Lot 1/ DP 1044690; Part Lot 2/ DP 215818; Lot 46/ DP 8135; Lot 283 / DP 752064; Lot B/ DP 338897; Lot 78/ DP 8135; Lot 57/ DP 908; Part Lot F/ DP 361103; Part Lot 122/ DP 8135; Part Lot 11/ DP 7632; Lot J/ DP 362655; Part Lot 124/ DP 8135; Lot 189/ DP 7632; Lot 48/ DP 9564; Lot 43/ DP 8135; Lot 24/DP 776328; Lot 78/ DP 9564 ; Lot 45/ DP 8135; Lot 25 / DP 776328; Part Lot 1/ DP 215818; Part Lot 77/ DP 8135; Lot 1 / DP 132055; Lot 1/ DP 215819; Lot 79/ DP 8135.

Modification Report

A Modification Report is attached. The Modification Report assesses the likely environmental impacts of the modification under Section 4.12(8) of the *Environmental Planning and Assessment Act 1979*.

Declaration

I certify that I have prepared the contents of this Modification Report in accordance with the requirements of the *Environmental Planning and Assessment Act 1979* and *Environmental Planning and Assessment Regulation 2000* and that, to the best of my knowledge, the information contained in this report is not false or misleading.

Signature:

Date: November 2019

Name:

William Miles

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Limitations

AECOM Australia Pty Ltd (AECOM) has prepared this Modification Report in accordance with the usual care and thoroughness and based on generally accepted practices and standards at the time it was prepared. No other warranty, expressed or implied, is made as to the professional advice included in this Modification Report.

This Modification Report has been produced in accordance with the stipulations in the *Environmental Planning and Assessment Act 1979* and the *Environmental Planning and Assessment Regulation* 2000.

Where this Modification Report indicates that information has been provided to AECOM by third parties, AECOM has made no independent verification of this information except as expressly stated in the Modification Report. AECOM assumes no liability for any inaccuracies in or omissions to that information.

This Modification Report was prepared in November 2019 and is based on the conditions encountered and information reviewed at the time of preparation. AECOM disclaims responsibility for any changes that may have occurred after this time.

This Modification Report should be read in full. No responsibility is accepted for use of any part of this Modification Report in any other context or for any other purpose.

Abbreviations

Acronym	Definition
AS/NZS	Australian / New Zealand Standard
ABN	Australian Business Number
ACM	Asbestos Containing Material
ACS	Asbestos Contaminated Soil
ACT	Australian Capital Territory
AMP	Asbestos Management Plan
ANZECC	Australia and New Zealand Environment and Conservation Council
AQMP	Air Quality Management Plan
BWMP	Biodiversity and Weed Management Plan
CBD	Central Business District
CEMP	Construction Environmental Management Plan
CMP	Contamination Management Plan
CSIRO	Commonwealth Scientific and Industrial Research Organisation
dB	decibel
DECC	NSW Department of Environment and Climate Change
DEMP	Demolition Environmental Management Plan
DMP	Demolition Management Plan
DNVMP	Demolition Noise and Vibration Management Plan
DoE	Department of Environment
DPE	NSW Department of Planning and Environment
DPIE	NSW Department of Planning, Industry and Environment
DPI	NSW Department of Primary Industries
DWRMP	Demolition Waste and Resource Management Plan
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EMR	Environmental Management Representative
EMS	Environmental Management System
ENM	Excavated Natural Material
EP&A Act	NSW Environmental Planning and Assessment Act 1979
EPA	Environment Protection Authority
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
EPL	Environment Protection Licence
EPI	Environmental Planning Instruments
ERA	Environmental Risk Assessment
ESA	Environmental Site Assessment
ESD	Ecologically Sustainable Development

Acronym	Definition
GDE	Groundwater Dependent Ecosystems
GWMP	Groundwater Management Plan
На	Hectares
HIA	Heritage Impact Assessment
HMS	Heritage Management Strategy
ICNG	Interim Construction Noise Guideline
IPC	NSW Independent Planning Commission
ISEPP	State Environmental Planning Policy (Infrastructure)
ISO	International Organisation for Standardisation
km²	kilometres squared
Leq	Equivalent noise level
LDAR	Leak Detection and Repair
LEP	Local Environment Plan
LGA	Local Government Area
LNAPL	Light Non-Aqueous Phase Liquid
LPG	Liquefied Petroleum Gas
m	metres
m ³	metres cubed
m/s	metres per second
mbgl	metres below ground level
MHF	Major Hazard Facility
min	minutes
MNES	Matter of National Environmental Significance
MOD	Modification
NEPM	National Environment Protection Measure
NO _x	Oxides of Nitrogen
NOW	NSW Office of Water
NPWS	National Parks and Wildlife Service
NSW	New South Wales
NVMP	Noise and Vibration Management Plan
OEH	Office of Environment and Heritage
OEMP	Operational Environmental Management Plan
OWSS	Oily Water Sewer System
PASS	Potential Acid Sulfate Soils
PHA	Preliminary Hazard Analysis
POEO Act	Protection of the Environment Operations Act
PPE	Personal Protective Equipment

Acronym	Definition
PRP	Pollution Reduction Program
SEE	Statement of Environmental Effects
SEPP	State Environmental Planning Policy
SMP	Stormwater Management Plan
SSC	Sutherland Shire Council
SSD	State Significant Development
SSLEP	Sutherland Shire Local Environment Plan
SWMP	Soil and Water Management Plan
t	tonne
TMP	Traffic Management Plan
ТРН	Total Petroleum Hydrocarbons
TRH	Total Recoverable Hydrocarbons
VENM	Virgin Excavated Natural Material
VOC	Volatile Organic Compounds
WHS	Work Health and Safety
WMS	Waste Management System
WRMP	Waste and Resource Management Plan
WWTP	Wastewater Treatment Plant

Executive Summary

Caltex Australia Petroleum Pty Ltd currently operates the Kurnell Terminal (the 'Site') on the southern side of Botany Bay, in Kurnell, NSW (refer to **Figure 1**). Between 1956 and 2014 the Site was used as both an oil refinery and a fuel terminal. In July 2012, Caltex announced that it would progress with converting the refinery to a finished product terminal (the 'Project'). In 2014 refining ceased and now the main purpose of the Site is as a fuel import terminal, although other ancillary and related operations also occur.

The process to convert the refinery to a terminal has involved a number of related activities including numerous upgrades and changes to operational infrastructure, as well as the removal and demolition of redundant infrastructure. This process is ongoing. The objective of the Project was and remains "*to establish a viable, safe, reliable and sustainable finished product import terminal at Kurnell*". This includes providing a safe working environment at the terminal and also ensuring that the operation is not burdened by unnecessary costs.

Caltex received development consent to complete the conversion works under SSD 5544. Caltex has modified SSD 5544 five times to complete the various demolition works. These modifications include the main demolition works (SSD 5544 MOD1), the Asbestos Contaminated Soil (ACS) management works (SSD 5544 MOD2), Tank 101 demolition works (SSD 5544 MOD3), a modification to extend the timing of demolition works (SSD 5544 MOD4) and ACS containment cell and CWO pipeline modification works (SSD 5544 MOD5).

Following ongoing works to complete the Project, Caltex are seeking to modify the development consent for the Project. The proposed modification involves an amendment of Condition B7B of the Conditions of Consent (as modified) to extend the duration of ACS management works from 30 November 2019 to 31 March 2020. Caltex is seeking approval for this change (MOD6) as a modification to development consent SSD 5544 under Section 4.55 (1A) of the *Environmental Planning and Assessment Act 1979*. This modification is sought as the works are a continuation of the conversion project, are likely to be the same scale as previously consented and would only result in minimal environmental impacts. The end result of these works would be substantially the same development as the approved Project under SSD 5544 (as modified).

In order to inform this Modification Report consultation with the NSW Department of Planning, Industry and Environment, Sutherland Shire Council and NSW Environment Protection Authority was completed. A high-level assessment of potential impacts relating to the proposed modification was undertaken. The potential impacts associated with the proposed modification are considered to be of the same scale as those that have been previously approved under SSD 5544 (as modified). The relevant management and mitigation measures that were consented for the conversion works (SSD 5544), demolition works (SSD 5544 MOD1) and ACS management works (SSD 5544 MOD2) would still apply. Whilst the duration of the ACS management works is proposed to be extended, the magnitude of the potential impacts would not change, and the existing agreed management and mitigation measures (in relation to the lack of complaints) suggest that the measures being implemented for the ACS management works are effective.

The proposed modification would support the objectives of the Project by supporting Caltex in operating a viable finished products fuel terminal at Kurnell, capable of providing a safe, reliable and sustainable supply of petroleum fuels to NSW and the ACT. This Modification Report has concluded that the modification works should proceed because they would:

- Result in no long-term adverse impacts to the environment or local community;
- Ensure the primary objectives of the Project continue to be achieved; and
- Satisfy the principles of Ecologically Sustainable Development as described in the *Environmental Planning and Assessment Regulation 2000.*

On the basis of the discussion within this modification report, the proposed modification is considered to be justified.

1.0 Introduction

1.1 Overview

Caltex Australia Petroleum Pty Ltd (Caltex) currently operates the Kurnell Terminal ('the Site') on the southern side of Botany Bay, in Kurnell, NSW (refer to **Figure 1**). Between 1956 and 2014 the Site was used as both an oil refinery and a fuel terminal. In July 2012, Caltex announced that it would progress with converting the refinery to a finished product terminal (the 'Project'). In 2014 refining ceased and now the main purpose of the Site is as a fuel import terminal, although other ancillary and related operations also occur.

The process to convert the refinery to a terminal has involved a number of related activities including numerous upgrades and changes to operational infrastructure, as well as the removal and demolition of redundant infrastructure. This process is ongoing. The objective of the Project was and remains "to establish a viable, safe, reliable and sustainable finished product import terminal at Kurnell". This includes providing a safe working environment at the terminal and ensuring that the operation is not burdened by unnecessary costs.

The Project has been divided into two phases:

- 1. Converting infrastructure to allow the Site to operate as a terminal and shutdown the refinery (the conversion works); and
- 2. Demolition and removal of redundant infrastructure (the demolition works).

Caltex has received development consent to complete the conversion works under SSD 5544. Caltex has modified SSD 5544 five times to complete the various demolition and conversion works.

Caltex is now proposing to modify Condition B7B of the Conditions of Consent (as modified) to extend the duration of ACS management works from 30 November 2019 to 31 March 2020. This change (SSD 5544 MOD6) would be modification to development consent SSD 5544 under Section 4.55 (1A) of the *Environmental Planning and Assessment Act 1979*. This modification is sought as the works are a continuation of the conversion project and would only result in minimal environmental impacts. The end result of these works would be substantially the same development as the approved Project under SSD 5544 (as modified).

This Modification Report has been prepared to support the application for the proposed modification. In line with the requirements of Section 4.55 of the EP&A Act, this Modification Report provides the information required by clause 115 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation). This Modification Report considers a range of relevant environmental, safety, legal, social and economic impacts related to the proposed modification. No additional environmental impacts are expected as a result of this modification.



KEY

 The Site
 Towra Point Aquatic Reserve
 Caltex Land Ownership
 National Park
 ACS Containment Cell
 Towra Point Nature Reserve Works Area



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sheet 01 of 01	COORDINATE SYSTEM GDA 1994 MGA Zone 56
FIGURE 1 - THE SITE	

SSD 5544 MODIFICATION 6

CLIENT CALTEX PETROLEUM AUSTRALIA PTY LTD					
DRAWN	CEP	DATE 12/11/2019	G015	REV	Project
CHECK		DATE	0010	01	0000-1102

1.2 Proponent and Team

The proponent for the proposed modification is Caltex Refineries (NSW) Pty Ltd, 2 Solander Street Kurnell, NSW 2231; with the primary contact being Craig Collard, Demolition Manager.

This Modification Report has been prepared by AECOM Australia Pty Ltd (AECOM) ABN 20 093 846 925, Level 21, 420 George Street Sydney, 2000, Tel: (02) 8934 0000. The environmental planning and assessment coordinator is William Miles, CEnvP IA and Associate Director - Environment.

1.3 **Project Need and Alternatives**

1.3.1 Background

From 1956 to 2014 the Site operated as an oil refinery and terminal. The development consent to convert the Site to a fuel import terminal was granted in January 2014 (Application Number SSD 5544). Since 2014 when the conversion works commenced and refining at the Site ceased, the Site is now only managing finished petroleum products and is referred to as the Kurnell Terminal.

As part of SSD 5544, a number of previous Development Applications (DAs) for the Site were surrendered. SSD 5544 is therefore now the dominant consent for the Site. SSD 5544 has since been the subject of five modifications. These modifications have been, in order:

- Modification 1 Demolition works (SSD 5544 MOD1) consented 10 August 2015;
- Modification 2 Asbestos contaminated soil (ACS) management works (SSD 5544 MOD2) consented 27 October 2017;
- Modification 3 Tank 101 demolition (SSD 5544 MOD3) consented 17 November 2017;
- Modification 4 Timing of Demolition Works (SSD 5544 MOD4) consented on 9 August 2018; and
- Modification 5 Increased the capacity of the ACS containment cell, extended the duration of ACS management works and allowed for the retention of a portion of the cooling water outlet pipeline beneath Prince Charles Parade and adjacent dune area of Silver Beach (SSD 5544 MOD5) consented on 10 July 2019.

These various works all relate to the objective of the Project to establish a viable, safe, reliable and sustainable finished product import terminal at Kurnell.

1.3.2 Need and Objectives of the Project

As noted within the Environmental Impact Statement (EIS) for SSD 5544, "Caltex initiated a review of its refining operations in May 2011". In summary, this review concluded that "the Caltex Kurnell and Lytton refineries in their current configuration are relatively small and are disadvantaged compared to the modern, larger scale and more efficient refineries in the Asian region. This disadvantage is exacerbated by the impact of the ongoing strength of the Australian dollar, lower Caltex refining margins and increasing costs on the 'as is' refining business. As a result of the refining review, Caltex is proposing to close the Kurnell Refinery and convert the Site to a petroleum fuels import (finished product) terminal'.

Whilst it was concluded that the refinery business is no longer viable at Kurnell, the EIS also stated that the Site is at the hub of Caltex's supply chain for NSW and ACT and therefore needed to be retained as a finished product terminal to receive and distribute refined petroleum product. This needs case for the Project (SSD 5544) supported its objective which was:

"To ensure that Caltex's operations within Australia remain viable whilst ensuring that the company can provide a safe, reliable and sustainable supply of petroleum fuels to NSW and the ACT."

1.3.3 Need and Objectives of the Modification

The proposed modification involves an amendment of Condition B7B of the Conditions of Consent (as modified) to extend the duration of ACS Management Works from 30 November 2019 to 31 March 2020. The proposed modification relates directly to the ACS management Works, which were consented under SSD 5544 MOD2.

An amendment of Condition B7B is required to allow the ACS management works to be completed within an approved timescale. Originally the ACS management works were expected to be completed by 30 April 2019. This deadline was conditioned under SSD 5544 MOD2. The deadline was extended to 30 November 2019 under SSD 5544 MOD5.

Until recently it was expected that this revised deadline would be met. The works to move ACS from the Site to the containment cell have now been completed and the initial capping layers for the cell have been put in place, effectively closing the cell. The next capping layer involves placing an HDPE layer over the whole of the cell and welding it to the HDPE liner layers thereby fully containing the waste within HDPE and other layers. This work can only be completed by specialist contractors. Due to delays on another project the selected contractors cannot complete the necessary HDPE liner work until late November 2019 which in turn means that the remaining civil works to cap the containment cell will not be completed until December or January (weather depending).

Consequently, the ACS works will take longer than expected resulting in the works falling behind the anticipated program. It is likely that the cell will be closed before March 2020, however Caltex believes that this date would provide enough contingency to ensure that the works can be completed.

1.4 Section 4.55(1A) Modification

This Modification Report has been prepared to support the modification of Condition B7B under SSD 5544 to increase the ACS Management Works program until 31 March 2020. In line with the requirements of Section 4.55 (1A) of the EP&A Act, this Modification Report provides the information required by clause 115 of the EP&A Regulation. Section 4.55(1A) of the EP&A Act states that a consent authority may modify a development consent if '*it is satisfied that the development to which the consent as modified relates is substantially the same development as the development for which the consent was originally granted and before that consent as originally granted was modified (if at all)*'. The development, as proposed to be modified, is substantially the same development as that originally approved in that:

- The primary function and purpose of the approved liquid fuel terminal would not change as a result of the proposed modification;
- The approved fuel storage capacity of the liquid fuel terminal would remain unchanged as a result of the proposed modification; and
- Any potential environmental impacts would be minimal and appropriately managed through the existing or modified conditions of consent.

As demonstrated within this Modification Report, the proposed modification is likely to result in impacts which are of 'minimal environmental impact' (i.e. impacts that are expected to be within the same scale as those that have been previously approved and would result in "very small" or "negligible" overall environmental impacts¹). The relevant management and mitigation measures that were approved for the Conversion Project (SSD 5544 as modified) would continue to apply should the modification be consented.

1.4.1 Compliance with the EP&A Regulations 2000

Clause 115 of the EP&A Regulation outlines the specific information that must be included within a modification application. The relevant clauses in Section 115 and where these have been addressed in this Modification Report are shown below in **Table 1**.

Table 1:	Clause	115	requirements
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Clause	Requirement	Document Reference
1(a)	The name and address of the applicant.	Section 1.2
1(b)	A description of the development to be carried out under the consent (as previously modified).	Section 3.0

¹ King, Markwick, Taylor & Ors v Bathurst Regional Council [2006] NSWLEC 2005

Clause	Requirement	Document Reference
1(c)	The address and formal particulars of title, of the land on which the development is to be carried out.	Section 2.1
1(d)	A description of the proposed modification to the development consent.	Section 4.0
1(e)	 A statement that indicates either: that the modification is merely intended to correct a minor error, misdescription or miscalculation, or that the modification is intended to have some other effect, as specified in the statement. 	Section 1.4 & 4.1
1(f)	A description of the expected impacts of the modification.	Section 7.0
1(g)	An undertaking to the effect that the development (as to be modified) will remain substantially the same as the development that was originally approved.	Section 1.4 & 4.1
1(h)	If the applicant is not the owner of the land, a statement signed by the owner of the land to the effect that the owner consents to the making of the application (except where the application for the consent the subject of the modification was made, or could have been made, without the consent of the owner).	Applicant (Caltex) is owner of land.
1(i)	A statement as to whether the application is being made to the Court (under Section 4.55) or to the consent authority (under Section 4.56), and, if the consent authority so requires, must be in the form approved by that authority.	Section 5.1.1
2	The notification requirements of clause 49 apply in respect of an application if the consent of the owner of the land would not be required were the application an application for development consent rather than an application for the modification of such consent	Not applicable
3	Additional requirements if an application for the modification of a development consent under Section 4.55 (2) or 4.56 (1) of the Act, if it relates to residential flat development.	Not applicable
4	Additional requirements if an application referred to in subclause (3) is also accompanied by a BASIX certificate.	Not applicable
5	The consent authority may refer the proposed modification to the relevant design review panel but not if the application is for modification of a development consent for State significant development.	Th Project is classified as SSD.
6	Additional requirements if an application for the modification of a development consent under Section 4.55 (1A) or (2) of the Act, if it relates to development for which the development application was required to be accompanied by a BASIX certificate or BASIX certificate.	Not applicable
7	Additional requirements relating to the appropriate BASIX certificate.	Not applicable
8	An application for modification of a development consent under Section 4.55 (1), (1A) or (2) or 4.56 (1) of the Act relating to land owned by a Local Aboriginal Land Council may be made only with the consent of the New South Wales Aboriginal Land Council.	Land is not owned by Local Aboriginal Land Council
9	The application must be accompanied by the relevant fee prescribed under Part 15.	Noted
10	A development consent may not be modified by the Land and Environment Court under Section 4.55 of the Act if an application for modification of the consent has been made to the consent authority under Section 4.56 of the Act and has not been withdrawn.	Not applicable.

1.5 Document Structure

Table 2 provides a summary of the document structure of this MR.

Table 2 Document structure

Executive Summary	This summarises the key issues and findings detailed in the other parts of the MR.
Introduction	Chapter 1 provides an outline of the approved Project including SSD 5544, SSD 5544 MOD1, SSD 5544 MOD2, SSD 5544 MOD3 and SSD 5544 MOD4, the need for the works, and the justification of the modification.
Project Location and Existing Environment	Chapter 2 provides a description of the location of the Lots and the Site and describes the existing environment.
Approved Project	Chapter 3 provides a description of the approved Project to date
Proposed Modification	Chapter 4 provides a detailed description of the proposed modification including a program of activities and how they interact with the approved Project.
Legislation, Planning Policy and Approvals	Chapter 5 discusses the relevant controlling legislation and policy.
Consultation	Chapter 6 summarises consultation with the relevant stakeholders.
Environmental Assessment	Chapter 7 provides a high level assessment of the potential environmental impacts related to the proposed modification as compared to the assessments within SSD 5544 MOD2.
Revised Management and Mitigation Measures	Chapter 8 discusses the environmental management and mitigation measures for the Project and any additions, amendments or deletions.
Revised Conditions of Consent	Chapter 9 identifies recommended additions, amendments or deletions to the existing conditions of consent.
Evaluation and Justification	Chapter 10 addresses the principles of Ecologically Sustainable Development (ESD) and the objects of the EP&A Act as well as providing a justification for the proposed modification.

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2.0Project Location and Existing Environment

2.1 The Site

Refinery and Terminal Operations 2.1.1

The Kurnell Terminal (the 'Site') is located on the Kurnell Peninsula within the Sutherland Shire Local Government Area (LGA), approximately 15 km south of Sydney's Central Business District. The Site is approximately 187 ha in size and consists of a number of lots and deposited plans. Between 1956 and 2014 the Site was used as both an oil refinery and a fuel terminal.

Kurnell Refinery was the largest oil refinery in NSW and the second largest of the seven oil refineries in Australia, based on crude oil processing capacity. It operated from 1956 to 2014. As consented by SSD 5544, refinery operations ceased in Q4 of 2014. Caltex has modified SSD 5544 five times to complete the various demolition works. A description of these modifications is provided in Section 3.0 of this Modification Report. Caltex now only import finished petroleum products (gasoline, jet fuel and diesel) through the two fixed berths (K1 and K2) at the existing wharf and the additional sub berth (K3) located in Botany Bay. These products are stored in existing and converted tanks.

2.1.2 Site History

Caltex requested permission to establish a major oil refinery in NSW in 1951. Permission was granted by Cumberland County Council in June 1952 and the facility was commissioned in 1956. Since commissioning, the Site has been subject to various development applications (DAs).

The Site (refer to Figure 1) is legally described under the following Lot and Deposited Plan (DP) numbers:

Lot 56/ DP 908

Lot 62/ DP 908

Lot 12/ DP 7632

Lot 190/ DP 7632

Lot 44/ DP 8135

Lot 46/ DP 8135

Lot 78/ DP 8135

Lot 122/ DP 8135

Lot 124/ DP 8135

Lot 48/ DP 9564

Lot 78/ DP 9564

Lot 1/ DP 215819

Part Lot 1/ DP 215818

- Lot D/ DP 361103 •
- Lot G/ DP 361103 .
- Lot K/ DP 362655 •
- Lot 570/ DP 752064 •
- Lot 1/ DP 1044690 •
- Lot 283 / DP 752064 •
- Lot 57/ DP 908 •
- Lot 11/ DP 7632 •
- Lot 189/ DP 7632
- Lot 43/ DP 8135 •
- Lot 45/ DP 8135 •
- Lot 77/ DP 8135 • Lot 79/ DP 8135 •

- Lot 123/ DP 8135 •
- Lot 125/ DP 8135
- Lot 77/ DP 9564 •
- Lot 81/ DP 9564 •
- Part Lot 2/ DP 215818 •
 - Lot B/ DP 338897

•

- Lot F/ DP 361103 •
- Lot J/ DP 362655 •
- Lot H/ DP 362655
- Lot 24/DP 776328 •
- Lot 25/ DP 776328 •
- Lot 1 / DP 132055

2.1.3 **Existing Site Environment**

The majority of the Site is zoned as Zone IN3 Heavy Industrial under the Sutherland Shire Local Environment Plan 2015 ('the LEP'); with ancillary components being zoned SP2 Pipeline. The Site was highly disturbed during the construction and operation of the refinery. As a result, there are few areas of ecological significance within the Site boundary. The refinery site is listed as an 'archaeological site' under the LEP as the 'Australia Oil Refinery'. The terminal operates under an Environment Protection Licence (EPL No 837), which outlines requirements with regards to noise, air quality, water quality, ground investigations, monitoring and reporting.

2.2.1 Surrounding Land Uses

Land uses surrounding the Site are as follows:

- To the east and south of the Site is the southern portion of the Kamay Botany Bay National Park;
- To the north-west of the Site, is the village of Kurnell and Marton Park;
- To the west of the Site is Quibray Bay; and
- Land to the south west has the following land use zonings under the LEP:
 - IN1General Industrial;
 - IN2 Light Industrial; and
 - SP2 Special Industrial.

2.2.2 Residential Areas

The village of Kurnell was proclaimed in 1933 and began to flourish following the construction of the Kurnell Refinery as many of the workers employed to construct the facility took up residence. Many of the workers who were employed to construct the refinery elected to stay in the area following the project's completion. The Site is immediately to the south of the Kurnell Village and the Kurnell Village lies immediately to the south of Botany Bay. In the 2016 census Kurnell was recorded to have a population of 2,267².

2.2.3 The Existing Road Network

The Kurnell Peninsula is serviced by Captain Cook Drive. Captain Cook Drive has one lane in each direction for the majority of its length and is the only access route to and from the peninsula.

2.2.4 Existing Environment Surrounding the Site

The general Site context in relation to Botany Bay and the wider area of Kurnell is shown in **Figure 1**. The Site is located at the eastern end of Kurnell Peninsula. The Site is bounded by the Kamay Botany Bay National Park to the south and east, Captain Cook Drive to the north west and St Joseph Banks Drive to the south west. The northern Site boundary is bordered by Solander Street, a small southern section of Cook Street, undeveloped land, light industry and residences adjoining the eastern side of Cook Street, and undeveloped land on the southern side of Reserve Road. Additional residences are located on the north west of the Site. Residential areas in Cronulla are located approximately 5 kilometres to the south west. Marton Park, comprising a developed recreational park and an undeveloped wetland area, is located on the northern side of Solander Street. Kurnell Substation is located on the western side of Captain Cook Drive opposite the Site. Kurnell Desalination Plant is located opposite the terminal on the western side of Sir Joseph Banks Drive. The former Continental Carbon Australia facility is located approximately 800 metres due south of the southern Site boundary and is surrounded by the National Park.

In addition to the Kamay Botany Bay National Park and Marton Park, there are a number of other reserves within proximity of the Site. Captain Cook's Landing Place Park is located approximately 500 metres to the north of the Site, while Bonna Point Reserve is located approximately 1.4 kilometres to the North West of the Site. Towra Point Nature Reserve (on Towra Point Peninsula) is a Ramsar Site located to the west of the site, on the other side of Quibray and Weeney Bays. Some of the Towra Point Nature Reserve extends as a vegetated fringe around the edge of Quibray Bay to an area close to the Site, north of Captain Cook Drive. Quibray Bay also includes Towra Point Aquatic Reserve which, whilst not part of Towra Point Nature Reserve and the Ramsar Site, forms part of the wider ecosystem associated with it. To the north of Kurnell is Botany Bay, a large bay with a diverse number of habitats and existing uses, and where the Georges and Cooks Rivers meet before joining the Pacific Ocean.

² <u>http://www.censusdata.abs.gov.au</u> – accessed 5 November 2019

3.0 Approved Project Description

This section of the Modification Report provides and overview of the key components of the approved Project (SSD 5544) (the conversion works), as well as the approved Project modifications, being:

- Main demolition works (SSD 5544 MOD1);
- Asbestos Contaminated Soil (ACS) management works (SSD 5544 MOD2);
- Tank 101 demolition works (SSD 5544 MOD3);
- Extend the timing of demolition works (SSD 5544 MOD4); and
- Increased capacity of the ACS containment cell, extended duration of ACS management works and retention of a portion of the cooling water outlet pipeline beneath Prince Charles Parade and the dune area of Silver Beach (SSD 5544 MOD5).

A full project description is available in the Kurnell Refinery Conversion EIS (URS, 2013), the Kurnell Refinery Demolition SEE (URS, 2014), the ACS Management Project SEE (AECOM, 2016), the Tank 101 Demolition SEE (AECOM, 2017), the Timing of Demolition Works Modification Application (AECOM, 2018), and the Kurnell Refinery Conversion Project SSD Modification 5 Report (AECOM, 2019).

3.1 The Approved Project

3.1.1 Conversion Works (SSD 5544)

The conversion works involved the conversion of tanks and installation of pumps and associated pipelines to allow for the cessation of refining at the Site and to allow for the expansion of terminal operations. These works occurred within the approved Project Area (referred to as the conversion works area).

Caltex received development consent for the conversion works in January 2014 (SSD 5544). Cessation of refinery operations occurred in Q4 of 2014. By the end of 2016 all of the works approved under this initial development consent for the Project were completed. The Kurnell Terminal uses part of the Site in a manner similar to the refinery, i.e. for the storage and distribution of petroleum products. The operation of the terminal continues to be managed in line with the EPL for the Site.

Under SSD 5544, the Kurnell Terminal has a nominal maximum storage capacity of 925 mega litres (ML) of refined product and by products.

The Kurnell terminal has consent to manage the following products:

- Gasoline Unleaded Petrol, Premium Unleaded Petrol and Super Premium Unleaded Petrol;
- Diesel; and
- Jet Fuel.

The terminal also has consent to manage the following by-products:

- Slop³; and
- Wastewater.

3.1.2 Demolition Works (SSD 5544 MOD1)

The main demolition works involve the following activities:

- Demolition, dismantling or removal of:
 - Refinery process units and associated infrastructure;

³ Slop or slop oil is a petrochemical industry term for recovered petroleum hydrocarbons in a refinery or terminal, which requires further processing to make it suitable for sale and use. It is a product which Caltex would either reprocess at a separate facility or sell to a customer.

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- Redundant tanks and associated infrastructure;
- Redundant pipeways and above and underground pipelines; and
- Redundant buildings and services.
- Associated civil works with the works outlined above;
- Waste management activities including concrete crushing; and
- Returning the works areas to ground level.

Caltex received development consent for the demolition works in August 2015.

This consent also included measures to manage the excavation, testing, storage and disposal of various soils at the Site, included hydrocarbon contaminated soils and ACSs, during the demolition works. Management and mitigation measures and the conditions of consent for the demolition works were agreed with various regulators and documented within the Demolition Environmental Management Plan (DEMP). The DEMP was agreed with a number of stakeholders.

3.1.3 ACS management works (SSD 5544 MOD2)

The Asbestos Contamination Soil (ACS) Management Project involves works to remove ACS from areas around the Site and place them in a containment cell in order to remove the hygiene risk and the *Work Health and Safety Regulation 2011* Exemption from the pipeways.

The ACS management works involve the following activities:

- Construction:
 - Additional soil sampling within the pipeways to confirm the waste classification of the soil prior to placement in the containment cell;
 - Construction of the containment cell base and leachate collection system in the proposed cell location;
 - Installation of ground water monitoring wells down gradient of the proposed cell location;
 - Excavation and transportation of ACSs directly to the containment cell location for emplacement;
 - Filling and compaction of the ACSs into the containment cell;
 - Verifying the removal of ACS from the pipeways; and
 - Closure of the containment cell.
- Operation:
 - Managing and monitoring the closed containment cell.

Caltex received development consent for the ACS management works in October 2017.

3.1.4 Tank 101 Demolition Works (SSD 5544 MOD3)

The Tank 101 demolition works involved the following activities:

- Disconnection of the tank from the existing pipework;
- Demolition and dismantling of Tank 101 and associated infrastructure;
- Associated civil works;
- Intermediate storage of the demolished material at the former Caltex Lubricant Oil Refinery (CLOR) prior to disposal or recycling; and
- Returning the works areas to ground level.

Caltex received development consent for the Tank 101 demolition works in November 2017 and the demolition is now complete.

The work was undertaken during daytime hours only and was managed as part of the demolition activities in accordance with the DEMP and associated sub-plans where applicable.

3.1.5 Timing of Demolition Works (SSD 5544 MOD4)

When operating as a refinery the Site contained a number of butane assets related to storage, transport and dosing. These assets were to be demolished and removed as part of the demolition works (SSD 5544 MOD1). However, following development consent to remove these assets Caltex initiated a review to see if they could be retained and reused.

After a detailed internal review, Caltex decided that retention and reuse of the butane assets was not a viable option and therefore confirmed that these assets were no longer required. The uncertainty regarding the future butane assets and the confirmation regarding their proposed removal resulted in a delay to demolition works program which required a modification to Condition of Consent B7A of SSD 5544 to enable their permissible removal.

The modification of Condition B7A involved an extension of Demolition Works by 10 months to 10 June 2019 and accommodated both the demolition of the butane assets as well as the remaining activities consented under MOD1.

Caltex received development consent for SSD 5544 MOD4 in August 2018.

3.1.6 ACS Containment Cell and CWO Pipeline Modification (SSD 5544 MOD5)

SSD 5544 MOD5 involved three main components:

- 1. An increase in the final capacity of the ACS containment cell (approved under SSD 5544 MOD 2) from 15,300 cubic metres (m³) to 22,240 m³;
- 2. An amendment of Condition B7B of the Conditions of Consent (as modified) to extend the duration of ACS management works from 30 April 2019 by six months to 30 November 2019; and
- 3. An amendment of Condition B16A of the Conditions of Consent to allow for the retention of portions of the CWO pipeline beneath the dune area of Silver Beach where it has been deemed not feasible to remove.

Caltex received development consent for SSD5544 MOD5 on 10 July 2019.

3.2 Program

The conversion works program, demolition works program, the ACS management works program and the Tank 101 demolition works program, including the revised timing of demolition and ACS management works is provided in **Table 3-1**.

Task	Indicative Date
Conversion works	
Detailed Engineering & Design Start	Mid 2012
Engineering & Design Completed	Second half 2013
Tank Conversions Start	Early 2014
Installation of Piping, Pumps and Associated Infrastructure	Early 2014
Construction on Piping Completed	Mid 2014
Kurnell Refinery Shutdown	End 2014
Kurnell Refinery Decommissioning Process Units	First half 2015
Kurnell Refinery Decommissioning Tanks and lines	2015 to Mid 2016
Continued Tank Conversions	End 2014 to End 2016
CONVERSION TO TERMINAL COMPLETED	December 2016

 Table 3
 Conversion, Demolition, ACS management and Tank 101 demolition works schedule

Task	Indicative Date
Demolition works	
Demolition of refinery process units (excluding butane assets)	Mid 2015 to Mid 2017
Demolition of redundant tanks (excluding three tanks listed below)	Start 2016 to Mid 2018
Removal of redundant pipelines	Start 2016 to Mid 2018
Demolition and removal of butane assets	May 2018 to September 2018
Demolition of remaining buildings	July 2018 to December 2018
Final tank removals (last three tanks)	January 2019 to February 2019
Final waste processing (scrap, concrete etc.)	October 2018 to April 2019
Final civil works	November 2018 to June 2019
ACS management works	
Containment Cell Construction	Late 2017 to Mid 2018
Excavation of ACS from Pipeways and Filling of Containment Cell	Mid 2018 to Mid 2019
Closure of Containment Cell	Mid 2019 to Late 2019
Tank 101 Demolition works	
Demolition of Tank 101	Early 2018

3.3 Continued Works

Continued maintenance and upgrade works are likely to occur over the coming years in order to maintain the viability of the terminal into the future. These upgrade works would be subject of future development applications and/or approvals.

4.0 Proposed Modification Details

This section of the Modification Report provides an overview of the proposed modification. It describes the modification that Caltex is seeking approval for under the Section 4.55 (1A) of the EP&A Act.

4.1 Extension of ACS management works duration

Caltex are proposing to amend Condition B7B of the conditions of consent for SSD 5544 to extend the timescale allowed to complete the ACS management works. Currently this condition states the following:

B7B. Notwithstanding Condition B7A, the ACS management work shall not extend beyond 30 November 2019

Caltex are seeking development consent to modify this condition to extend the duration of ACS management works from 30 November 2019 to 31 March 2020. An amendment of Condition B7B is required to allow the ACS management works to be completed within an approved timescale. Originally the ACS management works were expected to be completed by 30 April 2019. This deadline was conditioned under SSD 5544 MOD2. The deadline was extended to 30 November 2019 under SSD 5544 MOD5.

Until recently it was expected that this revised deadline would be met. The works to move ACS from the Site and bring them to the containment cell have now been completed. In addition, the initial capping layers for the cell have been put in place, effectively closing the cell. The location of the containment cell works area is shown on **Figure 1**.

The cap design includes 1.6 m of soil and aggregate layers and two layers of geosynthetic including a Geosynthetic Clay Liner (GCL) and a High Density Polyethylene (HDPE), as shown in **Figure 2**. There will be connections between the capping and liner layers, in particular the upper and lower HDPE liners will be welded together, thereby fully containing the waste within HDPE and other layers. A marker layer will be included as a separation geotextile to reduce the risk of the cap being removed.

Figure 2 Containment Cell Capping Layer (as shown in SSD 5544 MOD2)



The next capping layer to be installed involves placing an HDPE layer over the whole of the cell and welding it to the HDPE liner layers. This work can only be completed by specialist contractors. Due to delays on another project the selected contractors cannot complete the necessary HDPE liner work until late November 2019 which in turn means that the remaining civil works to cap the containment cell (installing a drainage layer, marker layers, clean soil and top soil) will not be completed until December or January (weather depending).

Consequently, the ACS works will take longer than expected resulting in the works falling behind the anticipated program. It is likely that the cell will be closed before March 2020, however Caltex believes that this date would provide enough contingency to ensure that the works can be completed.

Therefore, Caltex are seeking development consent to modify Condition B7B to the following:

B7B. Notwithstanding Condition B7A, the ACS management work shall not extend beyond **31 March 2020** (emphasis added)

No additional or amended physical works are proposed as part of this modification.

4.2 Program

The revised ACS management works program is provided in Table 4 below.

Table 4 Revised ACS management works program

Task	Indicative Date
Containment Cell Construction	Late 2017 – Mid 2018
Excavation of ACS from Pipeways and Filling of Containment Cell	Late 2017 – Mid 2019
Closure of containment cell	Mid 2019 – Early 2020

5.0 Statutory Context

This section of the Modification Report reviews the key Commonwealth and State legislation, as well as the State, regional and local planning policies that apply to the modification in order to determine the permissibility, regulatory requirements and the approvals required to allow the modification to proceed.

5.1 Environmental Planning and Assessment Act 1979

5.1.1 Approval Pathway

The Conversion Project (SSD 5544) was classified as State Significant Development (SSD) under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) because it involved development with a capital investment value of more than \$30 million for a liquid fuel depot meeting the criteria in Clause 10(2) of Schedule 1 in *State Environmental Planning Policy (State and Regional Development) 2011.* On 7 January 2014, SSD 5544 was approved under Section 89E (now Section 4.38) of the EP&A Act by the Planning Assessment Commission of NSW (now the Independent Planning Commission), as delegate of the Minister for Planning (under delegation executed on 23 December 2013).

This modification constitutes development as defined by Section 1.5 of the EP&A Act and therefore requires consent under Part 4 of the same Act. Modifications to development consents are obtained under Section 4.55 of the EP&A Act. Section 4.55 (1A) relates to modifications involving minimal environmental impact. To progress the modification works in accordance within Section 4.55 (1A), the proposed works must be substantially the same development as approved under SSD 5544 and must be likely to result in minimal environmental impact.

As demonstrated within this Modification Report, the proposed modification is likely to result in impacts which are of 'minimal environmental impact' (i.e. impacts that are expected to be within the same scale as those that have been previously approved and would result in "very small" or "negligible" overall environmental impacts) (refer to **Section 7.0**). The relevant management and mitigation measures that were approved for the Conversion Project (SSD 5544 as modified) would continue to apply should this modification be consented, noting that some measures may no longer be required (refer to **Section 8.0**).

This modification would not result in any change to the design of the ACS management project and is only required due to unexpected delays. The work to move ACS at the Site to the cell is complete and the cell is partially closed. Only civil works remain. As such the potential impacts from these works are expected to be less than those previously approved and would result in "very small" or "negligible" overall environmental impacts.

A modification through Section 4.55 (1A) requires that aspects of the proposed modification that may have environmental, social or economic impacts that differ from those previously assessed for SSD 5544, undergo assessment in line with Section 4.15 of the EP&A Act. In order to comply with the requirements for assessing this type of modification, a Modification Report (this document) has been prepared and is submitted alongside the modification application. The application is being made to the consent authority, the Minister for Planning (or delegate). In accordance with clause 8A(2) of *State Environmental Planning Policy (State and Regional Development) 2011*, as a reportable political donation was made by the Applicant in the past two years, the final determination for this modification application will be made by Independent Planning Commission.

Section 4.55(3) of the EP&A Act states that a modification application must address the matters of consideration referred to in Section 4.15(1) of the EP&A Act as are of relevance to the development the subject of the application. In response, the table below identifies each matter of consideration listed under Section 4.15(1) of the EP&A Act and the document reference where each matter is addressed.

Table 5 Matters of consideration under Section 4.15(1) of the EP&A Act

Section 4.15(1) Requirement	Document Reference
The provisions of any of the following that apply to the land to which the developm relates	nent application
(1)(a)(i) Any environmental planning instrument, and	Section 5.0
(1)(a)(ii) Any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Secretary has notified the consent authority that the making of the proposed instrument had been deferred indefinitely or has not been approved), and	Section 5.5
(1)(a)(iii) Any development control plan, and	Not applicable
(1)(a)(iiia) Any planning agreement that has been entered into under Section 7.4, or any draft planning agreement that a developer has offered to enter under Section 7.4, and	Section 5.1.2
(1)(a)(iv) The regulations (to the extent that they prescribe matters for the purpose of this paragraph), and	Section 1.4.1
(1)(b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality, and	Section 7.0
(1)(c) The suitability of the site for the development, and	Section 10.0
(1)(d) Any submissions made in accordance with this Act or the regulations, and	Section 5.1.3
(1)(e) The public interest.	Section 10.0

5.1.2 Planning Agreements

Section 4.15(1)(a)(iiia) of the EP&A Act requires the consent authority to consider:

Any planning agreement that has been entered into under Section 7.4, or any draft planning agreement that a developer has offered to enter under Section 7.4.

At the time of lodgement of this modification application there were no planning agreement that are relevant to the proposed modification that should be considered as part of this modification.

5.1.3 Submissions

Section 4.15(1)(d) of the EP&A Act requires the consent authority to consider:

Any submissions made in accordance with this Act or the regulations

Submissions received as a result of this modification will be considered and responded to appropriately.

5.2 State Environmental Planning Policies

The following State Environmental Planning Policies (SEPPs) apply to the development or the land to which it relates:

- State Environmental Planning Policy (Infrastructure) 2007;
- State Environmental Planning Policy (Coastal Management) 2018;
- State Environmental Planning Policy No. 33 Hazardous and Offensive Development; and
- State Environmental Planning Policy No. 55 Remediation of Land.

These SEPPs and their requirements are addressed in Table 6.

Table 6 State Environmental Planning Policies

Relevant SEPP	Comment
State Environmental Planning Policy (Infrastructure) 2007	The ACS management works were defined as a type of 'waste or resource management facility', under clause 121(1) of the ISEPP and were therefore permissible with consent in the land use zone for the Site (i.e. (d) IN3 Heavy Industrial). The modification would not change this conclusion.
State Environmental Planning Policy (Coastal Management) 2018	Certain parts of the containment cell fall within land identified as "proximity area for coastal wetlands". Notwithstanding, the proposed modification would not result in any changes to surface and ground water flows to and from the adjacent coastal wetlands over that assessed and consented as part of SSD 5544 MOD2. Therefore, in relation to the Coastal Management SEPP there would be no impediment to the consent authority granting development consent for this modification application.
State Environmental Planning Policy No 33 – Hazardous and Offensive Development	The proposed modification would not change how SEPP 33 applies to either the demolition works (SSD 5544 MOD1) or the ACS management works (SSD 5544 MOD2).
State Environmental Planning Policy No 55 – Remediation of Land	The proposed modification would not change how SEPP 55 applies to either the demolition works (SSD 5544 MOD1) or the ACS management works (SSD 5544 MOD2).

5.3 Local Environmental Plan

The Site is located in the Sutherland Shire Local Government Area (LGA) and therefore the planning controls contained in the *Sutherland Shire Local Environmental Plan 2015* ('LEP') are relevant.

The LEP indicates that the Site is zoned as Heavy Industrial (IN3). Under the land use definitions provided in the 'Dictionary' of the LEP, the ACS containment cell is considered a 'waste disposal facility'. 'Waste disposal facilities' and 'waste or resource management facilities' are not specifically mentioned in the LEP as land uses that are either permitted without consent, permitted with consent or prohibited under IN3 – Heavy Industrial. However, the land uses listed under 'permitted with consent' include "Any other development not specified in item 2 (permitted without consent) or 4 (prohibited)". As such the ACS management works and this modification is permissible as an innominate land use.

The LEP aims to promote an appropriate balance of development and management of the environment that will be ecologically sustainable, socially equitable and economically viable. As discussed in **Chapter 10.0** the proposed modification is consistent with the principles or Ecologically Sustainable Development (ESD).

5.4 Other Legislation

The Statement of Environmental Effects (SEEs) for the demolition work (SSD 5544 MOD1) and the ACS management works (SSD 5544 MOD2) provided a detailed review of how the proposed works would comply with the relevant Commonwealth, State legislation and any assessments or permits, licences etc. that might be required. The proposed modification would not change the discussion presented in these documents.

5.5 Draft Environmental Planning Instruments

Section 4.15(1)(a)(ii) of the EP&A Act requires the consent authority to consider:

Any proposed instrument that is or has been the subject of public consultation under the [EP&A] Act and that has been notified to the consent authority (unless the Secretary has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved.

At the time of lodgement of this modification application there were no draft environmental planning instruments that are relevant to the proposed modification or subject site; that should be considered as part of this modification.

6.0 Consultation

This section documents the consultation effort for the modification works.

6.1 Methodology

Consultation between the Caltex Terminal Management and various stakeholders is an ongoing process. Caltex maintains an open dialogue between the personnel responsible for the Site and those residents with whom it shares the Kurnell Peninsula. Regular community meetings, announcements and feedback sessions with the residents are part of the ongoing consultation process. Consultation on the modification works has included liaison with Government agencies including DPIE, EPA and Sutherland Shire Council (SSC).

6.2 Stakeholder consultation

The consultation undertaken with government stakeholders is outlined in Table 7 below.

 Table 7
 Government stakeholder consultation

Department	Consultation Method	Response Provided
NSW Department of Planning, Industry and Environment (DPIE)	AECOM spoke to DPIE by phone on 28 October 2019 to discuss the modification.	AECOM and DPIE discussed the planning approval pathway for the modification and agreed a Section 4.55 (1A) modification to SSD 5544 would be most appropriate. DPIE requested that strong justification for the timescale extension be provided. They also asked that Caltex provide an update on what ACS Management works are completed and what remain and the expected timeframe to
		complete the works.
Sutherland Shire Council	AECOM spoke to the relevant Council officer by phone on 6 November 2019 to discuss the modification.	Council did not require any information in the modification application provided that the modification was just for a timescale extension. They confirmed they would review the application once it was provided.
NSW Environment Protection Authority (EPA)	AECOM spoke to the relevant EPA officer by phone on 6 November 2019 to discuss the modification.	EPA did not require any information in the modification application provided that the modification was just for a timescale extension. They confirmed they would review the application once it was provided.

6.3 **Public consultation**

Caltex maintain on-going dialogue with the local community regarding its operations on the Kurnell Peninsula. Quarterly meetings are held for the community in Kurnell. This consultation is advertised and well-attended by a core group from the local community.

7.0 Environmental Assessment

7.1 Assessment

The likely impacts of the proposed modification are outlined in **Table 8** below. The assessment should be read in conjunction with the SEEs for SSD 5544 MOD1 (as modified) and SSD 5544 MOD2. It should be noted that all impacts were assessed in SSD 5544 and subsequent consented modifications as being non-significant.

The identification of potential impacts and confirmation of appropriate assessment methodologies is determined by:

- Identifying the sensitivities of the local environment (refer to Chapter 2.0);
- Reviewing available information and documents relating to the existing environment and consented Project (refer to **Section 3.0**);
- Understanding the characteristics of the modification and how they relate to the approved Project and the assessments which have been completed previously (refer to **Section 4.0**);
- A review of relevant legislation and planning policy (refer to Section 5.0); and
- An identification of other projects or actions that may cumulatively add to any perceived impact from the modification works.

The environmental assessment is provided in Table 8 below.

Aspect	Modification impacts
Hazards and risk	The extended duration for closing the containment cell, as proposed, would not change the outcomes of the hazard and risk assessment completed for the Demolition Works (SSD 5544 MOD1) and ACS management works (SSD 5544 MOD2). The same controls that have already been consented would continue to be implemented but over a longer period.
Soils, groundwater and contamination	The proposed modification does not propose to change other controls relating to the management of soil and ground water for the ACS management works (SSD 5544 MOD2). No additional impacts relating to soils and groundwater are expected.
Surface water, wastewater and flooding	No change in surface water, wastewater or flooding is anticipated to occur as a result of the extension of ACS management works duration. The same controls that have already been consented would continue to be implemented but over a longer period. Potential impacts would be of no greater scale as those that have been previously approved and would require the implementation of previously approved controls.
Noise and vibration	The increased duration of ACS management works has the potential to result in an increase in the duration of noise impacts at nearby sensitive receptors. However, as discussed in the SEE for the ACS management works (SSD 5544 MOD2), the noise from these works complies with the necessary criteria at all receptors. Consequently, the potential noise and vibration impacts would be of same or lesser scale as those that have been previously approved and would require the implementation of previously approved mitigation.

Table 8 Environmental impact scoping

Aspect	Modification impacts
Air quality and odour	ACS handling operations are now complete and the cell is in the process of being capped. The subbase layer has been placed, which has effectively closed the cell. As such potential impacts from the Project related to the handling of ACS would no longer occur. Minor civil works required for capping the cell would occur following the placement of the HDPE capping layers. Potential dust impacts related to this activity would be of a similar magnitude as previously assessed and would be managed in line with existing and agreed controls. The controls have worked and are implemented as per the management plan. Potential impacts would be of a lesser scale as those that have been previously approved.
Socio-economic	Given the location of the ACS management works relative to residential areas and other community facilities, potential socio-economic impacts would be considered consistent with those considered in SSD 5544. Potential impacts would be of same or lesser scale as those that have been previously approved and would the implementation of previously approved mitigation.
Transport and access	The extension of ACS management works duration would not require additional transport movements. Works would be undertaken by contractors already completing the works, albeit for an extended duration. The equipment required to complete the works would be of the same size and scale assessed during SSD 5544 MOD2. The number of contractors required to complete the works is however significantly less than the number of workers arriving at Site during operation of the refinery and less than at the start of the demolition works. Potential impacts would be of same or lesser scale as those that have been previously approved and would require the implementation of previously approved mitigation.
Waste management	The type of waste associated with the extended duration of the ACS management works would be the same as consented for the ACS management works (SSD 5544 MOD2), however would require management for an extended period. Potential impacts would be of same or lesser scale as those that have been previously approved and would require the implementation of previously approved mitigation.
Heritage	No impacts to heritage values are expected as a result of the extension to the ACS management works duration.
Ecology	No impacts to ecological values are expected as a result of the extension to the ACS management works duration.
Coastal processes	The ACS management works do not impact coastal processes.

7.2 Summary of potential and residual impacts

The potential impacts associated with the proposed modification are considered to be of the same scale as those that have been previously approved under SSD 5544 (as modified). The relevant management and mitigation measures that were consented for the conversion works (SSD 5544), demolition works (SSD 5544 MOD1) and ACS management works (SSD 5544 MOD2) would still apply.

Whilst the duration of the ACS management works is proposed to be extended, the magnitude of the potential impacts would not change, and the relevant agreed management and mitigation measures would continue to be implemented. Given the progress of the ACS modification works, the scale of the proposed modification and implementation of relevant management and mitigation measures, the proposed modification would likely result in 'very small' or 'negligible' overall environmental impacts.

8.0 Management and Mitigation measures

The preceding chapter of this Modification Report described the potential impacts of the proposed modification. The section concluded that the existing agreed controls and mitigation measures are appropriate to manage the ongoing works associated with the Project.

Due to the minor nature of the modification, the extended duration for the ACS containment works, would not change the impacts identified for the Demolition Works (SSD 5544 MOD1) and ACS management works (SSD 5544 MOD2). As a result, the same management and mitigation measures that have already been consented would continue to be implemented, albeit for a longer period.

A consolidated set of mitigation and management measures for the whole Project (i.e. the conversion works, the demolition works, the ACS management works, the Tank 101 demolition works, the timing of demolition works) was prepared for SSD 5544 MOD5. The consolidated set of management and mitigation measures has been provided in **Appendix A**.

9.0 Revised Conditions of Consent

The conditions of consent provided in SSD 5544 (7 January 2014), SSD 5544 MOD1 (10 August 2015), SSD 5544 MOD2 (27 October 2017), SSD 5544 MOD3 (17 November 2017), SSD 5544 MOD4 (9 August 2018) and SSD 5544 MOD5 (10 July 2019) were reviewed based on the outcomes of the assessments within this Modification Report to determine their relevance to the modification works.

Only one condition (Condition B7B) requires modification. No other conditions of consent need to be modified as part of the modification application. Caltex are requesting that Condition B7B is modified to state (proposed change in **bold**):

B7B. Notwithstanding Condition B7A, the ACS management work shall not extend beyond **31 March 2020**

10.0 Evaluation and Justification

This section of the Modification Report provides an evaluation of the proposed modification and the outcomes of this Modification Report, including a discussion of the justification for proceeding with the modification. This section also provides:

- An assessment of the modification against the principles of Ecologically Sustainable Development (ESD);
- A description of the modification works benefits;
- Consideration of the consistency of the modification with the objects of the *Environmental Planning and Assessment Act 1979* (EP&A Act); and
- The justification for the modification.

10.1 Ecologically Sustainable Development

10.1.1 The Principles

This Section provides a review of the modification against the principles of ESD in accordance with *the Environmental Planning and Assessment Regulation 2000* (EP&A Regulation). The principles, as listed in the Section 7 of the EP&A Regulation, are as follows:

- 1. "The **precautionary principle** namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation;
- 2. **Inter-generational equity** namely, that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations;
- 3. **Conservation of biological diversity and ecological integrity** namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration; and
- 4. **Improved valuation, pricing and incentive mechanisms** namely, that environmental factors should be included in the valuation of assets and services."

These principles are discussed below.

10.1.2 Precautionary Principle

The precautionary principle deals with certainty in environmental and technical decision-making. It provides that where there is a threat of serious or irreversible environmental damage, the absence of full scientific certainty should not be used as a reason to postpone measures to prevent environmental degradation.

A modification application undergoes a public process that allows for better examination of the potential effects of proposed activities or development. Thus, the assessment process can be defined as precautionary in nature. The requirement to consider the potential impacts of the modification works is a form of regulation designed to identify and address uncertainty about the effects of these activities.

The potential impacts of the modification on the relevant environmental aspects for the Project have been considered in **Section 7.0**. Potential impacts relating to these aspects have been thoroughly assessed as part of modification applications SSD 5544 MOD1, SSD 5544 MOD2 and SSD 5544 MOD5. Various precautionary assumptions were made for a number of these assessments and through this process a comprehensive suite of management and mitigation measures were developed and have been implemented. As relevant these measures will continue to be implemented to minimise potential impacts to the community and environment.

10.1.3 Inter-Generational Equity

Inter-generational equity requires that the present generation pass onto the next generation an environment that does not limit the ability of those future generations to attain a quality of life at least equal to that of the current generation.
The modification works would contribute to the conversion of the Site into a safe and viable liquid fuel depot. The proposed modification works would maintain inter-generational equity by ensuring components of the existing bio-physical, social and economic environment available now would also be maintained for future generations. Aspects of the proposed modification that would assist in achieving inter-generational equity include the following:

- Potential contamination risks would be reduced by managing risks through a suite of measures and controls;
- Continue the use of the Site as a liquid fuel depot in a safe manner; and
- Ongoing consultation and engagement with the local community to provide an opportunity to ask questions and identify and manage areas of concern.

Through the implementation of mitigation and management measures for avoiding and minimising short-term or long-term environmental impacts, inter-generational social equality impacts have been addressed.

10.1.4 Conservation of Biological Diversity and Ecological Integrity

The modification would not cause significant ecological impacts.

10.1.5 Improved Valuation and Pricing of Environmental Resources

This ESD principle is premised on an assumption that all resources should be appropriately valued and that the value of environmental resources should be considered alongside any economic or cost benefit analysis for the life of the Project.

The modification works would allow for the continued safe operation of the finished product terminal at Kurnell, thereby allowing the Site to operate efficiently into the future. The value placed by Caltex on environmental resources is evident from the extent of site-specific investigations, planning and environmental safeguards and measures that have been undertaken and which would be implemented to prevent damage to the local environment.

10.2 Objects of the Environmental Planning and Assessment Act 1979

Consideration has been given to the consistency of the modification with the objects of the EP&A Act as outlined below.

a. to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources

The modification would allow for the safe and continued use of the Site in line with existing land use designations. The modification would support the ongoing use of the Site for employment purposes and not impact upon areas of significant ecological significance.

b. to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment

This Modification Report identifies the likely impacts of the modification on the environment and surrounding community (**Section 7.0**). With identified management and mitigation measures, residual impacts on the environment are anticipated to be negligible and for certain receptors would be avoided (**Section 8.0**). The proposed modification would support the goal of maintaining a safe and efficient and viable finished petroleum product terminal at Kurnell.

c. to promote the orderly and economic use and development of land

The *Sutherland Shire Local Environmental Plan 2015* (SSLEP) provides for the land use and zoning for the Site and surrounding area. Pursuant to the LEP, the Site is designated as IN3 Heavy Industrial.

The modification works would support the existing and permissible land uses at the Site and therefore is in line with orderly and economic use and development of land.

d. to promote the delivery and maintenance of affordable housing

The modification would not affect the provision or maintenance of affordable housing.

e. to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats

The mitigation measures outlined within this Modification Report, would allow for the protection of the environment, including the protection and conservation of native animals and plants, threatened species, populations and ecological communities, and their habitats (refer to **Section 8.0**).

f. to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage)

The modification works support the sustainable management of built and cultural heritage. The modification works would support the objective of the Site remaining as an efficient finished petroleum products terminal.

g. to promote good design and amenity of the built environment

The proposed modification would not result in a change in use of the Site, which would continue to operate as a finished petroleum products terminal.

h. to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants

The modification would not involve the construction or maintenance of any buildings.

i. to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State

The modification is to be assessed as modification to a State Significant Development (SSD 5544) under Part 4 of the EP&A Act by the Department of Planning, Industry and Environment (DPIE). Ongoing consultation has occurred with Sutherland Shite Council regarding the conversion of the Kurnell Refinery and would continue as the demolition works, ACS management works and other activities at the Site continue (**Section 6.0**).

j. to provide increased opportunity for community participation in environmental planning and assessment.

Caltex undertakes regular consultation with the community through quarterly meetings. Proposed developments at the Site are presented to and discussed with the local community.

Since the announcement of the Project in July 2012, the quarterly briefings have discussed the works that were planned to occur at the Site (including demolition). These briefings have discussed both the progress and the upcoming works for conversion works and the demolition works.

10.3 Project Justification

The modification is important in supporting the evolution of the Site from a refinery to a safe and viable finished fuel import terminal. The modification helps ensure that works previously consented under SSD 5544 MOD1, SSD 5544 MOD2 and SSD 5544 MOD5 can be undertaken and completed in the most efficient way possible.

The extension of ACS management works duration would result in impacts of the same scale as those assessed in the approved ACS management works modification application (SSD 5544 MOD2). Existing management and mitigation measures outlined within the various management plans would continue to be implemented to ensure that potential impacts are mitigated, and environmental risks are acceptable. Whilst the ACS management works would continue for a longer duration the existing agreed controls would help ensure that the works continue to be managed appropriately.

The proposed modification would support the objectives of the Project by supporting Caltex in operating a viable finished products fuel terminal at Kurnell, capable of providing a safe, reliable and sustainable supply of petroleum fuels to NSW and the ACT.

This Modification Report has concluded that the modification works should proceed because they would:

- Result in no long-term adverse impacts to the environment or local community;
- Ensure the primary objectives of the Project continue to be achieved; and
- Satisfy the principles of Ecologically Sustainable Development as described in the EP&A Regulation.

On the basis of the discussion within this modification report, the proposed modification is considered to be justified.

11.0 References

AECOM (2016a) *Kurnell ACS Management Project, Statement of Environmental Effects*, AECOM Australia Pty Ltd, Sydney

AECOM (2018) Section 4.55 (1A) Modification - Extension of Time for SSD 5544 MOD 1 Demolition Works, AECOM Australia Pty Ltd, Sydney

AECOM (2019) Section 4.55 (1A) Modification – Kurnell Refinery Conversion Project SSD 5544 Modification 5, AECOM Australia Pty Ltd, Sydney

URS (2013a) *Kurnell Refinery Conversion, Environmental Impact Statement*, URS Australia Pty Ltd, Sydney

URS (2014) *Kurnell Refinery Demolition, Statement of Environmental Effects*, URS Australia Pty Ltd, Sydney

Appendix A

Consolidated Management and Mitigation Measures

Appendix AConsolidated Management and Mitigation Measures

Consolidated Management and Mitigation Measures for SSD 5544 (including MOD1, MOD2, MOD3, MOD4 and MOD5)

The following acronyms have been used to describe each stage:

CD – Conversion Design; Conv – Conversion; Op – Operation; DD – Demolition Design; Dem – Demolition; and Con – Construction.

Item	Management and Mitigation Measure	Conversion (SSD 5544)		Demolition (SSD 5544 MOD1, MOD4 and MOD5)		ACS Works (SSD 5544 04 MOD2 and) MOD5)		Tar dem work 5544	ik 101 olition s (SSD MOD3)	
		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
Gene	ral									
A1	Caltex would carry out the proposed works in accordance with the EIS, the SEE s , the MRs and the approval conditions.	~	~	~	~	~	~	~	~	~
A2	Caltex would implement reasonable and practicable measures to avoid, or minimise impacts to the environment that may arise as a result of the Project.	~	~	~	~	~	~	~	~	~
A3	Caltex would ensure that the Project contractor prepares and implements a Construction Environmental Management Plan (CEMP) for the conversion works and a Demolition Environmental Management Plan (DEMP) for the demolition works (inclusive of the ACS Modification works, Tank 101 demolition works) to manage any Project impacts. This would be reviewed and approved by a Caltex Environmental Management Representative (EMR). Elements of these plans may be shared as required.		~			~	~			~
A4	Caltex would appoint an EMR to monitor the implementation of all required environmental mitigation and management measures. The EMR would ensure that all measures were being effectively applied during the proposed works and that the work would be carried out in accordance with the CEMP, the DEMP and all environmental approvals and legislative conditions.		~			~	~			✓
A5	Caltex and the various works' contractor personnel would undergo training in accordance with the CEMP, the DEMP and currently implemented environmental and safety measures agreed as part of the Project approval.		~			~	~			~
A6	Caltex would provide Sutherland Shire Council the opportunity to review and comment on the CEMP prior to the commencement of conversion works.		~							

Item	Management and Mitigation Measure	Conversion (SSD 5544)		Demolition (SSD 5544 MOD1, MOD4 and MOD5)		ACS Works (SSD 5544 4 MOD2 and MOD5)		Tank 101 demolition works (SSD 5544 MOD3)		
		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
A7	Prior to the demolition works commencing for a particular structure or group of structures, Caltex would develop a specific demolition management plan (DMP) for each structure or group of structures to be demolished. The DMPs would be made available to the appropriate regulators prior to being implemented if requested. The DMPs for the two concrete stacks (power plant and common stacks) and for the tall complex structures (two catalytic cracker units (plants 4 and 34)) would be provided to the EPA for comment ahead of the demolition works for these structures taking place.					¥				~
A8	Caltex would provide a draft of the DEMP and SWMP to NSW DPI for review and comment prior to finalising.				~				\checkmark	
A9	Caltex would provide NSW Health with a copy of the DEMP and Asbestos Management Plan (AMP) for review and comment prior to finalising.				~				~	
A10	Caltex would provide NSW OEH with a copy of the Biodiversity and Weed Management Plan (BWMP) for review and comment prior to finalising.				~					
A11	Following the ACS Modification works, Caltex will update the Asbestos Management Plan for the Site and Asbestos Register.							~		
A12	A Containment Cell Long Term Environmental Management Plan (CCLTEMP) would be prepared in consultation with the EPA prior to the closure of the containment cell. The CCLTEMP would detail the ongoing environmental management of containment cell, including maintenance of the capping and drainage, groundwater monitoring (including groundwater quality and levels), and land use restrictions that will apply to the containment cell. The CCLTEMP would be attached to the positive covenant for the land where the containment cell is located, if required.							~		
A13	From development consent of SSD 5544 MOD2 until the quarterly community meeting after the containment cell is closed, Caltex will provide an update on the progress of the ACS Modification works, including issues faced or complaints received, at each of the quarterly community meetings.						~	~		

ltem	Management and Mitigation Measure	Conversion (SSD 5544)			Derr (SS) MOD ² and	olition D 5544 I, MOD4 MOD5)	ACS V (SSD MOD2 MO	Vorks 5544 2 and D5)	Tank 101 demolition works (SSD 5544 MOD3)	
		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
A14	ACS from the pipeways classified as hazardous waste under the NSW EPA Waste Classification Guidelines would have a minimum cover of at least 500 mm plus the surface cap.						~			
A15	Within one month after it has been validated that all ACS from the pipeways has been removed, the containment cell would be capped and permanently sealed as per the containment cell design.						~			
A16	Caltex would prepare an ACS Modification Works Completion Report following the completion and closure of the containment cell. The report would include a summary of the waste classification and environmental monitoring data conducted in accordance with the Environmental Management Plans (and associated Sub Plans). Monitoring data should include but not necessarily be limited to: i. Waste Characterisation and Tracking ii. Air Quality monitoring (including dust and asbestos) iii. Groundwater Monitoring.						¥			
Hazar	ds and Risk	T	r		r		1	T		
B1	A program of routine testing, inspection and maintenance would be developed for each new piece of equipment or function of instrumentation to be added to the preventative maintenance program already established for existing plant and equipment.		*	~						
B2	The recommendations of the Fire Safety Study would be implemented for the design and operation of the terminal.	~	~							
B3	The Process Hazard Analysis Recommendations would be implemented for the design and operation of the terminal.	~	~							
B4	The spill response plan for the Site would be updated for the proposed terminal.		✓							
B5	Caltex would review hardware protection in place and proposed to ensure the risk of filling low flash point material into tanks designed for high flash point usage is minimised. Particular attention to human factors issues at manifolds.	~	~							

ltem	Management and Mitigation Measure	Conversion (SSD 5544)			Dem (SSI MOD ² and	nolition D 5544 1, MOD4 MOD5)	ACS V (SSD MOD2 MOI	Vorks 5544 2 and D5)	Tank 101 demolition works (SSD 5544 MOD3	
		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
B6	Caltex would determine need for additional means of communication, e.g. for lone worker on the proposed terminal.		~							
B7	Caltex would review the procedures used for potentially hazardous manual operation to ensure they are appropriate and sufficient for any increased frequency of use.		~							
B8	The bullet pointed measures listed in Section 8.7 of the Demolition Works SEE would be implemented to ensure that the conclusions of Appendix C Hazards and Risks Assessment of the Demolition Works SEE remain valid.				~	~			~	~
B9	Personnel required to work with hazardous/flammable/contaminated materials would be trained in safe use and handling and would be provided with all relevant safety equipment.						~			
B10	Procedures are currently in place to manage incidents and injuries at the Site. This includes an established incident reporting and response process. These processes would be implemented for the ACS Modification works.						~	~		
Soils	Groundwater and Contamination									
C1	 A Soils and Erosion Management Plan would be developed as part of the Construction Environmental Management Plan (CEMP) to manage the excavation, testing, stockpiling, reuse and rehabilitation of soils. This plan would outline: the areas where soil disturbance is likely; soil testing procedures; soil handling procedures; locations where soil would be stockpiled on-site for either removal, treatment or reuse; procedures to reduce erosion and the spread of dust; restricting traffic to defined roads or tracks where necessary; and the rehabilitation of bare soil following completion of the construction works. 		*							

ltem	Management and Mitigation Measure	Conversion (SSD 5544)			Derr (SS) MOD ² and	nolition D 5544 1, MOD4 MOD5)	ACS V (SSD MOD2 MOI	Vorks 5544 2 and D5)	Tank 101 demolition works (SSD 5544 MOD3)	
		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
C2	All materials would be stockpiled in accordance with 'The Blue Book' <i>Managing Urban Stormwater - Soils and Construction Volume 1 and 2</i> (Landcom, 2004). Principal controls would include the following:									
	 silt fences would be installed around stockpiles to reduce erosion and protect vegetation or Site infrastructure as necessary; silt and sediment traps would be installed across stormwater drains in proximity to excavation areas; stockpiles would be restricted to cleared areas and not impact any vegetation; stockpiles would be placed on impermeable sheeting; stockpiles would be covered and wetted down in order to reduce dust creation; stockpiles would not be located in close proximity to any stormwater drainage systems; Caltex would not stockpile in areas that are prone to flooding as identified in Figure 4-10 of Appendix D of the Demolition Works SEE; and Stockpile locations and erosion and sediment control requirements associated with the Project would be reviewed by a suitably qualified person to ensure that the recommended measures achieve the environmental automatic for the Site. 		v			¥	×			~
C3	The Soils and Erosion Management Plan would also outline the inspection program for any erosion control structures and bunded areas.		~							
C4	Excavated soils would be tested for both contaminants and odour using standard practices (e.g. soil vapour and soil sampling etc.)		~							
C5	Clean materials would be separated from contaminated materials for reuse as backfill where required.		~							
C6	A Contamination Management Plan would form part of the CEMP for the Project. This plan would outline measures for testing, classifying, handling, storing and managing contaminated soils and contaminated groundwater.		~							

ltem	Management and Mitigation Measure	Conversion (SSD 5544)			Dem (SSI MOD1 and	olition D 5544 I, MOD4 MOD5)	ACS Works (SSD 5544 MOD2 and MOD5)		Tan dem work 5544	k 101 olition s (SSD MOD3)
		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
C7	Suspected contaminated materials would be assessed and classified in accordance with EPL requirements and NSW (2009) <i>Waste Classification Guidelines: Part 1: Classifying Waste</i> , batched, further tested (where required) and disposed by a licenced contractor.		~							
C8	Disposal of any contaminated soils or groundwater would be in accordance with EPL requirements and NSW DECCW's <i>Waste Classification Guidelines</i> and the Contamination Management Plan (CMP) for the Project. Contaminated materials would be sent to appropriately licensed facilities in accordance with the <i>Contaminated Land Management Act 1997</i> .		✓							
C9	If Acid Sulfate Soils (ASS) are encountered during construction or the ACS Modification works, an ASS Management Plan would be prepared in accordance with the ASS Manual (ASS Management Advisory Committee 1998).		~			~	✓			✓
C10	 A Groundwater Management Plan (GWMP) would be developed and included within the CEMP. This plan would outline the measures that would be used to manage the testing, dewatering, storage, movement and treatment of any groundwater intercepted during the construction phase. Measures would include: the use of appropriate drip trays and interception techniques for any construction specific liquids stored on the Site; bunding of any fuel or chemical storage area at the construction Site; regular inspection of construction equipment to ensure any leaks are minimised and rectified; management of vehicles leaving the Site to reduce soil on roads, production of dust and the introduction of contamination to the groundwater and/or stormwater system; appropriate and timely disposal of any contaminated soil, water or waste generated during construction; regular inspection of erosion control structures and bunded areas; and regular inspection and testing of containment areas, drainage lines and process pipe work. 		✓							

Item	Management and Mitigation Measure	Conversion (SSD 5544)		Demolition (SSD 5544 MOD1, MOD4 and MOD5)		ACS Works (SSD 5544 MOD2 and MOD5)		Tank 101 demolition works (SSD 5544 MOD3		
		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
C11	Any runoff that may accumulate in excavations would be periodically tested for elevated levels of contamination. Water that is found to have elevated levels of contaminants would be collected and sent to the on-site Wastewater Treatment Plant in accordance with the established refinery wastewater management procedures.		~							
C12	Runoff entering any excavations would be limited by using bunds or similar structures as required.		\checkmark			\checkmark				~
C13	Construction/demolition workers would be instructed in appropriate health and safety and handling protocols for minimising human contact with contaminated soils and groundwater.		~			~	~			~
C14	During the cleaning of the crude and finished fuel tanks, measures would be implemented in line with Caltex's existing Turnaround and Inspection process to contain and collect any potentially contaminating material for appropriate disposal to the on-site wastewater treatment plant, landfarm or appropriate off-site disposal facilities. This process would be detailed within the CEMP.		✓							
C15	Permits would be required to work in the areas where potential soil and groundwater contamination exists. The work permit includes requirements such as monitoring and PPE. No unauthorised entry into these areas is permitted, without a permit.		~			~	~			~
C16	Appropriate inspection, assessment, maintenance and repair programmes that would be implemented as part of the operation of the Project. These safeguards would be incorporated into the updated management plans for the proposed terminal. The Project would be appropriately licenced under the <i>Protection of the Environment Operations Act 1997</i> and would be managed in accordance with EPL requirements.		~	~				~		
C17	A Contamination Management Plan would be developed to outline measures for monitoring, handling, storing and managing contaminated soils and contaminated groundwater. It would include the following:					~	~			~

ltem	Management and Mitigation Measure	Conversion (SSD 5544)		Dem (SSI MOD1 and	Demolition (SSD 5544 MOD1, MOD4 and MOD5)		/orks 5544 and 05)	Tan dem work 5544	k 101 olition s (SSD MOD3)	
		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
	 During excavation visual and olfactory indicators of impact would be monitored. Where there is potential for volatile organic contaminants (based on known ground conditions) or where hydrocarbons are seen or smelt during excavations, soils would be inspected for hydrocarbon impacts using a PID and/or testing. Excavated soils would not be used for backfill if they are impacted at levels exceeding commercial/industrial as defined by Schedule B1 Guidelines, <i>Investigation Levels for Soil and Groundwater, National Environment Protection Measure (Assessment of Site Contamination) Amendment Measure 2013.</i> All excavations would be sampled for asbestos. Asbestos assessment would be undertaken in accordance with Schedule B1 Guidelines, <i>Investigation Levels for Soil and Groundwater, National Environment Protection Measure 2013.</i> All excavations would be contamination) <i>Amendment Measure 2013.</i> Asbestos impacted soil not found in the pipeways would be disposed of at the ACS containment cell or removed from the Site as soon as practicable if excavated. If these soils need to be temporarily stockpiled they would be stored at a defined location at the former CLOR site, covered and labelled as asbestos waste. Asbestos impacted soil would be undertaken by a licenced contractor and comply with NSW WorkCover requirements. Hydrocarbon impacted soil would not be temporarily stockpiled adjacent to the excavation. If these soils need to be temporarily stockpiled adjacent to the excavation. If these soils need to be temporarily stockpiled adjacent to the excavation. If these soils need to be temporarily stockpiled they would be stored at a defined location at the former CLOR site. Excavated soil would not be temporarily stockpiled adjacent to the excavation. If these soils need to be temporarily stockpiled adjacent to the excavation. If these soils need to be temporarily stockpiled they would be stored at a defined location at the former CLOR site.									

ltem	Management and Mitigation Measure	Conversion (SSD 5544)		Demolition (SSD 5544 MOD1, MOD4 and MOD5)		ACS Works (SSD 5544 MOD2 and MOD5)		Tank 101 demolition works (SSD 5544 MOD3)		
		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
	 bunds would be impermeable and of sufficient capacity to ensure that runoff from these stockpiles is contained prior to being sent to the WWTP. Where no contamination issues are identified, excavated material would be used as backfill to bring the excavated area back to grade as soon as practicable. If required, certified VENM, ENM or appropriated remediated material would be used to provide additional backfill material. If excavated material cannot be re-used or managed on-site then it would be removed off-site as waste to an appropriately licensed facility. Further, excavated material; would be classified in accordance with EPL condition O5.1 which requires "any liquid and/or non-liquid waste generated and/or stored [at the Site] is assessed and classified in accordance with the NSW (2009) <i>Waste Classification Guidelines: Part 1: Classifying Waste</i>, batched and further tested (where required, for example Toxicity Characteristics Leaching Procedure (TCLP) testing)". The method of disposal or reuse would be in line with the materials' classification in accordance with specifications set out in a DWRMP. Where soils are reused on Site (i.e. are not considered to be impacted at levels exceeding commercial/industrial as defined by <i>Schedule B1 Guidelines, Investigation Levels for Soil and Groundwater, National Environment Protection Measure (Assessment of Site Contamination) Amendment Measure 2013)</i> a record would be kept (in the Waste Management Database) of where these soils are reused, the volumes reused; the type and levels of contaminants present in the soils and the soil classification. 									
C18	The Soil and Water Management Plan would outline management measures for any soils that are excavated or stored on-site during the demolition works and ACS Modification works and water management requirements. It would identify:									
	 the areas where soil disturbance is likely; how excavations would be staged so that the length of time that excavations are left open and temporary stockpiles are required is minimised; locations where soil would be stockpiled on-site for either removal, treatment or reuse; 					~	~			✓

Item	Management and Mitigation Measure	Conversion (SSD 5544)		Demolition (SSD 5544 MOD1, MOD4 and MOD5)		n ACS Works 4 (SSD 5544 D4 MOD2 and 5) MOD5)		Tank 101 demolition works (SSD 5544 MOD3)		
		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
	 that if additional backfill material is required, only certified VENM, ENM or appropriated remediated material would be used; procedures to reduce erosion and the spread of dust; restricting traffic to defined roads or tracks where necessary; measures to protect excavations from increased stormwater runoff (e.g. by using bunds or similar structures where required); measures to manage the storage of demolition and ACS Modification works specific liquids at the Site and the appropriate bunding or containment of demolition related fuel or chemical storage areas; demolition and ACS Modification works equipment is maintained and operated in a proper and efficient condition to reduce the likelihood of spills or leaks; measures to manage vehicles leaving the Site to reduce soil on roads, production of dust and the introduction of contamination to the groundwater and/or stormwater system; measures for the dewatering, storage, movement and treatment of groundwater encountered in excavations. Dewatered groundwater would be collected and sent to the on-site Wastewater Treatment Plant in accordance with the established Site wastewater management procedures, unless it is tested and is of suitable quality to be directed to stormwater; procedures for dewatering, including the need to liaise with NOW to ensure the necessary water licences are obtained, if required; and how the rehabilitation of bare soil would be managed across the Site once areas are returned to grade. 									
C19	The Soil and Water Management Plan would also:									
	 be developed in accordance with 'The Blue Book' Managing Urban Stormwater – Soils and Construction Volume 1 and 2 (Landcom, 2004); outline the inspection program for erosion control structures and bunded areas; continue the existing groundwater monitoring program; and include a plan for corrective action should an unexpected increase in COPC be observed in the groundwater monitoring 					V	~			~

Item	Management and Mitigation Measure	Conversion (SSD 5544)			Dem (SSI MOD1 and	olition D 5544 I, MOD4 MOD5)	ACS W (SSD MOD2 MOI	/orks 5544 and 05)	Tank 101 demolition works (SSD 5544 MOD3)	
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C20	An Asbestos Management Plan would be developed in accordance with the relevant guidelines. Caltex would utilise existing registers, procedures and plans in place for the Site for the preparation of an Asbestos Management Plan.					~	~			
C21	Additional sampling would be undertaken to ensure that the area of soil disturbance is restricted as far as practicable to asbestos impacted areas only.						~			
C22	ACS in the pipeways would be wetted down prior to excavation, loading and transport.						~			
C23	ACS classified as general or restricted under the Waste Classification Guidelines would be transported directly to the containment cell. Excavation works would be staged to allow placement of ACS directly into the containment cell to minimise the need to stockpile ACS.						~			
C24	Where hazardous ACS cannot be appropriately managed on-site, it would be taken off-site for treatment and disposal at an appropriately licensed facility.						~			
C25	All vehicle tyres would be cleaned before exiting the containment cell works area a temporary truck wash system.						~			
C26	During the works, the containment cell area would remain bunded to prevent water flowing out of the respective areas except via the OWSS and WWTP.						~	~		
C27	During the works, stormwater within the containment cell works area would be directed to the OWSS and treated at the WWTP.						~			
C28	Stormwater from within excavated areas of the pipeways would be sent to the WWTP unless it is tested and is of suitable quality to be directed to stormwater, as per normal operation of the pipeways.						~			
C29	Two groundwater monitoring bores would be installed at the north and west of the containment cell. Quarterly monitoring would be undertaken during construction, filling and closure of the cell.						~	~		

Item	Management and Mitigation Measure	C (\$	onversio SSD 554	on 4)	Dem (SSI MOD ² and	olition D 5544 I, MOD4 MOD5)	ACS Works (SSD 5544 MOD2 and MOD5)		Tank 101 demolition works (SSD 5544 MOD3)	
		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
C30	A marker layer would be installed during the final capping of the containment cell to identify the presence of asbestos as a safeguard for potential future use.						~			
C31	Following excavation of ACS, an independent licenced asbestos inspector would be employed to verify that the friable asbestos has been removed from the pipeways and that the Exemption Order under Section 419 of the Work, Health and Safety Regulation 2011 is no longer required.						~			
C32	 The OEMP for the Site would be updated to include the following measures: Quarterly groundwater monitoring for two years for the two installed monitoring wells. Following this time, annual groundwater monitoring would be undertaken to provide ongoing demonstration that the containment cell liner is operating effectively. Monitoring of these bores would occur in accordance with the existing groundwater monitoring program for the Site. Regular inspections of the containment cell to monitor the effectiveness of the erosion and sediment control measures incorporated into the design of the containment cell, in line with the Site's existing Inspection Checklist and following heavy rain events. 							>		
Huma	n Health and Ecological Risk						-			
D1	Construction/demolition personnel would be made aware of the potential presence of Non Aqueous Phase Liquids (NAPL) and would be shown how to identify its presence. The CEMP/DEMP would include management measures to appropriately deal with any NAPL found on Site.		✓		~		~		~	~
D2	Construction/demolition staff would be inducted and provided with training prior to working with potentially contaminated soil as part of the Project, to prevent unnecessary disturbance (e.g. dust generation, asbestos fibre liberation, contaminant mobility and volatilisation).		✓		~		~		~	~

Item	Management and Mitigation Measure	Conversion (SSD 5544)			Dem (SSI MOD1 and	olition D 5544 I, MOD4 MOD5)	ACS W (SSD) MOD2 MOI	/orks 5544 and 05)	Tank 101 demolition works (SSD 5544 MOD3)	
		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
D3	The location of potentially contaminated areas would be noted in the CEMP/DEMP and provided to construction/demolition personnel involved in soil excavation and handling. The CEMP/DEMP would also identify the type of contamination found in each area. Where necessary, safety training and appropriate PPE would be provided.		V	~	✓	V	~		~	~
D4	Caltex would continue to monitor groundwater quality in areas that are known to contain impacts to ensure that significant mobilisation of COPC from groundwater to surface water is not occurring.		~	~	✓	~			~	~
Waste	e Management									
E1	The Project would be integrated into existing resource efficiency, waste management and handling, emergency response and preparedness plans for the existing Site.	~	~	~	✓	~	~	~	~	~
E2	Construction and Operation Waste and Resource Management Plans (WRMP) and Demolition Waste and Resource Management Plans (DWRMP) would be compiled prior to the each phase commencing. The DWRMP would be updated to include reference to management of waste generated by the ACS Modification works prior to construction works commencing.	~			✓		~		~	
E3	 The WRMPs and DWRMP would: identify requirements consistent with the waste and resource hierarchy; ensure resourcing efficiency is delivered through the design and responsible construction, demolition and operational practices; ensure procurement of pre-fabricated materials to eliminate off-cuts on-site, and the re-use of materials where possible; provide consistent clear direction on waste and resource handling, storage, stockpiling, use and reuse management measures (consistent with current management practices relating to Caltex's Kurnell Waste Management System); 	~	~	✓	~	~	~		~	~

ltem	Management and Mitigation Measure	Conversion (SSD 5544)		Demolition (SSD 5544 MOD1, MOD4 and MOD5)		ACS Works (SSD 5544 MOD2 and MOD5)		Tank 101 demolition works (SSD 5544 MOD3)		
		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
	 provide separate waste containers/skips to ensure waste material segregation and maximise the opportunities for re-use and recycling; identify disposal and management routes consistent with current management practices as adapted for the Project; set out clear requirements for meeting legislative and regulatory requirements; ensure safe storage and disposal of waste ensuring least amount of harm to surrounding environment; define requirements to support Caltex's sustainable procurement objectives through effective, design, construction, operation and procurement; and set out processes for disposal, including on-site transfer, management and the necessary associated approvals. 									
E4	The WRMP and DWRMP would incorporate the requirements of the waste and resource hierarchy and cleaner production initiatives.	~	~	~	~	~	~		~	~
E5	The WRMP and DWRMP would include a process for auditing, monitoring and reporting, which would include regular inspections off-site activities and the waste management area(s). The WRMP and DWRMP would be subject to regular auditing and a system would be used to record and report the types, volumes and management measures for all waste and resource arising from/used for the works.	~	~	~	~	~	~		~	~
E6	Project-generated waste would be segregated at the source and stored in accordance with current Site practices. Site management practices would potentially need adapting to consider additional storage requirements. Regardless, all waste would be stored in suitable containers and designated waste management areas.		~	~		√	~			~
E7	Caltex's existing procedures for the disposal of sewage, greywater, hazardous materials, general waste and recyclable materials would be adopted for the Project (and modified if required). This would include using licensed contractors to remove and transport waste from the Site.						~	~	~	

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E8	A Waste Register would be prepared, used and maintained by the Demolition Contractor to track all wastes generated from demolition works. The Demolition Contractor would retain waste receipts to indicate evidence of waste disposal. The database would also be used to track all materials reused at the premises including its reuse location, type of waste and classification. A Waste Register would be prepared, used and maintained by the Contractor to track all wastes generated from the ACS Modification works and used to record and report the types, volumes and management measures for all waste and resources arising from/used for the works. This would be subject to regular auditing.				*	*	¥		¥	~
E9	 Stockpiled wastes would be: appropriately segregated to avoid mixing and contamination; clearly labelled; contained in bunded areas and if necessary on an appropriate lining; less than 5m in height; and located >40m away from any sensitive receivers, heritage, ecological areas and watercourses. 				~	~	~		~	~
E10	Materials to be re-used would be analysed to ensure material is not contaminated and re-use is appropriate.				~	~	~		~	~
E11	An Asbestos Management Plan would be prepared and implemented in accordance with relevant legislative and other requirements. This plan would outline proposed methods of managing asbestos waste by the contractor. The Asbestos Management Plan would be updated to include the ACS Modification works.				~	~	~			
E12	The Site's existing Asbestos Waste Register would be amended as appropriate, implemented and maintained to track asbestos wastes generated during the works.				~	~	~	~	~	~

ltem	Management and Mitigation Measure	Conversion (SSD 5544)			Dem (SS) MOD ⁻ and	nolition D 5544 1, MOD4 MOD5)	ACS V (SSD MOD2 MOI	Vorks 5544 2 and D5)	Tank 101 demolition works (SSD 5544 MOD3)	
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E13	If stored on-site, asbestos wastes would be located away from operational areas and properly sealed and contained to minimise human exposure and clearly labelled. Signage and barriers/fencing would be installed to ensure all employees, contractors and visitors would keep away from the area at all times.					~	~			~
E14	The removal and disposal of asbestos wastes would be undertaken by a licenced asbestos contractor.					~	~			~
E15	A Decontamination Area would be provided on-site for all authorised personnel handling asbestos.				~	~	~			
E16	Wastes (both liquid and non-liquid) generated from the works would be assessed, classified and managed. Wastes would be disposed of at an appropriately licenced facility.					~	~			~
E17	Recyclable wastes would be stored in suitable containers and designated waste management areas, to be transferred by a licensed waste contractor to an appropriate recycling facility where possible.						~			
E18	Treated soils from the CSRF would be used where possible for the containment cell construction works in accordance with the conditions of the Caltex treated soil exemption 2016.						~			
E19	New waste streams would be addressed as they arise and assessed to determine the most suitable management measures to use when handling, storing, transporting and disposing of the waste.						~			
E20	Unidentifiable waste streams would be analysed and sent for testing in an accredited laboratory to assess the risks associated with handling and disposal of the waste.						~			
E21	Additional sampling will be undertaken in the pipeways to further delineate the areas classified as asbestos contaminated in order to minimise the volume of soil classified as Special Waste and disposed of in the containment cell.						~			

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		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
E22	Caltex would complete inspections following periods of extended heavy rainfall to confirm that pumps within the containment cell sumps are directing leachate to the Site's WWTP.						~	~		
Surfa	ce Water, Wastewater and Flooding						-			
F1	 The Construction Environmental Management Plan (CEMP) for the Project would include a Soil and Erosion Management Plan. This plan would include the following measures: All materials would be stockpiled in accordance with '<i>The Blue Book' Managing Urban Stormwater – Soils and Construction Volume 1 and 2</i> (Landcom, 2004); Silt fences would be installed around stockpiles to reduce erosion and the movement of suspended solids as necessary; Soil stockpiles and any polluted materials would be stored in designated areas which are not in close proximity to any stormwater drainage systems; Erosion control structures, bunded areas, containment areas, drainage lines and interception measures would be subject to regular inspection; Clean materials would be separated from contaminated materials; and Soil erosion and sedimentation devices would remain in place until the disturbed ground surface is restored. These devices would also capture any gross pollutants. 		~							
F2	 A Soils and Water Management Plan would be developed as a sub plan to the DEMP. Measures to be included in the plan and implemented during the demolition works to protect stormwater quality would include: Stormwater or groundwater ponded in excavations would be sent to the WWTP, unless it is tested and is of suitable quality to be directed to stormwater; Stormwater that is captured in the bunds around the contaminated soil stockpiles would be collected and sent to the WWTP; Silt fencing and/or alternate sediment control measures would be installed around soil stockpiles and disturbed areas or areas where dust suppression is being undertaken; 					✓	V			

Item	Management and Mitigation Measure	Conversion (SSD 5544)		Demolition (SSD 5544 MOD1, MOD4 and MOD5)		ACS Works (SSD 5544 MOD2 and MOD5)		Tank 101 demolition works (SSD 5544 MOD3)		
		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
	 Regular inspection would be undertaken of soil stockpiles/excavation areas, including following rainfall events; Regular inspection of excavation areas <u>and</u> containment cell area, including following rainfall events; Regular inspections would be undertaken of stormwater drains down hydraulic gradient of disturbed areas; Stormwater management measures incorporated into the design of the containment cell would be regularly inspected during operation in line with the Site's existing Inspection Checklist and following heavy rain events; If stormwater quality is impacted during the demolition works and ACS Modification works in areas that have been disturbed, water would be diverted to the intermediate sewer system; and During the demolition works and ACS Modification works, following notable but prolonged rainfall events (over three days) or following heavy rainfall events over a shorter timescale, water sampling would be completed at the stormwater retention basin to ensure that the quality of the water is of an appropriate standard to be discharged from the Site. Water that is not of an appropriate guality would be either treated in situ or directed to the WWTP. 									
F3	 Caltex would continue to implement the measures within the Stormwater Management Plan (SMP) for the Site. This plan has been produced in response to Environment Protection Licence No. 837, PRP U24.1: Stormwater Catchment and Management Plan. The SMP has committed Caltex to implementing a Stormwater Management Strategy and completing a number of stormwater management measures in a staged manner. Measures include: Ongoing maintenance of the existing stormwater system; Implementation of a number of projects to improve the infrastructure, reduce the potential for the refinery to flood, and prevent contaminated stormwater leaving the refinery premises; Working with the NSW Office of Environment and Heritage (OEH), NSW EPA and Sutherland Shire Council to divert to flow of stormwater from the National Park away from the Site's stormwater system to the Sutherland Shire Council's stormwater infrastructure. 	v	~	v	~	¥	~	~	~	~

ltem	Management and Mitigation Measure	C (!	onversio SSD 554	on 4)	Demolition (SSD 5544 MOD1, MOD4 and MOD5)		ACS Works (SSD 5544 MOD2 and MOD5)		Tank 101 demolition works (SSD 5544 MOD3)	
		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
	 Carrying out stormwater flow monitoring; and Updating the Site's stormwater system performance model to account for the changes to the stormwater system infrastructure that can then be used as a tool to assess future modifications, as necessary. This work would be completed in consultation with NSW EPA. 									
F4	Discharges from the Wastewater Treatment Plant would be within existing EPL limits during demolition, construction and operation. Any required change to this Oily Water Management System would be discussed and agreed with NSW EPA.	~	~			~	~	~		~
F5	The measures and processes currently in place at the Site to prevent any loss of contaminant would be maintained throughout the demolition, construction and operation phases of the Project. All bunds on tanks which are retained in service would meet the capacity requirements of <i>Australian Standard AS1940</i> during the operation of the Project.	~	~			~	v	~		V
F6	 Improvements to monitoring would be initiated to ensure that if a loss of containment into a bund occurs it is detected early and contingency actions can be taken promptly. The measures for tanks containing low flash materials include: explosive vapour detectors within the bunds; triple infrared scanners on tank roofs; and CCTV in conjunction with infrared cameras as a confirmation for alarms. All tanks on-site would be subject to: an automated high level shut off system; and 			~						

ltem	Management and Mitigation Measure	C (\$	onversio SSD 554	on 4)	Dem (SS) MOD ⁻ and	nolition D 5544 1, MOD4 MOD5)	ACS W (SSD MOD2 MOI	Vorks 5544 2 and D5)	Tar dem work 5544	nk 101 olition ss (SSD MOD3)
		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
F7	Caltex undertakes a flood study, commencing in March 2018 that assesses potential flood risks from the Site to the Kurnell township, with a particular emphasis on the impacts from surface water entering the Site from land to the east and south of the Site and whether current diversion methods are appropriate. The flood study would consider the Sutherland Shire Council's <i>Draft Sea Level</i> <i>Rise Policy</i> (May 2016), or a latest revision. Caltex to remain in consultation with Sutherland Shire Council throughout the flooding investigation works to identify a mutually acceptable solution to potential flood risks along the north eastern boundary of the Site. The timing and form of consultation is to be mutually agreed by both parties (Caltex and Sutherland Shire Council) and outlined within a written document to be produced by Caltex prior to March 2018. It shall include regular reporting updates and milestone meetings, for example, at the Scope of Works, concept design, at the issuing of the draft report to discuss results and recommendations as a result of the study.			~		~		~		~

Item	lanagement and Mitigation Measure		onversic SSD 554	on 4)	Dem (SSI MOD ² and	olition D 5544 I, MOD4 MOD5)	ACS Works (SSD 5544 MOD2 and MOD5)		Tank 101 demolition works (SSD 5544 MOD3)	
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F8	 The following measures would be employed during and following the demolition of the refinery process units and associated infrastructure: Appropriate bunding and controls would be put in place to prevent stormwater runoff from the demolition works area entering the stormwater system. Following the completion of the demolition works and removal of redundant infrastructure, the former refinery process area would be regraded. The regrading would aim to ensure that water does not pool in this area. As part of the regrading works, the surface material in this area would meet the commercial/industrial criteria as defined by Schedule B1 Guidelines, <i>Investigation Levels for Soil and Groundwater, National Environment Protection Measure (Assessment of Site Contamination) Amendment Measure 2013.</i> A crushed aggregate made from clean concrete and asphalt from the demolition works would also be spread across the surface to help reduce soil erosion. Stormwater runoff collected in the stormwater system would be subject to the controls within this system (such as the oily water separators) prior to being discharged. 					~				~
F9	Excavation of the pipeways would be staged, effectively minimising the area of disturbance at one time. The ACS Modification works would be undertaken in a manner to minimise the potential for soil erosion and sedimentation.						~			
F10	Local weather patterns would be monitored to ensure that workers completing the ACS Modification works at the Site were aware of predicted heavy rainfalls so that work could be stopped in the pipeways prior to them containing surface water flows.						~			

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F11	 The OEMP for the Site would be updated to include the following measures: the new stormwater management infrastructure for the containment cell would be regularly maintained to ensure that stormwater flows are properly conveyed to the wider catchment; and the leachate collection system including the tank would be regularly inspected to ensure that it is operating effectively and that no leaks have occurred. 							~		
Noise	and Vibration									
G1	 The CEMP/DEMP for the Project would include a Noise and Vibration Management Plan (NVMP). The NVMP would outline: The locations of noise sensitive receptors; Construction noise monitoring procedures; and Construction equipment maintenance to ensure good working order. 		v			~				
G2	Low-noise plant and equipment would be selected, where practicable, in order to minimise potential for noise and vibration. All equipment would be regularly checked to ensure that the mufflers and other noise reduction equipment are working correctly.		~			~	~			~
G3	Community consultation with local residents would be undertaken to assist in the alleviation of community concerns. Prior to the proposed demolition works commencing within the Eastern and Western Right of Ways, at Silver Beach, on the Wharf or prior to particularly loud demolition works occurring on the main terminal site, potentially affected residents within Kurnell would be notified in advance. Should complaints be received, the complaints register would continue to be maintained and managed in line with the existing feedback process at the Site.		~	~		~	~			~
G4	Any noise complaint(s) would be investigated immediately. Reasonable and feasible measures would to be implemented to reduce noise impacts.		~	~		~	~	~		~
G5	Construction/demolition equipment would be located to reduce noise emission to sensitive receptors, where practicable.		~			~	✓			~

Item	Management and Mitigation Measure	Conversion (SSD 5544)		Dem (SSI MOD [^] and	olition D 5544 I, MOD4 MOD5)	ACS Works (SSD 5544 MOD2 and MOD5)		Tank 101 demolition works (SS 5544 MOD		
		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
G6	The majority of the conversion works for the Project would typically be completed between 7.00am to 10.00pm seven days a week. Some works consistent with Caltex's existing day-to-day operational and maintenance procedures would occur over a 24 hour period as regulated by the Environmental Protection Licence (No. 837) (EPL) for the Site.		V			V	~			
G7	Construction/Demolition staff and contractors would undergo training in environmental noise issues including:									
	 minimising the use of horn signals and maintaining a low volume. Alternative methods of communication should be considered; avoiding any unnecessary noise when carrying out manual operations and when operating plant; and switching off any equipment not in use for extended periods during construction work. 		~			¥	v			~
G8	Should any unexpected construction activities occur which could potentially generate significant noise not described in this report, monitoring would be undertaken to ensure construction noise emission levels do not exceed EPL limits.		~				~			
G9	Pipeline removal works would be confined to 7.00 am to 6.00 pm Monday to Saturday as per Condition C19 (for SSD 5544).					~	~			
G10	Demolition works near 30D Cook Street (i.e. within 500m) would be confined to 7.00am to 6.00 pm Monday to Saturday as per Condition C19.					~				~
G11	Demolition noise monitoring would be undertaken when necessary to ensure compliance with demolition noise criteria.					~	~			~

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		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
G12	Caltex would ensure that the noise generated by the demolition works does not exceed the criteria defined in Table 2 (from Condition of Consent C16 of SSD 5544) unless the reasonable and feasible noise mitigation strategies outlined within the DNVMP have been implemented. Reasonable and feasible noise mitigation strategies would include appropriate respite periods during particularly noisy or prolonged activities.					~				~
G13	The DNVMP would describe where demolition noise limits from Table 2 (from Condition of Consent C16 of SSD 5544) are likely to be exceeded and what reasonable and feasible noise mitigation would be employed to minimise noise.					~				~
G14	 To help ensure that the structures on Site that are to be retained with high or medium heritage significance are protected from potential vibration impacts, the DNVMP would also Utilise Appendix H Heritage Impact Assessment to identify the medium to high heritage significance buildings to be retained; Identify where works to demolish redundant structures are occurring within 20 m of a medium to high significance heritage building and the requirement to undertake vibration monitoring and management for these buildings to protect their integrity; and Outline general monitoring and management measures to monitor vibration and manage buildings. 				~				~	
G15	The Tank 101 demolition works would be coordinated with other nearby demolition works to reduce the potential for cumulative impacts.									~

ltem	Management and Mitigation Measure	Conversion (SSD 5544)			Conversion (SSD 5544)		Conversion (SSD 5544)		rsion (5544) M		Conversion (SSD 5544)		Demolition (SSD 5544 MOD1, MOD4 and MOD5)		on ACS Works 4 (SSD 5544 0D4 MOD2 and 95) MOD5)		nk 101 olition ts (SSD MOD3)
A := 0		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem							
H1	Dust emissions from the construction phase of the Project and during the demolition works would be monitored by construction/demolition staff. Visual inspections would be completed by demolition staff during the works. Demolition staff would also complete dust deposition monitoring during the demolition works (as per AS/NZS 3580) in appropriate locations on the Site boundary and in Kurnell. Staff would also monitor dust (PM ₁₀) levels using the on site real time ambient air quality monitoring station. When required, during activities likely to cause high dust levels or adverse weather conditions etc., a designated worker would continuously monitor downwind emissions to the community or local residents, using the methods described above, and call a halt to activities if sensitive receptors are likely to be affected by airborne particulate matter. Should significant impacts be likely, appropriate measures would be taken to mitigate adverse air quality impacts.		~			*	~			~							
H2	Within the refinery, vehicles would only travel on designated roads where possible and would be limited to a maximum speed of 10 km/hr in offroad areas and 25 km/hr elsewhere.		*			~	~			~							
H3	Where there is the potential for dust or odour generation from trucks carrying spoil, loads would be covered and all tailgates would be securely fastened. Vehicles would not be loaded higher than the sides and tailboard.		*			~	~			~							
H4	Construction and potentially dust generating demolition activities would be limited during high wind events if sensitive receivers are likely to be significantly impacted.		~			~	~			~							
H5	All plant would be maintained and operated in line with the manufacturer's specifications in order to minimise the emission of air pollutants and offensive odours. Plant and construction vehicles would be turned off when not in use.		~			~	~			~							

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		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
H6	Stockpiled material would be assessed for the potential for causing odorous or particulate emissions. If air pollutants and offensive odours are likely, controls would be put into place to manage adverse impacts.		~			~				~
H7	All concrete cutting and coring would to be undertaken using "wet tools".		\checkmark			\checkmark				✓
H8	An odour reduction program would be implemented in accordance with the existing EPL.		~	~						
H9	The guidepoles on the EFRTs in gasoline service would be fitted with sleeves.		~	~						
H10	Caltex's Leak Detection and Repair (LDAR) Program would continue in accordance with the Environment Protection Licence.		~	~						
H11	All reasonable and feasible measures would be implemented to minimise dust and odour emissions during the demolition works					~	~			~
H12	VOC and Odour Monitoring would be undertaken by demolition workers or ACS Modification workers (i.e. visual and olfactory monitoring) and monitoring equipment during excavation activities where potential hydrocarbon contamination is present. Contractors would notify the Caltex Environment Specialist of any significant odours identified during demolition.					✓	~			✓
H13	Soils or concrete with significant hydrocarbon staining or obvious hydrocarbon odours would be transported to the former CLOR area and stored appropriately. Stockpiles of contaminated soil stored on-site would be managed to prevent odorous VOC emissions and windblown particulate emissions.					~				~
H14	Excavation would be staged to manage potential VOC and odour emissions. Where practical, excavations would not commence prior to 8am nor after 4pm as weather conditions at these times are generally conducive to adverse odour air quality situations from fugitive emissions.					~	~			~

ltem	Management and Mitigation Measure	Conversion (SSD 5544)			Demolition (SSD 5544 MOD1, MOD4 and MOD5)		h ACS Works 4 (SSD 5544 D4 MOD2 and 5) MOD5)		Tank 101 demolition works (SSD 5544 MOD3)	
		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
H15	In unfavourable weather conditions (e.g. dry and windy conditions) or where dust sources are present near sensitive receivers, water sprays would be used to dampen down soils prior to excavation, handling and/or loading/unloading materials. All exposed surfaces (from recent excavations) and stockpiles (of excavated material) would also be watered, sprayed or covered where required, to minimise nuisance dust and odours.					V	~			~
H16	During adverse meteorological conditions and extraordinary events, such as events where elevated background dust is present, additional mitigation measures would be considered to prevent and minimise air quality impacts from demolition works. These measures would include, but not be limited to implementing the following during high wind events (e.g. > 8m/s hourly average):					V	~			✓
	 Reducing working surface area Commencing excavation during favourable wind conditions Increase wetting agents for exposed surfaces Increase covering of exposed surface areas. 									
H17	Surface disturbance would be minimised. Exposed ground would be rehabilitated as soon as practicable.					~	~			~
H18	Real-time dust monitoring would be undertaking during the operation of the concrete crusher. Details of this monitoring (and associated response actions) would be incorporated into the AQMP for the demolition works.					~				~
H19	During crushing, a number of dust suppression measures would be implemented. These could include regular watering of stockpiles, dust curtains and other measures as appropriate.					~				~
H20	Where biological matter is present within cooling water inlet pipework, the pipework would be removed be as soon as possible. This would help to minimise the potential for odour issues associated with the degradation and then exposure of the biological matter.					~				~

Item	Management and Mitigation Measure	C (१	Conversion (SSD 5544)		Demolition (SSD 5544 MOD1, MOD4 and MOD5)		lition ACS Works 5544 (SSD 5544 MOD4 MOD2 and IOD5) MOD5)		Tank 101 demolition works (SSD 5544 MOD3)	
		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
H21	Where visible dust emissions are observed appropriate management actions would be implemented to prevent impact.					~				\checkmark
H22	In the event of an odour complaint, an evaluation would be undertaken to confirm if the demolition works are the source of the odours. If the demolition works are confirmed as a potential ongoing odour source additional mitigation measures would be implemented which could include the use of water sprays to suppress odours and, if necessary, the use of odour suppressants. Off-site olfactory observations and VOC monitoring using equipment would also be undertaken if necessary. In the event of ongoing odour issues, excavation activities would be stopped and if necessary the excavation covered or backfilled.					~	~			~
H23	In line with Caltex's existing procedure, following a complaint and its subsequent investigation, feedback regarding the source and nature of the complaint would be provided to the affected community members.					~	~			~
H24	Dust deposition monitoring would be undertaken during the demolition works (as per AS/NZS 3580). This would include monitoring points in appropriate locations on the Site boundary and in Kurnell.					~				~
H25	The on-site real time ambient air quality monitoring station would continue to operate throughout the demolition works. This station continuously monitors for PM_{10} , wind direction and speed, temperature and humidity and rainfall.					~	~			~
H26	A summary of the air quality monitoring data for the demolition works would be provided to the community during Caltex's quarterly community meeting.					~	~			~

ltem	agement and Mitigation Measure (SSD 5544)		on 4)	Dem (SSI MOD [^] and	DemolitionACS Works(SSD 5544(SSD 5544MOD1, MOD4MOD2 andand MOD5)MOD5)		Vorks 5544 2 and 05)	Tank 101 demolition works (SSD 5544 MOD3)		
		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
H27	 The DEMP would include a subplan: the Containment Cell Management Plan. With regards to air quality, this subplan would include: A brief overview of the containment cell operations relevant to potential air emission sources. Identification of mitigation measures for each respective emission source including those measures outlined in the DEMP for the Site (where relevant to operations within the containment cell area). Details of proposed monitoring and recordkeeping procedures. During the production of this plan the NSW EPA <i>Guidelines for Environmental Management On-Site Remediation</i>, would be reviewed and if necessary relevant measures incorporated. 						~			
H28	 The Containment Cell Management Plan would be prepared and include the following mitigation measures: A Soil Acceptance Criteria which identifies: Only soil contaminated with airborne asbestos* (referred to in the ACS Modification works as ACS) from the Site (as defined by Figure 1-2 in the SEE) would be accepted into the containment cell. Soils entering the containment cell from the Site but outside of the pipeways must be classified in accordance with the NSW EPA Waste Classification Guidelines 2014, as either special general solid waste or special restricted solid waste. All soils, regardless of their classification under the NSW EPA Waste Classification Guidelines 2014 from the pipeways on the Site (as shown on Figure 1.2 of the SEE) would be disposed of in the containment cell. The total volume of ACS would be limited by the design specifications final landform. Prior to the commencement of filling activities dust and aerosol monitoring stations would be placed at a minimum of six locations around the working area with the objective of monitoring prevalent upwind and downwind locations. Soil moisture content will be managed to ensure that it is greater than 15% in 						V			
	 Soil moisture content will be managed to ensure that it is greater than 15% in order to minimise potential particulate matter and asbestos [fibre] emissions 									

ltem	Management and Mitigation Measure		Conversion (SSD 5544)			Demolition (SSD 5544 MOD1, MOD4 and MOD5)		ACS Works (SSD 5544 MOD2 and MOD5)		Tank 101 demolition works (SSD 5544 MOD3)	
		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem	
	 to the maximum extent practicable by wetting of soils during filling of cell to minimise the generation of dust. Directed water sprays will be used when required throughout ACS handling operations. A biodegradable cover would be sprayed over ACS in the containment cell to minimise the generation of dust. The cover would be applied following the placement of ACS within the containment cell, and at the end of each day. Limiting potentially dust generating activities during high wind events (i.e. >8m/s hourly average or in severe wind gust conditions) Stockpiles will be maintained in a moist condition when not covered, and be covered if not in use or left overnight. Completed areas of the works area will be revegetated with native grasses as soon as is practicable. *Note - Airborne asbestos means any fibres of asbestos small enough to be made airborne (Safe Work Australia, April 2016, Code of Practice: How to Safely Remove Asbestos) 										

Item	m Management and Mitigation Measure			Conversion (SSD 5544)			ACS Works (SSD 5544 MOD2 and MOD5)		Tank 101 demolition works (SSD 5544 MOD3)	
		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
H29	The DEMP and relevant sub plans (e.g. Asbestos Management Plan and Containment Cell Management Plan) would be revised to include the following measures:									
	 a defined exclusion zone around the work area within which only staff who have been appropriately inducted in relation to the site procedures are permitted entry wetting of soils during excavation and disturbance works to minimise the generation of dust an Asbestos Removal Control Plan which identifies appropriate procedures for personal protective equipment; staff induction and decontamination of equipment preparation of an asbestos monitoring and management plan to account for the activities that may liberate asbestos into the atmosphere. Dust and aerosol monitoring would occur in areas of the Site where asbestos in soil has been identified or is suspected to occur (including the pipeways) together with monitoring and analysis methods, exposure and control criteria and contingencies that will be implemented in the event specific exposure control criteria are exceeded. 						¥			
Trans	port and Access									
11	Local Authorities and Kurnell residents would be informed of any Project related work which would affect the road network.		✓			~	~			~
12	 A Traffic Management Plan would be developed for the construction/demolition phase. The Traffic Management Plan would comply with all relevant Regulations and By-Laws and in particular address safe access and egress to the public road network. The Transport Management Plan would include: hours of permitted vehicle activity; designated routes for construction and demolition traffic and defined access points to the Site and demolition works area; duration of works; permitted demolition vehicle types; 		~			~	~			
ltem	Management and Mitigation Measure	Conversion (SSD 5544)			Dem (SSI MOD [^] and	olition ACS Works 0 5544 (SSD 5544 , MOD4 MOD2 and MOD5) MOD5)		/orks 5544 and 05)	Tank 101 demolition works (SSI 5544 MOD3	
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		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
	 designated areas within the Site and demolition works area for truck turning movements, parking, loading and unloading to allow heavy vehicles to enter and leave the Site and demolition works area in a forward direction; sequence for implementing traffic management measures should these be required; and procedures and/or principles for construction and demolition vehicle speed limits and the safe operation of construction and demolition vehicles; and coordination of off-site heavy vehicle movements from the demolition works and ACS Modification works to ensure that heavy vehicle movements do not exceed 60 movements per day. 									
13	 Works to remove pipelines from under the road reserves in Kurnell would not take place before a road opening application has been approved by Sutherland Shire Council and on the days the following events are taking place: Australia Day (January); 				√	√				
	 The Festival of Kites (May); The Boree Regatta (October). and Water events for the Australian Scout Jamboree (first two weeks of January 2016). 									
14	Traffic related to the ACS Modification works would be managed under the Traffic Management Plan that forms a sub-plan to the DEMP						~			

ltem	Management and Mitigation Measure	ement and Mitigation Measure (SSD 5544)		on 4)	Dem (SSI MOD ⁻ and	olition D 5544 I, MOD4 MOD5)	ACS Works (SSD 5544 MOD2 and MOD5)		Tank 101 demolition works (SSD 5544 MOD3)	
		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
Herita	nge	1	1		[[-	[
J1	A Heritage Management Strategy would be prepared for the Australian Oil Refinery prior to shut-down of the refinery plant, to provide Caltex with a basic framework for the ongoing management of the Site's heritage during present and future works. The Strategy would include a review of the heritage significance of the overall Site. The review would clarify the extent and relative heritage value of the place by identifying key elements of industrial and built heritage as well as social values of the refinery, and the relative contribution of these elements to the overall significance of the Site. Recommendations would also address the future assessment and management of memorabilia and other significant items of moveable heritage maintained on-site.	~								
J2	If any further heritage items were discovered throughout the Project, work would cease until an assessment is carried out by a qualified heritage professional.	~	~			\checkmark	\checkmark			~
J3	An archival photographic record of the existing fabric and operations of the Kurnell Refinery would be prepared while the plant is still operational, and during the decommissioning process. The recording would be undertaken in accordance with the Heritage Council guidelines on <i>Photographic Recording of Heritage Items</i> <i>Using Film and Digital Capture</i> (2006). The archival recording would be maintained for the appreciation of present and future generations. To this end, the recording would be lodged with the Sutherland Shire Library and NSW State Library.	~	~							
J4	The Heritage Management Strategy (HMS) and the management strategies within it would continue to be implemented.				~	~			~	~
J5	Opportunities to adaptively reuse redundant buildings identified in the HMS as having high or moderate heritage significance would continue to be reviewed prior to final demolition works.				~	~				
J6	The sculptural panels by Bert Flugelman would be retained and preserved.				~	~				

Item	Management and Mitigation Measure	Conversion (SSD 5544)			Dem (SSI MOD ² and	olition D 5544 I, MOD4 MOD5)	ACS Works (SSD 5544 MOD2 and MOD5)		Tank 101 demolition works (SSD 5544 MOD3)	
		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
J7	Sandstone blocks from the informal sandstone wall along Silver Beach would be set aside in a secure location prior to works, and reinstated in the same location following removal of the cooling water outlet pipeline.				~	~				
J8	 Appropriate mitigation measures would be implemented to reduce the likely damage to the interpretive footpath in front of the driveway entrance to the Kurnell Wharf. Measures would include: Making a record of the current state of the pavement. Removing the affected pavement in sections and storing these sections in a secure location. Reinstating the pavement in the same location following the removal of pipelines; If this is not practicable, a similar pavement treatment and a matching or compatible interpretative design would be reinstated. 				~	¥				
J9	If historical archaeological relics are unexpectedly found during the demolition works, works in the area of the relics would cease and the Heritage Council of NSW would be notified.					~	~			~
J10	A Stop Works procedure would be implemented should any Aboriginal Heritage items be found. Works would cease at the vicinity of the item and OEH would be notified as soon as possible					~	~			~
J11	If any human remains are disturbed, all work in the vicinity of the remains would stop immediately and the remains would not be further disturbed or moved. Works would cease at the vicinity of the item and OEH and NSW Police would be notified as soon as possible.					~	~			~
J12	Prior to works commencing, all personnel and contractors involved in ground disturbance works would be briefed on the procedures to follow if human remains or unexpected heritage items are found.				~	~	~		~	~
J13	As part of the DEMP, a Heritage Management Section will be developed. This will incorporate previous Management and Mitigation Measures that are not already included in the HMS.				~	~	~			

ltem	Management and Mitigation Measure	Conversion (SSD 5544)			Dem (SSI MOD1 and	olition D 5544 I, MOD4 MOD5)	ACS Works (SSD 5544 MOD2 and MOD5)		Tank 101 demolition works (SSD 5544 MOD3)	
		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
Ecolo	ду									
K1	 A Biodiversity and Weed Management Plan (BWMP) would be prepared in order to limit and control the spread of noxious weeds within the Site/demolition works area. It would include the following: wash down procedures to reduce the spread of weeds via vehicles and machinery; measures to target potential new weed outbreaks including soil stockpiles and any other disturbed areas; outline monitoring programs for noxious and problematic weeds on site and in the surrounding areas; measures for strict stockpiling control to help eradicate all noxious weeds as per NSW DPI specifications for Sutherland Shire LGA; include a list of 'frog-friendly' and 'wetland friendly' herbicides such as Roundup Biactive or Weedmaster DUO for the control of noxious weeds; and ensure that only amphibian friendly herbicides are used; wash down protocols for construction/demolition vehicles and machinery to prevent the spread of root-rot fungus (<i>Phytophthora cinnamomi</i>) and noxious weeds; all personnel undertaking routine management activities of any noxious weeds; weeds should be appropriated trained and all contractors should hold the necessary permits and licenses. Noxious weed information sheets would be provided to demolition contractors to help identification of relevant noxious weeds. 	✓	~	~	~	~				

ltem	Management and Mitigation Measure			on 4)	Dem (SSI MOD1 and	olition D 5544 I, MOD4 MOD5)	ACS Works (SSD 5544 MOD2 and MOD5)		Tank 101 demolition works (SSD 5544 MOD3)	
		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
К2	 A BWMP would be prepared in order to limit potential impacts to existing vegetation outside of the area of proposed works, but within the Site. It would include the following: existing vegetation on Site would be clearly marked on all Site plans and construction diagrams, with clear indications of no-go zones within all vegetated areas; existing vegetation would be clearly signposted and fenced off prior to the commencement of construction activities, and should remain fenced off until the completion of works (as per the Vegetation Exclusion Zones shown on Figure 17-1); and absolutely all works would be limited to the defined construction/demolition footprint. 	~	~	~	~	~				
КЗ	 To minimise the potential for impacts to native fauna species, the BWMP would be developed and include following measures: if any frogs are found within the Project Area, works would cease until frogs have been relocated to areas outside the area of impact; if any threatened frogs e.g. Green and Golden Bell Frog or Wallum Froglet are identified within the Site, works would cease and active searching should be undertaken by a qualified zoologist experienced in the identification and management of the Green and Golden Bell Frog and Wallum Froglet; all trenches would be inspected prior to works each morning. Any frogs that become trapped within trenches would be assessed by a suitably qualified ecologist or veterinarian and then released into the nearest suitable habitat if uninjured; identification sheets would be provided to all construction workers on Site for the two threatened frog species predicted to occur within the Site; wash down protocols to prevent the spread of Amphibian Chytrid Disease (chytridiomycosis) would be implemented at relevant work areas. Protocols would be consistent with OEH guidelines (DECC, 2008b); 'frog-friendly' and 'wetland friendly' herbicides such as Roundup Biactive or Weedmaster DUO would be used for the control of noxious weeds; and 	~	~	~						

ltem	Management and Mitigation Measure	Conversion (SSD 5544)			Dem (SSI MOD1 and	olition D 5544 I, MOD4 MOD5)	ACS Works (SSD 5544 MOD2 and MOD5)		Tank 101 demolition works (SSD 5544 MOD3)	
		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
	 if fauna are found to be utilising the Site, or a nest, den or roost is found, work in the immediate area is to stop and the animals are to be allowed to move off freely, or relocated by an authorised person to an area outside the construction footprint. 									
K4	To minimise the potential impacts to native fauna during the demolition works the following measures would be included in the BWMP:									
	 demolition workers would be provided with identification sheets relating to the threatened fauna species predicted to occur within the Site. Stop work procedures would be implemented during the works on the chance encounter of any dispersing threatened frogs or the identification of nesting Pied Oystercatcher, Little Tern, Osprey or White-bellied Sea-eagle to avoid death or injury to frogs dispersing across the study area, or disturbance to nesting threatened birds. Trenches/holes would be back-filled daily or covered overnight. Where this is not possible, other measures would be considered to prevent and/or mitigate fauna entrapment. Trenches/holes would be inspected prior to works each morning. Injured frogs that become trapped within trenches would be assessed by a veterinarian or ecologist. Uninjured frogs would be captured and released into the nearest suitable habitat to the south of the study area. If threatened frogs, Green and Golden Bell Frog or Wallum Froglet are identified during demolition works, active searching would be undertaken by a qualified zoologist experienced in the identification and management of the Green and Golden Bell Frog and Wallum Froglet. When open trenching/digging/excavating, Caltex would ensure that exclusion fencing shall be maintained during all seasons of the year, given the active season for the Green and Golden Bell Frog extends from September to April and the Wallum Froglet peak activity period occurs during the colder months. If practicable, works at Silver Beach to remove the cooling water outlet should be completed outside of the known nesting periods for Pied Oystercacher (August to January) and Little Tern (Spring/Summer). If nesting shorehirds are encountered in the Silver Beach foreshore area in the 				~	~				

ltem	Management and Mitigation Measure	Conversion (SSD 5544)			Dem (SSI MOD1 and	olition D 5544 I, MOD4 MOD5)	ACS Works (SSD 5544 MOD2 and MOD5)		Tank 101 demolition works (SSD 5544 MOD3)	
		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
	 vicinity of works (within 20 m), works at Silver Beach would cease, a qualified zoologist would be consulted and appropriate actions would be implemented, prior to works recommencing. If practical, works to remove tall structures on-site should be completed outside of the known nesting periods the threatened bird species (July to September for Osprey and June to January for White-bellied Sea-eagle). If not practical then tall structures would be inspected for active nests prior to commencing the demolition works. 									
К5	 The following recommendations, would be contained in the Cooling Water Outlet Management Plan for managing the potential marine ecology impact and implemented during demolition works: silt curtains would be installed seaward of the demolition works area but not directly above existing seagrass communities; all plant and equipment used in the water column would be appropriately prepared, checked and cleaned to avoid potential release of contaminants; plant and equipment used in the water column would be inspected to ensure fragments of the invasive algae Caulerpa taxifolia are not present; spill kits would be used to contain and clean up any spills from demolition plant and equipment. Spill kits would be located within 20 m of demolition plant and equipment; and demolition works at Silver Beach (particularly those located in the water column) would be timed such that they do not coincide with high-tide conditions or during significant wave action. 				~	~				

Item	Management and Mitigation Measure			on 4)	Derr (SS MOD ⁻ and	nolition D 5544 1, MOD4 MOD5)	ACS Works (SSD 5544 MOD2 and MOD5)		Tank 101 demolition works (SSD 5544 MOD3)	
		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
К6 К7	 Following the removal of the continental carbon pipeline and other infrastructure Caltex would develop a strategy to manage the redundant right of way (CCROW). The strategy would include measures to: remove fencing, reprofile and allow natural regeneration the southern part of the CCROW (beyond the southern boundary of the Site) to promote consistent and connected vegetative communities across the southern part of Caltex's ownership; remove and keep out noxious and invasive weeds, especially during the regeneration phase; and reprofiling of the CCROW could include creating gaps in the raised easement to allow for hydrological exchange and habitat regeneration. Caltex would undertake the following prior to excavation along the Continental Carbon Right of Way: 					*				
	 pre-clearing inspections; and implementing frog exclusion measures to ensure dispersing frogs are not captured and trapped in trenches during pipeline removal (e.g. exclusion fencing). 					~				
Coast	tal Processes	r		1		1	1	1	1	
L1	A Cooling Water Outlet Management Plan would be developed as part of the Demolition Environment Management Plan (DEMP). Rehabilitation works at Silver Beach would be in accordance with this Cooling Water Outlet Management Plan. The following measures would be included:				~	¥				
L2	A detailed survey of the likely extent of the disturbed area at Silver Beach would be undertaken prior to commencing demolition works to ensure that the pre- existing topography is re-established following the works.					~				
L3	The affected sand dunes (including the back-beach and sub-aerial beach) would be re-instated using the stockpiled overburden sand and if necessary, additional sand. Additional sand used for reinstating sand dunes would be of similar particle size and composition as the overburden sand.					~				

Item	Management and Mitigation Measure		Conversion (SSD 5544)			olition D 5544 I, MOD4 MOD5)	ACS Works (SSD 5544 MOD2 and MOD5)		Tank 101 demolition works (SSD 5544 MOD3	
		CD	Conv	Ор	DD	Dem	Con	Ор	DD	Dem
L4	The affected sand dunes would be restored to match the previously surveyed topography. A smooth profile from the back-beach area to the dune would be re- established to ensure the aerodynamics are as consistent as possible with the undisturbed areas adjacent to the disturbed area. If necessary, liquid sprays or geotextiles would be used to help stabilise the beach and protect against erosion.					V				
L5	The affected sand dunes would be re-vegetated using indigenous, native flora. The existing vegetation is limited to grasses, with no woody vegetation. The area would be re-planted with similar grass species in a manner that ensures minimal loss of wind-blown sand from the dune while the area is re-vegetating. All re- vegetated areas would:					√				
	 contain signage to highlight these areas as rehabilitation zones that prohibit public and vehicular access; be temporarily fenced, and be maintained and monitored until vegetation is established using approved dune rehabilitation methods. 									
L6	Material of a similar sediment size and colour characteristics would be used as back fill material for the trench below the low tide mark. To account for later settling and consolidations, some overfilling would be undertaken to account for later consolidation (approximately 10 % would be recommended).					~				