



Australian Government
**Department of Regional Australia,
Local Government, Arts and Sport**

PROPOSED IMPROVEMENT TO FUEL STORAGE AND SUPPLY

Christmas Island, Indian Ocean Territories

Statement of Evidence
to the
Parliamentary Standing Committee
on Public Works

Canberra, Australian Capital Territory

March 2012

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SUPPLEMENTARY INFORMATION

Attachments:

1. Location Plan
2. Christmas Island Plan
3. Key Fuel Infrastructure Related Sites Plan
4. Smith Point Storage Assets Plan
5. Schematic Diagram, Diesel Supply Arrangement
6. Christmas Island Airport, Aviation Fuel Storage Depot
7. Flying Fish Cove Port Infrastructure
8. Schematic Diagram, Petrol Supply, Flying Fish Cove to Rocky Point Tanks
9. Schematic Diagram, Petrol Supply, Rocky Point Tanks to Service Station
10. Rocky Point Storage Tanks and Service Station Aerial View
11. Rocky Point Petrol Tanks - Photograph of waves slamming against the cliff face
12. Preliminary Site Plan for New Pipeline Infrastructure
13. Preliminary Site Plan for New Bulk Fuel Installation
14. Service Station relocation - Indicative sites
15. Project Program

Proposed Improvement to Fuel Storage and Supply

Introduction

1. This submission by the Department of Regional Australia, Local Government, Arts and Sport (the Department) provides evidence to the Parliamentary Standing Committee on Public Works (Public Works Committee) of a proposal to increase the bulk fuel storage capacity, integrate and co-locate storage of diesel, aviation fuel and petrol on Christmas Island (CI).

Identification of the Need

Project Objectives

2. The objectives of the Christmas Island Fuel Consolidation Project (the Project) are to:
 - a) Increase fuel storage capacity for diesel, petrol and aviation fuel within the approved project constraints;
 - b) Integrate and co-locate storage of diesel and petrol; and
 - c) Relocate bulk storage of petrol and the Service Station away from the tourist precinct.

Historical Background

3. CI is a non-self-governing Australian Territory located in the Indian Ocean, approximately 2,600 km north-west of Perth. The current population is estimated at approximately 3,000 people, including persons held in Department of Immigration and Citizenship (DIAC) detention facilities, government employees, contractors and residents. The majority of the population and activity is concentrated in the north east portion of the Island. Overall responsibility for the Island lies with the Department. Refer to Location Plan and Island Plan at Attachments 1 and 2 respectively.

4. CI has a high dependency on fuel to maintain essential services and operations owing to its isolated location. Diesel is used primarily in the generation of electricity on CI via the power station operated by Indian Ocean Territories Power Authority. Major power consumers include the immigration detention centre at Northwest Point, the Drumsite residential area and the phosphate mine. Aviation fuel is essential for commercial and government aviation operations from the airport including for flights to Cocos (Keeling) Islands which refuel at Christmas Island airport. Unleaded petrol is used on CI by private, commercial and government vehicles.
5. All fuel is transported to CI via ship. Diesel and petrol are transported in bulk via tanker ship, and aviation fuel in containerised parcels (which are referred to as isotainers). Each year (between November and April with some year-on-year variation), swells cause rough seas and port closure thus impacting shipping to the Island. This period is referred to as the 'swell season'.

Diesel

6. The Commonwealth manages the general supply of diesel to CI and maintenance of its associated infrastructure through an existing contract with Gaseng Petroleum (Christmas Island) Pty Ltd.
7. The diesel fuel supply, discharge and storage operation consists of:
 - a) Diesel is received at Smith Point via tank ship and then transferred into a Commonwealth controlled bulk storage tank at Smith Point using floating hose; and
 - b) Diesel fuel is transferred from Smith Point to Indian Ocean Territories Power Authority (IOTPA) tanks on Murray Road via a 1.6 km pipeline and an inland depot. The pipeline and the inland depot are owned by Indian Ocean Oil Company. Refer to Attachments 3, 4 and 5.

Aviation Fuel

8. Supply and storage of aviation fuel is managed by Air BP on a commercial basis. The current storage capacity consists of fixed storage (2 x 85 kL tanks) and mobile storage (12 x 23kL isotainers). These are owned and operated by Air BP and are located adjacent to the CI airport. See Attachment 6.

9. Aviation fuel is transported to Christmas Island via 23kl isotainers transhipped on a regular cycle, ex-Fremantle through Zentner Shipping Pty Ltd.
10. The aviation fuel discharge and storage operation consists of:
 - a) Aviation fuel isotainers are received at the Flying Fish Cove wharf;
 - b) The isotainers are lifted one at a time from the ship using the wharf crane and loaded onto low loader transport. The low loader has the capacity to transport one isotainer at a time;
 - c) The low loader delivers the isotainers to the airport for storage and use; and
 - d) Empty isotainers are then returned for loading onto the ship for return to the mainland.
11. The aviation fuel storage facility is located on airport land leased to Air BP under a lease agreement with the Commonwealth. The lease is for 15 years effective from 1 March 2005.
12. The Government proposes investment in additional aviation fuel storage delivered through the Project. Air BP has advised the Department that given the demand on the island is driven by Government policy, the uncertain nature of the demand and other factors means such an investment does not meet Air BP return on investment requirements and at this stage Air BP does not have any plans to invest in Christmas Island.

Unleaded Petrol

13. The unleaded petrol discharge and storage operation consists of:
 - a) Petrol is received via tank ship at Flying Fish Cove;
 - b) Petrol is pumped from ship through dedicated underground pipe work into 2 x 370kl petrol tanks located at Rocky Point on the foreshore in the Settlement area; and
 - c) Petrol is then transferred via dedicated underground pipe work into the underground petrol tanks at the Service Station in the Settlement area. See Attachments 7, 8, 9 and 10.

14. As with diesel, the Commonwealth through its contract with Gaseng Petroleum (Christmas Island) Pty Ltd manages the general supply of petrol to CI and maintenance of its associated infrastructure.

Service Station

15. The Commonwealth owns and operates the Service Station through a contract with Gaseng Petroleum (Christmas Island) Pty Ltd.
16. The operation for the Service Station consists of:
 - a) Tanker truck owned by Gaseng Petroleum (Christmas Island) Pty Ltd is filled with diesel at the Indian Ocean Oil Company Tank Truck Fill Stand on Murray Road;
 - b) The tanker truck then transports the diesel fuel to the Service Station through the township. The Service Station is approximately 5.7km from the Tank Truck Fill Stand on Murray Road;
 - c) The diesel fuel from the tanker truck is pumped into an above ground diesel tank at the Service Station; and
 - d) Petrol is transferred from the petrol tanks located at Rocky Point via dedicated underground pipe work into the underground petrol tanks at the Service Station.

Need for the Work

17. All fuel is delivered to CI via sea transport. Adverse weather conditions, particularly those prevalent during the swell season, limit and often prevent ships from being unloaded. As a result of this, bulk deliveries of diesel and petrol are typically scheduled to occur just prior to and immediately following the swell season. The scheduled deliveries can be compromised due to variances in when the swell season commences and completes.
18. The current fuel storage facilities (diesel, aviation fuel and petrol) were built based on historic demand prior to the commencement of the Immigration Detention Centre (IDC) operation. The increased activity, including sea, land and air transport components, has increased demand, (diesel and aviation fuel in particular). The ability to meet the current demand in order to maintain essential

services and operations on CI is limited by the current capacity of the fuel storage infrastructure.

Diesel Fuel

19. In recent times there has been an increase in demand for diesel on CI primarily due to:
 - a) Increased demand for mains electricity as a result of:
 - i) Construction of and operational commencement in 2008 of the purpose-built Christmas Island immigration detention centre;
 - ii) Increases in semi-permanent population due to persons employed either directly or indirectly by the immigration detention centre and government agencies; and
 - iii) Increased operations and activity at the Airport;
 - b) Increased demand from other diesel fuel customers including:
 - i) Supply of fuel to Royal Australian Navy vessels; and
 - ii) Bulk commercial sales, such as those for heavy vehicles utilised in construction activity on the Island and in the supply of passenger and private vessels.

20. The increased demand for diesel coupled with the static diesel storage capacity and the inability to deliver diesel to CI during the swell season has placed pressures on the diesel fuel stocks. During the 2010-2011 swell season, the power station diesel supply was operating at the limits of its diesel supply and Christmas Island essential services were very nearly compromised. Had diesel fuel supplies been any further depleted, power would have been initially rationed resulting in compromised amenity and then lost to all consumers on Christmas Island, including:
 - a) Department of Immigration and Citizenship facilities;
 - b) Phosphate mining operations; and
 - c) The general public and commercial activities in the Drumsite, Settlement and Silver City areas.

21. To ensure that the operations and essential services of CI are protected against unpredictable swell season conditions, it is essential that the bulk diesel fuel

capacity accessible to the power station is increased. Table 1 provides the historical data for diesel deliveries by volume since 2004.

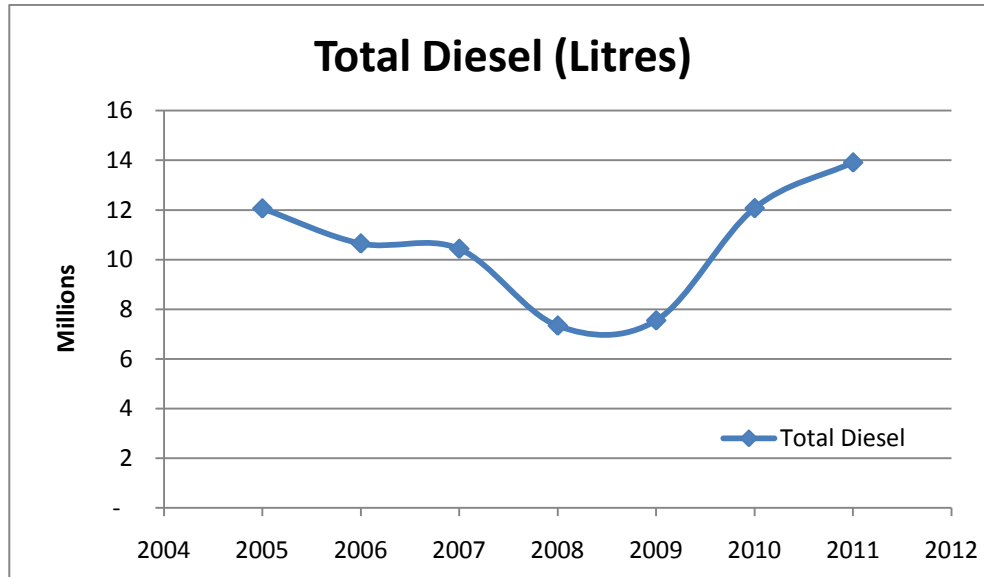


Table 1 – Historical Data Diesel Deliveries to Christmas Island

Aviation Fuel

22. Consumption of aviation fuel on CI is limited by the storage capacity of the commercial operator. During the recent 2010-2011 swell season, aviation fuel stocks were also compromised due to an inability to unload new supplies from the ship. The fuel stock had to be rationed until it was replenished. Rationing of fuel stock was also required during the 2011-2012 swell season for similar reasons. Table 2 provides historical data for Jet AI fuel deliveries since 2007 indicating a steady increase in volume.

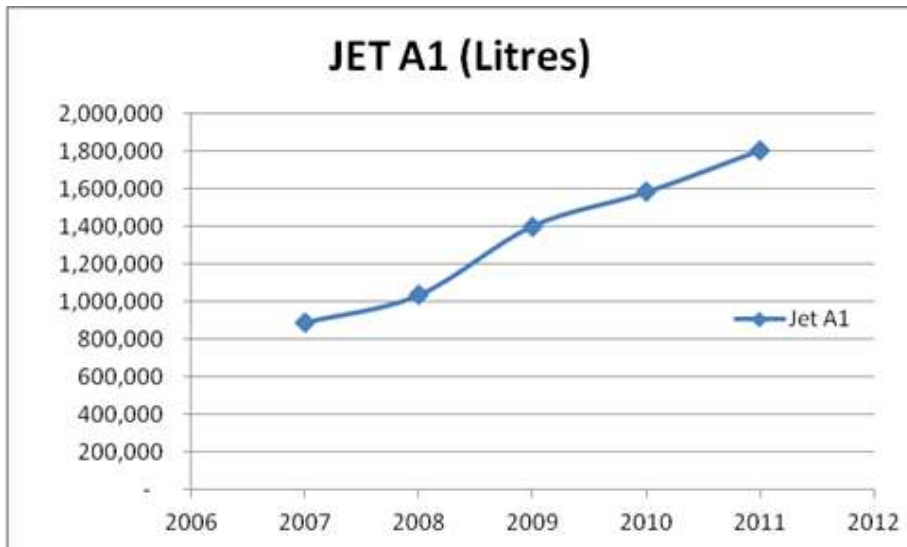


Table 2 – Historical Data, Jet A1 Deliveries to Christmas Island

23. There has been a rapid increase in total aircraft movements to CI in recent years. During 2008 and the years prior, there was an average of approximately 20 aircraft movements per month. This number has increased at a constant rate to over 60 per month in December 2011. Total passenger movements have increased from an approximate average of 965 per month in 2008 to 2,950 per month in 2011. Regular Passenger Transport air services, government charters, airfreight services, medical evacuations, surveillance and search and rescue flights operate regularly to and from Christmas Island. Table 3 provides historical data on aircraft movements to and from Christmas Island since 2005.

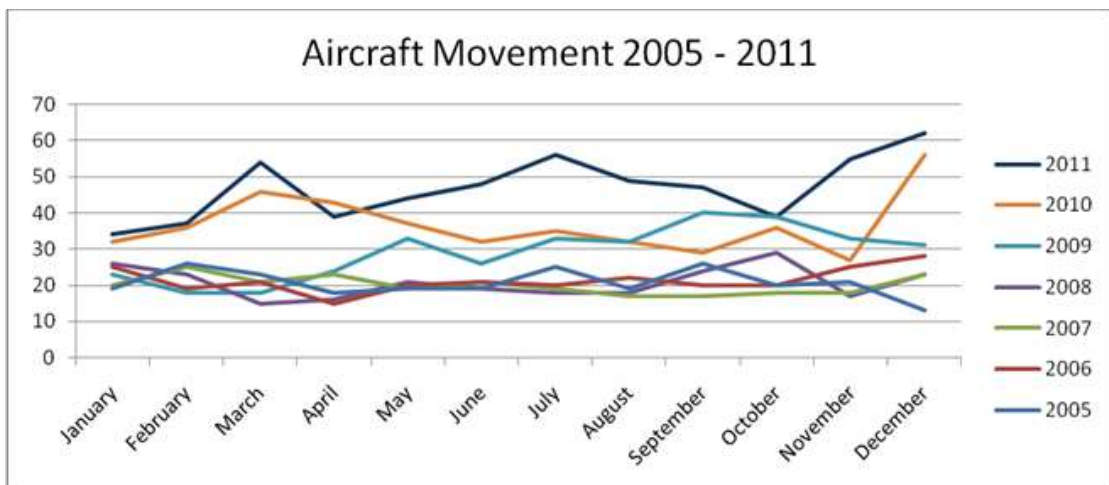


Table 3 – Christmas Island Aircraft Movement 2005 - 2011

24. The aircraft movements include the Regular Passenger Transport services operated by Virgin Australia (four return flights per week or eight aircraft

movements), a weekly Malaysian Airways charter flight from Kuala Lumpur, weekly airfreight services operated by Toll, DIAC chartered flights and Customs and Border Protection surveillance and search and rescue flights.

25. Historically, the average usage of aviation fuel has been in the order of 4,000 - 5,000 L/day (120,000 L/month). The usage rate in the last 6 months of 2011, however, has increased to a daily average of 5,800 L/day, culminating with a monthly consumption of 179,800L in December 2011.

Unleaded Petrol Fuel

26. Bulk petrol fuel storage on CI consists of 2 x 370 kL tanks located on an escarpment above the Indian Ocean at Rocky Point. This location is subject to extreme local weather conditions resulting in ongoing erosion around the tank footings, corrosion to tank fabric and risk of damage by waves breaking against the cliff face, (Attachment 11 refers).
27. The location of the petrol tanks is also constraining the future development of the foreshore area for tourism and commercial purposes. The area is predominantly zoned Commercial, Tourism and Public Open Space.
28. The Shire of Christmas Island has developed a town planning strategy – ‘*Report for Urban Design Master Plan, Gaze Road Tourism and Commercial Precinct, October 2011*’) that identifies the foreshore area including the current service station location for tourism and commercial purpose.
29. Usage of petrol (ULP) fuel is currently in the order of 2,000 L/day. Table 4 provides historical data of petrol consumption on Christmas Island.

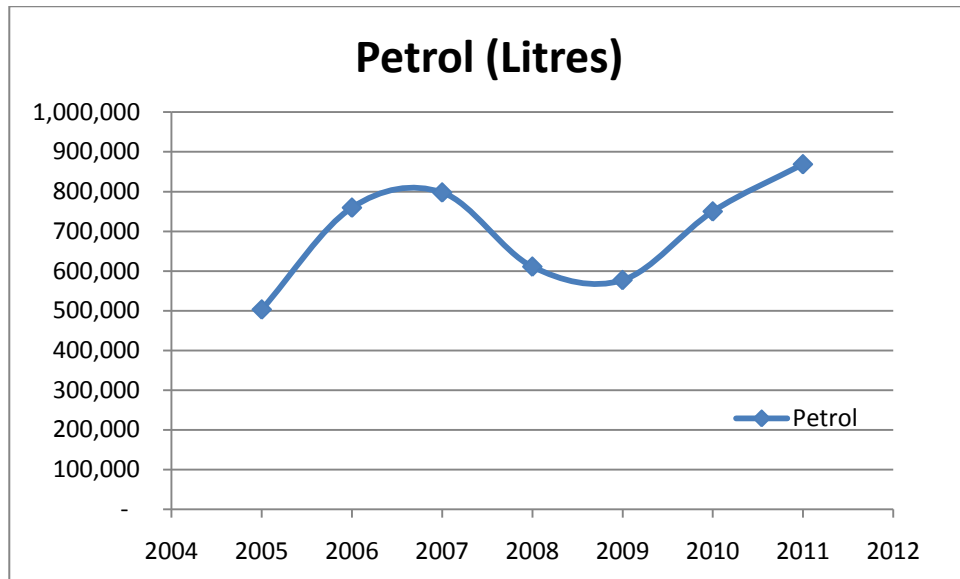


Table 4 – Annual Data Petrol Consumption on Christmas Island

Description of the Proposal

30. The Australian Government has recognised the pressure placed on the existing fuel storage infrastructure by the increased demand for diesel and aviation fuel and the ongoing risk to essential services due to poor reliability of fuel deliveries during the swell season. In the 2011-12 Budget, the Government announced funding to address the need for additional storage capacity for diesel and aviation fuel. The Fuel Consolidation Project has been established to manage the delivery of the works. The proposed works include:

- a) Increase access to Commonwealth owned bulk diesel storage tank currently leased to the Indian Ocean Oil Company (Tank F3 in Attachment 4). This will increase the diesel storage capacity at Smith Point without incurring any construction costs;
- b) Construct a new Bulk Fuel Installation on Murray Road for the following, (Attachment 12 and 13):
 - i. bulk petrol storage tanks (relocated from Rocky Point);
 - ii. Service Station (relocated from the Settlement area and subject to community consultation), and
 - iii. isotainer storage area for aviation fuel;

- c) Construct a new pipeline and associated infrastructure between Smith Point and the new Bulk Fuel Installation to transfer petrol into bulk storage assets, (Attachment 12);
 - d) Construct fixed storage for aviation fuel adjacent to the Air BP storage depot at the CI airport and;
 - e) Demolish redundant facilities and undertake associated site remediation works. The remediation works are expected to facilitate future tourism and commercial development on the foreshore area. The foreshore area has been zoned as commercial, tourism and public open space as part of the Shire of Christmas Island's '*Report for Urban Design Master Plan, October 2011, Gaze Road Tourism and Commercial Precinct, October 2011*'.
31. The Bulk Fuel Installation site will be designed to accommodate future expansion of storage capacity, if needed.

Other Options Considered

32. To meet the identified need, the Department considered a range of options to maximise efficiencies and obtain best value for money. Key considerations in the development and appraisal of options included:
- a) Opportunities to re-use existing infrastructure and storage assets;
 - b) Opportunities to co-locate and seek synergies in discharge from supply ships, infrastructure and storage assets;
 - c) Opportunities to maximise use of Commonwealth owned infrastructure and storage assets; and
 - d) Project budget.
33. In determining the required storage capacity, detailed analysis of historic and forecast usage rates, bulk delivery schedules and contingency periods was undertaken.

Environmental Impact Assessment

34. Christmas Island is of significant environmental value as it was uninhabited until the late 19th century. Many unique species of fauna and flora exist which have evolved independently of human interference. Approximately two-thirds

of the Island is declared National Park. Both the waters surrounding the Island and its land surface are fertile, and exhibit a high level of biodiversity with many endemic species.

35. Preliminary assessment of the proposed works has been undertaken by the Project Consultant to assess the anticipated environmental impact. No significant environmental impacts are anticipated.
36. The proposed new Bulk Fuel Installation on Murray Road is to be located near a traditional red crab migration corridor. It is recognised that the new asset will realise an increase of vehicle movements in the area. Engineering measures are proposed to be put in place by the Project to provide greater protection to the crabs which will include:
 - a) An extension to current crab funnelling fences to incorporate the new Bulk Fuel Installation; and
 - b) Either overhead or underground corridors that the funnelling fences will lead into providing safe passage for the crabs across Murray Road.
37. Preliminary discussions have been undertaken by the Project Consultant with Parks Australia in developing the proposed measures.
38. As the project progresses, a number of key actions will be undertaken to ensure the environmental impacts of the project are appropriately considered and associated risks and liabilities adequately addressed. These primarily include:
 - a) Conduct baseline assessments at all sites to determine contamination status of the sites prior to development;
 - b) Develop a project specific Environmental Management Plan (EMP) to detail the processes by which environmental protection will be assured;
 - c) Develop a project specific Construction Environmental Management Plan (CEMP) as a subset of the EMP to detail the processes by which environmental protection will be assured through the construction phase; and
 - d) Prepare a referral submission to the Department of Sustainability, Environment, Water, Population and Communities to obtain approval in accordance with the *EPBC Act*.

39. The EMP will be developed to address:
- a) Environmental Objectives and Policy;
 - b) Environmental Management and Responsibility;
 - c) Statutory Requirements and the Approval Process;
 - d) Commonwealth Legislation including
 - i) *EPBC Act; and*
 - ii) *Control of Naval Waters Act, 1918.*
 - e) State Legislation including;
 - i) *Contaminated Sites Act, 2003; and*
 - ii) *Western Australian Planning Commission Acts.*
 - f) Environmental Management;
 - i) Waste Management;
 - ii) Baseline Studies-soil, groundwater and ecological;
 - iii) Water Quality;
 - iv) Air Quality;
 - v) Ecology;
 - g) Environmental Monitoring and Reporting;
 - h) Compliance Monitoring;
 - i) Community Consultation; and
 - j) Environmental Incidents and Emergency Response.
40. Unloading fuel from tanker ships has inherent risk. This risk at Christmas Island is mitigated by Gaseng Petroleum (Christmas Island) Pty Ltd developing and implementing practices that accord with the requirements of the “International Safety Guide for Oil Tankers and Terminals” which is the standard reference for the safe operation of oil tankers and the terminals they serve. The document sets out a number of key requirements including but not limited to those relating to:
- a) Emergency Preparedness and Response Plans;
 - b) Safety and Fire Protection;
 - c) Safety Management;
 - d) Operator Training Requirements;
 - e) Inspection, Testing and Maintenance Requirements;
 - f) Operational Requirements; and
 - g) Precautions on Ship and Terminal during Cargo Handling.

Heritage Considerations

41. In 1989 the Australian Government investigated and documented Christmas Island's heritage. As a result of this and subsequent studies, Christmas Island has been confirmed as a place of aesthetic, historic, scientific and social significance and consequently a number of sites have been listed on the Commonwealth Heritage List. Places listed on the Commonwealth Heritage List are protected under the *EPBC Act*.
42. Preliminary assessment of the proposed sites has been undertaken by the Project Consultant to assess the proposed works at the proposed sites. Through this it has been determined that none of the proposed works sites are:
 - a) World Heritage listed;
 - b) National Heritage listed;
 - c) Commonwealth Heritage listed;
 - d) Listed on the Register of the National Estate;
 - e) Listed as a place of Cultural Significance; or
 - f) In *EPBC Act* protected areas.
43. The Project will prepare a referral submission to the Department of Sustainability, Environment, Water, Population and Communities to obtain approval in accordance with the *EPBC Act*.

Stakeholder Consultation

44. The following stakeholders have been consulted during the initial investigation and scoping of works:
 - a) Indian Ocean Territories Administrator;
 - b) Shire of Christmas Island;
 - c) Indian Ocean Territories Power Authority;
 - d) Indian Ocean Oil Company;
 - e) Phosphate Resources Limited;
 - f) Gaseng Petroleum Pty Ltd;
 - g) Air BP;
 - h) Patrick Ports;
 - i) Water Corporation;

- j) Parks Australia;
 - k) Department of Environment and Conservation (WA);
 - l) Department of Sustainability, Environment, Water, Population and Communities; and
 - m) Department for Planning and Infrastructure (WA).
45. Consultations will continue with the above stakeholders as the Project progresses. In addition, the CI community will be consulted in particular on the issue concerning the relocation of the Service Station.

Revenue

46. Indirect revenue is generated, in particular, through the sale of electricity by the Indian Ocean Territories Power Authority (IOTPA). No impact on revenue is expected as a result of this project.

Technical Information

Project Location

47. The proposed new works will be undertaken on Christmas Island. Specific details are as follows:
- a) The new pipeline infrastructure including new pump to transfer petrol will be constructed within the existing Public Utility Corridor between Smith Point and the Indian Ocean Oil Company's inland fuel depot at Murray Road. Pipeline infrastructure will also be constructed on Murray Road to the new Bulk Fuel Installation, (Attachment 12);
 - b) The new Bulk Fuel Installation incorporating the relocated Service Station (subject to public consultation) and aviation fuel isotainer storage compound will be constructed on Crown Land on Murray Road adjacent the Indian Ocean Territories Power Authority power station, (Attachment 13); and
 - c) Aviation fuel fixed storage will be constructed on a site adjacent to the Air BP storage facility at the CI airport (Attachment 6).

Scope of Project Works

48. The proposed project has 6 main elements to address the functional requirements.

Element 1 – Bulk Diesel Fuel Storage

49. The Commonwealth owns a number of bulk diesel fuel storage tanks on Christmas Island with a total storage capacity of approximately 5.6 mega litres (ML). Of this total storage capacity, Indian Ocean Oil Company (IOOC) has access to approximately 2.1ML under a commercial agreement with the Commonwealth (Tank F3) due to expire in 2019. The IOOC is a subsidiary of Phosphate Resources Ltd (PRL) and supplies diesel and oil for PRL's mining operations. PRL has a lease agreement with the Commonwealth for phosphate mining on CI.
50. The current agreement with IOOC provides the Commonwealth with access to these fuel supplies under certain conditions, principally if there is a real threat that essential services will not be able to be maintained as a result for fuel shortages on the island.
51. The Commonwealth will negotiate with IOOC the total additional volume requirement via increased access to Tank F3. No new bulk diesel fuel storage works are proposed.

Element 2 – Bulk Aviation Fuel Storage

52. The Department is in discussions with Air BP to resolve commercial and technical issues surrounding the proposed increases to aviation fuel storage capacity. As a minimum, it is proposed that aviation fuel storage capacity will be increased through the provision of 1-2 x 110kL tanks and up to 10 x 23kL isotainers. The fix storage tanks are proposed to be located on a site adjacent to Air BP's current depot at the airport. Provision will also be made for the storage of the additional isotainers at the new Bulk Fuel Installation.
53. The additional fixed storage facility at the airport will include all necessary pipe work, overfill protection and concrete footings.

Element 3 – Bulk Petrol Fuel Storage

54. It is proposed that the existing 2 x 370kL bulk petrol storage tanks will be relocated from Rocky Point to a new Bulk Fuel Installation that will be constructed on Murray Road adjacent the power station.

Element 4 – Retail Service Station

55. It is proposed that the Service Station will be co-located with the bulk petrol storage tanks at the new Bulk Fuel Installation with the final decision on the site subject to community consultation. The Service Station will continue to provide diesel and unleaded petrol for retail sale as is currently the case.

Element 5 – Fuel Pipeline Infrastructure

56. One new pipeline to transfer petrol is proposed for construction between Smith Point and the new Bulk Fuel Installation on Murray Road. The new infrastructure will be affixed to existing pipe racks and utilise the existing Public Utility Corridor for the majority of the traverse. This will be a requirement for a section of new pipework to be laid from where the Public Utility Corridor intersects Murray Road to the new Bulk Fuel Installation.
57. In order to address current access challenges, new stairs will be constructed adjacent the pipeline where required to ensure there is safe access for personnel to inspect and service the entire pipe length. In addition, a number of enhanced safety features such as fall arrest lines will be provided.

Element 6 – Decommissioning and Remediation

58. The following assets will be decommissioned and the sites remediated:
- a) The existing petrol pipe transfer infrastructure from Flying Fish Cove to Rocky Point and from Rocky Point to the current Service Station site in the Settlement;
 - b) The remnant bulk petrol storage assets at Rocky Point; and
 - c) The current Service Station including underground storage tanks (subject to community consultation).

Details of Site Selection

Bulk Fuel Installation

59. The Project Consultant identified and assessed a number of site options for the new Bulk Fuel Installation on Murray Road. The proposed site was preferred and supported by the Project Steering Committee for the following primary reasons:

- a) This site is vacant Crown Land;
- b) The site adequately addresses the total spatial requirement and allows for future expansion should the need arise;
- c) The site is supported by adequate and existing services and road infrastructure;
- d) The site is located immediately adjacent to an existing bulk fuel store, that being those utilised by the Indian Ocean Territories Power Authority power station and Indian Ocean Oil Company Depot;
- e) The site optimises use of the existing Public Utility Corridor in which existing and proposed additional fuel transfer pipeline infrastructure is located;
- f) The site is located away from the main residential, commercial and industrial areas of the Island; and
- g) The site delivers the greatest capital and ongoing cost effectiveness.

Fuel Pipeline Infrastructure

60. The Public Utility Corridor between Smith Point and the Indian Ocean Oil Company Inland Depot at Murray Road where existing pipeline infrastructure is installed was selected for the installation of new petrol pipeline infrastructure. This is the most direct and cost effective solution to transfer fuel.

61. There is also a requirement to extend the petrol pipeline from Murray Road to the new petrol storage tanks at the proposed Bulk Fuel Installation.

Aviation Fuel Storage

62. Fixed storage for aviation fuel will be located on a site adjacent to Air BP's current depot at the CI airport. This site is preferred due to its proximity to the existing aviation fuel storage and the airport.

Service Station

63. The preferred location of the Service Station is co-located with the Bulk Fuel Installation at Murray Road however the final location will be subject to community consultation. A number of options have been identified for the Service Station and their relative merits evaluated in determining the preferred site (Attachment 14). A brief summary of these options together with a brief appraisal is as follows:

Option 1 – Co-located with Bulk Fuel Installation at Murray Road

64. A new Service Station to be constructed within a public access area of the proposed Bulk Fuel Installation.
65. The key advantages of this location are as follows:
 - a) Consolidates fuel storage and retail supply in the same location;
 - b) Reduced infrastructure requirement and lower cost, ie no truck fill stand point would be required; and
 - c) There will be no requirement to transport flammable ULP or diesel via tanker truck on public roads.
66. The key disadvantages of this location are as follows:
 - a) Located approximately 6-7 km from the existing service station;
 - b) Located in close proximity to crab migration corridor; and
 - c) Will increase the volume of traffic past the school on Murray Road.

Option 2 – Drumsite

67. A new Service Station to be constructed at intersection of Murray Road and Sung Miaw Loh.
68. The key advantages of this location are as follows:
 - a) Site has good access and potentially multiple ingress/egress paths.

69. The key disadvantages of this location are as follows:
- a) Located approximately 4-5 km from the existing service station;
 - b) Does not consolidate fuel storage and retail supply in the same location;
 - c) Increased infrastructure requirement and higher cost, ie truck fill stand point would be required;
 - d) There will be a requirement to transport flammable ULP and diesel via tanker truck on public roads to fill in-ground tanks;
 - e) Relatively small footprint to fit facility; and
 - f) Residential development is proposed across from proposed site.

Option 3 – Taman Sweetland

70. A new Service Station to be constructed at the intersection of Murray and Silver City Roads.
71. The key advantages of this location are as follows:
- a) Site is located in an intermediate area between the Drumsite and Settlement residential areas; and
 - b) Site has good access and potentially multiple ingress/egress paths.
72. The key disadvantages of this location are as follows:
- a) Located approximately 3 km from the existing service station;
 - b) Does not consolidate fuel storage and retail supply in the same location;
 - c) Increased infrastructure requirement and higher cost, ie truck fill stand point would be required;
 - d) There will be a requirement to transport flammable ULP and diesel via tanker truck on public roads;
 - e) Located relatively close to a school; and
 - f) The road intersection near the proposed location may require an enhanced traffic management solution.

Option 4 – Remain in current location

73. In this option, the existing Service Station will be retained in its current location with enhancements to current access to provide one-way traffic flow through the

introduction of a new access off Gaze Rd. This should help alleviate traffic congestion, reduce risk of collisions and improve the current facility.

74. The key advantages of this location are as follows:
- a) Current land use will remain albeit with improved access and amenity; and
 - b) No change for the community to adjust to.
75. The key disadvantages of this location are as follows:
- a) Does not consolidate fuel storage and retail supply in the same location;
 - b) There will be a requirement to transport flammable ULP and diesel via tanker truck on public roads including into the tourist precinct and foreshore area; and
 - c) The site is constraining the future development of the foreshore area for tourism and commercial purposes.

Zoning and Local Approvals

76. The proposed Bulk Fuel Installation site is contained wholly within Commonwealth owned and controlled land. The propose site is zoned as unallocated Crown land in the Shire of Christmas Island Town Planning Scheme No.1. An existing Public Utility Corridor between Smith Point and the Indian Ocean Oil Company Bulk Fuel Installation at Murray Road will be utilised for the installation of new petrol pipeline infrastructure. The petrol pipeline will also be extended from the Indian Ocean Oil Company Bulk Fuel Installation at Murray Road to the new Bulk Fuel Installation.
77. The proposed site for aviation fuel storage at CI airport is Commonwealth owned.
78. Although planning approval from the Christmas Island Shire Council is not required to be obtained for the proposed works, the Department will submit a development application for approval by the Shire Council as it has regularly done on past projects.

Land Acquisition

79. The proposed works do not require acquisition of additional land.

Key Legislation

80. The following key legislation is relevant to this Project:

- a) *Environment Protection and Biodiversity Conservation Act 1999;*
- b) *Building and Construction Industry Improvement Act 2005;*
- c) *Building and Construction Industry Improvement (Accreditation Scheme) Regulations 2005;*
- d) *Work Health and Safety Act 2012;*
- e) *Disability Discrimination Act 1992; and*
- f) *Financial Management and Accountability Act 1997*

81. Relevant Australian Standards, Codes and Guidelines will be considered and complied with through the design, construction and commissioning processes.

These include but are not limited to the following:

- a) AS 1657 Fixed Platforms, Walkways, Stairways and Ladders - Design, Construction and Installation;
- b) AS 1692 Tanks for Flammable and Combustible Liquids;
- c) AS/NZS 1768 Lightning Protection;
- d) AS 1940 - 2004 The Storage and Handling of flammable and combustible liquids;
- e) AS NZS 60079 Series of Standards (Electrical apparatus for explosive gas atmosphere);
- f) AS/NZS 2381 Electrical Equipment for Explosive Atmospheres – Selection, Installation and Maintenance;
- g) AS/NZS 3000 Electrical Installations;
- h) AS 4041 Pressure Piping;
- i) AS 2885 Pipelines - Gas and Liquid Petroleum; and
- j) Australian Dangerous Goods Code.

Planning and Design Concepts

82. The general philosophy to be adopted for the design of the proposed facilities incorporates the following considerations:

- a) Compliance with applicable fuel facility design, safety and environmental codes and standards, with consideration of site specific characteristics and requirements;
- b) Provision of safe, cost effective and functional facilities suitable for their intended operating environment;
- c) Adoption of construction techniques that consider locally available materials, materials handling and processing capabilities and the general requirement for supplies to be transported by ship;
- d) Maximum use of existing infrastructure and facilities to minimise capital costs;
- e) Utilisation of readily available and durable materials that combine long life while minimising maintenance;
- f) Recognition of site constraints, security and safety requirements, functional relationships to existing facilities and operational determinants; and
- g) Planning services and structural design to accommodate flexibility.

Structural Design

83. Structural design will take into account the local geotechnical profile and marine environment, and the materials and skillset available on the Island.

Materials

84. Material selection will consider inherent durability, capital costs, maintenance liabilities, and the local tropical and marine environment.

Hydraulic Services

85. Existing mains potable water, sewerage and storm water services are proposed to be extended to each facility to suit design requirements.

Electrical Services and Fire Protection

86. Lighting, power and lightning protection will be provided in accordance with relevant Australian Standards, Codes and Guidelines.
87. Electrical infrastructure and switchboards will have spare capacity to allow for future growth.

88. Fire and Emergency Services Authority of Western Australia and the local volunteer fire fighting service will be consulted and fire detection systems, indication panels, emergency and exit lighting are proposed to be provided to suit the existing systems. All construction and fire protection will comply with the Building Code of Australia and all other applicable Codes and Australian Standards.

Landscaping

89. Any proposed new landscape works design will focus on a functional, low maintenance approach with the use of indigenous plants.

Re-use of Existing Structures

90. It is proposed to relocate and re-use the existing 2 x 370kL bulk petrol storage tanks from Rocky Point to the new Bulk Fuel Installation on Murray Road.
91. It is also proposed to utilise the existing pipe racking structure within the Public Utility Corridor between Smith Point and the Indian Ocean Oil Company Bulk Fuel Installation at Murray Road to which new pipeline infrastructure will be affixed.
92. Should the Service Station be re-located, consideration will be given to the re-use of elements of the existing Service Station in the new including the shelter, the site office/shed, air compressor and fuel dispensers.

Demolition and Disposal of Existing Structures

93. The following structures are proposed to be demolished and removed as part of this proposal:
- a) The steel pipeline infrastructure between Flying Fish Cove and the bulk petrol storage tanks at Rocky Point;
 - b) The bunded bulk petrol storage tank compound at Rocky Point;
 - c) The below ground polyethylene pipeline infrastructure between Rocky Point and the Service Station; and
 - d) The Service Station (subject to it being relocated).

94. All necessary remediation works and disposal to achieve legislative compliance and to satisfy the project specific Environmental Management Plan will be undertaken.

Water and Energy Conservation Measures

95. There is no specific Commonwealth water or energy policies for which these works need to comply. The Commonwealth however is committed to Ecologically Sustainable Development and the reduction of greenhouse gas emissions.
96. Ecological Sustainable Development objectives and solutions will be considered in the design to reduce the impact on the wider environment by the use of sustainable design and construction techniques and management systems that will reduce energy consumption and the use of natural resources. This will be achieved through:
- a) Reuse and increased use of existing assets where possible, in preference to new construction, where existing assets meets the functional requirements; and
 - b) Demand mitigation and management by means of passive design solutions and recycling where possible, energy efficient lighting, water efficient fittings and fixtures, and material selection and minimisation.

Security Measures

97. Security measures will be developed to comply with all applicable Codes and Australian Standards. These measures will generally relate to access control, lighting and asset protection.

Occupational Health and Safety Measures

98. The facilities to be provided under this project will comply with relevant Local, State and Federal Governments policy on Occupational Health and Safety measures including the *Work Health and Safety Act 2012*.
99. Safety in design will be achieved through compliance with all relevant codes and standards and through additional hazard and operability studies that will be undertaken by the Project Consultant.

100. In accordance with Section 35(4) of the *Building and Construction Industry Improvement Act 2005*, contractors will be required to hold full occupational health and safety accreditation from the Office of the Federal Safety Commissioner under the Australian Government Building and Construction Occupational Health and Safety Accreditation Scheme. The National Code of Practice for the Construction Industry and Industry Guidelines will also apply to this construction project.
101. A process will be implemented to identify any special or unusual public safety risks associated with the project and all solutions will be developed in consultation with all relevant stakeholders. All construction sites will be appropriately secured to prevent unauthorised access during the construction period.

Impacts on Local Communities

102. The Department has or will inform local residents and businesses about the proposed works through a variety of measures including:
- a) Regular Community Bulletins which are published in English, Chinese and Malay; and
 - b) Articles providing regular project updates published in The Islander community newspaper that is produced fortnightly by the Shire of Christmas Island; and
103. It is expected that the project will employ a diverse range of local workers during the construction period both directly via construction workers and related supplies and indirectly through accommodation, logistics and other support. It is expected that this will provide a positive impact for small businesses on the Island.
104. Consideration in construction planning will be given to issues that have the potential to adversely impact the local community such as traffic management, materials handling, site security and management. Consideration during the commissioning phase of the project will be given to ensuring that related activities do not negatively impact or compromise the local community. Current fuel related services and supply will continue to be provided to the local

community and the Island at large throughout the construction and commissioning processes.

105. Post construction, the Island will have a greater supply of diesel and aviation fuel that will provide a greater level of assurance that essential services and Island capabilities can be effectively maintained across the swell season. Additionally the removal of the bulk petrol storage tanks at Rocky Point and Service Station from the Settlement will enable the Island to progress their plans for the development of a master planned tourism and commercial precinct on the foreshore area.

Impact on Local Roads and Traffic

106. Construction of the proposed works will result in a minor increase in trucks and workforce vehicle movements on the Island however it is expected that this will have a minimal impact on traffic flows in surrounding streets and areas. Any damage to local roads attributable to the construction process will be made good. Current vehicle movement protocols applying on the Island particularly during the crab migration will be observed during construction.
107. As a result of the preferred relocation of the Service Station from the Settlement area to the new Bulk Fuel Installation, there is expected to be:
- a) No requirement for routine tanker truck movements in built up areas as is currently the case;
 - b) A reduction of traffic along Gaze Road; and
 - c) An increase in vehicle movements by members of the public along Murray Road travelling to and from the Service Station.

Project Costs

108. The approved budget and current project estimate of this Project is \$19.5 million, excluding Goods and Services Tax. This includes all costs for design, project management, construction costs, fittings and equipment, contingencies, and an allowance for escalation.
109. An increase in the net operating costs of Commonwealth fuel assets is expected due to the construction of new and re-used facilities containing more technical

and environmentally compliant equipment, upgraded infrastructure and engineering services.

Details of Project Delivery System

110. The Project will be delivered in three stages:

- a) Stage 1: Investigation and Scoping (Completed);
- b) Stage 2: Design Development (subject to Public Works Committee approval); and
- c) Stage 3: Construction (subject to Public Works Committee approval)

111. The Project will comply with the Commonwealth Procurement Guidelines, December 2008.

112. The following Project governance arrangements are in place:

- a) Project Steering Committee. The Project Steering Committee is the highest authority on the project. Its role is to ensure the Project objectives are met within set parameters, and that the project is adequately resourced. It consists of senior executives from the Department and meets on a quarterly basis but may convene meetings on an ad-hoc basis if the need arises;
- b) Project Control Group. The Project Control Group assists the Project Steering Committee in performing its roles and responsibilities by providing regular reports, advice and recommendations for consideration and endorsement. The Project Control Group will also provide direction, guidance and advice to the Project Management Team. The Group membership includes staff at Director Level from relevant service delivery areas from within the Territories & Disaster Reconstruction Division. The Project Control Group meets on a monthly basis but may meet on an ad-hoc basis if required; and
- c) Project Management Team. The Project Management Team is responsible for the day-to-day management and control of the project and stakeholders consultation. It provides advice and assists the Project Control Group in performing its roles and responsibilities. The Project Management Team consists of the Departmental staff and consultants

directly involved in the delivery of the project and have regular fortnightly meetings.

113. Due to the need for extensive data/information for the Public Works Committee referral, engagement of a subject matter expert in bulk fuel installation design, project management and contract administration was necessary to ensure the appropriate level and quality of data/information is submitted.
114. Moore Consulting and Engineering has been appointed as Project Consultant by the Commonwealth following a competitive tender process. As Project Consultant, the primary services to be provided include project management, contract administration, design and other consultancy.
115. A Construction Contractor is proposed to be appointed by the Department for the construction of the proposed works a competitive open tender process.
116. The Project delivery system will have in place plans to minimise disruptions and maintain continuity of service during construction works.

Project Schedule

117. Stage One - Investigation and scoping has been completed. Subject to Parliamentary approval, Stage Two - Design development is expected to be complete in mid 2012 and Stage Three - Construction is expected to commence in late 2012 and be completed by June 2014. A detailed Program is presented at Attachment 15.

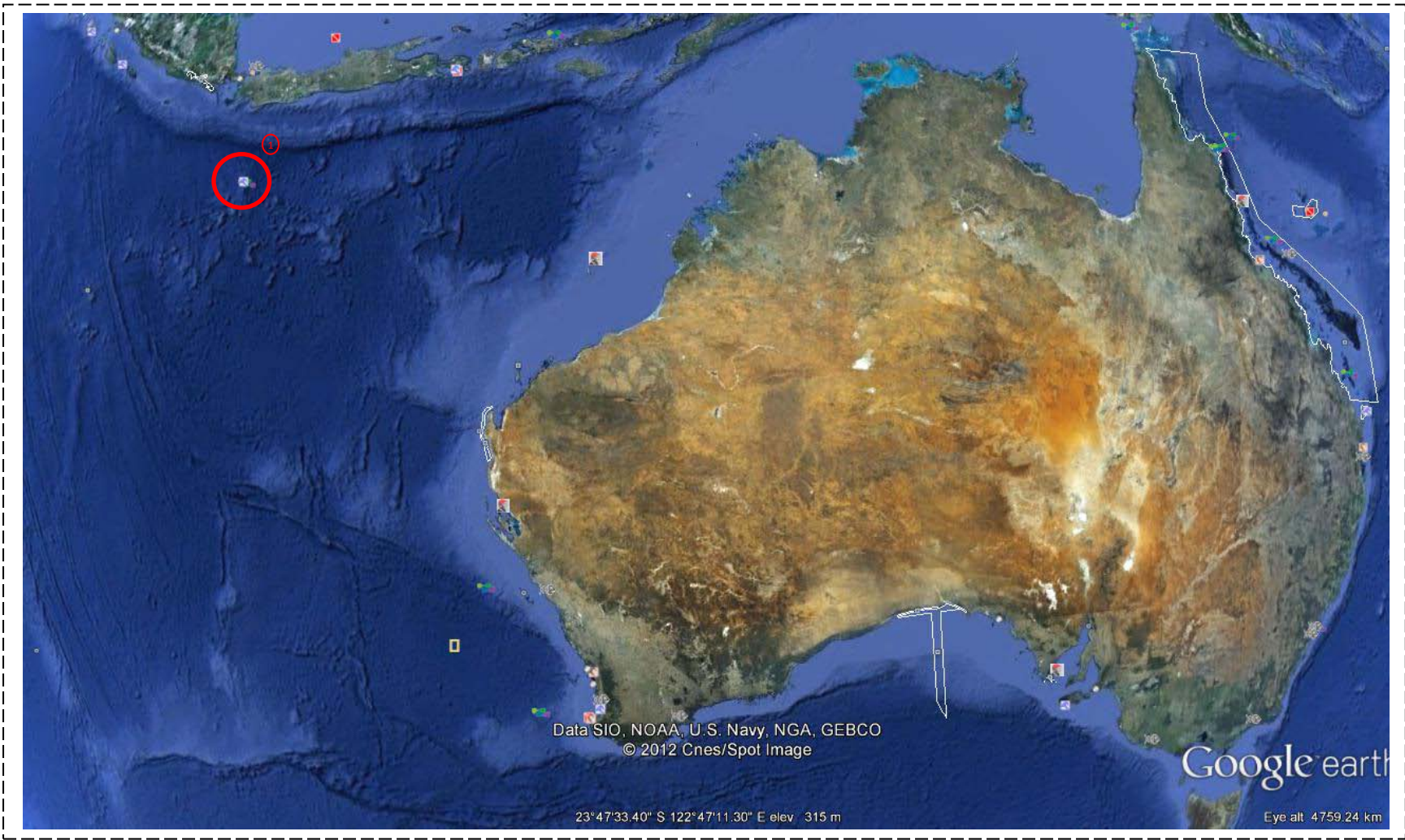
Public Value

118. The proposed works will contribute significantly to Christmas Island capability through greater assurance in diesel, aviation and petrol fuel storage capacity. This will enable it to operate more effectively with consideration of the issues presented through the swell season. The proposed works consider the current needs as well as all known future demands and conditions.
119. The relocation of the petrol storage and Service Station facilities away from foreshore and the Settlement area will enable the Island to progress masterplanning objectives established for the area. This will also remove the

requirement for unloading of petrol from tanker ships in Flying Fish Cove. At completion all tanker ships will be unloaded from Smith Point.

120. Existing facilities have been re-used where they feasibly meet the operational needs and to minimise operating costs and environmental impacts. The cost of investment, both in capital and operating terms, has been optimised.

Supplementary Information



SITE LEGEND

1. CHRISTMAS ISLAND

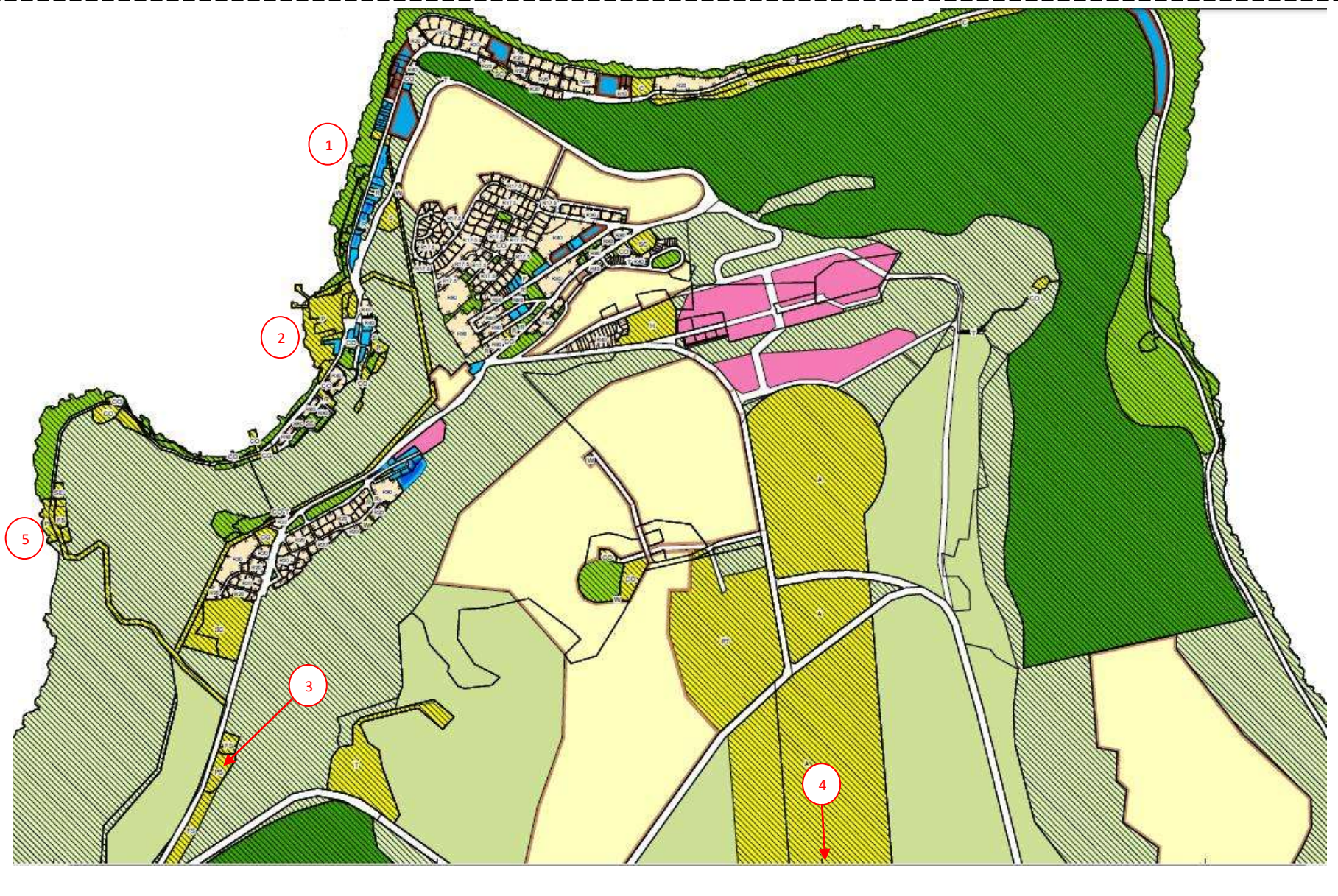


SITE LEGEND

1. NORTH EAST SHELF

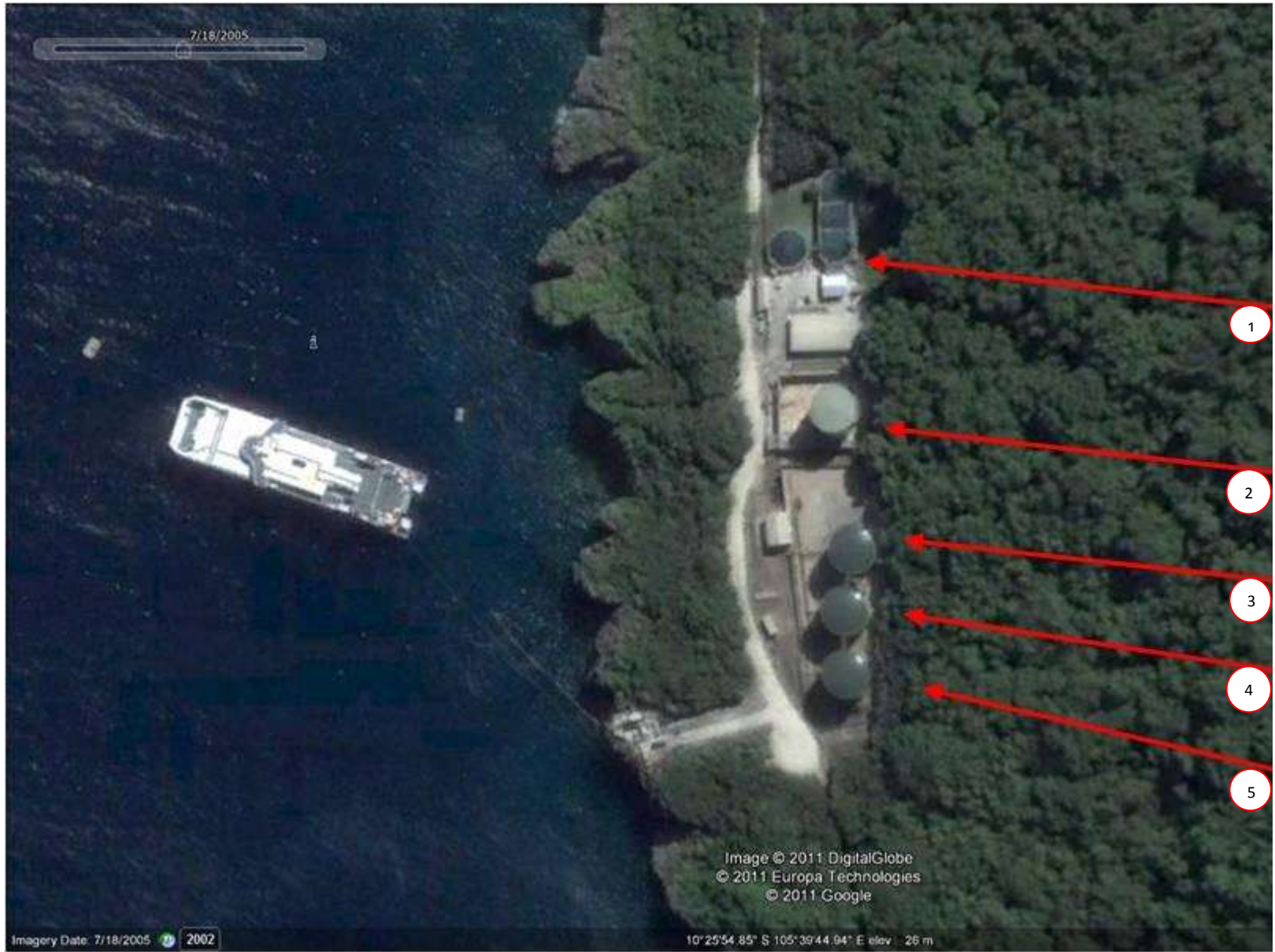
SITE LEGEND

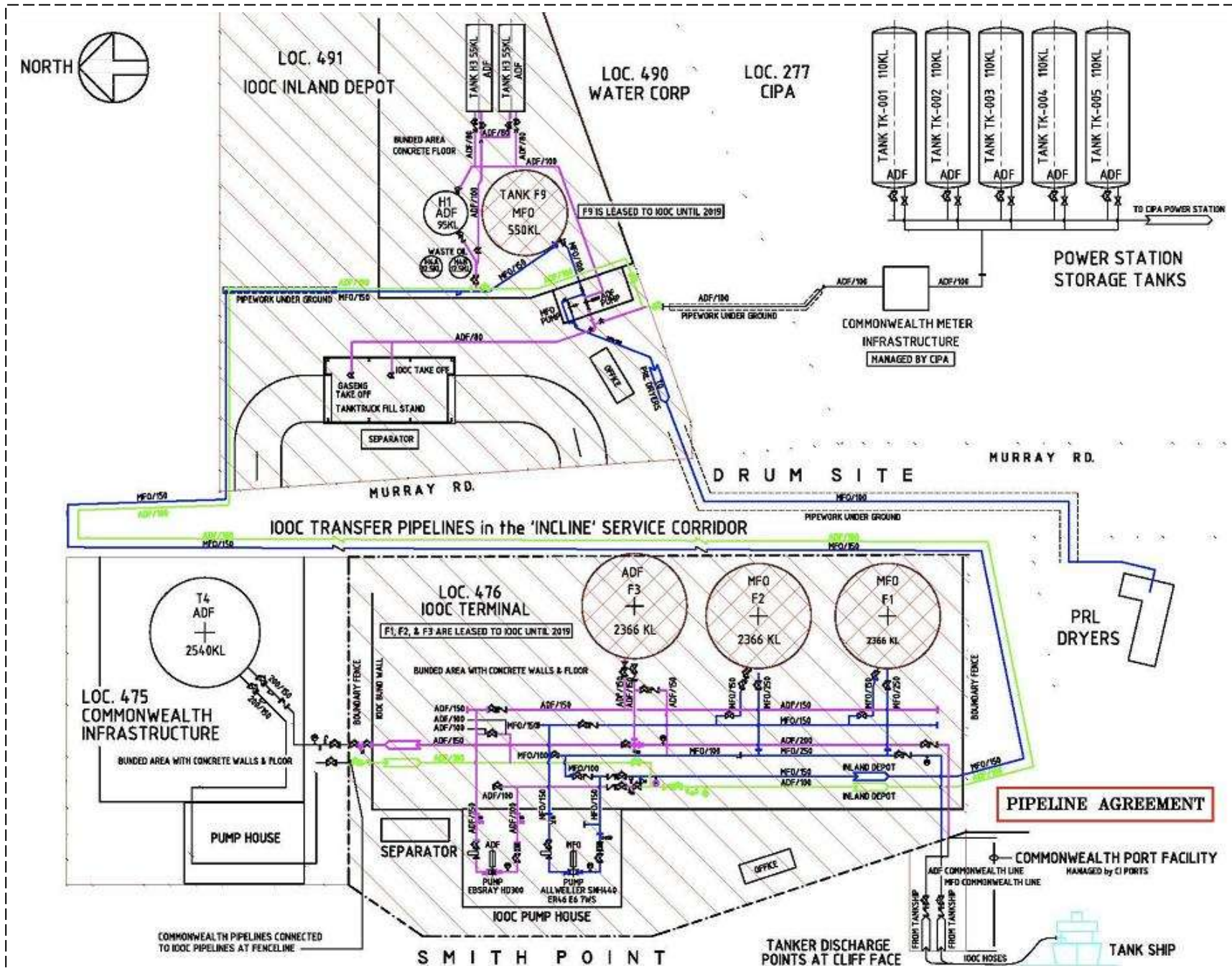
- 1. ROCKY POINT
- 2. FLYING FISH COVE
- 3. POWER STATION
- 4. AIRPORT
- 5. SMITH POINT



SITE LEGEND

- 1. Water Corporation Sewage Facility
- 2. Tank T4 - Diesel
- 3. Tank F3 - Diesel
- 4. Tank F2 - Medium Fuel Oil
- 5. Tank F1 - Medium Fuel Oil



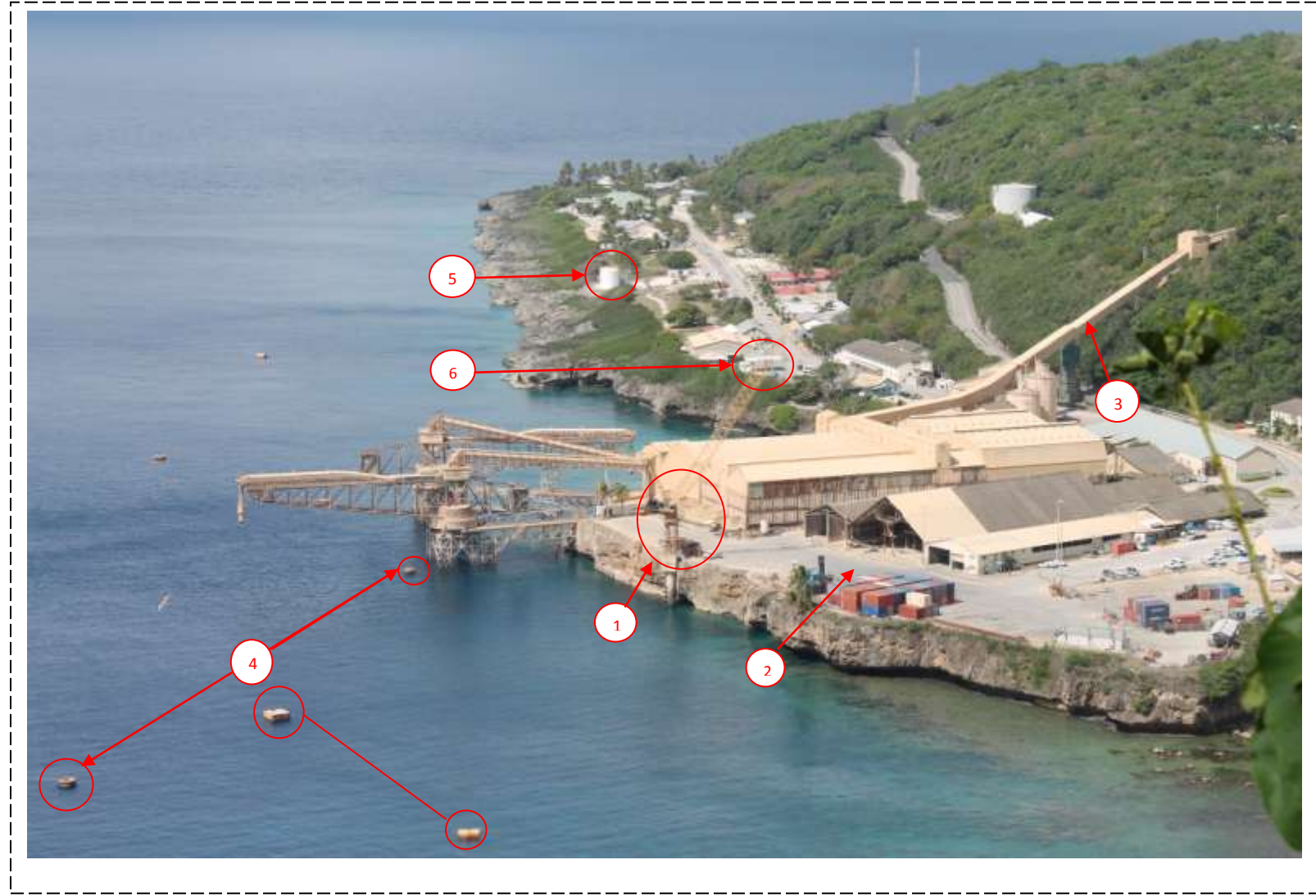


ATTACHMENT 05 | SCHEMATIC DIAGRAM, DIESEL SUPPLY ARRANGEMENT

SITE LEGEND

1. Existing Fixed Storage Tanks
2. Existing Isotainer Storage Area
3. Terminal Building
4. Aircraft Apron



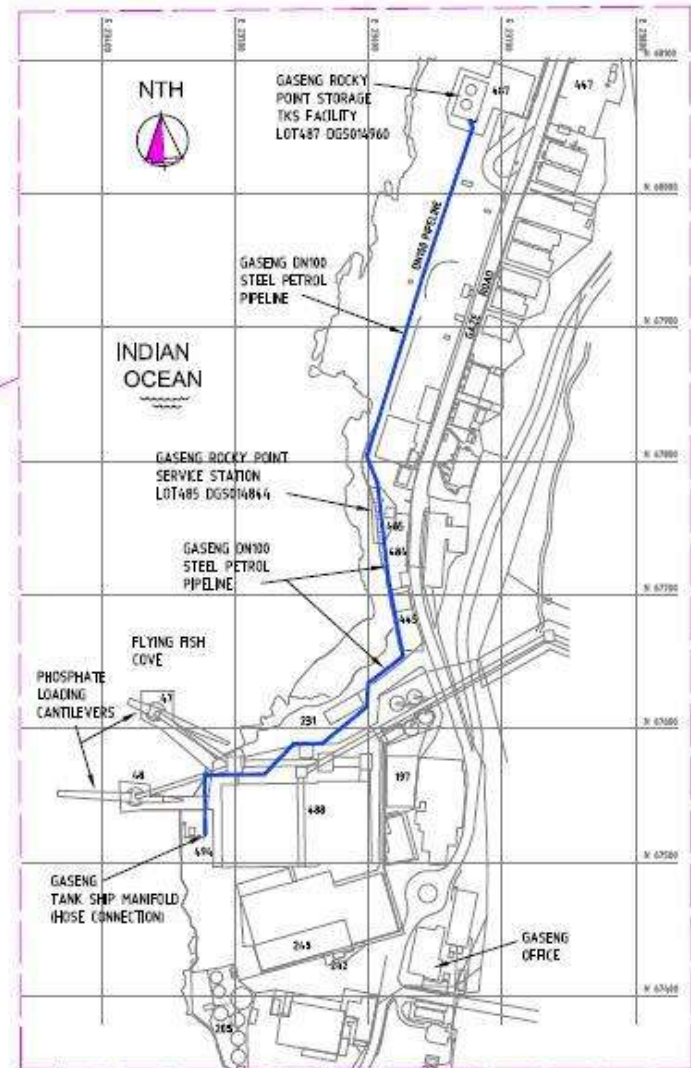


- SITE LEGEND**
- 1. Port Crane
 - 2. Port Loading Area
 - 3. Loading Conveyor Belt
 - 4. Deep Sea Moorings
 - 5. Rocky Point Petrol Storage Tanks
 - 6. Service Station

DN 100 STEEL PIPELINE
 CHRISTMAS ISLAND LOCATION
 LOT 487 DGS014960 (STORAGE FACILITY)
 THRU TO LOT 494 (TANKSHIP MANIFOLD)



CHRISTMAS ISLAND

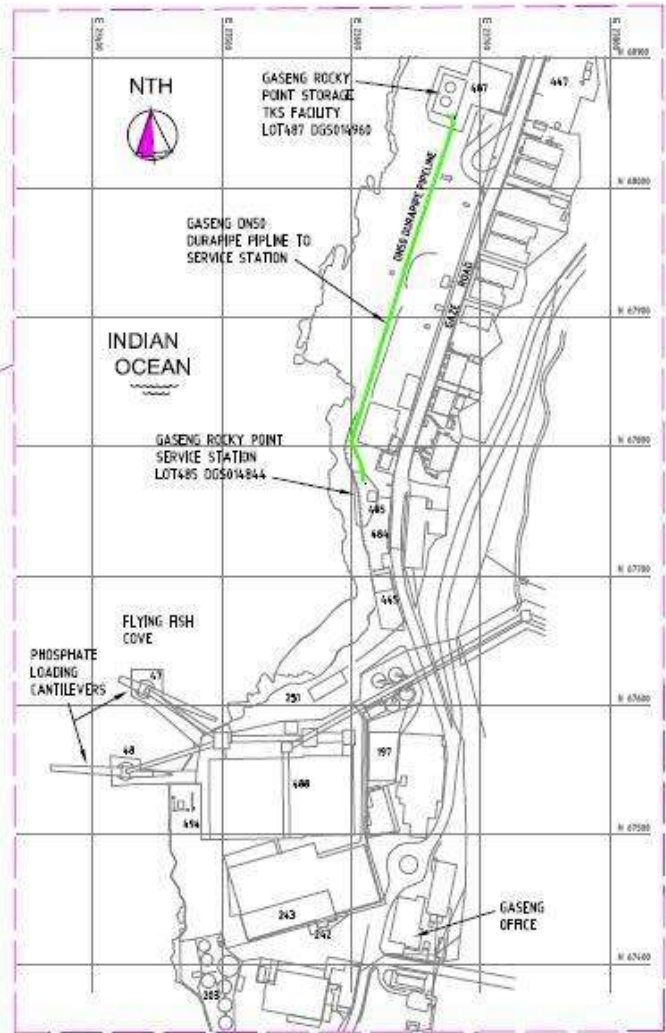


KEY PLAN SCALE 1:4000
 SCALE REF. No UTM L48 (UNIVERSAL TRANSVERSE MERCATOR)

DN 50 DURAPIPE PIPELINE
 CHRISTMAS ISLAND LOCATION
 LOT 487 DGS014960 (STORAGE FACILITY)
 THRU TO LOT 485 DGS014844 (SERVICE STATION)



CHRISTMAS ISLAND



KEY PLAN SCALE 1:4000
 SCALE REF. No UTM L48 (UNIVERSAL TRANSVERSE MERCATOR)

SITE LEGEND

- 1. Rocky Point Bulk Storage Tanks P1 & P2
- 2. Service Station



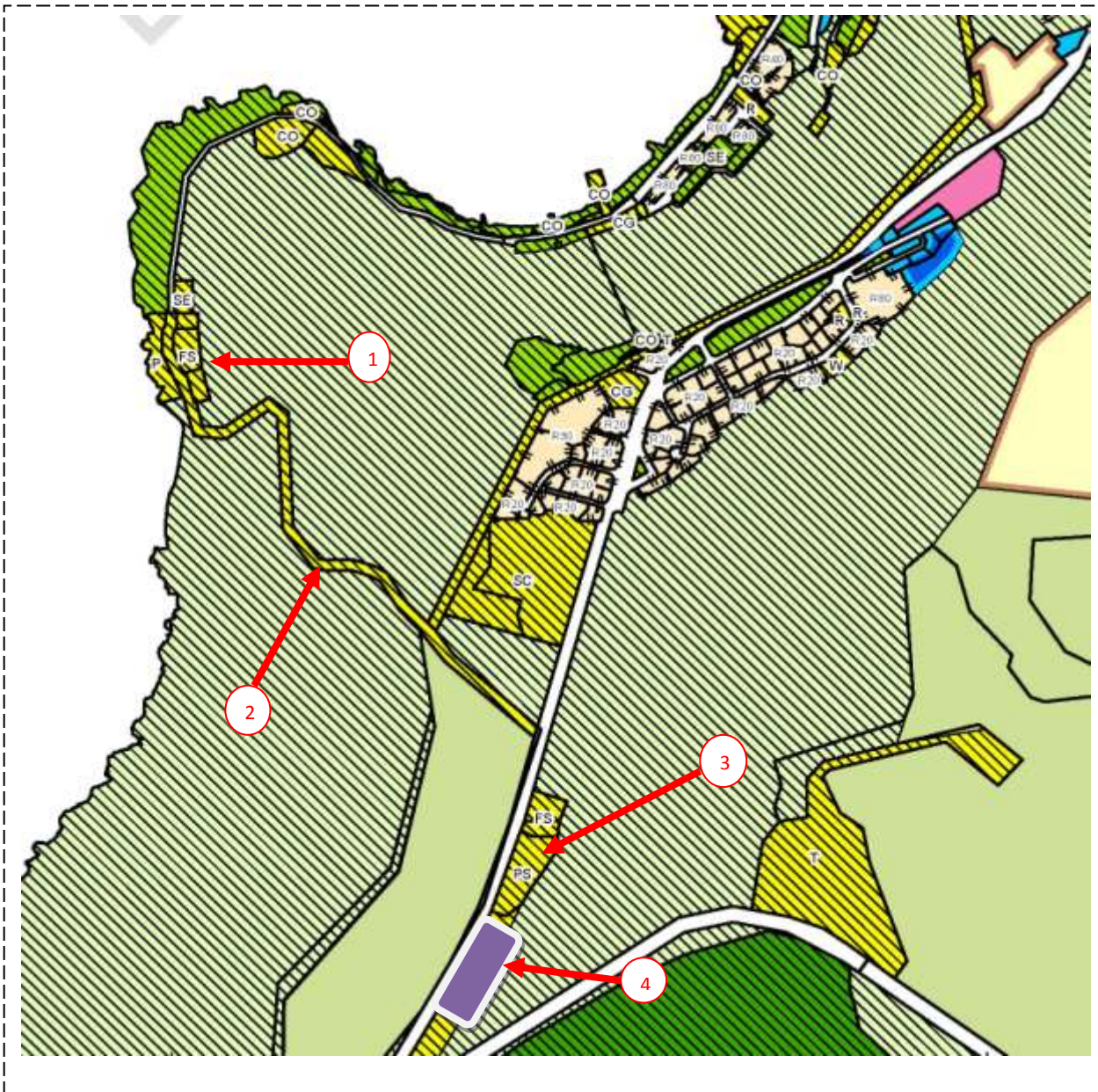
ATTACHMENT 10 | ROCKY POINT STORAGE TANKS AND SERVICE STATION, AERIAL VIEW



ATTACHMENT 11 | ROCKY POINT PETROL TANKS, PHOTOGRAPH OF WAVES BREAKING AGAINST THE CLIFF FACE

SITE PLAN LEGEND

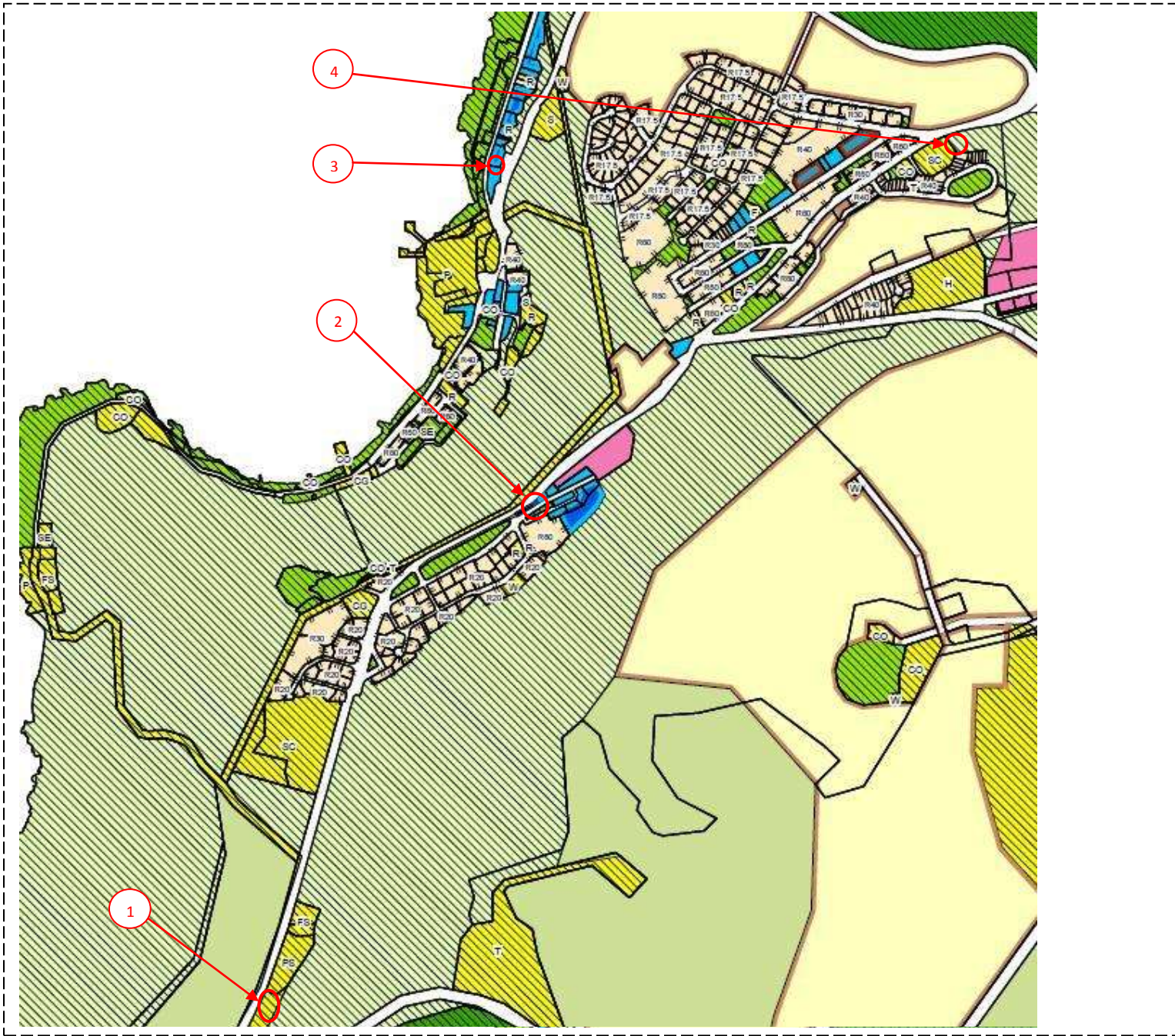
- 1. SMITH POINT
- 2. PIPELINE EASEMENT ROUTE
- 3. POWER STATION
- 4. PROPOSED BFI LOCATION





SITE LEGEND

- 1. 2 x 370kL ULP Tanks
- 2. Service Station
- 3. Existing Power Station
- 4. Motor Control Centre & Fire System Ancillaries
- 5. Isotainer Storage Area



SITE LEGEND

1. Proposed BFI Location
2. Potential Drumsite Location
3. Existing Location
4. Potential Silver City Rd Location



CHRISTMAS ISLAND FUEL CONSOLIDATION PROJECT MASTER PROGRAM



ID	Task Name	Duration	Start	Finish	2012	2013	2014	2015	2016	2017		
1	CHRISTMAS ISLAND FUEL CONSOLIDATION PROJECT	175.4 wks	Thu 1/09/11	Mon 9/02/15	[Gantt bar spanning from 2012 to 2015]							
2	REGIONAL AUSTRALIA START UP TASKS	8 wks	Thu 1/09/11	Wed 26/10/11	[Gantt bar from 2012 to 2013]							
7												
8	STAGE 1 - INVESTIGATION & SCOPING	32 wks	Tue 8/11/11	Thu 28/06/12	[Gantt bar from 2012 to 2013]							
9	START UP	2.6 wks	Tue 8/11/11	Thu 24/11/11	[Gantt bar from 2012 to 2013]							
15	OPTIONS & FEASIBILITY REPORT INCL. FDB	11.8 wks	Fri 25/11/11	Mon 27/02/12	[Gantt bar from 2012 to 2013]							
24	EOI PROCESS	20.8 wks	Mon 23/01/12	Thu 14/06/12	[Gantt bar from 2012 to 2013]							
31	GOVERNMENT APPROVAL	25.4 wks	Wed 4/01/12	Thu 28/06/12	[Gantt bar from 2012 to 2013]							
61												
62	STAGE 2 - DESIGN DEVELOPMENT	20.4 wks	Tue 28/02/12	Wed 18/07/12	[Gantt bar from 2012 to 2013]							
63	SCHEMATIC DESIGN PHASE (50% DESIGN)	11.2 wks	Tue 28/02/12	Tue 15/05/12	[Gantt bar from 2012 to 2013]							
72	DETAILED DESIGN PHASE (TENDER DESIGN)	11.2 wks	Tue 1/05/12	Wed 18/07/12	[Gantt bar from 2012 to 2013]							
80	HEAD CONTRACT TENDER PREPARATION	8 wks	Wed 16/05/12	Tue 10/07/12	[Gantt bar from 2012 to 2013]							
86												
87	STAGE 3 - CONSTRUCTION	131 wks	Thu 19/07/12	Mon 9/02/15	[Gantt bar from 2012 to 2015]							
88	HEAD CONTRACTOR TENDER	6 wks	Thu 19/07/12	Wed 29/08/12	[Gantt bar from 2012 to 2013]							
91	HEAD CONTRACTOR ASSESMENT & APPOINTMENT	7 wks	Thu 30/08/12	Wed 17/10/12	[Gantt bar from 2012 to 2013]							
99	CONSTRUCTION, COMMISSIONING & COMPLETION	66 wks	Thu 18/10/12	Mon 10/02/14	[Gantt bar from 2012 to 2014]							
105	POST COMPLETION (DEFECTS LIABILITY PERIOD)	52 wks	Tue 11/02/14	Mon 9/02/15	[Gantt bar from 2014 to 2015]							

Project: CHRISTMAS ISLAND FUEL CONSOLIDATION PRO
Date: Thu 8/03/12
Rev: 5

Task		Inactive Task		Duration-only		Finish-only	
Critical Task		Inactive Milestone		Manual Summary Rollup			
Milestone		Inactive Summary		Manual Summary			
Summary		Manual Task		Start-only			