

# Gunns Ltd Pulp Mill Project

Donovan's Bay

## CONSTRUCTION MANAGEMENT PLAN

Document No. HPGJ005-EP-DBCMP



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D	03/04/06	Construction drawing of Donovan's Bay	TGH	ADH	ADH
C	25/03/06	Freehills & DPIWE comments incorporated	TGH	ADH	ADH
B	02/03/06	Gunns Comments incorporated	TGH	ADH	ADH
A	25/02/06	Issued for comment	HPG	DES	ADH
Rev	Date	Description	Prepared	Checked	Approved

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## 1.0 INTRODUCTION

This document contains the minimum requirements for the construction of a large 900mm diameter Effluent Pipeline crossing through Donovan's Bay, located at Bell Bay Tasmania using open trench method. It does not address all environmental issues. There are other environmental issues addressed in other reports which form part of the draft Integrated Impact Assessment.

## 2.0 SCOPE

The document is the Management Plan as referenced in the Document No. HPGJ005-EP-DBD Effluent Pipeline Design Basis, Clause 2.6.2 Water Crossings.

It details:

- the construction method to be used for the crossing, however it does not include a site specific drawing showing the mean high and low water mark at this stage;
- the proposed management measures to avoid or minimise environmental impacts resulting from construction activities;
- the proposed management measures to avoid and the proposed water quality monitoring program;
- and an implementation timetable for key aspects of the plan

The plan is to follow a construction method similar to the gas pipeline crossing completed by Duke Energy International in 2002.

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## 3.0 REFERENCE DOCUMENTS

### 3.1 Government, Assessment, Design Documents and Australian Standards

These documents must be complied with:

- Workplace Health & Safety Act Tasmania.
- Assessment of Potential Effluent Pipeline Route across Donovan's Bay.
- Effluent Pipeline Design Basis HPGJ005-EP-DBD.
- Australian Standard - AS 2885.1.
- Australian Standard - AS 2566.
- Other EMPs for the Project

### 3.2 Construction Documents

The construction documents that accompany this plan are: [each of the documents will be produced at the commencement of actual construction phase, once all detailed design is completed, and approved by the relevant government agencies and authorities]:

- Quality, Safety and Environmental Plans
- Technical pipeline construction specification
- Survey procedure
- Fence procedure
- Cleaning procedure
- Trenching procedure
- Pipe Haulage and Handling procedure
- Pipe Stringing procedure
- Field joining procedure
- Lower-in procedure
- Hydrostatic Testing procedure

### 3.3 Construction Drawings

The construction drawings that accompany this plan are: [these will be produced during the detailed design phase]:

- Pipeline alignment sheet
- Specific Donovan's Bay Crossing drawings
- Typical Pipeline drawings
- Construction Line list

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## 4.0 CONSTRUCTION DETAILS

### 4.1 General

The Effluent pipeline that will cross Donovan's Bay will be 900 mm in diameter. It will be made of glass-fibre reinforced thermosetting plastics (GRP) or High density polyethylene (HDPE), and it will be buried in a trench within the tidal zone of Donovan's Bay.

The method of construction will involve the survey, clearing of approaches, constructing of a rubble access road, constructed on geo-fabric on the western side of the trench with a low sandbag dam constructed using bulk fill bags further to the west. A trench will be side dug from the road with excavated material to be stored in the area between the road and the sandbag dam.

Following excavation of the trench and confirmation of depth and profile, the pipe strings, having been prepared on the Right of Way (RoW) on the northern or southern side of the Bay, will be floated into the Bay at high tide and will be sunk on the correct alignment using a surveyed peg line. The trench will then be backfilled and the construction area reinstated and revegetated.

### 4.2 Timing

The crossing will be undertaken in summer, where conditions are usually dry. This will assist with the control of water flow from surrounding water courses. Leaving the low point of the Bay open to tidal movement should allow for unseasonable rain to flow out to the Tamar without causing significant sedimentation.

### 4.3 Location

The pipeline crosses Donovan's Bay between kilometre points (KP) 2.1 to 2.4 (for approximately 300 meters in length), refer to appendix A for more detail. The pipeline will be located to the East of the Tasmanian Natural Gas Pipeline

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#### 4.4 Clearing of approaches

General clearing and grading of the approaches to Donovan's Bay will accord with the clearing method statement. Specific requirements for the site will include:

- Ensuring construction machinery is clean and free of weed and disease.
- Installing sediment fencing to ensure protection of all possible discharge points.
- Constructing a sediment retention basin immediately North and South of Donovan's Bay. The majority of construction disturbance will pass through these structures. Outflow from these structures must pass through sediment fencing or straw bales wrapped in geotextile fabric.
- Covering vegetation is to be stripped to a separate stockpile where appropriate.
- Striping topsoil to a maximum depth of 150 mm from the ditch line and move this to the perimeter of the construction easement. (Windrow preferably not exceeding 600mm in height).
- Striping any subsoils/spoil to separate stockpiles away from the topsoil. Topsoils and subsoils must not be mixed.
- Drainage from all topsoil and subsoil stockpiles is to discharge through sediment control fencing placed on the lower side of the stockpile.
- Ensuring at the end of each day that temporary diversion banks have been constructed on Right of Way slopes leading into the watercourse.

#### 4.5 Temporary road construction

The temporary road to allow access will be constructed using clean crushed stone. The grading of the rock is to be between 40mm and 250mm and is to be laid over a geo-fabric mat to a depth of 400-600 mm and a width of 5.0 meters.

Construction of the temporary road will be carried out during the low tide or when the site is exposed. Construction is to commence from both sides of Donovan's Bay.

Rock is to be placed commencing at each bank and progressively towards the low point of the Bay.

The temporary road construction is to cease at the low point of the Bay leaving a 5 – 6 metre gap allowing for tidal movements.

#### 4.6 Temporary dam construction

On an outgoing tide, sand filled bulk bags wrapped in geo-textile will be installed on the western side of the trench line and temporary road. They will be far enough away from the trench to allow the trench spoil to be placed on the same side (approximately 5m), between the road and the dam wall.

The height of the wall will be determined during detailed design. The spoil will also act as a secondary dam therefore allowing continuity of work regardless of the tides.

The sand filled bulk bags will be turned up to meet the temporary road leaving the same gap of 5 - 6 metres for tidal movement. For more detail refer to Appendix B for a preliminary drawing.

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A low sand bag wall constructed to approximately 300mm will be installed at the low point of the Bay. This will be designed to remain under water at all times but will aid in trapping sediment moving along the bottom of the low channel.

Once the temporary dam across the Bay is complete there will be no need to work only on the first two-thirds of outgoing tides, as any turbid waters/slimes will be held inside the dam and cannot be released to the estuary.

#### **4.7 Trench Excavation**

Excavation of the trench will commence from both sides of Donovan's Bay, shortening the construction period. Hydraulic excavators will be used and will excavate the trench from the side utilising the temporary road.

The use of hydraulic excavators will assist in the removal of sediment in amalgamated clumps where practical, minimising the suspension of sedimentary material.

Where rock is encountered hydraulic rock breakers or rippers will be used.

Blasting is not recommended due to the presence of the Tasmanian Natural Gas Pipeline that runs parallel with the proposed effluent pipeline. However if some minor blasting is required to fracture the exposed rock a qualified contractor will be required submit a blasting plan.

Excavated material (trench spoil) will be stored between the temporary road and the temporary sand bag wall.

Trenching the low area of the Bay, which at low tide remains underwater, will cause sedimentation. To minimise sedimentation, trenching will occur for this section only during the first two-thirds of the outgoing tide.

It is expected that the trench water will rise and fall with the tide. Sediment fencing may be required where water drains from the trench. Sediment fences will be monitored and maintained on a daily basis (see clause 5.0).

#### **4.8 Pipe Preparation**

The pipe will be strung and joined to form a continual pipeline string. The string will be on either the north or south side of the Bay and it will be pre-hydrostatic tested.

If buoyancy calculations indicate that concrete weights are required to reduce the risk of flotation during operation of the pipeline, then they will be installed in accordance with an approved method statement prior to lowering-in. (These calculations will be preformed during detailed design and the type selected.)

Prior to lowering-in the string it may be placed on a roller bed and flotation devices attached (if required).



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## 4.9 Lowering in

The pipe string will be towed from the opposite side of the Bay from which the string is located during the high tide period.

It is proposed to float the string out into the Bay so that the pipe is correctly aligned. Pre-installed stakes will assist in positioning the string. Any flotation devices used will be removed and the string sunk into the open trench.

Surveyors will ensure accurate location, alignment and adequate cover as per the alignment sheets and specific drawing once the string is in position.

## 4.10 Backfill

Utilising soft materials excavated during trenching is preferred for backfill material. Should this not be suitable imported clean sand may be required.

Excavators are to commence backfill in the middle of the crossing working back to the shorelines on both sides.

It is expected that disturbance and sedimentation will occur during backfill of the low area of the Bay. To minimise these impacts, backfilling will occur for this section only during the first two-thirds of the outgoing tide.

## 4.11 Reinstatement

Any excessively turbid waters built up behind the walls will be pumped to shore and filtered. Silt filters will consist of clean straw bales lined with geotextile fabric. Filtered water will be released in a controlled manner back into the Bay.

The temporary dam wall and stockpile area will be reinstated. The sand bags and any left over excavated material will be removed by excavator to the shoreline and disposed of at a licensed landfill site or the Pulp Mill construction waste disposal site. Works are to be carried out on the first two-thirds of the outgoing tide.

The temporary road will be dismantled from the centre working back to both shorelines. Material is to be removed to the shoreline and disposed of at licensed landfill site or the Pulp Mill construction waste disposal site.

The site will be reinstated to as close as possible to its pre construction profile, with consideration to not creating raised areas likely to aid the spread and colonisation of *spartina (rice grass)*.

Works will be carried out at low tide or when the site is exposed.

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## 4.12 Revegetation

The immediate banks above the high water mark of the crossing are to be revegetated to assist with stabilisation of the area. It is proposed that plant species that are existing to the site are to be used. A range of methods will be implemented to provide the best possible result. Specifically:

- Planting seedlings with stakes and guards;
- Broadcasting seed; and
- Brush spreading (only that stored from initial clearing of the approaches)

## 5.0 ENVIRONMENTAL CONTROLS

### 5.2 Pipeline Equipment

The construction will require excavators to work within the Bay. These excavators will be involved in placement of bulk sand bags, causeway construction, trench excavation and rock breaking. Due to the timing and period of construction there is a risk of hydraulic oil spill (refuelling and oil spills).

#### 5.2.1 Refuelling

Refuelling of all plant and equipment must take place at least 50 metres from the high water mark. Where this is not possible for example pumps, the site must be bunded to twice the capacity of the refuelling container or machinery tank whichever is greater. As refuelling containers holding in excess of 20 litres are prohibited from site.

Spill kits must be onsite for minor spills.

#### 5.2.2 Oil Spills

Using hydraulic excavators onsite increases the risk of oil spills to mitigate any damage from an oil spill, a marine oil spill boom with floats will be strung out across the Bay during the construction period.

Spill kits must be onsite for minor spills.

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## 5.4 Water Run Off and Sediment Control

As the approaches to Donovan's Bay will be cleared, water run off and sediment control measures will be in place. Measures will include:

- Sediment basin
- Temporary soil diversion berms
- Sediment fencing
- Sediment traps or ponds

All must be monitored and maintained on a daily basis to ensure they are working effectively.

## 5.5 Clean Plant and Equipment

All vehicles entering the site must be clean and free of soil, weed and disease material and be in compliance with the weed and disease management plan. [This will be produced during the detailed design phase]

All vehicles not immediately required on site are to remain 50 metres from the high water mark

## 5.6 Weed and Disease Management Plan

Works must be carried out in accordance with the weed and disease management plan. [This will be produced during the detailed design phase]

## 5.7 Monitoring

### 5.7.1 Turbidity

It is expected that construction through Donovan's Bay will cause elevated levels of sediment and turbidity. A turbidity monitoring program must be developed pre-construction and implemented prior to construction. The data from the program will allow construction crews an understanding of what activities may require modification through the process. Monitoring will commence 2 days prior to commencement of construction and will conclude one day after construction.

### 5.7.2 Photo Monitoring

Photo monitoring sites will be used throughout the construction period and into the future. Three (3) sites are proposed:

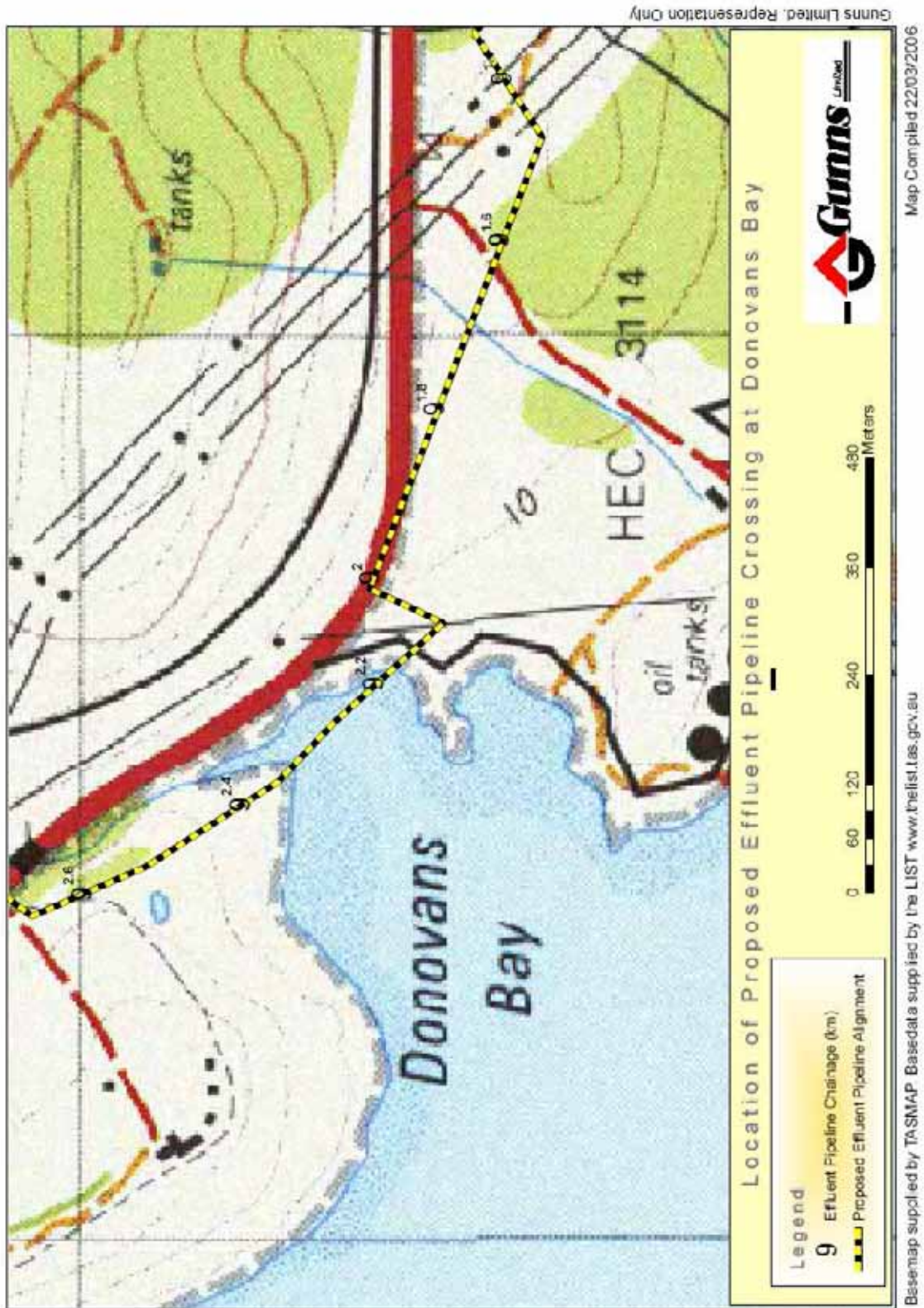
- one at either approach to the Bay
- one on the hill to the east of the crossing

Photos will be taken on a daily basis. Monitoring will commence one day prior to construction and be maintained until the completion of construction. Photo monitoring will include the completion of the revegetation for the site and six months after full completion.

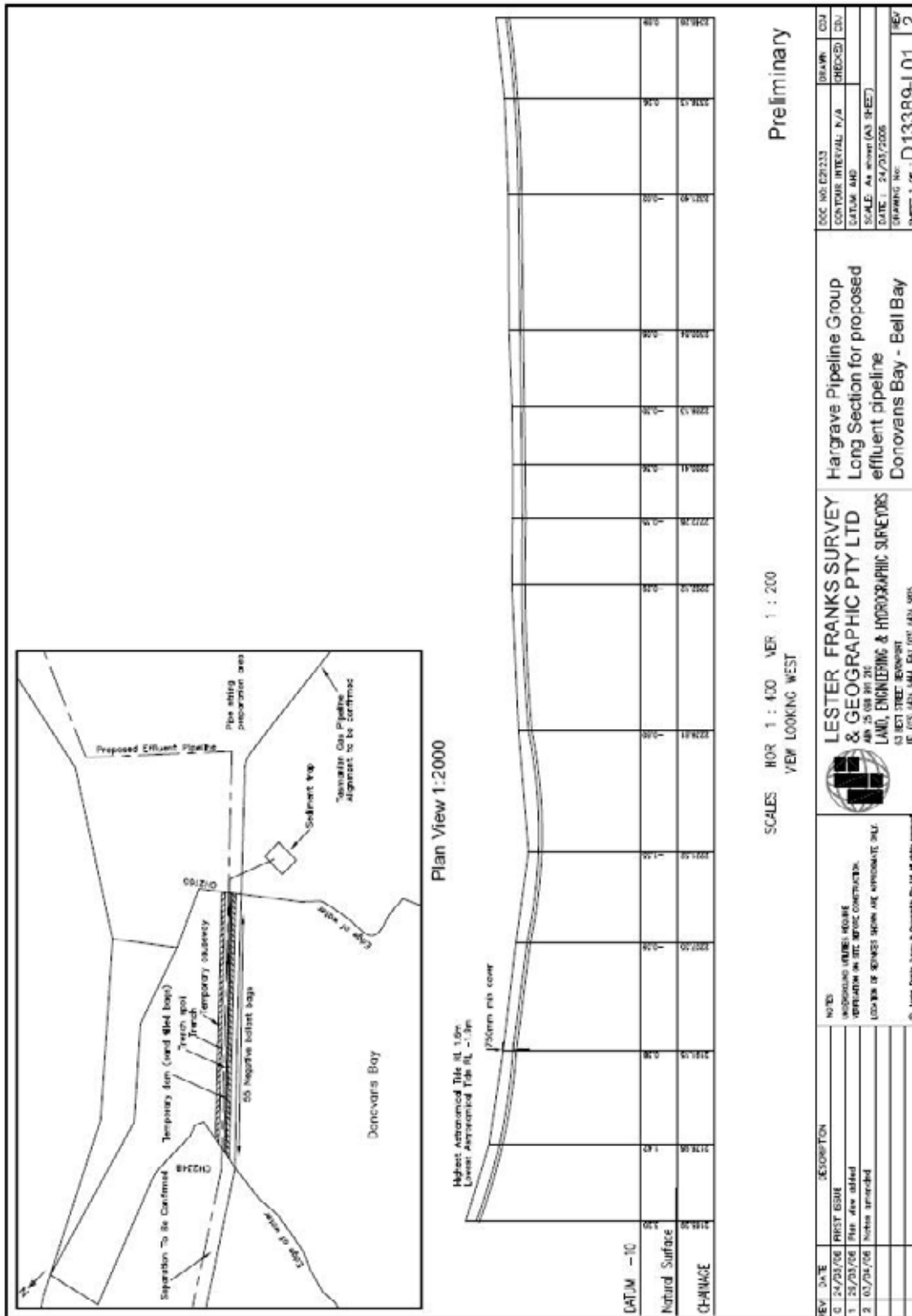
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## Appendices

## Appendix A Donovan's Bay Pipeline Route crossing.



# Appendix B Preliminary construction drawing of Donovan's Bay



SCALES: HOR 1 : 400 VER 1 : 200  
 VIEW LOOKING WEST  
 Preliminary

<b>LESTER FRANKS SURVEY &amp; GEOGRAPHIC PTY LTD</b> 4th Floor 201 St LAUREL ENGINEERING & HYDROGRAPHIC SURVEYS 63 WEST STREET BRISBANE QLD 4000 AUSTRALIA TEL: (07) 4841 5441 FAX: (07) 4841 9885	HARGRAVE PIPELINE GROUP Long Section for proposed effluent pipeline Donovan's Bay - Bell Bay	DOC NO: D2123 CONTOUR INTERVAL: N/A DATUM AND SCALE: As shown (AS SHEET) DATE: 24/03/2006 DRAWING NO: D13389-L01 SHEET 1 OF 2
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