



**REPORT FOR THE  
PEE JAY-1 SITE SURVEY**

**FUGRO SURVEY JOB NO. P0758-7  
ADA CONTRACT NO. K-10-08-07**

Client : Australian Drilling Associates Pty Ltd  
Level 5, Rialto North Tower  
525 Collins Street  
Melbourne, 3000  
Victoria

Date of Survey : 3 – 5 November 2007

0	Final		MSW	4 December 2007
Rev	Description	Checked	Approved	Date

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## CONTENTS

	<b>Page No.</b>
<b>EXECUTIVE SUMMARY</b>	<i>i</i>
<b>1.0 INTRODUCTION</b>	<b>1-1</b>
1.1 Project Description	1-1
1.2 Scope of Work	1-1
1.3 Reporting Structure	1-3
<b>2.0 DATA REDUCTION</b>	<b>2-1</b>
2.1 Navigation and Positioning	2-1
2.2 Single Beam Echo Sounder	2-1
2.3 Side Scan Sonar Data	2-1
2.4 Sub-bottom Profiling Data	2-2
2.5 Drawing Presentation	2-2
<b>3.0 SURVEY RESULTS</b>	<b>3-1</b>
3.1 Introduction	3-1
3.2 Bathymetry	3-1
3.3 Seabed Features	3-1
3.4 Shallow Geology	3-3
3.5 Seabed Sampling	3-6
<b>4.0 CONCLUSIONS AND RECOMMENDATIONS</b>	<b>4-1</b>
<b>5.0 DISTRIBUTION</b>	<b>5-1</b>



## FIGURES

<b>FIGURE 1-1 : GENERAL LOCATION DIAGRAM</b>	<b>1-2</b>
<b>FIGURE 1-2 : SURVEY LINE LAYOUT (FROM VESSEL CRP POSITIONS)</b>	<b>1-4</b>
<b>FIGURE 3-1 : SIDE SCAN SONAR RECORD, LINE PJ_008, ILLUSTRATING THE SEAFLOOR CONDITIONS AT THE PROPOSED PEE JAY-1 WELL LOCATION</b>	<b>3-2</b>
<b>FIGURE 3-2 : SUB-BOTTOM PROFILER DATA EXAMPLE OF THE SHALLOW GEOLOGY AT THE PROPOSED PEE JAY-1 WELL LOCATION FROM LINE PJ_008</b>	<b>3-4</b>
<b>FIGURE 3-3 : SUB-BOTTOM PROFILER DATA EXAMPLE OF THE SHALLOW GEOLOGY AT THE PROPOSED PEE JAY-1 WELL LOCATION FROM LINE PJX_008</b>	<b>3-5</b>

## TABLES

<b>TABLE 1-1 : COORDINATES – PEE JAY-1 SITE SURVEY LIMITS</b>	<b>1-3</b>
<b>TABLE 3-1 : INTERPRETED GEOLOGICAL SEQUENCE AT THE PROPOSED PEE JAY-1 WELL LOCATION</b>	<b>3-3</b>
<b>TABLE 3-2 : SEABED SAMPLING RESULTS</b>	<b>3-6</b>

## APPENDICES

<b>APPENDIX A : SERVICE WARRANTY</b>
<b>APPENDIX B : SEABED SAMPLE LOG</b>



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<b>DRAWING</b>
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**SCALE 1:5,000**

<b>FUGRO DRAWING NO.</b>	<b>DESCRIPTION</b>
<b>P0758-7_001</b>	<b>PEE JAY-1 COMPOSITE DRAWING - BATHYMETRY, SEABED FEATURES, ISOPACHS AND SHALLOW GEOLOGICAL PROFILES</b>

## **EXECUTIVE SUMMARY**

*Fugro was contracted by Australian Drilling Associates Pty Ltd on behalf of Beach Petroleum Ltd to provide geophysical survey and seabed sampling services for a site survey at the proposed Pee Jay-1 well location. The offshore fieldwork was carried out between 3 and 5 November 2007.*

### **Scope of Work**

*The purpose of the survey was to acquire bathymetric and geophysical data as well as seabed samples within a 1.2km x 1km area to assess the seabed and sub-seabed conditions for the installation of a jack-up rig at the proposed well location 445782mE, 5516973mN (MGA94, CM 147°E).*

*The survey concluded safely and efficiently, and the project objectives were achieved.*

### **Bathymetry**

*The water depth within the site ranges from 76.1 to 76.7m below LAT. The seabed does not exhibit any significant relief within the site.*

*At the proposed well location the water depth was recorded to be 76.4m below LAT and the seabed is essentially flat.*

### **Seabed Features**

*The seabed within the survey area appears to be smooth and featureless exhibiting a uniform low degree of acoustic reflectivity consistent with the very soft silty clay recovered by the drop corer.*

### **Shallow Geology**

*The shallow stratigraphy within the survey area is interpreted as consisting of a uniform surficial layer of unconsolidated very soft fine sediments up to 2m thick overlying a thick sequence of horizontally bedded generally fine grained sediments.*

*Three main units are delineated from the profiler records, and the interpreted composition of the units and depths below seabed at the proposed well location are as follows:*

<b>Depth Below Seabed (m)</b>	<b>Unit</b>	<b>Description</b>
0.0 – 1.7	Unit A	Very soft silty clay with shells
1.7 – 13.8	Unit B	Silty clay interbedded with thin layers of coarser sediment
>13.8	Unit C	Silty clay interbedded with thin layers of coarser sediment

***Due to the anticipated soft consistency of the fine grained sediments at the site allowance should be made for considerable spudcan penetration.***

*If further information regarding the physical properties of the shallow geological sequence is required, a geotechnical drilling campaign is advised.*

*No significant items of debris, obstructions or shallow geological hazards were apparent on the data within the surveyed area.*

## 1.0 INTRODUCTION

### 1.1 Project Description

Fugro Survey Pty Ltd (Fugro) was contracted by Australian Drilling Associates Pty Ltd (ADA) on behalf of Beach Petroleum Ltd (Beach) to provide geophysical survey services for the Pee Jay-1 proposed well location within the Bass Basin, in Bass Strait offshore Victoria.

A general location diagram of the area is shown as Figure 1-1.

The site survey was designed to gather seabed and sub-seabed information to aid in the installation of a jack-up rig. The specified site survey area is 1.2km x 1km with the proposed well location 445782mE, 5516973mN (MGA94, CM 147°E), positioned 50m to the northwest of the centre of the site.

Bathymetry was acquired with a single beam echo sounder. Seabed lithology and characteristics were determined from side scan sonar and shallow geological structure was investigated using a surface towed boomer sub-bottom profiler. A seabed sample was collected using a drop corer to correlate with the geophysical data. The survey and seabed sampling was carried out between 3 and 5 November 2007.

Fugro chartered the survey vessel the *MV Pacific Conquest*, owned and operated by East Coast Maritime Pty Ltd, as the platform for the operation.

The survey and report have been conducted in accordance with the Service Contract (Contract No. K-10-08-07) between Fugro and ADA, and is covered by the Service Warranty as presented in Appendix A.

The Service Warranty outlines the limitations of this report, in terms of a range of considerations including, but not limited to, its purpose, scope, the data on which it is based, its use by third parties, possible future changes in design procedures and possible changes in site conditions with time. It should be noted that the Service Warranty does not in any way supersede the terms and condition of the contract between Fugro and ADA.

### 1.2 Scope of Work

The purposes of the data collection were:

- To accurately measure the water depth and map the seabed topography.
- To determine the nature and composition of the seabed sediments.
- To identify any seabed obstructions or features within the survey area.
- To map the shallow geology and identify any potential hazards for jack-up rig installation.
- To obtain sediment samples for verification of the geophysical data.

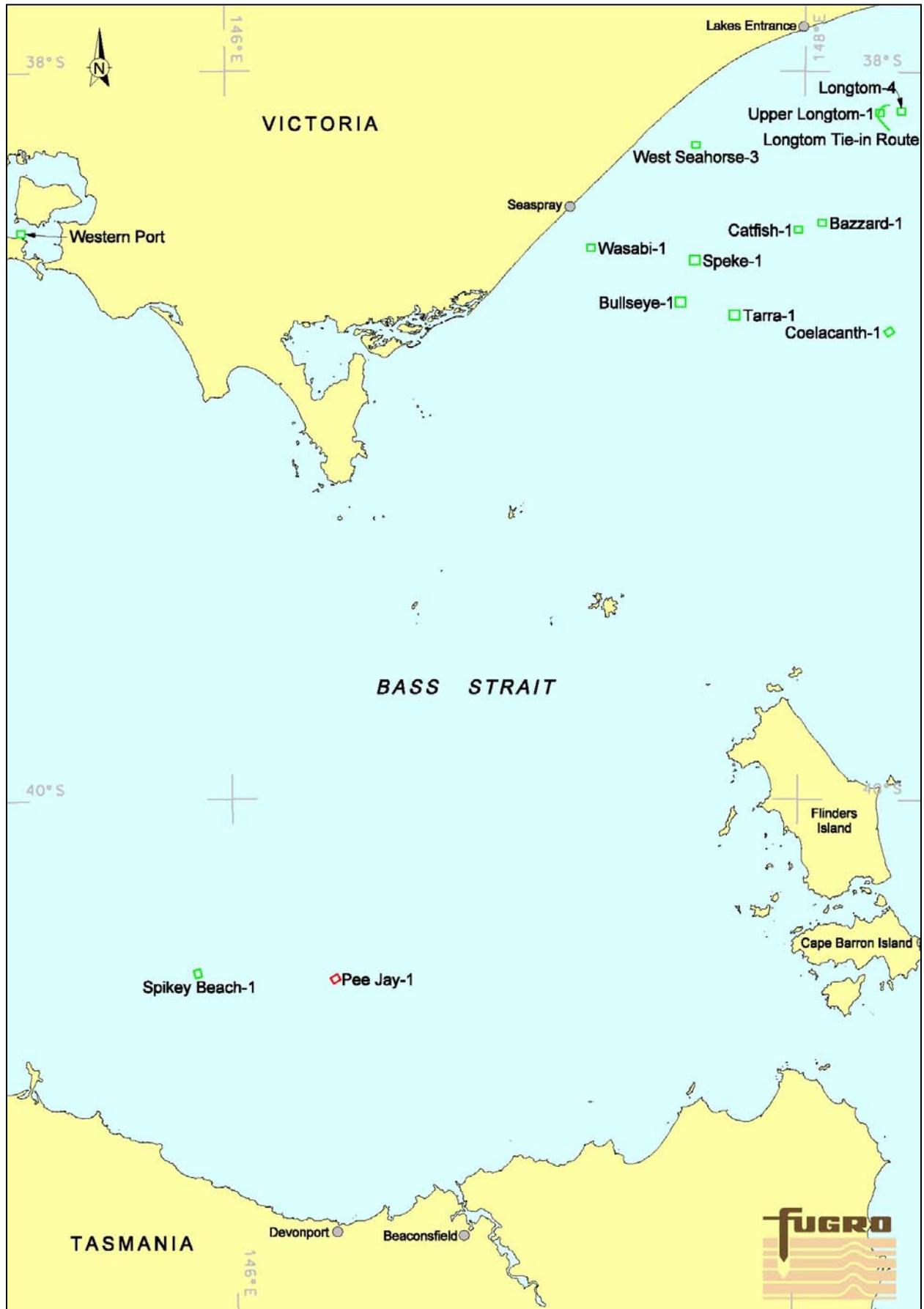


FIGURE 1-1 : GENERAL LOCATION DIAGRAM

The 1.2km x 1km survey area encompassing the proposed Pee Jay-1 well location is bound by the coordinates in Table 1-1.

<b>GDA94, MGA94, Zone 55, CM 147°E</b>		
<b>Point</b>	<b>Easting (m)</b>	<b>Northing (m)</b>
Proposed Well Location	445782	5516973
North Corner	445915	5517670
East Corner	446550	5516678
South Corner	445695	5516152
West Corner	445058	5517174

**TABLE 1-1 : COORDINATES – PEE JAY-1 SITE SURVEY LIMITS**

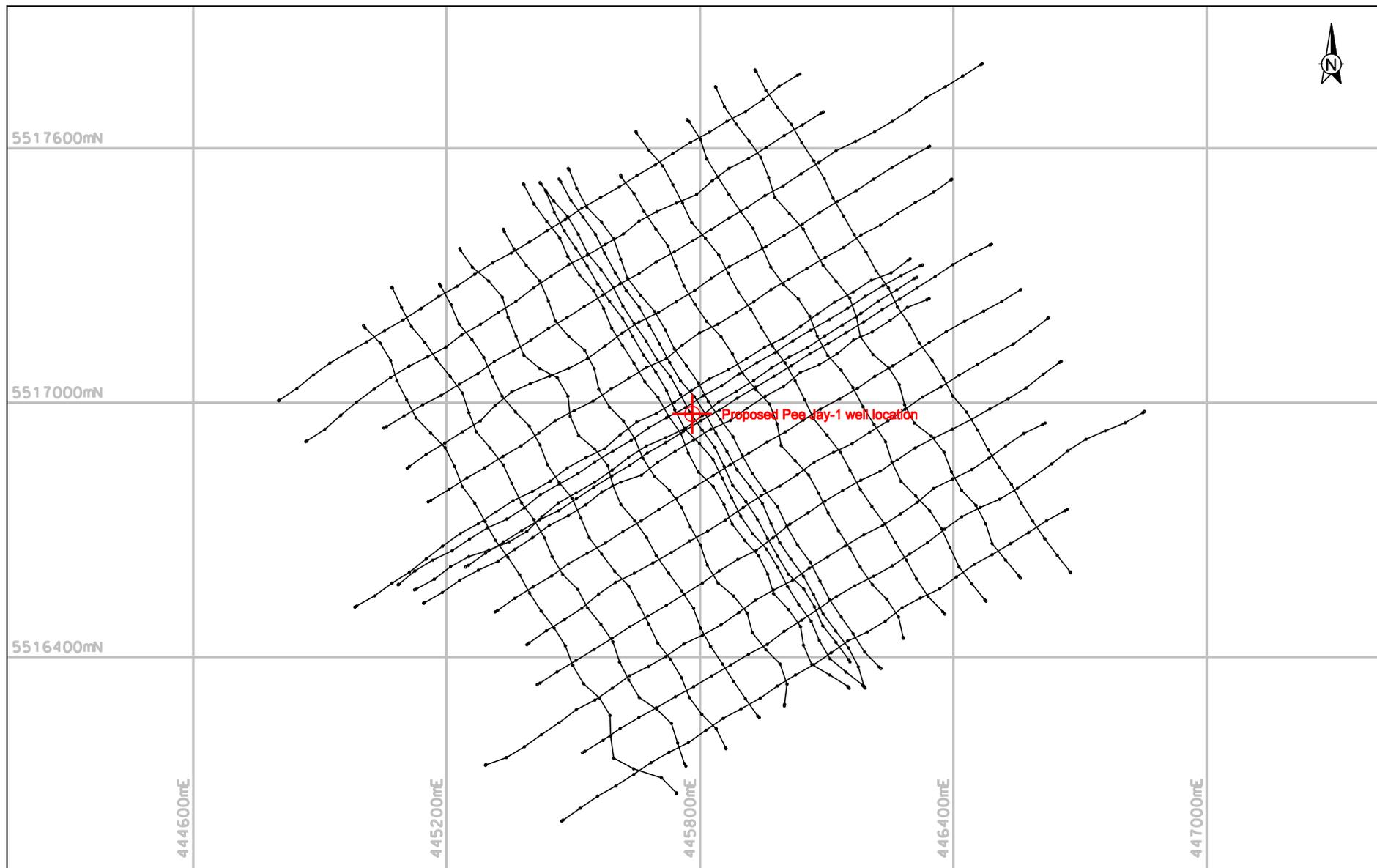
A total of 16 x 1km long lines orientated 59°/239° and 15 x 1.2km long lines orientated 149°/329° lines were surveyed for the Pee Jay-1 site, as shown in Figure 1-2. The two lines either side of the centreline were run at 25m line spacing, while all other lines were run at 100m line spacing. Primary survey lines in a NE-SW direction were run with echo sounder, boomer and side scan sonar while cross-lines in a NW-SE direction were run with echo sounder and boomer only.

### 1.3 Reporting Structure

During the survey campaign, a total of 14 sites and a proposed pipeline route were surveyed for ADA, of which three of the sites were for Beach. This report presents the results of the Pee Jay-1 site survey. The additional results reports relevant to Beach are:

- P0758-6 Spikey Beach-1 Site Survey
- P0758-15 Bernoulli-1 Site Survey (Field Report)

A separate report, report P0758-16 (Operations Report), details the survey operations and discusses equipment and field procedures, as well as health, safety and environmental procedures common to all the sites surveyed. Relevant supporting information and documentation is provided in the appendices of the Operations Report.



**FIGURE 1-2 : SURVEY LINE LAYOUT (FROM VESSEL CRP POSITIONS)**

## **2.0 DATA REDUCTION**

After completion of the offshore geophysical data acquisition, all electronic and hard copy records were returned to Fugro's Perth office for processing and final reporting.

The processing, interpretation and charting procedures are briefly outlined in Section 2.1 to Section 2.5.

### **2.1 Navigation and Positioning**

The MRDGPS systems provided reliable and accurate positioning throughout the project. The surface navigation data were of good quality and only minimal data editing was required. An automated trace routine was used to remove the few erroneous position spikes that were evident. No smoothing of position data was required.

### **2.2 Single Beam Echo Sounder**

The single beam echo sounder data were processed in Starfix.Proc using an automated trace routine and by manual editing to remove erroneous spikes from the data. Processed pitch, roll and heave were also applied to the soundings in Starfix.Proc. A sound velocity profile was recorded at the beginning of the survey and applied during the processing of the data.

The quality of the single beam echo sounder data was generally good with only minor heave and tidal related artefacts apparent in the processed data. However, misclosures of up to  $\pm 0.3\text{m}$  are evident between cross-lines and normal lines, this being the result of using predicted tidal data as no real time tides were recorded.

The reduced bathymetric soundings plotted on the bathymetry drawing are colour coded at 1m intervals, although such is the flat seabed at this site only one colour is displayed.

### **2.3 Side Scan Sonar Data**

The side scan sonar data were used to check for the presence of debris and to map the seabed features within the survey area. The side scan sonar records show areas of seabed characterised by different sonar reflectivity, indicating variations in the composition and relief of sediments, outcrops or other features on the seabed. Typically, hard rocky seabed produces dark records (high reflectivity), soft fine grained sediments produce light, featureless records (low reflectivity) and a sandy seabed produces intermediate tones (moderate reflectivity). Objects such as outcrops, pipelines, etc. standing proud of the seabed typically show strong reflectivity with associated areas of acoustic 'shadow' behind the object, the shadow being indicative of the height of the object. Seabed with variable surface relief due to specific seabed features or variation in seabed geology (such as rock or reef outcrops, pitted seabed, coarse or gravelly sediments, etc.) will produce variably textured sonar records, ranging from mottled very dark and light printing, to lightly textured records.

The position of the side scan sonar towfish was calculated by measuring the length of tow cable out using a T-count cable counter block. The side scan sonar data were recorded digitally as well as on paper hard copy. The data were interpreted and compiled into the seabed features drawing.

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## 2.4 Sub-bottom Profiling Data

Sub-bottom profiler records represent time sections on which the vertical axis shows the two-way travel time (in milliseconds) from the source to the various reflecting surfaces and back to the receiving hydrophone. An assumed seismic velocity through the shallow sediments of 1600 m/s was used. This converts 10ms of two-way travel time to 8.0 vertical metres.

Starfix.Interp is Fugro's software that digitally reads SEG-Y format data (electronic boomer records) and allows the data to be viewed at various scales. This software also allows swell filters and frequency filters to be post applied to the recorded data. Pertinent reflectors are digitally mapped and transferred to Microstation as XYZ files. These files are then used to create the isopachs and geological profiles included in the composite drawing. The isopach drawing and profiles show the thickness of the upper sedimentary units.

## 2.5 Drawing Presentation

The results for the site survey are presented in the form of a composite, five panel A0 north-up drawing showing bathymetry, seabed features, isopachs and sub-seabed profiles at a horizontal scale of 1:5,000 and a vertical scale of 1:200.

In addition to the hard copies, the drawings are also provided in PDF and DGN formats.

### **3.0 SURVEY RESULTS**

*Refer to Drawing No. P0758-07\_001*

#### **3.1 Introduction**

The hydrographic and geophysical techniques used within the Pee Jay-1 site comprised single beam echo sounding, side scan sonar and boomer sub-bottom profiling. Thirty one survey lines were run. A seabed sample was recovered in the vicinity of the proposed well location.

#### **3.2 Bathymetry**

The processed bathymetric data was reduced to Lowest Astronomical Tide (LAT) using predicted tidal data for the survey area supplied by MetOcean Engineers. Mean Seal Level (MSL) is 1.75m above LAT at the proposed Pee Jay-1 well location.

The water depths have a limited variation within the site, ranging from a minimum of 76.1m along the SE margin of the site to localised maximums of 76.7m in the eastern half of the site.

The seabed appears to be essentially flat within the surveyed area.

At the proposed Pee Jay-1 well location the water depth was recorded to be 76.4m below LAT and the seabed is essentially flat.

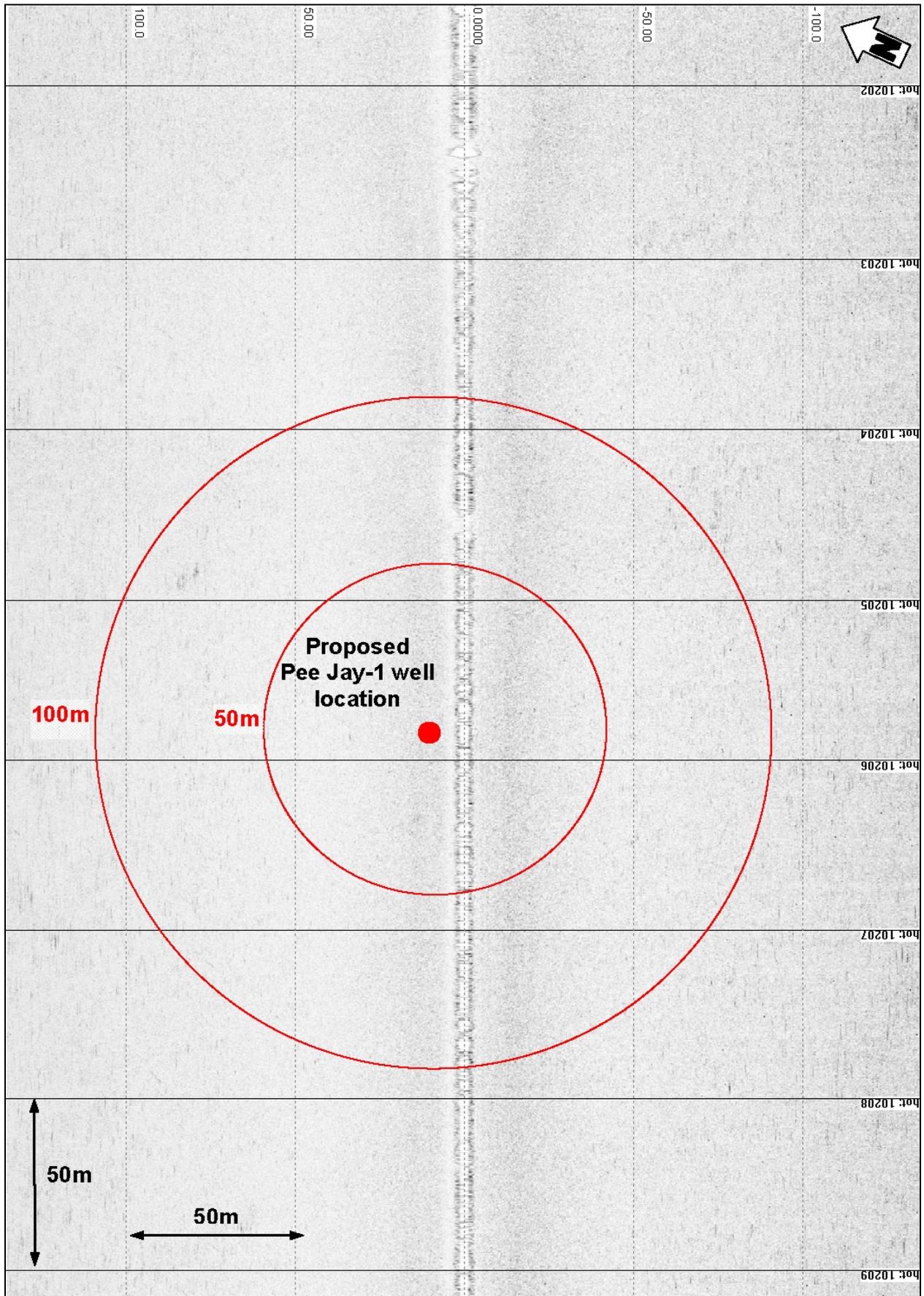
#### **3.3 Seabed Features**

The side scan sonar was operated at 100kHz on a range of 125m per channel. The record quality was moderate to good.

The side scan sonar records display a uniform, low acoustic reflectivity seabed indicative of fine/soft sediments consistent with the very soft silty clay with shells and shell fragments logged at the top of drop core GC\_PJ\_01, obtained in the vicinity of the proposed location. The site is smooth and featureless apart from occasional very faint diffuse small patches of seabed exhibiting slightly higher acoustic reflectivity which may correspond to minor accumulations of shell at the seabed.

No items of debris were identified within the surveyed area.

Figure 3-1 illustrates the seabed conditions at and around the proposed well location.



**FIGURE 3-1 : SIDE SCAN SONAR RECORD, LINE PJ\_008, ILLUSTRATING THE SEAFLOOR CONDITIONS AT THE PROPOSED PEE JAY-1 WELL LOCATION**

### 3.4 Shallow Geology

Sub-bottom profile data was acquired with an Applied Acoustics surface-towed boomer system operating at 200J firing three times a second with filter settings of 500 to 1500Hz. A recording sweep of 90ms was used for duration of the survey. Data quality was moderate to good with penetration to at least 60m below the seabed. The data quality was degraded slightly due to the prevailing sea conditions but is still fit for purpose.

The shallow geology within the surveyed site is interpreted as consisting of a surficial layer of very soft fine sediments overlying a thick sequence of horizontally bedded generally fine grained sediments extending down to the limit of the data. Three main sedimentary units are identified on the sub-bottom profiler data as summarised below:

**Unit A** – The surficial unit exists as a very uniform, continuous, approximately 1.5m to 2.0m thick layer of unconsolidated sediments covering the entire survey area, as shown in the Isopach panel of Drawing No. P0758-7\_01. Drop core, GC\_PJ\_01 recovered very soft silty clay with shells to a depth of 0.67m below the seabed. The Unit A sediments appear to be slightly thicker in the west of the survey area. The base of Unit A is marked by a strong horizontal reflector, R1, interpreted to represent a break in sediment deposition and may consist of a thin layer of coarser sediment and/or shell fragments. At the proposed well location Unit A is interpreted to be 1.7m thick.

**Unit B** – Unit B also exists as a very uniform, continuous layer of sediments typically 12m thick covering the entire survey area. The Unit B sediments appear almost acoustically transparent with only two low to moderate strength internal reflectors apparent on the data, at depths of approximately 7m and 10m below the seabed. The unit is interpreted to consist of horizontally bedded silty clays possibly interbedded with thin layers of coarser sediments. The base of Unit B is marked by a moderate strength horizontal reflector, R2, which is also interpreted as representing a break in deposition. An isopach drawing showing the thickness of sediment between the seabed and the base of Unit B is included the Isopach panel of Drawing No. P0758-7\_01. Reflector R2 occurs at a depth of approximately 13.8m below seabed at the proposed Pee Jay-1 well location.

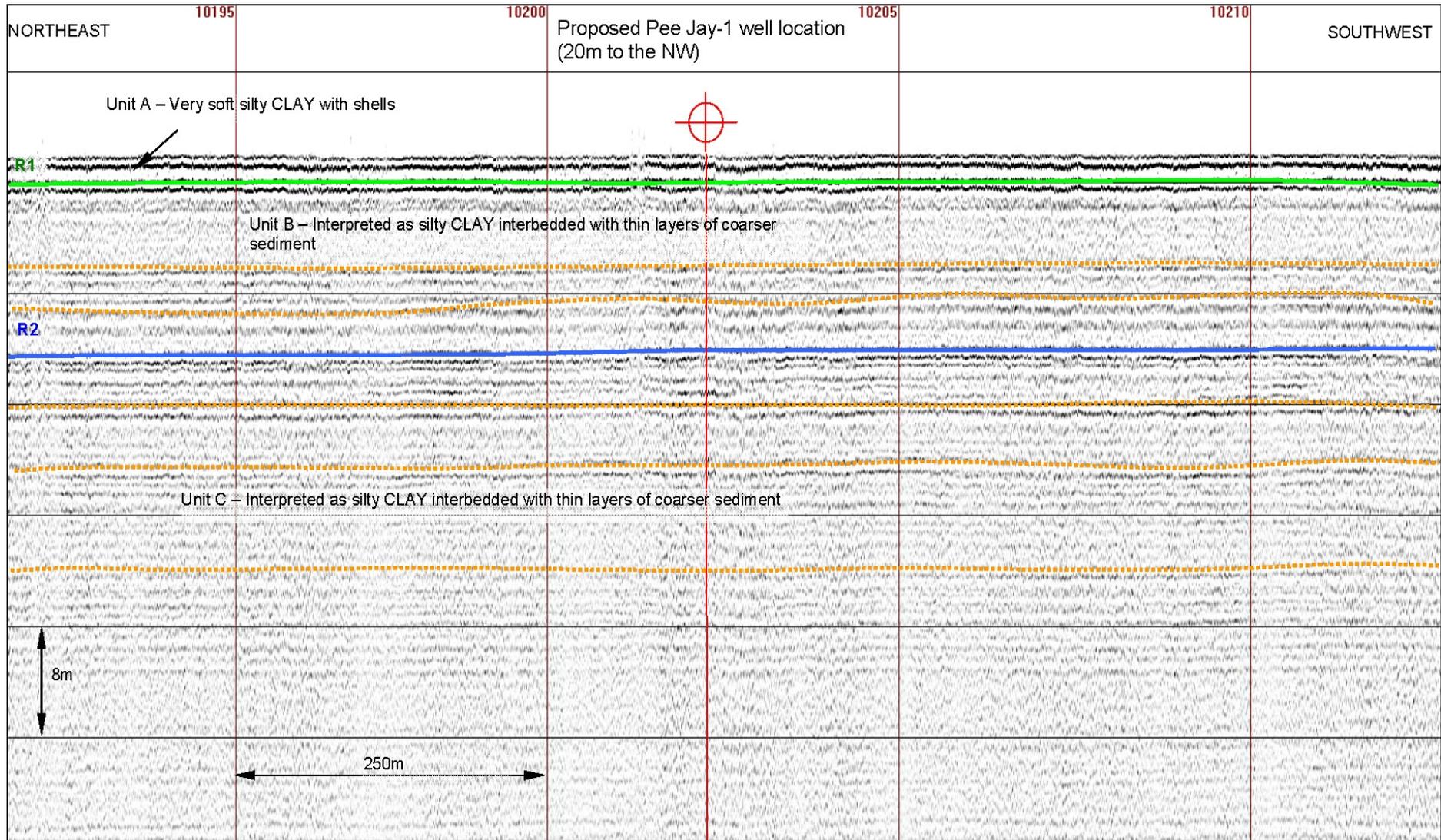
**Unit C** – Unit C extends down to the limit of the sub-bottom profiler data and is characterised by weak horizontal internal reflectors. Reflector R2 at the top of the unit may mark the top of a thin, less than 1m thick, layer of coarser sediment. Unit C is interpreted to consist of a further sequence of silty clays interbedded with thin layers of coarser sediment marked by the weak internal reflectors. At the proposed well location the bedding layers are apparent at depths of approximately 18, 22, 24, 27, 30, 33, 37 and 42m below the seabed.

The interpreted shallow geological sequence at the proposed well location is summarised in Table 3-1.

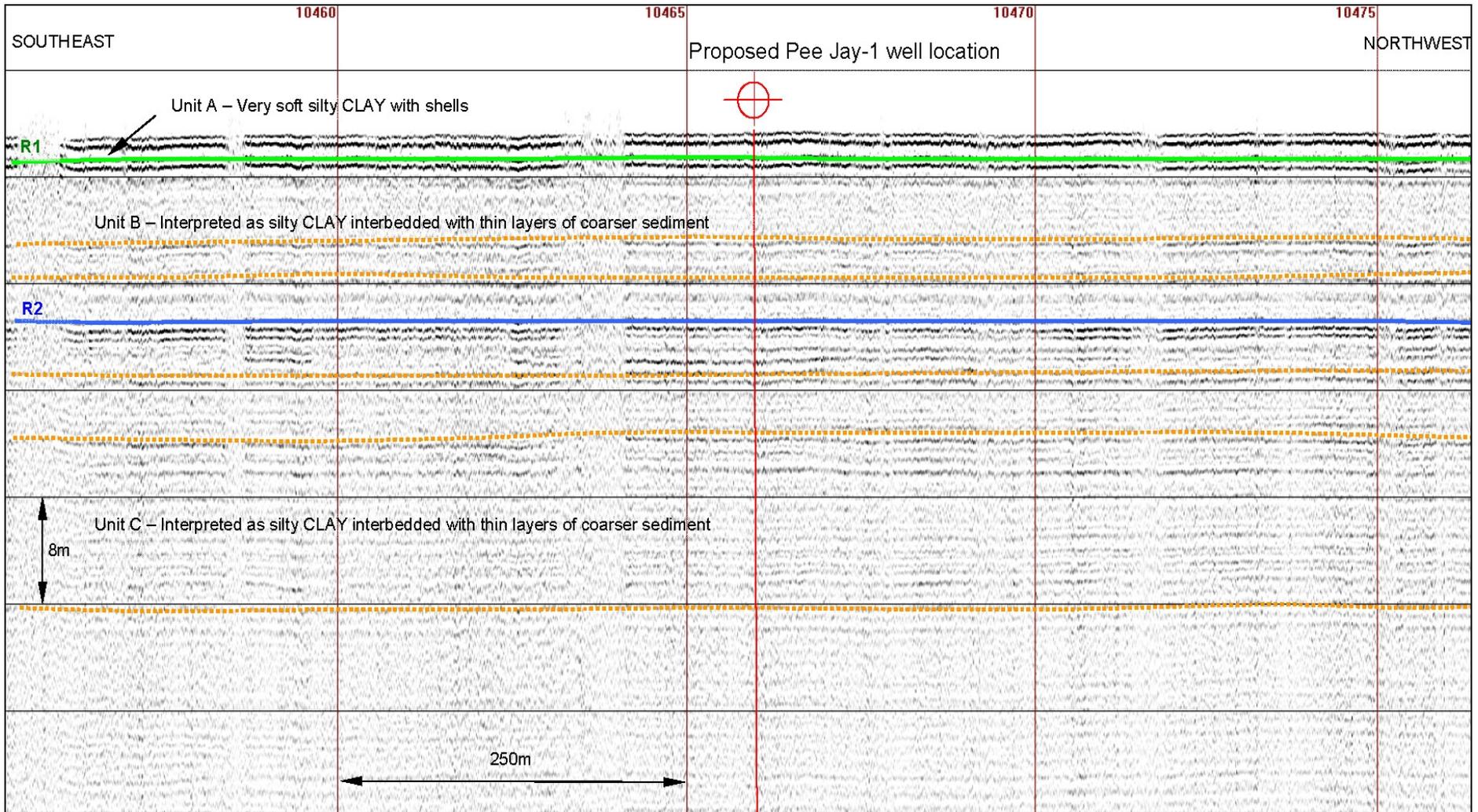
Depth Below Seabed (m)	Unit	Description
0.0 – 1.7	Unit A	Very soft silty clay with shells
1.7 – 13.8	Unit B	Silty clay interbedded with thin layers of coarser sediment
>13.8	Unit C	Silty clay interbedded with thin layers of coarser sediment

**TABLE 3-1 : INTERPRETED GEOLOGICAL SEQUENCE AT THE PROPOSED PEE JAY-1 WELL LOCATION**

Figure 3-2 and Figure 3-3 illustrate the shallow seismic data underlying the proposed location.



**FIGURE 3-2 : SUB-BOTTOM PROFILER DATA EXAMPLE OF THE SHALLOW GEOLOGY AT THE PROPOSED PEE JAY-1 WELL LOCATION FROM LINE PJ\_008**



**FIGURE 3-3 : SUB-BOTTOM PROFILER DATA EXAMPLE OF THE SHALLOW GEOLOGY AT THE PROPOSED PEE JAY-1 WELL LOCATION FROM LINE PJX\_008**

### 3.5 Seabed Sampling

A seabed sample was collected using a drop corer approximately 80m to the WNW of the proposed well location, in order to assist interpretation of the data sets. The results of the seabed sampling are listed in Table 3-2 and a photographic record and description is included in Appendix B.

GDA94, MGA94, Zone 55, CM 147°E				
Sample No.	Easting (m)	Northing (m)	Water Depth (m LAT)	Description
GC_PJ_01	445713	5517013	76.5	Top (0m) – Yellowish grey, very soft, silty CLAY with numerous shells and shell fragments (up to 12mm). Base (0.67m) – Yellowish grey, very soft, silty CLAY with shells and shell fragments (up to 15mm).

**TABLE 3-2 : SEABED SAMPLING RESULTS**

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#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

The water depth within the site ranges from 76.1 to 76.7m below LAT. The seabed does not exhibit any significant relief within the site.

At the proposed well location the water depth was recorded to be 76.4m below LAT and the seabed is essentially flat.

No topographic anomalies were identified that would pose a hazard to drilling at the proposed location.

The seabed within the survey area appears to be smooth and featureless, exhibiting a uniform low degree of acoustic reflectivity consistent with the very soft silty clay recovered by the drop corer.

No debris or obstructions were identified on the seafloor within the survey area.

The shallow stratigraphy within the survey area is interpreted as consisting of a uniform surficial layer of unconsolidated very soft fine sediments up to 2m thick overlying a thick sequence of horizontally bedded generally fine grained sediments.

There is no evidence from the sub-bottom profiler records of any shallow geological hazards within the survey area.

**Due to the anticipated soft consistency of the fine grained sediments at the site considerable spudcan penetration should be allowed for.**

If further information regarding the physical properties of the shallow geological sequence is required, a geotechnical drilling campaign is advised.

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## 5.0 DISTRIBUTION

Copies of this report have been distributed as follows:

Australian Drilling Associates Pty Ltd

Attn: Mr Phil Stratford

: 3 hard copies

: 1 electronic copy

**APPENDIX A  
SERVICE WARRANTY**



1. This report and the geophysical interpretation and assessment carried out in connection with the report (together with the "Services") were compiled and carried out by Fugro Survey Pty Ltd (FSPTY) for Australian Drilling Associates Pty Ltd (the "Client") in accordance with the terms of a contract between FSPTY and the Client. The Services were performed by FSPTY with the skill and care ordinarily exercised by a reasonable geophysical survey contractor, at the time the Services were performed. Further, and in particular, the Services were performed by FSPTY taking into account the limits of the scope of works required by the Client, the time scale involved and the resources, including financial, equipment and manpower resources, agreed between FSPTY and the Client.
2. Other than that expressly contained in paragraph 1 above, FSPTY provides no other representation or warranty whether expressed or implied, in relation to the Services and all warranties and conditions implied by law are hereby expressly excluded.
3. The Services were performed by FSPTY exclusively for the purposes of the Client. FSPTY is not aware of any interest of or reliance by any party other than the Client in or on the Services. Unless stated in the contract or report for the Services or expressly provided in writing, FSPTY does not authorise, consent or condone any party other than the Client relying upon the services. Should this report or any part of this report, or otherwise details of the Services or any part of the services be made known to any such party and such party relies thereon that party does so wholly at its own and sole risk and FSPTY disclaims any liability to such parties. Any such party would be well advised to seek (*independent*) advice from a competent (*geophysical survey contractor/consultant*) and/or lawyer.
4. It is FSPTY's understanding that this report is to be used for the purpose described in Section 1 - "Introduction" of the report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the report is used, or the Client's proposed development or activity change, this report may no longer be valid and any further use of or reliance upon the report in those circumstances by the Client without FSPTY's review and advice shall be at the Client's sole and own risk. Should FSPTY be requested to review the report after the date hereof, FSPTY shall be entitled to additional payment at the then existing rates or such other terms as agreed between FSPTY and the Client.
5. The passage of time may result in man-made and/or natural changes in site conditions and changes in regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should be not relied upon if any such changes have taken place and in any event after a period not greater than two years (or typically six months in the case of seabed features information) from the date of this report or as stated in the report without the written advice of FSPTY. In the absence of such written advice from FSPTY, reliance on the report after the specified time period shall be at the Client's own and sole risk. Should FSPTY be asked to review the report after the specified time period, FSPTY shall be entitled to additional payment at the then existing rate or such other terms as may be agreed upon between FSPTY and the Client.

6. The observations and conclusions described in this report are based solely upon the Services which were provided pursuant to the agreement between the Client and FSPTY. FSPTY has not performed any observations, investigations, studies or testing not specifically set out or required by the contract between the Client and FSPTY. FSPTY is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services.
7. Where the Services have involved the use of any information provided by third parties or the Client and upon which FSPTY was reasonably entitled to rely then the Services clearly are limited by the accuracy of such information. Unless otherwise stated, FSPTY was not authorised and did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the Client or third parties, including laboratories and information services, during the performance of the services. FSPTY is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to FSPTY and including the doing of any independent investigation of the information provided to FSPTY save as otherwise provided in the terms of the contract between the Client and FSPTY
8. Neither FSPTY nor any director, officer, agent, or employee of FSPTY shall have any liability (whether direct or indirect, in contract or in tort or breach of statutory duty or otherwise) to the Client (nor to any body corporate related to the Client within the meaning of section 50 of the Corporations Law, nor to any director, officer, agent, or employee of the Client or of any such body) for or in connection with the engagement of FSPTY for the provision of the Services, except to the extent to which it is not permissible by law to exclude, restrict or modify liability and except for any such liability for losses, claims, damages, liabilities or expenses incurred by the Client (or any of them) that are determined by a final judgement of a court of competent jurisdiction to have resulted primarily from actions taken or omitted to be taken by such person illegally or in bad faith from such person's gross negligence.

The above provisions will survive any termination of FSPTY's engagement to provide the Services.

**APPENDIX B  
SEABED SAMPLE LOG**

<b>Job No.:</b> P0758	<b>Date:</b> 05/11/07	<b>Time:</b> 00:48	<b>SAMPLE No.:</b> GC_PJ_01
<b>Project:</b> Site Surveys Victorian Consortium		<b>Time Zone :</b> UTC	<b>Client:</b> ADA
<b>Vessel:</b> Pacific Conquest		<b>Geophysicist:</b> RB	<b>Water Depth :</b> 76.5m LAT
<b>Horizontal Datum:</b> GDA 94		<b>Grid:</b> MGA94	<b>Projection:</b> UTM , CM147°
<b>Easting (m):</b> 445713	<b>Northing (m):</b> 5517013	<b>Recovery (m):</b> 0.67	<b>Penetration (m):</b> N/A
<b>Corer Weight (kg):</b> 400	<b>Core Barrel Length (m):</b> 3		<b>Cutter Condition:</b> Good

Depth (m)	Description	Strength Measurements	
		Torvane (kPa)	Penetrometer (kPa)
0.00	Yellowish grey, very soft, silty CLAY with shells and shell fragments (up to 10mm)	5kPa	N/A
0.67	Yellowish grey, very soft, silty CLAY with shells and shell fragments (up to 15mm)	N/A (shells)	N/A

Sample has been described by visual identification. A pocket penetrometer and a Torvane have been used to define the unconfined compressive strength and shear strength of the soil. The undrained shear strength of the soil is taken as half the unconfined compressive strength. \* The Depth from seabed corresponds to the depth at which the core liner was sectioned and the point at which the sample was described.



**SAMPLE PHOTO**

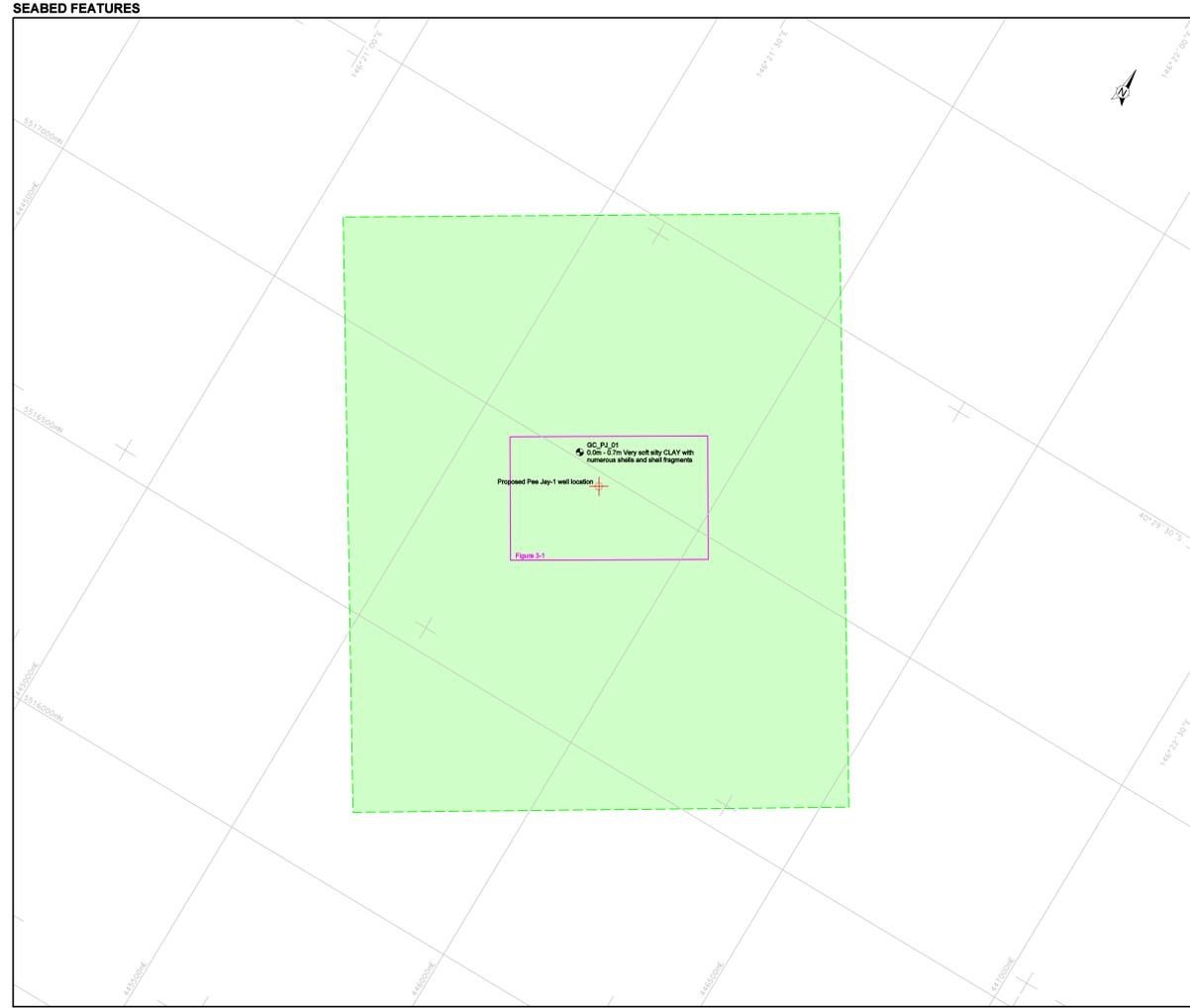
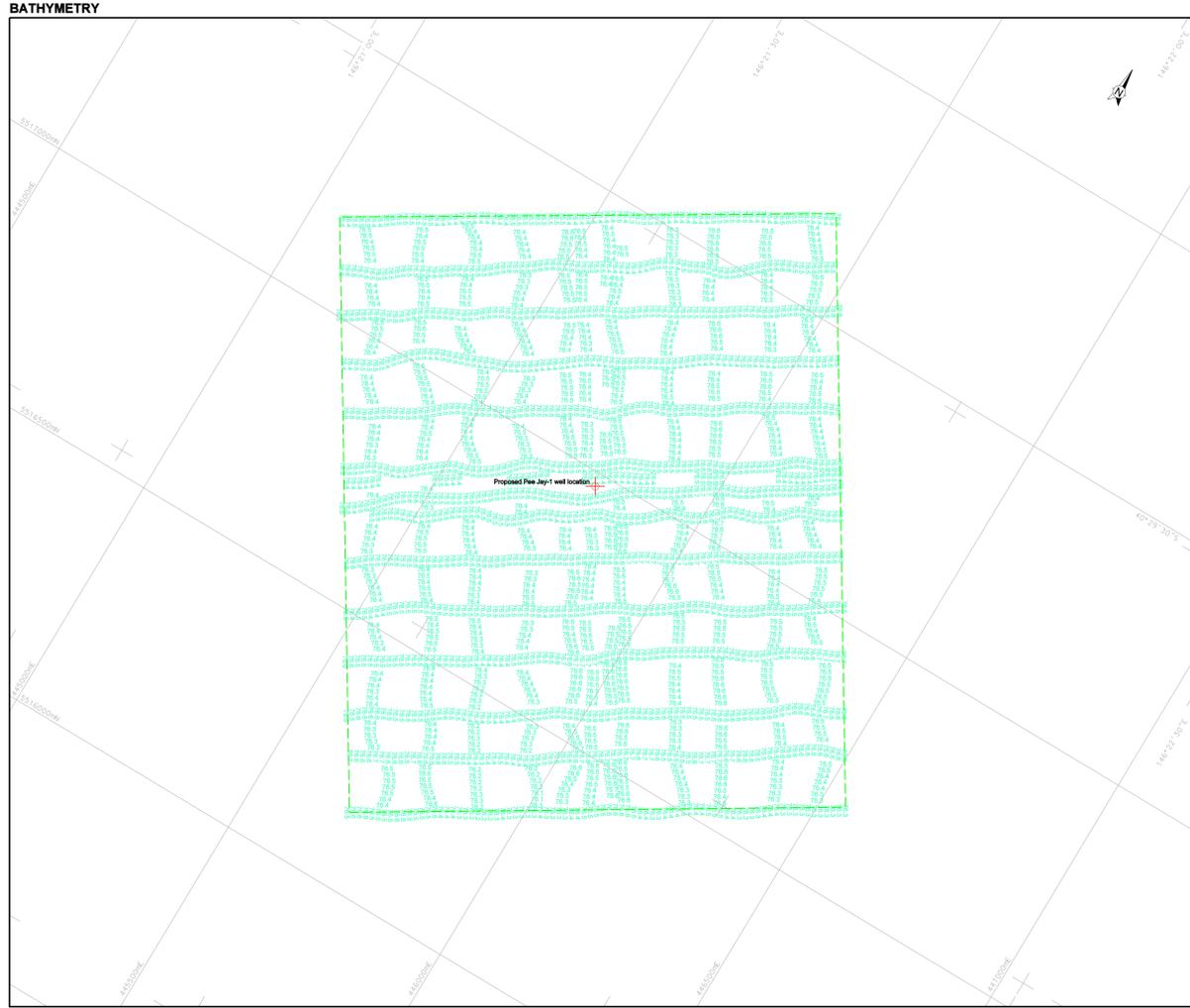


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<b>DRAWING</b>
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**SCALE 1:5,000**

<b>FUGRO DRAWING NO.</b>	<b>DESCRIPTION</b>
<b>P0758-7_001</b>	<b>PEE JAY-1 COMPOSITE DRAWING - BATHYMETRY, SEABED FEATURES, ISOPACHS AND SHALLOW GEOLOGICAL PROFILES</b>



### LEGEND:

- Proposed Pee Jay-1 well location (446782mE, 516972mN)
- Limit of site survey area (supplied by client)
- Location of data example figures in report

### BATHYMETRY

- Bathymetric soundings in metres (colour banded at 1m intervals)

### SEABED FEATURES

- Uniform low acoustic reflectivity seabed - interpreted to represent very soft silty CLAY with numerous shells and shell fragments
- Seabed sample location with designator and brief description (GC: gravity core)

### ISOPACHS

- Thickness of surficial sediments from seabed to reflector R1 or base of Unit A (m)
- Reflector R1 spot depth
- Thickness of sediments from seabed to reflector R2 or base of Unit B (m)
- Reflector R2 spot depth
- Track line used for shallow geological profile

### SHALLOW GEOLOGICAL PROFILE

- GC\_PJ\_01
- Seabed profile with sample location with designator (GC: gravity core)
- Reflector 1, dashed where inferred (seabed to reflector R1 or base of Unit A)
- Reflector 2, dashed where inferred (seabed to reflector R2 or base of Unit B)
- Internal reflector, dashed where inferred
- Location of data example figures in report

AUSTRALIAN HEIGHT DATUM (AHD) OR MEAN SEA LEVEL (MSL)	
LOWEST ASTRONOMICAL TIDE (LAT)	1.75m
SEABED	Depth

- ### NOTES:
- Positioning Systems: Starfix MR00PS
  - Bathymetry data acquired using an Odom EchoTrack CF2000 Mini dual frequency single beam echo sounder.
  - Bathymetry reduced to LAT using predicted tides provided by MacDermid Engineers.
  - Seabed features interpreted from data acquired with a GeoAcoustics T3SD side scan sonar towfish operated at 100kHz frequency and a range of 125m per channel.
  - Shallow geology has been interpreted from data acquired with an Applied Acoustics Boomer system operating at 200 Joules energy level.
  - Seismic travel time has been converted to depths using an assumed velocity of 1600m/s within the sub-seabed sediments.
  - Lithological descriptions are interpretations based on the acoustic response of seabed and sub-seabed sediments.

