

**NOTES:**  
 Contours are computer generated to hydrographic standard (inclusive).  
 Soundings obtained to clearance depth of 0.3 m LAT.  
 Contour obtained from aerial photography and is approximate only.  
 For water control refer to the control table on Plan 8300-005.  
 A position shift of E -0.34, N -0.93 was applied in Coomera to the Omnistar HP data based on a position check conducted on 26/04/05.  
 The Omnistar position was verified using the Leica 12300 RTK-GPS using PSM 146531 as a base station.  
 Soundings reduced to datum based on Queensland control zones for hydrography 333 and 304.  
 Soundings downstream of Paradise Point reduced to datum using tide gauge read at Bcn 314, 78 100029.  
 Soundings up stream of Coomera Point reduced to datum using tide gauge read at TS 100028.  
 Enhanced predictions at TS 042500 were based on water level dip readings.

<b>Horizontal Datum</b>	MGA GDA94 Zone 58	<b>Eastings</b>		<b>Northings</b>	
<b>Base Station</b>	Omnistar HP (DGPS corrections)				
<b>Vertical Datum</b>	LAT based on				
<b>Tide Notes</b>	See Note 7	PSM 77643 RL 5.076m LAT (QCCC Marina)	PSM 17988 RL 1.830m LAT (Paradise Point)	PSM 99183 RL 3.011m LAT (Sanctuary Cove)	
<b>Depth Tolerance</b>	0.20m	<b>Horizontal Tolerance</b>	1.5m	<b>Weather</b>	B - 10 Knots SE
<b>Vessel</b>	QG Norfolk	<b>Echo Sounder</b>	Kongsberg EK30020	<b>Heave meter</b>	Applanix POSMV 320
<b>Horizontal Positioning</b>	Applanix POSMV 320/Omnistar HP	<b>Data Collection/Processing</b>	SIG 10.8.31/01/04 V7.17/Prepared: 10/02/05	<b>Tidal Reference Station</b>	TS 042500, 78 100029, 78 100028

**SCALE 1:2000 AT A1**

**CLASS C CLIENT MSQ - SOUTHPORT**

**SOUNDINGS (m)**  
 2.5 below datum  
 2.7 above datum  
 4.3 above datum  
 5.5 below datum

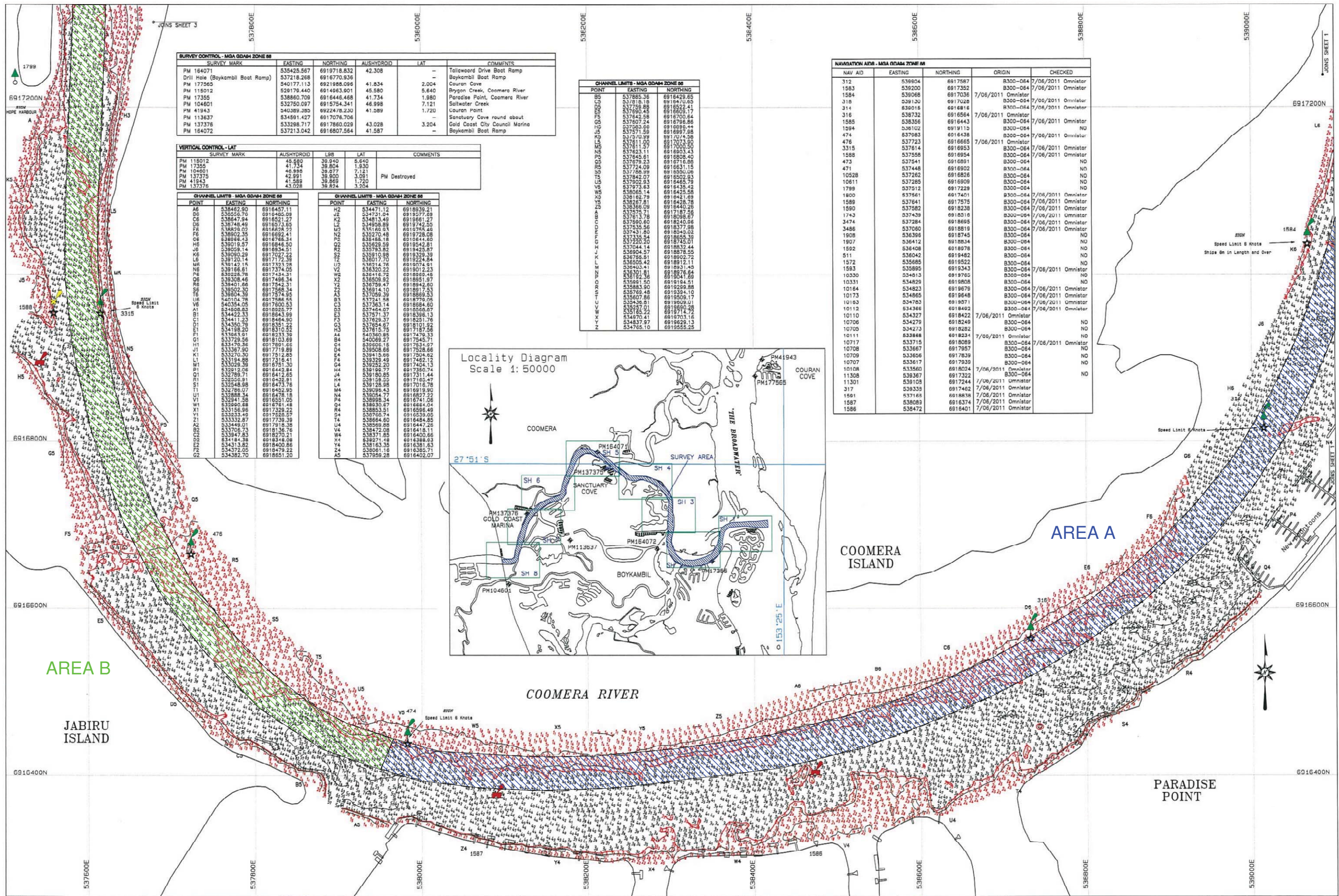
**Signature**  
 Original Signed and Filed  
 Hydrographic Surveyor: I Heise  
 Surveyor: R Penington  
 Checked: I Heise  
 Original Signed and Filed  
 Ocean Caretill Manager: [Signature]  
 Date: [Blank]

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**COOMERA RIVER**  
 DREDGE AREAS  
 SHEET 1 OF 4

ATTACHMENT 1

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SURVEY CONTROL - MGA GD44 ZONE 58					
SURVEY MARK	EASTING	NORTHING	AUSHYDROID	LAT	COMMENTS
PM 164071	535425.567	6919718.832	42.308	-	Tallowood Drive Boat Ramp
Drill Hole (Boykambil Boat Ramp)	537218.268	691870.936	-	-	Boykambil Boat Ramp
PM 177565	540177.113	6921988.096	41.834	2.004	Couran Cove
PM 115012	529176.440	6914963.901	45.580	5.640	Brygon Creek, Coomera River
PM 17355	538860.709	6916446.468	41.734	1.980	Paradise Point, Coomera River
PM 104601	532750.097	6915754.341	46.998	7.121	Saltwater Creek
PM 41943	540389.380	6922478.230	41.089	1.720	Couran Point
PM 113637	534591.427	6917076.708	-	-	Sanctuary Cove round about
PM 137376	533298.717	691780.929	43.028	3.204	Gold Coast City Council Marina
PM 164072	537213.042	6916807.564	41.587	-	Boykambil Boat Ramp

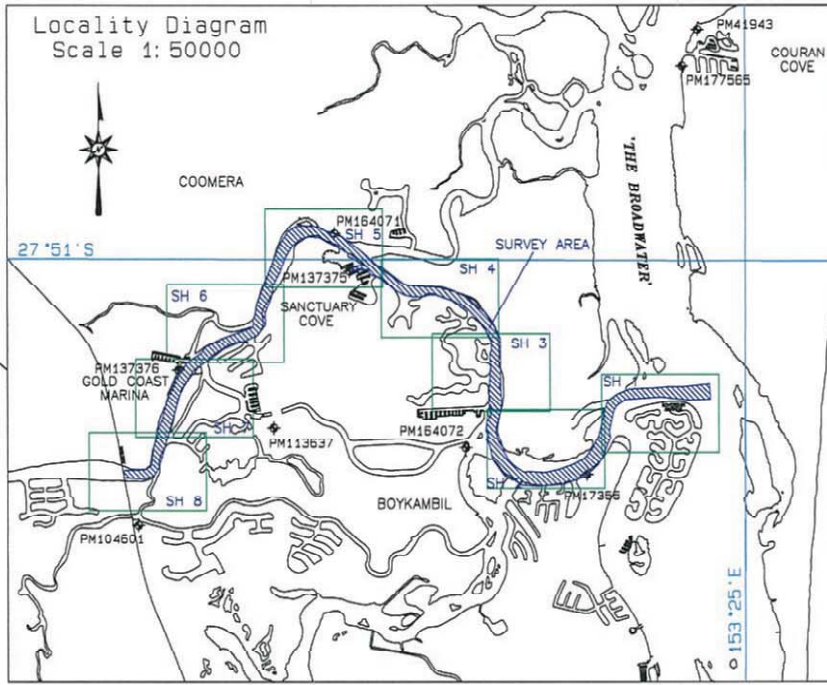
VERTICAL CONTROL - LAT					
SURVEY MARK	AUSHYDROID	LSB	LAT	COMMENTS	
PM 115012	45.580	39.940	5.640		
PM 17355	41.734	39.804	1.930		
PM 104601	46.998	39.677	7.121		
PM 137376	42.991	39.800	3.091	PM Destroyed	
PM 41943	41.589	39.869	1.720		
PM 137376	43.028	39.824	3.204		

CHANNEL LIMITS - MGA GD44 ZONE 58		
POINT	EASTING	NORTHING
A6	536457.11	6916457.11
D6	535055.70	6916457.11
C6	538647.94	6916521.27
D6	538745.49	6916513.65
F6	538890.02	6916828.22
H6	538902.35	6916922.41
C6	538965.43	6916766.34
F6	539019.57	6916846.50
J6	539059.14	6916934.51
K6	539090.29	6917027.22
L6	539120.14	6917172.58
M6	539142.14	6917321.28
N6	539166.61	6917474.05
O6	539226.78	6917434.31
P6	539308.46	6917496.34
R6	539401.60	6917542.31
S6	539502.30	6917568.34
T6	539604.39	6917574.95
U6	540104.78	6917586.55
V6	540354.005	6917600.53
W6	53912.26	6918052.77
B1	534422.33	6918643.99
C1	534411.23	6918464.90
D1	534411.23	6918464.90
E1	534198.20	6918310.52
F1	533963.91	6918233.39
G1	533729.69	6918103.69
H1	533479.36	6917891.66
I1	533387.90	6917719.89
J1	533295.84	6917581.84
K1	533194.88	6917316.41
L1	533029.39	6916751.30
M1	532897.71	6916412.65
N1	532550.81	6916432.81
O1	532548.88	6916473.78
P1	532786.07	6916452.95
Q1	532888.34	6916478.18
R1	533448.01	6917811.06
S1	533990.88	6916781.48
T1	533335.69	6917329.22
U1	533335.69	6917329.22
V1	533332.87	6917739.39
W1	533448.01	6917811.06
X1	533706.73	6918136.76
Y1	533947.83	6918270.21
Z1	534184.38	6918448.85
A2	534313.82	6918400.86
B2	534372.05	6918479.22
C2	534382.70	6918651.20

CHANNEL LIMITS - MGA GD44 ZONE 58		
POINT	EASTING	NORTHING
H2	536457.11	6916457.11
A4	535055.70	6916457.11
K2	534813.49	6916661.27
L2	534958.89	6916742.55
M2	534813.49	6916755.40
N2	535270.48	6916728.08
O2	535164.68	6916814.60
Q2	535629.59	6916542.81
R2	535793.82	6916425.87
S2	535910.58	6916329.39
T2	536017.70	6916224.84
U2	536214.78	6916074.91
V2	536300.22	6915939.39
W2	536416.92	6915846.49
X2	536509.92	6915851.97
Y2	536759.47	6915942.60
Z2	536914.10	6915917.53
A3	537059.99	6915866.53
B3	537214.58	6915776.07
C3	537363.14	6915684.60
D3	537514.67	6915586.07
E3	537571.37	6915486.13
F3	537629.07	6915381.76
G3	537684.67	6915274.22
H3	537751.75	6915167.56
A4	540360.85	6917476.33
B4	540069.27	6917545.71
C4	539906.15	6917631.07
D4	539508.68	6917528.66
E4	539415.66	6917504.62
F4	539239.49	6917462.12
G4	539252.20	6917404.13
H4	539199.77	6917356.74
J4	539180.85	6917311.44
K4	539158.25	6917262.47
L4	539128.98	6917016.78
M4	539096.43	6916919.90
N4	539054.77	6916827.22
O4	538989.58	6916741.06
Q4	538930.67	6916664.04
R4	538853.51	6916586.49
S4	538760.74	6916503.92
T4	538664.60	6916424.85
U4	538559.85	6916344.26
V4	538472.08	6916248.11
W4	538371.85	6916140.66
X4	538271.48	6916038.03
Y4	538163.35	6915931.63
Z4	538061.16	6915825.71
A5	537959.28	6915719.20

CHANNEL LIMITS - MGA GD44 ZONE 58		
POINT	EASTING	NORTHING
B5	537885.36	6916429.65
C5	537815.18	6916410.60
D5	537765.89	6916390.17
E5	537690.45	6916360.84
F5	537607.24	6916326.86
G5	537503.60	6916289.44
H5	537371.59	6916248.58
I5	537219.99	6916204.20
J5	537041.00	6916157.90
K5	536823.11	6916109.43
L5	536645.61	6916060.40
M5	536465.09	6916011.15
N5	537224.09	6916031.15
O5	537224.09	6916031.15
P5	537224.09	6916031.15
Q5	537224.09	6916031.15
R5	537224.09	6916031.15
S5	537224.09	6916031.15
T5	537224.09	6916031.15
U5	537224.09	6916031.15
V5	537224.09	6916031.15
W5	537224.09	6916031.15
X5	537224.09	6916031.15
Y5	537224.09	6916031.15
Z5	537224.09	6916031.15

NAVIGATION AIDS - MGA GD44 ZONE 58				
NAV AID	EASTING	NORTHING	ORIGIN	CHECKED
312	539904	6917587	B300-064	7/06/2011 Omnistar
1583	539200	6917352	B300-064	7/06/2011 Omnistar
1584	539068	6917036	7/06/2011 Omnistar	
318	539120	6917020	B300-064	7/06/2011 Omnistar
314	539218	6916916	B300-064	7/06/2011 Omnistar
316	538732	6916564	7/06/2011 Omnistar	
1585	538356	6916443	B300-064	7/06/2011 Omnistar
1594	538102	6919110	B300-064	NO
474	537983	6916438	B300-064	7/06/2011 Omnistar
476	537723	6916665	7/06/2011 Omnistar	
3315	537614	6916953	B300-064	7/06/2011 Omnistar
1588	537518	6916954	B300-064	7/06/2011 Omnistar
473	537541	6916891	B300-064	NO
471	537448	6916902	B300-064	NO
10528	537262	6916826	B300-064	NO
10611	537285	6916909	B300-064	NO
1799	537512	6917229	B300-064	NO
1800	537561	6917401	B300-064	7/06/2011 Omnistar
1589	537641	6917575	B300-064	7/06/2011 Omnistar
1590	537582	6918238	B300-064	7/06/2011 Omnistar
1743	537439	6918010	B300-064	7/06/2011 Omnistar
3474	537284	6918695	B300-064	7/06/2011 Omnistar
3486	537060	6918819	B300-064	7/06/2011 Omnistar
1908	536396	6918745	B300-064	NO
1907	536412	6918834	B300-064	NO
1592	536408	6918978	B300-064	NO
511	536242	6919462	B300-064	NO
1572	535685	6919522	B300-064	NO
1593	535895	6919343	B300-064	7/06/2011 Omnistar
10330	534613	6919765	B300-064	NO
10331	534829	6919808	B300-064	NO
10164	534823	6919679	B300-064	7/06/2011 Omnistar
10173	534865	6919648	B300-064	7/06/2011 Omnistar
10163	534763	6919571	B300-064	7/06/2011 Omnistar
10112	534366	6919426	B300-064	7/06/2011 Omnistar
10110	534327	6918422	7/06/2011 Omnistar	
10706	534279	6918249	B300-064	NO
10700	534273	6918282	B300-064	NO
10111	533888	6918234	7/06/2011 Omnistar	
10717	533715	6918089	B300-064	7/06/2011 Omnistar
10708	533667	6917957	B300-064	NO
10709	533596	6917839	B300-064	NO
10707	533617	6917939	B300-064	NO
1010R	533560	6918024	7/06/2011 Omnistar	
11308	533967	6917322	B300-064	NO
11301	539103	6917244	7/06/2011 Omnistar	
317	539339	6917462	7/06/2011 Omnistar	
1591	537168	6918838	7/06/2011 Omnistar	
1587	538089	6916374	7/06/2011 Omnistar	
1586	538472	6916401	7/06/2011 Omnistar	



**NOTES:**

- Contours are computer generated to Hydrographic Standard (Inclusive).
- Soundings coloured to clearance depth of 3.3 m LAT.
- Contour lines obtained from aerial photography and is approximate only.
- For survey control refer to the control table on Plan 8300-059 Sheet 2 & Plan 8300-055.
- A section with a 1:3 scale was applied in Gariole to the Omnistar IP data based on a position check conducted over 09/05/11.
- The Omnistar position was verified using the Leica 120000 RTK-008 using PM 164071 as base station.
- Soundings reduced to datum based on AUSHDROID (1984) datum for Hydrography 58 and 59.
- Soundings downstream of Paradise Point reduced to datum using tides as read at Ben 314, 19/05/2003.
- Soundings up stream of Gold Coast City Marina reduced to datum using tides as read at Ben 314, 19/05/2003.
- Enhanced predictions at 19 043000 were based on water level dip readings.

Horizontal Datum	MGA GD44 Zone 58	Easting	Northing
Base Station	Omnistar IP	(DPS corrections)	
Vertical Datum	LAT		
Title Note	See Note 7		
Depth Tolerance	0.20m	Horizontal Tolerance	1.5m
Weather	S - 10 Knots SE		

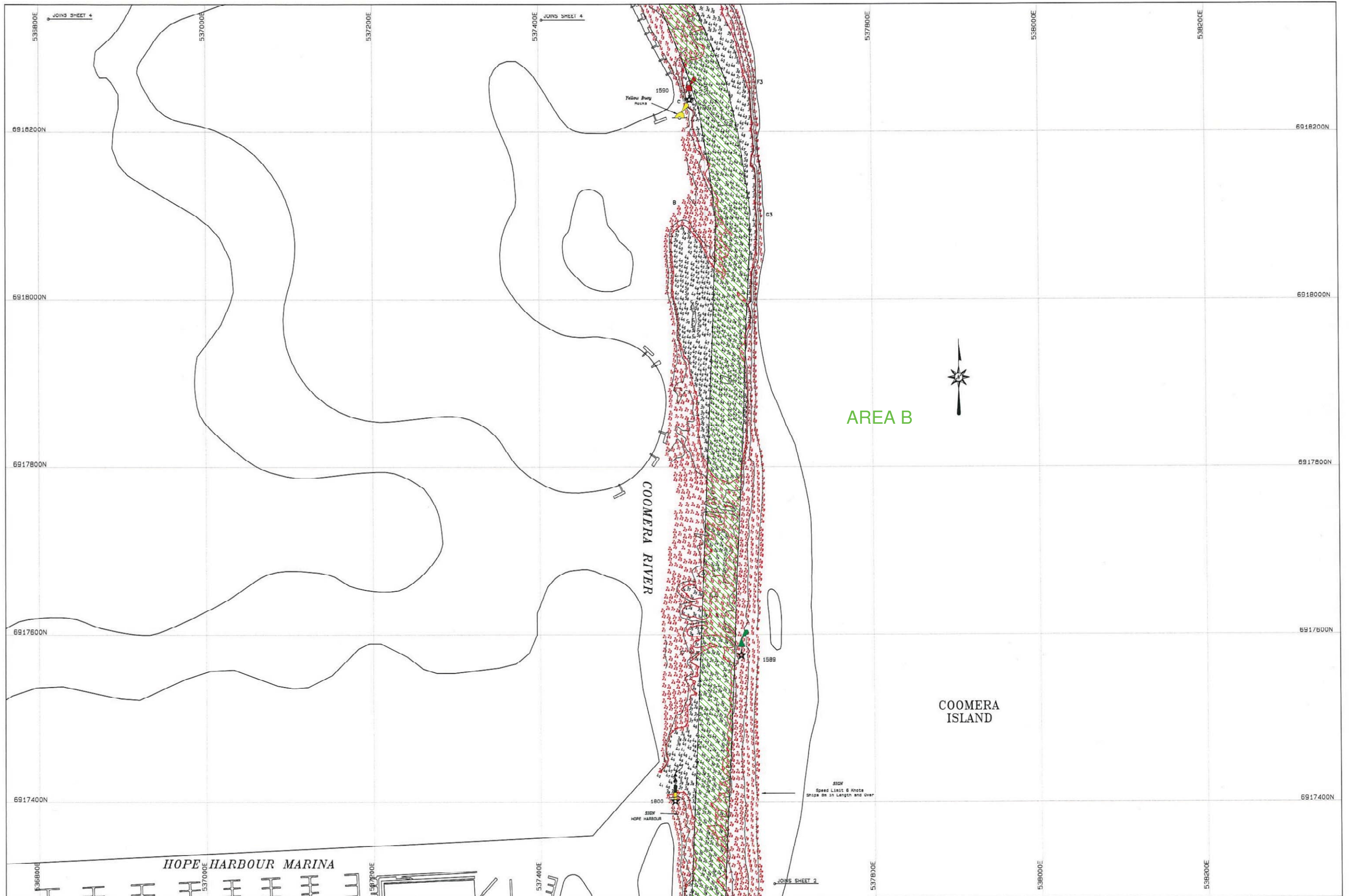
Visual	GS Norfolk	BOUNDINGS (m)	0 20 100 200
Race Boundary	UNKNOWN CHOICE	2 <sub>1</sub>	below datum
Perimeter	APPLICX PUNY 250	2 <sub>2</sub>	above datum
Horizontal Positioning	APPLICX POSHY 330/Omnistar IP	LEVELS (m)	
Data Collector/Processing	MS VS 8.30/VS 17.1/TERRACON V10.04	1	below datum
Tide Reference Station	TM 043000, ATD 130028, ATB 130002	CLASS	C
		CLIENT	MSQ - SOUTHPORT

Signature: T Reise  
Original Signed and Filed  
Hydrographic Surveyor  
Checked: T Reise  
Original Signed and Filed  
Chart Officer  
Manager: \_\_\_\_\_  
Date: \_\_\_\_\_

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DREDGE AREAS  
SHEET 2 OF 4  
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ATTACHMENT 2



**NOTES:**  
 1) Soundings are computer generated by hydrographic standards (inclusive).  
 2) Soundings coloured to clearance depth of 3.3 x LAT.  
 3) Coastline obtained from aerial photography and is approximate only.  
 4) For survey control refer to the control table on Plan 8300-007 Sheet 2 & Plan 8300-008.  
 5) A 0.011m drift of E 0.020m N was applied in Caris to the Omnistar HP data based on a position check conducted over 100 days.  
 6) The Omnistar position was verified using the Leica 123000 RTK-GPS using PSN 146931 as a base station.  
 7) Soundings reduced to datum based on horizontal control were for 1990-91 only. All other soundings downstream of Paradise Point reduced to datum using tides as read at Ben 314, TS 100023.  
 8) Soundings up stream of Gold Coast City Marina reduced to datum using tides as read at TS 100023.  
 9) Enhanced predictions at TS 045000 were based on water level dip readings.

Horizontal Datum	MOA GDA84 Zone 56	Easting	Northing
Ship Station	Omnistar HP (DGPS corrections)		
Vertical Datum	LAT based on		
Tide Notes	See Note 7		
Depth Tolerance	0.2m	Horizontal Tolerance	1.0m
Weather	☐ - 10 KNOTS SE		

Vessel	GG Norfolk
Echo Sounder	Kongsberg EK6000
Heave meter	Acoustic POSV 320
Horizontal Positioning	Applanix POSV 320/Omnistar HP
Data Collection/Processing	SS 10.8.2/Caris V7.1/Paradise V10.86
Tide Reference Station	TS 045000, ATB 100023, ATB 100025

BOUNDINGS (m)	2g below datum
	2f above datum
LEVELS (m)	5h above datum
	5i below datum

CLASS	COAST
MSQ - SOUTHPORT	

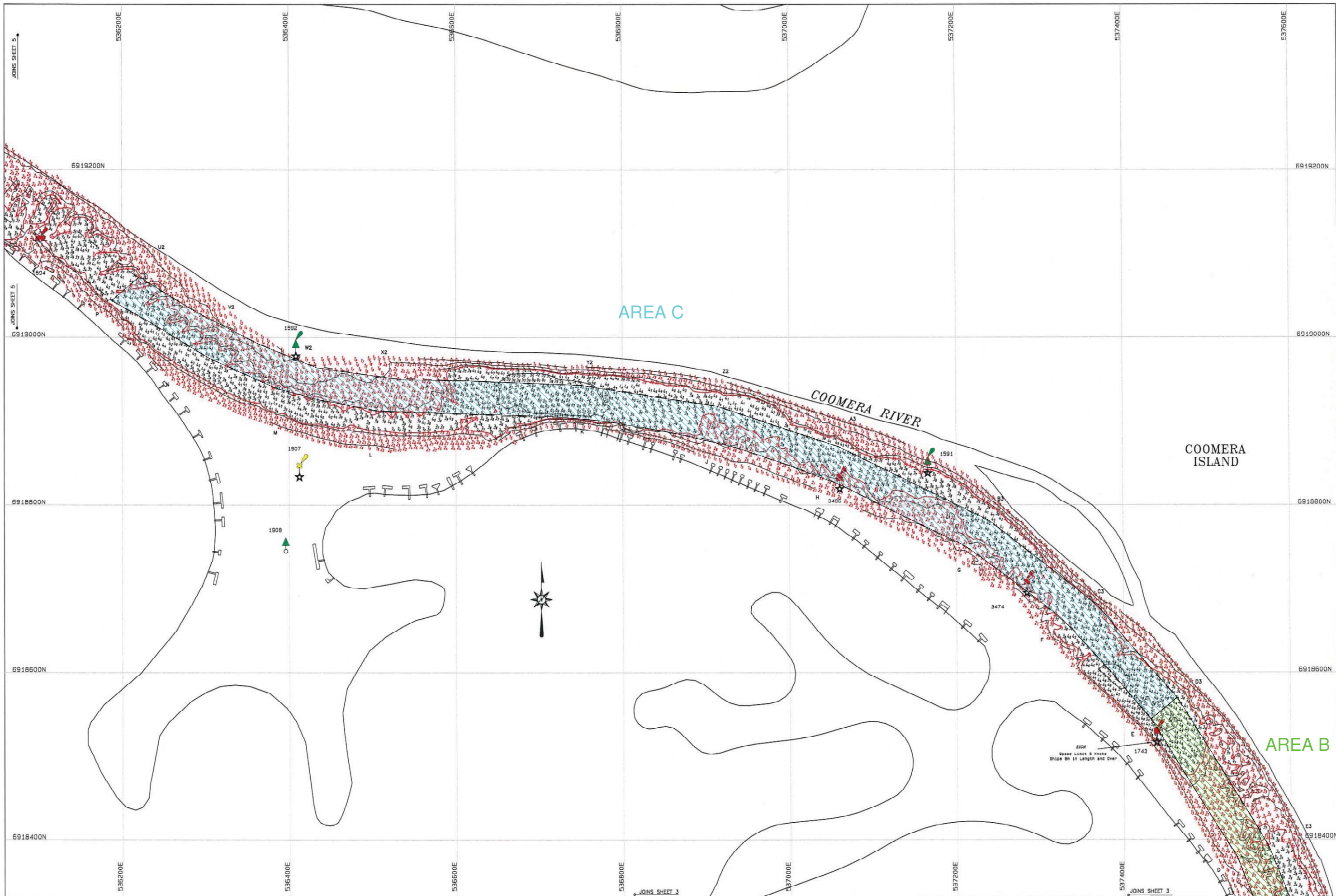
Signature	Original Signed and Filed
Hydrographic Surveyor	T Reise
Surveyor	R Penington
Checked	T Reise
Original Signed and Filed	Owen Carroll
Manager	Date

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**COOMERA RIVER**  
 DREDGE AREAS  
 SHEET 3 OF 4

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ATTACHMENT 3



**NOTES:**  
 1) Contours are computer generated to Hydrographic Standards (inclusive).  
 2) Soundings reduced to datum using the MGA 2011 datum.  
 3) Coastline obtained from aerial photography and is approximate only.  
 4) For survey control refer to the control table on P149 B300-087 Sheet 2 of P149 B300-088.  
 5) A position shift of 0.0034 m (0.011 ft) was applied in Easting to the Denistair HP data based on a position check conducted over PSM 82150.  
 6) The Denistair position was verified using the Leica 123000 RTK-PPS using PSM 140231 as a base station.  
 7) Soundings produced to datum based on Queensland co-tidal zones for hydrography 233 and 234.  
 8) Soundings downstream of Paradise Point reduced to datum using tide as read at SW 014, 70 10220.  
 9) Soundings up stream of Gold Coast City Marina reduced to datum using tide as read at 78 10025.  
 10) Enhanced predictions at 78 04205 were based on water level tide readings.

<b>Horizontal Datum</b>	MGA 2011 Zone 56	<b>Easting</b>		<b>Northing</b>	
<b>Base Station</b>	Denistair HP (DGPS corrections)				
<b>Vertical Datum</b>	LAT based on				
<b>Title Notes</b>	See Note 7	PSM 77043 HL 0.078m LAT (SCCC Marina)	PSM 17355 RL 1.830m LAT (Paradise Point)	PSM 99193 HL 3.011m LAT (Sanctuary Cove)	
<b>Depth Tolerance</b>	0.20m	<b>Horizontal Tolerance</b>	1.5m	<b>Weather</b>	5 - 10 Knots SE
<b>Vessel</b>	GG Norfolk	<b>Isma Bouncer</b>	Kangaroo EK30020	<b>Heave Meter</b>	Applanix POSV 320
<b>Horizontal Positioning</b>	Applanix POSV 320/Denistair HP	<b>Data Collection/Processing</b>	RTK V8.8.2/RTK V7.1/TERRACON 1.12.02	<b>Tidal Reference Station</b>	78 04205A, 478 12022A, 478 12022B

**BOUNDRINGS (m)**  
 0 20 100 200  
 SCALE 1 : 2000 AT A1

**CLASS** CLIENT  
**C** **MSQ - SOUTHPORT**

**LEVELS (m)**  
 0<sup>h</sup> above datum  
 2<sup>s</sup> below datum  
 2<sup>d</sup> above datum

**Signature** Original Signed and Filed  
**Hydrographic Surveyor** T Reiss  
**Surveyor** R Penington  
**Checked** T Reiss  
**Original Signed and Filed**  
**Owen Cartelli**  
**Manager** Date

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 DREDGE AREAS  
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ATTACHMENT 4