



Appendix A

Field Sampling Logs

APPENDIX A - FIELD SAMPLING LOGS

SEABED SAMPLING LOG SHEET (Deck)							QPRO-0755		
Job No: 10496			Area: Garden Island		Vessel: MV Linni		Operator: JB / BRZ		
Date: from: 28-Apr-2015 to: 01-May-2015			Page: 1 of 1		Client: AURECON		Sieve Size:		
							Equipment: Mini Vibrocorer / Grab		
Project:									
Sample Number	Station Number	Time	Grab	Vibrocore	Sample	Sediment Description	Comments		
28-Apr-15									
1	E3	15:41		VC	Good	Silt / Sand	376326 E	6433201 N	
2	E2	16:58			No Sample	Loss of pressure	376337 E	6433204 N	
29-Apr-15									
3	E2b	14:42		VC	Good	Silt / Sand	376337 E	6433209 N	
4	E1	13:22			Good	Silt / Sand	376326 E	6433215 N	
5	D1	16:43			No Sample	Seabed slope unsuitable for VC	376390 E	6433370 N	
6	D1b	17:30	DG		Good	Silt / Sand	376390 E	6433370 N	
7	D3	18:10	DG		Good	Silt / Sand	376385 E	6433336 N	
8	D2	18:20	DG		Good	Silt / Sand	376390 E	6433352 N	
30-Apr-15									
9	A3	7:55		VC	Good	Silt / Sand	377094 E	6433579 N	
10	A2	8:17			Good	Silt / Sand	377099 E	6433582 N	
11	A1	10:21			Good	Silt / Sand	377140 E	6433626 N	
12	C1	11:50			Good	Silt / Sand	376824 E	6433588 N	
13	C2	12:40			Good	Silt / Sand	376814 E	6433622 N	
14	C3	13:30			Good	Silt / Sand	376829 E	6433637 N	
15	B4	14:03			Good	Silt / Sand	376862 E	6433715 N	
16	B3	15:17			Good	Silt / Sand	376880 E	6433706 N	
17	B2	16:08			Good	Silt / Sand	377002 E	6433590 N	
18	B1	16:44			Good	Silt / Sand	377042 E	6433554 N	
19	B1b	17:20	DG			Good	Silt / Sand	377042 E	6433554 N
20	B1c	17:28	DG			Good	Silt / Sand	377042 E	6433554 N
21	B1d	17:38	DG			Good	Silt / Sand	377042 E	6433554 N
1-May-15									
22	G2	14:06		VC	Good	Coarse sand and some larger rocks	375503 E	6439257 N	
23	G1	15:02			No Sample	Lost cutter and tulip	375489 E	6439281 N	
24	G1b	15:36			Good	Coarse sand and some larger rocks	375489 E	6439281 N	
25	G3	16:33			Small Sample	Poor penetration - coarse sediments	375469 E	6439254 N	
26	G3b	16:49			Small Sample	Poor penetration - coarse sediments	375469 E	6439254 N	
27	F1	17:35			Small Sample	Rocks in cutters. Decide to switch to DG	375449 E	6439330 N	
28	F1b	17:57	DG		Good	Coarse sand and some larger rocks	375449 E	6439330 N	
29	F2	18:17	DG		Good	Coarse sand and some larger rocks	375497 E	6439300 N	
30	F3	18:35	DG		Good	Coarse sand and some larger rocks	375537 E	6439291 N	
ADCP1						Deployment location	377110 E	6433542 N	
ADCP2						Deployment location	375570 E	6439378 N	
ADCP2 SPORT						Deployment location	375549 E	6439387 N	



Appendix B

Sediment Core Logs

SEDIMENT SAMPLING LOG

SAMPLE LOCATION ID **A1**

PROJECT NO. **243418-A10706**

PROJECT **HMAS STIRLING - MAINTENANCE DREDGING - SEDIMENT INVESTIGATION**

CLIENT **Department of Defence**

CO-ORDINATES (UTM)

SHEET **1** of **1**

METHOD **Vibrocore / Day Grab**
E 377140
N 6433626

DATE **30/04/2015**

VESSEL **MV Linni**

ORIENTATION **VERTICAL**

DREDGE POCKET REFERENCE **A**

Sample ID	Method	Recovery	Sample Type	Depth (m)	Legend	SEDIMENT DESCRIPTION COLOUR, MAJOR FRACTION, MINOR FRACTION, INCLUSION
				0.0		
A1	VIBROCORE	GOOD	PRIMARY	0.5		Light brown to grey clayey silty fine to coarse sand.
				1.0		
				1.5		Terminated at 1.17m
				2.0		
REMARKS						LOGGED CD DATE 30/04/2015 CHECKED CD DATE 30/07/2015

SEDIMENT SAMPLING LOG

 SAMPLE LOCATION ID **A2**

 PROJECT NO. **243418-A10706**

 PROJECT **HMAS STIRLING - MAINTENANCE DREDGING - SEDIMENT INVESTIGATION**

 CLIENT **Department of Defence**

CO-ORDINATES (UTM)

 SHEET **1** of **1**

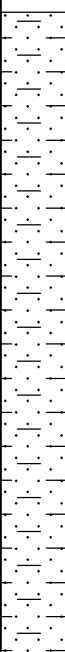
 METHOD **Vibrocore / Day Grab**
E 377099
N 6433582

 DATE **30/04/2015**

 VESSEL **MV Linni**

 ORIENTATION **VERTICAL**

 DREDGE POCKET REFERENCE **A**

Sample ID	Method	Recovery	Sample Type	Depth (m)	Legend	SEDIMENT DESCRIPTION
						COLOUR, MAJOR FRACTION, MINOR FRACTION, INCLUSION
A2	VIBROCORE	GOOD	PRIMARY	0.0		Light brown to grey clayey fine to coarse sand with some silt.
				0.5		
				1.0		Terminated at 0.99m
				1.5		
				2.0		
REMARKS						LOGGED <u>CD</u> DATE <u>30/04/2015</u> CHECKED <u>CD</u> DATE <u>30/07/2015</u>

SEDIMENT SAMPLING LOG

 SAMPLE LOCATION ID **A3**

 PROJECT NO. **243418-A10706**

 PROJECT **HMAS STIRLING - MAINTENANCE DREDGING - SEDIMENT INVESTIGATION**

 CLIENT **Department of Defence**

CO-ORDINATES (UTM)

 SHEET **1** of **1**

 METHOD **Vibrocore / Day Grab**
E 377094
N 6433579

 DATE **30/04/2015**

 VESSEL **MV Linni**

 ORIENTATION **VERTICAL**

 DREDGE POCKET REFERENCE **A**

Sample ID	Method	Recovery	Sample Type	Depth (m)	Legend	SEDIMENT DESCRIPTION COLOUR, MAJOR FRACTION, MINOR FRACTION, INCLUSION
A3	VIBROCORE	GOOD	PRIMARY	0.0		Light brown to grey clayey silty fine to coarse sand.
				0.5		
				1.0		Terminated at 0.79m
				1.5		
				2.0		

REMARKS

LOGGED **CD**
 DATE **30/04/2015**
 CHECKED **CD**
 DATE **30/07/2015**

SEDIMENT SAMPLING LOG

SAMPLE LOCATION ID **B1**

PROJECT NO. **243418-A10706**

PROJECT **HMAS STIRLING - MAINTENANCE DREDGING - SEDIMENT INVESTIGATION**

CLIENT **Department of Defence**

CO-ORDINATES (UTM)

SHEET **1** of **1**

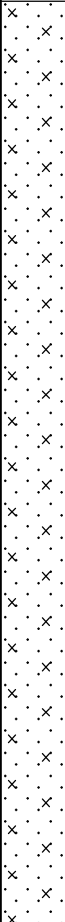
METHOD **Vibrocore / Day Grab**
E 377042
N 6433554

DATE **30/04/2015**

VESSEL **MV Linni**

ORIENTATION **VERTICAL**

DREDGE POCKET REFERENCE **B**

Sample ID	Method	Recovery	Sample Type	Depth (m)	Legend	SEDIMENT DESCRIPTION	
						COLOUR, MAJOR FRACTION, MINOR FRACTION, INCLUSION	
B1	VIBROCORE	GOOD	PRIMARY	0.0		Light brown to dark grey silty fine to coarse sand.	
				0.5			
				1.0			
				1.5		Terminated at 1.43m	
				2.0			
REMARKS							LOGGED CD DATE 30/04/2015 CHECKED CD DATE 30/07/2015

SEDIMENT SAMPLING LOG

 SAMPLE LOCATION ID **B2**

 PROJECT NO. **243418-A10706**

 PROJECT **HMAS STIRLING - MAINTENANCE DREDGING - SEDIMENT INVESTIGATION**

 CLIENT **Department of Defence**

CO-ORDINATES (UTM)

 SHEET **1** of **1**

 METHOD **Vibrocore / Day Grab**
E 377002
N 6433590

 DATE **30/04/2015**

 VESSEL **MV Linni**

 ORIENTATION **VERTICAL**

 DREDGE POCKET REFERENCE **B**

Sample ID	Method	Recovery	Sample Type	Depth (m)	Legend	SEDIMENT DESCRIPTION COLOUR, MAJOR FRACTION, MINOR FRACTION, INCLUSION
				0.0		
B2	VIBROCORE	GOOD	PRIMARY	0.5		Light brown to dark grey silty fine to coarse sand.
				1.0		
				1.5		Terminated at 1.32m
				2.0		
REMARKS						LOGGED <u>CD</u> DATE <u>30/04/2015</u> CHECKED <u>CD</u> DATE <u>30/07/2015</u>

SEDIMENT SAMPLING LOG

SAMPLE LOCATION ID **B3**

PROJECT NO. **243418-A10706**

PROJECT **HMAS STIRLING - MAINTENANCE DREDGING - SEDIMENT INVESTIGATION**

CLIENT **Department of Defence**

CO-ORDINATES (UTM)

SHEET **1** of **1**

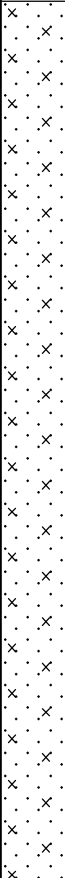
METHOD **Vibrocore / Day Grab**
E 376880
N 6433706

DATE **30/04/2015**

VESSEL **MV Linni**

ORIENTATION **VERTICAL**

DREDGE POCKET REFERENCE **B**

Sample ID	Method	Recovery	Sample Type	Depth (m)	Legend	SEDIMENT DESCRIPTION	
						COLOUR, MAJOR FRACTION, MINOR FRACTION, INCLUSION	
B3	VIBROCORE	GOOD	PRIMARY	0.0		Light brown to dark grey silty fine to coarse sand with some clay	
				0.5			
				1.0			
				1.5		Terminated at 1.36m	
				2.0			
REMARKS						LOGGED <u>CD</u> DATE <u>30/04/2015</u> CHECKED <u>CD</u> DATE <u>30/07/2015</u>	

SEDIMENT SAMPLING LOG

 SAMPLE LOCATION ID **B4**

 PROJECT NO. **243418-A10706**

 PROJECT **HMAS STIRLING - MAINTENANCE DREDGING - SEDIMENT INVESTIGATION**

 CLIENT **Department of Defence**

CO-ORDINATES (UTM)

 SHEET **1** of **1**

 METHOD **Vibrocore / Day Grab**
E 376862
N 6433715

 DATE **30/04/2015**

 VESSEL **MV Linni**

 ORIENTATION **VERTICAL**

 DREDGE POCKET REFERENCE **B**

Sample ID	Method	Recovery	Sample Type	Depth (m)	Legend	SEDIMENT DESCRIPTION COLOUR, MAJOR FRACTION, MINOR FRACTION, INCLUSION
				0.0		
B4	VIBROCORE	GOOD	PRIMARY	0.5		Light brown to dark grey silty fine to coarse sand.
				1.0		
				1.5		Terminated at 1.36m
				2.0		
REMARKS						LOGGED <u>CD</u> DATE <u>30/04/2015</u> CHECKED <u>CD</u> DATE <u>30/07/2015</u>

SEDIMENT SAMPLING LOG

 SAMPLE LOCATION ID **C1**

 PROJECT NO. **243418-A10706**

 PROJECT **HMAS STIRLING - MAINTENANCE DREDGING - SEDIMENT INVESTIGATION**

 CLIENT **Department of Defence**

CO-ORDINATES (UTM)

 SHEET **1** of **1**

 METHOD **Vibrocore / Day Grab**
E 376824
N 6433588

 DATE **30/04/2015**

 VESSEL **MV Linni**

 ORIENTATION **VERTICAL**

 DREDGE POCKET REFERENCE **C**

Sample ID	Method	Recovery	Sample Type	Depth (m)	Legend	SEDIMENT DESCRIPTION COLOUR, MAJOR FRACTION, MINOR FRACTION, INCLUSION
				0.0		
C1	VIBROCORE	GOOD	PRIMARY	0.5		Light brown to grey silty fine to coarse sand.
				1.0		
				1.5		
				2.0		Terminated at 0.86m
REMARKS						LOGGED CD DATE 30/04/2015 CHECKED CD DATE 30/07/2015

SEDIMENT SAMPLING LOG

 SAMPLE LOCATION ID **C2**

 PROJECT NO. **243418-A10706**

 PROJECT **HMAS STIRLING - MAINTENANCE DREDGING - SEDIMENT INVESTIGATION**

 CLIENT **Department of Defence**

CO-ORDINATES (UTM)

 SHEET **1** of **1**

 METHOD **Vibrocore / Day Grab**
E 376814
N 6433622

 DATE **30/04/2015**

 VESSEL **MV Linni**

 ORIENTATION **VERTICAL**

 DREDGE POCKET REFERENCE **C**

Sample ID	Method	Recovery	Sample Type	Depth (m)	Legend	SEDIMENT DESCRIPTION COLOUR, MAJOR FRACTION, MINOR FRACTION, INCLUSION
				0.0		
C2	VIBROCORE	GOOD	PRIMARY	0.5		Light brown to grey silty fine to coarse sand.
				1.0		Terminated at 0.7m
				1.5		
				2.0		
REMARKS						LOGGED CD DATE 30/04/2015 CHECKED CD DATE 30/07/2015

SEDIMENT SAMPLING LOG

 SAMPLE LOCATION ID **C3**

 PROJECT NO. **243418-A10706**

 PROJECT **HMAS STIRLING - MAINTENANCE DREDGING - SEDIMENT INVESTIGATION**

 CLIENT **Department of Defence**

CO-ORDINATES (UTM)

 SHEET **1** of **1**

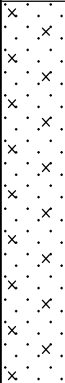
 METHOD **Vibrocore / Day Grab**
E 376829
N 6433637

 DATE **30/04/2015**

 VESSEL **MV Linni**

 ORIENTATION **VERTICAL**

 DREDGE POCKET REFERENCE **C**

Sample ID	Method	Recovery	Sample Type	Depth (m)	Legend	SEDIMENT DESCRIPTION COLOUR, MAJOR FRACTION, MINOR FRACTION, INCLUSION
				0.0		
C3	VIBROCORE	GOOD	PRIMARY	0.5		Light brown to dark grey silty fine to coarse sand.
				1.0		
				1.5		
				2.0		
REMARKS						LOGGED CD DATE 30/04/2015 CHECKED CD DATE 30/07/2015

SEDIMENT SAMPLING LOG

SAMPLE LOCATION ID **D1**

PROJECT NO. **243418-A10706**

PROJECT **HMAS STIRLING - MAINTENANCE DREDGING - SEDIMENT INVESTIGATION**

CLIENT **Department of Defence**

CO-ORDINATES (UTM)

SHEET **1** of **1**

METHOD **Vibrocore / Day Grab**
E 376390
N 6433370

DATE **29/04/2015**

VESSEL **MV Linni**

ORIENTATION **VERTICAL**

DREDGE POCKET REFERENCE **D**

SEDIMENT DESCRIPTION

COLOUR, MAJOR FRACTION, MINOR FRACTION, INCLUSION

Light brown to grey fine to coarse clayey sand with some rare angular to sub rounded gravel, shell fragments and occasional strands of decaying vegetation.

REMARKS

LOGGED **CD**

DATE **29/04/2015**

CHECKED **CD**

DATE **30/07/2015**

SEDIMENT SAMPLING LOG

 SAMPLE LOCATION ID **D2**

 PROJECT NO. **243418-A10706**

 PROJECT **HMAS STIRLING - MAINTENANCE DREDGING - SEDIMENT INVESTIGATION**

 CLIENT **Department of Defence**

CO-ORDINATES (UTM)

 SHEET **1** of **1**

 METHOD **Vibrocore / Day Grab**
E 376390
N 6433352

 DATE **29/04/2015**

 VESSEL **MV Linni**

 ORIENTATION **VERTICAL**

 DREDGE POCKET REFERENCE **D**

Sample ID	Method	Recovery	Sample Type	Depth (m)	Legend	SEDIMENT DESCRIPTION	
						COLOUR, MAJOR FRACTION, MINOR FRACTION, INCLUSION	
D2	DAY GRAB	GOOD	PRIMARY	0.0		Light brown to grey clayey silty fine to coarse sand.	
				0.5			
				1.0			
				1.5			
				2.0			
REMARKS						LOGGED CD DATE 29/04/2015 CHECKED CD DATE 30/07/2015	

SEDIMENT SAMPLING LOG

 SAMPLE LOCATION ID **D3**

 PROJECT NO. **243418-A10706**

 PROJECT **HMAS STIRLING - MAINTENANCE DREDGING - SEDIMENT INVESTIGATION**

 CLIENT **Department of Defence**

CO-ORDINATES (UTM)

 SHEET **1** of **1**

 METHOD **Vibrocore / Day Grab**
E 376385
N 6433336

 DATE **29/04/2015**

 VESSEL **MV Linni**

 ORIENTATION **VERTICAL**

 DREDGE POCKET REFERENCE **D**

Sample ID	Method	Recovery	Sample Type	Depth (m)	Legend	SEDIMENT DESCRIPTION	
						COLOUR, MAJOR FRACTION, MINOR FRACTION, INCLUSION	
D3	DAY GRAB	GOOD	PRIMARY	0.0		Light brown to grey clayey silty fine to coarse sand.	
				0.5			
				1.0			
				1.5			
				2.0			

REMARKS

LOGGED **CD**
 DATE **29/04/2015**
 CHECKED **CD**
 DATE **30/07/2015**

SEDIMENT SAMPLING LOG

 SAMPLE LOCATION ID **DRT1**

 PROJECT NO. **243418-A10706**

 PROJECT **HMAS STIRLING - MAINTENANCE DREDGING - SEDIMENT INVESTIGATION**

 CLIENT **Department of Defence**

CO-ORDINATES (UTM)

 SHEET **1** of **1**

 METHOD **Vibrocore / Day Grab**
E 377042
N 6433554

 DATE **30/04/2015**

 VESSEL **MV Linni**

 ORIENTATION **VERTICAL**

 DREDGE POCKET REFERENCE **DRT**

SEDIMENT DESCRIPTION

COLOUR, MAJOR FRACTION, MINOR FRACTION, INCLUSION

Sample ID	Method	Recovery	Sample Type	Depth (m)	Legend	SEDIMENT DESCRIPTION
DRT1	DAY GRAB	GOOD	TRIPLE	0.0		Light brown to dark grey silty fine to coarse sand.
				0.5		
				1.0		
				1.5		
				2.0		

REMARKS

 LOGGED **CD**

 DATE **30/04/2015**

 CHECKED **CD**

 DATE **30/07/2015**

SEDIMENT SAMPLING LOG

 SAMPLE LOCATION ID **DRT2**

 PROJECT NO. **243418-A10706**

 PROJECT **HMAS STIRLING - MAINTENANCE DREDGING - SEDIMENT INVESTIGATION**

 CLIENT **Department of Defence**

CO-ORDINATES (UTM)

 SHEET **1** of **1**

 METHOD **Vibrocore / Day Grab**
E 377042
N 6433554

 DATE **30/04/2015**

 VESSEL **MV Linni**

 ORIENTATION **VERTICAL**

 DREDGE POCKET REFERENCE **DRT**

SEDIMENT DESCRIPTION

COLOUR, MAJOR FRACTION, MINOR FRACTION, INCLUSION

Sample ID	Method	Recovery	Sample Type	Depth (m)	Legend	SEDIMENT DESCRIPTION
DRT2	DAY GRAB	GOOD	TRIPLE	0.0		Light brown to dark grey silty fine to coarse sand.
				0.5		
				1.0		
				1.5		
				2.0		

REMARKS

 LOGGED **CD**

 DATE **30/04/2015**

 CHECKED **CD**

 DATE **30/07/2015**

SEDIMENT SAMPLING LOG

 SAMPLE LOCATION ID **DRT3**

 PROJECT NO. **243418-A10706**

 PROJECT **HMAS STIRLING - MAINTENANCE DREDGING - SEDIMENT INVESTIGATION**

 CLIENT **Department of Defence**

CO-ORDINATES (UTM)

 SHEET **1** of **1**

 METHOD **Vibrocore / Day Grab**
E 377042
N 6433554

 DATE **30/04/2015**

 VESSEL **MV Linni**

 ORIENTATION **VERTICAL**

 DREDGE POCKET REFERENCE **DRT**

SEDIMENT DESCRIPTION

COLOUR, MAJOR FRACTION, MINOR FRACTION, INCLUSION

Sample ID	Method	Recovery	Sample Type	Depth (m)	Legend	SEDIMENT DESCRIPTION
DRT3	DAY GRAB	GOOD	TRIPLE	0.0		Light brown to dark grey silty fine to coarse sand.
				0.5		
				1.0		
				1.5		
				2.0		

REMARKS

 LOGGED **CD**

 DATE **30/04/2015**

 CHECKED **CD**

 DATE **30/07/2015**

SEDIMENT SAMPLING LOG

 SAMPLE LOCATION ID **E1**

 PROJECT NO. **243418-A10706**

 PROJECT **HMAS STIRLING - MAINTENANCE DREDGING - SEDIMENT INVESTIGATION**

 CLIENT **Department of Defence**

CO-ORDINATES (UTM)

 SHEET **1** of **1**

 METHOD **Vibrocore / Day Grab**
E 376326
N 6433215

 DATE **29/04/2015**

 VESSEL **MV Linni**

 ORIENTATION **VERTICAL**

 DREDGE POCKET REFERENCE **E**

Sample ID	Method	Recovery	Sample Type	Depth (m)	Legend	SEDIMENT DESCRIPTION	
						COLOUR, MAJOR FRACTION, MINOR FRACTION, INCLUSION	
E1	VIBROCORE	GOOD	PRIMARY	0.0		Light brown to grey fine to coarse sand with some silt and occ. Medium gravel inclusions	
				0.5			
				1.0		Terminated at 1.02m	
				1.5			
				2.0			
REMARKS							LOGGED CD DATE 29/04/2015 CHECKED CD DATE 30/07/2015

SEDIMENT SAMPLING LOG

 SAMPLE LOCATION ID **E2**

 PROJECT NO. **243418-A10706**

 PROJECT **HMAS STIRLING - MAINTENANCE DREDGING - SEDIMENT INVESTIGATION**

 CLIENT **Department of Defence**

CO-ORDINATES (UTM)

 SHEET **1** of **1**

 METHOD **Vibrocore / Day Grab**
E 376337
N 6433209

 DATE **29/04/2015**

 VESSEL **MV Linni**

 ORIENTATION **VERTICAL**

 DREDGE POCKET REFERENCE **E**

Sample ID	Method	Recovery	Sample Type	Depth (m)	Legend	SEDIMENT DESCRIPTION COLOUR, MAJOR FRACTION, MINOR FRACTION, INCLUSION
E2	VIBROCORE	GOOD	PRIMARY	0.0		Light brown to grey fine to coarse sand with some silt and occ. Medium gravel inclusions.
				0.5		
				1.0		
				1.5		
				2.0		
REMARKS						LOGGED CD DATE 29/04/2015 CHECKED CD DATE 30/07/2015

SEDIMENT SAMPLING LOG

 SAMPLE LOCATION ID **E3**

 PROJECT NO. **243418-A10706**

 PROJECT **HMAS STIRLING - MAINTENANCE DREDGING - SEDIMENT INVESTIGATION**

 CLIENT **Department of Defence**

CO-ORDINATES (UTM)

 SHEET **1** of **1**

 METHOD **Vibrocore / Day Grab**
E 376326
N 6433201

 DATE **28/04/2015**

 VESSEL **MV Linni**

 ORIENTATION **VERTICAL**

 DREDGE POCKET REFERENCE **E**

Sample ID	Method	Recovery	Sample Type	Depth (m)	Legend	SEDIMENT DESCRIPTION COLOUR, MAJOR FRACTION, MINOR FRACTION, INCLUSION
E3	VIBROCORE	GOOD	PRIMARY	0.0		Light brown to grey fine to coarse silty sand with some angular gravel, shell fragments and occasional strands of decaying vegetation.
				0.5		
				0.84		Terminated at 0.84m
				1.0		
				1.5		
				2.0		

REMARKS

LOGGED **CD**
 DATE **28/04/2015**
 CHECKED **CD**
 DATE **30/07/2015**

SEDIMENT SAMPLING LOG

SAMPLE LOCATION ID **F1b**

PROJECT NO. **243418-A10706**

PROJECT **HMAS STIRLING - MAINTENANCE DREDGING - SEDIMENT INVESTIGATION**

CLIENT **Department of Defence**

CO-ORDINATES (UTM)

SHEET **1** of **1**

METHOD **Vibrocore / Day Grab**
E 375449
N 6439330

DATE **01/05/2015**

VESSEL **MV Linni**

ORIENTATION **VERTICAL**

DREDGE POCKET REFERENCE **F**

SEDIMENT DESCRIPTION

COLOUR, MAJOR FRACTION, MINOR FRACTION, INCLUSION

Light brown to dark grey silty fine to coarse sand with occasional fine to coarse gravel inclusions

REMARKS

LOGGED **CD**

DATE **01/05/2015**

CHECKED **CD**

DATE **30/07/2015**

SEDIMENT SAMPLING LOG

 SAMPLE LOCATION ID **F2**

 PROJECT NO. **243418-A10706**

 PROJECT **HMAS STIRLING - MAINTENANCE DREDGING - SEDIMENT INVESTIGATION**

 CLIENT **Department of Defence**

CO-ORDINATES (UTM)

 SHEET **1** of **1**

 METHOD **Vibrocore / Day Grab**
E 375497
N 6439300

 DATE **01/05/2015**

 VESSEL **MV Linni**

 ORIENTATION **VERTICAL**

 DREDGE POCKET REFERENCE **F**

Sample ID	Method	Recovery	Sample Type	Depth (m)	Legend	SEDIMENT DESCRIPTION	
						COLOUR, MAJOR FRACTION, MINOR FRACTION, INCLUSION	
F2	DAY GRAB	GOOD	PRIMARY	0.0		Light brown to dark grey silty fine to coarse sand with occasional fine to coarse angular gravel inclusions	
				0.5			
				1.0			
				1.5			
				2.0			
REMARKS						LOGGED CD DATE 01/05/2015 CHECKED CD DATE 30/07/2015	

SEDIMENT SAMPLING LOG

SAMPLE LOCATION ID **F3**

PROJECT NO. **243418-A10706**

PROJECT **HMAS STIRLING - MAINTENANCE DREDGING - SEDIMENT INVESTIGATION**

CLIENT **Department of Defence**

CO-ORDINATES (UTM)

SHEET **1** of **1**

METHOD **Vibrocore / Day Grab**
E 375537
N 6439291

DATE **01/05/2015**

VESSEL **MV Linni**

ORIENTATION **VERTICAL**

DREDGE POCKET REFERENCE **F**

SEDIMENT DESCRIPTION

COLOUR, MAJOR FRACTION, MINOR FRACTION, INCLUSION

Sample ID	Method	Recovery	Sample Type	Depth (m)	Legend	SEDIMENT DESCRIPTION
F3	DAY GRAB	GOOD	PRIMARY	0.0		Light brown to dark grey silty fine to coarse sand with occasional fine to coarse angular gravel inclusions
				0.5		
				1.0		
				1.5		
				2.0		

REMARKS

LOGGED **CD**

DATE **01/05/2015**

CHECKED **CD**

DATE **30/07/2015**

SEDIMENT SAMPLING LOG

SAMPLE LOCATION ID **G1b**

PROJECT NO. **243418-A10706**

PROJECT **HMAS STIRLING - MAINTENANCE DREDGING - SEDIMENT INVESTIGATION**

CLIENT **Department of Defence**

CO-ORDINATES (UTM)

SHEET **1** of **1**

METHOD **Vibrocore / Day Grab**
E 375489
N 6439281

DATE **01/05/2015**

VESSEL **MV Linni**

ORIENTATION **VERTICAL**

DREDGE POCKET REFERENCE **G**

Sample ID	Method	Recovery	Sample Type	Depth (m)	Legend	SEDIMENT DESCRIPTION COLOUR, MAJOR FRACTION, MINOR FRACTION, INCLUSION
G1b	VIBROCORE	GOOD	PRIMARY	0.0		Light brown to dark grey silty fine to coarse sand.
				0.5		Terminated at 0.43m
				1.0		
				1.5		
				2.0		

REMARKS

LOGGED **CD**
DATE **01/05/2015**
CHECKED **CD**
DATE **30/07/2015**

SEDIMENT SAMPLING LOG

SAMPLE LOCATION ID **G2**

PROJECT NO. **243418-A10706**

PROJECT **HMAS STIRLING - MAINTENANCE DREDGING - SEDIMENT INVESTIGATION**

CLIENT **Department of Defence**

CO-ORDINATES (UTM)

SHEET **1** of **1**

METHOD **Vibrocore / Day Grab**
E 375503
N 6439257

DATE **01/05/2015**

VESSEL **MV Linni**

ORIENTATION **VERTICAL**

DREDGE POCKET REFERENCE **G**

Sample ID	Method	Recovery	Sample Type	Depth (m)	Legend	SEDIMENT DESCRIPTION COLOUR, MAJOR FRACTION, MINOR FRACTION, INCLUSION
				0.0		Light brown to dark grey silty fine to coarse sand with some clay.
G2	VIBROCORE	GOOD	PRIMARY	0.5		
				1.0		
				1.5		Terminated at 1.5m
				2.0		
REMARKS						LOGGED CD DATE 01/05/2015 CHECKED CD DATE 30/07/2015

SEDIMENT SAMPLING LOG

 SAMPLE LOCATION ID **G3**

 PROJECT NO. **243418-A10706**

 PROJECT **HMAS STIRLING - MAINTENANCE DREDGING - SEDIMENT INVESTIGATION**

 CLIENT **Department of Defence**

CO-ORDINATES (UTM)

 SHEET **1** of **1**

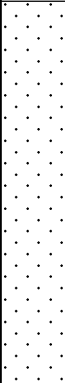
 METHOD **Vibrocore / Day Grab**
E 375469
N 6439254

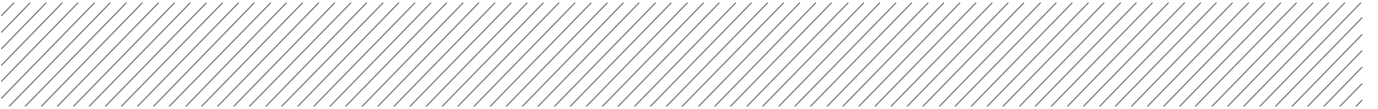
 DATE **01/05/2015**

 VESSEL **MV Linni**

 ORIENTATION **VERTICAL**

 DREDGE POCKET REFERENCE **G**

Sample ID	Method	Recovery	Sample Type	Depth (m)	Legend	SEDIMENT DESCRIPTION	
						COLOUR, MAJOR FRACTION, MINOR FRACTION, INCLUSION	
G3	VIBROCORE	SMALL SAMPLE	PRIMARY	0.0		Light brown to dark grey silty fine to coarse sand with occasional fine to coarse gravel inclusions	
				0.5		Terminated at 0.59m	
				1.0			
				1.5			
				2.0			
REMARKS							LOGGED CD DATE 01/05/2015 CHECKED CD DATE 30/07/2015



Appendix C

Laboratory

Analytical Results

CERTIFICATE OF ANALYSIS

Work Order	: EP1503416	Page	: 1 of 21
Client	: AURECON AUSTRALASIA PTY LTD	Laboratory	: Environmental Division Perth
Contact	: MR CHRIS DONNETTI	Contact	: Scott James
Address	: Level 5, 863 Hay Street Perth, WA 6000	Address	: 10 Hod Way Malaga WA Australia 6090
E-mail	: Chris.Donnetti@aurecongroup.com	E-mail	: perth.enviro.services@alsglobal.com
Telephone	: 08 6145 9393	Telephone	: +61-8-9209 7655
Facsimile	: 08 6145 5020	Facsimile	: +61-8-9209 7600
Project	: Garden Island Sediment Investigation	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: 243418-NA1507-DESPH02	Date Samples Received	: 05-MAY-2015
C-O-C number	: ----	Issue Date	: 15-MAY-2015
Sampler	: C.D.	No. of samples received	: 31
Site	: ----	No. of samples analysed	: 28
Quote number	: EP/388/15		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 ^ = This result is computed from individual analyte detections at or above the level of reporting

- **EP071SD (TRH) : Reporting limits had to be raised due to high moisture content.**
- **EP080-SD: Poor matrix spike recovery and poor surrogate recovery for various samples due to sample matrix interferences and high moisture content. Confirmed by re-run and re-analysis of various samples.**
- **EP090: Particular sample shows poor duplicate results due to sample heterogeneity. Confirmed by re-analysis.**
- **EP090: Particular sample shows poor duplicate results due to sample heterogeneity. Confirmed by visual inspection.**
- **EP090: Particular sample shows poor matrix spike recovery for Monobutyltin due to matrix interferences.**
- **EP090: Particular samples required dilution due to the presence of high level contaminants. Surrogate recoveries have not been determined.**
- **EP132-SD: Poor Matrix Spike (MS) recoveries and poor QC Duplicate precision due to matrix interferences and effects. Surrogate recoveries for various samples fall outside the default static control Limits. However they are within USEPA Based Acceptance Limits. No further action required**



NATA Accredited Laboratory 825

Accredited for compliance with
ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Canhuang Ke	Metals Instrument Chemist	Perth Inorganics
Efua Wilson	Metals Chemist	Perth Inorganics
Rassem Ayoubi	Senior Organic Chemist	Perth Organics
Ryan Story	2IC Organic Instrument Chemist	Brisbane Organics
Satishkumar Trivedi	2 IC Acid Sulfate Soils Supervisor	Brisbane Acid Sulphate Soils



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				A1	A2	A3	B1	B2
				30-APR-2015 15:00	30-APR-2015 15:00	30-APR-2015 15:00	30-APR-2015 15:00	30-APR-2015 15:00
Compound	CAS Number	LOR	Unit	EP1503416-001	EP1503416-002	EP1503416-003	EP1503416-004	EP1503416-005
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	34.6	30.6	33.4	26.2	31.8
EG020-SD: Total Metals in Sediments by ICPMS								
Antimony	7440-36-0	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	7440-38-2	1.00	mg/kg	1.41	<1.00	<1.00	<1.00	1.19
Cadmium	7440-43-9	0.1	mg/kg	0.1	<0.1	0.1	<0.1	0.1
Chromium	7440-47-3	1.0	mg/kg	16.0	15.3	15.1	13.8	15.8
Copper	7440-50-8	1.0	mg/kg	10.0	4.4	4.3	2.0	5.8
Lead	7439-92-1	1.0	mg/kg	2.1	2.4	2.3	1.2	1.9
Nickel	7440-02-0	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP003: Total Organic Carbon (TOC) in Soil								
Total Organic Carbon	----	0.02	%	0.50	0.40	0.48	0.10	0.46
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
>C10 - C16 Fraction	>C10_C16	3	mg/kg	<6	<6	<6	<6	<6
>C16 - C34 Fraction	----	3	mg/kg	<6	9	7	<6	<6
>C34 - C40 Fraction	----	5	mg/kg	<10	<10	<10	<10	<10
>C10 - C40 Fraction (sum)	----	3	mg/kg	<6	9	7	<6	<6
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg	<6	<6	<6	<6	<6
C15 - C28 Fraction	----	3	mg/kg	<6	<6	<6	<6	<6
C29 - C36 Fraction	----	5	mg/kg	<10	<10	<10	<10	<10
C10 - C36 Fraction (sum)	----	3	mg/kg	<6	<6	<6	<6	<6
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons								
C6 - C10 Fraction	C6_C10	3	mg/kg	<3	<3	<3	<3	<3
EP080-SD: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	A1	A2	A3	B1	B2
Client sampling date / time					30-APR-2015 15:00	30-APR-2015 15:00	30-APR-2015 15:00	30-APR-2015 15:00	30-APR-2015 15:00
Compound	CAS Number	LOR	Unit	EP1503416-001	EP1503416-002	EP1503416-003	EP1503416-004	EP1503416-005	
EP080-SD: BTEXN - Continued									
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	
EP090: Organotin Compounds									
Monobutyltin	78763-54-9	1	µgSn/kg	<1	1	2	1	1	
Dibutyltin	1002-53-5	1	µgSn/kg	6	4	4	2	21	
Tributyltin	56573-85-4	0.5	µgSn/kg	174	8.2	8.8	9.2	47.3	
EP132B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	5	µg/kg	<5	<5	<5	<5	<5	
2-Methylnaphthalene	91-57-6	5	µg/kg	<5	<5	<5	<5	<5	
Acenaphthylene	208-96-8	4	µg/kg	<4	<4	<4	<4	<4	
Acenaphthene	83-32-9	4	µg/kg	18	<4	<4	<4	<4	
Fluorene	86-73-7	4	µg/kg	13	<4	<4	<4	<4	
Phenanthrene	85-01-8	4	µg/kg	33	<4	<4	<4	<4	
Anthracene	120-12-7	4	µg/kg	6	<4	<4	<4	<4	
Fluoranthene	206-44-0	4	µg/kg	44	<4	<4	<4	<4	
Pyrene	129-00-0	4	µg/kg	35	4	<4	<4	<4	
Benz(a)anthracene	56-55-3	4	µg/kg	24	<4	<4	<4	<4	
Chrysene	218-01-9	4	µg/kg	22	<4	<4	<4	<4	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	4	µg/kg	26	<4	<4	<4	<4	
Benzo(k)fluoranthene	207-08-9	4	µg/kg	10	<4	<4	<4	<4	
Benzo(e)pyrene	192-97-2	4	µg/kg	14	<4	<4	<4	<4	
Benzo(a)pyrene	50-32-8	4	µg/kg	27	<4	<4	<4	<4	
Perylene	198-55-0	4	µg/kg	5	<4	<4	<4	<4	
Benzo(g,h,i)perylene	191-24-2	4	µg/kg	17	<4	<4	<4	<4	
Dibenz(a,h)anthracene	53-70-3	4	µg/kg	5	<4	<4	<4	<4	
Indeno(1.2.3.cd)pyrene	193-39-5	4	µg/kg	14	<4	<4	<4	<4	
Coronene	191-07-1	5	µg/kg	<5	<5	<5	<5	<5	
^ Sum of PAHs	----	4	µg/kg	313	4	<4	<4	<4	
EP080-SD: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.1	%	75.2	71.8	73.6	71.7	74.1	
Toluene-D8	2037-26-5	0.1	%	79.2	72.8	70.7	70.1	71.2	
4-Bromofluorobenzene	460-00-4	0.1	%	80.6	70.2	71.6	69.2	70.6	
EP090S: Organotin Surrogate									



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	A1	A2	A3	B1	B2
Client sampling date / time					30-APR-2015 15:00	30-APR-2015 15:00	30-APR-2015 15:00	30-APR-2015 15:00	30-APR-2015 15:00
Compound	CAS Number	LOR	Unit		EP1503416-001	EP1503416-002	EP1503416-003	EP1503416-004	EP1503416-005
EP090S: Organotin Surrogate - Continued									
Tripropyltin	----	0.1	%		Not Determined	76.2	91.5	72.0	80.9
EP132T: Base/Neutral Extractable Surrogates									
2-Fluorobiphenyl	321-60-8	0.1	%		83.2	85.1	82.0	74.4	79.2
Anthracene-d10	1719-06-8	0.1	%		81.2	91.0	85.3	75.4	79.9
4-Terphenyl-d14	1718-51-0	0.1	%		75.4	87.1	79.7	70.6	74.4



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				B3	B4	C1	C2	C3
				30-APR-2015 15:00	30-APR-2015 15:00	30-APR-2015 15:00	30-APR-2015 15:00	30-APR-2015 15:00
Compound	CAS Number	LOR	Unit	EP1503416-006	EP1503416-007	EP1503416-008	EP1503416-009	EP1503416-010
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	35.2	34.7	34.3	32.7	31.9
EG020-SD: Total Metals in Sediments by ICPMS								
Antimony	7440-36-0	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	7440-38-2	1.00	mg/kg	<1.00	<1.00	<1.00	<1.00	<1.00
Cadmium	7440-43-9	0.1	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Chromium	7440-47-3	1.0	mg/kg	17.1	16.6	16.4	17.2	17.3
Copper	7440-50-8	1.0	mg/kg	10.3	5.8	6.4	4.0	6.6
Lead	7439-92-1	1.0	mg/kg	2.3	1.6	2.7	1.6	2.4
Nickel	7440-02-0	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP003: Total Organic Carbon (TOC) in Soil								
Total Organic Carbon	----	0.02	%	0.53	0.50	0.55	0.41	0.33
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
>C10 - C16 Fraction	>C10_C16	3	mg/kg	<6	<6	<6	<6	<6
>C16 - C34 Fraction	----	3	mg/kg	10	<6	<6	<6	13
>C34 - C40 Fraction	----	5	mg/kg	<10	<10	<10	<10	<10
>C10 - C40 Fraction (sum)	----	3	mg/kg	10	<6	<6	<6	13
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg	<6	<6	<6	<6	<6
C15 - C28 Fraction	----	3	mg/kg	<6	<6	<6	<6	8
C29 - C36 Fraction	----	5	mg/kg	<10	<10	<10	<10	<10
C10 - C36 Fraction (sum)	----	3	mg/kg	<6	<6	<6	<6	8
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons								
C6 - C10 Fraction	C6_C10	3	mg/kg	<3	<3	<3	<3	<3
EP080-SD: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	B3	B4	C1	C2	C3
Client sampling date / time					30-APR-2015 15:00	30-APR-2015 15:00	30-APR-2015 15:00	30-APR-2015 15:00	30-APR-2015 15:00
Compound	CAS Number	LOR	Unit		EP1503416-006	EP1503416-007	EP1503416-008	EP1503416-009	EP1503416-010
EP080-SD: BTEXN - Continued									
^ Total Xylenes	1330-20-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EP090: Organotin Compounds									
Monobutyltin	78763-54-9	1	µgSn/kg		<1	94	<1	<1	1
Dibutyltin	1002-53-5	1	µgSn/kg		2	1340	2	2	2
Tributyltin	56573-85-4	0.5	µgSn/kg		14.4	8330	3.4	3.5	1.7
EP132B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	5	µg/kg		<5	<5	<5	<5	<5
2-Methylnaphthalene	91-57-6	5	µg/kg		<5	<5	<5	<5	<5
Acenaphthylene	208-96-8	4	µg/kg		<4	<4	<4	<4	<4
Acenaphthene	83-32-9	4	µg/kg		<4	<4	<4	<4	<4
Fluorene	86-73-7	4	µg/kg		<4	<4	<4	<4	<4
Phenanthrene	85-01-8	4	µg/kg		13	<4	5	<4	<4
Anthracene	120-12-7	4	µg/kg		<4	<4	<4	<4	<4
Fluoranthene	206-44-0	4	µg/kg		17	<4	12	<4	5
Pyrene	129-00-0	4	µg/kg		17	<4	11	<4	5
Benz(a)anthracene	56-55-3	4	µg/kg		9	<4	8	<4	<4
Chrysene	218-01-9	4	µg/kg		9	<4	6	<4	<4
Benzo(b+j)fluoranthene	205-99-2 205-82-3	4	µg/kg		14	<4	10	<4	5
Benzo(k)fluoranthene	207-08-9	4	µg/kg		5	<4	<4	<4	<4
Benzo(e)pyrene	192-97-2	4	µg/kg		8	<4	5	<4	<4
Benzo(a)pyrene	50-32-8	4	µg/kg		12	<4	9	<4	<4
Perylene	198-55-0	4	µg/kg		<4	<4	<4	<4	<4
Benzo(g,h,i)perylene	191-24-2	4	µg/kg		13	<4	6	<4	4
Dibenz(a,h)anthracene	53-70-3	4	µg/kg		<4	<4	<4	<4	<4
Indeno(1.2.3.cd)pyrene	193-39-5	4	µg/kg		10	<4	6	<4	<4
Coronene	191-07-1	5	µg/kg		<5	<5	<5	<5	<5
^ Sum of PAHs	----	4	µg/kg		127	<4	78	<4	19
EP080-SD: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.1	%		70.7	74.2	76.9	75.9	74.0
Toluene-D8	2037-26-5	0.1	%		72.9	66.3	67.4	68.8	70.6
4-Bromofluorobenzene	460-00-4	0.1	%		68.2	67.2	68.8	70.9	69.3
EP090S: Organotin Surrogate									



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				B3	B4	C1	C2	C3
Client sampling date / time				30-APR-2015 15:00	30-APR-2015 15:00	30-APR-2015 15:00	30-APR-2015 15:00	30-APR-2015 15:00
Compound	CAS Number	LOR	Unit	EP1503416-006	EP1503416-007	EP1503416-008	EP1503416-009	EP1503416-010
EP090S: Organotin Surrogate - Continued								
Tripropyltin	----	0.1	%	72.9	Not Determined	65.3	35.9	98.6
EP132T: Base/Neutral Extractable Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	75.6	80.8	70.8	78.9	80.6
Anthracene-d10	1719-06-8	0.1	%	77.4	75.3	72.1	83.3	88.1
4-Terphenyl-d14	1718-51-0	0.1	%	72.0	71.8	68.8	84.2	85.5



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				D1	D2	D3	E1	E2
				29-APR-2015 15:00	29-APR-2015 15:00	29-APR-2015 15:00	28-APR-2015 15:00	28-APR-2015 15:00
Compound	CAS Number	LOR	Unit	EP1503416-011	EP1503416-012	EP1503416-013	EP1503416-014	EP1503416-015
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	33.6	34.4	33.3	35.6	37.0
EG020-SD: Total Metals in Sediments by ICPMS								
Antimony	7440-36-0	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	7440-38-2	1.00	mg/kg	<1.00	<1.00	<1.00	<1.00	<1.00
Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	<0.1	0.1	0.1
Chromium	7440-47-3	1.0	mg/kg	17.3	18.5	18.1	18.2	17.5
Copper	7440-50-8	1.0	mg/kg	7.1	11.4	9.0	10.5	9.6
Lead	7439-92-1	1.0	mg/kg	9.1	3.9	3.2	1.8	2.0
Nickel	7440-02-0	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP003: Total Organic Carbon (TOC) in Soil								
Total Organic Carbon	----	0.02	%	0.13	0.24	0.19	0.19	0.25
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
>C10 - C16 Fraction	>C10_C16	3	mg/kg	<6	<6	<6	<6	<6
>C16 - C34 Fraction	----	3	mg/kg	9	14	13	13	10
>C34 - C40 Fraction	----	5	mg/kg	<10	<10	<10	<10	<10
>C10 - C40 Fraction (sum)	----	3	mg/kg	9	14	13	13	10
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg	<6	<6	<6	<6	<6
C15 - C28 Fraction	----	3	mg/kg	<6	10	9	7	8
C29 - C36 Fraction	----	5	mg/kg	<10	<10	<10	<10	<10
C10 - C36 Fraction (sum)	----	3	mg/kg	<6	10	9	7	8
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons								
C6 - C10 Fraction	C6_C10	3	mg/kg	<3	<3	<3	<3	<3
EP080-SD: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	D1		D2		D3		E1		E2	
Client sampling date / time					29-APR-2015 15:00		29-APR-2015 15:00		29-APR-2015 15:00		28-APR-2015 15:00		28-APR-2015 15:00	
Compound	CAS Number	LOR	Unit		EP1503416-011		EP1503416-012		EP1503416-013		EP1503416-014		EP1503416-015	
EP080-SD: BTEXN - Continued														
^ Total Xylenes	1330-20-7	0.5	mg/kg		<0.5		<0.5		<0.5		<0.5		<0.5	
^ Sum of BTEX	----	0.2	mg/kg		<0.2		<0.2		<0.2		<0.2		<0.2	
EP090: Organotin Compounds														
Monobutyltin	78763-54-9	1	µgSn/kg		2		<1		2		4		1	
Dibutyltin	1002-53-5	1	µgSn/kg		1		<1		1		4		1	
Tributyltin	56573-85-4	0.5	µgSn/kg		1.0		1.0		1.4		2.5		2.0	
EP132B: Polynuclear Aromatic Hydrocarbons														
Naphthalene	91-20-3	5	µg/kg		<5		<5		<5		<5		<5	
2-Methylnaphthalene	91-57-6	5	µg/kg		<5		<5		<5		<5		<5	
Acenaphthylene	208-96-8	4	µg/kg		<4		<4		<4		<4		<4	
Acenaphthene	83-32-9	4	µg/kg		<4		<4		<4		<4		<4	
Fluorene	86-73-7	4	µg/kg		<4		<4		<4		<4		<4	
Phenanthrene	85-01-8	4	µg/kg		5		4		9		18		<4	
Anthracene	120-12-7	4	µg/kg		<4		<4		<4		<4		<4	
Fluoranthene	206-44-0	4	µg/kg		8		13		36		40		<4	
Pyrene	129-00-0	4	µg/kg		7		11		36		35		<4	
Benz(a)anthracene	56-55-3	4	µg/kg		5		10		24		14		<4	
Chrysene	218-01-9	4	µg/kg		<4		8		23		13		<4	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	4	µg/kg		6		11		25		15		<4	
Benzo(k)fluoranthene	207-08-9	4	µg/kg		4		4		9		5		<4	
Benzo(e)pyrene	192-97-2	4	µg/kg		<4		6		12		7		<4	
Benzo(a)pyrene	50-32-8	4	µg/kg		5		12		28		15		<4	
Perylene	198-55-0	4	µg/kg		<4		<4		5		<4		<4	
Benzo(g,h,i)perylene	191-24-2	4	µg/kg		<4		7		15		11		<4	
Dibenz(a,h)anthracene	53-70-3	4	µg/kg		<4		<4		4		<4		<4	
Indeno(1.2.3.cd)pyrene	193-39-5	4	µg/kg		<4		6		14		9		<4	
Coronene	191-07-1	5	µg/kg		<5		<5		<5		<5		<5	
^ Sum of PAHs	----	4	µg/kg		40		92		240		182		<4	
EP080-SD: TPH(V)/BTEX Surrogates														
1,2-Dichloroethane-D4	17060-07-0	0.1	%		73.4		75.6		75.7		73.4		71.6	
Toluene-D8	2037-26-5	0.1	%		66.2		66.3		80.6		65.9		63.3	
4-Bromofluorobenzene	460-00-4	0.1	%		66.5		68.4		79.7		67.9		66.8	
EP090S: Organotin Surrogate														



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID		D1	D2	D3	E1	E2
Client sampling date / time						29-APR-2015 15:00	29-APR-2015 15:00	29-APR-2015 15:00	28-APR-2015 15:00	28-APR-2015 15:00
Compound	CAS Number	LOR	Unit			EP1503416-011	EP1503416-012	EP1503416-013	EP1503416-014	EP1503416-015
EP090S: Organotin Surrogate - Continued										
Tripropyltin	----	0.1	%			107	51.2	70.1	98.1	46.7
EP132T: Base/Neutral Extractable Surrogates										
2-Fluorobiphenyl	321-60-8	0.1	%			69.3	72.0	75.8	80.9	77.5
Anthracene-d10	1719-06-8	0.1	%			70.0	74.0	80.0	82.8	82.0
4-Terphenyl-d14	1718-51-0	0.1	%			70.2	70.6	78.2	79.3	76.2



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				E3	F1	F2	F3	G1
				28-APR-2015 15:00	01-MAY-2015 15:00	01-MAY-2015 15:00	01-MAY-2015 15:00	01-MAY-2015 15:00
Compound	CAS Number	LOR	Unit	EP1503416-016	EP1503416-017	EP1503416-018	EP1503416-019	EP1503416-020
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	35.8	26.5	38.4	40.5	34.0
EG020-SD: Total Metals in Sediments by ICPMS								
Antimony	7440-36-0	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	7440-38-2	1.00	mg/kg	<1.00	1.65	1.77	3.00	2.79
Cadmium	7440-43-9	0.1	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Chromium	7440-47-3	1.0	mg/kg	19.4	17.0	22.6	19.4	20.4
Copper	7440-50-8	1.0	mg/kg	11.9	<1.0	4.0	4.2	2.1
Lead	7439-92-1	1.0	mg/kg	2.2	1.1	3.6	3.9	3.1
Nickel	7440-02-0	1.0	mg/kg	1.1	1.4	2.2	2.5	1.7
Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP003: Total Organic Carbon (TOC) in Soil								
Total Organic Carbon	----	0.02	%	0.30	0.31	0.84	0.84	0.40
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
>C10 - C16 Fraction	>C10_C16	3	mg/kg	<6	<6	<6	<6	<6
>C16 - C34 Fraction	----	3	mg/kg	16	8	15	31	14
>C34 - C40 Fraction	----	5	mg/kg	<10	<10	<10	<10	<10
>C10 - C40 Fraction (sum)	----	3	mg/kg	16	8	15	31	14
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg	<6	<6	<6	<6	<6
C15 - C28 Fraction	----	3	mg/kg	12	<6	10	20	8
C29 - C36 Fraction	----	5	mg/kg	<10	<10	<10	15	<10
C10 - C36 Fraction (sum)	----	3	mg/kg	12	<6	10	35	8
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons								
C6 - C10 Fraction	C6_C10	3	mg/kg	<3	<3	<3	<3	<3
EP080-SD: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	E3	F1	F2	F3	G1
Client sampling date / time					28-APR-2015 15:00	01-MAY-2015 15:00	01-MAY-2015 15:00	01-MAY-2015 15:00	01-MAY-2015 15:00
Compound	CAS Number	LOR	Unit	EP1503416-016	EP1503416-017	EP1503416-018	EP1503416-019	EP1503416-020	
EP080-SD: BTEXN - Continued									
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	
EP090: Organotin Compounds									
Monobutyltin	78763-54-9	1	µgSn/kg	<1	<1	<1	<1	<1	
Dibutyltin	1002-53-5	1	µgSn/kg	<1	<1	<1	<1	<1	
Tributyltin	56573-85-4	0.5	µgSn/kg	1.2	<0.5	1.8	3.7	4.8	
EP132B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	5	µg/kg	<5	<5	<5	<5	<5	
2-Methylnaphthalene	91-57-6	5	µg/kg	<5	<5	<5	<5	<5	
Acenaphthylene	208-96-8	4	µg/kg	<4	<4	<4	<4	<4	
Acenaphthene	83-32-9	4	µg/kg	<4	<4	<4	<4	<4	
Fluorene	86-73-7	4	µg/kg	<4	<4	<4	<4	<4	
Phenanthrene	85-01-8	4	µg/kg	6	<4	<4	5	<4	
Anthracene	120-12-7	4	µg/kg	<4	<4	<4	<4	<4	
Fluoranthene	206-44-0	4	µg/kg	10	<4	4	12	5	
Pyrene	129-00-0	4	µg/kg	9	<4	4	11	5	
Benz(a)anthracene	56-55-3	4	µg/kg	6	<4	<4	6	<4	
Chrysene	218-01-9	4	µg/kg	7	<4	<4	6	<4	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	4	µg/kg	8	<4	4	10	<4	
Benzo(k)fluoranthene	207-08-9	4	µg/kg	<4	<4	<4	<4	<4	
Benzo(e)pyrene	192-97-2	4	µg/kg	4	<4	<4	5	<4	
Benzo(a)pyrene	50-32-8	4	µg/kg	8	<4	<4	8	<4	
Perylene	198-55-0	4	µg/kg	<4	<4	<4	<4	<4	
Benzo(g,h,i)perylene	191-24-2	4	µg/kg	6	<4	<4	8	<4	
Dibenz(a,h)anthracene	53-70-3	4	µg/kg	<4	<4	<4	<4	<4	
Indeno(1.2.3.cd)pyrene	193-39-5	4	µg/kg	5	<4	<4	7	<4	
Coronene	191-07-1	5	µg/kg	<5	<5	<5	<5	<5	
^ Sum of PAHs	----	4	µg/kg	69	<4	12	78	10	
EP080-SD: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.1	%	71.4	75.5	71.7	69.3	75.4	
Toluene-D8	2037-26-5	0.1	%	70.2	69.8	70.4	65.7	70.7	
4-Bromofluorobenzene	460-00-4	0.1	%	68.9	71.7	69.4	66.7	71.2	
EP090S: Organotin Surrogate									



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				E3	F1	F2	F3	G1
Client sampling date / time				28-APR-2015 15:00	01-MAY-2015 15:00	01-MAY-2015 15:00	01-MAY-2015 15:00	01-MAY-2015 15:00
Compound	CAS Number	LOR	Unit	EP1503416-016	EP1503416-017	EP1503416-018	EP1503416-019	EP1503416-020
EP090S: Organotin Surrogate - Continued								
Tripropyltin	----	0.1	%	70.6	87.4	85.2	89.9	69.3
EP132T: Base/Neutral Extractable Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	93.3	86.2	76.5	104	79.3
Anthracene-d10	1719-06-8	0.1	%	88.1	87.6	79.4	113	83.0
4-Terphenyl-d14	1718-51-0	0.1	%	83.0	83.1	75.5	137	80.9



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				G2	G3	DRT1	DRT2	DRT3
				01-MAY-2015 15:00	01-MAY-2015 15:00	30-APR-2015 15:00	30-APR-2015 15:00	30-APR-2015 15:00
Compound	CAS Number	LOR	Unit	EP1503416-021	EP1503416-022	EP1503416-023	EP1503416-024	EP1503416-025
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	30.1	37.0	29.4	28.7	31.1
EG020-SD: Total Metals in Sediments by ICPMS								
Antimony	7440-36-0	0.50	mg/kg	0.96	<0.50	<0.50	<0.50	<0.50
Arsenic	7440-38-2	1.00	mg/kg	6.24	6.98	<1.00	<1.00	<1.00
Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium	7440-47-3	1.0	mg/kg	17.2	18.1	16.6	16.3	17.3
Copper	7440-50-8	1.0	mg/kg	1.7	12.0	20.6	13.9	15.4
Lead	7439-92-1	1.0	mg/kg	2.5	3.3	2.3	2.8	2.4
Nickel	7440-02-0	1.0	mg/kg	1.7	1.7	<1.0	1.4	1.5
Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP003: Total Organic Carbon (TOC) in Soil								
Total Organic Carbon	----	0.02	%	0.53	0.46	0.30	0.23	0.23
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
>C10 - C16 Fraction	>C10_C16	3	mg/kg	<6	<6	<6	<6	<6
>C16 - C34 Fraction	----	3	mg/kg	6	10	8	8	14
>C34 - C40 Fraction	----	5	mg/kg	<10	<10	<10	<10	<10
>C10 - C40 Fraction (sum)	----	3	mg/kg	6	10	8	8	14
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg	<6	<6	<6	<6	<6
C15 - C28 Fraction	----	3	mg/kg	<6	6	<6	<6	10
C29 - C36 Fraction	----	5	mg/kg	<10	<10	<10	<10	<10
C10 - C36 Fraction (sum)	----	3	mg/kg	<6	6	<6	<6	10
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons								
C6 - C10 Fraction	C6_C10	3	mg/kg	<3	<3	<3	<3	<3
EP080-SD: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	G2		G3		DRT1		DRT2		DRT3	
Client sampling date / time					01-MAY-2015 15:00		01-MAY-2015 15:00		30-APR-2015 15:00		30-APR-2015 15:00		30-APR-2015 15:00	
Compound	CAS Number	LOR	Unit		EP1503416-021		EP1503416-022		EP1503416-023		EP1503416-024		EP1503416-025	
EP080-SD: BTEXN - Continued														
^ Total Xylenes	1330-20-7	0.5	mg/kg		<0.5		<0.5		<0.5		<0.5		<0.5	
^ Sum of BTEX	----	0.2	mg/kg		<0.2		<0.2		<0.2		<0.2		<0.2	
EP090: Organotin Compounds														
Monobutyltin	78763-54-9	1	µgSn/kg		<1		<1		<1		<1		1	
Dibutyltin	1002-53-5	1	µgSn/kg		<1		<1		4		4		6	
Tributyltin	56573-85-4	0.5	µgSn/kg		<0.5		<0.5		10.0		28.7		33.0	
EP132B: Polynuclear Aromatic Hydrocarbons														
Naphthalene	91-20-3	5	µg/kg		<5		<5		<5		<5		<5	
2-Methylnaphthalene	91-57-6	5	µg/kg		<5		<5		<5		<5		<5	
Acenaphthylene	208-96-8	4	µg/kg		<4		<4		<4		<4		<4	
Acenaphthene	83-32-9	4	µg/kg		<4		<4		<4		<4		<4	
Fluorene	86-73-7	4	µg/kg		<4		<4		<4		<4		<4	
Phenanthrene	85-01-8	4	µg/kg		<4		9		<4		<4		<4	
Anthracene	120-12-7	4	µg/kg		<4		<4		<4		<4		<4	
Fluoranthene	206-44-0	4	µg/kg		<4		33		<4		4		<4	
Pyrene	129-00-0	4	µg/kg		<4		28		<4		<4		<4	
Benz(a)anthracene	56-55-3	4	µg/kg		<4		18		<4		<4		<4	
Chrysene	218-01-9	4	µg/kg		<4		18		<4		<4		<4	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	4	µg/kg		<4		25		<4		<4		<4	
Benzo(k)fluoranthene	207-08-9	4	µg/kg		<4		10		<4		<4		<4	
Benzo(e)pyrene	192-97-2	4	µg/kg		<4		11		<4		<4		<4	
Benzo(a)pyrene	50-32-8	4	µg/kg		<4		23		<4		<4		<4	
Perylene	198-55-0	4	µg/kg		<4		4		<4		<4		<4	
Benzo(g,h,i)perylene	191-24-2	4	µg/kg		<4		15		<4		<4		<4	
Dibenz(a,h)anthracene	53-70-3	4	µg/kg		<4		4		<4		<4		<4	
Indeno(1.2.3.cd)pyrene	193-39-5	4	µg/kg		<4		14		<4		<4		<4	
Coronene	191-07-1	5	µg/kg		<5		<5		<5		<5		<5	
^ Sum of PAHs	----	4	µg/kg		<4		212		<4		4		<4	
EP080-SD: TPH(V)/BTEX Surrogates														
1.2-Dichloroethane-D4	17060-07-0	0.1	%		64.1		63.2		68.3		70.9		69.9	
Toluene-D8	2037-26-5	0.1	%		67.6		70.9		75.4		71.5		72.6	
4-Bromofluorobenzene	460-00-4	0.1	%		67.4		71.2		74.2		72.5		71.1	
EP090S: Organotin Surrogate														



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				G2	G3	DRT1	DRT2	DRT3
				01-MAY-2015 15:00	01-MAY-2015 15:00	30-APR-2015 15:00	30-APR-2015 15:00	30-APR-2015 15:00
Compound	CAS Number	LOR	Unit	EP1503416-021	EP1503416-022	EP1503416-023	EP1503416-024	EP1503416-025
EP090S: Organotin Surrogate - Continued								
Tripopyltin	----	0.1	%	72.1	49.9	70.8	73.5	91.4
EP132T: Base/Neutral Extractable Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	79.9	82.3	87.6	92.6	75.9
Anthracene-d10	1719-06-8	0.1	%	84.8	84.5	88.9	93.0	77.2
4-Terphenyl-d14	1718-51-0	0.1	%	78.8	83.2	84.8	88.4	85.5



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				QC1	QC2	QC3	----	----
				30-APR-2015 15:00	01-MAY-2015 15:00	01-MAY-2015 15:00	----	----
Compound	CAS Number	LOR	Unit	EP1503416-026	EP1503416-027	EP1503416-028	----	----
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	33.0	28.7	33.8	----	----
EG020-SD: Total Metals in Sediments by ICPMS								
Antimony	7440-36-0	0.50	mg/kg	<0.50	<0.50	<0.50	----	----
Arsenic	7440-38-2	1.00	mg/kg	<1.00	1.35	1.95	----	----
Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	<0.1	----	----
Chromium	7440-47-3	1.0	mg/kg	16.0	17.2	20.4	----	----
Copper	7440-50-8	1.0	mg/kg	4.0	1.1	1.9	----	----
Lead	7439-92-1	1.0	mg/kg	1.1	1.3	2.8	----	----
Nickel	7440-02-0	1.0	mg/kg	1.2	1.8	1.9	----	----
Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	<0.1	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	----	----
EP003: Total Organic Carbon (TOC) in Soil								
Total Organic Carbon	----	0.02	%	0.34	0.71	0.48	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
>C10 - C16 Fraction	>C10_C16	3	mg/kg	<6	<6	<6	----	----
>C16 - C34 Fraction	----	3	mg/kg	<6	8	9	----	----
>C34 - C40 Fraction	----	5	mg/kg	<10	<10	<10	----	----
>C10 - C40 Fraction (sum)	----	3	mg/kg	<6	8	9	----	----
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	3	mg/kg	<3	<3	<3	----	----
C10 - C14 Fraction	----	3	mg/kg	<6	<6	<6	----	----
C15 - C28 Fraction	----	3	mg/kg	<6	<6	6	----	----
C29 - C36 Fraction	----	5	mg/kg	<10	<10	<10	----	----
C10 - C36 Fraction (sum)	----	3	mg/kg	<6	<6	6	----	----
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons								
C6 - C10 Fraction	C6_C10	3	mg/kg	<3	<3	<3	----	----
EP080-SD: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	<0.2	----	----

Sub-Matrix: **SOIL** (Matrix: **SOIL**)

Client sample ID

Client sampling date / time

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QC1		QC2		QC3		----	----
Client sampling date / time					30-APR-2015 15:00		01-MAY-2015 15:00		01-MAY-2015 15:00		----	----
Compound	CAS Number	LOR	Unit	EP1503416-026		EP1503416-027		EP1503416-028		----	----	
EP080-SD: BTEXN - Continued												
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5		<0.5		<0.5		----	----	
^ Sum of BTEX	----	0.2	mg/kg	<0.2		<0.2		<0.2		----	----	
EP090: Organotin Compounds												
Monobutyltin	78763-54-9	1	µgSn/kg	<1		<1		<1		----	----	
Dibutyltin	1002-53-5	1	µgSn/kg	4		<1		<1		----	----	
Tributyltin	56573-85-4	0.5	µgSn/kg	59.6		0.8		<0.5		----	----	
EP132B: Polynuclear Aromatic Hydrocarbons												
Naphthalene	91-20-3	5	µg/kg	<5		<5		<5		----	----	
2-Methylnaphthalene	91-57-6	5	µg/kg	<5		<5		<5		----	----	
Acenaphthylene	208-96-8	4	µg/kg	<4		<4		<4		----	----	
Acenaphthene	83-32-9	4	µg/kg	<4		<4		<4		----	----	
Fluorene	86-73-7	4	µg/kg	<4		<4		<4		----	----	
Phenanthrene	85-01-8	4	µg/kg	<4		<4		<4		----	----	
Anthracene	120-12-7	4	µg/kg	<4		<4		<4		----	----	
Fluoranthene	206-44-0	4	µg/kg	<4		<4		<4		----	----	
Pyrene	129-00-0	4	µg/kg	<4		<4		<4		----	----	
Benz(a)anthracene	56-55-3	4	µg/kg	<4		<4		<4		----	----	
Chrysene	218-01-9	4	µg/kg	<4		<4		<4		----	----	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	4	µg/kg	<4		<4		<4		----	----	
Benzo(k)fluoranthene	207-08-9	4	µg/kg	<4		<4		<4		----	----	
Benzo(e)pyrene	192-97-2	4	µg/kg	<4		<4		<4		----	----	
Benzo(a)pyrene	50-32-8	4	µg/kg	<4		<4		<4		----	----	
Perylene	198-55-0	4	µg/kg	<4		<4		<4		----	----	
Benzo(g,h,i)perylene	191-24-2	4	µg/kg	<4		<4		<4		----	----	
Dibenz(a,h)anthracene	53-70-3	4	µg/kg	<4		<4		<4		----	----	
Indeno(1.2.3.cd)pyrene	193-39-5	4	µg/kg	<4		<4		<4		----	----	
Coronene	191-07-1	5	µg/kg	<5		<5		<5		----	----	
^ Sum of PAHs	----	4	µg/kg	<4		<4		<4		----	----	
EP080-SD: TPH(V)/BTEX Surrogates												
1.2-Dichloroethane-D4	17060-07-0	0.1	%	67.4		70.5		71.7		----	----	
Toluene-D8	2037-26-5	0.1	%	72.7		72.8		72.6		----	----	
4-Bromofluorobenzene	460-00-4	0.1	%	73.5		73.3		72.6		----	----	
EP090S: Organotin Surrogate												



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QC1	QC2	QC3	----	----
				Client sampling date / time	30-APR-2015 15:00	01-MAY-2015 15:00	01-MAY-2015 15:00	----	----
Compound	CAS Number	LOR	Unit		EP1503416-026	EP1503416-027	EP1503416-028	----	----
EP090S: Organotin Surrogate - Continued									
Tripropyltin	----	0.1	%		80.6	79.4	60.7	----	----
EP132T: Base/Neutral Extractable Surrogates									
2-Fluorobiphenyl	321-60-8	0.1	%		77.7	75.9	81.6	----	----
Anthracene-d10	1719-06-8	0.1	%		78.2	77.4	84.0	----	----
4-Terphenyl-d14	1718-51-0	0.1	%		74.5	73.1	79.9	----	----



Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP080-SD: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	70	130
Toluene-D8	2037-26-5	70	130
4-Bromofluorobenzene	460-00-4	70	130
EP090S: Organotin Surrogate			
Tripopyltin	----	35	130
EP132T: Base/Neutral Extractable Surrogates			
2-Fluorobiphenyl	321-60-8	70	130
Anthracene-d10	1719-06-8	70	130
4-Terphenyl-d14	1718-51-0	70	130

CERTIFICATE OF ANALYSIS

Work Order	: EP1503418	Page	: 1 of 7
Client	: AURECON AUSTRALASIA PTY LTD	Laboratory	: Environmental Division Perth
Contact	: MR CHRIS DONNETTI	Contact	: Scott James
Address	: Level 5, 863 Hay Street Perth, WA 6000	Address	: 10 Hod Way Malaga WA Australia 6090
E-mail	: Chris.Donnetti@aurecongroup.com	E-mail	: perth.enviro.services@alsglobal.com
Telephone	: 08 6145 9393	Telephone	: +61-8-9209 7655
Facsimile	: 08 6145 5020	Facsimile	: +61-8-9209 7600
Project	: Garden Island Sediment Investigation	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: 243418-NA1507-DESPH02	Date Samples Received	: 05-MAY-2015
C-O-C number	: ----	Issue Date	: 26-MAY-2015
Sampler	: C.D.	No. of samples received	: 25
Site	: ----	No. of samples analysed	: 24
Quote number	: EP/388/15		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results



NATA Accredited Laboratory 825

Accredited for compliance with
ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Dianne Blane	Laboratory Coordinator (2IC)	Newcastle - Inorganics



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting



Analytical Results

Sub-Matrix: **SEDIMENT** (Matrix: **SOIL**)

Client sample ID

Client sampling date / time

				A1	A2	A3	B1	B2
				30-APR-2015 15:00	30-APR-2015 15:00	30-APR-2015 15:00	30-APR-2015 15:00	30-APR-2015 15:00
Compound	CAS Number	LOR	Unit	EP1503418-001	EP1503418-002	EP1503418-003	EP1503418-004	EP1503418-005
EA150: Particle Sizing								
+75µm	----	1	%	86	89	87	98	86
+150µm	----	1	%	46	51	42	79	53
+300µm	----	1	%	5	2	2	12	8
+425µm	----	1	%	2	<1	<1	2	2
+600µm	----	1	%	<1	<1	<1	<1	<1
+1180µm	----	1	%	<1	<1	<1	<1	<1
+2.36mm	----	1	%	<1	<1	<1	<1	<1
+4.75mm	----	1	%	<1	<1	<1	<1	<1
+9.5mm	----	1	%	<1	<1	<1	<1	<1
+19.0mm	----	1	%	<1	<1	<1	<1	<1
+37.5mm	----	1	%	<1	<1	<1	<1	<1
+75.0mm	----	1	%	<1	<1	<1	<1	<1
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	7	7	7	2	7
Silt (2-60 µm)	----	1	%	7	2	4	1	5
Sand (0.06-2.00 mm)	----	1	%	86	91	89	97	88
Gravel (>2mm)	----	1	%	<1	<1	<1	<1	<1
Cobbles (>6cm)	----	1	%	<1	<1	<1	<1	<1
EA152: Soil Particle Density								
Soil Particle Density (Clay/Silt/Sand)	----	0.01	g/cm3	2.62	2.67	2.66	2.71	2.72



Analytical Results

Sub-Matrix: **SEDIMENT** (Matrix: **SOIL**)

Client sample ID

Client sampling date / time

				B3	B4	C1	C2	C3
				30-APR-2015 15:00	30-APR-2015 15:00	30-APR-2015 15:00	30-APR-2015 15:00	30-APR-2015 15:00
Compound	CAS Number	LOR	Unit	EP1503418-006	EP1503418-007	EP1503418-008	EP1503418-009	EP1503418-010
EA150: Particle Sizing								
+75µm	----	1	%	81	87	88	84	88
+150µm	----	1	%	42	36	39	42	60
+300µm	----	1	%	6	3	3	3	18
+425µm	----	1	%	2	<1	1	1	6
+600µm	----	1	%	2	<1	<1	<1	2
+1180µm	----	1	%	1	<1	<1	<1	<1
+2.36mm	----	1	%	<1	<1	<1	<1	<1
+4.75mm	----	1	%	<1	<1	<1	<1	<1
+9.5mm	----	1	%	<1	<1	<1	<1	<1
+19.0mm	----	1	%	<1	<1	<1	<1	<1
+37.5mm	----	1	%	<1	<1	<1	<1	<1
+75.0mm	----	1	%	<1	<1	<1	<1	<1
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	11	6	7	8	6
Silt (2-60 µm)	----	1	%	6	4	5	5	3
Sand (0.06-2.00 mm)	----	1	%	82	90	88	87	91
Gravel (>2mm)	----	1	%	1	<1	<1	<1	<1
Cobbles (>6cm)	----	1	%	<1	<1	<1	<1	<1
EA152: Soil Particle Density								
Soil Particle Density (Clay/Silt/Sand)	----	0.01	g/cm3	2.63	2.67	2.61	2.66	2.68



Analytical Results

Sub-Matrix: **SEDIMENT** (Matrix: **SOIL**)

Client sample ID

Client sampling date / time

				D1	D2	D3	E1	E2
				29-APR-2015 15:00	29-APR-2015 15:00	29-APR-2015 15:00	28-APR-2015 15:00	28-APR-2015 15:00
Compound	CAS Number	LOR	Unit	EP1503418-011	EP1503418-012	EP1503418-013	EP1503418-014	EP1503418-015
EA150: Particle Sizing								
+75µm	----	1	%	92	95	95	94	95
+150µm	----	1	%	70	74	75	77	85
+300µm	----	1	%	14	17	11	12	20
+425µm	----	1	%	5	8	3	4	13
+600µm	----	1	%	2	4	1	2	9
+1180µm	----	1	%	<1	2	<1	<1	4
+2.36mm	----	1	%	<1	2	<1	<1	2
+4.75mm	----	1	%	<1	1	<1	<1	<1
+9.5mm	----	1	%	<1	1	<1	<1	<1
+19.0mm	----	1	%	<1	<1	<1	<1	<1
+37.5mm	----	1	%	<1	<1	<1	<1	<1
+75.0mm	----	1	%	<1	<1	<1	<1	<1
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	4	4	4	3	3
Silt (2-60 µm)	----	1	%	1	1	1	2	2
Sand (0.06-2.00 mm)	----	1	%	94	93	95	94	92
Gravel (>2mm)	----	1	%	1	2	<1	1	3
Cobbles (>6cm)	----	1	%	<1	<1	<1	<1	<1
EA152: Soil Particle Density								
Soil Particle Density (Clay/Silt/Sand)	----	0.01	g/cm3	2.68	2.70	2.67	2.66	2.66



Analytical Results

Sub-Matrix: **SEDIMENT** (Matrix: **SOIL**)

Client sample ID

Client sampling date / time

				E3	F1	F2	F3	G2
				28-APR-2015 15:00	01-MAY-2015 15:00	01-MAY-2015 15:00	01-MAY-2015 15:00	01-MAY-2015 15:00
Compound	CAS Number	LOR	Unit	EP1503418-016	EP1503418-017	EP1503418-018	EP1503418-019	EP1503418-021
EA150: Particle Sizing								
+75µm	----	1	%	91	76	70	51	69
+150µm	----	1	%	74	62	52	25	54
+300µm	----	1	%	15	30	18	11	40
+425µm	----	1	%	6	20	9	8	33
+600µm	----	1	%	2	16	5	6	25
+1180µm	----	1	%	1	13	2	4	5
+2.36mm	----	1	%	<1	11	<1	2	2
+4.75mm	----	1	%	<1	9	<1	2	<1
+9.5mm	----	1	%	<1	3	<1	1	<1
+19.0mm	----	1	%	<1	<1	<1	<1	<1
+37.5mm	----	1	%	<1	<1	<1	<1	<1
+75.0mm	----	1	%	<1	<1	<1	<1	<1
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	5	9	13	18	14
Silt (2-60 µm)	----	1	%	1	9	9	17	10
Sand (0.06-2.00 mm)	----	1	%	93	69	76	62	71
Gravel (>2mm)	----	1	%	1	13	2	3	5
Cobbles (>6cm)	----	1	%	<1	<1	<1	<1	<1
EA152: Soil Particle Density								
Soil Particle Density (Clay/Silt/Sand)	----	0.01	g/cm3	2.65	2.57	2.63	2.64	2.60



Analytical Results

Sub-Matrix: **SEDIMENT** (Matrix: **SOIL**)

Client sample ID

Client sampling date / time

				G3	DRT1	DRT2	DRT3	----
				01-MAY-2015 15:00	30-APR-2015 15:00	30-APR-2015 15:00	30-APR-2015 15:00	----
Compound	CAS Number	LOR	Unit	EP1503418-022	EP1503418-023	EP1503418-024	EP1503418-025	----
EA150: Particle Sizing								
+75µm	----	1	%	74	90	90	91	----
+150µm	----	1	%	60	69	69	70	----
+300µm	----	1	%	40	11	12	10	----
+425µm	----	1	%	34	3	3	3	----
+600µm	----	1	%	30	2	2	2	----
+1180µm	----	1	%	25	2	2	1	----
+2.36mm	----	1	%	22	1	1	<1	----
+4.75mm	----	1	%	21	<1	<1	<1	----
+9.5mm	----	1	%	17	<1	<1	<1	----
+19.0mm	----	1	%	10	<1	<1	<1	----
+37.5mm	----	1	%	<1	<1	<1	<1	----
+75.0mm	----	1	%	<1	<1	<1	<1	----
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	13	6	7	6	----
Silt (2-60 µm)	----	1	%	6	2	1	2	----
Sand (0.06-2.00 mm)	----	1	%	56	90	90	91	----
Gravel (>2mm)	----	1	%	25	2	2	1	----
Cobbles (>6cm)	----	1	%	<1	<1	<1	<1	----
EA152: Soil Particle Density								
Soil Particle Density (Clay/Silt/Sand)	----	0.01	g/cm3	2.60	2.71	2.68	2.69	----



ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: EB1519399	Page	: 1 of 5
Client	: AURECON AUSTRALASIA PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: MR CHRIS DONNETTI	Contact	: Customer Services EB
Address	: Level 5, 863 Hay Street Perth, WA 6000	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: Chris.Donnetti@aurecongroup.com	E-mail	: ALSEnviro.Brisbane@alsglobal.com
Telephone	: 08 6145 9393	Telephone	: +61-7-3243 7222
Facsimile	: 08 6145 5020	Facsimile	: +61-7-3243 7218
Project	: Garden Island Sediment Investigation	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: 243418-NA1507-DESPH02	Date Samples Received	: 18-May-2015 17:10
C-O-C number	: ----	Date Analysis Commenced	: 28-May-2015
Sampler	: CHRIS DONNETTI	Issue Date	: 03-Jun-2015 10:56
Site	: ----		
Quote number	: ----	No. of samples received	: 18
		No. of samples analysed	: 9

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results



NATA Accredited Laboratory 825

Accredited for compliance with
ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics
Matt Frost	Senior Organic Chemist	Brisbane Organics
Ryan Story	2IC Organic Instrument Chemist	Brisbane Organics



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

Ø = ALS is not NATA accredited for these tests.

- EP090S: Sample shows poor matrix spike recovery due to matrix interference.
- EP090: Samples required dilution prior to analysis due to matrix interferences and high level contaminants. LOR values have been adjusted accordingly. Surrogate and matrix spike recoveries have not been determined.
- EP090S: Sample 'Composite 1' required dilution prior to extraction and shows poor surrogate recovery due to matrix interferences. LOR values have been adjusted accordingly. Surrogate recovery confirmed by re-extraction and re-analysis.
- EN68: This analysis in accordance with National Ocean Disposal Guidelines, Commonwealth of Australia, 2002 - (modified). Results reported are those determined on a 1:4 sediment/seawater elutriate without blank correction.



Analytical Results

Sub-Matrix: **ELUTRIATE**
 (Matrix: **WATER**)

Client sample ID

				Composite 1 Composite of #1-3 (A1/A2/A3)	Composite 2 Composite of #4-7 (B1/B2/B3/B4)	Seawater #1 Seawater for Elutriate	----	----
Client sampling date / time				[30-Apr-2015]	[30-Apr-2015]	[02-May-2015]	----	----
Compound	CAS Number	LOR	Unit	EB1519399-014	EB1519399-015	EB1519399-016	-----	-----
				Result	Result	Result	Result	Result
EN68: Seawater Elutriate Testing Procedure								
Seawater Sampling Date	----	0.1	-	----	----	28/05/2015	----	----
EP090: Organotin Compounds (Soluble)								
Tributyltin	56573-85-4	2	ngSn/L	<4	19	<2	----	----
EP090S: Organotin Surrogate								
Tripopyltin	----	5	%	9.02	72.4	78.5	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID				
				A1 (1) Subsample 1	A1 (2) Subsample 2	A1 (3) Subsample 3	B4 (1) Subsample 1	B4 (2) Subsample 2
Client sampling date / time				[30-Apr-2015]	[30-Apr-2015]	[30-Apr-2015]	[30-Apr-2015]	[30-Apr-2015]
Compound	CAS Number	LOR	Unit	EB1519399-008	EB1519399-009	EB1519399-010	EB1519399-011	EB1519399-012
				Result	Result	Result	Result	Result
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1	%	29.2	29.1	28.4	32.4	29.9
EN68: Seawater Elutriate Testing Procedure								
Seawater Sampling Date	----	0.1	-	----	----	----	----	----
EP090: Organotin Compounds								
Monobutyltin	78763-54-9	1	µgSn/kg	<4	<4	<4	<4	<4
Dibutyltin	1002-53-5	1	µgSn/kg	<4	4	7	<4	<4
Tributyltin	56573-85-4	0.5	µgSn/kg	187	199	367	131	104
EP090S: Organotin Surrogate								
Tripropyltin	----	0.5	%	Not Determined	Not Determined	Not Determined	Not Determined	Not Determined



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				B4 (3) Subsample 3	Composite 1 Composite of #1-3 (A1/A2/A3)	Composite 2 Composite of #4-7 (B1/B2/B3/B4)	----	----
Client sampling date / time				[30-Apr-2015]	[30-Apr-2015]	[30-Apr-2015]	----	----
Compound	CAS Number	LOR	Unit	EB1519399-013	EB1519399-014	EB1519399-015	-----	-----
				Result	Result	Result	Result	Result
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1	%	30.5	----	----	----	----
EN68: Seawater Elutriate Testing Procedure								
Seawater Sampling Date	----	0.1	-	----	28/05/2015	28/05/2015	----	----
EP090: Organotin Compounds								
Monobutyltin	78763-54-9	1	µgSn/kg	<4	----	----	----	----
Dibutyltin	1002-53-5	1	µgSn/kg	<4	----	----	----	----
Tributyltin	56573-85-4	0.5	µgSn/kg	46.9	----	----	----	----
EP090S: Organotin Surrogate								
Tripopyltin	----	0.5	%	Not Determined	----	----	----	----



Appendix D

Results Tables



Appendix E

Survey Photos

Appendix E–Site Photographs



Plate 1: Vibrocore deployment



Plate 2: Vibrocore operations



Plate 3: Day grab retrieval



Plate 4: A1 core 30/4/2015



Plate 5: A2 core 30/4/2015



Plate 6: A3 core 30/4/2015



Plate 7: B1 core 30/4/2015



Plate 8: B2 core 30/4/2015



Plate 9: B3 core 30/4/2015



Plate 10: B4 core 30/4/2015



Plate 11: C1 core 30/4/2015



Plate 12: C2 core 30/4/2015



Plate 13: C3 core 30/4/2015

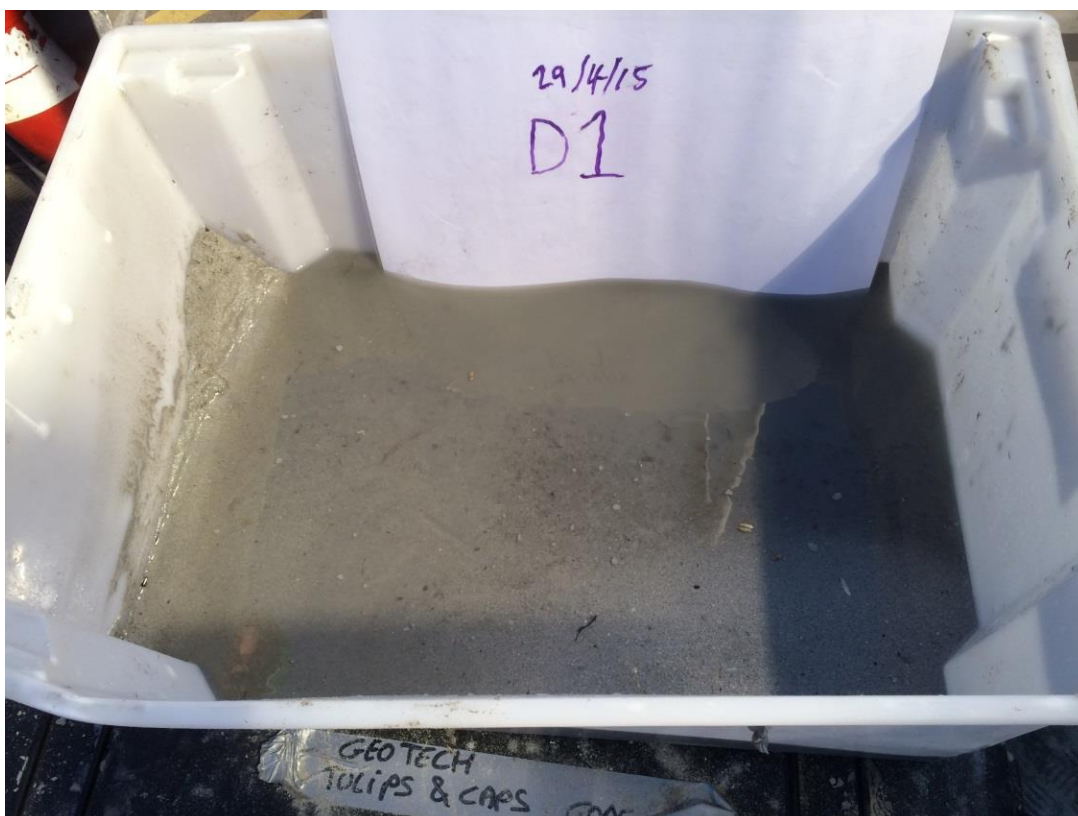


Plate 14: D1 day grab 29/4/2015

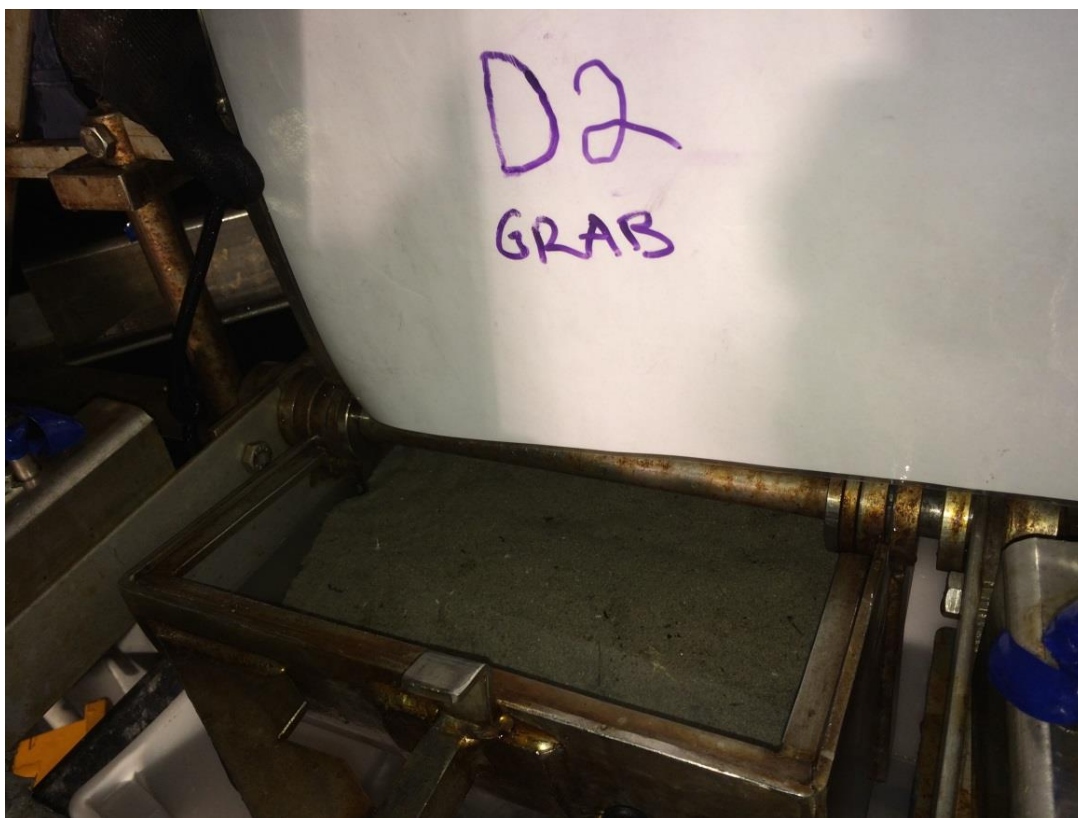


Plate 15: D2 day grab 29/4/2015



Plate 16: D3 day grab 29/4/2015



Plate 17: E1 core 29/4/2015



Plate 18: E2 core 29/4/2015



Plate 19: F1 core 01/5/2015



Plate 20: F2 day grab 01/5/2015



Plate 21: F3 day grab 01/5/2015



Plate 22: G1 core 1/5/2015



Plate 23: G2 core 1/5/2015



Plate 24: G3 core 1/5/2015



Plate 25: DRT1 grab 30/4/2015

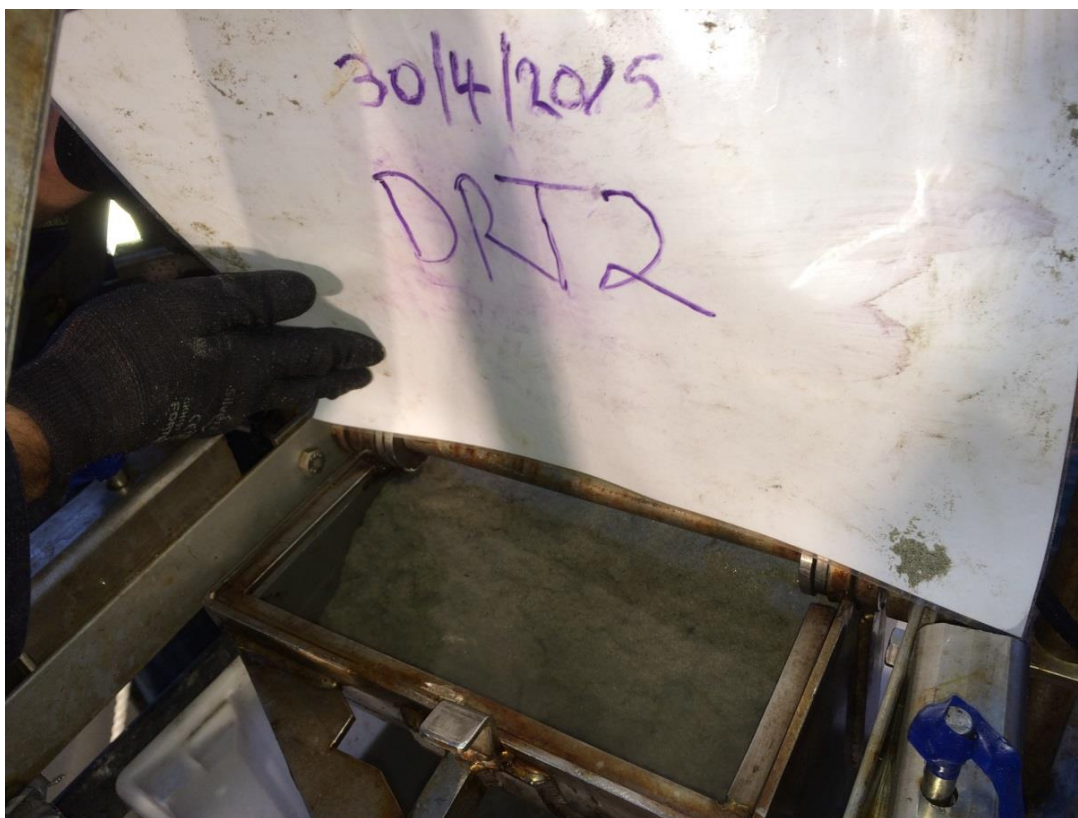


Plate 26: DRT2 grab 30/4/2015



Plate 27: DRT3 grab 30/4/2015



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