

Line Name: MGL1004_RL_B		NAVIGATION		DATE: 2010-07-29		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE	
Seq# 001		Line Brg : 116.241 °		LINE LOGS		JULIAN DAY: 210	
CLIENT: Korenaga		SURVEY: Shatsky Rise, Northwest Pacific		MGL1004			
DC SOL : 1.2m		DEPTH SOL : 5470.0m		NAVIGATION SYSTEM USED: C-Nav - Primary			
DC EOL : 2.7m		DEPTH EOL : 2471.0m		NAVIGATION SYSTEM USED: SeaPath 200			
SMG SOL: 4.5 knots		FEATHER SOL: na °		NAVIGATION SYSTEM USED: Pos MV			
SMG EOL: 4.7 knots		FEATHER EOL: na °		GRAVITY METER: BMG-II: used			
WEATHER		MAX FEATHER: na °		MAGNETOMETER: GeoMetrics: used			
WIND SOL: 20.0 knots				MAG DEC USED : 1.28°			
WIND EOL: 20.4ktsNW knots		00:00 – 04:00 utc =>		12:00 – 16:00 utc =>			
SEAS SOL: 1-3m		04:00 – 08:00 utc =>		D.Rieger, M. Zhang 16:00 – 20:00 utc =>			
SEAS EOL: 4-5ft		08:00 – 12:00 utc =>		20:00 – 00:00 utc =>			
SP	TIME(UTC)	EVENT	COMMENTS				
924	02:47:00	FSP	First Shot				
1001	04:23:15	FGSP	First Good Shot Point: Start of Line				
2338	06:35:20	LSP	End of Line				
1032	05:00:00	OBS Crossing	OBSA1				VESSEL POSITION Latitude (N) Longitude (E) FGSP 1001 33° 38' 59.964" 156° 32' 59.979" LGSP 2338 32° 46' 08.687" 158° 37' 24.502"
1156	07:29:00	OBS Crossing	OBSA2				
1279	09:54:00	OBS Crossing	OBSA3				NAVIGATION OFFSET APPLIED NRP - Stern _____ NRP - COS _____ NRP - CNG (na) _____ COS - CNG (na) _____ NRP - CMP (na) _____
1403	12:18:00	OBS Crossing	OBSA4				
1527	14:43:00	OBS Crossing	OBSA5				Note: LMN line parameter set to great circle line.
1650	17:19:00	OBS Crossing	OBSA6				
1773	19:37:00	OBS Crossing	OBSA7				P1 P2 na na
1885	21:48:00	OBS Crossing	OBSA8				
2021	00:28:00	OBS Crossing	OBSA9				Source only
2113	02:16:00	OBS Crossing	OBSA10				
2206	04:04:00	OBS Crossing	OBSA11				MGL1004_RL_B.LJ source_12m.SCN(001) Langseth.RTCN SP spacing: 162m line status: obs line complete
2330	06:26:00	OBS Crossing	OBSA12				
Posnet locations & remarks: good - none - intermittent		Acoustic remarks:					
Tailbuoy #1	na	Gun string #1	good				
		Gun string #2	good				
		Gun string #3	good				
		Gun string #4	good				

Seq# 002		Line Name: MGL1004_RL_E		NAVIGATION		DATE: 2010-07-30		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE										
		Line Brg : 66.871 °		LINE LOGS		JULIAN DAY: 211												
CLIENT: Korenaga			SURVEY: Shatsky Rise, Northwest Pacific			MGL1004												
DC SOL : -80.6m			DEPTH SOL : 2476.0m			NAVIGATION SYSTEM USED C-Nav - Primary												
DC EOL : -316.9m			DEPTH EOL : 3056.6m			NAVIGATION SYSTEM USED SeaPath 200												
SMG SOL: 4.85 knots			FEATHER SOL: na °			NAVIGATION SYSTEM USED Pos MV												
SMG EOL: 4.8 knots			FEATHER EOL: na °			GRAVITY METER: BMG-II: used												
WEATHER			MAX FEATHER: na °			MAGNETOMETER: GeoMetrics: used												
WIND SOL: 17.9 knots						MAG DEC USED : 1.28°												
WIND EOL: 13.3 knots			00:00 - 04:00 utc =>			12:00 - 16:00 utc =>												
SEAS SOL: 1-3m			04:00 - 08:00 utc => D.Rieger, M. Zhang			16:00 - 20:00 utc =>												
SEAS EOL: 1-3m			08:00 - 12:00 utc =>			20:00 - 00:00 utc =>												
SP	TIME(UTC)	EVENT	COMMENTS															
999	07:24:32	FSP	First Shot															
1001	07:37:58	FGSP	First Good Shot Point: Start of Line															
1289	13:18:39	LSP	End of Line															
			VESSEL POSITION															
			<table border="1"> <thead> <tr> <th>SP</th> <th>Latitude (N)</th> <th>Longitude (E)</th> </tr> </thead> <tbody> <tr> <td>1001</td> <td>32° 46' 30.003"</td> <td>158° 36' 33.582"</td> </tr> <tr> <td>1289</td> <td>32° 56' 31.352"</td> <td>159° 04' 02.948"</td> </tr> </tbody> </table>							SP	Latitude (N)	Longitude (E)	1001	32° 46' 30.003"	158° 36' 33.582"	1289	32° 56' 31.352"	159° 04' 02.948"
SP	Latitude (N)	Longitude (E)																
1001	32° 46' 30.003"	158° 36' 33.582"																
1289	32° 56' 31.352"	159° 04' 02.948"																
			NAVIGATION OFFSET APPLIED															
			NRP - Stern															
			NRP - COS															
			NRP - CNG (na)															
			COS - CNG (na)															
			NRP - CMP (na)															
			Note: LMN line parameter set to great circle line.															
			<div style="display: flex; justify-content: space-around;"> <div>P1 na</div> <div>P2 na</div> </div>															
			Source only															
Posnet locations & remarks: good - none - intermittent			Acoustic remarks:															
Tailbuoy #1	na	Gun string #1	good															
		Gun string #2	good															
		Gun string #3	good															
		Gun string #4	good															
				MGL1004_RL_E.LA source_12m.SCN(001) Langseth.RTCN														
				SP spacing: 162m														
				line status: obs line complete														

Seq# 009		Line Name: MGL1004_ML_A		NAVIGATION		DATE: 2010-08-10		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY / EARTH INSTITUTE																		
		Line Brg : 298.346 °		LINE LOGS		JULIAN DAY: 222																				
CLIENT: Korenaga				SURVEY: Shatsky Rise, Northwest Pacific				MGL1004																		
DC SOL : -2.9m				DEPTH SOL : 5406.5m				NAVIGATION SYSTEM USED: DC-Nav - Primary																		
DC EOL : 51.1m				DEPTH EOL : 5497.0m				NAVIGATION SYSTEM USED: SeaPath 200																		
SMG SOL: 4.5 knots				FEATHER SOL: -0.5 °				NAVIGATION SYSTEM USED: Pos MV																		
SMG EOL: 5.2 knots				FEATHER EOL: 7.8 °				GRAVITY METER: BMG-II: used																		
WEATHER				MAX FEATHER: na °				MAGNETOMETER: GeoMetrics: used																		
WIND SOL: 4.6 knots				12:00 - 16:00 utc =>				MAG DEC USED : 1.28°																		
WIND EOL: 18.5 knots				04:00 - 08:00 utc =>				D. Rieger & M. Zhang																		
SEAS SOL: 1-3				08:00 - 12:00 utc =>																						
SEAS EOL: 1-3 feet				20:00 - 00:00 utc =>																						
SP	TIME(UTC)	EVENT	COMMENTS																							
925	10:26:55	FSP SOL	First shot point: Start of line																							
1008	10:54:10	FOSP	First good shot point																							
1213	11:58:31	OBS	OBS crossing A21																							
1713	14:39:34	OBS	OBS crossing A22																							
2113	16:49:48	OBS	OBS crossing A11																							
2515	19:03:26	OBS	OBS crossing A1f																							
2915	21:10:55	OBS	OBS crossing A1f																							
3375	23:36:25	OBS	OBS crossing A1f																							
3816	01:53:35	OBS	OBS crossing A1f																							
4316	04:36:20	OBS	OBS crossing A1f																							
4576	05:58:34	OBS	OBS crossing A1f																							
4917	07:46:31	OBS	OBS crossing A1f																							
5315	09:52:07	OBS	OBS crossing A1f																							
5617	11:27:32	OBS	OBS crossing A1f																							
5917	13:02:27	OBS	OBS crossing A1f																							
6358	15:21:04	OBS	OBS crossing A2																							
6719	17:14:59	OBS	OBS crossing A2																							
7118	19:19:31	OBS	OBS crossing A2																							
7519	21:26:10	OBS	OBS crossing A2																							
7920	23:33:01	OBS	OBS crossing A2																							
8321	01:39:31	OBS	OBS crossing A2																							
8720	03:45:11	OBS	OBS crossing A2																							
9122	05:52:02	OBS	OBS crossing A1																							
9287	06:44:35	EOL	End of Line																							
<table border="1"> <thead> <tr> <th colspan="3">VESSEL POSITION</th> </tr> <tr> <th>SP</th> <th>Latitude (N)</th> <th>Longitude (E)</th> </tr> </thead> <tbody> <tr> <td>FOSP</td> <td>1008</td> <td>31 57 05.344</td> </tr> <tr> <td>LGSP</td> <td>9287</td> <td>33 39 48.437</td> </tr> <tr> <td></td> <td></td> <td>156 31 06.900</td> </tr> </tbody> </table>									VESSEL POSITION			SP	Latitude (N)	Longitude (E)	FOSP	1008	31 57 05.344	LGSP	9287	33 39 48.437			156 31 06.900			
VESSEL POSITION																										
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NRP - CNG (na)																										
COS - CNG (na)																										
NRP - CMP (na)																										
Note: LMN line parameter set to great circle line.																										
<div style="text-align: center;"> <p>P1 P2</p> <p>MGL1004_ML_A.p190 MGL1004_ML_A.p294</p> </div>																										
<div style="text-align: center;"> <p>Source only</p> </div>																										
Posnet locations & remarks: good - none - intermittent				Acoustic remarks:																						
Tailbuoy #1	na	Gun string #1	good	MGL1004_ML_A.L3 source_9m.SCN(001) Langseth.RTCN																						
		Gun string #2	good	SP spacing: 50m																						
		Gun string #3	good	line status: obs line complete																						
		Gun string #4	good																							

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY EARTH INSTITUTE

Line Name: MGL1004_ML_B

NAVIGATION

DATE: 2010-08-13

Seq# 010

Line Brg : 162.785 °

LINE LOGS

JULIAN DAY: 225

CLIENT: Korenaga				SURVEY: Shatsky Rise, Northwest Pacific		MGL1004
DC SOL : -36.2m		DEPTH SOL : 5524.0m		NAVIGATION SYSTEM USED DC-Nav - Primary		
DC EOL : -24.3m		DEPTH EOL : 5612.0m		NAVIGATION SYSTEM USED SeaPath 200		
SMG SOL: 4.0 knots		FEATHER SOL: 3.5 °		NAVIGATION SYSTEM USED Pos MV		
SMG EOL: 5.1 knots		FEATHER EOL: -9.5 °		GRAVITY METER: BMG-II; used		
<u>WEATHER</u>		MAX FEATHER: 16.8 °		MAGNETOMETER: GeoMetrics; used		
WIND SOL: 6.0 knots				MAG DEC USED : 1.28°		
WIND EOL: 15.0 knots		00:00 – 04:00 utc =>		12:00 – 16:00 utc =>		
SEAS SOL: 1-3		04:00 – 08:00 utc =>		16:00 – 20:00 utc => D. Rieger & M. Zhang		
SEAS EOL: 1-3		08:00 – 12:00 utc =>		20:00 – 00:00 utc =>		
SP		TIME(UTC)	EVENT	<u>COMMENTS</u>		
916	09:53:58	FSP	SOL	First shot point; Start of line		
916	09:53:58	FGSP		First good shot point		
8368	08:08:24	EOL		End of Line		
				<u>VESSEL POSITION</u>		
				SP	Latitude (N) Longitude (E)	
				916	33 41 12.106 156 32 12.506	
				LGSP	8368 33 28 18.560 157 41 55.900	
				<u>NAVIGATION OFFSET APPLIER</u>		
				NRP - Stern		
				NRP - COS		
				NRP - CNG (na)		
				COS - CNG (na)		
				NRP - CMP (na)		
				Note: LMN line parameter set to great circle line.		
				P1	P2	
				MGL1004_ML_B p190	MGL1004_ML_B p294	
				Source only		
<u>Posnet locations & remarks: good - none - intermittent</u>				<u>Acoustic remarks:</u>		
Tailbuoy #1	na	Gun string #1	good	MGL1004_ML_B L1 source_9m SCN(001) Langseth RTCN		
		Gun string #2	good	SP spacing: 50m		
		Gun string #3	good	line status: obs line complete		
		Gun string #4	good			

Seq# 011		Line Name: MGL1004_ML_7		NAVIGATION		DATE: 2010-08-13		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY / EARTH INSTITUTE													
		Line Brg : 281.7 °		LINE LOGS		JULIAN DAY: 225															
CLIENT: Korenaga			SURVEY: Shatsky Rise, Northwest Pacific			MGL1004															
DC SOL : 4.6m			DEPTH SOL : 5621.0m			NAVIGATION SYSTEM USED: C-Nav - Primary															
DC EOL :			DEPTH EOL : 4926.0m			NAVIGATION SYSTEM USED: SeaPath 200															
SMG SOL: 5.0 knots			FEATHER SOL: -51.6 °			NAVIGATION SYSTEM USED: Pos MV															
SMG EOL: 5.0 knots			FEATHER EOL:			GRAVITY METER: BMG-II: used															
WEATHER			MAX FEATHER: na °			MAGNETOMETER: GeoMetrics: used															
WIND SOL: 21.1 knots			00:00 - 04:00 utc =>			12:00 - 16:00 utc =>															
WIND EOL: 26.7 knots			04:00 - 08:00 utc =>			16:00 - 20:00 utc => D. Rieger & M. Zhang															
SEAS SOL: 1-3			08:00 - 12:00 utc =>			20:00 - 00:00 utc =>															
SEAS EOL: 1-2m																					
SP	TIME(UTC)	EVENT	COMMENTS																		
807	11:25:05	FSP SOL	First shot point: Start of line																		
807	11:25:05	FOSP	First good shot point																		
2063	16:36	GPS	Gun Pod 1 GPS down																		
3346	01:52:58	EOL	end of Line																		
			VESSEL POSITION																		
			<table border="1"> <tr> <td>SP</td> <td>Latitude (N)</td> <td>Longitude (E)</td> </tr> <tr> <td>807</td> <td>30 29 00.072</td> <td>157 46 27.125</td> </tr> <tr> <td>FOSP</td> <td></td> <td></td> </tr> <tr> <td>LGSP</td> <td>3346</td> <td>30 42 42.7896 157 27 34.4262</td> </tr> </table>							SP	Latitude (N)	Longitude (E)	807	30 29 00.072	157 46 27.125	FOSP			LGSP	3346	30 42 42.7896 157 27 34.4262
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807	30 29 00.072	157 46 27.125																			
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LGSP	3346	30 42 42.7896 157 27 34.4262																			
			NAVIGATION OFFSET APPLIED																		
			NRP - Stern																		
			NRP - COS																		
			NRP - CNG (na)																		
			COS - CNG (na)																		
			NRP - CMP (na)																		
			Note: LMN line parameter set to great circle line.																		
			<div style="display: flex; justify-content: space-around;"> <div> P1 MGL1004_ML_7 p190 </div> <div> P2 MGL1004_ML_7 p294 </div> </div>																		
			<div style="border: 1px solid black; padding: 5px; display: inline-block;">Source only</div>																		
Posnet locations & remarks: good - none - intermittent			Acoustic remarks:																		
Tailbuoy #1	good	Gun string #1	good																		
		Gun string #2	good																		
		Gun string #3	good																		
		Gun string #4	good																		
				MGL1004_ML_7.LA source_9m.SCN(001) Langseth.RTCN																	
				SP spacing: 50m																	
				line status: obs line complete																	

Seq# 015		Line Name: MGL1004_ML_5		NAVIGATION		DATE: 2010-08-25		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE										
		Line Brg : 78.309 °		LINE LOGS		JULIAN DAY: 237												
CLIENT: Korenaga			SURVEY: Shatsky Rise, Northwest Pacific			MGL1004												
DC SOL : 8.8m			DEPTH SOL : 3914.0m			NAVIGATION SYSTEM USED C-Nav - Primary												
DC EOL : -25.3m			DEPTH EOL : -1.0m			NAVIGATION SYSTEM USED SeaPath 200												
SMG SOL: 5.1 knots			FEATHER SOL: 25.5 °			NAVIGATION SYSTEM USED Pos MV												
SMG EOL: 5.0 knots			FEATHER EOL: 6.5 °			GRAVITY METER: BMG-II: used												
WEATHER			MAX FEATHER: na °			MAGNETOMETER: GeoMetrics: used												
WIND SOL: 11.0 knots			00:00 - 04:00 utc =>			12:00 - 16:00 utc =>												
WIND EOL: 9.1 knots			04:00 - 08:00 utc =>			16:00 - 20:00 utc => D. Rieger & M. Zhang												
SEAS SOL: 1-2			08:00 - 12:00 utc =>			20:00 - 00:00 utc =>												
SEAS EOL: 0-1																		
SP	TIME(UTC)	EVENT	COMMENTS															
1005	02:55:32	FSP SOL	First shot point: Start of line															
1005	02:55:32	FOSP	First good shot point															
4184	20:09:19		Stopped shooting spectra disabled															
4194	20:12:30		Resumed shooting spectra enabled															
4247	20:29:32	LSP	End of Line															
			VESSEL POSITION															
			<table border="1"> <tr> <td>SP</td> <td>Latitude (N)</td> <td>Longitude (E)</td> </tr> <tr> <td>FOSP</td> <td>1005 31° 48' 01.034"</td> <td>156° 33' 07.500"</td> </tr> <tr> <td>LOSP</td> <td>4247 32° 05' 08.453"</td> <td>158° 14' 00.682"</td> </tr> </table>							SP	Latitude (N)	Longitude (E)	FOSP	1005 31° 48' 01.034"	156° 33' 07.500"	LOSP	4247 32° 05' 08.453"	158° 14' 00.682"
SP	Latitude (N)	Longitude (E)																
FOSP	1005 31° 48' 01.034"	156° 33' 07.500"																
LOSP	4247 32° 05' 08.453"	158° 14' 00.682"																
			NAVIGATION OFFSET APPLIED															
			NRP - Stern															
			NRP - COS															
			NRP - CNG (na)															
			COS - CNG (na)															
			NRP - CMP (na)															
			Note: LMN line parameter set to great circle line.															
			<div style="display: flex; justify-content: space-around;"> <div> P1 MGL1004_ML_5.p190 </div> <div> P2 MGL1004_ML_5.p294 </div> </div>															
			Source only															
Posnet locations & remarks: good - none - intermittent			Acoustic remarks:															
Tailbuoy #1	good	Gun string #1	good															
		Gun string #2	good															
		Gun string #3	good															
		Gun string #4	good															
				MGL1004_ML_5.LA source_9m.SCN(001) Langseth.RTCN														
				SP spacing: 50m														
				line status: obs line complete														

Seq# 017		Line Name: MGL1004_ML_CR		NAVIGATION		DATE: 2010-08-26		Lamont-Doherty Earth Observatory																					
		Line Brg : 26.328 °		LINE LOGS		JULIAN DAY: 238		COLUMBIA UNIVERSITY EARTH INSTITUTE																					
CLIENT: Korenaga			SURVEY: Shatsky Rise, Northwest Pacific			MGL1004																							
DC SOL : -23.7m			DEPTH SOL : 2561.0m			NAVIGATION SYSTEM USED C-Nav - Primary																							
DC EOL : 9.6m			DEPTH EOL : 2949.4m			NAVIGATION SYSTEM USED SeaPath 200																							
SMG SOL: 5.7 knots			FEATHER SOL: 99.7 °			NAVIGATION SYSTEM USED Pos MV																							
SMG EOL: 4.6 knots			FEATHER EOL: 3.0 °			GRAVITY METER: BMG-II: used																							
WEATHER			MAX FEATHER: na °			MAGNETOMETER: GeoMetrics: used																							
WIND SOL: 6.3 knots			00:00 - 04:00 utc =>			12:00 - 16:00 utc =>																							
WIND EOL: 4.6 knots			04:00 - 08:00 utc =>			16:00 - 20:00 utc => D. Rieger & M. Zhang																							
SEAS SOL: 1-2			08:00 - 12:00 utc =>			20:00 - 00:00 utc =>																							
SEAS EOL: 01/02/10																													
SP	TIME(UTC)	EVENT	COMMENTS																										
1435	08:38:51	FSP, SOL	First shot point, Start of line																										
1550	09:14:40	FOSP	First good shot point																										
1540	09:11:29	OBS	Cross OBS B2																										
1939	11:17:52	OBS	Cross OBS B3																										
2339	13:25:03	OBS	Cross OBS B4																										
2725	15:27:37	OBS	Cross OBS A12																										
3137	17:37:56	OBS	Cross OBS B5																										
3357	19:43:15	OBS	Cross OBS B6																										
3936	21:50:50	OBS	Cross OBS B7																										
4766	02:21:01	LSP, EOL	Last shot point, End of line																										
<table border="1"> <tr> <td colspan="2">Posnet locations & remarks:</td> <td colspan="2">Acoustic remarks:</td> </tr> <tr> <td>Tailbuoy #1</td> <td>good</td> <td>Gun string #1</td> <td>good</td> </tr> <tr> <td></td> <td></td> <td>Gun string #2</td> <td>good</td> </tr> <tr> <td></td> <td></td> <td>Gun string #3</td> <td>good</td> </tr> <tr> <td></td> <td></td> <td>Gun string #4</td> <td>good</td> </tr> </table>										Posnet locations & remarks:		Acoustic remarks:		Tailbuoy #1	good	Gun string #1	good			Gun string #2	good			Gun string #3	good			Gun string #4	good
Posnet locations & remarks:		Acoustic remarks:																											
Tailbuoy #1	good	Gun string #1	good																										
		Gun string #2	good																										
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		Gun string #4	good																										
				VESEL POSITION <table border="1"> <tr> <td></td> <td>Latitude (N)</td> <td>Longitude (E)</td> </tr> <tr> <td>FOSP</td> <td>1550 32 18 07.067</td> <td>158 19 44.086</td> </tr> <tr> <td>LGSP</td> <td>4766 32 36 45.925</td> <td>159 03 15.729</td> </tr> </table>							Latitude (N)	Longitude (E)	FOSP	1550 32 18 07.067	158 19 44.086	LGSP	4766 32 36 45.925	159 03 15.729											
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FOSP	1550 32 18 07.067	158 19 44.086																											
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				NAVIGATION OFFSET APPLIED NRP - Stern _____ NRP - COS _____ NRP - CNG (na) _____ COS - CNG (na) _____ NRP - CMP (na) _____																									
				Note: LMN line parameter set to great circle line.																									
				<div style="text-align: center;"> P1 P2 MGL1004_ML_CR p190 MGL1004_ML_CR p294 </div>																									
				<div style="text-align: center; border: 1px solid black; padding: 5px;"> Source only </div>																									
				MGL1004_ML_CR source_9m.SCN(001) Langseth.RTCN SP spacing: 50m line status: obs line complete																									

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