

Seq# 001		Line Name: MGL1803OBS01	NAVIGATION	DATE: 2018-02-21	Lamont-Doherty Earth Observatory	
		Line Brg : 292.57 °	LINE LOGS	JULIAN DAY: 52	COLUMBIA UNIVERSITY EARTH INSTITUTE	
		CLIENT: NSF - Gurnis	SURVEY: SISIE	AREA: New Zealand South Island 2D		
DC SOL : 1057.1 m	DEPTH SOL : 1529.0 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary				
DC EOL : -109.1 m	DEPTH EOL : 4096.7 m	NAVIGATION SYSTEM USED: SeaPath 200				
BSP SOL: 5.0 kts	FEATHER SOL: N/A	NAVIGATION SYSTEM USED: C-Nav2000				
BSP EOL: 4.7 kts	FEATHER EOL: N/A	NAVIGATION SYSTEM USED: POSMV				
WEATHER	MAX FEATHER: N/A	GRAVITY METER: BMG-II: used, SN223				
WIND SOL: SW 15.6 kts		MAGNETOMETER: GeoMetrics: used				
WIND EOL: WSW 20.1 kts	shift hours	shift leaders	shift hours	watch personnel	shift hours	watch personnel
SEAS SOL: 1.5m	12:00 - 24:00	Todd Jensvold	00:00 - 12:00	Robert Steinhaus		
SEAS EOL: 2.5 m	12:00 - 24:00	Alan Thompson	00:00 - 12:00	Clive Dugdale		
SP	UTC	EVENT	COMMENTS			
838	10:41	SOL				
1001	13:12	OBS	crossed OBS 120			
1081	14:33	OBS	crossed OBS 119			
1155	15:49	OBS	crossed OBS 118			
1229	17:04	OBS	crossed OBS 117			
1302	18:17	OBS	crossed OBS 116			
1375	19:29	OBS	crossed OBS 115			
1449	20:43	OBS	crossed OBS 114			
1516	21:50	OBS	crossed OBS 113			
1582	22:57	OBS	crossed OBS 112			
1645	00:00	Midnight	JD 53			
1650	00:05	OBS	crossed OBS 111			
1706	01:03	MMO	Power down d/t fur seal sighting Last full volume sp			
1716	01:13	OBS	crossed OBS 110			
1723	01:20	Soft start	Begin soft start			
1738	01:40	Soft start	Soft start complete			
1739	01:41	Full volume	First full volume shot point			
1783	02:26	OBS	crossed OBS 109			
1850	03:34	OBS	crossed OBS 108			
1883	04:09	MMO	Power down d/t fur seal sighting Last full volume sp			
1889	04:15	Soft start	Begin soft start			
1903	04:35	Soft start	Soft start complete			
1904	04:35	Full volume	First full volume shot point			
1917	04:50	OBS	crossed OBS 107			
1984	05:58	OBS	crossed OBS 106			
2049	07:05	OBS	crossed OBS 105			
2105	08:02	MMO	Last full volume sp			
2106	08:03	MMO	Power down d/t fur seal sighting - mitigation gun			
2117	08:06	OBS	crossed OBS 104			
2118	08:18	Soft start	Begin soft start			
2133	08:38	Soft start	Soft start complete			
2134	08:39	Full volume	First full volume shot point			
2184	09:32	OBS	crossed OBS 103			
2251	10:41	OBS	crossed OBS 102			
2318	11:50	OBS	crossed OBS 101			
2355	12:27	EOL				
				VESSEL POSITION		
				Shotpoints	Latitude (N / +)	Longitude (E / +)
				FSP	838 -49° 31' 53.837"	165° 57' 22.601"
				LSP	2355 -48° 43' 40.235"	163° 05' 19.248"
				NAVIGATION OFFSET APPLIED		
				NRP - Stern	29.5m	
				NRP - COS	220.0m	
				NRP - CNG	n/a	
				COS - CNG	n/a	
				NRP - CMP	n/a	
Posnet locations & remarks: good - none - intermittent		acoustics				
Tailbuoy #1	none	Gun string #1	GOOD			
Tailbuoy #2	none	Gun string #2	GOOD			
Tailbuoy #3	none	Gun string #3	none			
Tailbuoy #4	none	Gun string #4	GOOD			
				SP spacing:	150m	
				line status:	Complete	

Seq# 002		Line Name: MGL1803OBS02	NAVIGATION	DATE: 2018-02-27	Lamont-Doherty Earth Observatory	
		Line Brg : 109.335 °	LINE LOGS	JULIAN DAY: 58	COLUMBIA UNIVERSITY EARTH INSTITUTE	
CLIENT: NSF - Gurnis		SURVEY: SISIE	AREA: New Zealand South Island 2D			
DC SOL : -254.0 m	DEPTH SOL : 4449.5 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary				
DC EOL : 290.4 m	DEPTH EOL : 172.2 m	NAVIGATION SYSTEM USED: SeaPath 200				
BSP SOL: 4.7 kts	FEATHER SOL: N/A	NAVIGATION SYSTEM USED: C-Nav2000				
BSP EOL: 4.9 kts	FEATHER EOL: N/A	NAVIGATION SYSTEM USED: POSMV				
WEATHER	MAX FEATHER: N/A	GRAVITY METER: BMG-II: used, SN223				
WIND SOL: SE 3.2 kts	MAGNETOMETER: GeoMetrics: used					
WIND EOL: NE 17.2 kts	shift hours	watch personnel	shift hours	watch personnel	shift hours	watch personnel
SEAS SOL: 1.0 m	12:00 - 24:00	Todd Jensvoid	00:00 - 12:00	Robert Steinhaus		
SEAS EOL: 1.0 m	12:00 - 24:00	Alan Thompson	00:00 - 12:00	Clive Dugdale		
SP	UTC	EVENT	COMMENTS			VESSEL POSITION
2584	13:19	SOL				Shotpoints
2687	15:13	OBS	Crossing OBS201			Latitude (N / +)
2774	16:41	OBS	Crossing OBS202	FSP	2584	-46° 54' 54.884"
2861	18:08	OBS	Crossing OBS203	LSP	4418	-47° 41' 17.892"
2946	19:32	MMO	Power Down for PSO Sighting (SEAL)			Longitude (E / +)
2948	19:34	OBS	Crossing OBS204			163° 16' 24.243"
2965	19:51	Soft Start	Begin Soft Start			
2968	19:54	Soft Start	Aborted Soft Start due to OE in Soft Start Setup			
2969	19:55	Soft Start	Restarted Soft Start			
2980	20:10	MMO	Aborted Soft Start due to PSO Sighting (SEAL)			
2981	20:11	Soft Start	Power Down for PSO Sighting (SEAL)			
2986	20:18	Soft Start	Restarted Soft Start			
3000	20:38	Soft Start	Soft Start Complete			
3001	20:39	Full Volume	First Full Volume Shot			
3028	21:07	OBS	Crossing OBS205			
3108	22:27	OBS	Crossing OBS206			
3188	23:47	OBS	Crossing OBS207			
3201	00:00	Midnight	FSOD 28Feb2018			
3269	01:08	OBS	Crossing OBS208			
3303	01:43	MMO	Power Down for PSO Sighting (SEAL)			
3318	01:59	Soft Start	Begin Soft Start			
3335	02:20	Soft Start	Soft Start Complete			
3336	02:21	Full Volume	First Full Volume Shot			
3336	02:21	OBS	Crossing OBS209			
3401	03:27	OBS	Crossing OBS210			
3467	04:33	OBS	Crossing OBS211			
3534	05:40	OBS	Crossing OBS212			
3601	06:46	OBS	Crossing OBS213			
3674	07:59	OBS	Crossing OBS214			
3751	09:16	OBS	Crossing OBS215			
3823	10:29	OBS	Crossing OBS216			
3897	11:43	OBS	Crossing OBS217			
3977	13:04	OBS	Crossing OBS218			
4057	14:25	OBS	Crossing OBS219			
4137	15:45	OBS	Crossing OBS220			
4217	17:03	OBS	Crossing OBS221			
4298	18:19	MMO	Power Down for PSO Sighting			
4298	18:25	OBS	Crossing OBS222			
4315	18:54	Soft Start	Begin Soft Start			
4327	19:14	Full Volume	Soft Start Complete / First Full Volume Shot			
4378	20:07	OBS	Crossing OBS223			
4418		EOL				
Posnet locations & remarks: good - none - intermittent			acoustics			
Tailbuoy #1	none	Gun string #1	GOOD			
Tailbuoy #2	none	Gun string #2	GOOD			
Tailbuoy #3	none	Gun string #3	none			
Tailbuoy #4	none	Gun string #4	None			
				SP spacing:	150m	
				line status:	Complete	

Seq# 006		Line Name: MGL1803MCS23a		NAVIGATION		DATE: 2018-03-06		Lamont-Doherty Earth Observatory		
		Line Brg : 194.682 °		LINE LOGS		JULIAN DAY: 65		COLUMBIA UNIVERSITY EARTH INSTITUTE		
CLIENT: NSF - Gurnis		SURVEY:		SISIE		AREA: South Island - New Zealand				
DC SOL:	-26.7 m	DEPTH SOL :	2620.0 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL:	-5.6 m	DEPTH EOL :	3299.9 m	NAVIGATION SYSTEM USED: SeaPath 330						
BSP SOL:	4.5 kts	FEATHER SOL:	38.6 °	NAVIGATION SYSTEM USED: C-Nav2000						
BSP EOL:	3.8 kts	FEATHER EOL:	-11.7 °	NAVIGATION SYSTEM USED: POSMV						
WEATHER		MAX FEATHER:	38.6 °	GRAVITY METER: BMG-II: used, SN223						
		MAGNETOMETER: GeoMetrics: used								
WIND SOL:	w 22.9 kts									
WIND EOL:	W 18.2 kts	shift hours	shift leaders	shift hours	watch personnel	shift hours	watch personnel			
SEAS SOL:	2.5 m	12:00 - 24:00	Todd Jensvold	00:00 - 12:00	Robert Steinhaus					
SEAS EOL:	5.0 m	12:00 - 24:00	Alan Thompson	00:00 - 12:00	Clive Dugdale					
SP	UTC	EVENT	COMMENTS			VESSEL POSITION				
15873	11:52	SOL	Start of line			Shotpoints Latitude (S) Longitude (E)				
17020	19:10	Streamer	Streamer Tow Depth Change from 12m to 18m due to weather Conditions Winds WSW 23.1 Kts Seas 4-5m			FSP	15873	47° 20' 17.482"	165° 58' 26.947"	
17362	21:17	MMO	Power down for PSO Sighting (SEAL)			LSP	19369	48° 59' 26.540"	165° 22' 09.165"	
17364	21:18	MMO	First Mitigation Shot Point							
17406	21:33	Soft Start	Source off for Soft Start Configuration							
17409	21:34	Soft Start	Begin Soft Start							
17466	21:54	Soft Start	Soft Start Complete							
17727	23:26	MMO	Power down for PSO Sighting (SEAL), last full volume shot point			NAVIGATION OFFSET APPLIED				
17728	23:27	MMO	Missed shot while reconfiguring digishot			NRP - Stern 29.5m				
17729	23:27	MMO	First Mitigation Shot Point			NRP - COS 220.0m				
17773	23:43	Soft Start	Begin Soft Start			NRP - CNG 422.00m				
17820	0:00	Midnight	3/7/2018			COS - CNG 202.00m				
17830	00:03	Soft Start	Soft Start Complete			NRP - CMP 321.00m				
19369	09:49	EEOL	Line terminated d/t source string tangle caused by bad weather							
Posnet locations & remarks: good - none - intermittent										
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good						
Tailbuoy #2	none	Gun string #2	GOOD	Acoustic good						
Tailbuoy #3	none	Gun string #3	None	Acoustic good						
Tailbuoy #4	none	Gun string #4	None	Acoustic good						
						SP spacing:	50.0m			
						line status:	Complete			

Seq# 007		Line Name: MGL1803MCS23b		NAVIGATION		DATE: 2018-03-07		Lamont-Doherty Earth Observatory	
		Line Brg : 194.682 °		LINE LOGS		JULIAN DAY: 66		COLUMBIA UNIVERSITY EARTH INSTITUTE	
CLIENT: NSF - Gurnis		SURVEY:		SISIE		AREA: South Island - New Zealand			
DC SOL:	22.1 m	DEPTH SOL :	3624.7 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary					
DC EOL:	-59.1 m	DEPTH EOL :	3578.2 m	NAVIGATION SYSTEM USED: SeaPath 330					
BSP SOL:	3.9 kts	FEATHER SOL:	-11.4 °	NAVIGATION SYSTEM USED: C-Nav2000					
BSP EOL:	4.2 kts	FEATHER EOL:	06.6 °	NAVIGATION SYSTEM USED: POSMV					
WEATHER		MAX FEATHER:	-20.9 °	GRAVITY METER: BMG-II: used, SN223					
WIND SOL: W 27.1 kts		MAGNETOMETER: GeoMetrics: used							
WIND EOL:	WS 21 kts	shift hours	shift leaders	shift hours	watch personnel	shift hours	watch personnel		
SEAS SOL:	6.0 m	12:00 - 24:00	Todd Jensvold	00:00 - 12:00	Robert Steinhaus				
SEAS EOL:	5.0 m	12:00 - 24:00	Alan Thompson	00:00 - 12:00	Clive Dugdale				
SP	UTC	EVENT	COMMENTS						
19359	21:11	SOL	Start of line						
19714	00:00	Midnight	3/8/2018						
20434	05:33	Last good	Power down for pinniped sighting, last full volume shot point						
20435	05:33	MMO	first mitigation shot point						
20477	05:51	Source	Begin ramp up						
20481	05:53	Source	Cancel ramp up d/t configuration error, 120 cubic inches 3 guns						
20482	05:53	Source	Begin ramp up						
20528	06:13	Source	Ramp up complete						
20529	06:13	First good	First good shot point at full volume						
20885	08:42	EOL	End of Line						
Posnet locations & remarks: good - none - intermittent									
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good					
Tailbuoy #2	none	Gun string #2	GOOD	Acoustic good					
Tailbuoy #3	none	Gun string #3	None	Acoustic good					
Tailbuoy #4	none	Gun string #4	None	Acoustic good					
				SP spacing: 50.0m					
				line status:		Ccomplete			

VESSEL POSITION		
Shotpoints	Latitude (S)	Longitude (E)
FSP	21:11 48° 59' 10.675"	165° 22' 14.269"
LSP	8:42 49° 38' 54.534"	165° 05' 46.309"

NAVIGATION OFFSET APPLIED	
NRP - Stern	29.5m
NRP - COS	220.0m
NRP - CNG	422.00m
COS - CNG	202.00m
NRP - CMP	321.00m

Seq# 009		Line Name: MGL1803MCS14	NAVIGATION	DATE: 2018-03-08	Lamont-Doherty Earth Observatory		
		Line Brg : 292.5 °	LINE LOGS	JULIAN DAY: 67	COLUMBIA UNIVERSITY EARTH INSTITUTE		
CLIENT: NSF - Gurnis		SURVEY:	SISIE	AREA: South Island - New Zealand			
DC SOL:	2.6 m	DEPTH SOL :	3106.7 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary			
DC EOL:	-209.6 m	DEPTH EOL :	4118.0 m	NAVIGATION SYSTEM USED: SeaPath 330			
BSP SOL:	4.6 kts	FEATHER SOL:	-18.7 °	NAVIGATION SYSTEM USED: C-Nav2000			
BSP EOL:	4.4 kts	FEATHER EOL:	06.9 °	NAVIGATION SYSTEM USED: POSMV			
WEATHER		MAX FEATHER:	-18.7 °	GRAVITY METER: BMG-II: used, SN223			
WIND SOL: SSE 12.5 kts				MAGNETOMETER: GeoMetrics: used			
WIND EOL:	W 16.5 kts	shift hours	shift leaders	shift hours	watch personnel	shift hours watch personnel	
SEAS SOL:	5.0 m	12:00 - 24:00	Todd Jensvold	00:00 - 12:00	Robert Steinhaus		
SEAS EOL:	2.0 m	12:00 - 24:00	Alan Thompson	00:00 - 12:00	Clive Dugdale		
SP	UTC	EVENT	COMMENTS			VESSEL POSITION	
21956	19:23	SOL	Start of line - Tail of Streamer on Surface at Start of Line			Shotpoints Latitude (S) Longitude (E)	
22014	19:44	Streamer	All of the Streamer is at depth of 18m			FSP	21956 49° 27' 49.686" 165° 40' 02.054
22645	00:00	Midnight	3/9/2018			LSP	26080 48° 43' 32.824" 163° 04' 37.010"
22912	01:46	Last Good	Last full volume sp, power down d/t whale			NAVIGATION OFFSET APPLIED	
22915	01:47	Mitigation	First mitigation sp, missed 22913,22914 d/t reconfiguring digishot			NRP - Stern	29.5m
22986	02:17	Mitigation	Last mitigation sp			NRP - COS	220.0m
22991	02:19	Source	Begin ramp up. Missed SP 22987-22990 d/t reconfiguring digishot			NRP - CNG	422.00m
23039	02:40	Source	Ramp up complete			COS - CNG	202.00m
23040	02:40	First good	first full volume sp			NRP - CMP	321.00m
23456	05:25	Last Good	Last full volume sp, power down d/t penguin				
23458	05:26	Mitigation	First mitigation sp, missed 23457 d/t reconfiguring digishot				
23491	05:40	Mitigation	Last mitigation sp				
23493	05:40	Source	Begin ramp up. Missed SP 23492 d/t reconfiguring digishot				
23541	06:00	Source	Ramp up complete				
23542	06:00	First good	first full volume sp				
23845	07:59	Streamer	Set streamer depth to 14m, swell noise not as bad, good streamer control				
26080	22:35	EOL	End of Line				
Posnet locations & remarks: good - none - intermittent							
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good			
Tailbuoy #2	none	Gun string #2	GOOD	Acoustic good			
Tailbuoy #3	none	Gun string #3	None	Acoustic good			
Tailbuoy #4	none	Gun string #4	None	Acoustic good			
				SP spacing:	50.0m		
				line status:	Complete		

Seq# 011		Line Name: MGL1803MCS17b		NAVIGATION		DATE: 2018-03-11		 																										
		Line Brg : 43.058 °		LINE LOGS		JULIAN DAY: 70																												
CLIENT: NSF - Gurnis		SURVEY: SISIE		AREA: South Island - New Zealand																														
DC SOL: -10.5 m		DEPTH SOL : 2622.1 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																														
DC EOL: 1664.3 m		DEPTH EOL : 1667.0 m		NAVIGATION SYSTEM USED: SeaPath 330																														
BSP SOL: 5.2 kts		FEATHER SOL: 24.3 °		NAVIGATION SYSTEM USED: C-Nav2000																														
BSP EOL: 5.5 kts		FEATHER EOL: -05.6 °		NAVIGATION SYSTEM USED: POSMV																														
WEATHER		MAX FEATHER: 24.3 °		GRAVITY METER: BMG-II: used, SN223																														
WIND SOL: NW 38.0 kts				MAGNETOMETER: GeoMetrics: used																														
WIND EOL: NW 42.4 kts		<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>																										
SEAS SOL: 3.5 m		12:00 - 24:00		Todd Jenvold		00:00 - 12:00		Robert Steinhaus																										
SEAS EOL: 6 m		12:00 - 24:00		Alan Thompson		00:00 - 12:00		Clive Dugdale																										
SP		UTC		EVENT		COMMENTS																												
28039		03:07		SOL		Start of line - Streamer depth 14m @SOL, Preplot line moved d/t sea conditions																												
28295		04:31		Streamer		Streamer depth moved to 18m																												
29466		10:52		Source		Sub-Arrays 1 and 2 Disabled to Recover for weather Source Volume 3120 in3																												
						<table border="1" style="margin: auto;"> <thead> <tr><th colspan="2">VESSEL POSITION</th></tr> <tr><th>Shotpoints</th><th>Latitude (S)</th><th>Longitude (E)</th></tr> </thead> <tbody> <tr><td>FSP</td><td>28039</td><td>47° 31' 22.476"</td><td>165° 45' 44.253"</td></tr> <tr><td>LSP</td><td>29718</td><td>46° 58' 43.463"</td><td>166° 31' 53.311"</td></tr> </tbody> </table> <table border="1" style="margin: auto;"> <thead> <tr><th colspan="2">NAVIGATION OFFSET APPLIED</th></tr> </thead> <tbody> <tr><td>NRP - Stern</td><td>29.5m</td></tr> <tr><td>NRP - COS</td><td>220.0m</td></tr> <tr><td>NRP - CNG</td><td>405.20m</td></tr> <tr><td>COS - CNG</td><td>185.20m</td></tr> <tr><td>NRP - CMP</td><td>312.60m</td></tr> </tbody> </table>				VESSEL POSITION		Shotpoints	Latitude (S)	Longitude (E)	FSP	28039	47° 31' 22.476"	165° 45' 44.253"	LSP	29718	46° 58' 43.463"	166° 31' 53.311"	NAVIGATION OFFSET APPLIED		NRP - Stern	29.5m	NRP - COS	220.0m	NRP - CNG	405.20m	COS - CNG	185.20m	NRP - CMP	312.60m
VESSEL POSITION																																		
Shotpoints	Latitude (S)	Longitude (E)																																
FSP	28039	47° 31' 22.476"	165° 45' 44.253"																															
LSP	29718	46° 58' 43.463"	166° 31' 53.311"																															
NAVIGATION OFFSET APPLIED																																		
NRP - Stern	29.5m																																	
NRP - COS	220.0m																																	
NRP - CNG	405.20m																																	
COS - CNG	185.20m																																	
NRP - CMP	312.60m																																	
29718		12:11		EOL		End of line																												
Posnet locations & remarks: good - none - intermittent																																		
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good																														
Tailbuoy #2	none	Gun string #2	Failed	Acoustic good																														
Tailbuoy #3	none	Gun string #3	None	Acoustic good																														
Tailbuoy #4	none	Gun string #4	Failed	Acoustic good																														
						SP spacing: 50.0m																												
						line status:		Complete																										

Seq# 012		Line Name: MGL1803MCS17c		NAVIGATION		DATE: 2018-03-17		Lamont-Doherty Earth Observatory	
		Line Brg : 51.005 °		LINE LOGS		JULIAN DAY: 76		COLUMBIA UNIVERSITY EARTH INSTITUTE	
CLIENT: NSF - Gurnis		SURVEY: SISIE		AREA: South Island - New Zealand					
DC SOL:	-9.5 m	DEPTH SOL :	1587.6 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary					
DC EOL:	-295.4 m	DEPTH EOL :	88.0 m	NAVIGATION SYSTEM USED: SeaPath 330					
BSP SOL:	5.0 kts	FEATHER SOL:	-04.8 °	NAVIGATION SYSTEM USED: C-Nav2000					
BSP EOL:	5.6 kts	FEATHER EOL:	12.6 °	NAVIGATION SYSTEM USED: POSMV					
WEATHER		MAX FEATHER: 12.6 °		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: E 15.6 kts				MAGNETOMETER: GeoMetrics: used					
WIND EOL:	ENE 16.1 kts	shift hours	shift leaders	shift hours	watch personnel	shift hours	watch personnel		
SEAS SOL:	3.5 m	12:00 - 24:00	Todd Jensvold	00:00 - 12:00	Robert Steinhaus				
SEAS EOL:	2.0 m	12:00 - 24:00	Alan Thompson	00:00 - 12:00	Clive Dugdale				
SP	UTC	EVENT	COMMENTS						
30910	02:12	SOL	Start of line - Streamer depth 14m @SOL						
30986	02:38	Streamer	Streamer depth set to 18m to see if noise is lower						
31025	02:51	Streamer	Streamer depth set back to 14m						
31700	06:26	Source	Last full volume sp						
31701	06:26	Source	string 3 spared out to repair tow point, 4950cubic inches, 27 guns						
31722	06:32	Source	wait on array 3 instead switch to array 4 out to repair tow point, volume 4950 cubic inches 27 guns						
31751	06:41	Source	array 4 tow point repaired and online, array 3 spared out for repair, 4950 cubic inches 27 guns						
31780	06:50	Source	array 3 repaired and online, 6600 cubic inches 36 guns						
32830	12:09	EOL	End of line						
Posnet locations & remarks: good - none - intermittent									
Tailbuoy #1	Failed	Gun string #1	GOOD	Acoustic good					
Tailbuoy #2	none	Gun string #2	GOOD	Acoustic good					
Tailbuoy #3	none	Gun string #3	None	Acoustic good					
Tailbuoy #4	none	Gun string #4	GOOD	Acoustic good					
				SP spacing: 50.0m					
				line status:		Complete			

VESSEL POSITION		
Shotpoints	Latitude (S)	Longitude (E)
FSP 30910	47° 03' 00.530"	166° 24' 29.339"
LSP 32830	46° 30' 30.563"	167° 22' 41.677"

NAVIGATION OFFSET APPLIED	
NRP - Stern	29.5m
NRP - COS	220.0m
NRP - CNG	405.20m
COS - CNG	185.20m
NRP - CMP	312.60m

Seq# 014		Line Name: MGL1803MCS19a		NAVIGATION		DATE: 2018-03-17		Lamont-Doherty Earth Observatory													
		Line Brg : 270 °		LINE LOGS		JULIAN DAY: 76		COLUMBIA UNIVERSITY EARTH INSTITUTE													
CLIENT: NSF - Gurnis		SURVEY:		SISIE		AREA: South Island - New Zealand															
DC SOL: -128.8 m		DEPTH SOL : 68.1 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																	
DC EOL: -14.9 m		DEPTH EOL : 1506.9 m		NAVIGATION SYSTEM USED: SeaPath 330																	
BSP SOL: 5.4 kts		FEATHER SOL: -49.8 °		NAVIGATION SYSTEM USED: C-Nav2000																	
BSP EOL: 5.0 kts		FEATHER EOL: 03.3 °		NAVIGATION SYSTEM USED: POSMV																	
WEATHER		MAX FEATHER: -49.8 °		GRAVITY METER: BMG-II: used, SN223																	
WIND SOL: NE 10.5 kts				MAGNETOMETER: GeoMetrics: used																	
WIND EOL: N 22.6 kts		<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>													
SEAS SOL: 1.5 m		12:00 - 24:00		Todd Jensvold		00:00 - 12:00		Robert Steinhaus													
SEAS EOL: 3.0 m		12:00 - 24:00		Alan Thompson		00:00 - 12:00		Clive Dugdale													
SP	UTC	EVENT	COMMENTS																		
34013	13:54	SOL	Start of line - Streamer depth 14m @SOL																		
35998	00:00	Midnight	18 March 2018																		
36470	03:00	EOL	End of line																		
						<table border="1"> <thead> <tr> <th colspan="3">VESSEL POSITION</th> </tr> <tr> <th>Shotpoints</th> <th>Latitude (S)</th> <th>Longitude (E)</th> </tr> </thead> <tbody> <tr> <td>FSP 34013</td> <td>46° 21' 14.391"</td> <td>167° 17' 58.822"</td> </tr> <tr> <td>LSP 36470</td> <td>46° 49' 12.335"</td> <td>165° 42' 17.160"</td> </tr> </tbody> </table>				VESSEL POSITION			Shotpoints	Latitude (S)	Longitude (E)	FSP 34013	46° 21' 14.391"	167° 17' 58.822"	LSP 36470	46° 49' 12.335"	165° 42' 17.160"
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Posnet locations & remarks: good - none - intermittent																					
Tailbuoy #1	Failed	Gun string #1	GOOD	Acoustic good																	
Tailbuoy #2	none	Gun string #2	GOOD	Acoustic good																	
Tailbuoy #3	none	Gun string #3	None	Acoustic good																	
Tailbuoy #4	none	Gun string #4	GOOD	Acoustic good																	
				SP spacing: 50.0m		line status: Complete															