



Seq# 001		Line Name: MGL1701MC01		NAVIGATION		DATE: 2017-01-13		Lamont-Doherty Earth Observatory																	
		Line Brg : 109.7 °		LINE LOGS		JULIAN DAY: 13		COLUMBIA UNIVERSITY EARTH INSTITUTE																	
CLIENT: BANGS / UTIG/NSF			SURVEY:		CEVICHE		AREA: Southern Chile																		
DC SOL: 41.9 m		DEPTH SOL : 5132.3 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																					
DC EOL: 28.4 m		DEPTH EOL : 1356.8 m		NAVIGATION SYSTEM USED: SeaPath 330																					
BSP SOL: 3.9 kts		FEATHER SOL: -31.0 °		NAVIGATION SYSTEM USED: C-Nav2000																					
BSP EOL: 3.7 kts		FEATHER EOL: 06.8 °		NAVIGATION SYSTEM USED: POSMV																					
WEATHER		MAX FEATHER: -31.2 °		GRAVITY METER: BMG-II: used, SN223																					
WIND SOL: 22.9 kts				MAGNETOMETER: GeoMetrics: used																					
WIND EOL: 0.9 kts		<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>																	
SEAS SOL: 1.0 m		12:00 - 24:00		Gilles Guerin		00:00 - 12:00		Todd Jensvold																	
SEAS EOL: 1.0 m		12:00 - 24:00		David Martinson		00:00 - 12:00		Alan Thompson																	
SP	UTC	EVENT	COMMENTS																						
601	00:06	SOL	Start of line																						
716	0:42	XBT T5	in warm eddy, did not reach max dept																						
1000	02:14	FFSP	First full fold shot poin																						
1015	02:19	XBT T5	in warm eddy, did not reach max dept																						
1547	5:11	XBT T7	Reach max depth																						
1547	5:17	XBT T5	Reach max depth - increase in temperature at 1050 m																						
2890	12:22	XBT T5	Reach max depth																						
2943	12:40	EOL	End of line																						
								<table border="1"> <thead> <tr> <th colspan="4">VESSEL POSITION</th> </tr> <tr> <th>Shotpoints</th> <th>Latitude (S)</th> <th colspan="2">Longitude (W)</th> </tr> </thead> <tbody> <tr> <td>FSP 601</td> <td>31° 19' 59.515"</td> <td colspan="2">72° 45' 52.412"</td> </tr> <tr> <td>LSP 2943</td> <td>31° 20' 00.025"</td> <td colspan="2">71° 50' 30.247"</td> </tr> </tbody> </table>		VESSEL POSITION				Shotpoints	Latitude (S)	Longitude (W)		FSP 601	31° 19' 59.515"	72° 45' 52.412"		LSP 2943	31° 20' 00.025"	71° 50' 30.247"	
VESSEL POSITION																									
Shotpoints	Latitude (S)	Longitude (W)																							
FSP 601	31° 19' 59.515"	72° 45' 52.412"																							
LSP 2943	31° 20' 00.025"	71° 50' 30.247"																							
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NRP - CMP	315.00m																								
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	GOOD	Acoustic good																					
						SP spacing: 37.5m																			
				line status:		Complete																			

Line Name: MGL1701MC03		NAVIGATION		DATE: 2017-01-14		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE																
Seq # 003		LINE LOGS		JULIAN DAY: 14																		
Line Brg :		CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile														
DC SOL:	18.4 m	DEPTH SOL :	1455.8 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary																		
DC EOL:	-6.6 m	DEPTH EOL :	5774.3 m	NAVIGATION SYSTEM USED: SeaPath 330																		
BSP SOL:	4.1 kts	FEATHER SOL:	35.9 °	NAVIGATION SYSTEM USED: C-Nav2000																		
BSP EOL:	3.4 kts	FEATHER EOL:	05.4 °	NAVIGATION SYSTEM USED: POSMV																		
WEATHER			MAX FEATHER:	35.9 °	GRAVITY METER: BMG-II: used, SN223																	
WIND SOL:	12.3 kts				MAGNETOMETER: GeoMetrics: used																	
WIND EOL:	22.8 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>															
SEAS SOL:	1.5 m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold																	
SEAS EOL:	1.5m	12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson																	
SP	UTC	EVENT	COMMENTS				VESSEL POSITION															
998	7:43:07	SOL	Start of line				Shotpoints	Latitude (S)	Longitude (W)													
1023	7:50:34	XBT T5	Launch XBT				FSP	998	30° 59' 59.413"	71° 53' 44.900"												
2082	13:01	XBT T5	Launch XBT; reached maximum depth but strange results, another XBT launched shortly after				LSP	2990	30° 59' 59.323"	72° 40' 40.598"												
2179	13:33	XBT T5	Launch XBT; reached maximum depth																			
2889	17:37	XBT T5	Launch XBT; hit warm spot (~700m)																			
2990	18:14:45	EOL	End of line				<table border="1"> <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>205.0m</td> </tr> <tr> <td>NRP - CNG</td> <td>425.00m</td> </tr> <tr> <td>COS - CNG</td> <td>220.0m</td> </tr> <tr> <td>NRP - CMP</td> <td>315.00m</td> </tr> </tbody> </table>				NAVIGATION OFFSET APPLIED		NRP - Stern	29.5m	NRP - COS	205.0m	NRP - CNG	425.00m	COS - CNG	220.0m	NRP - CMP	315.00m
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NRP - Stern	29.5m																					
NRP - COS	205.0m																					
NRP - CNG	425.00m																					
COS - CNG	220.0m																					
NRP - CMP	315.00m																					

Posnet locations & remarks: good - none - intermittent				Acoustic good	SP spacing: 37.5m	
Tailbuoy #1	Good	Gun string #1	GOOD			
Tailbuoy #2	none	Gun string #2	GOOD			line status: Complete
Tailbuoy #3	none	Gun string #3	None			
Tailbuoy #4	none	Gun string #4	GOOD			

Seq # 004		Line Name: MGL1701MC04		NAVIGATION		DATE: 2017-01-14		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE	
		Line Brg : 4.5 °		LINE LOGS		JULIAN DAY: 14			
		CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile	
DC SOL: -20.2 m		DEPTH SOL : 6267.6 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary					
DC EOL: 24.5 m		DEPTH EOL : 6192.0 m		NAVIGATION SYSTEM USED: SeaPath 330					
BSP SOL: 4.2 kts		FEATHER SOL: -18.5 °		NAVIGATION SYSTEM USED: C-Nav2000					
BSP EOL: 3.5 kts		FEATHER EOL: -11.3 °		NAVIGATION SYSTEM USED: POSMV					
WEATHER		MAX FEATHER: -18.5 °		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: 29.6 kts				MAGNETOMETER: GeoMetrics: used					
WIND EOL: 19.4 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		Gilles Guerin		00:00 - 12:00		Todd Jensvold	
SEAS EOL: 2.5 m		12:00 - 24:00		David Martinson		00:00 - 12:00		Alan Thompson	
SP		UTC		EVENT		COMMENTS		VESSEL POSITION	
914		23:10		SOL		Start of line		Shotpoints	
1001		23:34		FFSP		First full fold shot point		Latitude (S)	
1092		00:00		Midnight				Longitude (W)	
								FSP 914 31° 01' 39.074"	
								LSP 3372 30° 11' 51.442"	
								72° 35' 54.395"	
								72° 32' 23.754"	
								NAVIGATION OFFSET APPLIED	
								NRP - Stern 29.5m	
								NRP - COS 205.0m	
								NRP - CNG 425.00m	
								COS - CNG 220.0m	
								NRP - CMP 315.00m	
3372		11:31		EOL		End of line			

Posnet locations & remarks: good - none - intermittent				Acoustic good	SP spacing: 37.5m	
Tailbuoy #1	Good	Gun string #1	GOOD			
Tailbuoy #2	none	Gun string #2	GOOD			line status: Complete
Tailbuoy #3	none	Gun string #3	None			
Tailbuoy #4	none	Gun string #4	GOOD			

Line Name: MGL1701MC05		NAVIGATION		DATE: 2017-01-15		 																
Seq # 005		Line Brg : 93.9 °		LINE LOGS				JULIAN DAY: 15														
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile																
DC SOL: 14.1 m	DEPTH SOL : 6223.9 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary																				
DC EOL: 24.5 m	DEPTH EOL : 3029.2 m	NAVIGATION SYSTEM USED: SeaPath 330																				
BSP SOL: 3.4 kts	FEATHER SOL: -02.9 °	NAVIGATION SYSTEM USED: C-Nav2000																				
BSP EOL: 4.2 kts	FEATHER EOL: 00.4 °	NAVIGATION SYSTEM USED: POSMV																				
WEATHER		MAX FEATHER: 15.1 °		GRAVITY METER: BMG-II: used, SN223																		
WIND SOL: 17.2 kts	MAGNETOMETER: GeoMetrics: used																					
WIND EOL: 17.5 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>																
SEAS SOL: 1.5 m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold																		
SEAS EOL: 1.0 m	12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson																		
SP	UTC	EVENT	COMMENTS				VESSEL POSITION															
927	15:53	SOL	Start of line																			
969	16:07		XBT T5 launch, warm layer at ~800m				Shotpoints															
1076	16:43		XBT T7 launch				Latitude (S)															
1087	16:47		XBT T5 launch, reach max depth				Longitude (W)															
1727	20:00:03		XBT T5 launch				FSP	927	30° 16' 03.025"	72° 34' 18.403"												
1745	20:05:00		XBT T5 max depth				LSP	2584	30° 16' 50.851"	71° 55' 41.749"												
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NAVIGATION OFFSET APPLIED																						
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NRP - COS	205.0m																					
NRP - CNG	425.00m																					
COS - CNG	220.0m																					
NRP - CMP	315.00m																					
2584	0:02	EOL	End of line																			

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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	GOOD	Acoustic good			
					SP spacing: 37.5m		
					line status: Complete		

Line Name: MGL1701MC06		NAVIGATION		DATE: 2017-01-16		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE														
Seq # 006		Line Brg : 182.0 °		LINE LOGS				JULIAN DAY: 16												
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile														
DC SOL: 28.6 m	DEPTH SOL : 3218.0 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary																		
DC EOL: 4.3 m	DEPTH EOL : 2982.4 m	NAVIGATION SYSTEM USED: SeaPath 330																		
BSP SOL: 3.3 kts	FEATHER SOL: 07.2 °	NAVIGATION SYSTEM USED: C-Nav2000																		
BSP EOL: 4.0 kts	FEATHER EOL: 08.6 °	NAVIGATION SYSTEM USED: POSMV																		
WEATHER		MAX FEATHER: 08.6 °		GRAVITY METER: BMG-II: used, SN223																
WIND SOL: 18.9 kts	MAGNETOMETER: GeoMetrics: used																			
WIND EOL: 14.9 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>														
SEAS SOL: 2 m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold																
SEAS EOL: 2.0 m	12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson																
SP	UTC	EVENT	COMMENTS				VESSEL POSITION													
946	5:21	SOL	Start of line				Shotpoints	Latitude (S)												
990	5:36		XBT T5, failed at -800m					Longitude (W)												
1128	6:22		XBT T5, failed at -800m				FSP	946												
1820		RGPS	RGPS gun string 2 failed					30° 15' 44.424"												
2190	11:38	MAMMAL	Power down airguns, marine animal				LSP	5040												
2249	11:56	MAMMAL	First full volume shot point					31° 38' 46.326"												
4554	00:00	Midnight	New JD-017					72° 03' 51.107"												
5040	2:29	EOL	End of line				<table border="1"> <tr> <th colspan="2">NAVIGATION OFFSET APPLIED</th> </tr> <tr> <td>NRP - Stern</td> <td>29.5m</td> </tr> <tr> <td>NRP - COS</td> <td>205.0m</td> </tr> <tr> <td>NRP - CNG</td> <td>425.00m</td> </tr> <tr> <td>COS - CNG</td> <td>220.0m</td> </tr> <tr> <td>NRP - CMP</td> <td>315.00m</td> </tr> </table>		NAVIGATION OFFSET APPLIED		NRP - Stern	29.5m	NRP - COS	205.0m	NRP - CNG	425.00m	COS - CNG	220.0m	NRP - CMP	315.00m
NAVIGATION OFFSET APPLIED																				
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NRP - COS	205.0m																			
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COS - CNG	220.0m																			
NRP - CMP	315.00m																			

<div style="border: 1px dotted black; height: 100px; width: 100%;"></div>						
Posnet locations & remarks: good - none - intermittent						
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good		
Tailbuoy #2	none	Gun string #2	Intermittent	Acoustic good		
Tailbuoy #3	none	Gun string #3	None	Acoustic good		
Tailbuoy #4	none	Gun string #4	GOOD	Acoustic good		
					SP spacing:	37.5m
					line status:	Complete

Line Name: MGL1701MC06A		NAVIGATION		DATE: 2017-01-17		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE																
Seq # 007		Line Brg : 182.0 °		LINE LOGS				JULIAN DAY: 17														
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile																
DC SOL: 1.2 m	DEPTH SOL : 2993.7 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary																				
DC EOL: -0.9 m	DEPTH EOL : 3041.7 m	NAVIGATION SYSTEM USED: SeaPath 330																				
BSP SOL: 3.8 kts	FEATHER SOL: 02.7 °	NAVIGATION SYSTEM USED: C-Nav2000																				
BSP EOL: 3.2 kts	FEATHER EOL: 10.8 °	NAVIGATION SYSTEM USED: POSMV																				
WEATHER		MAX FEATHER:		GRAVITY METER: BMG-II: used, SN223																		
WIND SOL: 12.1 kts	MAGNETOMETER: GeoMetrics: used																					
WIND EOL: 17.5 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>																
SEAS SOL: 1.0 m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold																		
SEAS EOL: 1.5 m	12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson																		
SP	UTC	EVENT	COMMENTS				VESSEL POSITION															
5088	2:44	SOL	Start of line: Firing arrays 3&4@ SOL 3300cubic inches 18 guns, source layback in Spectra 235m				Shotpoints	Latitude (S)	Longitude (W)													
5328	03:56	Source	Firing all gun strings: 1&2 COS 235m depth 9m.....gun strings 3&4 COS 205m depth 7m				FSP	5088	31° 39' 44.725"	72° 03' 53.458"												
5332	03:57	Source	Gun strings 3&4 spared and recovered. Firing Strings 1&2 only COS 235m depth 9m				LSP	5768	31° 53' 33.049"	72° 04' 28.449"												
5705	06:00	Source	Gun string 4 deployed and online, 4950 cubic inches, COS 235m depth 9m				<table border="1"> <tr> <th colspan="2">NAVIGATION OFFSET APPLIED</th> </tr> <tr> <td>NRP - Stern</td> <td>29.5m</td> </tr> <tr> <td>NRP - COS</td> <td>205.0m</td> </tr> <tr> <td>NRP - CNG</td> <td>425.00m</td> </tr> <tr> <td>COS - CNG</td> <td>220.0m</td> </tr> <tr> <td>NRP - CMP</td> <td>315.00m</td> </tr> </table>				NAVIGATION OFFSET APPLIED		NRP - Stern	29.5m	NRP - COS	205.0m	NRP - CNG	425.00m	COS - CNG	220.0m	NRP - CMP	315.00m
NAVIGATION OFFSET APPLIED																						
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NRP - COS	205.0m																					
NRP - CNG	425.00m																					
COS - CNG	220.0m																					
NRP - CMP	315.00m																					
5734	06:10	Source	Gun string 3 deployed and online, 6600 cubic inches, all gun strings COS 235m depth 9m																			
5768	06:22	EOL	End of line																			



<div style="border: 1px dotted black; height: 100px; width: 100%;"></div>						
Posnet locations & remarks: good - none - intermittent						
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good		
Tailbuoy #2	none	Gun string #2	Partial line	Acoustic good - String 2 RGPS replaced while configuration changes made, good when redeployed		SP spacing: 37.5m
Tailbuoy #3	none	Gun string #3	None	Acoustic good		line status: Complete
Tailbuoy #4	none	Gun string #4	GOOD	Acoustic good		

Seq # 008		Line Name: MGL1701MC06B		NAVIGATION		DATE: 2017-01-17		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE		
		Line Brg : 182.0 °		LINE LOGS		JULIAN DAY: 17				
		CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile		
DC SOL: 4.0 m		DEPTH SOL : 3041.7 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL: 30.0 m		DEPTH EOL : 2470.0 m		NAVIGATION SYSTEM USED: SeaPath 330						
BSP SOL: 3.6 kts		FEATHER SOL: 11.1 °		NAVIGATION SYSTEM USED: C-Nav2000						
BSP EOL: 3.2 kts		FEATHER EOL: -04.7 °		NAVIGATION SYSTEM USED: POSMV						
WEATHER		MAX FEATHER: 11.1 °		GRAVITY METER: BMG-II: used, SN223						
WIND SOL: S 17.5 kts				MAGNETOMETER: GeoMetrics: used						
WIND EOL: 19.8 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		Gilles Guerin		00:00 - 12:00		Todd Jensvold		
SEAS EOL: 1.5 m		12:00 - 24:00		David Martinson		00:00 - 12:00		Alan Thompson		
SP		UTC		EVENT		COMMENTS				
6582		06:25		SOL		Start of line: First line with New source depth 9m, Streamer depth 10m, NRP-COS 235, COS-CNG 196 m				
						VESSEL POSITION				
						Shotpoints		Latitude (S)		Longitude (W)
						FSP 6582		31° 53' 42.400"		72° 04' 29.033"
						LSP 8401		32° 42' 52.988"		72° 06' 36.414"
						NAVIGATION OFFSET APPLIED				
						NRP - Stern		29.5m		
						NRP - COS		235.0m		
						NRP - CNG		425.00m		
						COS - CNG		190.00m		
						NRP - CMP		328.90m		
8401		18:45		EOL		End of line				



<div style="border: 1px dotted black; height: 100px; width: 100%;"></div>							
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	GOOD	Acoustic good			
					SP spacing: 50.0m		
					line status: Complete		

Line Name: MGL1701MC07		NAVIGATION		DATE: 2017-01-17		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE																
Seq # 009		Line Brg : 202.5 °		LINE LOGS				JULIAN DAY: 17														
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile																
DC SOL: -4.7 m	DEPTH SOL : 2478.0 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary																				
DC EOL: 22.2 m	DEPTH EOL : 1539.9 m	NAVIGATION SYSTEM USED: SeaPath 330																				
BSP SOL: 4.2 kts	FEATHER SOL: 04.7 °	NAVIGATION SYSTEM USED: C-Nav2000																				
BSP EOL: 3.6 kts	FEATHER EOL: -04.8 °	NAVIGATION SYSTEM USED: POSMV																				
WEATHER	MAX FEATHER: 13.8 °	GRAVITY METER: BMG-II: used, SN223																				
WIND SOL: 18.5 kts		MAGNETOMETER: GeoMetrics: used																				
WIND EOL: 21.4 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>																
SEAS SOL: 1.5 m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold																		
SEAS EOL: 1.5 m	12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson																		
SP	UTC	EVENT	COMMENTS				VESSEL POSITION															
1005	18:47	SOL	start of line				Shotpoints	Latitude (S)	Longitude (W)													
1631	00:00	Midnight	JD 18				FSP	1005	32° 42' 58.964"	72° 06' 37.907"												
3465	14:28	mammal					LSP	3767	33° 56' 19.769"	72° 23' 38.190"												
3476	14:33	airguns	S1G4 started autofiring				<table border="1"> <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>235.0m</td> </tr> <tr> <td>NRP - CNG</td> <td>425.00m</td> </tr> <tr> <td>COS - CNG</td> <td>190.00m</td> </tr> <tr> <td>NRP - CMP</td> <td>328.90m</td> </tr> </tbody> </table>				NAVIGATION OFFSET APPLIED		NRP - Stern	29.5m	NRP - COS	235.0m	NRP - CNG	425.00m	COS - CNG	190.00m	NRP - CMP	328.90m
NAVIGATION OFFSET APPLIED																						
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NRP - COS	235.0m																					
NRP - CNG	425.00m																					
COS - CNG	190.00m																					
NRP - CMP	328.90m																					
3506	14:45	airguns	power up to 3300 cubic inches strings 3 & 4																			
3506	14:45	airguns	begin recovery of string 1, string 2 disabled - d/t moving to allow recovery of string 1, firing 3300cubic inches strings 3 & 4																			
3639	15:40	airguns	Strings 1 & 2 enabled, disabled string 3 to repair tow point, firing 1, 2 & 4 4950 cubic inches																			
3767	16:32	EOL	End of line																			

Posnet locations & remarks: good - none - intermittent				Acoustic good	SP spacing: 50.0m	
Tailbuoy #1	Good	Gun string #1	GOOD			
Tailbuoy #2	none	Gun string #2	GOOD			line status: Complete
Tailbuoy #3	none	Gun string #3	None			
Tailbuoy #4	none	Gun string #4	GOOD			

Line Name: MGL1701MC08		NAVIGATION		DATE: 2017-01-18		 															
Seq # 010		Line Brg : 202.5 °		LINE LOGS				JULIAN DAY: 18													
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile															
DC SOL: -3.4 m	DEPTH SOL : 1533.6 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary																			
DC EOL: 6.4 m	DEPTH EOL : 1426.7 m	NAVIGATION SYSTEM USED: SeaPath 330																			
BSP SOL: 3.2 kts	FEATHER SOL: 03.1 °	NAVIGATION SYSTEM USED: C-Nav2000																			
BSP EOL: 3.8 kts	FEATHER EOL: -00.5 °	NAVIGATION SYSTEM USED: POSMV																			
WEATHER	MAX FEATHER: -00.8 °	GRAVITY METER: BMG-II: used, SN223																			
WIND SOL: 21.4 kts		MAGNETOMETER: GeoMetrics: used																			
WIND EOL: 13.7 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>															
SEAS SOL: 1.5m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold																	
SEAS EOL: 1.5 m	12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson																	
SP	UTC	EVENT	COMMENTS				VESSEL POSITION														
1007	16:34	SOL	start of line				Shotpoints	Latitude (S)	Longitude (W)												
1011	16:35	Source	Disabled strings 3 & 4, PAM cable tangled				FSP	1007	33° 56' 27.617"	72° 23' 42.056"											
1060	16:55	Source	Disable strings 1-4 to recover gun strings d/t PAM cable tangled in streamer lead-in				LSP	1113	33° 59' 09.825"	72° 24' 50.748"											
1065	16:57	Source	Firing 40 cubic inch while recovering gun strings				<table border="1"> <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>235.0m</td> </tr> <tr> <td>NRP - CNG</td> <td>425.00m</td> </tr> <tr> <td>COS - CNG</td> <td>190.00m</td> </tr> <tr> <td>NRP - CMP</td> <td>328.90m</td> </tr> </tbody> </table>			NAVIGATION OFFSET APPLIED		NRP - Stern	29.5m	NRP - COS	235.0m	NRP - CNG	425.00m	COS - CNG	190.00m	NRP - CMP	328.90m
NAVIGATION OFFSET APPLIED																					
NRP - Stern	29.5m																				
NRP - COS	235.0m																				
NRP - CNG	425.00m																				
COS - CNG	190.00m																				
NRP - CMP	328.90m																				
1113	17:17	EOL	End of line - line terminated to recover and untangle equipment																		



Posnet locations & remarks: good - none - intermittent				Acoustic good	SP spacing: 50.0m	
Tailbuoy #1	Good	Gun string #1	GOOD			
Tailbuoy #2	none	Gun string #2	GOOD			line status: Complete
Tailbuoy #3	none	Gun string #3	None			
Tailbuoy #4	none	Gun string #4	GOOD			

Line Name: MGL1701MC08R		NAVIGATION		DATE: 2017-01-18		 														
Seq # 011		Line Brg : 199.323 °		LINE LOGS				JULIAN DAY: 18												
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile														
DC SOL: -62.4 m	DEPTH SOL : 1547.6 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary																		
DC EOL: -77.3 m	DEPTH EOL : 321.6 m	NAVIGATION SYSTEM USED: SeaPath 330																		
BSP SOL: 4.1 kts	FEATHER SOL: 06.9 °	NAVIGATION SYSTEM USED: C-Nav2000																		
BSP EOL: 3.1 kts	FEATHER EOL: 14.0 °	NAVIGATION SYSTEM USED: POSMV																		
WEATHER		MAX FEATHER: 16.5 °		GRAVITY METER: BMG-II: used, SN223																
WIND SOL: 14.5 kts	MAGNETOMETER: GeoMetrics: used																			
WIND EOL: 29.4 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>														
SEAS SOL: 1.5 m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold																
SEAS EOL: 1.5m	12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson																
SP	UTC	EVENT	COMMENTS				VESSEL POSITION													
977	23:47	SOL	start of line - Prime																	
1006	00:00	Midnight	January 19																	
1006	00:00:16	End of Prime																		
1007	00:00:41	Reshoot																		
1113	00:46:23	End of Reshoot																		
1114	00:46:50	Prime																		
1650	04:26	XBT	XBT T7 launch, reach max depth																	
2631	10:49	Source	String 2 disabled for recovery, 5310cubic inches volume																	
2742	11:32	Source	String 2 repaired and deployed, Firing 6600 cubic inches																	
3140	14:18	Mammal	power down for mammal																	
3157	14:25	Mammal	full volume																	
3506	16:48	Mammal	power down for mammal																	
3519	16:53	Mammal	full volume																	
3598	17:27	Mammal	power down for mammal																	
3639	17:44	Mammal	full volume																	
3754	18:33	Mammal	power down for mammal																	
3796	18:51	Mammal	full volume																	
4086	20:59	Mammal	power down for mammal																	
4128	21:17	Mammal	full volume																	
4470	23:48	XBT T7	launch; reached seafloor																	
4499	00:00	Midnight	January 20																	
7774	00:00	Midnight	January 21																	
8382	4:48	EOL	End of line																	
							<table border="1"> <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>235.0m</td> </tr> <tr> <td>NRP - CNG</td> <td>425.00m</td> </tr> <tr> <td>COS - CNG</td> <td>196.00m</td> </tr> <tr> <td>NRP - CMP</td> <td>328.90m</td> </tr> </tbody> </table>		NAVIGATION OFFSET APPLIED		NRP - Stern	29.5m	NRP - COS	235.0m	NRP - CNG	425.00m	COS - CNG	196.00m	NRP - CMP	328.90m
NAVIGATION OFFSET APPLIED																				
NRP - Stern	29.5m																			
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COS - CNG	196.00m																			
NRP - CMP	328.90m																			

<div style="border: 1px dotted black; height: 100px; width: 100%;"></div>							
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	GOOD	Acoustic good			
					SP spacing:	50.0m	
					line status:	Complete	

Seq # 013		Line Name: MGL1701MC10		NAVIGATION		DATE: 2017-01-22		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE														
		Line Brg : 36.8 °		LINE LOGS		JULIAN DAY: 22																
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile																
DC SOL: 468.3 m	DEPTH SOL : 154.3 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																			
DC EOL: 2485.6 m	DEPTH EOL : 73.5 m		NAVIGATION SYSTEM USED: SeaPath 330																			
BSP SOL: 3.8 kts	FEATHER SOL: -31.7 °		NAVIGATION SYSTEM USED: C-Nav2000																			
BSP EOL: 4.4 kts	FEATHER EOL: 00.4 °		NAVIGATION SYSTEM USED: POSMV																			
WEATHER		MAX FEATHER: -31.7 °		GRAVITY METER: BMG-II: used, SN223																		
WIND SOL: 17.6 kts			MAGNETOMETER: GeoMetrics: used																			
WIND EOL: 22.1 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>																
SEAS SOL: 1.5m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold																		
SEAS EOL: 1.5 m	12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson																		
SP	UTC	EVENT	COMMENTS				VESSEL POSITION															
1098	3:02	SOL	start of line - Line shifted for vessel to avoid shallow waters, ignore DC				Shotpoints	Latitude (S)	Longitude (W)													
							FSP	1098	38° 13' 39.490"	73° 43' 43.597"												
							LSP	1552	38° 04' 28.542"	73° 33' 19.638"												
1552	6:02	EOL	end of line				<table border="1"> <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>235.0m</td> </tr> <tr> <td>NRP - CNG</td> <td>425.00m</td> </tr> <tr> <td>COS - CNG</td> <td>196.00m</td> </tr> <tr> <td>NRP - CMP</td> <td>328.90m</td> </tr> </tbody> </table>				NAVIGATION OFFSET APPLIED		NRP - Stern	29.5m	NRP - COS	235.0m	NRP - CNG	425.00m	COS - CNG	196.00m	NRP - CMP	328.90m
NAVIGATION OFFSET APPLIED																						
NRP - Stern	29.5m																					
NRP - COS	235.0m																					
NRP - CNG	425.00m																					
COS - CNG	196.00m																					
NRP - CMP	328.90m																					

Posnet locations & remarks: good - none - intermittent				Acoustic good	SP spacing: 50.0m	
Tailbuoy #1	Good	Gun string #1	GOOD			
Tailbuoy #2	none	Gun string #2	GOOD			line status: Complete
Tailbuoy #3	none	Gun string #3	None			
Tailbuoy #4	none	Gun string #4	GOOD			

Line Name: MGL1701MC11		NAVIGATION		DATE: 2017-01-22		 		
Seq # 014		Line Brg : 282.9 °		LINE LOGS				JULIAN DAY: 22
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile		
DC SOL: -98.2 m	DEPTH SOL : 114.2 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL: -122.5 m	DEPTH EOL : 4445.7 m	NAVIGATION SYSTEM USED: SeaPath 330						
BSP SOL: 4.2 kts	FEATHER SOL: -10.7 °	NAVIGATION SYSTEM USED: C-Nav2000						
BSP EOL: 4.3 kts	FEATHER EOL: 15.8 °	NAVIGATION SYSTEM USED: POSMV						
WEATHER		MAX FEATHER: 16.9 °		GRAVITY METER: BMG-II: used, SN223				
WIND SOL: 17.6 kts				MAGNETOMETER: GeoMetrics: used				
WIND EOL: 24.4 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>		
SEAS SOL: 1.5 m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold				
SEAS EOL: 1.5 m	12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson				
SP	UTC	EVENT	COMMENTS				VESSEL POSITION	
971	8:15:38	SOL	start of line					
1648	12:37	seaturtle	power down airguns, last full volume shot				Shotpoints	
1675	12:38	Full power	Full volume after power down				Latitude (S)	
2011	14:57	pinniped	powerd down airguns, last full volume shot				Longitude (W)	
2062	15:17	Full power	Full volume after power down				FSP	971
2118	15:40	pinniped	powered down airguns, last full volume shot				38° 00'	12.295°
2159	15:56	Full power	Full volume after power down				LSP	3516
							37° 44'	18.314°
							75° 07'	59.998°
	21:53:06	XBT T5	launched, reached max depth 216m				NAVIGATION OFFSET APPLIED	
	00:00	Midnight	January 23				NRP - Stern	29.5m
	0:54	EOL	end of line				NRP - COS	235.0m
							NRP - CNG	425.00m
							COS - CNG	196.00m
							NRP - CMP	328.90m

Posnet locations & remarks: good - none - intermittent				Acoustic good	SP spacing: 50.0m
Tailbuoy #1	Good	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		
				line status:	Complete

Line Name: MGL1701MC13		NAVIGATION		DATE: 2017-01-23		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE		
Seq # 015		Line Brg : 105 °		LINE LOGS				JULIAN DAY: 23
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile		
DC SOL: 8.1 m	DEPTH SOL : 4515.5 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL: -402.1 m	DEPTH EOL : 87.6 m	NAVIGATION SYSTEM USED: SeaPath 330						
BSP SOL: 4.0 kts	FEATHER SOL: -11.9 °	NAVIGATION SYSTEM USED: C-Nav2000						
BSP EOL: 4.4 kts	FEATHER EOL: 05.2 °	NAVIGATION SYSTEM USED: POSMV						
WEATHER		MAX FEATHER:		GRAVITY METER: BMG-II: used, SN223				
WIND SOL: 18.4 kts	MAGNETOMETER: GeoMetrics: used							
WIND EOL: 17.1 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>		
SEAS SOL: 1.5 m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold				
SEAS EOL: 1.5 m	12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson				
SP	UTC	EVENT	COMMENTS				VESSEL POSITION	
909	4:55	SOL	start of line				Shotpoints	Latitude (S)
2187	13:25	mammal	airguns power down					Longitude (W)
2203	13:31	mammal	airguns full volume				FSP	909
2478	15:11	mammal	airguns power down					37° 53' 39.777"
2520	15:27	mammal	airguns full volume				LSP	3510
2542	15:35	mammal	airguns power down					38° 11' 09.238"
2556	15:41	mammal	airguns full volume					73° 36' 29.006"
2882	17:45	mammal	airguns power down				NAVIGATION OFFSET APPLIED	
2897	17:51	mammal	airguns full volume				NRP - Stern	29.5m
3510	21:44:38	EOL	end of line				NRP - COS	235.0m
							NRP - CNG	425.00m
							COS - CNG	196.00m
							NRP - CMP	328.90m

<div style="border: 1px dotted black; height: 100px; width: 100%;"></div>						
Posnet locations & remarks: good - none - intermittent						
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good		
Tailbuoy #2	none	Gun string #2	Intermittent	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

Line Name: MGL1701MC14		NAVIGATION		DATE: 2017-01-24		Lamont-Doherty Earth Observatory					
Seq # 016		Line Brg : 187.3 °		LINE LOGS		JULIAN DAY: 24					
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile					
DC SOL: 47.2 m	DEPTH SOL : 255.9 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary									
DC EOL: -60.3 m	DEPTH EOL : 554.5 m	NAVIGATION SYSTEM USED: SeaPath 330									
BSP SOL: 4.2 kts	FEATHER SOL: -02.0 °	NAVIGATION SYSTEM USED: C-Nav2000									
BSP EOL: 3.9 kts	FEATHER EOL: 07.2 °	NAVIGATION SYSTEM USED: POSMV									
WEATHER		MAX FEATHER: 15.2 °		GRAVITY METER: BMG-II: used, SN223							
WIND SOL: 3.2 kts	MAGNETOMETER: GeoMetrics: used										
WIND EOL: 3.9 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>					
SEAS SOL: 1.5m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold							
SEAS EOL: 1.5 m	12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson							
SP	UTC	EVENT	COMMENTS					VESSEL POSITION			
946	3:22	SOL	start of line								
2039	10:27	PSO	power down for mammal					Shotpoints	Latitude (S)	Longitude (W)	
2078	10:42	PSO	full volume					FSP	946	38° 08' 13.704"	73° 45' 18.223"
2393	12:51	PSO	power down for mammal					LSP	3565	39° 18' 25.934"	73° 56' 47.354"
2416	13:01	PSO	Shutdown								
2424	13:04	PSO	resume mitigation								
2461	13:20	PSO	full volume								
	15:10	XBT	XBT-T4 Seq21								
2826	16:08	PSO	power down for mammal								
2841	16:15	PSO	full volume								
2869	16:28	PSO	power down for mammal								
2909	16:48	PSO	full volume								
3117	18:24	PSO	power down for mammal								
3191	18:55	PSO	full volume								
3247	19:19	PSO	power down for mammal								
3320	19:49	PSO	full volume single shot then ordered to power down again								
3320	19:49	PSO	power down for mammal								
3324	19:51	PSO	Shutdown								
3329	19:53	PSO	resume mitigation								
3366	20:08	PSO	full volume								
	21:15	Lead-in	Remove streamer from high tow point for upcoming turn								
	21:17	Lead-in	Streamer at normal tow point								
3565	21:30:15	EOT	end of line								

NAVIGATION OFFSET APPLIED	
NRP - Stern	29.5m
NRP - COS	235.0m
NRP - CNG	425.00m
COS - CNG	196.00m
NRP - CMP	328.90m

Posnet locations & remarks: good - none - intermittent				Acoustic good	SP spacing: 50.0m	
Tailbuoy #1	Good	Gun string #1	GOOD			
Tailbuoy #2	none	Gun string #2	Intermittent			Acoustic good
Tailbuoy #3	none	Gun string #3	None			Acoustic good
Tailbuoy #4	none	Gun string #4	GOOD			Acoustic good
				line status:	Complete	

Seq # 017		Line Name: MGL1701MC15		NAVIGATION		DATE: 2017-01-24		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE														
		Line Brg : 70.4 °		LINE LOGS		JULIAN DAY: 24																
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile																
DC SOL: -526.6 m	DEPTH SOL : 130.1 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																			
DC EOL: -1356.0 m	DEPTH EOL : 44.7 m		NAVIGATION SYSTEM USED: SeaPath 330																			
BSP SOL: 4.8 kts	FEATHER SOL: -09.0 °		NAVIGATION SYSTEM USED: C-Nav2000																			
BSP EOL: 4.4 kts	FEATHER EOL: 04.4 °		NAVIGATION SYSTEM USED: POSMV																			
WEATHER		MAX FEATHER: 04.6 °		GRAVITY METER: BMG-II: used, SN223																		
WIND SOL: 9.4 kts			MAGNETOMETER: GeoMetrics: used																			
WIND EOL: 12.7 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>																
SEAS SOL: 1.5m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold																		
SEAS EOL: 1.5m	12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson																		
SP	UTC	EVENT	COMMENTS				VESSEL POSITION															
1379	23:39	SOL	start of line				Shotpoints	Latitude (S)	Longitude (W)													
1438	00:00	Midnight	January 25				FSP	1379	39° 16' 40.174"	73° 44' 42.596"												
							LSP	1959	39° 11' 03.800"	73° 25' 52.954"												
							<table border="1"> <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>235.0m</td> </tr> <tr> <td>NRP - CNG</td> <td>425.00m</td> </tr> <tr> <td>COS - CNG</td> <td>196.00m</td> </tr> <tr> <td>NRP - CMP</td> <td>328.90m</td> </tr> </tbody> </table>				NAVIGATION OFFSET APPLIED		NRP - Stern	29.5m	NRP - COS	235.0m	NRP - CNG	425.00m	COS - CNG	196.00m	NRP - CMP	328.90m
NAVIGATION OFFSET APPLIED																						
NRP - Stern	29.5m																					
NRP - COS	235.0m																					
NRP - CNG	425.00m																					
COS - CNG	196.00m																					
NRP - CMP	328.90m																					
1959	3:15	EOT	end of line																			

<div style="border: 1px dotted black; height: 100px; width: 100%;"></div>							
Posnet locations & remarks: good - none - intermittent							
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good			
Tailbuoy #2	none	Gun string #2	Intermittent	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		

Line Name: MGL1701MC16		NAVIGATION		DATE: 2017-01-25		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE		
Seq # 018		Line Brg : 270.9 °		LINE LOGS				JULIAN DAY: 25
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile		
DC SOL: -7.8 m	DEPTH SOL : 77.8 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL: 1.1 m	DEPTH EOL : 4402.3 m	NAVIGATION SYSTEM USED: SeaPath 330						
BSP SOL: 4.1 kts	FEATHER SOL: -21.1 °	NAVIGATION SYSTEM USED: C-Nav2000						
BSP EOL: 4.2 kts	FEATHER EOL: 00.7 °	NAVIGATION SYSTEM USED: POSMV						
WEATHER		MAX FEATHER:		GRAVITY METER: BMG-II: used, SN223				
WIND SOL: 14.3 kts	MAGNETOMETER: GeoMetrics: used							
WIND EOL: 23.2 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>		
SEAS SOL: 0.5m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold				
SEAS EOL:	12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson				
SP	UTC	EVENT	COMMENTS				VESSEL POSITION	
982	5:33	SOL	start of line				Shotpoints	Latitude (S)
2178	13:09	airguns	power down					Longitude (W)
2224	13:25	airguns	full volume				FSP	982 39° 06' 40.465"
2695	16:16	XBT T5	Launch failed at ~800m				LSP	3509 39° 04' 58.124"
2911	17:34	airguns	power down					75° 01' 01.929"
2951	17:49	airguns	full volume				NAVIGATION OFFSET APPLIED	
3510	21:17:04	EOT	end of line				NRP - Stern	29.5m
						NRP - COS	235.0m	
						NRP - CNG	425.00m	
						COS - CNG	196.00m	
						NRP - CMP	328.90m	

Posnet locations & remarks: good - none - intermittent					
Tailbuoy #1	Good	Gun string #1	GOOD		Acoustic good
Tailbuoy #2	none	Gun string #2	Intermittent		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	

Seq # 019		Line Name: MGL1701MC16A		NAVIGATION		DATE: 2017-01-25		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE																	
		Line Brg : 270.9 °		LINE LOGS		JULIAN DAY: 25																			
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile																			
DC SOL: 3.9 m		DEPTH SOL :	3297.0 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary																					
DC EOL: -723.9 m		DEPTH EOL :	3680.6 m	NAVIGATION SYSTEM USED: SeaPath 330																					
BSP SOL: 4.4 kts		FEATHER SOL:	04.6 °	NAVIGATION SYSTEM USED: C-Nav2000																					
BSP EOL: 4.2 kts		FEATHER EOL:	03.8 °	NAVIGATION SYSTEM USED: POSMV																					
WEATHER			MAX FEATHER:	03.7 °	GRAVITY METER: BMG-II: used, SN223																				
WIND SOL: 26.8 kts					MAGNETOMETER: GeoMetrics: used																				
WIND EOL: 18.1 kts		<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>																		
SEAS SOL: 1.5m		12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold																				
SEAS EOL: 1.5 m		12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson																				
SP	UTC	EVENT	COMMENTS																						
3109	10:41:48	SOL	start of line																						
3507	13:03	airguns	power down																						
3552	13:19	airguns	full volume																						
4229	17:31	EOT	end of line																						
			<table border="1"> <thead> <tr> <th colspan="4">VESSEL POSITION</th> </tr> <tr> <th>Shotpoints</th> <th>Latitude (S)</th> <th colspan="2">Longitude (W)</th> </tr> </thead> <tbody> <tr> <td>FSP 3109</td> <td>39° 05' 18.570"</td> <td>74° 47' 10.177"</td> <td></td> </tr> <tr> <td>LSP 4229</td> <td>39° 04' 40.497"</td> <td>75° 25' 59.820"</td> <td></td> </tr> </tbody> </table>							VESSEL POSITION				Shotpoints	Latitude (S)	Longitude (W)		FSP 3109	39° 05' 18.570"	74° 47' 10.177"		LSP 4229	39° 04' 40.497"	75° 25' 59.820"	
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Shotpoints	Latitude (S)	Longitude (W)																							
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<div style="border: 1px dashed black; height: 100px; width: 100%;"></div>					SP spacing: 50.0m	
Posnet locations & remarks: good - none - intermittent						
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good Acoustic good Acoustic good Acoustic failed		
Tailbuoy #2	none	Gun string #2	Intermittent			
Tailbuoy #3	none	Gun string #3	None			
Tailbuoy #4	none	Gun string #4	GOOD			
					line status:	Complete

<div style="border: 1px dotted black; height: 100px; width: 100%;"></div>						
Posnet locations & remarks: good - none - intermittent						
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good		
Tailbuoy #2	none	Gun string #2	Intermittent	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

Line Name: MGL1701MC18		NAVIGATION		DATE: 2017-01-26		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE														
Seq # 020		Line Brg : 92 °		LINE LOGS				JULIAN DAY: 26												
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile														
DC SOL: -8.8 m	DEPTH SOL : 4326.9 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary																		
DC EOL: 245.0 m	DEPTH EOL : 52.2 m	NAVIGATION SYSTEM USED: SeaPath 330																		
BSP SOL: 4.2 kts	FEATHER SOL: -02.4 °	NAVIGATION SYSTEM USED: C-Nav2000																		
BSP EOL: 4.4 kts	FEATHER EOL: -04.3 °	NAVIGATION SYSTEM USED: POSMV																		
WEATHER		MAX FEATHER: 07.5 °		GRAVITY METER: BMG-II: used, SN223																
WIND SOL: 25.5 kts	MAGNETOMETER: GeoMetrics: used																			
WIND EOL: 9.7 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>														
SEAS SOL: 1.5 m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold																
SEAS EOL: 1.5 m	12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson																
SP	UTC	EVENT	COMMENTS				VESSEL POSITION													
982	21:13:19	SOL	start of line				Shotpoints													
1409	23:59	airguns	power down				Latitude (S)													
1452	0:17	airguns	full volume				Longitude (W)													
3098	11:36	XBT	T7 launch				FSP	982 39° 12' 31.690" 75° 16' 21.135"												
3249	12:31	airguns	power down				LSP	4083 39° 14' 49.601" 73° 28' 39.067"												
3291	12:46	airguns	full volume				<table border="1"> <tr><th colspan="2">NAVIGATION OFFSET APPLIED</th></tr> <tr><td>NRP - Stern</td><td>29.5m</td></tr> <tr><td>NRP - COS</td><td>235.0m</td></tr> <tr><td>NRP - CNG</td><td>425.00m</td></tr> <tr><td>COS - CNG</td><td>196.00m</td></tr> <tr><td>NRP - CMP</td><td>328.90m</td></tr> </table>		NAVIGATION OFFSET APPLIED		NRP - Stern	29.5m	NRP - COS	235.0m	NRP - CNG	425.00m	COS - CNG	196.00m	NRP - CMP	328.90m
NAVIGATION OFFSET APPLIED																				
NRP - Stern	29.5m																			
NRP - COS	235.0m																			
NRP - CNG	425.00m																			
COS - CNG	196.00m																			
NRP - CMP	328.90m																			
3312	12:53	airguns	power down																	
3364	13:12	airguns	full volume																	
4083	17:38	EOL	end of line																	

<div style="border: 1px dotted black; height: 100px; width: 100%;"></div>								
Posnet locations & remarks: good - none - intermittent								
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good			SP spacing: 50.0m line status: Complete	
Tailbuoy #2	none	Gun string #2	Intermittent	Acoustic good				
Tailbuoy #3	none	Gun string #3	None	Acoustic good				
Tailbuoy #4	none	Gun string #4	GOOD	Acoustic good				

Seq # 021		Line Name: MGL1701MC18T		NAVIGATION		DATE: 2017-01-27		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE																					
		Line Brg : 267.9 °		LINE LOGS		JULIAN DAY: 27																							
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile																							
DC SOL: 45.3 m		DEPTH SOL : 96.1 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																									
DC EOL: -235.9 m		DEPTH EOL : 199.3 m		NAVIGATION SYSTEM USED: SeaPath 330																									
BSP SOL: 4.1 kts		FEATHER SOL: -18.4 °		NAVIGATION SYSTEM USED: C-Nav2000																									
BSP EOL: 3.7 kts		FEATHER EOL: 14.4 °		NAVIGATION SYSTEM USED: POSMV																									
WEATHER		MAX FEATHER: -18.4 °		GRAVITY METER: BMG-II: used, SN223																									
WIND SOL: 13.6 kts		MAGNETOMETER: GeoMetrics: used																											
WIND EOL: 12 kts		<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>																						
SEAS SOL: 1.5 m		12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold																								
SEAS EOL: 1.0 m		12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson																								
SP	UTC	EVENT	COMMENTS																										
1211	20:25:45	SOL	start of line																										
1581	22:44	airguns	power down																										
1640	23:07	airguns	full volume																										
<table border="1"> <thead> <tr> <th colspan="4">VESSEL POSITION</th> </tr> <tr> <th>Shotpoints</th> <th>Latitude (S)</th> <th colspan="2">Longitude (W)</th> </tr> </thead> <tbody> <tr> <td>FSP</td> <td>1211</td> <td>39° 08'</td> <td>19.317"</td> <td>73° 35'</td> <td>39.918"</td> </tr> <tr> <td>LSP</td> <td>1759</td> <td>39° 05'</td> <td>37.013"</td> <td>73° 54'</td> <td>21.248"</td> </tr> </tbody> </table>										VESSEL POSITION				Shotpoints	Latitude (S)	Longitude (W)		FSP	1211	39° 08'	19.317"	73° 35'	39.918"	LSP	1759	39° 05'	37.013"	73° 54'	21.248"
VESSEL POSITION																													
Shotpoints	Latitude (S)	Longitude (W)																											
FSP	1211	39° 08'	19.317"	73° 35'	39.918"																								
LSP	1759	39° 05'	37.013"	73° 54'	21.248"																								
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COS - CNG	196.00m																												
NRP - CMP	328.90m																												
1759	23:52:11	EOL	end of line																										

<div style="border: 1px dotted black; height: 100px; width: 100%;"></div>							
Posnet locations & remarks: good - none - intermittent							
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good			
Tailbuoy #2	none	Gun string #2	Intermittent	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		

Posnet locations & remarks: good - none - intermittent					SP spacing: 50.0m	
Tailbuoy #1	Good	Gun string #1	Failed			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	GOOD			Acoustic Failed
				line status:	Complete	

Line Name: MGL1701MC20		NAVIGATION		DATE: 2017-01-28		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE		
Seq # 023		Line Brg : 184.9 °		LINE LOGS				JULIAN DAY: 28
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile		
DC SOL: -4.8 m	DEPTH SOL : 128.6 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL: 52.8 m	DEPTH EOL : 250.7 m	NAVIGATION SYSTEM USED: SeaPath 330						
BSP SOL: 3.8 kts	FEATHER SOL: 13.5 °	NAVIGATION SYSTEM USED: C-Nav2000						
BSP EOL: 3.2 kts	FEATHER EOL: 10.5 °	NAVIGATION SYSTEM USED: POSMV						
WEATHER		MAX FEATHER: 14.2 °		GRAVITY METER: BMG-II: used, SN223				
WIND SOL: 17.0 kts	MAGNETOMETER: GeoMetrics: used							
WIND EOL: 14.6 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>		
SEAS SOL: 1.5 m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold				
SEAS EOL: 1.5 m	12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson				
SP	UTC	EVENT	COMMENTS				VESSEL POSITION	
1005	9:55:04	SOL	start of line				Shotpoints	Latitude (S)
1052	10:15	mammal	power down					Longitude (W)
1122	10:45	mammal	full volume				FSP	1005
1146	10:55	mammal	power down					39° 42' 04.310"
1255	11:45	mammal	shut down				LSP	1285
								39° 49' 32.067"
1285	12:00	EOL	end of line - last full volume shot point was 1146					74° 00' 03.732"
NAVIGATION OFFSET APPLIED								
NRP - Stern		29.5m						
NRP - COS		235.0m						
NRP - CNG		425.00m						
COS - CNG		196.00m						
NRP - CMP		328.90m						

<div style="border: 1px dotted black; height: 100px; width: 100%;"></div>							
Posnet locations & remarks: good - none - intermittent							
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good			
Tailbuoy #2	none	Gun string #2	Intermittent	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		

Seq # 024		Line Name: MGL1701MC20A		NAVIGATION		DATE: 2017-01-28		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE													
		Line Brg : 185.7 °		LINE LOGS		JULIAN DAY: 28															
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile															
DC SOL: 72.6 m	DEPTH SOL : 238.0 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																		
DC EOL: 54.6 m	DEPTH EOL : 168.1 m		NAVIGATION SYSTEM USED: SeaPath 330																		
BSP SOL: 3.0 kts	FEATHER SOL: 08.7 °		NAVIGATION SYSTEM USED: C-Nav2000																		
BSP EOL: 3.5 kts	FEATHER EOL: 12.1 °		NAVIGATION SYSTEM USED: POSMV																		
WEATHER		MAX FEATHER: 19.4 °		GRAVITY METER: BMG-II: used, SN223																	
WIND SOL: 13.0 kts			MAGNETOMETER: GeoMetrics: used																		
WIND EOL: 14.5 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>															
SEAS SOL: 2.0 m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold																	
SEAS EOL: 2.0 m	12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson																	
SP	UTC	EVENT	COMMENTS			VESSEL POSITION															
1397	12:59:45	SOL	start of line																		
2374	19:34	mammals	power down			Shotpoints	Latitude (S)	Longitude (W)													
2396	19:45		full volume			FSP	1397	39° 52' 31.149"	74° 00' 42.433"												
2618	21:17		current causing sinuosity in streamer for past half hour			LSP	3290	40° 42' 59.345"	74° 11' 30.315"												
3290	2:45:07	EOL	end of line			<table border="1"> <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>235.0m</td> </tr> <tr> <td>NRP - CNG</td> <td>425.00m</td> </tr> <tr> <td>COS - CNG</td> <td>196.00m</td> </tr> <tr> <td>NRP - CMP</td> <td>328.90m</td> </tr> </tbody> </table>				NAVIGATION OFFSET APPLIED		NRP - Stern	29.5m	NRP - COS	235.0m	NRP - CNG	425.00m	COS - CNG	196.00m	NRP - CMP	328.90m
NAVIGATION OFFSET APPLIED																					
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COS - CNG	196.00m																				
NRP - CMP	328.90m																				

<div style="border: 1px dotted black; height: 100px; width: 100%;"></div>							
Posnet locations & remarks: good - none - intermittent							
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good			
Tailbuoy #2	none	Gun string #2	Intermittent	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		

Seq # 025		Line Name: MGL1701MC30		NAVIGATION		DATE: 2017-01-29		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE	
		Line Brg : 273.7 °		LINE LOGS		JULIAN DAY: 29			
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile			
DC SOL: -7.0 m	DEPTH SOL : 155.2 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary							
DC EOL: -305.8 m	DEPTH EOL : 3923.3 m	NAVIGATION SYSTEM USED: SeaPath 330							
BSP SOL: 4.2 kts	FEATHER SOL: -72.3 °	NAVIGATION SYSTEM USED: C-Nav2000							
BSP EOL: 4.0 kts	FEATHER EOL: 11.7 °	NAVIGATION SYSTEM USED: POSMV							
WEATHER	MAX FEATHER: -72.3 °	GRAVITY METER: BMG-II: used, SN223							
WIND SOL: 4.5 kts		MAGNETOMETER: GeoMetrics: used							
WIND EOL: 11.2 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>			
SEAS SOL: 1.5 m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold					
SEAS EOL: 2.0 m	12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson					
SP	UTC	EVENT	COMMENTS			VESSEL POSITION			
995	7:57:04	SOL	start of line			Shotpoints	Latitude (S)	Longitude (W)	
1888	13:38	airguns	power down			FSP	995	40° 36' 25.250"	73° 59' 41.610"
1910	13:47	airguns	full volume			LSP	3769	40° 27' 44.343"	75° 37' 15.514"
2151	15:23	XBT T5	launch, reach max depth			NAVIGATION OFFSET APPLIED			
3769	2:48:56	EOL	end of line			NRP - Stern	29.5m		
					NRP - COS	235.0m			
					NRP - CNG	425.00m			
					COS - CNG	196.00m			
					NRP - CMP	328.90m			

<div style="border: 1px dotted black; height: 100px; width: 100%;"></div>							
Posnet locations & remarks: good - none - intermittent							
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good			
Tailbuoy #2	none	Gun string #2	Intermittent	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		

Seq # 026		Line Name: MGL1701MC28		NAVIGATION		DATE: 2017-01-30		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE														
		Line Brg : 96.8 °		LINE LOGS		JULIAN DAY: 30																
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile																
DC SOL: -15.1 m		DEPTH SOL : 4050.0 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																		
DC EOL: 98.3 m		DEPTH EOL : 142.0 m		NAVIGATION SYSTEM USED: SeaPath 330																		
BSP SOL: 3.4 kts		FEATHER SOL: 12.0 °		NAVIGATION SYSTEM USED: C-Nav2000																		
BSP EOL: 4.4 kts		FEATHER EOL: 06.7 °		NAVIGATION SYSTEM USED: POSMV																		
WEATHER		MAX FEATHER: 13.4 °		GRAVITY METER: BMG-II: used, SN223																		
WIND SOL: 15.2 kts				MAGNETOMETER: GeoMetrics: used																		
WIND EOL: 11.5 kts		<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>															
SEAS SOL: 1.5 m		12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold																	
SEAS EOL: 2.0 m		12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson																	
SP	UTC	EVENT	COMMENTS				VESSEL POSITION															
975	6:13	SOL	start of line				Shotpoints	Latitude (S)	Longitude (W)													
3322	23:21	airguns	power down; whale				FSP	975	40° 23' 06.139"	75° 26' 50.360"												
3418	23:58	airguns	full volume				LSP	3599	40° 30' 57.842"	73° 54' 36.816"												
3526	0:39	airguns	power down; whale																			
3599	01:06:15	EOL	end of line				<table border="1"> <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>235.0m</td> </tr> <tr> <td>NRP - CNG</td> <td>425.00m</td> </tr> <tr> <td>COS - CNG</td> <td>196.00m</td> </tr> <tr> <td>NRP - CMP</td> <td>328.90m</td> </tr> </tbody> </table>				NAVIGATION OFFSET APPLIED		NRP - Stern	29.5m	NRP - COS	235.0m	NRP - CNG	425.00m	COS - CNG	196.00m	NRP - CMP	328.90m
NAVIGATION OFFSET APPLIED																						
NRP - Stern	29.5m																					
NRP - COS	235.0m																					
NRP - CNG	425.00m																					
COS - CNG	196.00m																					
NRP - CMP	328.90m																					

<div style="border: 1px dotted black; height: 100px; width: 100%;"></div>							
Posnet locations & remarks: good - none - intermittent							
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good			
Tailbuoy #2	none	Gun string #2	Intermittent	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		

Seq # 027		Line Name: MGL1701MC20B		NAVIGATION		DATE: 2017-01-31		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE													
		Line Brg : 189.2 °		LINE LOGS		JULIAN DAY: 31															
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile															
DC SOL: -0.9 m	DEPTH SOL : 161.0 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																		
DC EOL: -22.1 m	DEPTH EOL : 1103.6 m		NAVIGATION SYSTEM USED: SeaPath 330																		
BSP SOL: 3.5 kts	FEATHER SOL: 09.2 °		NAVIGATION SYSTEM USED: C-Nav2000																		
BSP EOL: 3.7 kts	FEATHER EOL: 12.3 °		NAVIGATION SYSTEM USED: POSMV																		
WEATHER		MAX FEATHER: 21.4 °		GRAVITY METER: BMG-II: used, SN223																	
WIND SOL: 16.3 kts			MAGNETOMETER: GeoMetrics: used																		
WIND EOL: 24.1 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>															
SEAS SOL: 1.5 m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold																	
SEAS EOL: 2.0 m	12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson																	
SP	UTC	EVENT	COMMENTS																		
3201	10:19:10	SOL	start of line																		
				VESSEL POSITION																	
				Shotpoints	Latitude (S)		Longitude (W)														
				FSP	3201	40° 40' 37.292"		74° 10' 57.222"													
				LSP	5018	41° 29' 02.663"		74° 21' 33.767"													
5018	23:27:13	EOL	end of line																		
				<table border="1"> <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>235.0m</td> </tr> <tr> <td>NRP - CNG</td> <td>425.00m</td> </tr> <tr> <td>COS - CNG</td> <td>196.00m</td> </tr> <tr> <td>NRP - CMP</td> <td>328.90m</td> </tr> </tbody> </table>						NAVIGATION OFFSET APPLIED		NRP - Stern	29.5m	NRP - COS	235.0m	NRP - CNG	425.00m	COS - CNG	196.00m	NRP - CMP	328.90m
NAVIGATION OFFSET APPLIED																					
NRP - Stern	29.5m																				
NRP - COS	235.0m																				
NRP - CNG	425.00m																				
COS - CNG	196.00m																				
NRP - CMP	328.90m																				

Posnet locations & remarks: good - none - intermittent					
Tailbuoy #1	Good	Gun string #1	GOOD		Acoustic good
Tailbuoy #2	none	Gun string #2	None		Acoustic good
Tailbuoy #3	none	Gun string #3	None		Acoustic good
Tailbuoy #4	none	Gun string #4	GOOD		Acoustic None
				SP spacing: 50.0m	
				line status: Complete	

Line Name: MGL1701MC21		NAVIGATION		DATE: 2017-01-31		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE		
Seq # 028		Line Brg : 180.7 °		LINE LOGS				JULIAN DAY: 31
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile		
DC SOL: -3.1 m	DEPTH SOL : 1124.7 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL: -15037.0 m	DEPTH EOL : 146.4 m	NAVIGATION SYSTEM USED: SeaPath 330						
BSP SOL: 3.9 kts	FEATHER SOL: 06.5 °	NAVIGATION SYSTEM USED: C-Nav2000						
BSP EOL: 4.8 kts	FEATHER EOL: 12.1 °	NAVIGATION SYSTEM USED: POSMV						
WEATHER		MAX FEATHER: 19.9 °		GRAVITY METER: BMG-II: used, SN223				
WIND SOL: 25.9 kts	MAGNETOMETER: GeoMetrics: used							
WIND EOL: 20.7 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>		
SEAS SOL: 2.0 m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold				
SEAS EOL: 1.0 m	12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson				
SP	UTC	EVENT	COMMENTS				VESSEL POSITION	
1008	23:30:35	SOL	start of line				Shotpoints	
2225	8:26	XBT4	Launch, reached max depth				Latitude (S)	
2771	12:35	airguns	power down				Longitude (W)	
2807	12:52	airguns	full volume				FSP	1008
2912	13:41	airguns	power down				LSP	6559
2945	13:56	airguns	firing S1, S2 (3300 cubic inches); S3,S4 on deck to remove fishing net				41° 29'	13.700"
2953	13:59	airguns	full volume				74° 21'	34.447"
3407	17:21	airguns	power down				43° 59'	20.960"
3461	17:43	airguns	full volume				74° 23'	31.533"
	5:58	course correction	begin moving port				NAVIGATION OFFSET APPLIED	
5827	10:56:32	airguns	power down				NRP - Stern	29.5m
5863	11:11	airguns	full volume				NRP - COS	235.0m
6559	15:31	EOL	end of line				NRP - CNG	425.00m
							COS - CNG	196.00m
							NRP - CMP	328.90m

Posnet locations & remarks: good - none - intermittent				
Tailbuoy #1	Good	Gun string #1	GOOD	
Tailbuoy #2	none	Gun string #2	None	
Tailbuoy #3	none	Gun string #3	None	
Tailbuoy #4	none	Gun string #4	GOOD	
				Acoustic good
				Acoustic good
				Acoustic good
				Acoustic None
				SP spacing: 50.0m
				line status: Complete

Seq # 029		Line Name: MGL1701MC22		NAVIGATION		DATE: 2017-02-02		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE														
		Line Brg : 270 °		LINE LOGS		JULIAN DAY: 33																
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile																
DC SOL: -40.3 m	DEPTH SOL : 110.4 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																			
DC EOL: 258.4 m	DEPTH EOL : 3412.5 m		NAVIGATION SYSTEM USED: SeaPath 330																			
BSP SOL: 4.4 kts	FEATHER SOL: 33.8 °		NAVIGATION SYSTEM USED: C-Nav2000																			
BSP EOL: 4.0 kts	FEATHER EOL: 08.9 °		NAVIGATION SYSTEM USED: POSMV																			
WEATHER		MAX FEATHER: 33.9 °		GRAVITY METER: BMG-II: used, SN223																		
WIND SOL: 24.7 kts			MAGNETOMETER: GeoMetrics: used																			
WIND EOL: 16 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>																
SEAS SOL: 1.0 m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold																		
SEAS EOL: 1.0 m	12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson																		
SP	UTC	EVENT	COMMENTS				VESSEL POSITION															
961	17:10	SOL	start of line				Shotpoints	Latitude (S)		Longitude (W)												
2621	4:29	XBT T5	launch, reach max depth				FSP	961	44° 00' 00.807"	74° 33' 32.168"												
3592	10:52	EOL	end of line				LSP	3592	43° 59' 46.523"	76° 11' 45.697"												
						<table border="1"> <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>235.0m</td> </tr> <tr> <td>NRP - CNG</td> <td>425.00m</td> </tr> <tr> <td>COS - CNG</td> <td>196.00m</td> </tr> <tr> <td>NRP - CMP</td> <td>328.90m</td> </tr> </tbody> </table>					NAVIGATION OFFSET APPLIED		NRP - Stern	29.5m	NRP - COS	235.0m	NRP - CNG	425.00m	COS - CNG	196.00m	NRP - CMP	328.90m
NAVIGATION OFFSET APPLIED																						
NRP - Stern	29.5m																					
NRP - COS	235.0m																					
NRP - CNG	425.00m																					
COS - CNG	196.00m																					
NRP - CMP	328.90m																					

Posnet locations & remarks: good - none - intermittent				
Tailbuoy #1	Good	Gun string #1	GOOD	
Tailbuoy #2	none	Gun string #2	None	
Tailbuoy #3	none	Gun string #3	None	
Tailbuoy #4	none	Gun string #4	GOOD	
				Acoustic good
				Acoustic good
				Acoustic good
				Acoustic None
				SP spacing: 50.0m
				line status: Complete

Posnet locations & remarks: good - none - intermittent					
Tailbuoy #1	Good	Gun string #1	GOOD		Acoustic good
Tailbuoy #2	none	Gun string #2	None		Acoustic good
Tailbuoy #3	none	Gun string #3	None		Acoustic good
Tailbuoy #4	none	Gun string #4	GOOD		Acoustic None
				SP spacing: 50.0m	
				line status: Complete	

Seq # 031		Line Name: MGL1701MC26		NAVIGATION		DATE: 2017-02-04		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE													
		Line Brg : 81.4 °		LINE LOGS		JULIAN DAY: 35															
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile															
DC SOL: -53.5 m	DEPTH SOL : 3728.8 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																		
DC EOL: -841.2 m	DEPTH EOL : 67.2 m		NAVIGATION SYSTEM USED: SeaPath 330																		
BSP SOL: 3.6 kts	FEATHER SOL: 16.6 °		NAVIGATION SYSTEM USED: C-Nav2000																		
BSP EOL: 4.7 kts	FEATHER EOL: 08.5 °		NAVIGATION SYSTEM USED: POSMV																		
WEATHER		MAX FEATHER: 16.6 °		GRAVITY METER: BMG-II: used, SN223																	
WIND SOL: 14.7 kts					MAGNETOMETER: GeoMetrics: used																
WIND EOL: 11.3 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>															
SEAS SOL: 4.0 m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold																	
SEAS EOL: 1.5 m	12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson																	
SP	UTC	EVENT	COMMENTS				VESSEL POSITION														
963	6:07	SOL	start of line				Shotpoints	Latitude (S)	Longitude (W)												
3360	22:02	EOL	end of line				FSP	963	42° 51' 16.502"	75° 45' 33.217"											
							LSP	3360	42° 40' 40.629"	74° 18' 52.832"											
						<table border="1"> <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>235.0m</td> </tr> <tr> <td>NRP - CNG</td> <td>425.00m</td> </tr> <tr> <td>COS - CNG</td> <td>196.00m</td> </tr> <tr> <td>NRP - CMP</td> <td>328.90m</td> </tr> </tbody> </table>				NAVIGATION OFFSET APPLIED		NRP - Stern	29.5m	NRP - COS	235.0m	NRP - CNG	425.00m	COS - CNG	196.00m	NRP - CMP	328.90m
NAVIGATION OFFSET APPLIED																					
NRP - Stern	29.5m																				
NRP - COS	235.0m																				
NRP - CNG	425.00m																				
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NRP - CMP	328.90m																				

<div style="border: 1px dotted black; height: 100px; width: 100%;"></div>						
Posnet locations & remarks: good - none - intermittent						
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good		
Tailbuoy #2	none	Gun string #2	None	Acoustic good		
Tailbuoy #3	none	Gun string #3	None	Acoustic good		
Tailbuoy #4	none	Gun string #4	GOOD	Acoustic None		
					SP spacing: 50.0m	
					line status: Complete	

Seq # 032		Line Name: MGL1701MC42		NAVIGATION		DATE: 2017-02-05		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE											
		Line Brg : 5.5 °		LINE LOGS		JULIAN DAY: 36													
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile													
DC SOL: -1.4 m	DEPTH SOL : 84.0 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																
DC EOL: -260.3 m	DEPTH EOL : 87.2 m		NAVIGATION SYSTEM USED: SeaPath 330																
BSP SOL: 4.0 kts	FEATHER SOL: -02.1 °		NAVIGATION SYSTEM USED: C-Nav2000																
BSP EOL: 4.4 kts	FEATHER EOL: 01.3 °		NAVIGATION SYSTEM USED: POSMV																
WEATHER		MAX FEATHER: 02.4 °		GRAVITY METER: BMG-II: used, SN223															
WIND SOL: 11.0 kts					MAGNETOMETER: GeoMetrics: used														
WIND EOL: 11.1 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>													
SEAS SOL: 1.0 m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold															
SEAS EOL: 1.0 m	12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson															
SP	UTC	EVENT	COMMENTS				VESSEL POSITION												
1379	0:18:57	SOL	start of line				Shotpoints	Latitude (S)	Longitude (W)										
1751	2:42	EOL	end of line				FSP	1379	42° 30' 52.662"	74° 17' 25.480"									
						LSP	1751	42° 20' 51.850"	74° 15' 17.702"										
						NAVIGATION OFFSET APPLIED <table border="1"> <tr> <td>NRP - Stern</td> <td>29.5m</td> </tr> <tr> <td>NRP - COS</td> <td>235.0m</td> </tr> <tr> <td>NRP - CNG</td> <td>425.00m</td> </tr> <tr> <td>COS - CNG</td> <td>196.00m</td> </tr> <tr> <td>NRP - CMP</td> <td>328.90m</td> </tr> </table>				NRP - Stern	29.5m	NRP - COS	235.0m	NRP - CNG	425.00m	COS - CNG	196.00m	NRP - CMP	328.90m
NRP - Stern	29.5m																		
NRP - COS	235.0m																		
NRP - CNG	425.00m																		
COS - CNG	196.00m																		
NRP - CMP	328.90m																		

Posnet locations & remarks: good - none - intermittent					
Tailbuoy #1	Good	Gun string #1	GOOD		Acoustic good
Tailbuoy #2	none	Gun string #2	None		Acoustic good
Tailbuoy #3	none	Gun string #3	None		Acoustic good
Tailbuoy #4	none	Gun string #4	GOOD		Acoustic None
				SP spacing: 50.0m	
				line status: Complete	

Seq # 033		Line Name: MGL1701MC41		NAVIGATION		DATE: 2017-02-05		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE													
		Line Brg : 269.5 °		LINE LOGS		JULIAN DAY: 36															
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile															
DC SOL: 4.9 m	DEPTH SOL : 142.8 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																		
DC EOL: -63.9 m	DEPTH EOL : 3787.3 m		NAVIGATION SYSTEM USED: SeaPath 330																		
BSP SOL: 4.1 kts	FEATHER SOL: -37.1 °		NAVIGATION SYSTEM USED: C-Nav2000																		
BSP EOL: 4.0 kts	FEATHER EOL: -01.5 °		NAVIGATION SYSTEM USED: POSMV																		
	MAX FEATHER: 06.7 °		GRAVITY METER: BMG-II: used, SN223																		
WIND SOL: 12.4 kts					MAGNETOMETER: GeoMetrics: used																
WIND EOL: 13.9 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>															
SEAS SOL: 1.5 m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold																	
SEAS EOL: 1.5 m	12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson																	
SP	UTC	EVENT	COMMENTS				VESSEL POSITION														
983	4:04:17	SOL	start of line				Shotpoints	Latitude (S)	Longitude (W)												
1680	08:50	Streamer	Pulling in on streamer to change soft-tow in preparation for shallow water				FSP	983	42° 19' 59.911"	74° 23' 31.024"											
1697	08:56	Streamer	Streamer in position on (higher) soft tow point, this changes inline offset slightly				LSP	3488	42° 19' 58.475"	75° 54' 31.635"											
2227	12:30	XBT	T5 launch																		
3488	20:43:04	EOL	end of line				<table border="1"> <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>235.0m</td> </tr> <tr> <td>NRP - CNG</td> <td>425.00m</td> </tr> <tr> <td>COS - CNG</td> <td>196.00m</td> </tr> <tr> <td>NRP - CMP</td> <td>328.90m</td> </tr> </tbody> </table>			NAVIGATION OFFSET APPLIED		NRP - Stern	29.5m	NRP - COS	235.0m	NRP - CNG	425.00m	COS - CNG	196.00m	NRP - CMP	328.90m
NAVIGATION OFFSET APPLIED																					
NRP - Stern	29.5m																				
NRP - COS	235.0m																				
NRP - CNG	425.00m																				
COS - CNG	196.00m																				
NRP - CMP	328.90m																				



Posnet locations & remarks: good - none - intermittent					
Tailbuoy #1	Good	Gun string #1	GOOD		Acoustic good
Tailbuoy #2	none	Gun string #2	None		Acoustic good
Tailbuoy #3	none	Gun string #3	None		Acoustic good
Tailbuoy #4	none	Gun string #4	GOOD		Acoustic None
				SP spacing: 50.0m	
				line status: Complete	

Seq # 034		Line Name: MGL1701MC43		NAVIGATION		DATE: 2017-02-05		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE		
		Line Brg : 104.2 °		LINE LOGS		JULIAN DAY: 36				
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile				
DC SOL: -2.5 m	DEPTH SOL : 3789.4 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary							
DC EOL: -129.2 m	DEPTH EOL : 1327.1 m		NAVIGATION SYSTEM USED: SeaPath 330							
BSP SOL: 4.3 kts	FEATHER SOL: -34.7 °		NAVIGATION SYSTEM USED: C-Nav2000							
BSP EOL: 89.3 kts	FEATHER EOL: -02.4 °		NAVIGATION SYSTEM USED: POSMV							
	MAX FEATHER: -34.7 °		GRAVITY METER: BMG-II: used, SN223							
WIND SOL: 13.2 kts					MAGNETOMETER: GeoMetrics: used					
WIND EOL: 15.9 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>				
SEAS SOL: 1.0 m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold						
SEAS EOL: 2.0 m	12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson						
SP	UTC	EVENT	COMMENTS				VESSEL POSITION			
1115	23:11	SOL	start of line				Shotpoints	Latitude (S)	Longitude (W)	
							FSP	1115	42° 27' 14.731"	75° 47' 47.133"
							LSP	2202	42° 34' 45.528"	75° 09' 25.407"
							NAVIGATION OFFSET APPLIED			
							NRP - Stern	29.5m		
							NRP - COS	235.0m		
							NRP - CNG	425.00m		
							COS - CNG	196.00m		
							NRP - CMP	328.90m		
2202	6:14	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	None		Acoustic good
Tailbuoy #3	none	Gun string #3	None		Acoustic good
Tailbuoy #4	none	Gun string #4	GOOD		Acoustic None
				SP spacing: 50.0m	
				line status: Complete	

Seq # 035		Line Name: MGL1701MC27		NAVIGATION		DATE: 2017-02-06		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE		
		Line Brg : 9.9 °		LINE LOGS		JULIAN DAY: 37				
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile				
DC SOL: 17.5 m	DEPTH SOL : 1527.7 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary								
DC EOL: -14.4 m	DEPTH EOL : 1397.8 m	NAVIGATION SYSTEM USED: SeaPath 330								
BSP SOL: 4.2 kts	FEATHER SOL: -27.9 °	NAVIGATION SYSTEM USED: C-Nav2000								
BSP EOL: 8.9 kts	FEATHER EOL: -03.8 °	NAVIGATION SYSTEM USED: POSMV								
	MAX FEATHER: -27.9 °	GRAVITY METER: BMG-II: used, SN223								
WIND SOL: 18.5 kts		MAGNETOMETER: GeoMetrics: used								
WIND EOL: 15.5 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>				
SEAS SOL: 1.5 m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold						
SEAS EOL: 1.5 m	12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson						
SP	UTC	EVENT	COMMENTS				VESSEL POSITION			
923	7:58:24	SOL	start of line				Shotpoints	Latitude (S)	Longitude (W)	
4176	4:52:15	XBT	launch XBT T5, reach 1410 m				FSP	923	42° 27' 57.280"	75° 06' 26.997"
							LSP	4909	40° 41' 52.008"	74° 41' 58.826"
							NAVIGATION OFFSET APPLIED			
							NRP - Stern	29.5m		
							NRP - COS	235.0m		
							NRP - CNG	425.00m		
							COS - CNG	196.00m		
							NRP - CMP	328.90m		
4909	9:28:35	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	None		Acoustic good
Tailbuoy #3	none	Gun string #3	None		Acoustic good
Tailbuoy #4	none	Gun string #4	GOOD		Acoustic None
				SP spacing: 50.0m	
				line status: Complete	

Line Name: MGL1701MC31		NAVIGATION		DATE: 2017-02-07		 														
Seq # 036		Line Brg : 6.2 °		LINE LOGS				JULIAN DAY: 38												
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile														
DC SOL: -3.4 m	DEPTH SOL : 1399.0 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary																		
DC EOL: -6.2 m	DEPTH EOL : 1864.0 m	NAVIGATION SYSTEM USED: SeaPath 330																		
BSP SOL: 4.0 kts	FEATHER SOL: -07.2 °	NAVIGATION SYSTEM USED: C-Nav2000																		
BSP EOL: 4.1 kts	FEATHER EOL: -01.1 °	NAVIGATION SYSTEM USED: POSMV																		
	MAX FEATHER: 16.4 °	GRAVITY METER: BMG-II: used, SN223																		
WIND SOL: 18.1 kts		MAGNETOMETER: GeoMetrics: used																		
WIND EOL: 11.8 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>														
SEAS SOL: 1.5 m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold																
SEAS EOL: 2.0 m	12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson																
SP	UTC	EVENT	COMMENTS				VESSEL POSITION													
1006	09:30	SOL	start of line																	
3313	00:00	Midnight	Feb 8																	
4437	06:57	Source	Last shot point @ 6600cubic inches, recovering string 2 d/t leak and autofire																	
4438	06:58	Source	Firing Strings 1, 3, and 5 4950 cubic inches				FSP	1006 40° 41' 44.434" 74° 41' 57.908"												
4560	07:42	Source	String 2 repaired and in position, firing 6600 cubic inches				LSP	7472 37° 48' 00.542" 74° 18' 00.326"												
4919	10:00	XBT T5	launch, failed at 1300m				<table border="1"> <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>235.0m</td> </tr> <tr> <td>NRP - CNG</td> <td>425.00m</td> </tr> <tr> <td>COS - CNG</td> <td>196.00m</td> </tr> <tr> <td>NRP - CMP</td> <td>328.90m</td> </tr> </tbody> </table>		NAVIGATION OFFSET APPLIED		NRP - Stern	29.5m	NRP - COS	235.0m	NRP - CNG	425.00m	COS - CNG	196.00m	NRP - CMP	328.90m
NAVIGATION OFFSET APPLIED																				
NRP - Stern	29.5m																			
NRP - COS	235.0m																			
NRP - CNG	425.00m																			
COS - CNG	196.00m																			
NRP - CMP	328.90m																			
5559	14:41	Mammal	power down; pinniped																	
5580	14:50	Mammal	full volume																	
5745	16:01	Mammal	power down; pinniped																	
5748	16:02	Mammal	Shutdown, missed sp 5749-5753																	
5754	16:04	Mammal	Mit gun enabled																	
5759	16:06	Mammal	full volume																	
5804	16:25	Mammal	power down; pinniped																	
5844	16:40	Mammal	full volume																	
6021	17:48	Mammal	power down; pinniped																	
6045	17:57	Mammal	full volume																	
6130	18:30	Mammal	power down; pinniped																	
6146	18:36	Mammal	full volume																	
6193	18:54	Mammal	power down; pinniped																	
6206	18:59	Mammal	full volume																	
6228	19:07	Mammal	power down; pinniped																	
6235	19:09	Mammal	full volume																	
6252	19:16	Mammal	power down; pinniped																	
6259	19:19	Mammal	full volume																	
6262	19:20	Mammal	power down; pinniped																	
6301	19:35	Mammal	full volume																	
6387	20:08	Mammal	power down; pinniped																	
6398	20:12	Mammal	full volume																	
6432	20:26	Mammal	power down; pinniped																	
6528	21:02	Mammal	full volume																	
6716	22:16	Mammal	power down; pinniped																	
6760	22:34	Mammal	full volume																	

6920	23:39	Mammal	power down; pinniped	
6931	23:44	Mammal	Shutdown, missed sp 6932-6943	
6944	23:49	Mammal	Mit gun enabled	
6969	00:00	Midnight	Feb 9	
6979	00:04	Mammal	full volume	
7019	00:21	Mammal	power down;dolphins	
7030	00:25	Mammal	full volume	
7472	3:30	EOL	End of line	
Posnet locations & remarks: good - none - intermittent				
Tailbuoy #1	Good	Gun string #1	Intermittent	Acoustic good
Tailbuoy #2	none	Gun string #2	None	Acoustic good
Tailbuoy #3	none	Gun string #3	None	Acoustic good
Tailbuoy #4	none	Gun string #4	GOOD	Acoustic None
				SP spacing: 50.0m
				line status: Complete

Line Name: MGL1701MC32		NAVIGATION		DATE: 2017-02-09		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE		
Seq # 037		Line Brg : 354.5 °		LINE LOGS				JULIAN DAY: 40
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile		
DC SOL: 6.2 m	DEPTH SOL : 1847.3 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL: -1489.1 m	DEPTH EOL : 4771.4 m	NAVIGATION SYSTEM USED: SeaPath 330						
BSP SOL: 4.1 kts	FEATHER SOL: -12.3 °	NAVIGATION SYSTEM USED: C-Nav2000						
BSP EOL: 3.9 kts	FEATHER EOL: -06.6 °	NAVIGATION SYSTEM USED: POSMV						
	MAX FEATHER: 21.2 °	GRAVITY METER: BMG-II: used, SN223						
WIND SOL: 12 kts		MAGNETOMETER: GeoMetrics: used						
WIND EOL: 26.5 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>		
SEAS SOL: 2.0 m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold				
SEAS EOL: 4.0 m	12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson				
SP	UTC	EVENT	COMMENTS				VESSEL POSITION	
1003	3:32	SOL	start of line				Shotpoints	Latitude (S)
1132	4:25	XBT	XBT T5, launch reach at aprox 700 m					Longitude (W)
1149	4:32	XBT	XBT T7, reach max depth				FSP	1003
4335	00:00	Midnight	10 February					37° 47' 49.115"
4962	03:56	Source	last shot 6420cubic inches, spared out string 2 to recover and repair				LSP	5021
4963	03:56	Source	firing strings 1, 3, and 4: 4950 cubic inches					35° 59' 46.067"
								74° 18' 01.071"
								74° 31' 51.583"
							NAVIGATION OFFSET APPLIED	
							NRP - Stern	29.5m
							NRP - COS	235.0m
							NRP - CNG	425.00m
							COS - CNG	196.00m
							NRP - CMP	328.90m
5021	4:20	EOL	End of line					

Posnet locations & remarks: good - none - intermittent				
Tailbuoy #1	Good	Gun string #1	GOOD	
Tailbuoy #2	none	Gun string #2	None	
Tailbuoy #3	none	Gun string #3	None	
Tailbuoy #4	none	Gun string #4	GOOD	
				Acoustic good
				Acoustic good
				Acoustic good
				Acoustic None
				SP spacing: 50.0m
				line status: Complete

Seq # 039		Line Name: MGL1701MC35		NAVIGATION		DATE: 2017-02-11		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE													
		Line Brg : 283.5 °		LINE LOGS		JULIAN DAY: 42															
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile															
DC SOL: 417.8 m	DEPTH SOL : 1142.0 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																		
DC EOL: 48.4 m	DEPTH EOL : 4779.6 m		NAVIGATION SYSTEM USED: SeaPath 330																		
BSP SOL: 4.5 kts	FEATHER SOL: -00.3 °		NAVIGATION SYSTEM USED: C-Nav2000																		
BSP EOL: 4.3 kts	FEATHER EOL: 02.6 °		NAVIGATION SYSTEM USED: POSMV																		
	MAX FEATHER: 04.4 °		GRAVITY METER: BMG-II: used, SN223																		
WIND SOL: 26.8 kts					MAGNETOMETER: GeoMetrics: used																
WIND EOL: 18.2 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>															
SEAS SOL: 2.0 m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold																	
SEAS EOL: 2.0 m	12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson																	
SP	UTC	EVENT	COMMENTS			VESSEL POSITION															
1248	4:45	SOL	start of line																		
1932	9:12	XBT T7	launch			Shotpoints	Latitude (S)	Longitude (W)													
						FSP	1248	36° 21' 06.316"	73° 18' 53.291"												
						LSP	3581	36° 06' 06.009"	74° 34' 30.243"												
3581	20:09:38	EOL	end of line																		
						<table border="1"> <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>235.0m</td> </tr> <tr> <td>NRP - CNG</td> <td>425.00m</td> </tr> <tr> <td>COS - CNG</td> <td>196.00m</td> </tr> <tr> <td>NRP - CMP</td> <td>328.90m</td> </tr> </tbody> </table>				NAVIGATION OFFSET APPLIED		NRP - Stern	29.5m	NRP - COS	235.0m	NRP - CNG	425.00m	COS - CNG	196.00m	NRP - CMP	328.90m
NAVIGATION OFFSET APPLIED																					
NRP - Stern	29.5m																				
NRP - COS	235.0m																				
NRP - CNG	425.00m																				
COS - CNG	196.00m																				
NRP - CMP	328.90m																				

Posnet locations & remarks: good - none - intermittent					
Tailbuoy #1	Good	Gun string #1	GOOD		Acoustic good
Tailbuoy #2	none	Gun string #2	None		Acoustic good
Tailbuoy #3	none	Gun string #3	None		Acoustic good
Tailbuoy #4	none	Gun string #4	GOOD		Acoustic None
				SP spacing: 50.0m	
				line status: Complete	

Seq # 040		Line Name: MGL1701MC36		NAVIGATION		DATE: 2017-02-12		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE	
		Line Brg : 22 °		LINE LOGS		JULIAN DAY: 43			
		CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile	
DC SOL: -7.6 m		DEPTH SOL : 4935.8 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary					
DC EOL: -111.3 m		DEPTH EOL : 5137.9 m		NAVIGATION SYSTEM USED: SeaPath 330					
BSP SOL: 4.8 kts		FEATHER SOL: -26.5 °		NAVIGATION SYSTEM USED: C-Nav2000					
BSP EOL: 4.4 kts		FEATHER EOL: -01.9 °		NAVIGATION SYSTEM USED: POSMV					
		MAX FEATHER: -26.5 °		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: 19.8 kts				MAGNETOMETER: GeoMetrics: used					
WIND EOL: 25.1 kts		<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>	
SEAS SOL: 1.0 m		12:00 - 24:00		Gilles Guerin		00:00 - 12:00		Todd Jensvold	
SEAS EOL: 1.5 m		12:00 - 24:00		David Martinson		00:00 - 12:00		Alan Thompson	
SP		UTC		EVENT		COMMENTS		VESSEL POSITION	
972		01:38:47		SOL		start of line			
2364		11:08		XBT		T5 launch; success!			
								Shotpoints	
								Latitude (S)	
								Longitude (W)	
								FSP 972 36° 08' 45.793" 74° 24' 58.512"	
								LSP 4583 34° 38' 10.675" 73° 40' 28.310"	
4583		1:35:08		EOL		end of line			
								NAVIGATION OFFSET APPLIED	
								NRP - Stern 29.5m	
								NRP - COS 235.0m	
								NRP - CNG 425.00m	
								COS - CNG 196.00m	
								NRP - CMP 328.90m	



Seq # 041		Line Name: MGL1701MC37		NAVIGATION		DATE: 2017-02-13		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE	
		Line Brg : 112.0 °		LINE LOGS		JULIAN DAY: 44			
		CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile	
DC SOL: -5.6 m		DEPTH SOL : 4997.1 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary					
DC EOL: -158.5 m		DEPTH EOL : 111.0 m		NAVIGATION SYSTEM USED: SeaPath 330					
BSP SOL: 3.6 kts		FEATHER SOL: -13.6 °		NAVIGATION SYSTEM USED: C-Nav2000					
BSP EOL: 4.9 kts		FEATHER EOL: -00.9 °		NAVIGATION SYSTEM USED: POSMV					
		MAX FEATHER: -13.6 °		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: 25.8 kts				MAGNETOMETER: GeoMetrics: used					
WIND EOL: 11.5 kts		<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>	
SEAS SOL: 4.0 m		12:00 - 24:00		Gilles Guerin		00:00 - 12:00		Todd Jensvold	
SEAS EOL: 1.0 m		12:00 - 24:00		David Martinson		00:00 - 12:00		Alan Thompson	
SP	UTC	EVENT	COMMENTS						
971	6:21	SOL	start of line						
				VESSEL POSITION					
				Shotpoints		Latitude (S)		Longitude (W)	
				FSP 971		34° 43' 06.145"		73° 44' 10.613"	
				LSP 3514		35° 08' 24.492"		72° 26' 32.163"	
3514	23:08:42	EOL	end of line						
				NAVIGATION OFFSET APPLIED					
				NRP - Stern		29.5m			
				NRP - COS		235.0m			
				NRP - CNG		425.00m			
				COS - CNG		196.00m			
				NRP - CMP		328.90m			

Seq # 042		Line Name: MGL1701MC39		NAVIGATION		DATE: 2017-02-14		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE		
		Line Brg : 291.9 °		LINE LOGS		JULIAN DAY: 46				
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile				
DC SOL: -15.9 m	DEPTH SOL : 643.8 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary							
DC EOL: 2.6 m	DEPTH EOL : 2880.8 m		NAVIGATION SYSTEM USED: SeaPath 330							
BSP SOL: 3.9 kts	FEATHER SOL: -24.3 °		NAVIGATION SYSTEM USED: C-Nav2000							
BSP EOL: 4.1 kts	FEATHER EOL: -03.0 °		NAVIGATION SYSTEM USED: POSMV							
	MAX FEATHER: -24.3 °		GRAVITY METER: BMG-II: used, SN223							
WIND SOL: 5.8 kts					MAGNETOMETER: GeoMetrics: used					
WIND EOL: 9.2 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>				
SEAS SOL: 2.0 m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold						
SEAS EOL: 2.0 m	12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson						
SP	UTC	EVENT	COMMENTS				VESSEL POSITION			
968	5:55	SOL	start of line				Shotpoints	Latitude (S)	Longitude (W)	
1080	6:38	XBT	launch XBT T7, reach max depth				FSP	968	34° 46' 48.182"	72° 29' 51.138"
1895	11:51	XBT	launch XBT T5, reach max depth				LSP	2151	34° 34' 31.307"	73° 05' 44.593"
2151	13:34	EOL	end of line; last shot at full volume 2119				NAVIGATION OFFSET APPLIED			
						NRP - Stern	29.5m			
						NRP - COS	235.0m			
						NRP - CNG	425.00m			
						COS - CNG	196.00m			
						NRP - CMP	328.90m			

Line Name: MGL1701MC39A		NAVIGATION		DATE: 2017-02-14		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE														
Seq # 043		Line Brg : 291.9 °		LINE LOGS				JULIAN DAY: 46												
CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile														
DC SOL: -3.1 m	DEPTH SOL : 3431.7 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary																		
DC EOL: -74.0 m	DEPTH EOL : 4829.8 m	NAVIGATION SYSTEM USED: SeaPath 330																		
BSP SOL: 3.9 kts	FEATHER SOL: -00.6 °	NAVIGATION SYSTEM USED: C-Nav2000																		
BSP EOL: 4.1 kts	FEATHER EOL: 04.1 °	NAVIGATION SYSTEM USED: POSMV																		
	MAX FEATHER: 04.1 °	GRAVITY METER: BMG-II: used, SN223																		
WIND SOL: 10.7 kts		MAGNETOMETER: GeoMetrics: used																		
WIND EOL: 7.2 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>														
SEAS SOL: 1.5 m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold																
SEAS EOL: 1.5 m	12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson																
SP	UTC	EVENT	COMMENTS				VESSEL POSITION													
2280	14:28	SOL	start of line																	
2843	18:13	XBT	XBT T5, reach max depth																	
3015	19:21	mammals	power down				FSP	2280 34° 33' 18.289" 73° 09' 38.898"												
3067	19:41	mammals	full volume				LSP	3370 34° 22' 06.350" 73° 42' 34.136"												
3192	20:30	mammals	power down																	
3199	20:33	mammals	shut down																	
3205	20:35	mammals	power up																	
3244	20:51	mammals	full volume																	
3370	21:40	EOL	end of line																	
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Posnet locations & remarks: good - none - intermittent					
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good	
Tailbuoy #2	none	Gun string #2	None	Acoustic good	
Tailbuoy #3	none	Gun string #3	None	Acoustic good	
Tailbuoy #4	none	Gun string #4	GOOD	Acoustic None	
					SP spacing: 50.0m
				line status:	Complete

Seq # 044		Line Name: MGL1701MC37R		NAVIGATION		DATE: 2017-02-15		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE														
		Line Brg : 112.0 °		LINE LOGS		JULIAN DAY: 46																
CLIENT: BANGS / UTIG/NSF			SURVEY:		CEVICHE		AREA: Southern Chile															
DC SOL:	-7.0 m	DEPTH SOL : 4998.1 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																		
DC EOL:	-83.5 m	DEPTH EOL : 1734.5 m		NAVIGATION SYSTEM USED: SeaPath 330																		
BSP SOL:	4.1 kts	FEATHER SOL: -21.0 °		NAVIGATION SYSTEM USED: C-Nav2000																		
BSP EOL:	4.5 kts	FEATHER EOL: 01.6 °		NAVIGATION SYSTEM USED: POSMV																		
		MAX FEATHER: -21.0 °		GRAVITY METER: BMG-II: used, SN223																		
WIND SOL:	10.1 kts			MAGNETOMETER: GeoMetrics: used																		
WIND EOL:	6 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>															
SEAS SOL:	2.0 m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold																	
SEAS EOL:	1.0 m	12:00 - 24:00	David Martinson	00:00 - 12:00	Alan Thompson																	
SP	UTC	EVENT	COMMENTS				VESSEL POSITION															
922	4:37	SOL	start of line - prime																			
961	04:52	infill	begin infill 961-1647																			
	09:09	XBT T5	launch, reached max depth																			
1648	09:10	Reshoot	Begin reshoot SP 1648-1701																			
1702	09:30	infill	infill 1702-1715																			
1716	09:35	Reshoot	reshoot 1716-1843																			
1844	10:22	infill	infill 1844-2272																			
2273	12:56	Reshoot	Start reshoot but on mitigation gun																			
2293	13:03	Reshoot	Full volume after power down for pinniped																			
2349		infill																				
2541	14:33	EOL	end of line																			
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Seq # 045		Line Name: MGL1701MC39R		NAVIGATION		DATE: 2017-02-15		 																	
		Line Brg : 288.7 °		LINE LOGS		JULIAN DAY: 46																			
		CLIENT: BANGS / UTIG/NSF		SURVEY:		CEVICHE		AREA: Southern Chile																	
DC SOL: -21.6 m		DEPTH SOL : 2546.3 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																					
DC EOL: -72.9 m		DEPTH EOL : 5124.8 m		NAVIGATION SYSTEM USED: SeaPath 330																					
BSP SOL: 4.2 kts		FEATHER SOL: -05.1 °		NAVIGATION SYSTEM USED: C-Nav2000																					
BSP EOL: 4.1 kts		FEATHER EOL: -00.6 °		NAVIGATION SYSTEM USED: POSMV																					
		MAX FEATHER: -05.1 °		GRAVITY METER: BMG-II: used, SN223																					
WIND SOL: 6.8 kts				MAGNETOMETER: GeoMetrics: used																					
WIND EOL: 2 kts		<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>																	
SEAS SOL: 1.0 m		12:00 - 24:00		Gilles Guerin		00:00 - 12:00		Todd Jensvold																	
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3244	5:56	EOL	end of line																						

