

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

Seq# 003		Line Name: MGL2306003P03		NAVIGATION		DATE: 2023-05-12	
		Line Brg : 210.7 °		LINE LOGS		JULIAN DAY: 132	
CLIENT: NSF - Anne Becel				SURVEY: MCS		AREA: Cape Fear	
DC SOL: 7.7 m		DEPTH SOL : 4766.0 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary			
DC EOL: 3.0 m		DEPTH EOL : 3832.6 m		NAVIGATION SYSTEM USED: SeaPath 330			
BSP SOL: 4.8 kts		FEATHER SOL: 91.91 °		Started line Turning °		NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted	
BSP EOL: 2.2 kts		FEATHER EOL: 14.58 °					
WEATHER		MAX FEATHER: 91.91 °					
WIND SOL: E 5.3 kts				GRAVITY METER: BMG-II: used, SN223			
WIND EOL: SE 16.9 kts				MAGNETOMETER: Geometrics 882			
SEAS SOL: 1.0 m		shift hours Nav shift hours Acc					
SEAS EOL: 1.0 m		12:00 - 24:00 Cody Bahlau 12:00 - 24:00 Riley Lopez					
		0:00-12:00 Koray Ergun 00:00 - 12:00 Gilles Guerin					
SP	Orca Ref	UTC	EVENT	COMMENTS			
14074	1073	21:37	SOL	SOL - 18 Guns @ 3300 cuin			
14952	1951	0:00	MSP	First Shot of the day 2023-5-13			
15938	2937	2:44		Last Good Shot Point at 3300 cuin			
15939	2938	2:45		Array 2 disabled, 9 guns at a new volume 1650 cu in			
16309	3308	4:15		Start deploying GS2			
16375	3374	4:31		GS2 in position			
16532	3531	4:58		G1T1 Not firing			
16584	3583	5:06		Slowing down to WSP 3.5kts to pick up GS1			
16611	3610	5:14		Start recovering GS1			
16692	3691	5:35		GS1 on board			
		6:26		Start deploying GS1			
16949	3948	6:47		GS1 in position			
		8:56		GS2, G2T9 autofiring			
		8:58		Reducing speed for Gun recovery			
17771	4770	9:12		Recovering GS2			
		11:46		Deploying GS2			
18348	5347	12:10		GS2 in position and full volume			
		12:12		Speeding back up			
18988	5987	14:07		GS2 rGPS bad adjust since array recovery			
				(Tried taking out and putting back in, no result. Not estimating to avoid network spike)			
19962	6961	17:10		Gun 2-1 Disabled due to misfires, New Volume = 2940cuin			
19998	6997	17:21		Array 2 disabled for recovery, New Volume = 1650 cuin			
20092	7091	17:52	LGSP	Last Good Shot point for Array 1 at 1650 cuin (Line ended early dt GS2)			
20093	7092	17:53		EOL - 0 Guns @ 0 c uin			
Posnet locations & remarks: good - none - intermittent				Forward	Center		
Tailbuoy #1	GOOD		Gun string #1	GOOD	GOOD		
Head Float #1	GOOD		Gun string #2	GOOD	GOOD		
PROCESSING NOTES				line status: Complete (SOL-20092)			
- High UV's (>3) at SOL dt bend in the strmr caused by turn. Affected SP's SOL - 14108 - In the following SP ranges source was firing half volume while maintainance was being done on the other array. Navigation set to position by active guns fired: SP 15938 - 16373, 17722 - 18347, 19988 - 20092 : GS2 Disabled. During these shot ranges the center of source was computed at the center of GS 1 SP 16582 - 16949 : GS1 Disabled. During this shot range the center of source was computed at the center of source string 2							
Overall Comments		High UV's at SOL & EOL dt to turn. Source postioning for mean string active guns fired when a GS was disabled while on line.					

NRP – Stern	29.2m
NRP – COS	304.0m
NRP – CNG	415.53m
COS – CNG	111.53m
NRP – CMP	359.76m

[illegible]

[illegible]

Seq# 006		Line Name: MGL2306006P05		NAVIGATION LINE LOGS		DATE: 2023-05-14		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE	
Line Brg :		30.17 °		JULIAN DAY: 134					
		CLIENT: NSF - Anne Becel		SURVEY: MCS		AREA: Cape Fear			
DC SOL: 2.7 m		DEPTH SOL : 3025.9 m				NAVIGATION SYSTEM USED: C-Nav3050 - Primary			
DC EOL: -470.2 m		DEPTH EOL : 4637.7 m				NAVIGATION SYSTEM USED: SeaPath 330			
BSP SOL: 5.6 kts		FEATHER SOL: 79.18 °		Started line Turning °		NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted			
BSP EOL: 2.5 kts		FEATHER EOL: 8.57 °							
WEATHER		MAX FEATHER: 79.18 °				GRAVITY METER: BMG-II: used, SN223			
WIND SOL: SE 12 kts						MAGNETOMETER: Geometrics 882			
WIND EOL: SW13 kts									
SEAS SOL: 1.0 m		shift hours Nav shift hours Acq							
SEAS EOL: 1.0 m		12:00 - 24:00 Cody Bahlau 12:00 - 24:00 Riley Lopez							
		0:00-12:00 Koray Ergun 00:00 - 12:00 Gilles Guerin							
SP 25087		Orca Ref 1086		UTC 7:46		EVENT SOL		COMMENTS	
25170				7:58				SOL - 18 Guns @ 3300 cuin	
27849		3848		15:13				Speeding up to shooting speed	
27867		3866		15:16				Disabled Gun 1 on array 2 for autofires, new volume = 2920 cuin	
27880		3879		15:18				Disabled Array 2 due to autofires, new volume 9 guns @ 1650 cuin	
27919		3918		15:25				Reducing speed to 3.5kts WSP	
28119		4118		16:02				Recovering Array 2	
28216		4215		16:19				Array 2 onboard	
28283		4282		16:31				Deploying Array 2	
28331		4330		16:39				Array 2 in position, speeding up to shooting speed	
								Array 2 enabled, new volume 18 guns @ 3300 cuin	
31376		7375		23:59					
31037		7036		0:00		MSP		Last Shot of the day, 2023-05-13	
								First shot of the day, 2023-05-14	
31501		7500		1:22				Array 2 disabled for misfires on the front cluster	
31542		7541		1:31				Start to recover Array 2	
31621		7620		1:50				Array 2 ondeck for repairs	
31706		7705		02:18					
31722		7721		02:24				Commence deployment of String 2 following repair	
31750		7749		02:33				String 2 in the water for testing	
31751		7750		02:33				Enable Gun 2-1 - New Volume 2010ci	
31754		7753		02:34				Enable Gun 2-2 - New Volume 2370ci	
31767		7766		02:38				Disabled Guns 2-1 & 2-2 - New Volume 1650ci	
31768		7767		02:39				Enable Gun 2-1 - New Volume 2010ci	
31769		7768		02:39				Enable Gun 2-2 - New Volume 2370ci	
								Disabled Guns 2-1 & 2-2 - New Volume 1650ci	
31775		7774		2:41					
								Started devaiting from line to turn on to next line	
31778		7777		02:42					
31807		7806		02:52				Recovering string 2 again - same leakage	
								String 2 on deck for repair	
31839		7838		3:03		LGSP		EOL - 9 Guns @ 1650 cuin	

[illegible]

Seq# 008

Line Name: MGL2306008P07

Line Brg : 211.35 °

NAVIGATION

LINE LOGS

DATE: 2023-05-15

JULIAN DAY: 135

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

CLIENT: NSF - Anne Becel

SURVEY: MCS

AREA: Cape Fear

DC SOL: -151.0 m

DC EOL: 11.7 m

BSP SOL: 3.7 kts

BSP EOL: 4.4 kts

WEATHER

WIND SOL: NE 11 kts

WIND EOL: E 15kts kts

SEAS SOL: 1.0 m

SEAS EOL: 1.5 m

DEPTH SOL : 4355.1 m

DEPTH EOL : 2881.7 m

FEATHER SOL: -77.11 °

FEATHER EOL: -7.8 °

MAX FEATHER: -77.11 °

Started line Turning °

NAVIGATION SYSTEM USED: C-Nav3050 - Primary

NAVIGATION SYSTEM USED: SeaPath 330

NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted

GRAVITY METER: BMG-II: used, SN223

MAGNETOMETER: Geometrics 882

shift hours

12:00 - 24:00

0:00-12:00

Nav

Cody Bahlau

Koray Ergun

shift hours

12:00 - 24:00

00:00 - 12:00

Acq

Riley Lopez

Gilles Guerin

SP	Orca Ref	UTC	EVENT	COMMENTS	VESSEL POSITION			
33560	1061	7:44	SOL	SOL - 18 Guns @ 3300 cuin		Shotpoints	Latitude (N)	Longitude (W)
33668	1169	8:07		Speeding up to shooting speed (aft half of the strmr still in the turn)	FSP	33560	33°03'10.39"	74°37'34.65"
38792	6293	23:59	Midnight	Last Shot of the Day; 2023-5-15	LSP	40348	31°44'36.21"	75°33'34.82"
38793	6294	0:00		First shot of the Day; 2023-5-16			Latitude (N)	Longitude (W)
					FSP	33560	33.052887	74.626292
					LSP	40348	31.743391	75.559672
40188	7689	4:33	LPPSP	Last Preplot SP- 160 SP (4000m) run-out	<div><div>NRP – Stern</div><div>29.2m</div><div>NRP – COS</div><div>304.0m</div><div>NRP – CNG</div><div>415.53m</div><div>COS – CNG</div><div>111.53m</div><div>NRP – CMP</div><div>359.76m</div></div>			
40348	7849	5:02	LSP	EOL - 18 Guns @ 3300 cuin				
Posnet locations & remarks: good - none - Intermittent				Forward	Center			
Tailbuoy #1	GOOD		Gun string #1	GOOD	GOOD			
Head Float #1	GOOD		Gun string #2	GOOD	GOOD			
					SP spacing:	25.0m		
					line status:	Complete		
PROCESSING NOTES								
SP SOL - 33666 high UV dt turn with large number of front end compass outliers (S1C1 - S1C5) G1R2 RGPS data slightly noisy at times								
Overall Comments Due to streamer being in turn SOL SP's yielding high UV								

<u>Seq# 009</u>						Line Name: MGL2306009P08 Line Brg : 326.88 °		<u>NAVIGATION LINE LOGS</u>		DATE: 2023-05-16 JULIAN DAY: 136		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE			
						CLIENT: NSF - Anne Becel		SURVEY: MCS		AREA: Cape Fear					
DC SOL: -42.5 m DC EOL: 487.5 m BSP SOL: 3.1 kts BSP EOL: 4.1 kts WEATHER WIND SOL: NE 11 kts WIND EOL: SE 6 kts SEAS SOL: 1.0 m SEAS EOL: 1.0 m						DEPTH SOL : 2942.4 m DEPTH EOL : 2604.7 m FEATHER SOL: -73.78 ° FEATHER EOL: -7.37 ° MAX FEATHER: -73.78 ° shift hours Nav shift hours Accg 12:00 - 24:00 Cody Bahlau 12:00 - 24:00 Riley Lopez 0:00-12:00 Koray Ergun 00:00 - 12:00 Gilles Guerin						NAVIGATION SYSTEM USED: C-Nav3050 - Primary NAVIGATION SYSTEM USED: SeaPath 330 NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted GRAVITY METER: BMG-II: used, SN223 MAGNETOMETER: Geometrics 882			
SP	Orca Ref	UTC	EVENT	COMMENTS								VESSEL POSITION			
41720	721	6:43	SOL	SOL - Compressor tripped, low pressure. Reducing speed to minimum Starting up compressors and initiating ramp-up								FSP	Shotpoints	Latitude (N)	Longitude (W)
41863	864	7:24	FGSP	18 Guns @ 3300 cuin								LSP	41720	31°43'31.18"	75°29'53.93"
41873	874	7:27		Speeding up to shooting speed									43455	32°03'18.77"	75°44'41.16"
														Latitude (N)	Longitude (W)
												FSP	41720	31.725328	75.498313
												LSP	43455	32.055213	75.744767
43402	2403	12:24		Starting to deviate from line to turn on to next line (WSP down to 4.5kts)								<div style="border: 1px solid black; padding: 5px;"> NRP – Stern 29.2m NRP – COS 304.0m NRP – CNG 415.53m COS – CNG 111.53m NRP – CMP 359.76m </div>			
43455	2456	12:35	EOL	EOL - 18 Guns @ 3300 cuin											
Posnet locations & remarks: good - none - intermittent				Forward	Center										
Tailbuoy #1	GOOD		Gun string #1	GOOD	GOOD										
Head Float #1	GOOD		Gun string #2	GOOD	GOOD										
								SP spacing: 25.0m							
								line status:		Complete					
PROCESSING NOTES															
SOL - 41862 edited dt compressor failure at SOL. FGSP: 41863 High UV at EOL (TB and S1C1-S1C3) dt starting turn. Affected SP's 43427 - 43455															
Overall Comments		New SOL FGSP: 41863. Last 29 SP's positioning affected by vessel turning													

Seq# 010

Line Name: MGL2306010P09

Line Brg : 31.41 °

NAVIGATION

LINE LOGS

DATE: 2023-05-16

JULIAN DAY: 136

Lamont-Doherty Earth Observatory

COLUMBIA UNIVERSITY | EARTH INSTITUTE

CLIENT: NSF - Anne Becel

SURVEY: MCS

AREA: Cape Fear

DC SOL: 2.8 m

DC EOL: -442.5 m

BSP SOL: 3.6 kts

BSP EOL: 4.1 kts

WEATHER

WIND SOL: SE 8 kts

WIND EOL: SW 26 kts

SEAS SOL: 1.0 m

SEAS EOL: 1.5 m

DEPTH SOL : 2609.4 m

DEPTH EOL : 3964.2 m

FEATHER SOL: 69.29 °

FEATHER EOL: -22.93 °

MAX FEATHER: 69.29 °

Started line Turning °

NAVIGATION SYSTEM USED: C-Nav3050 - Primary

NAVIGATION SYSTEM USED: SeaPath 330

NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted

GRAVITY METER: BMG-II: used, SN223

MAGNETOMETER: Geometrics 882

shift hoursNavshift hoursAcq

12:00 - 24:00Cody Bahlau12:00 - 24:00Riley Lopez

0:00-12:00Koray Ergun00:00 - 12:00Gilles Guerin

SP	Orca Ref	UTC	EVENT	COMMENTS			VESSEL POSITION			
44067	1068	12:50	SOL	SOL - 18 Guns @ 3300 cuin				Shotpoints	Latitude (N)	Longitude (W)
							FSP	44067	32°04'07.65"	75°44'19.43"
							LSP	50080	33°13'30.35"	74°54'09.26"
									Latitude (N)	Longitude (W)
							FSP	44067	32.068792	75.738731
							LSP	50080	33.225098	74.902573
							<div><div>NRP – Stern29.2m</div><div>NRP – COS304.0m</div><div>NRP – CNG415.53m</div><div>COS – CNG111.53m</div><div>NRP – CMP359.76m</div></div>			
50029	7030	5:55	Turn	Starting to deviate from line to turn on to next line (WSP down to 4.5kts)						
50080	7081	6:05	EOL	EOL - 18 Guns @ 3300 cuin						
</										

Seq# 011

Line Name: MGL2306011P10

Line Brg : 304.18 °

NAVIGATION

LINE LOGS

DATE: 2023-05-17

JULIAN DAY: 137

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

CLIENT: NSF - Anne Becel

SURVEY: MCS

AREA: Cape Fear

DC SOL: -47.0 m

DC EOL: -435.8 m

BSP SOL: 3.7 kts

BSP EOL: 3.3 kts

WEATHER

WIND SOL: SW24 kts

WIND EOL: SW24 kts

SEAS SOL: 1.5 m

SEAS EOL: 2.0 m

DEPTH SOL : 3941.8 m

DEPTH EOL : 3551.1 m

FEATHER SOL: -64.28 °

FEATHER EOL: 7.05 °

MAX FEATHER: -64.28 °

Started line Turning °

NAVIGATION SYSTEM USED: C-Nav3050 - Primary

NAVIGATION SYSTEM USED: SeaPath 330

NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted

GRAVITY METER: BMG-II: used, SN223

MAGNETOMETER: Geometrics 882

shift hours

12:00 - 24:00

0:00-12:00

Nav

Cody Bahlau

Koray Ergun

shift hours

12:00 - 24:00

00:00 - 12:00

Acq

Riley Lopez

Gilles Guerin

SP	Orca Ref	UTC	EVENT	COMMENTS
50563	1064	6:19	SOL	SOL - 18 Guns @ 3300 cuin
50665	1166	6:41		Speeding up to shooting speed
51970	2471	10:53		Starting to deviate from line to turn on to next line (WSP down to 4.5kts)
52010	2511	11:03	EOL	EOL - 18 Guns @ 3300 cuin
Posnet locations & remarks: good - none - intermittent				
Tailbuoy #1	GOOD		Gun string #1	GOOD
Head Float #1	GOOD		Gun string #2	GOOD
PROCESSING NOTES				
Overall Comments				

VESEL POSITION

	Shotpoints	Latitude (N)	Longitude (W)
FSP	50563	33°14'22.34"	74°54'36.16"
LSP	52010	33°25'10.07"	75°34'02.69"

	Latitude (N)	Longitude (W)
FSP	50563	33.239539
LSP	52010	33.419464

NRP – Stern	29.2m
NRP – COS	304.0m
NRP – CNG	415.53m
COS – CNG	111.53m
NRP – CMP	359.76m

SP spacing: 25.0m

line status: Complete

Seq# 012		Line Name: MGL2306012P11		NAVIGATION		DATE: 2023-05-17		Lamont-Doherty Earth Observatory	
		Line Brg : 210.52 °		LINE LOGS		JULIAN DAY: 137		COLUMBIA UNIVERSITY EARTH INSTITUTE	
CLIENT: NSF - Anne Becel				SURVEY: MCS		AREA: Cape Fear			
DC SOL: -437.9 m		DEPTH SOL : 3535.6 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary					
DC EOL: 879.5 m		DEPTH EOL : 2403.5 m		NAVIGATION SYSTEM USED: SeaPath 330					
BSP SOL: 3.8 kts		FEATHER SOL: -79.74 °		Started line Turning °		NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted			
BSP EOL: 4.5 kts		FEATHER EOL: -19.09 °							
WEATHER		MAX FEATHER: -79.74 °		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: SW 22 kts				MAGNETOMETER: Geometrics 882					
WIND EOL: SE 9 kts									
SEAS SOL: 1.5 m									
SEAS EOL: 1.0 m									
		shift hours Nav shift hours Acq							
		12:00 - 24:00 Cody Bahlau 12:00 - 24:00 Riley Lopez							
		0:00-12:00 Koray Ergun 00:00 - 12:00 Gilles Guerin							
SP		Orca Ref		UTC		EVENT		COMMENTS	
52538		1039		11:13		SOL		SOL - 18 Guns @ 3300 cuin	
52690		1191		11:45				Speeding up to shooting speed	
53572		2073		14:29				Disabled G2T4 dt possible leakage issues	
53689		2190		14:52				GS2 disabled	
53696		2197		14:54				Reducing speed to 3.5kts WSP	
53716		2217		14:59				Recovering GS2	
53872		2373		15:45				GS2 on board	
54018		2519		16:24				Deploying GS2	
54114		2615		16:49				G2 in position and enabled	
54157		2658		16:59				Speeding up to 5kts	
54648		3149						Estimate network positions	
54654		3155						Estimate network positions (2)	
56453		4954		23:59				Last Shot of the Day:2023-05-17	
56454		4955		0:00		MSP		First Shot of the Day: 2023-5-18	
58144		6645		4:35				Starting to deviate from line to turn on to next line (WSP down to 4.5kts)	
58212		6713		04:48		EOL		EOL - 18 Guns @ 3300 cuin	
Posnet locations & remarks: good - none - intermittent				Forward		Center			
Tailbuoy #1		GOOD				Gun string #1		GOOD GOOD	
Head Float #1		GOOD				Gun string #2		GOOD GOOD	

SP spacing: 25.0m

line status: Complete

Seq# 013		Line Name: MGL2306013P12		NAVIGATION LINE LOGS		DATE: 2023-05-18		Lamont-Doherty Earth Observatory																																																																																																																																																																													
Line Brg : 319.39 °						JULIAN DAY: 138		COLUMBIA UNIVERSITY EARTH INSTITUTE																																																																																																																																																																													
<div> <div>CLIENT: NSF - Anne Becel</div> <div>SURVEY: MCS</div> <div>AREA: Cape Fear</div> </div>																																																																																																																																																																																					
<div> <div> DC SOL: 362.7 m DC EOL: 588.4 m BSP SOL: 3.8 kts BSP EOL: 4.4 kts WEATHER WIND SOL: SE 8 kts WIND EOL: E 30 kts SEAS SOL: 1.0 m SEAS EOL: 1.5 m </div> <div> DEPTH SOL : 2352.4 m DEPTH EOL : 2171.6 m FEATHER SOL: 78.72 ° FEATHER EOL: -1.23 ° MAX FEATHER: 78.73 ° </div> <div> NAVIGATION SYSTEM USED: C-Nav3050 - Primary NAVIGATION SYSTEM USED: SeaPath 330 NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted GRAVITY METER: BMG-II: used, SN223 MAGNETOMETER: Geometrics 882 </div> </div>																																																																																																																																																																																					
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Seq# 014		Line Name: MGL2306014P13		LINE LOGS		DATE: 2023-05-18		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE	
Line Brg :		26.33 °				JULIAN DAY: 138			
CLIENT: NSF - Anne Becel									
SURVEY: MCS									
AREA: Cape Fear									
DC SOL: -2.0 m									
DC EOL: -892.3 m									
BSP SOL: 4.8 kts									
BSP EOL: 4.4 kts									
WEATHER									
WIND SOL: E 30 kts									
WIND EOL: E 28 kts									
SEAS SOL: 1.5 m									
SEAS EOL: 2.5 m									
DEPTH SOL : 2168.2 m									
DEPTH EOL : 3130.6 m									
FEATHER SOL: 53.37 °									
FEATHER EOL: -3.88 °									
MAX FEATHER: 53.37 °									
NAVIGATION SYSTEM USED: C-Nav3050 - Primary									
NAVIGATION SYSTEM USED: SeaPath 330									
NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted									
GRAVITY METER: BMG-II: used, SN223									
MAGNETOMETER: Geometrics 882									
shift hours Nav shift hours Acc									
12:00 - 24:00 Cody Bahlau 12:00 - 24:00 Riley Lopez									
0:00-12:00 Koray Ergun 00:00 - 12:00 Gilles Guerin									
SP Orca Ref UTC EVENT COMMENTS									
60076 1077 7:52 SOL SOL - 18 Guns @ 3300 cuin									
60238 8:20 Speeding up to shooting speed									
13:25 Picking up Maggie for rough weather									
13:45 Maggie on board									
62185 13:50 Vessel difficulty maintaining constant speed dt weather (WSP 3kts-4.5kts, BSP4kts-5kts)									
62188 13:50 Difficulty keeping streamer depth. Tail surfacing.									
62654 15:10 Setting front half of streamer deep (15m)									
62776 15:32 Streamers set at 10m									
65334 6335 22:56 Gun 2-4 No Fire Detect - SP 65334 - New Volume 3120cu									
65348 6349 22:59 Gun 2-4 Disabled d/t open sensor line									
65694 6695 23:59 Last Shot of the Day: 2023-5-18									
65695 6696 0:00 MSP First Shot of the Day: 2023-5-19									
0:44 Starting to deviate from line to turn on to next line (WSP down to 4.5kts)									
65994 6995 00:55 EOL EOL - 17 Guns @ 3120 cuin									
Posnet locations & remarks: good - none - intermittent									
Forward Center									
Tailbuoy #1 GOOD Gun string #1 GOOD GOOD									
Head Float #1 GOOD Gun string #2 GOOD GOOD									
SP spacing: 25.0m									
line status: Complete									
PROCESSING NOTES									
High UV at EOL dt turn. Affected SP's 65962-EOL									
SP 61799 - 62029: Streamer tail end going shallow also affecting compass readings									
SP 62029 - EOL: Streamers set to 10m to improve streamer control									
Overall Comments Noisy tail compasses at SP 61799 - 62029, strmr surfacing. SP 62029 - EOL strrms at 10m depth									

[illegible]

Seq# 016		Line Name : MGL2306016P15		NAVIGATION LINE LOGS		DATE: 2023-05-19 JULIAN DAY: 139		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE	
		CLIENT: NSF - Anne Becel		SURVEY: MCS		AREA: Cape Fear			
DC SOL: -24.0 m		DEPTH SOL : 582.8 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary					
DC EOL: 981.2 m		DEPTH EOL : 521.1 m		NAVIGATION SYSTEM USED: SeaPath 330					
BSP SOL: 6.5 kts		FEATHER SOL: 90.66 °		Started line Turning °		NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted			
BSP EOL: 6.1 kts		FEATHER EOL: 57.31 °							
WEATHER		MAX FEATHER: 90.66 °		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: E 28 kts				MAGNETOMETER: Geometrics 882					
WIND EOL: E27 kts									
SEAS SOL: 2.5 m		shift hours Nav shift hours Acq							
SEAS EOL: 2.0 m		12:00 - 24:00 Cody Bahlau 12:00 - 24:00 Riley Lopez							
		0:00-12:00 Koray Ergun 00:00 - 12:00 Gilles Guerin							
SP		Orca Ref		UTC		EVENT		COMMENTS	
69632		1133		7:09		SOL		SOL - 17 Guns @ 3120 cuin	
								Positioning of streamer severely affected due to No data from TB1	
								Streamer depth issues S1C10-S1C26 WSP 2kts	
69707		1208		7:18				Bringing up speed back up to BSP 7kts	
								SRV 6.7 sec, compressor pressure 1650psi	
69728		1229		07:20				WSP 4.4kts, BSP 7.5kts, SRV 6.8secs, Pressure 1680psi	
69744		1245		07:23				Disabled G1T8	
69786		1287		07:28				Autofire on GS1, disabling GS1	
								Autofire continues	
69845		1346		7:36				Autofire stopped	
70727		2228		9:33				Starting to deviate from line to turn on to next line	
70797		2298		09:43		EOL		EOL - 9 Guns @ 1650 cuin	

Seq# 017

Line Name: MGL2306017P16

Line Brg : 121.64 °

NAVIGATION

LINE LOGS

DATE: 2023-05-19

JULIAN DAY: 139

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

CLIENT: NSF - Anne Becel

SURVEY: MCS

AREA: Cape Fear

DC SOL: -19.4 m

DC EOL: 422.7 m

BSP SOL: 3.5 kts

BSP EOL: 2.2 kts

WEATHER

WIND SOL: E 28 kts

WIND EOL: E 32 kts

SEAS SOL: 2.5 m

SEAS EOL: 2.0 m

DEPTH SOL : 577.3 m

DEPTH EOL : 1431.6 m

FEATHER SOL: 112.06 °

FEATHER EOL: -32.02 °

MAX FEATHER: 112.06 °

Started line Turning °

NAVIGATION SYSTEM USED: C-Nav3050 - Primary

NAVIGATION SYSTEM USED: SeaPath 330

NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted

GRAVITY METER: BMG-II: used, SN223

MAGNETOMETER: Geometrics 882

shift hours

Nav

shift hours

Acq

12:00 - 24:00

Cody Bahlau

12:00 - 24:00

Riley Lopez

0:00-12:00

Koray Ergun

00:00 - 12:00

Gilles Guerin

SP	Orca Ref	UTC	EVENT	COMMENTS	VESSEL POSITION			
71105	1106	9:57	SOL	SOL - 9 Guns @ 1650 cuin , No data from TB1 Positioning of streamer severely affected due to No data from TB1 GS1 disabled		Shotpoints	Latitude (N)	Longitude (W)
					FSP	71105	34°13'27.47"	75°46'47.93"
					LSP	71450	34°10'48.77"	75°42'11.07"
		10:09		Speeding up to WSP 5kts			Latitude (N)	Longitude (W)
					FSP	71105	34.224297	75.779981
					LSP	71450	34.180213	75.703074
		11:01		Starting to deviate from line to turn on to next line	<div><div>NRP – Stern29.2m</div><div>NRP – COS304.0m</div><div>NRP – CNG415.53m</div><div>COS – CNG111.53m</div><div>NRP – CMP359.76m</div></div>			
71450	1451	11:17	EOL	EOL - 9 Guns @ 1650 cuin				
Posnet locations & remarks: good - none - intermittent				Forward	Center			
Tailbuoy #1	Bad		Gun string #1	GOOD	GOOD			
Head Float #1	GOOD		Gun string #2	GOOD	GOOD			
						SP spacing:	25.0m	
						line status:	Complete	
PROCESSING NOTES								
GS 1 disabled throughout. The center of source is centered over GS 2. No tailbuoy present for the line. Very dynamic streamer movement throughout the line due to turns and likely heavy weather and currents.								
Overall Comments								
GS1 disabld throughout line; COS positioned at centre of GS2. No data from TB affecting quality of positioning.								

[illegible]

Seq# 019

Line Name: MGL2306019P17a

Line Brg : 202.49 °

NAVIGATION

LINE LOGS

DATE: 2023-05-19

JULIAN DAY: 139

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

CLIENT: NSF - Anne Becel

SURVEY: MCS

AREA: Cape Fear

DC SOL: 112.3 m

DC EOL: -5.8 m

BSP SOL: 1.8 kts

BSP EOL: 1.6 kts

WEATHER

WIND SOL: SE 29 kts

WIND EOL: E 3 kts

SEAS SOL: 2.0 m

SEAS EOL: 2.0 m

DEPTH SOL : 1373.4 m

DEPTH EOL : 1083.0 m

FEATHER SOL: 19.98 °

FEATHER EOL: -6.05 °

MAX FEATHER: 19.98 °

Started line Turning °

NAVIGATION SYSTEM USED: C-Nav3050 - Primary

NAVIGATION SYSTEM USED: SeaPath 330

NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted

GRAVITY METER: BMG-II: used, SN223

MAGNETOMETER: Geometrics 882

shift hours

Nav

shift hours

Acq

12:00 - 24:00

Cody Bahlau

12:00 - 24:00

Riley Lopez

0:00-12:00

Koray Ergun

00:00 - 12:00

Gilles Guerin

SP	Orca Ref	UTC	EVENT	COMMENTS	VESEL POSITION												
72044	1045	11:38	SOL	SOL - 9 Guns @ 1650 cuin, No data from TB1 Positioning of streamer severely affected due to No data from TB1 GS1 disabled	<table><tr><th></th><th>Shotpoints</th><th>Latitude (N)</th><th>Longitude (W)</th></tr><tr><td>FSP</td><td>72044</td><td>34°40'07.20"</td><td>75°42'02.97"</td></tr><tr><td>LSP</td><td>73370</td><td>33°53'31.22"</td><td>75°50'12.31"</td></tr></table>		Shotpoints	Latitude (N)	Longitude (W)	FSP	72044	34°40'07.20"	75°42'02.97"	LSP	73370	33°53'31.22"	75°50'12.31"
	Shotpoints	Latitude (N)	Longitude (W)														
FSP	72044	34°40'07.20"	75°42'02.97"														
LSP	73370	33°53'31.22"	75°50'12.31"														
72060	1061	11:45		Speeding up to WSP 5kts Strong currents from aft affecting vessel steering and streamer depths	<table><tr><th></th><th>Latitude (N)</th><th>Longitude (W)</th></tr><tr><td>FSP</td><td>72044</td><td>34.168666</td><td>75.700826</td></tr><tr><td>LSP</td><td>73370</td><td>33.8920062</td><td>75.836752</td></tr></table>		Latitude (N)	Longitude (W)	FSP	72044	34.168666	75.700826	LSP	73370	33.8920062	75.836752	
	Latitude (N)	Longitude (W)															
FSP	72044	34.168666	75.700826														
LSP	73370	33.8920062	75.836752														
73370	2371	19:52	EOL	EOL - 9 Guns @ 1650 cuin, No data from TB1	<table><tr><td>NRP – Stern</td><td>29.2m</td></tr><tr><td>NRP – COS</td><td>304.0m</td></tr><tr><td>NRP – CNG</td><td>415.53m</td></tr><tr><td>COS – CNG</td><td>111.53m</td></tr><tr><td>NRP – CMP</td><td>359.76m</td></tr></table>	NRP – Stern	29.2m	NRP – COS	304.0m	NRP – CNG	415.53m	COS – CNG	111.53m	NRP – CMP	359.76m		
NRP – Stern	29.2m																
NRP – COS	304.0m																
NRP – CNG	415.53m																
COS – CNG	111.53m																
NRP – CMP	359.76m																

Posnet locations & remarks: good - none - intermittent

Tailbuoy #1	Bad	Gun string #1	GOOD	GOOD
Head Float #1	GOOD	Gun string #2	GOOD	GOOD

SP spacing: 25.0m

line status: Complete

PROCESSING NOTES

GS 1 disabled throughout the line. The center of source is centered over array 2. No tailbuoy present for the line. Compass data throughout the line is noisy. Increased rate of change filters to help smooth "bouncing" seen in streamer replay to more realistic movement.

Overall Comments

GS1 disabled throughout line, COS postioned at GS2 center. No TB and rough data and rough seas affecting positioning quality of data.

Seq# 020		Line Name: MGL2306020P14R		NAVIGATION LINE LOGS		DATE: 2023-05-20		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE	
		Line Brg : 304.59 °				JULIAN DAY: 140			
CLIENT: NSF - Anne Becel									
SURVEY: MCS									
AREA: Cape Fear									
DC SOL: 141.2 m		DEPTH SOL : 3127.2 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary					
DC EOL: 208.2 m		DEPTH EOL : 539.9 m		NAVIGATION SYSTEM USED: SeaPath 330					
BSP SOL: 4.2 kts		FEATHER SOL: 46.58 °		Started line Turning °		NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted			
BSP EOL: 1.0 kts		FEATHER EOL: 82.74 °							
WEATHER		MAX FEATHER: 82.74 °		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: S 24 kts				MAGNETOMETER: Geometrics 882					
WIND EOL: SW 9.8 kts									
SEAS SOL: 1.0 m									
SEAS EOL: 1.0 m									

<u>Seq# 021</u>						Line Name: MGL2306021P14S Line Brg : 304.59 °		<u>NAVIGATION LINE LOGS</u>		DATE: 2023-05-21 JULIAN DAY: 141		Lamont-Doherty Earth Observatory <small>COLUMBIA UNIVERSITY EARTH INSTITUTE</small>												
								CLIENT:NSF - Anne Becel	SURVEY: MCS	AREA: Cape Fear														
DC SOL: 202.0 m DC EOL: 584.1 m BSP SOL: 1.1 kts BSP EOL: 0.3 kts WEATHER				DEPTH SOL : 537.8 m DEPTH EOL : 510.0 m FEATHER SOL: 82.64 ° FEATHER EOL: 83.58 ° MAX FEATHER: 83.58 °				NAVIGATION SYSTEM USED: C-Nav3050 - Primary NAVIGATION SYSTEM USED: SeaPath 330 NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted GRAVITY METER: BMG-II: used, SN223 MAGNETOMETER: Geometrics 882																
WIND SOL: SW 9.8 kts WIND EOL: SW 12 kts SEAS SOL: 1.0 m SEAS EOL: 1.0 m				shift hours Nav shift hours 12:00 - 24:00 Cody Bahlau 12:00 - 24:00 0:00-12:00 Koray Ergun 00:00 - 12:00		Accq Riley Lopez Gilles Guerin																		
SP	Orca Ref	UTC	EVENT	COMMENTS																				
78567	8068	1:01	SOL	SOL - 18 Guns @ 3300 cuin This line was acquired with an 8m shot point spacing. Due to extreme currents the vessel is being pushed off the line. Due to extreme currents there is a large feather angle, +80 degrees																				
				<div style="text-align: right;">VESSEL POSITION</div> <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th></th> <th>Shotpoints</th> <th>Latitude (N)</th> <th>Longitude (W)</th> </tr> </thead> <tbody> <tr> <td>FSP</td> <td>78567</td> <td>33°58'56.25"</td> <td>75°59'06.94"</td> </tr> <tr> <td>LSP</td> <td>78830</td> <td>33°59'46.28"</td> <td>76°00'08.22"</td> </tr> </tbody> </table>										Shotpoints	Latitude (N)	Longitude (W)	FSP	78567	33°58'56.25"	75°59'06.94"	LSP	78830	33°59'46.28"	76°00'08.22"
	Shotpoints	Latitude (N)	Longitude (W)																					
FSP	78567	33°58'56.25"	75°59'06.94"																					
LSP	78830	33°59'46.28"	76°00'08.22"																					
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	Latitude (N)	Longitude (W)																						
FSP	78567	33.982292	75.985261																					
LSP	78830	33.99619	76.002282																					
78830	8331	2:05	EOL	EOL - 18 Guns @ 3300 cuin Line ended early due to extreme currents																				
				<table border="1" style="width: 100%;"> <tbody> <tr> <td>NRP – Stern</td> <td>29.2m</td> </tr> <tr> <td>NRP – COS</td> <td>304.0m</td> </tr> <tr> <td>NRP – CNG</td> <td>415.53m</td> </tr> <tr> <td>COS – CNG</td> <td>111.53m</td> </tr> <tr> <td>NRP – CMP</td> <td>359.76m</td> </tr> </tbody> </table>									NRP – Stern	29.2m	NRP – COS	304.0m	NRP – CNG	415.53m	COS – CNG	111.53m	NRP – CMP	359.76m		
NRP – Stern	29.2m																							
NRP – COS	304.0m																							
NRP – CNG	415.53m																							
COS – CNG	111.53m																							
NRP – CMP	359.76m																							
Posnet locations & remarks: good - none - intermittent				Forward	Center																			
Tailbuoy #1	GOOD		Gun string #1	Intermittent	GOOD																			
Head Float #1	GOOD		Gun string #2	GOOD	GOOD																			
Compasses	S01C01 noisy, KO'd																							
D.I.s	S01C01 KO'd																							
PROCESSING NOTES																								
High currents causing extreme feather angle and crab angle. Shooting w 8m SPI dt very low BSP																								
Overall Comments Shooting w 8m SPI dt very low BSP caused by extreme currents. 80° feather angle.																								

Seq# 022

Line Name: MGL2306022P17b

Line Brg : 202.48 °

NAVIGATION

LINE LOGS

DATE: 2023-05-21

JULIAN DAY: 141

Lamont-Doherty Earth Observatory

COLUMBIA UNIVERSITY | EARTH INSTITUTE

CLIENT: NSF - Anne Becel

SURVEY: MCS

AREA: Cape Fear

DC SOL: 5.2 m

DC EOL: -699.9 m

BSP SOL: 1.4 kts

BSP EOL: 3.0 kts

WEATHER

WIND SOL: weak 5 kts

WIND EOL: N 14.9 kts

SEAS SOL: 1.5 m

SEAS EOL: 1.0 m

DEPTH SOL : 1072.3 m

DEPTH EOL : 1388.8 m

FEATHER SOL: 18.78 °

FEATHER EOL: -4.04 °

MAX FEATHER: 18.78 °

NAVIGATION SYSTEM USED: C-Nav3050 - Primary

NAVIGATION SYSTEM USED: SeaPath 330

NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted

GRAVITY METER: BMG-II: used, SN223

MAGNETOMETER: Geometrics 882

shift hours

Nav

shift hours

Acq

12:00 - 24:00

Cody Bahlau

12:00 - 24:00

Riley Lopez

0:00-12:00

Koray Ergun

00:00 - 12:00

Gilles Guerin

SP	Orca Ref	UTC	EVENT	COMMENTS	VESSEL POSITION			
80130	2131	7:00	SOL	SOL - 18 Guns @ 3300 cuin Strong currents limiting the speed over ground during the line.		Shotpoints	Latitude (N)	Longitude (W)
					FSP	80103	33°56'32.19"	75°48'45.52"
					LSP	82263	33°29'43.83"	76°01'31.04"
							Latitude (N)	Longitude (W)
					FSP	80103	33.942276	75.812644
					LSP	82263	33.495507	76.02529
82200	4201			Vessel started deviating to Port to turn on to next line.	<div><div>NRP – Stern29.2m</div><div>NRP – COS304.0m</div><div>NRP – CNG415.53m</div><div>COS – CNG111.53m</div><div>NRP – CMP359.76m</div></div>			
82263	4264	22:17	EOL	EOL - 18 Guns @ 3300 cuin				
Posnet locations & remarks: good - none - intermittent				Forward	Center			
Tailbuoy #1	GOOD		Gun string #1	Intermittent	GOOD			
Head Float #1	GOOD		Gun string #2	GOOD	GOOD			
Compasses	S01C01 noisy, KO'd				SP spacing: 25.0m			
D.I.s	S01C01 KO'd				line status:	Complete		
PROCESSING NOTES								
SOL and EOL positioning affected by vessel turning; affected SP's SOL - 80137 and 82244 - EOL SP's 81855 - 81822; Sudden change in currents causing rapid movement in vessel heading and streamer dynamic yielding high UV and compass outliers (S1C1-S1C6).								
Overall Comments		SOL and EOL affected by turn. Rapid current changes causing high rate of change in vessel and streamer.						

Seq# 023

Line Name: MGL2306023P20

Line Brg : 108.57 °

NAVIGATION

LINE LOGS

DATE: 2023-05-21

JULIAN DAY: 141

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

CLIENT: NSF - Anne Becel

SURVEY: MCS

AREA: Cape Fear

DC SOL: -407.5 m

DC EOL: 887.7 m

BSP SOL: 3.5 kts

BSP EOL: 3.7 kts

WEATHER

WIND SOL: N 14.9 kts

WIND EOL: N 20.7 kts

SEAS SOL: 1.0 m

SEAS EOL: 1.0 m

DEPTH SOL : 1428.2 m

DEPTH EOL : 2750.0 m

FEATHER SOL: -136.32 °

FEATHER EOL: -30.87 °

MAX FEATHER: -136.32 °

NAVIGATION SYSTEM USED: C-Nav3050 - Primary

NAVIGATION SYSTEM USED: SeaPath 330

NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted

GRAVITY METER: BMG-II: used, SN223

MAGNETOMETER: Geometrics 882

shift hours

12:00 - 24:00

0:00-12:00

Nav

Cody Bahlau

Koray Ergun

shift hours

12:00 - 24:00

00:00 - 12:00

Acq

Riley Lopez

Gilles Guerin

SP	Orca Ref	UTC	EVENT	COMMENTS	VESSEL POSITION			
83041	1042	22:24	SOL	SOL - 18 Guns @ 3300 cuin Vessel turning at start of line, strong currents are creating a large feather angle. The forward GPS on array 1 is intermittent		Shotpoints	Latitude (N)	Longitude (W)
					FSP	83401	33°29'23.76"	76°01'16.92"
					LSP	83576	33°26'24.47"	75°53'22.40"
							Latitude (N)	Longitude (W)
					FSP	83401	33.489934	76.021366
					LSP	83576	33.44013	75.889555
83515	1516			Vessel started deviating to Port to turn on to next line.	<div><div>NRP – Stern29.2m</div><div>NRP – COS304.0m</div><div>NRP – CNG415.53m</div><div>COS – CNG111.53m</div><div>NRP – CMP359.76m</div></div>			
83574	1575	23:59		Last Shot of the Day: 2023-05-21				
83575	1576	0:00	MSP	First Shot of the Day: 2023-05-22				
83576	1577	0:01	EOL	EOL - 18 Guns @ 3300 cuin				
Posnet locations & remarks: good - none - intermittent				Forward	Center			
Tailbuoy #1	GOOD		Gun string #1	Intermittent	GOOD			
Head Float #1	GOOD		Gun string #2	GOOD	GOOD			
Compasses	S01C01 noisy, KO'd				SP spacing: 25.0m			
D.I.s	S01C01 KO'd				line status:	Complete		
PROCESSING NOTES								
Line enabled early in Orca, not enough data in filters; first 2 SP's bad positioning (error ellipse up to 40m). Consider editing to FGSP = 83043 Steamer in turn at SOL causing high UV and large number of front compass outliers (S1C1 - S1C5). Affected SP's SOL - 83184 & 83537 - EOL								
Overall Comments		SOL and EOL affecte by turn. First 2 SP's high error ellipse dt lack of data for filter,consider editing FGSP to 83043.						

<u>Seq# 024</u>		Line Name: MGL2306024P21 Line Brg : 201.79 °		<u>LINE LOGS</u>		DATE: 2023-05-22 JULIAN DAY: 142		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE	
CLIENT: NSF - Anne Becel				SURVEY: MCS		AREA: Cape Fear			
DC SOL: 313.0 m DC EOL: 1025.2 m BSP SOL: 3.6 kts BSP EOL: 2.7 kts WEATHER		DEPTH SOL : 2757.7 m DEPTH EOL : 2645.2 m FEATHER SOL: 56.57 ° FEATHER EOL: -13.95 ° MAX FEATHER: 56.57 °		NAVIGATION SYSTEM USED: C-Nav3050 - Primary NAVIGATION SYSTEM USED: SeaPath 330 NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted GRAVITY METER: BMG-II: used, SN223 MAGNETOMETER: Geometrics 882					
WIND SOL: N 14.9 kts WIND EOL: N 20.1 kts SEAS SOL: 1.0 m SEAS EOL: 1.0 m		<u>shift hours</u> 12:00 - 24:00 0:00-12:00		<u>Nav</u> Cody Bahlau Koray Ergun		<u>shift hours</u> 12:00 - 24:00 00:00 - 12:00		<u>Acq</u> Riley Lopez Gilles Guerin	
SP	Orca Ref	UTC	EVENT	COMMENTS					
84045	1046	0:05	SOL	SOL - 18 Guns @ 3300 cuin Vessel turning at start of line, strong currents are creating a large feather angle. The forward GPS on array 1 is intermittent					
84074	1075	00:13	84074	Gun 1-4 begins misfiring - New Volume 3120ci - Troubleshooting begins					
84105	1106	00:20	84105	Volume change d/t troubleshooting issue on 1-4 : New Volume 3080ci					
84117	1118	00:23	84117	Swapped 1-3 & 1-4 in patch, 1-3 fires on channel 4, New Volume 3260ci					
84128	1129	00:26	84128	Swapped 1-4 back - New Volume 3080ci					
84171	1172	00:37	84171	Disabled string 1 - New Volume 1650ci					
84177	1178	00:38	84177	Enabled string 1 - New Volume 3120ci					
84203	1204	00:45	84203	Disabled string 1 - New Volume 1650ci					
		0:49		Commence Recovery of string 1					
		1:04		String 1 On Deck for repairs					
84417	1418	1:56	EOL	EOL - 9 Guns @ 1650 cuin					
Posnet locations & remarks: good - none - intermittent				Forward	Center				
Tailbuoy #1	GOOD		Gun string #1	Intermittent	GOOD				
Head Float #1	GOOD		Gun string #2	GOOD	GOOD				
Compasses	S01C01 noisy, KO'd								
D.I.s	S01C01 KO'd								
PROCESSING NOTES									
GS1 disabled @SP's 84171-84176 and 84203-84417. During those shot ranges the center of source is over GS 2.									
SP 84170 no source fired. The Z record still contains the source location if necessary, but no S record is present in the P190.									
Overall Comments		Only GS2 firing and positioned for SP's 84171 - 84176 and 84203 - 84417.							

Seq# 025		Line Name: MGL2306025P22		LINE LOGS		DATE: 2023-05-22		Lamont-Doherty Earth Observatory																																
		Line Brg : 287.97 °				JULIAN DAY: 142		COLUMBIA UNIVERSITY EARTH INSTITUTE																																
<div> <div>CLIENT: NSF - Anne Becel</div> <div>SURVEY: MCS</div> <div>AREA: Cape Fear</div> </div>																																								
<div> <div> DC SOL: 44.0 m DC EOL: -662.8 m BSP SOL: 4.2 kts BSP EOL: 2.2 kts WEATHER WIND SOL: N 20 kts WIND EOL: N 22 kts SEAS SOL: 1.0 m SEAS EOL: 1.5 m </div> <div> DEPTH SOL : 2583.7 m DEPTH EOL : 641.2 m FEATHER SOL: 95.41 ° FEATHER EOL: 12.23 ° MAX FEATHER: 95.41 ° </div> <div> NAVIGATION SYSTEM USED: C-Nav3050 - Primary NAVIGATION SYSTEM USED: SeaPath 330 NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted GRAVITY METER: BMG-II: used, SN223 MAGNETOMETER: Geometrics 882 </div> </div>																																								
<div> <div> shift hours 12:00 - 24:00 0:00-12:00 </div> <div> Nav Cody Bahlau Koray Ergun </div> <div> shift hours 12:00 - 24:00 00:00 - 12:00 </div> <div> Acc Riley Lopez Gilles Guerin </div> </div>																																								
SP	Orca Ref	UTC	EVENT	COMMENTS																																				
85064	1065	2:05	SOL	SOL - 18 Guns @ 1650 cuin																																				
				Vessel turning at start of line, strong currents are creating a large feather angle.																																				
				Array 1 onboard at start of the line																																				
85190	1191	2:30		Vessel deviating to port to allow room to deploy array 1																																				
85195	1196	02:31		Start deployment String 1																																				
85240	1241	02:41		String 1 Deployed - All strings in position																																				
85241	1242	2:41		Vessel starting back to line																																				
85252	1253	02:43		String 1 Enabled @ SP 85252 - New Volume 3300 ci																																				
85254	1255	02:44		FGSP d/t timing issues @ SP 85254																																				
85376	1377	3:06		Vessel back on line heading																																				
86404	2405	6:29		Starting to deviate from line to turn on to next line																																				
86465	2466	6:47	EOL	EOL - 18 Guns @ 1650 cuin																																				
Posnet locations & remarks: good - none - intermittent				Forward	Center																																			
Tailbuoy #1	GOOD		Gun string #1	GOOD	GOOD																																			
Head Float #1	GOOD		Gun string #2	GOOD	GOOD																																			
Compasses	S01C01 noisy, KO'd																																							
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PROCESSING NOTES																																								
Overall Comments																																								
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	Shotpoints	Latitude (N)	Longitude (W)																																					
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LSP	86465	33°27'01.44"	76°18'11.44"																																					
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COS – CNG	111.53m																																							
NRP – CMP	359.76m																																							
<div> <div>SP spacing: 25.0m</div> <div>line status: Complete</div> </div>																																								

Seq# 026		Line Name: MGL2306026P23 Line Brg : 203.31 °		<u>NAVIGATION</u> <u>LINE LOGS</u>		DATE: 2023-05-22 JULIAN DAY: 142		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE	
		CLIENT: NSF - Anne Becel		SURVEY: MCS		AREA: Cape Fear			
DC SOL: -332.2 m DC EOL: -563.3 m BSP SOL: 2.1 kts BSP EOL: 1.9 kts WEATHER		DEPTH SOL : 639.0 m DEPTH EOL : 649.3 m FEATHER SOL: -43.6 ° FEATHER EOL: 3.32 ° MAX FEATHER: -43.6 °		NAVIGATION SYSTEM USED: C-Nav3050 - Primary NAVIGATION SYSTEM USED: SeaPath 330 NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted GRAVITY METER: BMG-II: used, SN223 MAGNETOMETER: Geometrics 882					
WIND SOL: N 21 kts WIND EOL: NE 22 kts SEAS SOL: 1.0 m SEAS EOL: 1.0 m		shift hours Nav shift hours 12:00 - 24:00 Cody Bahlau 0:00-12:00 Koray Ergun		Accq 12:00 - 24:00 Riley Lopez 00:00 - 12:00 Gilles Guerin					
SP	Orca Ref	UTC	EVENT	COMMENTS					
87029	1030	6:55	SOL	SOL - 18 Guns @ 3300 cuin Vessel still in turn onto line					
87083	1084	7:18		Speeding up to shooting speed (WSP 5.5kts) Strong currents in the area creating high feather angle					
87144	1145	7:39		Starting to deviate from line to turn on to next line					
87203	1204	8:07	EOL	EOL - 18 Guns @ 3300 cuin					
Posnet locations & remarks: good - none - intermittent				Forward	Center				
Tailbuoy #1	GOOD		Gun string #1	Intermittent	GOOD				
Head Float #1	GOOD		Gun string #2	GOOD	GOOD				
Compasses	S01C01 noisy, KO'd								
D.I.s	S01C01 KO'd								
PROCESSING NOTES									
Short line consisting mostly of turn with currents causing high number of compass reading rejection									
Overall Comments		Short line while turning with high currents affecting bird compasses.							

VESSEL POSITION			
	Shotpoints	Latitude (N)	Longitude (W)
FSP	87029	33°26'52.72"	76°18'28.84"
LSP	87203	33°24'40.07"	76°19'27.24"

	Latitude (N)	Longitude (W)
FSP	87029	33.447977
LSP	87203	33.411131

NRP – Stern	29.2m
NRP – COS	304.0m
NRP – CNG	415.53m
COS – CNG	111.53m
NRP – CMP	359.76m

SP spacing:	25.0m
line status:	Complete

<u>Seq# 027</u>		Line Name: MGL2306027P24 Line Brg : 108.85 °		<u>NAVIGATION LINE LOGS</u>		DATE: 2025-07-22 JULIAN DAY: 142		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE	
CLIENT: NSF - Anne Becel SURVEY: MCS AREA: Cape Fear									
DC SOL: -492.9 m		DEPTH SOL : 657.3 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary					
DC EOL: 682.5 m		DEPTH EOL : 2261.3 m		NAVIGATION SYSTEM USED: SeaPath 330					
BSP SOL: 2.1 kts		FEATHER SOL: -83.07 °		NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted					
BSP EOL: 3.4 kts		FEATHER EOL: -24.51 °							
WEATHER		MAX FEATHER: -83.07 °		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: NE 24 kts				MAGNETOMETER: Geometrics 882					
WIND EOL: NE 20 kts									
SEAS SOL: 1.5 m		shift hours Nav shift hours Accg							
SEAS EOL: 1.5 m		12:00 - 24:00 Cody Bahlau 12:00 - 24:00 Riley Lopez							
		0:00-12:00 Koray Ergun 00:00 - 12:00 Gilles Guerin							
SP	Orca Ref	UTC	EVENT	COMMENTS					
87537	1038	8:21	SOL	SOL - 18 Guns @ 3300 cuin					
				Vessel still in turn onto line					
87614	1115	8:46		Speeding up to shooting speed					
				Strong currents in the area creating high feather angle					
88717	2218	12:27		Airleak on GS1 (PSI G1GP1 1800psi)					
88718	2219	12:27		Continuing to EOL before picking (DE 2900m)					
88758	2259	12:35		Starting to deviate from line to turn on to next line					
88811	2312	12:49	EOL	EOL - 18 Guns @ 3300 cuin					
Posnet locations & remarks: good - none - intermittent				Forward	Center				
Tailbuoy #1	GOOD		Gun string #1	Intermittent	GOOD				
Head Float #1	GOOD		Gun string #2	GOOD	GOOD				
Compasses	S01C01 noisy, KO'd								
D.I.s	S01C01 KO'd								
PROCESSING NOTES									
SP 88776 UV's are creeping up with increasing compass outliers, particularly St1C1-S1C5 up o the EOL									
Overall Comments									
EOL positioning yielding high UV dt to turn, a particularly front compasses.									

VESSEL POSITION			
	Shotpoints	Latitude (N)	Longitude (W)
FSP	87537	33°24'15.69"	76°19'13.48"
LSP	88811	33°18'04.02"	76°00'03.09"

	Latitude (N)	Longitude (W)
FSP	87537	33.404358
LSP	88811	33.301118

NRP – Stern	29.2m
NRP – COS	304.0m
NRP – CNG	415.53m
COS – CNG	111.53m
NRP – CMP	359.76m

SP spacing: 25.0m

line status: Complete

[illegible]

Seq# 029

Line Name: MGL2306029P26

Line Brq : 289.55 °

NAVIGATION

LINE LOGS

DATE: 2023-05-22

JULIAN DAY: 142

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

CLIENT: NSF - Anne Becel

SURVEY: MCS

AREA: Cape Fear

DC SOL:	9.8 m
DC EOL:	-484.5 m
BSP SOL:	4.0 kts
BSP EOL:	3.3 kts
WEATHER	

DEPTH SOL :	2020.7 m
DEPTH EOL :	681.5 m
FEATHER SOL:	65.95 °
FEATHER EOL:	24.04 °
MAX FEATHER:	65.95 °

NAVIGATION SYSTEM USED: C-Nav3050 - Primary
NAVIGATION SYSTEM USED: SeaPath 330
NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted

GRAVITY METER: BMG-II: used, SN223
MAGNETOMETER: Geometrics 882

WIND SOL:	NE 23 kts
WIND EOL:	NE 15 kts
SEAS SOL:	1.5 m
SEAS EOL:	1.5 m

<u>shift hours</u>	<u>Nav</u>	<u>shift hours</u>	<u>Acq</u>
12:00 - 24:00	Cody Bahlau	12:00 - 24:00	Riley Lopez
0:00-12:00	Koray Ergun	00:00 - 12:00	Gilles Guerin

[illegible]

[illegible]

Seq# 031				Line Name: MGL2306031P28		NAVIGATION LINE LOGS		DATE: 2023-05-22		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE									
				Line Brg : 110.12 °				JULIAN DAY: 142											
CLIENT: NSF - Anne Becel				SURVEY: MCS				AREA: Cape Fear											
DC SOL: -376.3 m		DEPTH SOL : 706.7 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary															
DC EOL: 789.7 m		DEPTH EOL : 2056.0 m		NAVIGATION SYSTEM USED: SeaPath 330															
BSP SOL: 3.5 kts		FEATHER SOL: -82.14 °		NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted															
BSP EOL: 3.3 kts		FEATHER EOL: -26.26 °																	
WEATHER		MAX FEATHER: -82.14 °																	
WIND SOL: NE 25 kts								GRAVITY METER: BMG-II: used, SN223											
WIND EOL: NE 21 kts								MAGNETOMETER: Geometrics 882											
SEAS SOL: 1.5 m		shift hours 12:00 - 24:00		Nav Cody Bahlau		shift hours 12:00 - 24:00		Acc Riley Lopez											
SEAS EOL: 2.0 m		0:00-12:00		Koray Ergun		00:00 - 12:00		Gilles Guerin											
SP	Orca Ref	UTC	EVENT	COMMENTS															
93040	1041	21:25	SOL	SOL - 18 Guns @ 3300 cuin				VESSEL POSITION											
				Vessel still in turn onto line					Shotpoints	Latitude (N)	Longitude (W)								
				Strong currents in the area creating high feather angle				FSP	93040	33°13'34.33"	76°24'16.52"								
								LSP	94308	33°07'03.45"	76°05'23.78"								
93924	1925			Last shot of the day: 2023-05-22															
93925	1926		MSP	First shot of the day: 2023-5-23															
									Latitude (N)	Longitude (W)									
								FSP	93040	33.226204	76.404588								
								LSP	94308	33.117625	76.08994								
94244				Starting to deviate from line to turn on to next line															
94308	2309	1:09	EOL	EOL - 18 Guns @ 3300 cuin															

[illegible]

Seq# 033

Line Name: MGL2306033P30

Line Brg : 289.67 °

NAVIGATION

LINE LOGS

DATE: 2023-05-23

JULIAN DAY: 143

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

CLIENT: NSF - Anne Becel

SURVEY: MCS

AREA: Cape Fear

DC SOL: 202.2 m

DC EOL: -699.0 m

BSP SOL: 3.1 kts

BSP EOL: 2.9 kts

WEATHER

WIND SOL: E 20.3 kts

WIND EOL: E 19 kts

SEAS SOL: 2.0 m

SEAS EOL: 1.5 m

DEPTH SOL : 1902.9 m

DEPTH EOL : 725.4 m

FEATHER SOL: 70.63 °

FEATHER EOL: 33.34 °

MAX FEATHER: 70.63 °

NAVIGATION SYSTEM USED: C-Nav3050 - Primary

NAVIGATION SYSTEM USED: SeaPath 330

NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted

GRAVITY METER: BMG-II: used, SN223

MAGNETOMETER: Geometrics 882

shift hours

12:00 - 24:00

0:00-12:00

Nav

Cody Bahlau

Koray Ergun

shift hours

12:00 - 24:00

00:00 - 12:00

Acq

Riley Lopez

Gilles Guerin

SP	Orca Ref	UTC	EVENT	COMMENTS	VESEL POSITION												
96045	1046	2:33	SOL	SOL - 18 Guns @ 3300 cuin Vessel still in turn onto line	<table><tr><th></th><th>Shotpoints</th><th>Latitude (N)</th><th>Longitude (W)</th></tr><tr><td>FSP</td><td>96045</td><td>33°03'16.87"</td><td>76°07'44.00"</td></tr><tr><td>LSP</td><td>97305</td><td>33°08'32.04"</td><td>76°27'00.17"</td></tr></table>		Shotpoints	Latitude (N)	Longitude (W)	FSP	96045	33°03'16.87"	76°07'44.00"	LSP	97305	33°08'32.04"	76°27'00.17"
	Shotpoints	Latitude (N)	Longitude (W)														
FSP	96045	33°03'16.87"	76°07'44.00"														
LSP	97305	33°08'32.04"	76°27'00.17"														
96280	1281	3:27		Speeding up to 5 kts WSP	<table><tr><th></th><th>Latitude (N)</th><th>Longitude (W)</th></tr><tr><td>FSP</td><td>96045</td><td>33.054686</td><td>76.128889</td></tr><tr><td>LSP</td><td>97305</td><td>33.142233</td><td>76.450047</td></tr></table>		Latitude (N)	Longitude (W)	FSP	96045	33.054686	76.128889	LSP	97305	33.142233	76.450047	
	Latitude (N)	Longitude (W)															
FSP	96045	33.054686	76.128889														
LSP	97305	33.142233	76.450047														
97237	2238	6:48		Starting to deviate from line to turn on to next line	<table><tr><td>NRP – Stern</td><td>29.2m</td></tr><tr><td>NRP – COS</td><td>304.0m</td></tr><tr><td>NRP – CNG</td><td>415.53m</td></tr><tr><td>COS – CNG</td><td>111.53m</td></tr><tr><td>NRP – CMP</td><td>359.76m</td></tr></table>	NRP – Stern	29.2m	NRP – COS	304.0m	NRP – CNG	415.53m	COS – CNG	111.53m	NRP – CMP	359.76m		
NRP – Stern	29.2m																
NRP – COS	304.0m																
NRP – CNG	415.53m																
COS – CNG	111.53m																
NRP – CMP	359.76m																
97305	2306	7:07	EOL	EOL - 18 Guns @ 3300 cuin													
<div>Posnet locations & remarks: good - none - intermittent</div> <table><tr><th>Forward</th><th>Center</th></tr><tr><td>Tailbuoy #1</td><td>GOOD</td></tr><tr><td>Head Float #1</td><td>GOOD</td></tr><tr><td>Compasses</td><td>S01C01 noisy, KO'd</td></tr><tr><td>D.I.s</td><td>S01C01 KO'd</td></tr></table>						Forward	Center	Tailbuoy #1	GOOD	Head Float #1	GOOD	Compasses	S01C01 noisy, KO'd	D.I.s	S01C01 KO'd		
Forward	Center																
Tailbuoy #1	GOOD																
Head Float #1	GOOD																
Compasses	S01C01 noisy, KO'd																
D.I.s	S01C01 KO'd																
<div>PROCESSING NOTES</div> <div>SP's: SOL - 96109 High UV and compass outliers in front compasses dt turn</div> <div>SP's: 97168 - 97211 High UV and compass outliers in front compasses dt turn</div>																	
<div>Overall Comments</div> <div>SOL and EOL streamer postioning affected by vessel maneuvering</div>																	

SP spacing: 25.0m

line status: Complete

[illegible]

Seq# 035

Line Name: MGL2306035P32

Line Brg : 112.15 °

NAVIGATION

LINE LOGS

DATE: 2023-05-23

JULIAN DAY: 143

Lamont-Doherty Earth Observatory

COLUMBIA UNIVERSITY | EARTH INSTITUTE

CLIENT: NSF - Anne Becel

SURVEY: MCS

AREA: Cape Fear

DC SOL: -110.3 m

DC EOL: 777.2 m

BSP SOL: 4.6 kts

BSP EOL: 3.7 kts

WEATHER

WIND SOL: NE 22 kts

WIND EOL: NE 20 kts

SEAS SOL: 1.5 m

SEAS EOL: 1.5 m

DEPTH SOL : 754.4 m

DEPTH EOL : 1823.7 m

FEATHER SOL: -86.24 °

FEATHER EOL: -25.16 °

MAX FEATHER: -86.24 °

NAVIGATION SYSTEM USED: C-Nav3050 - Primary

NAVIGATION SYSTEM USED: SeaPath 330

NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted

GRAVITY METER: BMG-II: used, SN223

MAGNETOMETER: Geometrics 882

shift hours

Nav

shift hours

Acq

12:00 - 24:00

Cody Bahlau

12:00 - 24:00

Riley Lopez

0:00-12:00

Koray Ergun

00:00 - 12:00

Gilles Guerin

SP	Orca Ref	UTC	EVENT	COMMENTS			VESSEL POSITION			
98059	1060	8:34	SOL	SOL - 18 Guns @ 3300 cuin				Shotpoints	Latitude (N)	Longitude (W)
				Vessel still in turn onto line			FSP	98059	33°04'29.50"	76°28'16.17"
98099	1100	8:41		Speeding up to 5kts WSP			LSP	99299	32°57'36.06"	76°10'02.15"
									Latitude (N)	Longitude (W)
							FSP	98059	33.07486	76.471158
							LSP	99299	32.960016	76.167263
99241	2242	11:54		Starting to deviate from line to turn on to next line			<div><div>NRP – Stern29.2m</div><div>NRP – COS304.0m</div><div>NRP – CNG415.53m</div><div>COS – CNG111.53m</div><div>NRP – CMP359.76m</div></div>			
99299	2300	12:08	EOL	EOL - 18 Guns @ 3300 cuin						
Posnet locations & remarks: good - none - intermittent				Forward	Center		SP spacing: 25.0m			
Tailbuoy #1	GOOD		Gun string #1	GOOD	GOOD					
Head Float #1	GOOD		Gun string #2	GOOD	GOOD					
Compasses	S01C01 noisy, KO'd									
D.I.s	S01C01 KO'd									
PROCESSING NOTES							line status:	Complete		
High UV and compass outliers at SOL dt turn. Affected SP's SOL - 98134										
Extreme currents coming out of the turn causing rapid streamer movement resulting in S-shape streamer yielding high UV in LSA; SP's 98210 - 98358										
Starting turn to next line at SOL, high UV's. Affected SP's 99240 - EOL										
Overall Comments							S-shape in streamer with high UV's at SP 98210 - 98358. Positioning affected by turn at SOL and EOL.			

Seq# 036

Line Name: MGL2306036P33

Line Brg : 203.86 °

NAVIGATION

LINE LOGS

DATE: 2023-05-23

JULIAN DAY: 143

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

CLIENT: NSF - Anne Becel

SURVEY: MCS

AREA: Cape Fear

DC SOL: 204.4 m

DC EOL: 798.6 m

BSP SOL: 3.4 kts

BSP EOL: 3.7 kts

WEATHER

WIND SOL: NE 22 kts

WIND EOL: NE 21 kts

SEAS SOL: 1.5 m

SEAS EOL: 1.5 m

DEPTH SOL : 137.7 m

DEPTH EOL : 1783.5 m

FEATHER SOL: 57.53 °

FEATHER EOL: -8.01 °

MAX FEATHER: 57.53 °

NAVIGATION SYSTEM USED: C-Nav3050 - Primary

NAVIGATION SYSTEM USED: SeaPath 330

NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted

GRAVITY METER: BMG-II: used, SN223

MAGNETOMETER: Geometrics 882

shift hours

12:00 - 24:00

0:00-12:00

Nav

Cody Bahlau

Koray Ergun

shift hours

12:00 - 24:00

00:00 - 12:00

Acq

Riley Lopez

Gilles Guerin

SP	Orca Ref	UTC	EVENT	COMMENTS	VESSEL POSITION			
99551	1052	12:16	SOL	SOL - 18 Guns @ 3300 cuin Vessel still in turn onto line		Shotpoints	Latitude (N)	Longitude (W)
					FSP	99551	32°57'05.93"	76°09'55.56"
					LSP	99888	32°53'03.59"	76°12'27.56"
							Latitude (N)	Longitude (W)
					FSP	99551	32.951647	76.165432
					LSP	99888	32.88433	76.207655
99822	1323	13:25		Starting to deviate from line to turn on to next line	<div><div>NRP – Stern</div><div>29.2m</div><div>NRP – COS</div><div>304.0m</div><div>NRP – CNG</div><div>415.53m</div><div>COS – CNG</div><div>111.53m</div><div>NRP – CMP</div><div>359.76m</div></div>			
99888	1389	13:43	EOL	EOL - 18 Guns @ 3300 cuin				
Posnet locations & remarks: good - none - intermittent								
Tailbuoy #1	GOOD		Gun string #1	GOOD	GOOD			
Head Float #1	GOOD		Gun string #2	GOOD	GOOD			
Compasses	S01C01 noisy, KO'd					SP spacing: 25.0m		
D.I.s	S01C01 KO'd					line status: Complete		
PROCESSING NOTES								
SP's SOL - 99606; affected by turn with high UV and front compass (S1C1-S1C6) outliers								
SP's 99857 - EOL; affected by turn with high UV and front compass (S1C1-S1C6) outliers								
Overall Comments					SOL and EOL positioning affected by turn			

Seq# 037

Line Name: MGL2306037P34

Line Brg : 294.24 °

NAVIGATION

LINE LOGS

DATE: 2023-05-23

JULIAN DAY: 143

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

CLIENT: NSF - Anne Becel

SURVEY: MCS

AREA: Cape Fear

DC SOL: 110.3 m

DC EOL: -312.8 m

BSP SOL: 3.7 kts

BSP EOL: 3.1 kts

WEATHER

WIND SOL: NE 21 kts

WIND EOL: NE 16 kts

SEAS SOL: 1.5 m

SEAS EOL: 1.5 m

DEPTH SOL : 1749.6 m

DEPTH EOL : 768.5 m

FEATHER SOL: 73.46 °

FEATHER EOL: 12.62 °

MAX FEATHER: 73.46 °

shift hours

Nav

shift hours

Acq

12:00 - 24:00

Cody Bahlau

12:00 - 24:00

Riley Lopez

0:00-12:00

Koray Ergun

00:00 - 12:00

Gilles Guerin

NAVIGATION SYSTEM USED: C-Nav3050 - Primary

NAVIGATION SYSTEM USED: SeaPath 330

NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted

GRAVITY METER: BMG-II: used, SN223

MAGNETOMETER: Geometrics 882

SP	Orca Ref	UTC	EVENT	COMMENTS			VESSEL POSITION			
100060	1061	13:52	SOL	SOL - 18 Guns @ 3300 cuin				Shotpoints	Latitude (N)	Longitude (W)
				Vessel still in turn onto line			FSP	100060	32°52'59.97"	76°13'11.70"
							LSP	101296	32°59'37.63"	76°31'23.86"
									Latitude (N)	Longitude (W)
							FSP	100060	32.883325	76.219917
							LSP	101296	32.993785	76.523295
101258	2259	17:43		Starting to deviate from line to turn on to next line			<div><div>NRP – Stern29.2m</div><div>NRP – COS304.0m</div><div>NRP – CNG415.53m</div><div>COS – CNG111.53m</div><div>NRP – CMP359.76m</div></div>			
101296	2297	17:53	EOL	EOL - 18 Guns @ 3300 cuin						

Seq# 038

Line Name: MGL2306038P35

Line Brg : 236.2 °

NAVIGATION

LINE LOGS

DATE: 2023-05-23

JULIAN DAY: 143

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

CLIENT: NSF - Anne Becel

SURVEY: MCS

AREA: Cape Fear

DC SOL: -80.4 m

DC EOL: -1432.3 m

BSP SOL: 2.8 kts

BSP EOL: 2.7 kts

WEATHER

WIND SOL: NE 16 kts

WIND EOL: NE 20 kts

SEAS SOL: 1.5 m

SEAS EOL: 1.5 m

DEPTH SOL : 763.7 m

DEPTH EOL : 752.0 m

FEATHER SOL: -40.82 °

FEATHER EOL: 19.75 °

MAX FEATHER: -40.82 °

NAVIGATION SYSTEM USED: C-Nav3050 - Primary

NAVIGATION SYSTEM USED: SeaPath 330

NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted

GRAVITY METER: BMG-II: used, SN223

MAGNETOMETER: Geometrics 882

shift hours

12:00 - 24:00

0:00-12:00

Nav

Cody Bahlau

Koray Ergun

shift hours

12:00 - 24:00

00:00 - 12:00

Acq

Riley Lopez

Gilles Guerin

SP	Orca Ref	UTC	EVENT	COMMENTS	VESSEL POSITION			
102018	1019	18:00	SOL	SOL - 18 Guns @ 3300 cuin Vessel still in turn onto line		Shotpoints	Latitude (N)	Longitude (W)
					FSP	102018	32°59'33.48"	76°31'46.30"
					LSP	102278	32°56'59.63"	76°34'45.35"
							Latitude (N)	Longitude (W)
					FSP	102018	32.992632	76.529527
					LSP	102278	32.949896	76.579263
102198	1199	18:57		Starting to deviate from line to turn on to next line	<div><div>NRP – Stern</div><div>29.2m</div><div>NRP – COS</div><div>304.0m</div><div>NRP – CNG</div><div>415.53m</div><div>COS – CNG</div><div>111.53m</div><div>NRP – CMP</div><div>359.76m</div></div>			
102278	1279	19:31	EOL					
Posnet locations & remarks: good - none - intermittent								
Tailbuoy #1	GOOD		Gun string #1	GOOD	GOOD			
Head Float #1	GOOD		Gun string #2	GOOD	GOOD			
Compasses	S01C01 noisy, KO'd					SP spacing: 25.0m		
D.I.s	S01C01 KO'd					line status: Complete		
PROCESSING NOTES								
SP's at SOL and EOL positioning affected by turn; SOL - 102036, 102272 - EOL								
Overall Comments					SOL and EOL positioing affected by turn			

Seq# 039					
Line Name:		MGL2306039P36	<u>NAVIGATION LINE LOGS</u>		DATE: 2023-05-23
Line Brg :		119.7 °			JULIAN DAY: 143
CLIENT:NSF - Anne Becel SURVEY: MCS AREA: Cape Fear					
DC SOL: -412.3 m		DEPTH SOL : 758.3 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary	
DC EOL: -791.4 m		DEPTH EOL : 892.6 m		NAVIGATION SYSTEM USED: SeaPath 330	
BSP SOL: 3.1 kts		FEATHER SOL: -88.76 °		NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted	
BSP EOL: 6.1 kts		FEATHER EOL: -17.10 °			
WEATHER		MAX FEATHER: -88.76 °		GRAVITY METER: BMG-II: used, SN223	
WIND SOL: NE 16 kts				MAGNETOMETER: Geometrics 882	
WIND EOL: NE 18 kts					
SEAS SOL: 1.5 m		shift hours	Nav	shift hours	Accq
SEAS EOL: 1.5 m		12:00 - 24:00	Cody Bahlau	12:00 - 24:00	Riley Lopez
		0:00-12:00	Koray Ergun	00:00 - 12:00	Gilles Guerin
SP	Orca Ref	UTC	EVENT	COMMENTS	
103095	1096	19:40	SOL	SOL - 18 Guns @ 3300 cuin	
				Vessel still in turn onto line	
103450	1451	20:47		Starting to deviate from line to turn on to next line	
103512	1513	20:57	EOL	EOL - 18 Guns @ 3300 cuin	
Posnet locations & remarks: good - none - intermittent			Forward	Center	
Tailbuoy #1	GOOD		Gun string #1	GOOD	GOOD
Head Float #1	GOOD		Gun string #2	GOOD	GOOD
Compasses	S01C01 noisy, KO'd				
D.I.s	S01C01 KO'd				
PROCESSING NOTES					
SP's at SOL and EOL positioning affected by turn; SOL - 103223, 103457 - EOL					
Overall Comments		SOL and EOL positioing affected by turn			

Seq# 040				Line Name: MGL2306040P37		Line Brg : 22.4 °		NAVIGATION LINE LOGS		DATE: 2023-05-23		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE																	
				CLIENT: NSF - Anne Becel		SURVEY: MCS		AREA: Cape Fear																					
DC SOL: -164.1 m		DEPTH SOL : 903.5 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																									
DC EOL: -585.2 m		DEPTH EOL : 681.4 m		NAVIGATION SYSTEM USED: SeaPath 330																									
BSP SOL: 5.6 kts		FEATHER SOL: -104.11 °		NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted																									
BSP EOL: 4.7 kts		FEATHER EOL: 7.77 °																											
WEATHER		MAX FEATHER: -104.11 °																											
WIND SOL: NE 18 kts																													
WIND EOL: N 24 kts		shift hours		Nav		shift hours		Acc																					
SEAS SOL: 1.5 m		12:00 - 24:00		Cody Bahlau		12:00 - 24:00		Riley Lopez																					
SEAS EOL: 2.0 m		0:00-12:00		Koray Ergun		00:00 - 12:00		Gilles Guerin																					
SP	Orca Ref	UTC	EVENT	COMMENTS																									
104066	1067	21:04	SOL	SOL - 18 Guns @ 3300 cuin						VESSEL POSITION																			
				Vessel still in turn onto line							Shotpoints	Latitude (N)	Longitude (W)																
				This line is going with the gulf stream, speed over ground in some sections will be greater than 5.1 kts.						FSP	104066	32°54'19.80"	76°27'59.23"																
										LSP	107485	33°37'09.67"	76°07'14.46"																
105206	2207	23:59	MSP	Last Shot of the day: 2023-5-23																									
105207	2208	0:00		First Shot of the day: 2023-5-24																									
105880	2881			Digis 11- 15 are trending up. Placed fixed wing angle to drive down.																									
107425	4426	5:50		Starting to deviate from line to turn on to next line																									
107485	5486	6:00	EOL	EOL - 18 Guns @ 3300 cuin																									

[illegible]

<u>Seq# 042</u>		Line Name: MGL2306042P19		<u>NAVIGATION</u>		DATE: 2024-05-23		Lamont-Doherty Earth Observatory																																																																																																									
		Line Brg : 22.77 °		<u>LINE LOGS</u>		JULIAN DAY: 144		COLUMBIA UNIVERSITY EARTH INSTITUTE																																																																																																									
<div> <div>CLIENT: NSF - Anne Becel</div> <div>SURVEY: MCS</div> <div>AREA: Cape Fear</div> </div>																																																																																																																	
<div> <div> DC SOL: -23.2 m DC EOL: 33.2 m BSP SOL: 6.5 kts BSP EOL: 6.2 kts WEATHER WIND SOL: N 24 kts WIND EOL: N 29 kts SEAS SOL: 2.0 m SEAS EOL: 2.0 m </div> <div> DEPTH SOL : 554.8 m DEPTH EOL : 460.7 m FEATHER SOL: 43.45 ° FEATHER EOL: 12.54 ° MAX FEATHER: 43.45 ° </div> <div> NAVIGATION SYSTEM USED: C-Nav3050 - Primary NAVIGATION SYSTEM USED: SeaPath 330 NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted GRAVITY METER: BMG-II: used, SN223 MAGNETOMETER: Geometrics 882 </div> </div>																																																																																																																	
<div> <div> <div>shift hours</div> <div>Nav</div> <div>shift hours</div> <div>Acc</div> </div> <div> 12:00 - 24:00 0:00-12:00 </div> <div> Cody Bahlau Koray Ergun </div> <div> 12:00 - 24:00 00:00 - 12:00 </div> <div> Riley Lopez Gilles Guerin </div> </div>																																																																																																																	
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<div> <div> <div>SP spacing: 50.0m</div> <div>line status: Complete</div> </div> </div>																																																																																																																	

Seq# 043

Line Name: MGL2306043P14b

Line Brg : 124 °

NAVIGATION

LINE LOGS

DATE: 2024-05-23

JULIAN DAY: 144

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

CLIENT: NSF - Anne Becel

SURVEY: MCS

AREA: Cape Fear

DC SOL: -2428.2 m

DC EOL: 336.3 m

BSP SOL: 5.6 kts

BSP EOL: 3.6 kts

WEATHER

WIND SOL: N 31 kts

WIND EOL: N 31 kts

SEAS SOL: 2.0 m

SEAS EOL: 2.5 m

DEPTH SOL : 467.3 m

DEPTH EOL : 589.5 m

FEATHER SOL: 107.74 °

FEATHER EOL: -60.06 °

MAX FEATHER: 107.74 °

NAVIGATION SYSTEM USED: C-Nav3050 - Primary

NAVIGATION SYSTEM USED: SeaPath 330

NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted

GRAVITY METER: BMG-II: used, SN223

MAGNETOMETER: Geometrics 882

shift hours

12:00 - 24:00

0:00-12:00

Nav

Cody Bahlau

Koray Ergun

shift hours

12:00 - 24:00

00:00 - 12:00

Acq

Riley Lopez

Gilles Guerin

SP	s	UTC	EVENT	COMMENTS	VESEL POSITION																															
110505	1006	10:23	SOL	SOL - 18 Guns @ 3300 cuin Vessel in turn This line is turning off the gulf stream, speed over ground in some sections will be greather than 5.1 kts. This line is acquired in the track of a 180° circle turning on to next line going opposite heading of previous line Streamers set to 10m depth for strmr control SPI +50m and varying dt arc track	<table><thead><tr><th></th><th>Shotpoints</th><th>Latitude (N)</th><th>Longitude (W)</th></tr></thead><tbody><tr><td>FSP</td><td>110505</td><td>34°01'26.49"</td><td>76°00'57.58"</td></tr><tr><td>LSP</td><td>110692</td><td>33°57'20.73"</td><td>75°56'58.27"</td></tr></tbody></table> <table><thead><tr><th></th><th>Latitude (N)</th><th>Longitude (W)</th></tr></thead><tbody><tr><td>FSP</td><td>110505</td><td>34.024026</td></tr><tr><td>LSP</td><td>110692</td><td>33.955759</td></tr></tbody></table> <div><table><tr><td>NRP – Stern</td><td>29.2m</td></tr><tr><td>NRP – COS</td><td>304.0m</td></tr><tr><td>NRP – CNG</td><td>415.53m</td></tr><tr><td>COS – CNG</td><td>111.53m</td></tr><tr><td>NRP – CMP</td><td>359.76m</td></tr></table></div>		Shotpoints	Latitude (N)	Longitude (W)	FSP	110505	34°01'26.49"	76°00'57.58"	LSP	110692	33°57'20.73"	75°56'58.27"		Latitude (N)	Longitude (W)	FSP	110505	34.024026	LSP	110692	33.955759	NRP – Stern	29.2m	NRP – COS	304.0m	NRP – CNG	415.53m	COS – CNG	111.53m	NRP – CMP	359.76m
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NRP – CMP	359.76m																																			
110692	1193	11:45	EOL	EOL - 18 Guns @ 3300 cuin																																

Posnet locations & remarks: good - none - intermittent

Tailbuoy #1

GOOD

Gun string #1

GOOD

GOOD

Head Float #1

GOOD

Gun string #2

GOOD

GOOD

Compasses

S01C01 noisy, KO'd

D.I.s

S01C01 KO'd

PROCESSING NOTES

Line acquired in arc shaped track continuously on a turning trajectory causing high UV's throughout the line. Compass and TB instability. Affected SP's SOL - EOL

Overall Comments

Line acquired in arc shaped track, continuously on a turning trajectory causing high UV's throughout the line.

SP spacing: 50.0m

Variable dt arc track

line status: Complete

Seq# 044		Line Name: MGL2306044P37a		NAVIGATION LINE LOGS		DATE: 2024-05-23		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE	
Line Brg :		202.45 °		JULIAN DAY: 144					
CLIENT: NSF - Anne Becel		SURVEY: MCS		AREA: Cape Fear					
DC SOL: 57.6 m		DEPTH SOL : 593.6 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary					
DC EOL: -1047.3 m		DEPTH EOL : 735.7 m		NAVIGATION SYSTEM USED: SeaPath 330					
BSP SOL: 3.5 kts		FEATHER SOL: 12.18 °		NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted					
BSP EOL: 3.9 kts		FEATHER EOL: 3.6 °							
WEATHER		MAX FEATHER: 12.18 °		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: N 28 kts				MAGNETOMETER: Geometrics 882					
WIND EOL: N 24 kts									
SEAS SOL: 2.5 m									
SEAS EOL: 3+ m									

<u>Seq# 045</u>		Line Name: MGL2306045P20b Line Brg : 108.73 °		<u>NAVIGATION</u> <u>LINE LOGS</u>		DATE: 2024-05-23 JULIAN DAY: 144		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE																						
<div> <div>CLIENT: NSF - Anne Becel</div> <div>SURVEY: MCS</div> <div>AREA: Cape Fear</div> </div>																														
DC SOL: 93.1 m		DEPTH SOL : 758.1 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																										
DC EOL: 401.4 m		DEPTH EOL : 2557.3 m		NAVIGATION SYSTEM USED: SeaPath 330																										
BSP SOL: 4.3 kts		FEATHER SOL: 81.76 °		NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted																										
BSP EOL: 5.7 kts		FEATHER EOL: 8.63 °																												
WEATHER		MAX FEATHER: 81.76 °		GRAVITY METER: BMG-II: used, SN223																										
WIND SOL: N 24 kts				MAGNETOMETER: Geometrics 882																										
WIND EOL: NE 26 kts																														
SEAS SOL: 3+m		shift hours		Nav		shift hours		Acc																						
SEAS EOL: 3+m		12:00 - 24:00		Cody Bahlau		12:00 - 24:00		Riley Lopez																						
		0:00-12:00		Koray Ergun		00:00 - 12:00		Gilles Guerin																						
SP	Orca Ref	UTC	EVENT	COMMENTS																										
114068	1069	20:18	SOL	SOL - 18 Guns @ 3300 cuin																										
				Vessel in turn																										
				Struggling with streamer control, portions of the streamer on surface.																										
114350	1351	21:05		Streamer is at 15 meters and stable																										
114876	1877	22:28		Vessel turning to port to head for next line																										
114921	1922	22:35	EOL	EOL - 18 Guns @ 3300 cuin																										
Posnet locations & remarks: good - none - intermittent				Forward	Center																									
Tailbuoy #1	GOOD		Gun string #1	GOOD	GOOD																									
Head Float #1	GOOD		Gun string #2	GOOD	GOOD																									
Compasses	S01C01 noisy, KO'd																													
D.I.s	S01C01 KO'd																													
PROCESSING NOTES																														
SP's SOL - 114304; center to last Rx-Groups struggling to go down to depth. SP's 114330 - EOL streamer set to 15m																														
High UV at EOL dt starting deviation from line to head for next line. Affected SP's 114885 - EOL																														
Overall Comments		Streamer depth unstable @ S1C9 - S1C26 from SOL to 114304 (set to 15m depth there on). EOL UV's high dt turn.																												
<div> <div>VESSEL POSITION</div> <table> <tr> <th></th> <th>Shotpoints</th> <th>Latitude (N)</th> <th>Longitude (W)</th> </tr> <tr> <td>FSP</td> <td>114068</td> <td>33°31'11.62"</td> <td>76°08'17.40"</td> </tr> <tr> <td>LSP</td> <td>114921</td> <td>33°27'39.75"</td> <td>75°55'10.86"</td> </tr> </table> </div>											Shotpoints	Latitude (N)	Longitude (W)	FSP	114068	33°31'11.62"	76°08'17.40"	LSP	114921	33°27'39.75"	75°55'10.86"									
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NRP – CNG	415.53m																													
COS – CNG	111.53m																													
NRP – CMP	359.76m																													
SP spacing: 25.0m				line status: Complete																										

Seq# 046

Line Name: MGL2306046P18

Line Brq : 287.07 °

NAVIGATION

LINE LOGS

DATE: 2023-05-24

JULIAN DAY: 144

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

CLIENT: NSF - Anne Becel

SURVEY: MCS

AREA: Cape Fear

DC SOL:	377.6 m
DC EOL:	1254.9 m
BSP SOL:	6.0 kts
BSP EOL:	3.8 kts

DEPTH SOL :	2657.7 m
DEPTH EOL :	1344.3 m
FEATHER SOL:	86.28 °
FEATHER EOL:	13.87 °
MAX FEATHER:	86.28 °

NAVIGATION SYSTEM USED: C-Nav3050 - Primary
NAVIGATION SYSTEM USED: SeaPath 330
NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted

GRAVITY METER: BMG-II: used, SN223
MAGNETOMETER: Geometrics 882

WIND SOL:	NE 26 kts
WIND EOL:	NE 21 kts
SEAS SOL:	3+ m
SEAS EOL:	2.5 m

<u>shift hours</u>	<u>Nav</u>	<u>shift hours</u>	<u>Acq</u>
12:00 - 24:00	Cody Bahlau	12:00 - 24:00	Riley Lopez
0:00-12:00	Koray Ergun	00:00 - 12:00	Gilles Guerin

[illegible]

[illegible]

Seq# 048		Line Name : MGL2306048P40		NAVIGATION LINE LOGS		DATE: 2023-05-25		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE	
Line Brg :		122.43 °		JULIAN DAY: 145					
CLIENT: NSF - Anne Becel		SURVEY: MCS		AREA: Cape Fear					
DC SOL: -0.9 m		DEPTH SOL : 1528.0 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary					
DC EOL: -4.0 m		DEPTH EOL : 4976.6 m		NAVIGATION SYSTEM USED: SeaPath 330					
BSP SOL: 3.6 kts		FEATHER SOL: -69.92 °		NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted					
BSP EOL: 5.0 kts		FEATHER EOL: -0.37 °							
WEATHER		MAX FEATHER: -69.92 °		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: E 20 kts				MAGNETOMETER: Geometrics 882					
WIND EOL: E15 kts									
SEAS SOL: 2.0 m									
SEAS EOL: 2.0 m									
SP		Orca Ref		UTC		EVENT		COMMENTS	
123079		1080		14:45		SOL		SOL- 9 Guns @ 1650 cuin	
								Streamer is at 10m and is stable	
				14:52				Vessel coming out of turn from previous line	
				15:09				Deploying GS2	
								GS2 in position and enabled -18 Guns @ 3300 cuin	
126455		4456		23:59				Last shot of the day: 2023-5-25	
126456		4457		0:00		MSP		First shot of the day: 2023-5-26	
127270		5271		02:06				Loss of streamer control due to low water speeds and digibirds 8 and 9.	
								Streamer on surface multiple times. Adjusted the speed over ground up to 6.5 kts to force the birds down.	
127806		5807		3:24				Streamers stable at 8 meters	
131652		9653		13:31				GS2 not firing	
131661		9662		13:33				GS2 back online	
132628		10629		16:10		EOL		EOL- 18 Guns @ 3300 cuin	
				</					

Seq# 049

Line Name: MGL2306049P41

Line Brg : 86.94 °

NAVIGATION
LINE LOGS

DATE: 2023-05-27

JULIAN DAY: 147

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

CLIENT: NSF - Anne Becel

SURVEY: MCS

AREA: Cape Fear

DC SOL: 592.0 m

DC EOL: -68.8 m

BSP SOL: 3.8 kts

BSP EOL: 5.0 kts

WEATHER

WIND SOL: E 25 kts

WIND EOL: SE 13 kts

SEAS SOL: 2.5 m

SEAS EOL: 1.5 m

DEPTH SOL : 4383.3 m

DEPTH EOL : 5171.5 m

FEATHER SOL: 72.48 °

FEATHER EOL: -1.16 °

MAX FEATHER: 72.48 °

NAVIGATION SYSTEM USED: C-Nav3050 - Primary

NAVIGATION SYSTEM USED: SeaPath 330

NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted

GRAVITY METER: BMG-II: used, SN223

MAGNETOMETER: Geometrics 882

shift hours12:00 - 24:000:00-12:00

NavCody BahlauKoray Ergun

shift hours12:00 - 24:0000:00 - 12:00

AcqRiley LopezGilles Guerin

SP	Orca Ref	UTC	EVENT	COMMENTS	VESEL POSITION																														
133613	-386	2:43	SOL	SOL- 18 Guns @ 3300 cuin SOL birds at 8m depth 34.5km run-in SP's (acquired) to Line41	<table><thead><tr><th></th><th>Shotpoints</th><th>Latitude (N)</th><th>Longitude (W)</th></tr></thead><tbody><tr><td>FSP</td><td>133613</td><td>31°37'35.49"</td><td>74°34'59.35"</td></tr><tr><td>LSP</td><td>137510</td><td>31°40'25.38"</td><td>73°33'26.91"</td></tr></tbody></table>		Shotpoints	Latitude (N)	Longitude (W)	FSP	133613	31°37'35.49"	74°34'59.35"	LSP	137510	31°40'25.38"	73°33'26.91"																		
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133777	-222	3:14		Restimated the ranges																															
133788	-211	3:16		Birds are at 6m	<table><thead><tr><th></th><th>Latitude (N)</th><th>Longitude (W)</th></tr></thead><tbody><tr><td>FSP</td><td>133613</td><td>31.626526</td><td>74.583152</td></tr><tr><td>LSP</td><td>137510</td><td>31.673718</td><td>73.557476</td></tr></tbody></table>		Latitude (N)	Longitude (W)	FSP	133613	31.626526	74.583152	LSP	137510	31.673718	73.557476																			
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LSP	137510	31.673718	73.557476																																
135000	1001	6:52	FPPSP	First Preplot SP of Line 41																															
136480	2481	11:06		Subarray seps coming close ~ 2.5m																															
136530	2531	11:14		Subarray seps improving > 4.5m																															
137270	3271	13:14	LPPSP	Last Preplot SP	<table><tbody><tr><td>NRP – Stern</td><td>29.2m</td></tr><tr><td>NRP – COS</td><td>304.0m</td></tr><tr><td>NRP – CNG</td><td>415.53m</td></tr><tr><td>COS – CNG</td><td>111.53m</td></tr><tr><td>NRP – CMP</td><td>359.76m</td></tr></tbody></table>	NRP – Stern	29.2m	NRP – COS	304.0m	NRP – CNG	415.53m	COS – CNG	111.53m	NRP – CMP	359.76m																				
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137510	3511	13:53	EOL	EOL- 18 Guns @ 3300 cuin																															
<table><thead><tr><th colspan="4">Posnet locations & remarks: good - none - intermittent</th><th>Forward</th><th>Center</th></tr></thead><tbody><tr><td>Tailbuoy #1</td><td>GOOD</td><td></td><td>Gun string #1</td><td>GOOD</td><td>GOOD</td></tr><tr><td>Head Float #1</td><td>GOOD</td><td></td><td>Gun string #2</td><td>GOOD</td><td>GOOD</td></tr><tr><td>Compasses</td><td>GOOD</td><td></td><td></td><td></td><td></td></tr><tr><td>D.I.s</td><td>GOOD</td><td></td><td></td><td></td><td></td></tr></tbody></table>						Posnet locations & remarks: good - none - intermittent				Forward	Center	Tailbuoy #1	GOOD		Gun string #1	GOOD	GOOD	Head Float #1	GOOD		Gun string #2	GOOD	GOOD	Compasses	GOOD					D.I.s	GOOD				
Posnet locations & remarks: good - none - intermittent				Forward	Center																														
Tailbuoy #1	GOOD		Gun string #1	GOOD	GOOD																														
Head Float #1	GOOD		Gun string #2	GOOD	GOOD																														
Compasses	GOOD																																		
D.I.s	GOOD																																		
PROCESSING NOTES																																			
High UV and number of front compass outliers at SOL - 133639 Subarray separations coming close at times Missing SP's in processing; SP's 133629, 133630, 133631, 133632																																			
Overall Comments SOL positioing affected by turn. Gunarray separations changing throughout line.																																			

SP spacing: 25.0m

line status: Complete

Seq# 050		Line Name: MGL2306050P42		NAVIGATION LINE LOGS		DATE: 2023-05-27		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE					
		Line Brg : 303.8 °				JULIAN DAY: 147							
<div> <div>CLIENT: NSF - Anne Becel</div> <div>SURVEY: MCS</div> <div>AREA: Cape Fear</div> </div>													
DC SOL: 61.6 m		DEPTH SOL : 5166.4 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary									
DC EOL: 878.6 m		DEPTH EOL : 2008.3 m		NAVIGATION SYSTEM USED: SeaPath 330									
BSP SOL: 4.5 kts		FEATHER SOL: 27.38 °		NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted									
BSP EOL: 4.7 kts		FEATHER EOL: -1.53 °											
WEATHER		MAX FEATHER: 27.38 °											
WIND SOL: SE 12 kts				GRAVITY METER: BMG-II: used, SN223									
WIND EOL: SW 20 kts				MAGNETOMETER: Geometrics 882									
SEAS SOL: 1.5 m													
SEAS EOL: 1.5 m													

<u>Seq# 051</u>		Time Name: MGL2306051P43 Line Brg : 22.61 °		<u>LINE LOGS</u>		DATE: 2023-05-29 JULIAN DAY: 149		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE	
CLIENT: NSF - Anne Becel SURVEY: MCS AREA: Cape Fear									
DC SOL: -3.5 m DC EOL: 760.3 m BSP SOL: 5.2 kts BSP EOL: 4.7 kts WEATHER WIND SOL: SW 20 kts WIND EOL: SW 12 kts SEAS SOL: 1.5 m SEAS EOL: 1.5 m		DEPTH SOL : 2016.2 m DEPTH EOL : 2789.6 m FEATHER SOL: 68.51 ° FEATHER EOL: -3.07 ° MAX FEATHER: 68.51 °		NAVIGATION SYSTEM USED: C-Nav3050 - Primary NAVIGATION SYSTEM USED: SeaPath 330 NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted GRAVITY METER: BMG-II: used, SN223 MAGNETOMETER: Geometrics 882					
		shift hours Nav shift hours Acc 12:00 - 24:00 Cody Bahlau 12:00 - 24:00 Riley Lopez 0:00-12:00 Koray Ergun 00:00 - 12:00 Gilles Guerin							
SP	Orca Ref	UTC	EVENT	COMMENTS					
151077	1078	6:53	SOL	SOL- 18 Guns @ 3300 cuin SOL birds at 6m depth					
151105	1106	6:58		Disabled GS1 to re-establish vessel separation rope to cuffs -9 Guns @ 1650 cuin					
151196	1197	7:13		Enabled GS1 -18 Guns @ 3300 cuin					
151208	1209	7:15		Disabled GS2 to recover up to stern to modify tow rope configuration -9 Guns @ 1650 cuin					
151584	1585	8:16		Reducing WSP to 3kts for GS recovery					
151657	1658	8:30		Altering course to STBD 30° for GS recovery dt high crab angle					
151731	1732	8:45		GS head at the stern, vessel easing back to PORT					
151890	1891	9:18		Altering course again to STBD for safe GS deployment					
151905	1906	9:21		GS deploying, vessel heading back to line course and speeding up					
151953	1954	9:28		GS2 in postion and enabled -18 Guns @ 3300 cuin					
153540	3541	13:39	Turn	Deviating from line to turn on to next line.					
153606	3607	13:51	EOL	EOL- 18 Guns @ 3300 cuin					
Posnet locations & remarks: good - none - intermittent				Forward	Center				
Tailbuoy #1	GOOD		Gun string #1	GOOD	GOOD				
Head Float #1	GOOD		Gun string #2	GOOD	GOOD				
Compasses	GOOD								
D.I.s	GOOD								
PROCESSING NOTES									
GS1 was disabled for shots 151105-151195. During this shot range the center of source was computed at the center of GS2 GS2 was disabled for shots 151208-151952. During this shot range the center of source was computed at the center of GS 1									
Overall Comments		COS source shifted to remaining source when GS's were disabled; GS1 SP's 151105-151195 and GS2 151208-151952.							

Seq# 052		Line Name: MGL2306052P44		NAVIGATION LINE LOGS		DATE: 2023-05-29		Lamont-Doherty Earth Observatory	
		Line Brg : 123.63 °				JULIAN DAY: 149		COLUMBIA UNIVERSITY EARTH INSTITUTE	
<div> <div>CLIENT: NSF - Anne Becel</div> <div>SURVEY: MCS</div> <div>AREA: Cape Fear</div> </div>									
DC SOL: 24.6 m		DEPTH SOL : 2844.3 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary					
DC EOL: 746.4 m		DEPTH EOL : 4940.0 m		NAVIGATION SYSTEM USED: SeaPath 330					
BSP SOL: 5.1 kts		FEATHER SOL: 78.40 °		NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted					
BSP EOL: 4.6 kts		FEATHER EOL: -11.39 °							
WEATHER		MAX FEATHER: 78.40 °		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: SW 10 kts				MAGNETOMETER: Geometrics 882					
WIND EOL: NE 5 kts									
SEAS SOL: 1.5 m		shift hours 12:00 - 24:00		Nav Cody Bahlau		shift hours 12:00 - 24:00		Acc Riley Lopez	
SEAS EOL: 1.0 m		0:00-12:00		Koray Ergun		00:00 - 12:00		Gilles Guerin	
SP	Orca Ref	UTC	EVENT	COMMENTS					
154094	1095	14:05	SOL	SOL- 18 Guns @ 3300 cuin					
				SOL birds at 6m depth					
				Streamer still in turn lining up with line direction (high feather)					
154274	1275	14:38		Speeding up to nominal shooting speed.					
157543	4544	23:59		Last shot of the day: 2023-5-29					
157544	4545	0:00	MSP	First shot of the day: 2023-5-30					
160912	7913	9:47		GS1 pressure slightly low at 1860psi (possible airleak)					
161016	8017	10:06		BSP down by 0.5kts to assess situation. Slight improvement, seems to be constant @1885					
154649	1650	15:38	Turn	Deviating from line to turn on to next line.					
162560	9561	14:52	EOL	EOL- 18 Guns @ 3300 cuin					
Posnet locations & remarks: good - none - intermittent				Forward	Center				
Tailbuoy #1	GOOD		Gun string #1	GOOD	GOOD				
Head Float #1	GOOD		Gun string #2	GOOD	GOOD				
Compasses	GOOD								
D.I.s	GOOD								
PROCESSING NOTES									
High UV's dt high number of front compass outliers (S1C1-S5) caused by turn during vessel maneuvering. Affected SP's SOL - 154129 and 162527 - EOL									
Manifold pressure 3-4% below nominal dt airleak on GS1 @SP's 160912 - EOL									
Overall Comments									
Positioning affected by vessel turning at SOL & EOL; SP's SOL - 154129 & 162527 - EOL. Air pressure below nominal @ SP's 160912 - EOL.									
				VESSEL POSITION					
					Shotpoints	Latitude (N)	Longitude (W)		
FSP					154093	33°35'23.79"	75°48'56.70"		
LSP					162560	32°30'48.16"	73°56'40.41"		
						Latitude (N)	Longitude (W)		
FSP					154093	33.589943	75.815751		
LSP					162560	32.513379	73.944557		
				<div> <div>NRP – Stern</div> <div>29.2m</div> <div>NRP – COS</div> <div>304.0m</div> <div>NRP – CNG</div> <div>415.53m</div> <div>COS – CNG</div> <div>111.53m</div> <div>NRP – CMP</div> <div>359.76m</div> </div>					
				<div> <div>SP spacing:</div> <div>25.0m</div> </div>					
				<div> <div>line status:</div> <div>Complete</div> </div>					

Seq# 053

Line Name: MGL2306053P45

Line Brg : 210.77 °

NAVIGATION

LINE LOGS

DATE: 2023-05-30

JULIAN DAY: 150

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

CLIENT: NSF - Anne Becel

SURVEY: MCS

AREA: Cape Fear

DC SOL: 48.0 m

DC EOL: 815.4 m

BSP SOL: 4.1 kts

BSP EOL: 3.1 kts

WEATHER

WIND SOL: N 6 kts

WIND EOL: N 12 kts

SEAS SOL: 1.0 m

SEAS EOL: 1.0 m

DEPTH SOL : 4949.7 m

DEPTH EOL : 4874.5 m

FEATHER SOL: 64.20 °

FEATHER EOL: 29.26 °

MAX FEATHER: 64.20 °

NAVIGATION SYSTEM USED: C-Nav3050 - Primary

NAVIGATION SYSTEM USED: SeaPath 330

NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted

GRAVITY METER: BMG-II: used, SN223

MAGNETOMETER: Geometrics 882

shift hours

12:00 - 24:00

0:00-12:00

Nav

Cody Bahlau

Koray Ergun

shift hours

12:00 - 24:00

00:00 - 12:00

Acq

Riley Lopez

Gilles Guerin

SP	Orca Ref	UTC	EVENT	COMMENTS	VESEL POSITION																								
163060	1061	15:01	SOL	SOL- 9 Guns @ 1650 cuin SOL birds at 6m depth Streamer still in turn lining up with line direction (high feather) Recovering GS1 dt airleak	<table><tr><th></th><th>Shotpoints</th><th>Latitude (N)</th><th>Longitude (W)</th></tr><tr><td>FSP</td><td>163060</td><td>32°30'08.53"</td><td>73°56'43.94"</td></tr><tr><td>LSP</td><td>164200</td><td>32°17'06.10"</td><td>74°06'26.67"</td></tr></table>		Shotpoints	Latitude (N)	Longitude (W)	FSP	163060	32°30'08.53"	73°56'43.94"	LSP	164200	32°17'06.10"	74°06'26.67"												
	Shotpoints	Latitude (N)	Longitude (W)																										
FSP	163060	32°30'08.53"	73°56'43.94"																										
LSP	164200	32°17'06.10"	74°06'26.67"																										
163144	1145	15:19		Disabled GS1 - 9 Guns @ 1650 cuin																									
163433	1434	16:38		Enable GS1	<table><tr><th></th><th></th><th>Latitude (N)</th><th>Longitude (W)</th></tr><tr><td>FSP</td><td>163060</td><td>32.50237</td><td>73.94554</td></tr><tr><td>LSP</td><td>164200</td><td>32.285029</td><td>74.107407</td></tr></table>			Latitude (N)	Longitude (W)	FSP	163060	32.50237	73.94554	LSP	164200	32.285029	74.107407												
		Latitude (N)	Longitude (W)																										
FSP	163060	32.50237	73.94554																										
LSP	164200	32.285029	74.107407																										
164137	2138	18:58	Turn	Deviating from line to turn on to next line.	<table><tr><td>NRP – Stern</td><td>29.2m</td></tr><tr><td>NRP – COS</td><td>304.0m</td></tr><tr><td>NRP – CNG</td><td>415.53m</td></tr><tr><td>COS – CNG</td><td>111.53m</td></tr><tr><td>NRP – CMP</td><td>359.76m</td></tr></table>	NRP – Stern	29.2m	NRP – COS	304.0m	NRP – CNG	415.53m	COS – CNG	111.53m	NRP – CMP	359.76m														
NRP – Stern	29.2m																												
NRP – COS	304.0m																												
NRP – CNG	415.53m																												
COS – CNG	111.53m																												
NRP – CMP	359.76m																												
164200	2201	19:15	EOL	EOL- 18 Guns @ 3300 cuin																									
<div>Posnet locations & remarks: good - none - Intermittent</div> <table><tr><td>Tailbuoy #1</td><td>GOOD</td><td></td><td>Gun string #1</td><td>GOOD</td><td>GOOD</td></tr><tr><td>Head Float #1</td><td>GOOD</td><td></td><td>Gun string #2</td><td>GOOD</td><td>GOOD</td></tr><tr><td>Compasses</td><td>GOOD</td><td></td><td></td><td></td><td></td></tr><tr><td>D.I.s</td><td>GOOD</td><td></td><td></td><td></td><td></td></tr></table>					Tailbuoy #1	GOOD		Gun string #1	GOOD	GOOD	Head Float #1	GOOD		Gun string #2	GOOD	GOOD	Compasses	GOOD					D.I.s	GOOD					SP spacing: 25.0m
Tailbuoy #1	GOOD		Gun string #1	GOOD	GOOD																								
Head Float #1	GOOD		Gun string #2	GOOD	GOOD																								
Compasses	GOOD																												
D.I.s	GOOD																												
<div>PROCESSING NOTES</div> <div>GS1 was disabled for shots 163060-163431. During this shot range the center of source was computed at the center of GS2.</div>					line status: Complete																								
Overall Comments					GS1 was disabled @SP's 163060-163431; COS positioned at the center of GS2.																								

<u>Seq# 054</u>				Line Name: MGL2306054P46 Line Brg : 303.6 °		<u>LINE LOGS</u>		DATE: 2023-05-30 JULIAN DAY: 150		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE			
CLIENT: NSF - Anne Becel				SURVEY: MCS		AREA: Cape Fear							
DC SOL:	354.2 m			DEPTH SOL :	4888.0 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary							
DC EOL:	680.8 m			DEPTH EOL :	2420.4 m	NAVIGATION SYSTEM USED: SeaPath 330							
BSP SOL:	3.0 kts			FEATHER SOL:	57.29 °	NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted							
BSP EOL:	4.3 kts			FEATHER EOL:	15.35 °								
WEATHER				MAX FEATHER:	57.29 °								
WIND SOL:	N 12 kts					GRAVITY METER: BMG-II: used, SN223							
WIND EOL:	N 18 kts					MAGNETOMETER: Geometrics 882							
SEAS SOL:	1.0 m			shift hours	Nav	shift hours	Acc						
SEAS EOL:	1.0 m			12:00 - 24:00	Cody Bahlau	12:00 - 24:00	Riley Lopez						
				0:00-12:00	Koray Ergun	00:00 - 12:00	Gilles Guerin						
SP	Orca Ref	UTC	EVENT	COMMENTS									
165042	1043	19:22	SOL	SOL- 18 Guns @ 3300 cuin									
165213	1214	20:08		Gun string 1 disabled (broken depth rope)									
165380	1381	20:10		Gun string 1 onboard									
165390	1391	20:12		LGSP d/t MOB alarm activated unintentionally - No Guns Fired 165381 thru SP 195389									
165405	1406	21:17		FGSP following MOB activation									
166026	2027	23:59		Gun string 1 Deployed (enabled)									
166027	2028	0:00	MSP	Last SP of the day 2023-05-30									
				First SP of the day 2023-05-31									
170600	6601	14:04		Strong currents (1.5kts) to port affecting streamer shape and front compasses. BSP 3.5kts, WSP 5kts									
170870				30° crab angle, high port feather developing									
171055				Feather steadying up at -22°									
				Currents changing affecting streamer shape and front compasses S1C1-S1C7									
173237	9238	22:53		Change heading due to doglead (CTS: ~289°)									
173320	9321	23:09		Started turn to stbd for next line									
173370	9371	23:21	EOL	EOL- 18 Guns @ 3300 cuin									
Posnet locations & remarks: good - none - intermittent				Forward	Center								
Tailbuoy #1	GOOD		Gun string #1	GOOD	GOOD								
Head Float #1	GOOD		Gun string #2	GOOD	GOOD								
Compasses	GOOD												
D.I.s	GOOD												

Seq# 055				Line Name: MGL2306055P47		Line Brg : 22.46 °		NAVIGATION LINE LOGS		DATE: 2023-05-31		JULIAN DAY: 151		<div>Lamont-Doherty Earth Observatory</div> <div>COLUMBIA UNIVERSITY EARTH INSTITUTE</div>													
<div> <div>CLIENT: NSF - Anne Becel</div> <div>SURVEY: MCS</div> <div>AREA: Cape Fear</div> </div>																											
DC SOL: 26.9 m DC EOL: -698.5 m BSP SOL: 4.5 kts BSP EOL: 4.9 kts WEATHER WIND SOL: N 12 kts WIND EOL: N 18 kts SEAS SOL: 1.0 m SEAS EOL: 1.0 m				DEPTH SOL : 2388.4 m DEPTH EOL : 2815.0 m FEATHER SOL: 89.76 ° FEATHER EOL: 15.87 ° MAX FEATHER: 89.76 °				NAVIGATION SYSTEM USED: C-Nav3050 - Primary NAVIGATION SYSTEM USED: SeaPath 330 NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted GRAVITY METER: BMG-II: used, SN223 MAGNETOMETER: Geometrics 882																			
				shift hours		Nav		shift hours		Acc																	
				12:00 - 24:00		Cody Bahlau		12:00 - 24:00		Riley Lopez																	
				0:00-12:00		Koray Ergun		00:00 - 12:00		Gilles Guerin																	
SP	Orca Ref	UTC	EVENT	COMMENTS																							
175061	1062	23:30	SOL	SOL- 18 Guns @ 3300 cuin																							
				Streamer at 6 meters																							
				Streamer turning at start of line																							
175219	1220	23:59		Last SP of the day																							
175220	1221	0:00	MSP	First SP of the day																							
178932	4933	10:17		Last segment of Line47. New CTS 031.01°																							
179207	5208	11:00	Turn	Bridge having difficulty keeping constant BSP dt currents																							
180088	6089	13:14	Turn	Starting to deviate off the track to turn onto the next line																							
180150	6151	13:25	EOL	EOL- 18 Guns @ 3300 cuin																							
Posnet locations & remarks: good - none - intermittent				Forward	Center																						
Tailbuoy #1	GOOD		Gun string #1	GOOD	GOOD																						

Seq# 056

Line Name: MGL2306056P48

Line Brg : 300.70 °

NAVIGATION
LINE LOGS

DATE: 2023-06-01

JULIAN DAY: 152

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

CLIENT: NSF - Anne Becel

SURVEY: MCS

AREA: Cape Fear

DC SOL: -171.2 m

DC EOL: -446.3 m

BSP SOL: 4.1 kts

BSP EOL: 2.2 kts

WEATHER

WIND SOL: N 18 kts

WIND EOL: N 18 kts

SEAS SOL: 1.5 m

SEAS EOL: 1.5 m

DEPTH SOL : 2802.7 m

DEPTH EOL : 446.3 m

FEATHER SOL: -66.04 °

FEATHER EOL: 43.92 °

MAX FEATHER: -66.04 °

NAVIGATION SYSTEM USED: C-Nav3050 - Primary

NAVIGATION SYSTEM USED: SeaPath 330

NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted

GRAVITY METER: BMG-II: used, SN223

MAGNETOMETER: Geometrics 882

shift hours

12:00 - 24:00

0:00-12:00

Nav

Cody Bahlau

Koray Ergun

shift hours

12:00 - 24:00

00:00 - 12:00

Acq

Riley Lopez

Gilles Guerin

SP	Orca Ref	UTC	EVENT	COMMENTS	VESEL POSITION										
181050	1051	13:32	SOL	SOL- 18 Guns @ 3300 cuin Streamer at 6 meters Streamer in turn at start of line Strong currents from the PORT Aft causing large STBD feather to develop	<table><tr><th>Shotpoints</th><th>Latitude (N)</th><th>Longitude (W)</th></tr><tr><td>181050</td><td>34°22'20.58"</td><td>75°25'20.02"</td></tr><tr><td>181899</td><td>34°28'04.02"</td><td>75°37'20.60"</td></tr></table>	Shotpoints	Latitude (N)	Longitude (W)	181050	34°22'20.58"	75°25'20.02"	181899	34°28'04.02"	75°37'20.60"	
Shotpoints	Latitude (N)	Longitude (W)													
181050	34°22'20.58"	75°25'20.02"													
181899	34°28'04.02"	75°37'20.60"													
181383	1384	15:26		Feather steadying up at 55°- 60°. Strong currents (4kts) from PORT bow, WSP 5kts, BSP 2.5kts	<table><tr><th>Latitude (N)</th><th>Longitude (W)</th></tr><tr><td></td><td></td></tr></table>	Latitude (N)	Longitude (W)								
Latitude (N)	Longitude (W)														
181463	1464	15:56		Streamer unstable, center compasses surfacing. Setting depth to 10m	FSP 181050 34.372383 75.422227										
181589	1590	16:41		Streamer stable at 7m depth	LSP 181899 34.467784 75.62239										
181848	1849	18:14		Start to turn to line 49	<table><tr><td>NRP – Stern</td><td>29.2m</td></tr><tr><td>NRP – COS</td><td>304.0m</td></tr><tr><td>NRP – CNG</td><td>415.53m</td></tr><tr><td>COS – CNG</td><td>111.53m</td></tr><tr><td>NRP – CMP</td><td>359.76m</td></tr></table>	NRP – Stern	29.2m	NRP – COS	304.0m	NRP – CNG	415.53m	COS – CNG	111.53m	NRP – CMP	359.76m
NRP – Stern	29.2m														
NRP – COS	304.0m														
NRP – CNG	415.53m														
COS – CNG	111.53m														
NRP – CMP	359.76m														
			Turn	Starting to deviate off the track to turn onto the next line											
181899	1900	18:33	EOL	EOL- 18 Guns @ 3300 cuin											
Posnet locations & remarks: good - none - Intermittent															
Tailbuoy #1	GOOD		Gun string #1	GOOD	GOOD										
Head Float #1	GOOD		Gun string #2	GOOD	GOOD										
Compasses	GOOD														
D.I.s	GOOD														
PROCESSING NOTES															
Overall Comments															

SP spacing: 25.0m

line status: Complete

Seq# 057

Line Name: MGL2306057P49

Line Brg : 212 °

NAVIGATION

LINE LOGS

DATE: 2023-06-01

JULIAN DAY: 152

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

CLIENT: NSF - Anne Becel

SURVEY: MCS

AREA: Cape Fear

DC SOL: 592.9 m

DC EOL: 507.7 m

BSP SOL: 2.1 kts

BSP EOL: 2.0 kts

WEATHER

WIND SOL: N 18 kts

WIND EOL: N 19.5 kts

SEAS SOL: 1.5 m

SEAS EOL: 1.5 m

DEPTH SOL : 1317.3 m

DEPTH EOL : 487.8 m

FEATHER SOL: -39.32 °

FEATHER EOL: -7.60 °

MAX FEATHER: -39.32 °

NAVIGATION SYSTEM USED: C-Nav3050 - Primary

NAVIGATION SYSTEM USED: SeaPath 330

NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted

GRAVITY METER: BMG-II: used, SN223

MAGNETOMETER: Geometrics 882

shift hours

12:00 - 24:00

0:00-12:00

Nav

Cody Bahlau

Koray Ergun

shift hours

12:00 - 24:00

00:00 - 12:00

Acq

Riley Lopez

Gilles Guerin

SP	Orca Ref	UTC	EVENT	COMMENTS	VESSEL POSITION			
182021	1022	18:42	SOL	SOL- 18 Guns @ 3300 cuin streamer is at 6m depth		Shotpoints	Latitude (N)	Longitude (W)
					FSP	182021	34°28'00.25"	75°37'43.48"
					LSP	183238	34°14'21.39"	75°48'50.11"
							Latitude (N)	Longitude (W)
					FSP	182021	34.466737	75.628744
					LSP	183238	34.239276	75.81392
183092	3093	23:59	MSP	Last SP of day:	<div><div>NRP – Stern29.2m</div><div>NRP – COS304.0m</div><div>NRP – CNG415.53m</div><div>COS – CNG111.53m</div><div>NRP – CMP359.76m</div></div>			
183093	3094	0:00		First SP of day				
183093	3094	00:09		Started turn towards next line				
183238	3239	0:54	EOL	EOL- 18 Guns @ 3300 cuin				
Posnet locations & remarks: good - none - Intermittent								
Tailbuoy #1	GOOD		Gun string #1	GOOD	GOOD			
Head Float #1	GOOD		Gun string #2	GOOD	GOOD			
Compasses	GOOD				SP spacing: 25.0m			
D.I.s	GOOD				line status:	Complete		
PROCESSING NOTES								
Minor occasional UV irregularities dt TB, HB and front compass movements dt high currents. BSP low dt line direction being against currents								
Overall Comments					Low BSP dt currents and occasional minor UV irregularites.			

Seq# 058

Line Name: MGL2306058P50

Line Brg : 274.97 °

NAVIGATION

LINE LOGS

DATE: 2023-06-02

JULIAN DAY: 153

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

CLIENT: NSF - Anne Becel

SURVEY: MCS

AREA: Cape Fear

DC SOL: 33.2 m

DC EOL: -384.8 m

BSP SOL: 2.2 kts

BSP EOL: 2.6 kts

WEATHER

WIND SOL: N 19.5 kts

WIND EOL: N 19 kts

SEAS SOL: 1.5 m

SEAS EOL: 1.5 m

DEPTH SOL : 477.7 m

DEPTH EOL : 338.6 m

FEATHER SOL: 58.35 °

FEATHER EOL: 27.35 °

MAX FEATHER: 64.65 °

NAVIGATION SYSTEM USED: C-Nav3050 - Primary

NAVIGATION SYSTEM USED: SeaPath 330

NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted

GRAVITY METER: BMG-II: used, SN223

MAGNETOMETER: Geometrics 882

shift hours

12:00 - 24:00

0:00-12:00

Nav

Cody Bahlau

Koray Ergun

shift hours

12:00 - 24:00

00:00 - 12:00

Acq

Riley Lopez

Gilles Guerin

SP	Orca Ref	UTC	EVENT	COMMENTS	VESEL POSITION												
184035	1036	1:05	SOL	SOL- 18 Guns @ 3300 cuin streamer is at 6m depth	<table><tr><th></th><th>Shotpoints</th><th>Latitude (N)</th><th>Longitude (W)</th></tr><tr><td>FSP</td><td>184035</td><td>34°14'16.21"</td><td>75°49'19.70"</td></tr><tr><td>LSP</td><td>184363</td><td>34°14'25.64"</td><td>75°54'40.36"</td></tr></table>		Shotpoints	Latitude (N)	Longitude (W)	FSP	184035	34°14'16.21"	75°49'19.70"	LSP	184363	34°14'25.64"	75°54'40.36"
	Shotpoints	Latitude (N)	Longitude (W)														
FSP	184035	34°14'16.21"	75°49'19.70"														
LSP	184363	34°14'25.64"	75°54'40.36"														
					<table><tr><th></th><th></th><th>Latitude (N)</th><th>Longitude (W)</th></tr><tr><td>FSP</td><td>184035</td><td>34.237835</td><td>75.82214</td></tr><tr><td>LSP</td><td>184363</td><td>34.240455</td><td>75.91121</td></tr></table>			Latitude (N)	Longitude (W)	FSP	184035	34.237835	75.82214	LSP	184363	34.240455	75.91121
		Latitude (N)	Longitude (W)														
FSP	184035	34.237835	75.82214														
LSP	184363	34.240455	75.91121														
184316	1317	2:36		started making turn	<table><tr><td>NRP – Stern</td><td>29.2m</td></tr><tr><td>NRP – COS</td><td>304.0m</td></tr><tr><td>NRP – CNG</td><td>415.53m</td></tr><tr><td>COS – CNG</td><td>111.53m</td></tr><tr><td>NRP – CMP</td><td>359.76m</td></tr></table>	NRP – Stern	29.2m	NRP – COS	304.0m	NRP – CNG	415.53m	COS – CNG	111.53m	NRP – CMP	359.76m		
NRP – Stern	29.2m																
NRP – COS	304.0m																
NRP – CNG	415.53m																
COS – CNG	111.53m																
NRP – CMP	359.76m																
184363	1364	2:52	EOL	EOL- 18 Guns @ 3300 cuin													
Posnet locations & remarks: good - none - Intermittent				Forward	Center												
Tailbuoy #1	GOOD		Gun string #1	GOOD	GOOD												
Head Float #1	GOOD		Gun string #2	GOOD	GOOD												
Compasses	GOOD																
D.I.s	GOOD																
PROCESSING NOTES																	
Minor occasional UV irregularities dt TB, HB, GS and front compass movements dt high currents. BSP low dt line direction being against currents																	
Overall Comments																	
Low BSP dt currents and occasional minor UV irregularites.																	

SP spacing: 25.0m

line status: Complete

Seq# 059				Line Name: MGL2306059P51		Line Brg : 202.93 °		NAVIGATION LINE LOGS		DATE: 2023-06-02		JULIAN DAY: 153		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE									
				CLIENT: NSF - Anne Becel		SURVEY: MCS		AREA: Cape Fear															
DC SOL: -187.9 m		DEPTH SOL : 333.5 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																			
DC EOL: -22.2 m		DEPTH EOL : 544.8 m		NAVIGATION SYSTEM USED: SeaPath 330																			
BSP SOL: 2.5 kts		FEATHER SOL: -39.66 °		NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted																			
BSP EOL: 3.9 kts		FEATHER EOL: 4.48 °																					
WEATHER		MAX FEATHER: -39.66 °								GRAVITY METER: BMG-II: used, SN223													
WIND SOL: N 19 kts				MAGNETOMETER: Geometrics 882																			
WIND EOL: NE 11 kts																							
SEAS SOL: 1.5 m																							
SEAS EOL: 1.5 m																							