

Seq# 001		Line Name: MGL2314001WE07P1		NAVIGATION LINE LOGS		DATE: 2023-10-30 JULIAN DAY: 303		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE	
Line Brg : 84.7 °									
		CLIENT:USGS		SURVEY: HI-REZ		AREA: Puerto Rico			
DC SOL: -43.8 m		DEPTH SOL : 344.4 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary					
DC EOL: -7.2 m		DEPTH EOL : 347.9 m		NAVIGATION SYSTEM USED: SeaPath 330					
BSP SOL: 4.2 kts		FEATHER SOL: 18.18 °		NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted					
BSP EOL: 3.0 kts		FEATHER EOL: 0.62 °							
WEATHER		MAX FEATHER: 18.18 °							
WIND SOL: E 17 kts				GRAVITY METER: BMG-II: used, SN223					
WIND EOL: NE 8 kts				MAGNETOMETER: Geometrics 882					
SEAS SOL: 0.5 m		shift hours Nav shift hours Acq							
SEAS EOL: 0.5 m		12:00 - 24:00 Koray Erqun 12:00 - 24:00 Gilles Guerin							
		0:00-12:00 Aaron Martin 00:00 - 12:00 Cody Bahlau							
SP Orca Ref UTC EVENT		COMMENTS							
880 880 13:43 SOL		SOL - MGL2314001WE07P1: 90cui							
		Vessel on approach, starting line early							
		At SOL bridge had wrong line coordinates, started correcting ~14:00 SP1190							
960 13:47		DC corrected to 0m, vessel on preplot line							
1001 1001 13:49 FSP		Actual preplot FSP							

Seq# 002

Line Name: MGL2314002WE05P1

Line Brg : 265.14 °

NAVIGATION

LINE LOGS

DATE: 2023-10-30

JULIAN DAY: 303

Lamont-Doherty Earth Observatory
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DC SOL: 0.0 m

DC EOL: -662.0 m

BSP SOL: 3.5 kts

BSP EOL: 3.1 kts

WEATHER

WIND SOL: NE 9 kts

WIND EOL: E 11 kts

SEAS SOL: 1 m

SEAS EOL: 1 m

DEPTH SOL : 458.0 m

DEPTH EOL : 795.0 m

FEATHER SOL: 12.64 °

FEATHER EOL: 36.52 °

MAX FEATHER: 36.52 °

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

6564

6564

18:11

SOL

SOL - MGL2314002WE05P1: 90cui
Reduced run-in dt vessel avoiding shallows
Config change caused digicourse to stop communicating at SOL missed first ~40SP's (250m)

1318

1318

23:14

Approaching sanctuary boundary, vessel to deviate offline and start turn on to next line

1189

1189

23:22

Vessel deviating from track
Vessel 88° into 180° turn, ending line early dt sanctuary boundary
Closest pass to boundary vessel at 95m

1070

1070

23:31

LSP

EOL - MGL2314002WE05P1: 90cui

Posnet locations & remarks: good - none - intermittent

Forward

Center

Tailbuoy #1

GOOD

Gun string #1

GOOD

GOOD

Head Float #1

GOOD

Compasses

GOOD

D.I.s

GOOD

PROCESSING NOTES

Acquisition started approx 40SP into the preplot line dt comms problems with digicourse (compasses). Shooting point was set to aft of source.
Line ended 30SP prior to preplot EOL in order to avoid entering sanctuary boundary, shooting continued during turn a far as practically possible.
SP 1174-EOL; Turn during EOL caused high UV's and compass outliers

Overall Comments

Started line w 250m delay dt compass problems. EOL in turn prior to preplot line end dt sanctuary causing high UV's.

VESSEL POSITION

Shotpoints

Latitude (N)

Longitude (W)

First preplot SP

6564

17°54'35.51"

66°38'18.67"

LSP

1070

17°52'39.16"

66°57'32.91"

Latitude (N)

Longitude (W)

FSP

6564

17.909865

-66.638519

LSP

1070

17.877544

-66.959141

NRP – Stern

29.2m

NRP – COS

287.0m

NRP – CNG

386.75m

COS – CNG

99.75m

NRP – CMP

SP spacing:

6.25m

line status:

Complete

Acronyms key
DC SOL Distance Crossed at Start of Line
DC EOL Distance Crossed at End of Line
BSP Bottom Speed, aka SOG: Speed Over Ground
FEATHER The angle from the boat to the TB (Tail Buoy)
NRP Navigation Reference Point
COS Center of Source
CNG Center Near Group
CMP Common Mid-point

Seq# 007

Line Name: MGL2314007SN06P1

Line Brg : 354 °

NAVIGATION

LINE LOGS

DATE: 2023-10-31

JULIAN DAY: 304

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

CLIENT:USGS

SURVEY: HI-REZ

AREA: Puerto Rico

DC SOL: -13.7 m

DC EOL: -22.1 m

BSP SOL: 5.0 kts

BSP EOL: 4.8 kts

WEATHER

WIND SOL: E 12 kts

WIND EOL: E 11 kts

SEAS SOL: 1 m

SEAS EOL: 1 m

DEPTH SOL : 2349.9 m

DEPTH EOL : 357.7 m

FEATHER SOL: -9.78 °

FEATHER EOL: -2.94 °

MAX FEATHER: -9.78 °

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

Koray Erqun

12:00 - 24:00

Gilles Guerin

0:00-12:00

Aaron Martin

00:00 - 12:00

Cody Bahlau

SP	Orca Ref	UTC	EVENT	COMMENTS	VESSEL POSITION			
2843	2843	21:17	SOL	SOL - MGL2314007SN06P1: 90cui		Shotpoints	Latitude (N)	Longitude (W)
					FSP	2843	17°43'20.86"	66°46'56.06"
					LSP	1001	17°55'46.42"	66°48'10.53"
							Latitude (N)	Longitude (W)
					FSP	2843	17.722462	-66.78224
					LSP	1001	17.92956	-66.802925
					<div>NRP – Stern29.2m</div> <div>NRP – COS287.0m</div> <div>NRP – CNG386.75m</div> <div>COS – CNG99.75m</div> <div>NRP – CMP</div>			
Posnet locations & remarks: good - none - intermittent					Forward	Center		
Tailbuoy #1					GOOD	Gun string #1	GOOD	GOOD
Head Float #1					GOOD			
Compasses					GOOD			
D.I.s					GOOD			
PROCESSING NOTES								
Some high residuals on streamer head positioning dt noisy HB rGPS from time to time.								
Overall Comments					Optimal line			

Acronyms key

DC SOL Distance Crossed at Start of Line

DC EOL Distance Crossed at End of Line

BSP Bottom Speed, aka SOG: Speed Over Ground

FEATHER The angle from the boat to the TB (Tail Buoy)

NRP Navigation Reference Point

COS Center of Source

CNG Center Near Group

CMP Common Mid-point

[illegible]

DC SOL	Distance Crossed at Start of Line
DC EOL	Distance Crossed at End of Line
BSP	Bottom Speed, aka SOG: Speed Over Ground
FEATHER	The angle from the boat to the TB (Tail Buoy)
NRP	Navigation Reference Point
COS	Center of Source
CNG	Center Near Group
CMP	Common Mid-point

[illegible]

Seq# 017		Line Name: MGL2314017WE03P1		NAVIGATION LINE LOGS		DATE: 2023-11-02 JULIAN DAY: 306		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE	
Line Brg : 86 °									
		CLIENT:USGS		SURVEY: HI-REZ		AREA: Puerto Rico			
DC SOL: 13.9 m		DEPTH SOL : 1185.1 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary					
DC EOL: -50.5 m		DEPTH EOL : 403.9 m		NAVIGATION SYSTEM USED: SeaPath 330					
BSP SOL: 4.5 kts		FEATHER SOL: 62.89 °		NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted					
BSP EOL: 4.4 kts		FEATHER EOL: 1.65 °							
WEATHER		MAX FEATHER: 62.89 °							
WIND SOL: E 29 kts									
WIND EOL: NE 13.1 kts									
SEAS SOL: 1.5 m									
SEAS EOL: 1.5 m									
		shift hours		Nav		shift hours		Acq	
		12:00 - 24:00		Koray Ergun		12:00 - 24:00		Gilles Guerin	
		0:00-12:00		Aaron Martin		00:00 - 12:00		Cody Bahlau	
SP		Orca Ref	UTC	EVENT	COMMENTS		VESSEL POSITION		
1029		1029	04:18	SOL	SOL -MGL2314017WE03P1				
					Starting line off an inside turn to avoid sanctuary boundary				
					Missed first 28 SP's from preplot SOL. Streamer still in turn.				
1227		1227	04:35		Performed a "re-estimate" to improve positioning fit because of bad adjust caused by turn-		FSP	Shotpoints	Latitude (N)
							LSP	1029	17°50'25.95"
								3829	17°51'45.49"
3792		3792	08:14		bridge has started turn to port for line change				
3829		3829	08:18	EOL	EOL -MGL2314017WE03P1		FSP	1029	17.840542
							LSP	3829	17.862636

[illegible]

Seq# 019		Line Name: MGL2314019SN10P1 Line Brg : 20.5 °		NAVIGATION LINE LOGS		DATE: 2023-11-02 JULIAN DAY: 306		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY EARTH INSTITUTE	
CLIENT:USGS SURVEY: HI-REZ AREA: Puerto Rico									
DC SOL: -62.7 m		DEPTH SOL : 2941.1 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary					
DC EOL: -60.3 m		DEPTH EOL : 276.3 m		NAVIGATION SYSTEM USED: SeaPath 330					
BSP SOL: 5.0 kts		FEATHER SOL: 40.34 °		NAVIGATION SYSTEM USED: C-Nav3050-Stern Mounted					
BSP EOL: 4.6 kts		FEATHER EOL: 0.64 °							
WEATHER		MAX FEATHER: 40.34 °		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: E 19.9 kts		shift hours		Nav		shift hours		Acq	
WIND EOL: E 18 kts		12:00 - 24:00		Koray Ergun		12:00 - 24:00		Gilles Guerin	
SEAS SOL: 1 m		0:00-12:00		Aaron Martin		00:00 - 12:00		Cody Bahlau	
SEAS EOL: 1 m									
SP Orca Ref UTC EVENT COMMENTS									
3356 3356 12:43 SOL SOL -MGL2314019SN10P1									
3346 3346 12:44 Streamer still in the turn									
985 985 15:57 Estimate executed d/t high compass residuals									
965 965 15:59 EOL Bridge steering to port d/t shallows									
EOL -MGL2314019SN10P1									
Posnet locations & remarks: good - none - intermittent Forward Center									
Tailbuoy #1 GOOD Gun string #1 GOOD GOOD									
Head Float #1 GOOD									
Compasses GOOD									
D.I.s GOOD									
PROCESSING NOTES									
SP 3356-3334; high UV's in positioning network solution dt streamer still being in the turn at SOL.									
Overall Comments High UV's in positioning network solution at SOL dt streamer still being in the turn.									