P·2·85 P·3·85 P·4·85 USGS

85004, 85006, 85007

POWELL-2,3,4

RECORD

SEISMIC LOG

Book 1

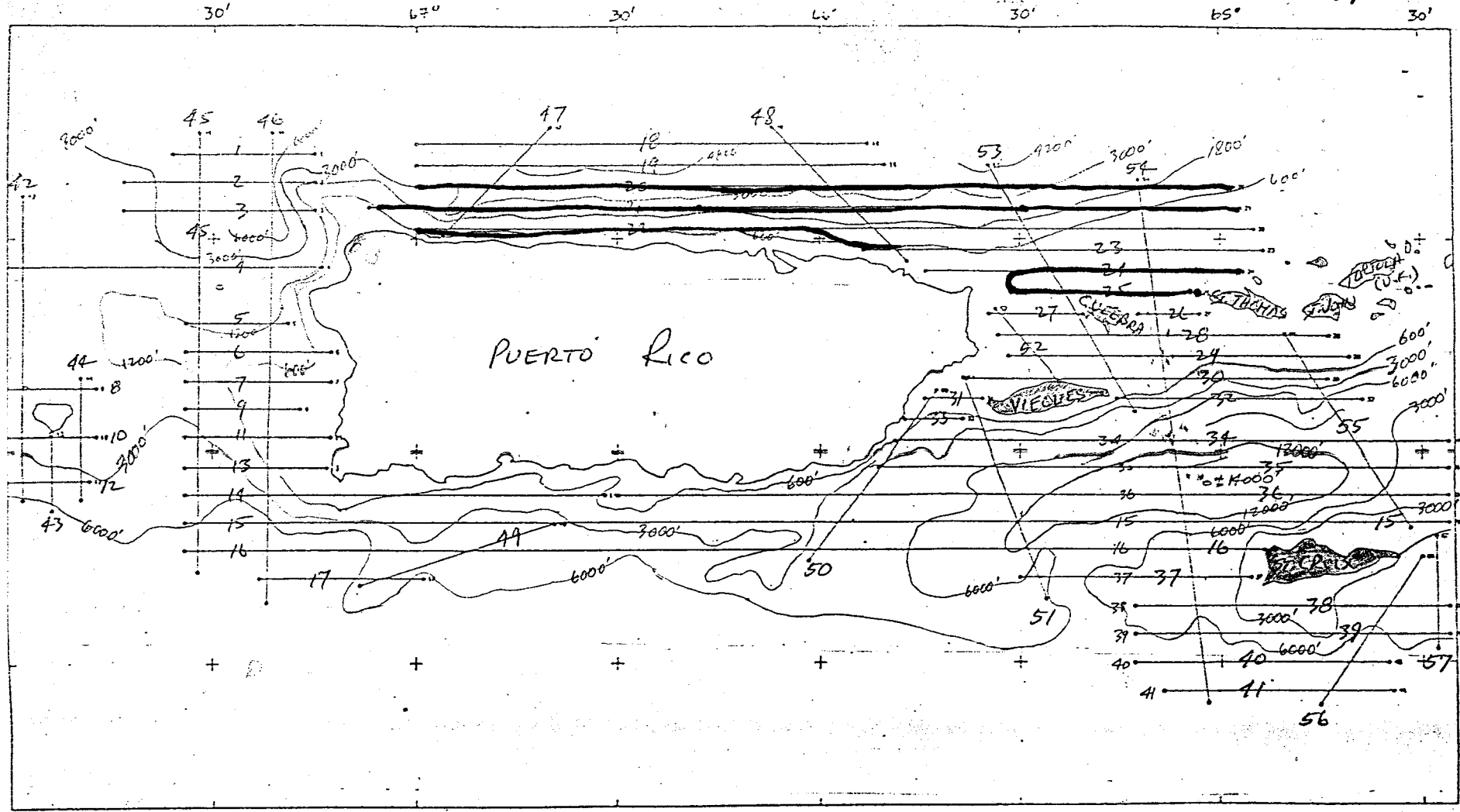
1985

7530-00-222-3525
FEDERAL SUPPLY SERVICE
(GPO)

104147

TR.

85004 sei
85005 sei
85004 sei



PUERTO RICO EARLIER SHIP TRACKS FOR PUERTO RICO AND U.S. VIRGIN ISLANDS

——— lines completed prior to seismic

15 Begin Leg 3 P.R./U.S.V.I.

Powell P-3-85 85005sc1

lv Roosevelt Roads 1733 z JD 074

1900 z - put seismic gear in water:
2/40 in³ airguns
airgun hydrophone streamer
Uniboom
Uniboom streamer

We are heading east toward the beginning of Line 35. Too rough to do gravity going east. Plan to be going west on Line 35 around midnight (0400 z) when we will have 3 satellites for nav.

Uniboom & airgun both work, but very noisy records. Recorders are running but we are not on line.

One shackle on Uniboom tow broke, Uniboom brought on board. Roy & Hal fixed it. Line 35 will be too deep for Uniboom, so will not put it back in water yet.

Personell: Jack Swenson (Menlo) Marine Tech
Roy Fields (Menlo) ET
Hal Williams (Menlo) Mech. Tech
Nelson Espinell (San Juan)
Kathy Scanlon (Woods Hole)

Airgun

recorder #1 - 6 sec sweep, Portlab

recorder #2 - 4 sec sweep, Stbd lab, slave off #1

P-3-85

ine	JD	GMT	Swp	Filter	cse/sp(kts)	Comments
35	74	0612	0-4	26-130		airgun: Begin Line 35 recorder #2
"	"	"	0-6	"		airgun " " " recorder #1
"		0741	2-6		270/10	airgun rec #2 — 2 sec delay (2-6 sec)
"	"	0900		25/125	"	All systems O.K.
"	"	0945	center key			airgun rec. #1 c/delay
"	"	0946	4-8			airgun rec #2 c/delay
"	"	1000	0-6 sec Edge Key			rec #1, back to Edge Key
		1007	3-7			rec #2, c/delay
						one airgun is not working (is leaking)
"	"	1010	2-6			rec #2, c/delay
		1019				going off track to avoid boat
		1030				back on track
						water depth is such in this area that the outgoing signal interfers w/ the return. c/delay doesn't help, must change firing rate (i.e. hence, scale of data) to remedy, don't want to.
35	74	1200	0-6	25/125	270/10	Airgun rec. #1 } one airgun still leaking - will pull
"	"	"	2-6	"	"	Airgun rec. #2 } it in at end of line.
						Records are very noisy although ship is riding nicely ~~with~~ with the seas — inherently noisy ship.
"	"	1500	"	"	"	Same story as at 1200 z. This watch is ready for relief!
		1545	0-4			Airgun rec #2 c/sweep
35A		1747				EOL 35, BOL 35A (transit)
		1755				Airguns pulled ½, leak
		1817				Airguns back on
35A		2355				c/course to 90° still on 35A

Line	JD	GMT	Sup	Filter	cc/sp	System	Comments
35A	75	0000	0-6 0-4	25/75	90/~~45~~	Air 1 Air 2	
		0143					Airguns off, leak
		0225					Guns on again
		0403					Airguns off, leak
		0440					Guns on again
		0510			turn		begin turn to line 32
		0515					one gun started to leak
		0600					shut off the leaky gun, continue with only one gun.

Line	JD	GMT	Swp	Filter	cse/sp	Comments
BOL 32	75	0606	0-6sec 0-4sec	25/125	270°/7kts	BOL 32 running only 1 40in³ airgun
"	"	0900	"	"	"	All O.K, still running on 1 airgun
32A	"	1102	"	"	240°/7kts	EOL 32 / BOL 32A (heading to Line 33)
"	"	1212	"	"	268° 7kts	C/C to ~268° (heading to Line 33) still one gun
33	"	1420	"	"	270°/7kts	EOL 32A / BOL 33 no C/C
~~33A~~	"	1518	0-6 0-4	25/125	turning	EOL 33 / ~~BOL 33A transit to east end of Line 34?~~ going to attempt to run grav. east on Line 34
		1550				pull in dead airgun, still slow turn to 34
~~33B~~		1600			90° 5kts	going east on line 34
~~33A~~ ~~32A~~		1615			100° ~~90°~~	GOING TO 18°,000.000 FOR SOL 33A ~~32A~~ SPEED 7.0kts
		1739			90°	ON 18°,000.000 (LAT) SOL PROPER
		2100			90°/7.0	SMOOTH. GOOD NAV USING XPONDERS
		~~2300~~				COMP CRASH
		~~2342~~				**ON LINE AGAIN**
	76	0047				SAT FIX. GUN LEAKING BUT STILL FIRING
		0245				OFF COURSE A LITTLE - DODGING SHIP W/ 10 MILE? STREAMER
		0251				LAT 17 59.490 FOR MOST OF LINE. I DONT THINK WE HAVE NAV DATA FROM 1748 ON TO 0238
		0310			90°/7.0	EOL 33A - C/C TO 70° PI GUN OFF - LEAKING BADLY.
turning						
		0325				GUNS OFF - PULLED IN
		0355				Guns in & firing, but leaking a little
turn done		0455			270°	on course for Line 34, BOL still 3km away
34	"	0506	0-6 0-4	25/125	270°/7kts	BOL 34, starting seismic line 34 before gravity Line 34
"		0645	2-6	"		Change delay on #2 recorder to 2sec
"	"	0900	0-6 2-6	"	"	All O.K. Records noisy, but getting used to that

Line	JD	GMT	Sup.	Filter	CSP/SP	Comments
34	76	—	0-6 2-6	25/125	270°/7	
"	"	1030	"	"	"	leaky airgun, record r. load, guns still firing
"	"	1140	"	"	"	one gun has ceased to fire
"	"	1245	0-4	"	"	C/C delay on rec #2 to 0 sec
"	"	1500	0-6 0-4	"	"	still running on one gun
"	"	1613				EOL 34 GUNS POWER
34A	"	1650			286°/5kts	GUNS ON / BOL 34A
		1800			"	SMOOTH
		2105			89°/6kts	C/C 89° GUNS STILL OK
		2215			80/5.8	C/C 80°
	77	0019			88/6	SMOOTH BOTH GUNS HOLDING OK
		0240			95/6	C/C TO AVOID SHIP
		0250			80/6	C/C 080
34A	77	0400	0-6 0-4	25/125	90°/6	New watch on
30		0423			turn to 270°	EOL 34A, turning to Line 30 BOL 30
						putting Uniboom in
		0450				test Uniboom, seems OK but water still too deep.
30	77	0700	0-6 0-4	25/125	270°	still too deep for Uniboom, airgun running well.
30	77	0910	0-25	500/1300	270°/5-7	Uniboom on - little penetration, playing w/ filters
		1045				Change paper on Uniboom, begin Rolls
52	"	1144	0-6	25/125	turn to 325°	EOL 30 / BOL 52 Airgun #1
			0-4	25/125	~5-7kts	Airgun #2
			0-.25	500/1300		Uniboom recorder malfunctioning. Uniboom
"		1300				put in new bugs & cleaned contact - seems OK now
26		1352	"	"	turn to 90°/5kt	EOL 52 / BOL 26 Airgun #2 recorder still sick.
						took Airgun #2 recorder apart & cleaned w/ vacuum.
		1422				Airgun #2 recorder looks like it's doing OK - letting it run for a while to see

Line	JD	GMT	Swp	filter	cse/sp	Comments
26	77	1430	0-6	25/125	90°/5kt	Airgun Recorder #1
"	"	"	0-4	25/125	"	Airgun Recorder #2 (slave)
"	"	"	0-.25	500/1300	"	Uniboom
26A		1553				EOL 26 / BOL 26A (transit to Line 29)
		1745				SMOOTH. UNIBOOM OFF. WORKING ON RCOR
		1915				C/C 82° DODGE SHIP
		2230			90/4	SMOOTH
	78	0100			90/4	"
		0325			~270/5	C/C 270°
29		0412			270°/5kts	BOL 29
			0-6	25/125		Airgun Recorder #1
			0-4	25/125		Airgun Recorder #2
	—	—	—	—	—	Uniboom off
		0533	0-.25	500/1300		Uniboom on
		0545	0-.5			c/sweep on Uniboom
		0800				All O.K.
29	"	1045	0-.5	500/1300	270°/5.8kts	c/paper on Uniboom End Roll 5/Begin Rdl 6
		1115				boat crossed stern, close to streamer...
		1325				pulled airgun streamer in to check → O.K.
		1345				airgun back on again
turn		1320			turn	EOL 29, turning to line 28
28		1404			90°/5.8kts	BOL 28 - all systems running as before.
		1719			90/6	UNIBOOM RCOR DOWN - SHOT DOWN & RESTORE - RAN OK -
						TRIGGER SET OK - NO KNOWN REASON FOR STOPPAGE -
		1734			90/4.9	EOL 28
28A		1734			"	SOL 28A (same course as 28, but no GPS sats)
		2000			"	SMOOTH -
		2100				RCOR #2 PROBLEM - ~15 MIN (LOST S16)

LINE	JD	GMT	SWP	FIL	CSE/SP	REMARKS
28A	79	0100	0·6	25/125	63/4	OK RCDR #1
			0-4			OK RCDR #2
			0-0.5 1/2 SEC	500/1300		UNIBOOM B
28B		0203			243°	C/C 243° EOL 28A / BOL 28B
28 West		0515			270°/5.5	C/C to 270° EOL 28B / BOL 28 West 2 GPS sats getting grav. mass
		0600				C/paper on Uniboom End Roll #6 / Begin Roll #7
		0900				screwed up paper feed on Uniboom for a few minutes
		1021				EOL 28 West, running to Line 27
27		1107			90°/5.9	BOL 27 short line betwn Culebra & St. Thomas
27A		1224			turn	EOL 27 / BOL 27A (transit to Line 55)
"		1230			128°/8.4	on course 127° doing ~8 kts
"		1236			127°/7	asked bridge to slow to 7 kts.
"		1252			90°/7	C/C to 90°
"		1230				one airgun down - shut it off, running one
"		1348			C/C	slowed a bit to ~ 6 kts Uniboom much better.
55		1425			turn	EOL 27A / BOL 55
		1437			147/6.2	on course 147° (overshot the turn, had to do some extra adjustment)
"		1530				getting into deep water - Uniboom off
		1733				EOL 55 GEAR PULLED - TRANSIT
						(Uniboom had a collection of coral on it & a cracked tail fin)
						(Airgun that went down at 1230 ✱
53	80	0435	0-6	25/125	149°/7.4	BOL 53 - 2 airguns, no Uniboom (too deep)
			0-4	slave		
"	"	0900	0-0.5	500/1300	"	Uniboom on
		1000				4' swells aft of the N (following sea)
		1015			detour	changing course to avoid island
		1053			110°	C/C back toward line
		1100	0-4			Recorder #2 (4 sec swp) malfunctioning - cleaned contacts
		1126				recorder running again

Line	JD	GMT	Sup	Cifter	Cse	sp.	Comments
53	80	1142	0-6	25/125	A/C	6kts	A/C to 126° (Airgun #1)
			0-4	25/125			(Airgun #2)
			0-0.5	500/1500			(Uniboom)
		1155					on course 147° again
		1145					leaky airgun - slow leak
		1434			turn		EOL 53 turn to Line 54
		1434					Uniboom off - deep water
54		1559					BOL 54 (midway)
							pull airguns to replace downgun
		1710					GUNS IN the water
		0720					GUNS OUT of H_2O one gun rapid- fire
		1803					1 gun back in
		1914					Ø DELAY
		2100					ON
		2339					+2 SEC DELAY ON RCDR 2
	81	0323					RCDR #2 Ø DELAY, 0-4 SEC
54A		0023					EOL 54 / BOL 54A
		0440			27°		A/C to 27° - aiming for begin Line 16
	81	0500	0-6 0-4	25/125	27°	5.5	Running with 1 airgun, no Uniboom
							Plan to use only 1 gun henceforth since we
							are v. low on spare parts.
16	"	0544	"	"	A/C		EOL 54A / BOL 16
		0608			270°		on course Line 16
		1108	2-6				c/sweep on Recorder #2 to 2-6 sec
		1245	0-4				c/sweep on Recorder #2 to 0-4 sec
"	"	1600	0-6 0-4	25/125	270°	5.8	All's well, continuing long Line 16, change watch
		1800	"	"	"	"	SMOOTH

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Line	JD	GMT	Swp	Filter	Csc	Speed	Comments
16	81	2100	0-6 0-4	25/125	270	6	SMOOTH
	82	0000					"
	82	0200					"
"	"	0400	0-6 2-6	"	"	"	C/swp 2-6 sec on Recorder #2
		0415					Airgun record deteriorating (guns appear O.K. but outgoing pulse weak)
		0500					Pulled guns in, replaced them, but new guns would not seal - now rebuilding.
turn		0642			A/C		EOL 16, turn to Line 45 still no seismics
turn		0730			"		guns operating again, looks good, still turning
					"		v. hard, smooth bottom - unreal!
turn		0815	2-6		"		C/sweep on #2 Recorder to 2-6 sec
45		0849	-	-	000		BOL 45 at 000°
"	"	1103	0-4		"	6 kt	C/sweep to 0-4 sec on #2 Recorder
		1211			A/C		A/C to avoid ship (A/C to ~40°)
		1233			350°		easing back on line
		2100			350°		BOL 45A
45A		2227			226		C/C 226 EOL 45 / BOL 45A
		2350			"		2 SEC DECAY OFF RCDR #2
		0200			"		SMOOTH
3		0320			A/C to 90°		C/C 90° EOL 45A
3		0330			90°		BOL 3
		0621	2-6				C/sweep on Recorder #2 - 2 sec delay
		0745	0-4				C/sweep on Recorder #2 - no delay
		0830					deviate from line to avoid boats
3A		0839			A/C		EOL 3 / BOL 3A
4		1021			270°		EOL 3A / BOL 4 (on course)
		1300					All OK.
		1515			A/C		A/C to avoid ships.
		1814			360		EOL 4, BOL 4A
		2021			90°		C/C 090

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LINE	JD	GMT	SWP	FILTER	CSE.	SPEED	STATEMENTS
4A	83	2030	0-6 0-4	25/125	90	6.0	C/C 180°
42		2110			180		BOL 42
		2304					SAT FIX- 550 m WEST OF LINE
	84	0155			270°		EOL 42 C/C to 270°
42A		0155					BOL 42A COMING AROUND TO LINE 8
8		0330			90°		SOL 8 EOL 42A } These Lines
8A		0550			80°	5kts	EOL 8 / BOL 8A } are essentially one
7		0730			90°	5kts	EOL 8A / BOL 7
		0956			78°		A/C to 78°
		1129			A/C		turning to Line 6
6		1205			270°		BOL 6
		1547					EOL 6, turning to Line 5
5		1651			90°		BOL 5
		1926			238		EOL 5 BOL 5A
9		2328			90°		BOL 9
9A	85	0206			110		EOL 9 BOL 9A
10/11		0308			270		EOL 9A BOL 10/11
10/11		0600			270°	6kts	on Line 10/11, just cruising along fine
10A		0856					EOL 10/11 turning to BOL 10A
12/13		1030			90°		BOL 12/13 EOL 10A on course
12/13		1256			87°		A/C to 87°
"	"	1500	"	"	80°	6kts	All systems go.
		1522			94°		A/C to ~94°
		1824			92°		EOL 13
13A		1836			270°		BOL 13A - (RERUN (RCDR 1 PAPER CHANGED)
13A/B		2148			"		EOL 13A > SEASTATE PICKED UP- 2-4FT SEAS
13A/B		2305			90°		C/C 90° SOME DEGRADATION OF RECORD, WHITECAPS
14		2330			90°		SOL 14
	86	0400					RCDR 2 OFF (change paper: End Roll 1/Begin 2
		0404					RCDR 8 ON

Line	JD	GMT	Sup	Filter	Csc	Sp.	Comments
14	86	0400	0-4 0-6	25/125	078	4.5	Rocking & Rolling – seas out of N.
		0530					relatively calm now – in the lee of Puerto Rico
		0830			90°	5kts	All is well.
"	"	1030	0-4	"	"	"	Paper on #2 Rec. not advancing properly – lost ~15 min cleaned top rubber paper advance rollers – seems OK
"	"	1200	0-4	"	"	"	Rec #2 advance screwing up again
		1225					cleaned lower roller – seems better
14A		1227					EOL 14 / BOL 14A
14B	"	1436	0-4 0-6	"	turn to 90°		EOL 14A / BOL 14B
		1441	2-6				c/s up on Recorder #2 to 2 sec. delay
50		2130			35°		c/c 35
		2320	0-6 0-4		"		@ DECAY REC'R 2 ~25 kt winds 10-12 ft swells
	87	0400				3kts	Rough seas – making only 3 knots
							seismics are mediocre – airgun still
							holding air
							Not getting useable gravity, but
							decided to keep collecting airgun
							data on way in to Roosevelt Roads.
		0503				3kts	Switched to the other airgun
							Switched back
		0800			60°	5 kts	c/s to 5 kts
		0930			30°		c/c to 30°
		1015					Airgun off EOL 50 haul gear in
							End of Survey
		1030					Heading to Roosevelt Roads