

6/26/96 Charleston - Seismic

Bohicket Marina - Crew J. Kindinger, K. Ludwig, D. Wiese, S. Cochran, J. Flocks. Start survey off of N. Edisto inlet to core SC95-18. Leave dock at 1023. Overcast, calm. Seas choppy (~3-4')

Proposed seismic tracklines sites -

SC 1.7) Start $\frac{1}{2}$ hour from SC95 core 18 ~

80° 08.700' 32° 31.750' N

80.135 32.529

SC 2) at SC95 core 18

80° 08.391' 32° 30.176'

80.110 32.503

3) at SC95 core 14

80° 07.031' 32° 35.330'

SC 3a) at SC95 core 16 (15)

80° 08.043' 32° 34.804'

80.134 32.801

4) past SC96 core 20

80° 05.35' 32° 33.85'

SC 4a) past SC96-20

80° 05.350' 32° 33.950'

80.089 32.566

SC 5) head NE 025° towards:

80° 04.150' 32° 36.150'

80.029 32.603

SC 6) SE Core SC96-12

80° 02.100' 32° 34.650'

80.035 32.578

SC 7) at SC95-11

80° 01.500' 32° 36.450'

80.025 32.608

SC 8) near SC96-21

79° 58.750' 32° 34.400'

79.975 32.573

8a) bear 265° SW towards end

8b) bear

6/29 Amend. to #2

#1 Anywhere outside N. Edisto inlet shoreward pass.

#2 long = -80° 8.507

lat = 32° 32.61

designated as way pt. #2 (SC1) on GPS.

6/26 (cont.)

SOL SC96-1 @ 1559 heading out of N. Edisto inlet.

1606 sea anchor deployed.

Standard seismic config. (sto)

1624 chop increasing

162930 turn away from shore

164429 turn to cross inlet

165329 near northern side of inlet. Turn up inlet.

170229 round seabrook pt. head up inlet, seas calming.

173330 record deteriorates - head channelward to test effect.

174330 Pass Turn ~180° ~~from~~ away from bar, turning around.

EOL 1802

head back to Bohicket Marine because DANA broke the sidescan.

<u>Edisto</u>	<u>Kiawah Is.</u>	<u>Morris Is.</u>	<u>Kiawah Is. North</u>
SC696-1	SC696-10	SC696-21	SB701-28
-2	-11	-22	-29
-3	-12	-23	-30
-4	-13	-24	SB701-30A
-5	-14	-25	SB701-31
-6	-15	-26	-32
-7	SB699-17	-27	-33
-8	-18		-34
-9			-35
			-36
			-37
			-38

6-27-96 CHARLESTON, S.C.

Bohicket Marina: Same crew; survey N. Edisto inlet on side scan;
seas choppy, small craft advisory so stay inside N. Edisto River.

Proposed side scan sonar tracklines:

SS1) $32^{\circ} 35.125'$, $80^{\circ} 13.000'$

SS2) $32^{\circ} 33.025'$, $80^{\circ} 09.906'$

SS3) $32^{\circ} \frac{32.919'}{31.911'}$, $80^{\circ} 09.907'$

SS4) $32^{\circ} 35.019'$, $80^{\circ} 13.001'$

SS5) $32^{\circ} 34.913'$, $80^{\circ} 13.002'$

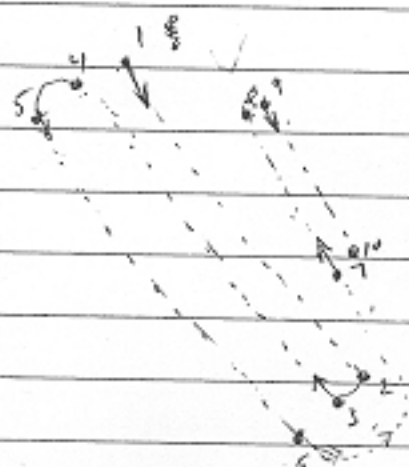
SS6) $32^{\circ} 32.813'$, $80^{\circ} \frac{09.908'}{10.874'}$

SS7) $32^{\circ} 33.806'$, $80^{\circ} 10.874'$

SS8) $32^{\circ} 34.906'$, $80^{\circ} 12.499'$

SS9) $32^{\circ} 35.012'$, $80^{\circ} 12.498'$

SS10) $32^{\circ} 33.912'$, $80^{\circ} 10.873'$



conversions:

$$\left(\frac{.65^{\circ} \text{ long}}{1000 \text{ m}} \right) (96.418 \text{ m}) = .001^{\circ} \text{ long}$$

$$\left(\frac{.54^{\circ} \text{ lat}}{1000 \text{ m}} \right) (195.811 \text{ m}) = .1057^{\circ} \text{ lat}$$

$$\begin{aligned} \sin &= \frac{o}{h} \\ \cos &= \frac{a}{h} \\ \tan &= \frac{o}{a} \end{aligned}$$

6-27-96 Cont. N. Edisto River

12:55 side scan sonar, seismic boomer, hydrophones & sea anchor deployed. Skies clear, ^{to p. cloudy} river calm.

(GMT)

16:54 seismic started SC 696-2

17:04 sonar recording started SS 627-1

100 MHz, fish down ~ 4m, 120m swath

17:12 44 increase speed

17:14 44 arr pt SS 01

17:32 44 increase speed

17:41 sonar display quit, must reboot, all data lost for SS 627-1

17:44 44 decrease speed, turn around

18:03 48 turn around, heading back downstream

18:14 54 drop to idle, pull in the fish

18:17 54 increased speed, seismic only

18:27 44 seismic stopped

20:00:00 SC 696-3 started

20:03:56 finished turn, running along N shore

20:25:56 - 20:28:56 unknown strange noise reflectors

20:30:56 big u-turn

20:33:56 heading south again (4:33 ^{EDT} pm)

20:49:56 end of line SC 696-3

6-28-96 CHARLESTON, S.C.

Skies clear to partly cloudy, ^{N Edisto} river and Beckett Creek calm.
Wind 10 kt from the N-NE creating low swells outside of river channel.

- 8:50 am deployed side scan sonar fish, seismic boomer & hydrophones, and sea anchor inside mouth of Edisto heading upstream to waypt 4
SOL sidescan 125334 SC696 SS628-1
12:59.9 SOL Seismic SC696-4
131359 printer started on seismic SC696-4
132621 begin circle because sonar disc says "full"
1337 SOL side-scan sonar, ^{SS628-2} circle straightened out heading upstream again
1345.5 EOL side-scan (disk says "full" again)
1349 SOL sidescan SS628-3
1453 EOL side scan ^(hooks up w/ line from yesterday) SS628-3 begin turn
1459 start side scan SS628-4 running downstream
145639 unk noise on seismic
150039 decrease speed (running w/ current now)
1511 Very near shore/shoal, seismic noise near shallows, bad signal from sonar fish so pulled it up a few inches to check it. All OK.
153159 sonar signal went to black, possibly lost signal due to pounding swells? No, just overheating - lost high voltage.
1532 sonar ~~at~~ stopped EOL SS628-4
1537 begin turn back upstream
1546 EOL seismic SC696-4 (11:45 am) pulled all equipment back in

6-28-96 cont.

12:25 pm deployed all equipment again, river becoming choppy

1637 seismic SOL SC696-5

1638 noise from turning of boat

1641 turning off course to avoid otr boat then straightened out

1642 side-scan SOL SS 628-5

1700 - sea state worsening. 1-2' chop may be reflected in surface ^{20m} record.

1720 17 boat speed boat trace.

174946 at inlet sea very choppy

1753 EOL seismic + side scan. Head back into inlet

1757 Sonar started SS 628-6

1758 seismic started SC696-6

182150 near marker (1st range marker) begin turn

182150 EOL seismic & sonar SC696-6 & SS628-6

1823 SOL SC696-7 still turning

1823 SOL SS 628-7

1824 picked up speed

1827 turning onto line path

1833 steer off course to avoid otr boats, running right near previous line path now

1848⁺ EOL seismic & sonar. because of lost nav. turn from off course path onto nearshore path

1854 SOL SC696-8 & SS628-8

1854⁺ lost nav data, increased speed to reach beginning pt of nearshore path EOL SS 628-8 EOL SC696-8 fish raised to ~1m below water surface

1903 SOL SC696-9 & SS628-9 make turn onto path.

1903/4 straightened out, Crab traps poss visible

No nav until 1904

192134 turn up Bericket Creek (fish still at ~1m)

1934 EOL side scan SS 628-9 lost nav data =

1940⁺ SOL SS 628-10 500 KHz frequency

2000 EOL SC696-9 & SS 628-10

6-29-96 CHARLESTON, S.C.

Skies fair, low swells w/some surface chop, wind S from the east

9:05 am deployed all equipment outside mouth of N. Edisto River, Run zigzag pattern along offshore.

1320 SS629-10 SOL

1326 SC696-10 SOL

1337 on line of path, "basically" (Jack)

1350 good path fish raised to -1m, better sonar data now

1427 EOL (both)

1428 SC696-11 SOL still turning

1429 SS629-11 SOL on line path

1439 increased speed slightly

1454 "diskette full" on sonar, ^{EOL 1st SS 629-11} keep running seismic SC696-11

1458 SOL SS629-12

1515 EOL overshoot map pt slightly

1515 SS629-¹³~~12~~ SOL making turn

1516 ~~EOL~~ A'd plotter paper out EOL (stopped seismic only)

1519 SOL SC696-12 again

1524 on line of path

160949 & Reach waypt. 5 turn seaward EOL ^{SC696-12 SS629-13} ~~SS629-12~~

1611 SOL SC696-13

1625 SOL SS629-~~13~~ 14 500 KHz (previous & SS 1200 KHz)

165422 GA SC696-13 turning landward. SOL SS629-14

165434 SOL SC696-14 ^{SS629-14} ~~SS696-14~~ ~~SS629-14~~

1701 SOL SS629-15 (down)

1707 EOL SS629-15 (down) 1'

1708 SOL SS629-16

1727 EOL ~~SS696-14~~ SC696-14

1728 SOL SC696-15

1729 EOL SS629-~~16~~ 16

1730 SOL SS629-~~17~~ 17

1842 EOL SC696-15 SS629-17

next will be: SS629-18

& SC696-16

A'd SC test for sub bottom

6-29-96 Cont.

Proposed side scan grid path for Stone Rv. area

st01) $32^{\circ} 34.250'$ $80^{\circ} 00.000'$

st02) $32^{\circ} 35.480'$ $79^{\circ} 56.716'$

st03) $32^{\circ} 36.250'$ $79^{\circ} 57.403'$

lat - .0698

st04) $32^{\circ} 37.510'$ $79^{\circ} 54.597'$

long - .034

st05) $32^{\circ} 37.440'$ $79^{\circ} 54.563'$

st06) $32^{\circ} 36.180'$ $79^{\circ} 57.369'$

st07) $32^{\circ} 36.110'$ $79^{\circ} 57.335'$

st08) $32^{\circ} 37.370'$ $79^{\circ} 54.529'$

st09) $32^{\circ} 36.040'$ $79^{\circ} 57.301'$

st10) $32^{\circ} 35.970'$ $79^{\circ} 57.267'$

st11) $32^{\circ} 37.300'$ $79^{\circ} 54.495'$

st12) $32^{\circ} 37.230'$ $79^{\circ} 54.461'$

st13) $32^{\circ} 35.900'$ $79^{\circ} 57.233'$

st14) Seaward parallel line of line st01-st02

$$\frac{1}{1860.4} = \frac{x}{135.95} = 0.0731 \quad \text{st02) } 35.480 - 0.0731 = 32^{\circ} 35.4069$$

$$\frac{1}{1860.4} = \frac{x}{63.99} = 0.0785 \quad 56.716 - 0.0785 = 79^{\circ} 56.687$$

st15) parallel line $34.250 - 0.0731 = 32^{\circ} 34.1769$

$$00.00 - 0.0785 = 79^{\circ} 59.9215$$

6-29-96 cont.

1844 SB 629-16 SOL

1844 SS 629-18 SOL

1900 EOL both

1903 SOL SB 629-17

1905 SOL SS 629-19

1905/6 SB 629-17 stopped & restarted

EOL SB 629-17 192106 to avoid traffic.

Restart " SS 629-19

1934 Begin line at beginning SB 629-17, SS 629-19

Following shrimp trawler - disturbed water observed on
for beginning 20 surface - could correspond with white reflection seen on sidescan.

1959 - no nav for ~ 6 min.

white reflector trails off on similar heading as trawler

Another trawler path seen in sidescan > 20:08:16 (crossing path)

2008 Nav down again

2015 Nav. back - loose connector

204019 EOL SB 629-17, SS 629-19

turning to do seaward parallel line.

204147 SOL SB 629-18, SS 629-20

213550 EOL EOD

6/30/96 Srdescan - Seismic Morris Island
~~Al-Fally Island~~

Previous grid ~ 60° from North.



$$\sin 30^\circ = x/150; x = 75m$$

$$\cos 30^\circ = y/150; y = 129.9m$$

$$1' \text{ lat.} = 1850m; 129.9m = 0.07' \text{ lat.}$$

$$1' \text{ long} = 0.8375' \text{ lat.}; \therefore 1' \text{ long} = 1850m \cdot 0.8375 = 1549.375m$$

$$\text{and } 75m = 0.048' \text{ long.}$$

Scm 01) ~~32° 40.525'~~, 32° 40.525', 79° 51.895'

Scm 02) 32° 40.595', 79° 51.943' 32° 40.575'
79° 47.853'

Scm 03) 32° 42.645', 79° 47.901'

Scm 04) 32° 42.715', 79° 47.949'

Scm 05) 32° 40.665', 79° 51.991'

Scm 06) 32° 40.735', 79° 52.039'

Scm 07) 32° 42.785', 79° 47.997'

Scm 08) 32° ~~40.805'~~ ^{42.855'}, 79° 48.045'

Scm 09) 32° 40.805', 79° 52.087'

Scm 10) 32° 40.875', 79° 52.135'

Scm 11) 32° 42.925', 79° 48.096'

Scm 12) 32° 42.995', 79° ~~48.144'~~

-8375

Scm 13) 32° 40.945', 79° 52.183'

Scm 14) 32° 41.015', 79° 52.231'

Scm 15) 32° 43.065', 79° 48.192'

6-30-96 Con'tScm 16) $32^{\circ} 43.135'$, $79^{\circ} 48.240'$ Scm 17) $32^{\circ} 41.085'$, $79^{\circ} 52.279'$ Scm 18) $32^{\circ} 41.155'$, $79^{\circ} 52.327'$ Scm 19) $32^{\circ} 43.205'$, $79^{\circ} 48.288'$ Scm 20) $32^{\circ} 43.275'$, $79^{\circ} 48.336'$ Scm 21) $32^{\circ} 41.225'$, $79^{\circ} 52.375'$

6-30-96 Cont

8:25^{am} deployed all equip off Morris Island. Skies hazy & overcast, seas calm with low swells. "It's a beautiful day in the neighborhood..." ♪ ♪ ♪

12:4234 SOL Sb 630-21 & SS 630-21

(no Sb 629-19 or Sb 629-20 in order to make file numbers catch up w/ ea othr ie: -21)

130557 High reflex varied, poss go back & check later

1348 EOL both (keep plotting throughout turn)

1352 SOL Sb 630-22 & SS 630-21

150515 EOL both

Many shrimp trawlers
nearby sonar

150929 SOL Sb 630-23 & SS 630-23

154129 slight veer off course to miss a shrimp boat

162137 EOL both

1629 SOL Sb 630-24 & SS 630-24

1658:49 slight veer off course to avoid shrimp

1743 EOL both

1748 SOL Sb 630-25 & SS 630-25

1829 EOL SS 630-25 and SOL SS 630-25a (boo-boo)

1834 - lost navigation ~~not~~ 1845 Nav. resumed.

190223 - EOL Sb 630-25, SS 630-25a

1908 SOL Sb 630-26, SS 630-26

1910 decrease speed to avoid sailboat path

1911 resume speed

1948 SS 630-26 disk full, circle boat back around

19 ~~SS 630-26a~~ SOL cable disconnected. - circling.

Reattach - tie line to cable to relieve stress from plug.

2019 SOL SS 630-26a

2037 EOL both

cable broke on sonar fish

pulled in all equip, then re deployed at 5:30 pm

2130 SOL Sb 630-27 SS 630-27

6a Sb 630-27 SS 630-27

2211 32° 42.338

79° 49.471

July 1, 1996 Charleston, S.C.

25°

Proposed grid waypoints:

SCS 2) 32° 36.300' 80° 00.209'	
SCS 3) 32° 34.775' 80° 00.209'	
SCS 4) 32° 34.775' 80° 00.712'	long lat + .0968 -
SCS 5) 32° 36.300' 80° 00.712'	
SCS 6) 32° 34.775' 80° 00.415'	
SCS 7) 32° 36.300' 80° 00.499'	
SCS 8) 32° 34.775' 80° 00.499'	
SCS 9) 32° 34.775' 80° 00.596'	
SCS 10) 32° 36.300' 80° 00.596'	
SCS 11) 32° 36.300' 80° 00.693'	
SCS 12) 32° 34.775' 80° 00.693'	
SCS 13) 32° 34.775' 80° 00.790'	
SCS 14) 32° 36.300' 80° 00.790'	
SCS 15) 32° 36.300' 80° 00.887'	
SCS 16) 32° 34.775' 80° 00.887'	
SCS 17) 32° 34.775' 80° 00.984'	
SCS 18) 32° 36.300' 80° 00.984'	
SCS 19) 32° 36.300' 80° 01.081'	
SCS 20) 32° 34.775' 80° 01.081'	
SCS 21) 32° 34.775' 80° 01.178'	
SCS 22) 32° 36.300' 80° 01.178'	
SCS 23) 32° 36.300' 80° 01.277'	
SCS 24) 32° 34.775' 80° 01.277'	
SCS 25) 32° 34.775' 80° 01.371'	
SCS 26) 32° 36.300' 80° 01.371'	
SCS 27) 32° 36.300' 80° 01.468'	
SCS 28) 32° 34.775' 80° 01.468'	
SCS 29) 32° 34.775' 80° 01.565'	
SCS 30) 32° 36.300' 80° 01.565'	



10:10 am all equipment deployed off Kiawah Is. Skies overcast. Winds 10 from SE. Seas sloppy; 3ft roll w/ 1ft surface chop. Rock & Roll. Run every other line on grid in a strictly northward direction is the attempt. Pull up equip at end of every run & motor to the next start point. Onshore/offshore transect's to coincide with southwesterly waves.

1420 SOL Sb 701-28 & SS 701-28	SCS 31) 32° 36.300' 80° 01.6618
1433	SCS 32) 32° 34.775' 80° 01.6618
1501/21 EOL	SCS 33) 32° 34.775' 80° 01.7586
1526 SOL Sb 701-29	SCS 34) 32° 36.300' 80° 01.7586
1527 SS 701-28	SCS 35) 32° 36.300' 80° 01.8554
1602 EOL both	SCS 36) 32° 34.775' 80° 01.8554
1630 SOL Sb 701-30, SS 701-30	SCS 37) 32° 34.775' 80° 01.9522
1645 SOL Sb 701-30a (dark gilled)	SCS 38) 32° 36.300' 80° 01.9522
	SCS 39) 32° 36.300' 80° 02.049
	SCS 40) 32° 34.775' 80° 02.049
	SCS 41) 32° 34.775' 80° 02.145

7-1-96 Cont.

1725 SOL SB70131, SS70131
1804 EOL both

182636 SOL SB70132, SS70132 Mike trawler ^{plume} shadow w/ shadow.
1847 EOL both

1916 SOL SB70133, SS70133
1920 Trawler plume
1944 EOL SB70133, SS70133

1950 SOL SB70134, SS70134 heading into waves (did not pull equip. and ran up)
2029 EOL SB70134, SS70134

2022 SOL SB70135, SS70135 curve at start to avoid shrimp boat
2044:40 EOL (just turned around, didn't pull equip in)
trawler plume w/ shadow.

SOL SB701-36 & SS701-36
21:14 EOL both

2119 SOL SB701-37, SS701-37
2136 EOL SB701-37, SS701-37

2139 SOL SB701-38, SS701-38
2201 Slow for traffic

2214 EOL EOD

696 7 1830 SU Fix 470

696 6 fix 011173 171717