

Salton Sea Cruise March 2011

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Shooting Day 1:

- March 5, 2011
- 210 cu. in. GI gun @ 60 sec repetition, 48 ch. MCS @ 1 m spacing and 6.25 group spacing

Line 1:

Start time: 13:24 local shot #1
End time: 16:13 local shot # 170
File name: 100.segy

Morning of March 5th we finished set up of the GI gun, launched the 48 channels of MCS and adjusted the buoyancy for Salton Sea salinity and pulled the barge to the north end of Line 1. Recording of MCS on line 1 began at 1:24 PM local time and continued at 60 second shot intervals until 4:13 PM.

Shooting Day 2:

- March 6, 2011

GI gun shooting shot # 200 at 8:37 am

Line 1a:

Start time: 8:53 am local time 16:53 GMT, first shot recorded on MCS #216
End time: ~12:10 local time last shot # 395
File name: 200.segy

Line 1b:

Start time: 12:28
File name: 300.segy

At ~12:30 local time turn onto line 1b, lost power on the Charity Eden tug, poor steering control and power. One of 2 engines lost. Altitude on the streamer was lost to ~ 6 m but it was left in the water while the status on the Charity Eden was assessed. The GI gun continued at 60 sec. intervals on navigation file beginning at 12:27. Loss of altitude and poor steering caused us to recover the streamer, unsure of last shot number recorded. Navigation file 1227 records engine failure, turn and loss of streamer. Unsure of end time on recording 300.segy. GI gun continued at intervals while we made our way toward the west shore along Line 8. At 1:45 local winds set in and we began to tie down the barge. Last shot on GI gun # 390 at 1:58 local time.

Barge was left at western end of line 8 while the research and Cross crews headed back to the Northern Marina with one engine and rough sea. At ~ 2:30 PM the single working engine overheated, Cross crew serviced engine and we continued north until a clogged fuel line about 40 minutes later. Reached marina at ~ 4 PM.

OBS Deployment Day 3:

- March 10, 2011

At 6:30 am the L-CHEAPO OBS crew met with the Cross Marine crew at the northern Marina to return to barge left in the storm the previous Sunday. Upon returning to the barge it became known that the air compressor used to fire the GI gun was missing and further assessment showed that much of the equipment left on the barge had been moved or vandalized in some way. The Imperial County Sheriffs were notified and intended to come to the barge to file a report. The Charity Eden continued as planned to recover OBSs from the southern portion of the Salton Sea. OBS1, the southern most deployment, failed to surface despite successful recovery sequence. The team successfully recovered 8 instruments and returned to the barge. At ~4pm the sheriff department arrived to conduct their investigation. All valuable equipment including streamer birds and timing/trigger were removed from the barge for safe keeping.

OBS Recovery/Deployment Day 4:

- March 11, 2011

We successfully recovered 14 instruments and reset them for redeployment returning to the barge at 9:40 am. The Charity deployed 8 units that were ready and recovered an additional 6, leaving them at the barge to be reset. 8 instruments were deployed along the Salt Creek line on the way back to the harbor.

OBS Recovery/Deployment Day 5:

- March 12, 2011

Continue to surface and reset remaining instruments. We focused on deploying the southern grid and also were able to surface the OBS that did not surface on the 10th. The Crew on the Charity used a sidescan sonar to locate the unit then were able to hook it with a boat hook as it was very shallow. The L-CHEAPO technicians suspect that the failed recovery was due to either the type of pin used or the fact that the release was set very tight. The entire array of 48 instruments were successfully recovered and redeployed.

- March 13, 2011

Down day. Cross crew serviced the

- March 14, 2011

We arrived at the marina at ~ 6 am to load the new configuration of compressors. The main initiative for the day was to tow the barge from the west side of line 8 to get north to line 7. Land instruments were live and recording our shots on this day. We successfully set up the new compressor configuration and recorded MCS while in transit to line 7.

Line 7 was completed and the barge was left near the eastern end of line 7 at sundown. For safe measure, we continued to unload valuable equipment.

•March 15, 2011

We set up and were shooting at 8:40 am logging gps time and location for the shots while we set up and checked streamer equipment. . Barge in tow at 9:38 am shot number 757.

Streamer deployed and birds set at 9:57 am shot number 779

Line 7b

- start time: 9:59 am
- first shot 779
- end time: 10:38 am
- last shot 817

Line 3

- start time: 10:39
- first shot: 3
- end time: 2:54 pm
- last shot

Line 9

- start time: ~2:59 pm
- first shot 9
- end time ~3:40 pm
- last shot 39

Malfunction on the Charity Eden causes recovery of the streamer. We continued to shoot and record time. The cooling water lines on the engines were clogged with buildup. The crew was able to flush the engines and we continued to shoot along line 9 without MCS.

Gun only on line 9 beginning at 4:31. Last shot on line 8 6:24 pm local time.

March 16, 2011

Begin shooting and logging time at 10:29 am local, shot number 1.

Begin tow onto line 10 at 11:40 am, shot number 80.

Line 10

- first shot 155
- start time: 12:54 pm
- last shot 332
- end time 3:51 pm

Line 4

- first shot 4
- start time: 3:52 pm
- last shot 46
- end time: 4:34 pm

Line 11

- start time 4:35 pm local
- first shot 11
- end time
- last shot

Recovered streamer at ~5:30 pm local because the engine on the Charity was clogged again preventing engine cooling.

March 17, 2011

Begin shooting and logging gps time at 1:11 pm local time, shot number 113

Line 11a

- start time 2:09 pm
- first shot 171
- last good shot #179

gun misfires at shot number 180 and then nofire on shot 182. Inspection shows a leak in the 210 c. in. airgun so the decision is made to swap in the 90 c. in. gun. 2:57 pm the new gun is connected and fired.

Line 5

Using the 90 c. in. GI gun at 60 second intervals and 2000 psi.

- start time 3:25 pm
- first shot 8
- end time 3:49 pm
- last shot 32

Turn south begins at 3:35 pm in 16 feet of water, so we raise the streamer depth to 3 m. Gun is disarmed at 3:49 pm to connect additional compressor and test at 20 second intervals

Line 5a

- start time 3:58 pm

- first shot 500
- last shot 747
- end time: 5:39 pm

At shot #528 interval was reset to 25 sec. as the compressors were having difficulties keeping up with a 20 sec shot interval.

We continued shooting with the same MCS streamer used for the rest of the deployment but also deployed a new streamer for testing. Streamer 1: 6.25 m group spacings and 48 channels. Streamer 2: 3.125 m group spacings and 24 channels.

Line 12

- first shot 12
- start time 5:40 pm
- last shot 188
- end time

Very rough weather set in requiring us to recover both streamers and tie down the barge to withstand the high wind and waves.

March 18, 2011

Begin breakdown of project. Problems recovering several OBSs. Instruments respond to burn sequence but fail to surface. 9 instruments recovered when we intended to surface 16. Sudden storm requires us to leave the barge again and head back to the harbor.

March 19, 2011

We intended to return to the barge and begin to bring it north to the marina. Rough waves prevent moving the barge so we unload loggers from 6 instruments and head to line 7 to calm water and successfully recover 9 OBSs.

March 20, 2011

Cross crew returned to the barge and towed it to the northern marina beginning at 5 am. The barge was returned successfully to the marina at 1 pm where we began to unload (empty) OBS racks along with 3 racks of the 9 recovered units. Breakdown was completed at ~5 pm and trucks and equipment were transported back to Scripps.