

FINAL CRUISE INSTRUCTIONS

FOCI

NOAA Ship *MILLER FREEMAN*, Cruise MF-05-04
March 14 – March 20, 2005
Chief Scientist – Carol L. DeWitt, NOAA/PMEL

1.0 FINAL CRUISE INSTRUCTIONS

1.1 **Cruise Title** – Eco-Fisheries-Oceanography Coordinated Investigations (Eco-FOCI).

1.2 **Cruise Numbers**

1.2.1 **Cruise Number** – MF-05-04

1.2.2 **FOCI Number** – 3MF05

1.3 **Cruise Dates**

1.3.1 **Departure** – Depart Dutch Harbor, Alaska, at 1500 on Tuesday, March 14, 2005.

1.3.2 **Arrival** – Arrive Kodiak, Alaska, on Monday, March 20, 2005.

1.4 **Operating Area** – Gulf of Alaska

2.0 CRUISE OVERVIEW

Cruise Objectives – Fisheries-Oceanography Coordinated Investigations (FOCI) is an effort by National Oceanic and Atmospheric Administration (NOAA) and associated academic scientists. FOCI's goal is to understand the effects of abiotic and biotic variability on ecosystems of the North Pacific Ocean and Bering Sea in order to discern the physical and biological processes that determine recruitment variability of commercially valuable finfish and shellfish stocks in Alaskan waters. The primary objective of the cruise will be the recovery and deployment of moorings in the Gulf of Alaska. The second objective will be physical oceanographic property sampling at and near the mooring locations.

2.1 **Applicability** – These instructions, with **FOCI Standard Operating Instructions for NOAA Ship MILLER FREEMAN**, dated October 6, 2003, present complete information for this cruise.

2.2 **Participating Organizations**

NOAA – Pacific Marine Environmental Laboratory (PMEL)
7600 Sand Point Way N.E.
Seattle, Washington 98115-6439

2.3 Personnel

2.3.1 Chief Scientist

Name	Gender	Affiliation	E-mail Address
Carol L. DeWitt (206) 526-6808	Female	PMEL	Carol.DeWitt@noaa.gov

2.3.2 Participating Scientists

Name	Gender	Affiliation	E-mail Address
Carol L. DeWitt	Female	PMEL	Carol.DeWitt@noaa.gov
William J. Floering	Male	PMEL	William.Floering@noaa.gov
Earl Roskie	Male	PMEL	Earl.Roskie@noaa.gov

2.4 Administration

2.4.1 Ship Operations

Marine Operations Center, Pacific
1801 Fairview Avenue East
Seattle, Washington 98102-3767
Telephone: (206) 553-4548
Fax: (206) 553-1109

Commander Mark P. Ablondi, NOAA
Chief, Operations Division, Pacific (MOP1)
Telephone: (206) 553-8705
Cellular: (206) 390-7527
E-mail: Mark.Ablondi@noaa.gov

Larry Mordock
Deputy Chief, Operations Division (MOP1x1)
Telephone – Work: (206) 553-4764
Home: (206) 365-3567
Cellular: (206) 465-9316
E-mail: Larry.Mordock@noaa.gov

2.4.2 Scientific Operations

Dr. Phyllis J. Stabeno, PMEL
Telephone: (206) 526-6453
E-mail: Phyllis.Stabeno@noaa.gov

3.0 OPERATIONS

3.1 Data To Be Collected

3.1.1 Scientific Computer System (SCS) – The ship's SCS shall operate throughout the cruise, acquiring and logging data from navigation, meteorological, oceanographic, and fisheries sensors. See **FOCI Standard Operating Instructions for NOAA Ship MILLER FREEMAN** (SOI 5.2) for specific requirements.

3.2 Staging Plan – Approximately 15,000 pounds of equipment were loaded onto the ship prior to its departure from Seattle, Washington, on Thursday, February 3, 2005. See [Section 9.1 Cruise MF-05-04 Equipment Inventory](#) for a complete equipment inventory. The scientific party will be responsible for arranging vehicles for moving their equipment from the airport and/or to the ship.

3.3 De-staging Plan – Upon completion of Cruise MF-05-04, FOCI personnel will arrange for shipping equipment back to Seattle, Washington. The scientific party will be responsible for arranging vehicles for moving their equipment from the ship to the airport and/or docks and coordinating with the ship any equipment that will be left on the vessel for upcoming cruises.

3.4 Cruise Plan – The ship will depart Dutch Harbor, Alaska, on Tuesday, March 15, 2005. We will utilize the stern platform as well as the port deck crane during mooring operations. A standard mooring site operation will include a Conductivity, Temperature, and Depth (CTD) cast prior to a mooring recovery and a CTD cast following a mooring deployment.

- **PAVLOF BAY** – One mooring will be recovered and redeployed,
- **SHELIKOF STRAIT** – Three moorings will be recovered and redeployed along Line 8 in Shelikof Strait. The Line 8 CTDs (seven CTDs) will be completed,
- **CHINIAK BAY** – One mooring will be recovered and redeployed at Chiniak Bay, and
- **EDD Test Mooring** – One surface mooring will be recovered,

The cruise will end in Kodiak, Alaska, on Monday, March 20, 2005.

3.5 Station Locations – See Section [9.4 Cruise MF-05-04 Station Locations and Itinerary](#).

3.6 Station Operations – The following are operations to be conducted on this cruise. The procedures for these operations are listed in the **FOCI Standard Operating Instructions for NOAA Ship MILLER FREEMAN** (SOI). Operations not addressed in the SOI and changes to standard procedures are addressed below.

- CTD/Water Sample Operations (SOI 3.2.1),
- Chlorophyll Sampling Operations (SOI 3.2.10), and
- ARGOS Satellite Tracked Drifter Buoy Deployments (SOI 3.2.11).

3.7 Underway Operations – The following are underway operations to be conducted on this cruise. The procedures for these operations are listed in the **FOCI Standard Operating Instructions for NOAA Ship MILLER FREEMAN** (SOI). Operations not addressed in the SOI and changes to standard procedures are addressed below.

- Radiometer Operations (SOI 3.2.14),
- Scientific Computer System (SCS) data acquisition (SOI 5.2),
- Fluorometer monitoring (SOI 5.3), and
- Thermosalinograph monitoring (SOI 5.3).

3.8 Applicable Restrictions – None.

3.9 Small Boat Operations – None.

4.0 FACILITIES

4.1 Equipment and Capabilities Provided by Ship

- Oceanographic winch with slip rings and 3-conductor cable terminated for CTD,
- Sea-Bird Electronics' SBE 911*plus* CTD system with stand, each CTD system should include underwater CTD, weights, and pinger. There should be one deck unit and tape recorder for the two systems,
- 10-liter Niskin sampling bottles for use with rosette (10 plus 4 spares),
- Conductivity and temperature sensor package to provide dual sensors on the CTD (primary),
- AUTOSAL salinometer, for CTD field corrections,
- Wire speed indicators and readout for quarterdeck, Rowe, and Marco winches,
- For meteorological observations: 2 anemometers (one R. M. Young system interfaced to the SCS), calibrated air thermometer (wet-and dry-bulb) and a calibrated barometer and/or barograph,
- Freezer space for storage of chemical samples (blast and storage freezers, indicate desired temperatures),
- SIMRAD EQ-50 echosounder,
- JRC JFV-200R color sounder recorder,
- RD Instruments' ADCP written to Iomega Zip drive,
- Use of Pentium PC in DataPlot for data analysis,
- Scientific Computer System (SCS),
- Electrical connection between Rowe winch and DataPlot,
- Removable stern platform (in place),
- Adequate deck lighting for night-time operations,
- Navigational equipment including GPS and radar,
- Safety harnesses for working on quarterdeck and fantail, and
- Ship's crane(s) used for loading and/or deploying.

4.2 Equipment and Capabilities Provided by Scientists

- Sea-Bird Electronics' SBE 911*plus* CTD system,
- PMEL PC with SEASOFT software for CTD data collection and processing,

- Fluorometer and light meter to be mounted on CTD,
- CTD stand modified for attachment of fluorometer,
- Conductivity and temperature sensor package to provide dual sensors on the CTD (backup),
- CTD rosette sampler,
- Subsurface moorings,
- ARGOS tracked drifter buoys,
- Miscellaneous scientific sampling and processing equipment, and
- Cruise Operations Database (COD)

5.0 DISPOSITION OF DATA AND REPORTS

5.1 The following data products will be included in the cruise data package:

- NOAA Form 77-13d, *Deck Log – Weather Observation Sheets*,
- Electronic Marine Operations Abstracts,
- SCS backup - recordable compact diskette (CD),
- Calibration Sheets for all ship's instruments used,
- CTD Cast Information/Rosette Log,
- Autosalinometer Logs, and
- Ultra-cold Freezer Temperature Daily Log (SOI 5.4).

5.2 **Pre and Post-cruise Meetings** – Cruise meetings may be held in accordance with *FOCI Standard Operating Instructions for NOAA Ship MILLER FREEMAN* (SOI 5.5).

6.0 ADDITIONAL PROJECTS

6.1 **Definition** – Ancillary and piggyback projects are secondary to the objectives of the cruise and should be treated as additional investigations. The difference between the two types of secondary projects is that an ancillary project does not have representation aboard and is accomplished by the ship's force.

6.2 **Ancillary Projects** – Any ancillary work done during this project will be accomplished with the concurrence of the Chief Scientist and on a not-to-interfere basis with the programs described in these instructions and in accordance with the *NOAA Fleet Standing Ancillary Instructions*.

6.3 **Piggyback Projects** – None.

7.0 HAZARDOUS MATERIALS

7.1 **HAZMAT Inventory** – See [Section 9.4 Cruise MF-04-04 HAZMAT](#).

7.2 **Material Safety Data Sheet (MSDS)** – All MSDSs can be found on the *OERD HAZMAT Emergency Guidelines – MSDS* compact diskette dated January 25, 2005, supplied to the ship.

8.0 MISCELLANEOUS

- 8.1 Communications** – Specific information on how to contact the **NOAA Ship *MILLER FREEMAN*** and all other fleet vessels can be found at:

<http://www.pmc.noaa.gov/phone.htm>

8.2 Important Telephone and Facsimile Numbers and E-mail Addresses

8.2.1 Pacific Marine Environmental Laboratory (PMEL)

FOCI – Ocean Environmental Research Division (OERD2):

- (206) 526-4700 (voice)
- (206) 526-6485 (fax)

Administration:

- (206) 526-6810 (voice)
- (206) 526-6815 (fax)

E-Mail: FirstName.LastName@noaa.gov

8.2.2 Alaska Fisheries Science Center (AFSC)

FOCI – Resource Assessment and Conservation Engineering (RACE):

- (206) 526-4171 (voice)
- (206) 526-6723 (fax)

E-Mail: FirstName.LastName@noaa.gov

- 8.2.3 NOAA Ship *MILLER FREEMAN*** – Telephone methods listed in order of increasing expense.

Homeport – Seattle, Washington:

- (206) 553-4589
- (206) 553-4581
- (206) 553-8344

United States Coast Guard – Kodiak, Alaska:

- (907) 487-9752
- (907) 487-9753
- (907) 487-4397
- (907) 487-4398

Cellular:

- (206) 790-7594

Iridium:

- (808) 659-5684

INMARSAT Mini-M:

- 011-872-761-267-346 (voice/PBX)
- 011-872-761-267-347 (voice)
- 011-872-761-267-348 (fax)

INMARSAT B:

- 011-872-330-394-120 (voice)
- 011-872-330-394-121 (fax)

E-Mail: NOAA.Ship.Miller.Freeman@noaa.gov (mention the person's name in SUBJECT field)

8.2.4 Marine Operations Center, Pacific (MOP)

Operations Division (MOP1):

- (206) 553-4548 (voice)
- (206) 553-1109 (facsimile)

E-Mail: FirstName.LastName@noaa.gov

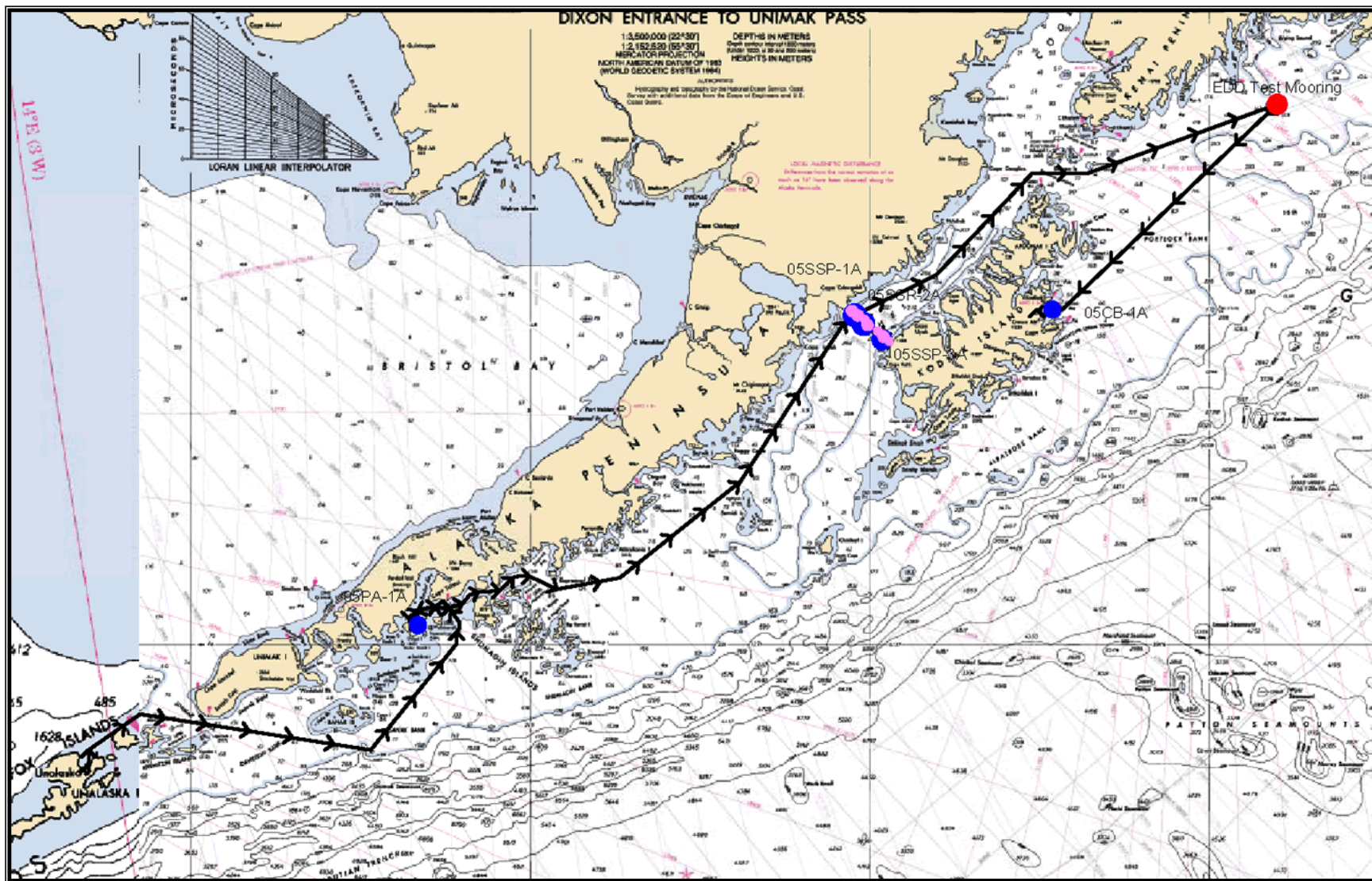
E-Mail to Radio Room: Radio.Room@noaa.gov

9.0 APPENDICES

9.1 Cruise MF-05-04 Equipment Inventory

Equipment	Quantity	Weight	Total Weight
Currently On Board The Vessel:			
Acoustic Release	5	111 lbs	555 lbs
ADCP in 41 inch syntactic float	3	1,000 lbs	3,000 lbs
Box, ARGOS Drifter	4	200 lbs	800 lbs
Deckset, 8011A Acoustic Release	1		
Current Meter	1	70 lbs	70 lbs
Floats, 30"	8	200 lbs	1,600 lbs
Floats, 41"	1	400 lbs	400 lbs
Hardware box	1	400 lbs	400 lbs
Spool, Mooring	1	250 lbs	250 lbs
Anchors			
04-CB-1A	1	1,600 lbs	1,600 lbs
04-SSP-1A	1	1,600 lbs	1,600 lbs
04-SSP-2A	1	1,600 lbs	1,600 lbs
04-SSP-3A	1	1,600 lbs	1,600 lbs
Pavlof Bay	1	1,600 lbs	1,600 lbs
TOTAL WEIGHT:			15,075 lbs

9.2 Cruise MF-05-04 Chartlet



9.3 Cruise MF-05-04 Station Locations and Itinerary

Activity	Latitude	Longitude	Dist (nm)	Spd (kts)	Trans (hrs)	Approx Bott Depth (m)	On Sta (hrs)	Arrive (Local) Date/Time	Depart (Local) Date/Time
Depart Dutch Harbor	53° 53.537' N	166° 30.751' W							15-Mar-2005 15:00
CTD at Pavlof Bay	55° 10.870' N	161° 41.205' W		4	0.7	100	0.4	16-Mar-2005 19:51	16-Mar-2005 20:18
Recover 04PA-1A	55° 10.870' N	161° 41.205' W	0.0	10	0.0	100	1.0	16-Mar-2005 20:18	16-Mar-2005 21:18
Deploy 05PA-1A	55° 10.870' N	161° 41.205' W	0.0	10	0.0	100	1.0	16-Mar-2005 21:18	16-Mar-2005 22:18
CTD at Pavlof Bay	55° 10.870' N	161° 41.205' W	0.0	10	0.0	100	0.4	16-Mar-2005 22:18	16-Mar-2005 22:44
CTD at Line 8, Station 61	57° 43.200' N	155° 15.600' W		10	9.8	181	0.5	18-Mar-2005 04:33	18-Mar-2005 05:05
CTD at Line 8, Station 60	57° 41.000' N	155° 10.000' W	3.7	10	0.4	289	0.6	18-Mar-2005 05:27	18-Mar-2005 06:01
CTD at Line 8, Station 59	57° 38.500' N	155° 04.200' W	4.0	10	0.4	252	0.5	18-Mar-2005 06:25	18-Mar-2005 06:58
CTD at Line 8, Station 58	57° 36.300' N	155° 00.500' W	3.0	10	0.3	238	0.5	18-Mar-2005 07:16	18-Mar-2005 07:48
CTD at Line 8, Station 57	57° 33.100' N	154° 52.500' W	5.4	10	0.5	228	0.5	18-Mar-2005 08:20	18-Mar-2005 08:52
CTD at Line 8, Station 56	57° 30.900' N	154° 47.000' W	3.7	10	0.4	205	0.5	18-Mar-2005 09:14	18-Mar-2005 09:45
CTD at Line 8, Station 55	57° 28.500' N	154° 42.000' W	3.6	10	0.4	60	0.4	18-Mar-2005 10:07	18-Mar-2005 10:31
CTD at 04SSP-3A	57° 29.017' N	154° 48.459' W		10	0.4	191	0.5	18-Mar-2005 10:52	18-Mar-2005 11:24
Recover 04SSP-3A	57° 29.017' N	154° 48.459' W	0.0	10	0.0	191	1.0	18-Mar-2005 11:24	18-Mar-2005 12:24
Deploy 05SSP-3A	57° 29.017' N	154° 48.459' W	0.0	10	0.0	191	1.5	18-Mar-2005 12:24	18-Mar-2005 13:54
CTD at 05SSP-3A	57° 29.017' N	154° 48.459' W	0.0	10	0.0	191	0.5	18-Mar-2005 13:54	18-Mar-2005 14:27
CTD at 04SSP-2A	57° 37.110' N	155° 04.490' W	11.8	10	1.2	249	0.5	18-Mar-2005 15:38	18-Mar-2005 16:11
Recover 04SSP-2A	57° 37.110' N	155° 04.490' W	0.0	10	0.0	249	1.0	18-Mar-2005 16:11	18-Mar-2005 17:11
Deploy 05SSP-2A	57° 37.110' N	155° 04.490' W	0.0	10	0.0	249	1.5	18-Mar-2005 17:11	18-Mar-2005 18:41
CTD at 05SSP-2A	57° 37.110' N	155° 04.490' W	0.0	10	0.0	249	0.5	18-Mar-2005 18:41	18-Mar-2005 19:14
CTD at 04SSP-1A	57° 41.050' N	155° 12.217' W	5.7	10	0.6	295	0.6	18-Mar-2005 19:48	18-Mar-2005 20:22
Recover 04SSP-1A	57° 41.050' N	155° 12.217' W	0.0	10	0.0	295	1.0	18-Mar-2005 20:22	18-Mar-2005 21:22
Deploy 05SSP-1A	57° 41.050' N	155° 12.217' W	0.0	10	0.0	295	1.5	18-Mar-2005 21:22	18-Mar-2005 22:52
CTD at 05SSP-1A	57° 41.050' N	155° 12.217' W	0.0	10	0.0	295	0.6	18-Mar-2005 22:52	18-Mar-2005 23:27
Recover EDD Test	59° 18.493' N	148° 59.753' W		10	15.3	187	2.0	20-Mar-2005 12:46	20-Mar-2005 14:46
CTD 04CB-1A	57° 43.338' N	152° 17.621' W		10	0.5	183	0.5	21-Mar-2005 04:56	21-Mar-2005 05:28
Recover 04CB-1A	57° 43.338' N	152° 17.621' W	0.0	10	0.0	183	2.0	21-Mar-2005 05:28	21-Mar-2005 07:28
Deploy 05CB-1A	57° 43.338' N	152° 17.621' W	0.0	10	0.0	183	0.5	21-Mar-2005 07:28	21-Mar-2005 07:58
CTD 05CB-1A	57° 43.338' N	152° 17.621' W	0.0	10	0.0	183	0.5	21-Mar-2005 07:58	21-Mar-2005 08:31
Arrive Kodiak	57° 43.808' N	152° 31.254' W		2	0.3			21-Mar-2005 10:09	

9.4 Cruise MF-05-04 HAZMAT

9.4.1 Cruise MF-05-04 HAZMAT Inventory By Equipment

Instrument	Battery Type	Manufacturer	Cell Type	Req. Cells	Total Instr.	Spares	Total Cells	Contact Person
RCM-9	Alkaline	APAK Batteries	9-volt	6	1	0	6	Roskie
MicroCat	Lithium	Motorola	9-volt	24	4	0	96	DeWitt

9.4.2 Cruise MF-05-04 HAZMAT Inventory

Chemical	CAS Number	Respondee	Org	Qty	H	F	R	Storage Color Code	Hazard Class	Packing Group Number	UN	Reportable Quantity	Response Indices
Battery, Alkaline	mixture	Roskie	PMEL	6-cells				General	Not regulated				
Battery, Lithium	mixture	DeWitt	PMEL	96-cells	2	2	3	General	9	II	3090		
Tributyltin Oxide	56-35-9	DeWitt	PMEL	30-pairs	3	1	0	Poison	Not regulated				1

Spill Response 1: Stop the leak, if possible. Ventilate the space involved. Absorb, sweep up, and place in container for disposal. Shut off or remove all ignition sources. Prevent waterway contamination. Construct a dike to prevent spreading. Collect run-off (water) and transfer to drums or tanks for later disposal.