1.0 DRAFT CRUISE INSTRUCTIONS

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

1.2 Cruise Numbers:

1.2.1 Cruise Number – MF-06-10 Leg II

1.2.2 Eco-FOCI Number - N/A

1.3 Cruise Dates: 25 September - 10 October, 2006

1.3.1 Departure - Dutch Harbor, AK. 25 Sept., 2006 3:00 pm Local Time

1.3.2 Touch-and-go – St. Paul Island, AK. 4 October, 2006 8:00 am Local Time

1.3.3 Arrival - Dutch Harbor, AK. 10 October, 2006 8:00 am Local Time

1.4 Operating Area - Bering Sea, Unimak Pass to St. Lawrence Island

2.0 CRUISE OVERVIEW

2.1 Cruise Objectives - To recover and deploy surface and subsurface oceanographic instrumentation moorings at several locations in the Bering Sea. To complete CTD casts and plankton tows at sampling stations in and around the mooring locations and along the 70 meter isobath. To collect data on the physical, chemical and biological parameters at each sampling station.

2.2 Applicability - These instructions, with FOCI Standard Operating Instructions for NOAA Ship MILLER FREEMAN, dated March 1, 2005, present complete information for this cruise.

2.3 Participating Organizations

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

2.4.1 Chief Scientist

<table>
<thead>
<tr>
<th>Name</th>
<th>Gender</th>
<th>Affiliation</th>
<th>E-mail Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wm. Floering</td>
<td>M</td>
<td>PMEL</td>
<td><a href="mailto:william.floering@noaa.gov">william.floering@noaa.gov</a></td>
</tr>
</tbody>
</table>

2.4.2 Other Participating Scientists

<table>
<thead>
<tr>
<th>Name</th>
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<th>E-mail Address</th>
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</thead>
<tbody>
<tr>
<td>Carol Dewitt</td>
<td>F</td>
<td>PMEL</td>
<td><a href="mailto:carol.dewitt@noaa.gov">carol.dewitt@noaa.gov</a></td>
</tr>
<tr>
<td>Peter Proctor</td>
<td>M</td>
<td>PMEL</td>
<td><a href="mailto:peter.proctor@noaa.gov">peter.proctor@noaa.gov</a></td>
</tr>
<tr>
<td>Sarah Thornton</td>
<td>F</td>
<td>UAF</td>
<td><a href="mailto:sarahjt@ims.uaf.edu">sarahjt@ims.uaf.edu</a></td>
</tr>
<tr>
<td>Dave Kachel</td>
<td>M</td>
<td>PMEL</td>
<td><a href="mailto:Dave.kachel@noaa.gov">Dave.kachel@noaa.gov</a></td>
</tr>
<tr>
<td>Hendrick Miller</td>
<td>M</td>
<td>PMEL</td>
<td><a href="mailto:Hendrick.v.miller@noaa.gov">Hendrick.v.miller@noaa.gov</a></td>
</tr>
<tr>
<td>Tony Jenkins</td>
<td>M</td>
<td>PMEL</td>
<td><a href="mailto:Antonio.jenkins@noaa.gov">Antonio.jenkins@noaa.gov</a></td>
</tr>
<tr>
<td>Annette Dougherty</td>
<td>F</td>
<td>AFSC</td>
<td><a href="mailto:Annette.dougherty@noaa.gov">Annette.dougherty@noaa.gov</a></td>
</tr>
<tr>
<td>Matt Brooks</td>
<td>M</td>
<td>FWS</td>
<td></td>
</tr>
</tbody>
</table>

2.5 Administration

2.5.1 Ship Operations

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

Commander Mark Pickett, NOAA
Chief, Operations Division, Pacific (MOP1)
Telephone: (206) 553-1857
Cellular: (206) 390-7527
E-mail: Mark.Pickett@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
2.5.2 **Scientific Operations**

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

Dr. Jeffrey Napp, AFSC  
Telephone: (206) 526-4148  
E-mail: Jeff.Napp@noaa.gov

3.0 OPERATIONS

3.1 **Data To Be Collected** - We will record the full suite of SCS sensors to include but not limited to, fluorometer, thermostalinograph, wind, air temperature, barometer, gps, corrected depth, bongo/seacat and CTD data.

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** - All mooring and associated sampling equipment for this cruise will be shipped via container to Dutch Harbor in care of FTS (Factory Trawler Systems). FTS will unload the container, store the equipment until the ship arrives and transport the equipment to the Miller Freeman on a flatbed truck.

3.3 **De-staging Plan** - This is the last cruise of the season, leaving only the steam to Seattle upon completion of MF-06-13. It is our intention to secure all samples and equipment aboard the Miller Freeman to be transported to and offloaded upon arrival in Seattle.

3.4 **Cruise Plan** - All mooring and sampling equipment will be loaded and secured on deck before departing Dutch Harbor on Sept. 24, 2006. Upon departure the Miller Freeman will steam for PMEL mooring site BS-2.

3.4.1 **Bering Sea Site 2**: At site BS-2 there are 3 moorings to recover including the "Peggy" surface mooring. Following the recoveries we will deploy 2 subsurface moorings at this site. Following the mooring deployments sampling at 4 corner stations and the center station will consist of a CTD cast (nutrients and chlorophylls), a 60/20 cm bongo tow and triplicate CalVet tows. Depending on the number of samples required a second CTD cast may be necessary. The ship will transit from mooring site BS-2 to mooring site BS-4 along the 70 meter isobath. A CTD/Bongo sampling station will be completed.

3.4.2 **Bering Sea Site 4**: There are two subsurface moorings to recover and two subsurface moorings to deploy at site BS-4. Due to approaching ice the BS-4 moorings were deployed approximately 3 miles south of there historical location. We will deploy the new BS-4 moorings back on the original historical location. Following the
mooring operations we will sample the 4 corner stations and the center station. A CTD cast, a 60/20 Bongo tow and triplicate CalVet tows will complete the sampling at each of the 5 stations. The ship will transit from mooring site BS-4 to mooring site BS-5. Again, we will follow the 70 meter isobath stopping to conduct a 60/20 Bongo tow and a CTD approximately every 9 miles.

### 3.4.3 Bering Sea Site 5:
There are two subsurface moorings to recover and two subsurface moorings to deploy at this station. Chemical, physical and biological sampling will take place at the 4 corner stations around the mooring site and at the center station. A CTD cast, a 60/20 cm bongo tow and triplicate CalVet tows will complete the sampling at the five stations near mooring site BS-5. The ship will follow the 70 meter isobath as we transit from mooring site BS-5 to mooring site BS-8. En route we will complete a CTD cast and a 60/20 cm bongo tow at stations approximately 9 miles apart.

### 3.4.4 Bering Sea Site 8:
Two subsurface moorings will be recovered and two will be deployed at site BS-8. As with the previous sites a CTD, a 60/20 cm bongo and triplicate CalVet tows will take place at each of the 4 corner stations around BS-8 and at the center station. The scheduling of operations following the work at BS-8 will be dictated by the time remaining in the cruise.

### 3.4.5 U-Tow trawls traveling south along the 70 meter isobath and the CTD "L" near Unimak Pass are two potential activities if time allows.

### 3.5 Station Locations

### 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)
- MARMAP Bongo Tows (SOI 3.2)
- CalVET Net Tows (SOI 3.2.6)
- Chlorophyll Sampling Operations (SOI 3.2.10)
- ARGOS Satellite Tracked Drifter Buoy Deployments (SOI 3.2.11)
- SIMRAD EK 500 Scientific Echosounder Monitoring (SOI 3.2.12)
- U-Tow transects along the 70 meter isobath

### 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.

- Scientific Computer System (SCS) data acquisition (SOI 5.2),
- Fluorometer monitoring (SOI 5.3),
- Thermosalinograph monitoring (SOI 5.3).
3.8 **Applicable Restrictions** - None Anticipated

3.9 **Small Boat Operations** - Small boat operations to assist in recovery of the surface mooring and the remote possibility of assisting with subsurface mooring recoveries.

4.0 **FACILITIES**

4.1 **Equipment and Capabilities Provided by Ship**

- Oceanographic winch with slip rings and 3-conductor cable terminated for CTD,
- Manual wire-angle indicator,
- Oceanographic winch with slip rings and 3-conductor cable terminated for the SBE SEACAT, for net tow operations,
- Sea-Bird Electronics’ SBE 911plus 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,
- Sea-Bird Electronics’ SBE-19 SEACAT system,
- Meter block for plankton tows,
- 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 biological and chemical samples (blast and storage freezers, indicate desired temperatures),
- SIMRAD EQ-50 echosounder,
- JRC JFV-200R color sounder recorder,
- RD Instruments’ ADCP,
- Bench space in DataPlot for PCs, monitor, printer and VCR to fly MOCNESS,
- Use of Pentium PC in DataPlot for data analysis,
- Scientific Computer System (SCS),
- Aft Rowe winch with multi conductor cable and slip rings for U-Tow,
- Electrical connection between Rowe winch and DataPlot,
- Removable stern platform installed,
- Laboratory space with exhaust hood, sink, lab tables and storage space,
- Sea-water hoses and nozzles to wash nets (quarterdeck and aft deck),
- Adequate deck lighting for night-time operations,
- Navigational equipment including GPS and radar,
- Safety harnesses for working on quarterdeck and fantail,
- Ship’s crane(s) used for loading and/or deploying,
- Internet access on ship's computers.
4.2 **Equipment and Capabilities Provided by Scientists**

- Sea-Bird Electronics’ SBE 911*plus* CTD system,
- Sea-Bird Electronics’ SBE-19 SEACAT 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,
- IAPSO standard water,
- 60-cm bongo sampling arrays,
- 20 cm bongo arrays,
- Spare wire angle indicator,
- CalVET net array,
- Argos tracked drifter buoy,
- Holy sock drogue for radar tracked drifter buoy,
- Surface mooring recovery only,
- Subsurface moorings deploy and recover,
- Miscellaneous scientific sampling and processing equipment,
- Scientific ultra-cold freezer,
- 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,
- Calibration Sheets for all ship's instruments used,
- CTD Cast Information/Rosette Log,
- Autosalinometer Logs,
- Bongo/Seacat logs,
- 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 Inventory

Refer to Appendix 9.2.

7.2 Material Safety Data Sheet (MSDS)

Submitted separately.

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.moc.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 Equipment Inventory A partial inventory of equipment follows below. A full inventory will be provided when it is available.

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Quantity</th>
<th>Weight (lbs)</th>
<th>Total wt. (lbs)</th>
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<td>Railroad wheel anchors</td>
<td>6</td>
<td>1600</td>
<td>9600</td>
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<td>Railroad wheel anchors</td>
<td>1</td>
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<td>1</td>
<td>2400</td>
<td>2400</td>
</tr>
<tr>
<td>Railroad wheel anchors</td>
<td>1</td>
<td>2500</td>
<td>2500</td>
</tr>
</tbody>
</table>
Mooring chain spool  4  450  1800  

Total  18300  

It is estimated that this partial inventory will make up at least two-thirds of the total equipment by weight.

9.2 HAZMAT Inventory

- 25 - SBE-39 (9-V lithium battery)
- 9 - MTR (9-V alkaline battery)
- 8 - Microcats (a pack of 6 lithium battery sticks and anti-fouling on conductivity cells)
- 4 - Seacat (9 D lithium battery pack (42 AH, 10.8 V) and antifouling cylinders on conductivity cells)
- 4 - ECO-fluorometer (a pack of 6 9-V lithium batteries)
- 1 - hazmat can with 6 lithium battery sticks (not in a pack), 6 9-V lithium batteries, 3 9-V alkaline batteries)

All battery packs and batteries are installed in the instruments. See also Table 1 included below.

9.3 Figures

9.4 Tables
<table>
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<th>Common Name of Material</th>
<th>Chemical Composition</th>
<th>UN Identification Number</th>
<th>Type</th>
<th>Size</th>
<th>Qty</th>
<th>MSDS</th>
<th>Storage Hazard</th>
<th>Type</th>
<th>Qty Loaded</th>
<th>Stored Location</th>
<th>Used</th>
<th>Amount Offloaded</th>
<th>Degree of Hazard</th>
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<td>Sodium Iodide</td>
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<td>600</td>
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<td>g</td>
<td>10</td>
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<td></td>
<td></td>
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<td>Sodium Nitroprusside</td>
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<td>g</td>
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<td>Composition</td>
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<td>Weight</td>
<td>Volume</td>
<td>Specified Quantity</td>
<td>Collection Method</td>
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<tr>
<td><strong>Ammonium Molybdate</strong></td>
<td>100% ammonium molybdate tetrahydrate</td>
<td>Not regulated</td>
<td>g</td>
<td>10.8</td>
<td>x</td>
<td>Dustpan, plastic bag; 1 dustpan, 150 ziplok bags</td>
<td></td>
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<td></td>
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<tr>
<td><strong>Ammonium Molybdate</strong></td>
<td>100% ammonium molybdate tetrahydrate</td>
<td>Not regulated</td>
<td>g</td>
<td>7.1</td>
<td>x</td>
<td>Dustpan, plastic bag; 1 dustpan, 150 ziplok bags</td>
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<tr>
<td><strong>Brij</strong></td>
<td>98-100% Ethoxylated Dodecyl Alcohol</td>
<td>Not regulated</td>
<td>ml</td>
<td>100</td>
<td>x</td>
<td>Paper Towels; 6 rolls</td>
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<td></td>
</tr>
<tr>
<td><strong>Cadmium</strong></td>
<td>100% Cd, UN2930</td>
<td>g</td>
<td>26</td>
<td>2</td>
<td>x</td>
<td>Dustpan, plastic bag; 1 dustpan, 150 ziplok bags</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Copper Sulfate</strong></td>
<td>100% Cupric Sulfate, UN3077</td>
<td>g</td>
<td>20</td>
<td>2</td>
<td>x</td>
<td>Dustpan, plastic bag; 1 dustpan, 150 ziplok bags</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dowfax</strong></td>
<td>47% Benzene, 1,1-oxybis, tetrapropylen e derivatives, sulfonated, sodium salts; 1% sodium sulfate; 3% sodium chloride; water balance</td>
<td>Not regulated</td>
<td>ml</td>
<td>100</td>
<td>x</td>
<td>Paper Towels; 6 rolls</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

*Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust.*

*Absorb material with dri-zorb, kitty litter, or paper towels.*

*Use non-sparking equipment and collect in ziplock bags.*

*Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust.*

*Absorb material with dri-zorb, kitty litter, or paper towels.*
<table>
<thead>
<tr>
<th>Material</th>
<th>Purity</th>
<th>UN Number</th>
<th>g</th>
<th>10</th>
<th>5</th>
<th>x</th>
<th>Health</th>
<th>Dustpan, plastic bag</th>
<th>1 dustpan, 150 ziplok bags</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrazine Sulfate</td>
<td>99-100%</td>
<td>UN3260</td>
<td>g</td>
<td>10</td>
<td>5</td>
<td>x</td>
<td>Health</td>
<td>Dustpan, plastic bag</td>
<td>1 dustpan, 150 ziplok bags</td>
<td>[3, 1, 2, 3] Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust.</td>
</tr>
<tr>
<td>Imidazole</td>
<td>90-100%</td>
<td>UN3263</td>
<td>g</td>
<td>13.6</td>
<td>5</td>
<td>x</td>
<td>Corrosive</td>
<td>Dustpan, plastic bag</td>
<td>1 dustpan, 150 ziplok bags</td>
<td>[3, 1, 0, 3] Remove all sources of ignition. Use non-sparking equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container.</td>
</tr>
<tr>
<td>Imidazole</td>
<td>90-100%</td>
<td>UN3263</td>
<td>g</td>
<td>27.2</td>
<td>4</td>
<td>x</td>
<td>Corrosive</td>
<td>Dustpan, plastic bag</td>
<td>1 dustpan, 150 ziplok bags</td>
<td>[3, 1, 0, 3] Remove all sources of ignition. Use non-sparking equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container.</td>
</tr>
<tr>
<td>N-1-Naphthylethylenediamine Dihydrochloride</td>
<td>Not regulated</td>
<td>UN3263</td>
<td>g</td>
<td>1</td>
<td>5</td>
<td>x</td>
<td>None Specified</td>
<td>Dustpan, plastic bag</td>
<td>1 dustpan, 150 ziplok bags</td>
<td>[2, 1, 1, 2] Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust.</td>
</tr>
<tr>
<td>Potassium Nitrate</td>
<td>99-100%</td>
<td>UN1486</td>
<td>g</td>
<td>3.8</td>
<td>3</td>
<td>x</td>
<td>Reactive</td>
<td>Dustpan, plastic bag</td>
<td>1 dustpan, 150 ziplok bags</td>
<td>[2, 0, 3, 2] Use non-sparking equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container.</td>
</tr>
<tr>
<td><strong>Potassium Phosphate</strong></td>
<td>99-100% Potassium Phosphate Monobasic</td>
<td>Not regulated</td>
<td>g</td>
<td>0.32</td>
<td>3</td>
<td>x</td>
<td>None Specified</td>
<td>Dustpan, plastic bag</td>
<td>1 dustpan, 150 ziplok bags</td>
<td>1</td>
</tr>
<tr>
<td>-------------------------</td>
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</tr>
<tr>
<td><strong>Sodium Fluorosilicate</strong></td>
<td>100% Sodium Fluorosilicate</td>
<td>UN2674</td>
<td>g</td>
<td>0.5</td>
<td>3</td>
<td>x</td>
<td>Keep away from food</td>
<td>Dustpan, plastic bag</td>
<td>1 dustpan, 150 ziplok bags</td>
<td>3</td>
</tr>
<tr>
<td><strong>Sodium Nitrite</strong></td>
<td>99-100% Sodium Nitrite</td>
<td>UN1498</td>
<td>g</td>
<td>0.05</td>
<td>5</td>
<td>x</td>
<td>Reactive</td>
<td>Dustpan, plastic bag</td>
<td>1 dustpan, 150 ziplok bags</td>
<td>1</td>
</tr>
<tr>
<td><strong>Stannous Chloride</strong></td>
<td>98-100% Stannous Chloride</td>
<td>Not regulated</td>
<td>g</td>
<td>25</td>
<td>5</td>
<td>x</td>
<td>None Specified</td>
<td>Dustpan, plastic bag</td>
<td>1 dustpan, 150 ziplok bags</td>
<td>2</td>
</tr>
<tr>
<td><strong>Sulfanilamide</strong></td>
<td>90-100% Sulfanilamide</td>
<td>Not regulated</td>
<td>g</td>
<td>10</td>
<td>5</td>
<td>x</td>
<td>None Specified</td>
<td>Dustpan, plastic bag</td>
<td>1 dustpan, 150 ziplok bags</td>
<td>0</td>
</tr>
<tr>
<td><strong>Tartaric Acid</strong></td>
<td>100% Tartaric Acid</td>
<td>Not regulated</td>
<td>g</td>
<td>150</td>
<td>5</td>
<td>x</td>
<td>None Specified</td>
<td>Dustpan, plastic bag</td>
<td>1 dustpan, 150 ziplok bags</td>
<td>0</td>
</tr>
<tr>
<td><strong>Sodium Hydroxide 10N</strong></td>
<td>410g Sodium Hydroxide 1 liter of water</td>
<td>UN1824</td>
<td>ml</td>
<td>1000</td>
<td>l</td>
<td>x</td>
<td>Store Separately</td>
<td>kitty litter, 10% HCl, dustpan, plastic bag, plastic tote</td>
<td>20 lbs kitty litter, 10 liters 10% HCl, 1 dustpan, 50 garbage bags</td>
<td>3</td>
</tr>
<tr>
<td>--------------------------</td>
<td>----------------------------------------</td>
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<td>-------------------------------------------------</td>
<td>----</td>
</tr>
<tr>
<td><strong>Hydrochloric Acid (Conc)</strong></td>
<td>35% Hydrogen Chloride, 65% water</td>
<td>UN1789</td>
<td>ml</td>
<td>500</td>
<td>6</td>
<td>x</td>
<td>Corrosive</td>
<td>Soda ash, kitty litter, plastic bags, dustpan, plastic totes</td>
<td>20 lbs kitty litter, 10 liters 10% HCl, 1 dustpan, 50 garbage bags</td>
<td>3</td>
</tr>
<tr>
<td>Nitric Acid 20%</td>
<td>20% Nitric Acid, 80% water</td>
<td>UN2031</td>
<td>ml</td>
<td>1000</td>
<td>0</td>
<td>x</td>
<td>Corrosive</td>
<td>Soda ash, kitty litter, plastic bags, dustpan, plastic totes</td>
<td>20 lbs kitty litter, 10 liters 10% HCl, 1 dustpan, 50 garbage bags</td>
<td></td>
</tr>
<tr>
<td>Sulfuric Acid (wrong MSDS)</td>
<td>95-98% Sulfuric Acid</td>
<td>UN2796</td>
<td>ml</td>
<td>500</td>
<td>3</td>
<td>x</td>
<td>Corrosive</td>
<td>Soda ash, kitty litter, plastic bags, dustpan, plastic totes</td>
<td>20 lbs kitty litter, 10 liters 10% HCl, 1 dustpan, 50 garbage bags</td>
<td></td>
</tr>
</tbody>
</table>
Methanol

100% Methanol UN1230 ml 500 l x Flammable kitty litter, dustpan, plastic bag, plastic tote 20 lbs kitty litter, 1 dustpan, 50 garbage bags

Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e.g., vermiculite, dry sand, spill x-s solvent absorber), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer!

Isopropanol

100% Isopropanol UN1219 ml 500 l x Flammable kitty litter, dustpan, plastic bag, plastic tote 20 lbs kitty litter, 1 dustpan, 50 garbage bags

Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e.g., vermiculite, dry sand, spill x-s solvent absorber), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do
not flush to sewer!