

**APPENDIX A: FISH COLLECTION FORMS**  
(Located on enclosed CD)

**Baseline Characterization of Anthropogenic Contaminants in Biota Associated with the Alaska OCS  
Liberty and Northstar Oil and Gas Production Units in the Nearshore Beaufort Sea – August 2003**

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These field forms, located on the enclosed CD, document the timing, location, method, personnel, and species collected at each site.

Arthur D Little

# Station Log

Station ID SIS

Date 07-25-01

Client MMS

Time 15:00-18:00 Fyke net

Project 2001 ANIMIDA

Case No. 72105

## Arctic Nearshore Impact Monitoring in the Development Area (ANIMIDA)

### Sampling Location

Station Number SIS

### Station Type

BSMP (Northstar/Liberty/Other)

Latitude 70° 25.958' N

Longitude 148° 41.922' W

### Field Observations and Measurements

Wind Speed 0-5 Wind Direction ~115°

Seas/Ice Calm seas off shore ice breaking up

Water Depth 3.25 m @ end

Conductivity, Temperature, Depth (CTD) NA

Doppler Current NA

Turbidity NA

Instrument Tow NA

Comments: offshore side

### Samples Collected

NA

#### Sediments:

Core Sample NA

Van Veen Grab NA

No. of Replicates NA

Organics	Metals	Grain Size	TOC	<sup>13</sup> C	Methyl Hg	Other

#### Sediment Texture (check all that apply):

>50% silt/clay NA

Fine NA

Coarse Sand NA

Gravel NA

Shell Hatch NA

Mixed NA

Indications of Anoxia: NA

Yes NA

No NA

H<sub>2</sub>S Odor: NA

Yes NA

No NA

Comments:

### Water/Suspended Sediments:

Surface NA

Mid-Water NA

Bottom NA

Other NA

Comments: NA

### Biota

(check species collected for analysis)

#### Amphipods:

Anonyx NA

#### Fish:

Sculpin NA

Safron Cod NA

Arctic Cod NA

Char NA

Cisco NA

Flounder NA

Whitefish NA

Other NA

#### Cleams:

Astarte NA

Cyrtodaria NA

Macoma NA

Portlandia NA

Comments:

### Quality Control Samples

Field Blank NA

Equipment Blank NA

Other NA

### Overall Comments:

Set up Fyke net ~20m length with 11m set to SE stump island shoreline (SIS)

### Field Personnel:

G. Lawley, J. Gold, F. Queiroz

### Signature:

[Signature]

### Date:

07-26-01

<b>Arthur D Little</b>	<b>Station Log</b>	Station ID <b>SIS</b>														
Date <b>07-26-01</b>		Client <b>MMS</b>														
Time <b>14:00 collection Fyke net</b>		Project <b>2001 ANIMIDA</b>														
		Case No. <b>72105</b>														
<b>Arctic Nearshore Impact Monitoring in the Development Area (ANIMIDA)</b>																
Sampling Location Station Number <b>SIS</b> Latitude <b>70° 25.958' N</b>	Longitude <b>148° 41.922' W</b>	Station Type <b>BSMP/Northstar</b> Liberty/Other														
<b>Field Observations and Measurements</b>																
Wind Speed <b>0-5</b> Wind Direction <b>N 115°</b>	Seas/Ice <b>calm seas, offshore ice broken</b>															
Water Depth <b>shoal to 4' E trap</b>	Conductivity, Temperature, Depth (CTD) <b>NA</b>															
Doppler Current <b>NA (2.25m)</b>	Turbidity <b>NA</b>	Instrument Tow <b>NA</b>														
Comments: <b>zodiac trip</b>																
<b>Samples Collected</b>																
Sediments: Core Sample <b>NA</b>	Van Veen Grab	No. of Replicates														
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Organics</th> <th>Metals</th> <th>Grain Size</th> <th>TOC</th> <th><sup>13</sup>C</th> <th>Methyl Hg</th> <th>Other</th> </tr> </thead> <tbody> <tr> <td style="height: 20px;"></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Organics	Metals	Grain Size	TOC	<sup>13</sup> C	Methyl Hg	Other									
Organics	Metals	Grain Size	TOC	<sup>13</sup> C	Methyl Hg	Other										
Sediment Texture (check all that apply):																
>50% silt/clay	Fine	Coarse Sand	Gravel	Shell Hatch	Mixed											
Indications of Anoxia: Yes No			H <sub>2</sub> S Odor: Yes No													
Comments:			<b>(w)</b>													
<b>Water/Suspended Sediments: NA</b>																
Surface			Mid-Water	Bottom	Other											
Comments: <b>offshore ice present.</b>																
<b>Biota</b> (check species collected for analysis)																
<b>Amphipods:</b> Anonyx																
<b>Fish:</b> Sculpin <input checked="" type="checkbox"/> Safron Cod <input checked="" type="checkbox"/> Arctic Cod <input checked="" type="checkbox"/> Char <input checked="" type="checkbox"/> Cisco <input checked="" type="checkbox"/> Flounder <input checked="" type="checkbox"/> Whitefish <input checked="" type="checkbox"/> Other <input type="checkbox"/>																
<b>Clams:</b> Astarte <input type="checkbox"/> Cyrtodaria <input type="checkbox"/> Macoma <input type="checkbox"/> Portlandia <input type="checkbox"/>																
Comments: <b>Fyke net with SE wing set up</b>																
<b>Quality Control Samples</b>																
Field Blank			Equipment Blank	Other												
Overall Comments:			<b>01-SIS-01-PTC-T-DV</b> <b>through 01-SIS-28-PTC-T-FS processed</b> <b>kept: 2</b> <b>bits and organic samples chilled on ice until storage in freezer @ POC</b> <b>[net deployment 07-25-01 (15:00) through 07-26-01 (14:00 ~ 20 hrs)] rechecked hourly</b>													
Field Personnel: <b>6 <sup>Lawley</sup> L. Hogg, J. Gold, F. Quarzoli, J. Braun, M. Mertz.</b>																
Signature: <b>J. M. Mertz</b>			Date: <b>07-27-01</b>													

Arthur D Little

# Station Log

Station ID SIS

Date 07-27-01

Time 11:00 @ collection

Fyke net

Client MMS  
Project 2001 ANIMIDA  
Case No. 72105

## Arctic Nearshore Impact Monitoring in the Development Area (ANIMIDA)

### Sampling Location

Station Number SIS

Latitude 70° 25.958' N

Longitude 148° 41.922' W

### Station Type

BSMP/Northstar/Liberty/Other

### Field Observations and Measurements

Wind Speed 0.5 Wind Direction 70° Seas/Ice calm

Water Depth 3.25 m Conductivity, Temperature, Depth (CTD) NA

Doppler Current NA Turbidity NA Instrument Tow NA

Comments: F-net maintenance

### Samples Collected

Sediments:		Core Sample	Van Veen Grab	No. of Replicates		
Organics	Metals	Grain Size	TOC	<sup>13</sup> C	Methyl Hg	Other

### Sediment Texture (check all that apply):

>50% silt/clay NA Fine NA Coarse Sand NA Gravel NA Shell Hatch NA Mixed NA

Indications of Anoxia: Yes NA No NA H<sub>2</sub>S Odor: Yes NA No NA

Comments: NA

### Water/Suspended Sediments:

Surface NA Mid-Water NA Bottom NA Other NA

Comments: NA

### Biota (check species collected for analysis)

Amphipods: Ammonyx any ctenodonta art. cisco  
Fish: Sculpin 10 Safron Cod NA Arctic Cod 6 Char 1 Cisco 4 Flounder 1 Whitefish 6 Other 9 same

Clams: Astarte NA Cyrtodaria NA Macoma NA Portlandia NA

Comments: Fyke net set 07/26 - 07/27, all species released

### Quality Control Samples

Field Blank NA Equipment Blank NA Other NA

Overall Comments: F-net checked and fish released due to replicates and processing issues

Field Personnel: G. Luskay F. Quertoli

Signature: Kevin Dugan

Date: 07-27-01

Arthur D Little

Station Log

Station ID SIS

Date 07-28-01

Client MMS

Time 09:00 collection fyke net

Project 2001 ANIMIDA

Case No. 72105

Arctic Nearshore Impact Monitoring in the Development Area (ANIMIDA)

Sampling Location

Station Type

Station Number SIS

BSMP/Northstar/Liberty/Other

Latitude 70° 25.958' N

Longitude 180° 14.912' W

Field Observations and Measurements

Wind Speed 5-10 Wind Direction 180° Seas/Ice slight S. winds/cloudy

Water Depth 325 Conductivity, Temperature, Depth (CTD) NA

Doppler Current NA Turbidity NA Instrument Tow NA

Comments: 7-die trip

Samples Collected

Sediments: Core Sample NA Van Veen Grab No. of Replicates

Organics	Metals	Grain Size	TOC	<sup>13</sup> C	Methyl Hg	Other

Sediment Texture (check all that apply):

>50% silt/clay Fine Coarse Sand Gravel Shell Hatch Mixed

Indications of Anoxia: Yes No H<sub>2</sub>S Odor: Yes No

Comments: (2)

Water/Suspended Sediments: NA

Surface Mid-Water Bottom Other

Comments: (2)

Biota (check species collected for analysis)

Amphipods: Anonyx Fish: Sculpin Safron Cod Arctic Cod Char Cisco Flounder Whitefish Other (2) Rainbow smelt (released)

Clams: Astarte Cyrtodaria Macoma Portlandia

Comments: (2)

Quality Control Samples

Field Blank Equipment Blank Other PHC

Overall Comments: 01-SIS-29-PHC-T-DV through 01-SIS-34-PHC-EB-QC extra fish released due to sample replicates see dissection log sheets for selection of fish

Field Personnel: G. Lawley, J. Gold, F. Querzoli

Signature: [Signature] Date: 07-28-01

Arthur D Little

# Station Log

Station ID SIS  
 Client MMS  
 Project 2001 ANIMIDA  
 Case No. 72105

Date 07-30-01  
 Time 0900 collection/denoise

## Arctic Nearshore Impact Monitoring in the Development Area (ANIMIDA)

### Sampling Location

Station Number SIS  
 Latitude 70°25.958' N Longitude 148°41.922' W

### Station Type

BSMP/Northstar/Liberty/Other

### Field Observations and Measurements

Wind Speed 8-12 Wind Direction W-NW Seas/Ice 1' seas/rain/cloudy  
 Water Depth 3.4 m Conductivity, Temperature, Depth (CTD) NA  
 Doppler Current NA Turbidity NA Instrument Tow NA

Comments: redice trip collection and breakdown net

### Samples Collected

Sediments: Core Sample            Van Veen Grab            No. of Replicates           

Organics	Metals	Grain Size	TOC	<sup>13</sup> C	Methyl Hg	Other

### Sediment Texture (check all that apply):

>50% silt/clay            Fine            Coarse Sand            Gravel            Shell Hatch            Mixed           

Indications of Anoxia: Yes            No            H<sub>2</sub>S Odor: Yes            No           

Comments: NA

### Water/Suspended Sediments:

Surface            Mid-Water            Bottom            Other           

Comments: NA

### Biota (check species collected for analysis)

*1-Parsons shell*

Amphipods: Annonyx             
 Fish: Sculpin 15 Safron Cod 2 Arctic Cod 11 Char 2 Cisco 65 Flounder 10 Whitefish 12 Other             
 Clams: Astarte            Cyrtodaria            Macoma            Portlandia           

Comments: Selected samples taken, remaining released @ 07 Jul 01

### Quality Control Samples

Field Blank            Equipment Blank 01-SIS- - EB-QC  
02-SIS- - EB-QC

### Overall Comments:

tack down F. net after collection,  
(will be moved to Pt. Brower next. @)

### Field Personnel:

G. Lawley, J. Gold, F. Quercoli

### Signature:

M. Quercoli

Date: 07-30-01

Arthur D Little

# Station Log

Station ID PBS

Date 07-31-01

Client MMS

Time 07-31-01 @ > 14:00 - 15:30

Project 2001 ANIMIDA

Case No. 72105

## Arctic Nearshore Impact Monitoring in the Development Area (ANIMIDA)

Sampling Location

Station Number PBS

Station Type

BSMP/Northstar Liberty/Other

Latitude 70.17.650 N

Longitude 147.49.211 W

### Field Observations and Measurements

Wind Speed 15 kn Wind Direction E Seas/Ice 0.5 / no ice

Water Depth 1m Conductivity, Temperature, Depth (CTD) NA

Doppler Current NA Turbidity NA Instrument Tow NA

Comments: Sharp drop off near shore, muddy bottom

### Samples Collected

Sediments: Core Sample      Van Veen Grab      No. of Replicates     

Organics	Metals	Grain Size	TOC	<sup>13</sup> C	Methyl Hg	Other

Sediment Texture (check all that apply):

>50% silt/clay      Fine      Coarse Sand      Gravel      Shell Hatch      Mixed     

Indications of Anoxia: Yes      No      H<sub>2</sub>S Odor: Yes      No     

Comments: (1)

### Water/Suspended Sediments:

Surface      Mid-Water      Bottom      Other     

Comments: (1)

Biota (check species collected for analysis)

Amphipods: Anonyx     

Fish: Sculpin      Saffron Cod      Arctic Cod      Char      Cisco      Flounder      Whitefish      Other     

Clams: Astarte      Cyrtodaria      Macoma      Portlandia     

Comments: (1)

### Quality Control Samples

Field Blank      Equipment Blank      Other     

Overall Comments: Fyke net deployment

Field Personnel: G. Lawley, J. Gold

Signature: [Signature]

Date: 07-31-01



<b>Arthur D Little</b> 01e	<h1 style="margin:0;">Station Log</h1>	Station ID <u>PBS</u> Client <u>MMS</u> Project <u>2001 ANIMIDA</u> Case No. <u>72105</u>
Date <u>08-28-01</u> Time <u>15:00</u>		

**Arctic Nearshore Impact Monitoring in the Development Area (ANIMIDA)**

Sampling Location <u>PBS</u> Station Number <u>PBS</u> Latitude <u>70° 17.650' N</u> Longitude <u>147° 49.211' W</u>	Station Type BSMP/Northstar/ <u>Liberty</u> /Other
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**Field Observations and Measurements**

Wind Speed <u>15-18 kts</u> Wind Direction <u>SSW</u> Seas/Ice _____
Water Depth <u>1.1 m</u> Conductivity, Temperature, Depth (CTD) _____
Doppler Current _____ Turbidity _____ Instrument Tow _____

Comments: Fyke net collection/maintenance

**Samples Collected**

Sediments: Core Sample _____	Van Veen Grab _____	No. of Replicates _____
Organics	Metals	Grain Size
TOC	B/C	Methyl Hg
Other		

**Sediment Texture (check all that apply):**

>50% silt/clay \_\_\_\_\_ Fine \_\_\_\_\_ Coarse Sand \_\_\_\_\_ Gravel \_\_\_\_\_ Shell Hatch \_\_\_\_\_ Mixed \_\_\_\_\_  
 Indications of Anoxia: Yes \_\_\_\_\_ No \_\_\_\_\_ H<sub>2</sub>S Odor: Yes \_\_\_\_\_ No \_\_\_\_\_

Comments:

**Water/Suspended Sediments:**

Surface \_\_\_\_\_ Mid-Water \_\_\_\_\_ Bottom \_\_\_\_\_ Other \_\_\_\_\_

Comments:

**Biota (check species collected for analysis)**

**Amphipods:** Annonyx \_\_\_\_\_ 1 - 1/4 m bur shell  
**Fish:** Sculpin 2 Saffron Cod 1 Arctic Cod \_\_\_\_\_ Char \_\_\_\_\_ Cisco 2 Flounder \_\_\_\_\_ Whitefish 3 Other \_\_\_\_\_  
**Clams:** Astarte \_\_\_\_\_ Cyrtodaria \_\_\_\_\_ Macoma \_\_\_\_\_ Portlandia \_\_\_\_\_

Comments:

**Quality Control Samples**

Field Blank NA Equipment Blank NA Other NA

**Overall Comments:**

Fyke net collection and maintenance  
only 1 (BW) taken of accept. size and target sp.

**Field Personnel:**

Ilford Glenley F. Queredli

**Signature:**

Ilford Glenley F. Queredli

Date: 08-01-01

Arthur D Little

# Station Log

Station ID

PBS

Date 08-03-01

Client MMS

Time 13:00  $\checkmark$

Project 2001 ANIMIDA

Case No. 72105

## Arctic Nearshore Impact Monitoring in the Development Area (ANIMIDA)

Sampling Location

PBS

Station Type

BSMP/Northstar/Liberty/Other

Station Number

Latitude 70° 17.650 'N

Longitude 147° 49.211 'W

### Field Observations and Measurements

Wind Speed 18-20kts Wind Direction SSW Seas/Ice 0.5-1/noice

Water Depth 1m Conductivity, Temperature, Depth (CTD) NA

Doppler Current NA Turbidity NA Instrument Tow NA

Comments: Paint Brewer, peat moss collecting in net, very muddy

### Samples Collected

Sediments:		Core Sample	Van Veen Grab	No. of Replicates		
Organics	Metals	Grain Size	TOC	<sup>13</sup> C	Methyl Hg	Other

Sediment Texture (check all that apply):

>50% silt/clay \_\_\_\_\_ Fine \_\_\_\_\_ Coarse Sand \_\_\_\_\_ Gravel \_\_\_\_\_ Shell Hatch \_\_\_\_\_ Mixed \_\_\_\_\_

Indications of Anoxia: Yes \_\_\_\_\_ No \_\_\_\_\_ H<sub>2</sub>S Odor: Yes  No \_\_\_\_\_

Comments:

\* Fyke net collection and maintenance @

### Water/Suspended Sediments:

Surface \_\_\_\_\_ Mid-Water \_\_\_\_\_ Bottom \_\_\_\_\_ Other \_\_\_\_\_

Comments:

NA

Biota (check species collected for analysis)

Amphipods: Annonyx \_\_\_\_\_ 2 rainbow smelt  
3 Arctic cisco

Fish: Sculpin 2 Safron Cod \_\_\_\_\_ Arctic Cod \_\_\_\_\_ Char 1 Cisco \_\_\_\_\_ Flounder 7 Whitefish 3 Other \_\_\_\_\_

Clams: Astarte \_\_\_\_\_ Cyrtodaria \_\_\_\_\_ Macoma \_\_\_\_\_ Portlandia \_\_\_\_\_

Comments:

### Quality Control Samples

Field Blank \_\_\_\_\_ Equipment Blank  01-PBS-62-PIE-EB-QC  
01-PBS-62-FAC-EB-QC Other \_\_\_\_\_

Overall Comments:

Field Personnel:

G. Conroy, J. Gold, F. Querzoli

Signature:

*[Handwritten Signature]*

Date: 08-03-01

Arthur D Little

# Station Log

Station ID

PBS

Date 08-04-01

Client MMS

Time 14:00

Project 2001 ANIMIDA

Case No. 72105

## Arctic Nearshore Impact Monitoring in the Development Area (ANIMIDA)

### Sampling Location

Station Number PBS

### Station Type

BSMP/Northstar/Liberty/Other

Latitude 70° 17.650' N

Longitude 147° 49.211' W

### Field Observations and Measurements

Wind Speed 18-24 Wind Direction SSW

Seas/Ice ~1.0

rain/overcast

Water Depth 1.0 m

Conductivity, Temperature, Depth (CTD) ---

Doppler Current ---

Turbidity --- Instrument Tow ---

Comments:

### Samples Collected

Sediments: Core Sample --- Van Veen Grab --- No. of Replicates ---

Organics	Metals	Grain Size	TOC	<sup>13</sup> C	Methyl Hg	Other

Sediment Texture (check all that apply):

>50% silt/clay --- Fine --- Coarse Sand --- Gravel --- Shell Hatch --- Mixed ---

Indications of Anoxia: Yes --- No --- H<sub>2</sub>S Odor: Yes --- No ---

Comments:

### Water/Suspended Sediments:

Surface --- Mid-Water --- Bottom --- Other ---

Comments:

### Biota (check species collected for analysis)

Amphipods: Annonyx ---

Fish: Sculpin 3 Safron Cod --- Arctic Cod --- Char --- Arctic 4 Cisco 3 Arctic 2 Flounder 2 Whitefish 3 Other ---

3 rainbows melt. 1-Dolly Varden

Clams: Astarte --- Cyrtodaria --- Macoma --- Portlandia ---

Comments:

### Quality Control Samples

Field Blank --- Equipment Blank --- Other ---

Overall Comments:

Fyke net collection  
JB photos taken

Field Personnel:

C. Lauray J. Gold J. Brown F. Querzoli

Signature:

[Handwritten Signature]

Date: 08-04-01

Arthur D Little

# Station Log

Station ID

PBS

Date 08-06-01

Client MMS

Time 09:00 Fyke net

Project 2001 ANIMIDA

Case No. 72105

## Arctic Nearshore Impact Monitoring in the Development Area (ANIMIDA)

### Sampling Location

Station Number PBS

### Station Type

BSMP/Northstar/Liberty/Other Liberty

Latitude 70° 17.650' N Longitude 147.49.211' W

### Field Observations and Measurements

Wind Speed 0-5 kn Wind Direction W Seas/Ice Flat / slight fog

Water Depth 1.0 m Conductivity, Temperature, Depth (CTD) —

Doppler Current — Turbidity — Instrument Tow —

Comments: Fyke net collection

### Samples Collected

Sediments: Core Sample 1 Van Veen Grab No. of Replicates ~~ignore for crosscut 08/06-01~~

Organics	Metals	Grain Size	TOC	<sup>13</sup> C	Methyl Hg	Other

### Sediment Texture (check all that apply):

>50% silt/clay \_\_\_\_\_ Fine \_\_\_\_\_ Coarse Sand \_\_\_\_\_ Gravel \_\_\_\_\_ Shell Hatch \_\_\_\_\_ Mixed \_\_\_\_\_

Indications of Anoxia: Yes \_\_\_\_\_ No \_\_\_\_\_ H<sub>2</sub>S Odor: Yes \_\_\_\_\_ No \_\_\_\_\_

Comments: \* Core sample taken @ 1330 by GL/JG before demobe

### Water/Suspended Sediments:

Surface \_\_\_\_\_ Mid-Water \_\_\_\_\_ Bottom \_\_\_\_\_ Other \_\_\_\_\_

Comments:

### Biota (check species collected for analysis)

Amphipods: Anonyx \_\_\_\_\_ <sup>see note</sup> (2) Hatched smelt

Fish: Sculpin 2 Safron Cod \_\_\_\_\_ Arctic Cod \_\_\_\_\_ Char \_\_\_\_\_ Cisco 20 Flounder ~4 Whitefish 1 Other \_\_\_\_\_

Clams: Astarte \_\_\_\_\_ Cyrtodaria \_\_\_\_\_ Macoma \_\_\_\_\_ Portlandia \_\_\_\_\_

Comments:

### Quality Control Samples

Field Blank \_\_\_\_\_ Equipment Blank \_\_\_\_\_ Other \_\_\_\_\_

Overall Comments: 08/04 - 08/06 Fyke net deployment

Hungry net to clean after fish collection returned @ 13:30 to Hempke net

Field Personnel: J Gold Gary Lanley F. Quercia

Signature: [Signature] Date: 08-06-01

<b>Arthur D Little</b>	<h1>Station Log</h1>	Station ID <u>L14</u> <sup>13267</sup> Client <u>MMS</u> Project <u>2001 ANIMIDA</u> Case No. <u>72105</u>														
Date <u>8/7/01</u> Time <u>10:15 - 10:47</u>																
<b>Arctic Nearshore Impact Monitoring in the Development Area (ANIMIDA)</b>																
Sampling Location <u>OTTER TRAWL #1 of 46</u> Station Number <u>L14</u> Latitude <u>70° 16.672' N</u> <u>147° 30' 33" W</u>		Station Type <u>BSMP/Northstar/Liberty/Other</u> Towing <u>5-N 2 mile</u> (32 min, 2.5 knots)														
Longitude <u>70° 17.655' N</u> <u>147° 28' 47" W</u>																
<b>Field Observations and Measurements</b>																
Wind Speed <u>10-15</u>	Wind Direction <u>WSW</u>	Seas/Ice _____														
Water Depth _____	Conductivity, Temperature, Depth (CTD) _____															
Doppler Current _____	Turbidity _____	Instrument Tow _____														
Comments: _____																
<b>Samples Collected</b>																
<b>Sediments:</b>	Core Sample _____	Van Veen Grab _____														
	No. of Replicates _____															
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Organics</th> <th>Metals</th> <th>Grain Size</th> <th>TOC</th> <th><sup>13</sup>C</th> <th>Methyl Hg</th> <th>Other</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Organics	Metals	Grain Size	TOC	<sup>13</sup> C	Methyl Hg	Other								
Organics	Metals	Grain Size	TOC	<sup>13</sup> C	Methyl Hg	Other										
Sediment Texture (check all that apply):																
>50% silt/clay _____	Fine _____	Coarse Sand _____														
		Gravel _____														
		Shell Hatch _____														
		Mixed _____														
Indications of Anoxia: Yes _____ No _____																
H <sub>2</sub> S Odor: Yes _____ No _____																
Comments: _____																
<b>Water/Suspended Sediments:</b>																
Surface _____	Mid-Water _____	Bottom _____														
		Other _____														
Comments: _____																
<b>Biota</b> (check species collected for analysis)																
<b>Amphipods:</b> Anonyx _____ <u>used &amp; returned</u>																
<b>Fish:</b> Sculpin <u>3</u> Safron Cod _____ Arctic Cod <u>2</u> Char _____ Cisco _____ Flounder _____ Whitefish _____ Other _____																
<b>Clams:</b> Astarte _____ Cyrtodaria _____ Macoma _____ Portlandia _____																
Comments: _____																
<b>Quality Control Samples</b>																
Field Blank _____	Equipment Blank _____	Other _____														
Overall Comments: _____																
_____																
_____																
_____																
_____																
Field Personnel: <u>M. Metz, J. Gold, C. Lawley</u>																
Signature: <u>A. Ingler</u>	Date: <u>08/07/01</u>															

<b>Arthur D Little</b>	<b>Station Log</b>	Station ID <u>L14</u>
		Client <u>MMS</u>
Date <u>8/7/01</u>		Project <u>2001 ANIMIDA</u>
Time <u>0955 - 1452</u>		Case No. <u>72105</u>

**Arctic Nearshore Impact Monitoring in the Development Area (ANIMIDA)**

Gill net set

Sampling Location \_\_\_\_\_ Station Type BSMP/Northstar/Liberty/Other

Station Number L14

Latitude 70° 16. 672' N Longitude 70° 16. 670' N

147° 50. 331' W 147° 30. 428' W

**Field Observations and Measurements**

Wind Speed 10-15 Wind Direction WSW Seas/Ice \_\_\_\_\_

Water Depth 20-30' Conductivity, Temperature, Depth (CTD) \_\_\_\_\_

Doppler Current \_\_\_\_\_ Turbidity \_\_\_\_\_ Instrument Tow \_\_\_\_\_

Comments: \_\_\_\_\_

**Samples Collected**

**Sediments:** Core Sample \_\_\_\_\_ Van Veen Grab \_\_\_\_\_ No. of Replicates \_\_\_\_\_

Organics	Metals	Grain Size	TOC	<sup>13</sup> C	Methyl Hg	Other

Sediment Texture (check all that apply):

>50% silt/clay \_\_\_\_\_ Fine \_\_\_\_\_ Coarse Sand \_\_\_\_\_ Gravel \_\_\_\_\_ Shell Hatch \_\_\_\_\_ Mixed \_\_\_\_\_

Indications of Anoxia: Yes \_\_\_\_\_ No \_\_\_\_\_ H<sub>2</sub>S Odor: Yes \_\_\_\_\_ No \_\_\_\_\_

Comments: \_\_\_\_\_

**Water/Suspended Sediments:**

Surface \_\_\_\_\_ Mid-Water \_\_\_\_\_ Bottom \_\_\_\_\_ Other \_\_\_\_\_

Comments: \_\_\_\_\_

**Biota** (check species collected for analysis)

**Amphipods:** Anonyx \_\_\_\_\_

**Fish:** Sculpin \_\_\_\_\_ Safron Cod \_\_\_\_\_ Arctic Cod \_\_\_\_\_ Char \_\_\_\_\_ Cisco 6 Arctic-kept \_\_\_\_\_ Flounder \_\_\_\_\_ Whitefish \_\_\_\_\_ Other \_\_\_\_\_

**Clams:** Astarte \_\_\_\_\_ Cyrtodaria \_\_\_\_\_ Macoma \_\_\_\_\_ Portlandia \_\_\_\_\_

Comments: \_\_\_\_\_

**Quality Control Samples**

Field Blank \_\_\_\_\_ Equipment Blank \_\_\_\_\_ Other \_\_\_\_\_

Overall Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Field Personnel: M. Mertz, J Gold, G Lawley

Signature: [Signature] Date: 08/02/08

<b>Arthur D Little</b>	<b>Station Log</b>	Station ID <u>L14</u>
		Client <u>MMS</u>
		Project <u>2001 ANIMIDA</u>
Date <u>8/7/01</u>		Case No. <u>72105</u>
Time <u>1128-1139</u>		

**Arctic Nearshore Impact Monitoring in the Development Area (ANIMIDA)**

Off: TRANI #2 of 4 21 min, 1 N. mile  
 Sampling Location Station Number L14 Station Type BSMP/Northstar/Liberty/Other  
 Latitude 70° 17.655' N Longitude 70° 18.078' N  
147° 28.975' W 147.26276' W

**Field Observations and Measurements**  
 Wind Speed 10-15 Wind Direction WSW Seas/Ice \_\_\_\_\_  
 Water Depth \_\_\_\_\_ Conductivity, Temperature, Depth (CTD) \_\_\_\_\_  
 Doppler Current \_\_\_\_\_ Turbidity \_\_\_\_\_ Instrument Tow \_\_\_\_\_

Comments: \_\_\_\_\_

**Samples Collected**  
 Sediments: Core Sample \_\_\_\_\_ Van Veen Grab \_\_\_\_\_ No. of Replicates \_\_\_\_\_

Organics	Metals	Grain Size	TOC	<sup>13</sup> C	Methyl Hg	Other

Sediment Texture (check all that apply):  
 >50% silt/clay \_\_\_\_\_ Fine \_\_\_\_\_ Coarse Sand \_\_\_\_\_ Gravel \_\_\_\_\_ Shell Hatch \_\_\_\_\_ Mixed \_\_\_\_\_  
 Indications of Anoxia: Yes \_\_\_\_\_ No \_\_\_\_\_ H<sub>2</sub>S Odor: Yes \_\_\_\_\_ No \_\_\_\_\_

Comments: \_\_\_\_\_

**Water/Suspended Sediments:**  
 Surface \_\_\_\_\_ Mid-Water \_\_\_\_\_ Bottom \_\_\_\_\_ Other \_\_\_\_\_

Comments: \_\_\_\_\_

**Biota** (check species collected for analysis)  
 Amphipods: Anonyx \_\_\_\_\_ *all fish too small, returned*

Fish: Sculpin 3 Saffron Cod 1 Arctic Cod 2 Char \_\_\_\_\_ Cisco \_\_\_\_\_ Flounder \_\_\_\_\_ Whitefish \_\_\_\_\_ Other \_\_\_\_\_  
 Clams: Astarte \_\_\_\_\_ Cyrtodaria \_\_\_\_\_ Macoma \_\_\_\_\_ Portlandia \_\_\_\_\_

Comments: \_\_\_\_\_

**Quality Control Samples**  
 Field Blank \_\_\_\_\_ Equipment Blank \_\_\_\_\_ Other \_\_\_\_\_

Overall Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Field Personnel: M. Hunt & J. Gold G. Lawley

Signature: P. Quigley Date: 08/07/01

Arthur D Little

# Station Log

Station ID L14  
Client MMS  
Project 2001 ANIMIDA  
Case No. 72105

pg 4 of 7

Date 8/7/01  
Time 1139-1204

## Arctic Nearshore Impact Monitoring in the Development Area (ANIMIDA)

Sampling Location  
Station Number L14  
Latitude 70° 19' 07.8" N  
147° 26' 27.6" W

OTTS Trial # 3 25 MIN I.N.M.  
4260  
Longitude 70° 17' 32.6" N  
142° 24' 26.6" W

Station Type  
BSMP/Northstar/Liberty/Other

### Field Observations and Measurements

Wind Speed 10-15 Wind Direction WSW Seas/Ice \_\_\_\_\_  
Water Depth \_\_\_\_\_ Conductivity, Temperature, Depth (CTD) \_\_\_\_\_  
Doppler Current \_\_\_\_\_ Turbidity \_\_\_\_\_ Instrument Tow \_\_\_\_\_

Comments: \_\_\_\_\_

### Samples Collected

Sediments: Core Sample \_\_\_\_\_ Van Veen Grab \_\_\_\_\_ No. of Replicates \_\_\_\_\_

Organics	Metals	Grain Size	TOC	<sup>13</sup> C	Methyl Hg	Other

Sediment Texture (check all that apply):

>50% silt/clay \_\_\_\_\_ Fine \_\_\_\_\_ Coarse Sand \_\_\_\_\_ Gravel \_\_\_\_\_ Shell Hatch \_\_\_\_\_ Mixed \_\_\_\_\_  
Indications of Anoxia: Yes \_\_\_\_\_ No \_\_\_\_\_ H<sub>2</sub>S Odor: Yes \_\_\_\_\_ No \_\_\_\_\_

Comments: \_\_\_\_\_

### Water/Suspended Sediments:

Surface \_\_\_\_\_ Mid-Water \_\_\_\_\_ Bottom \_\_\_\_\_ Other \_\_\_\_\_

Comments: \_\_\_\_\_

Biota (check species collected for analysis)

Amphipods: Annonyx \_\_\_\_\_ Too Small \_\_\_\_\_ Kept \_\_\_\_\_  
Fish: Sculpin 2 Safron Cod \_\_\_\_\_ Arctic Cod \_\_\_\_\_ Char \_\_\_\_\_ Cisco \_\_\_\_\_ Flounder \_\_\_\_\_ Whitefish \_\_\_\_\_ Other \_\_\_\_\_  
Clams: Astarte \_\_\_\_\_ Cyrtodaria \_\_\_\_\_ Macoma \_\_\_\_\_ Portlandia \_\_\_\_\_

Comments: \_\_\_\_\_

### Quality Control Samples

Field Blank \_\_\_\_\_ Equipment Blank \_\_\_\_\_ Other \_\_\_\_\_

Overall Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Field Personnel: \_\_\_\_\_

M. Metz, J. Gold, G. Lawley

Signature: \_\_\_\_\_

A. Zylich

Date: \_\_\_\_\_

08/07/01



<b>Arthur D Little</b>	<b>Station Log</b>	pg 5 of 7 Station ID <u>L14</u> Client <u>MMS</u> Project <u>2001 ANIMIDA</u> Case No. <u>72105</u>
Date <u>9/7/01</u>		
Time <u>1217-1251</u>		
<b>Arctic Nearshore Impact Monitoring in the Development Area (ANIMIDA)</b>		
OTTC: Trawl # <u>9446</u> 33 min 1 NM		
Sampling Location Station Number <u>L14</u> Latitude <u>70° 17.326' N</u> <u>14° 24.266' W</u>	Longitude <u>70° 16.875' N</u> <u>147° 26.837' W</u>	Station Type BSMP/Northstar/ <u>Liberty</u> /Other
<b>Field Observations and Measurements</b>		
Wind Speed <u>10-15</u>	Wind Direction <u>WSW</u>	Seas/Ice _____
Water Depth _____	Conductivity, Temperature, Depth (CTD) _____	
Doppler Current _____	Turbidity _____	Instrument Tow _____
Comments: _____		
<b>Samples Collected</b>		
<b>Sediments:</b>	Core Sample _____	Van Veen Grab _____
	No. of Replicates _____	
	Organics	Metals
	Grain Size	TOC
	<del>C</del>	Methyl Hg
		Other
Sediment Texture (check all that apply):		
>50% silt/clay _____	Fine _____	Coarse Sand _____
	Gravel _____	Shell Hatch _____
	Mixed _____	
Indications of Anoxia: Yes _____	No _____	H <sub>2</sub> S Odor: Yes _____
		No _____
Comments: _____		
<b>Water/Suspended Sediments:</b>		
Surface _____	Mid-Water _____	Bottom _____
		Other _____
Comments: _____		
<b>Biota (check species collected for analysis)</b>		
<b>Amphipods:</b> <u>Ammonyx</u>	<u>Toucan</u>	
<b>Fish:</b> <u>Sculpin</u>	<u>Saffron Cod</u>	<u>Arctic Cod</u>
	<u>Char</u>	<u>Cisco</u>
	<u>Flounder</u>	<u>Whitefish</u>
	<u>Other</u>	<u>Swiftfish</u>
<b>Clams:</b> <u>Astarte</u>	<u>Cyrtodaria</u>	<u>Macoma</u>
		<u>Portlandia</u>
Comments: _____		
<b>Quality Control Samples</b>		
Field Blank _____	Equipment Blank _____	Other _____
Overall Comments: _____		
_____		
_____		
_____		
_____		
Field Personnel: <u>M. Mertz J. Gold G. Lowley</u>		
Signature: <u>[Signature]</u>		Date: <u>08/07/01</u>

Arthur D Little

# Station Log

Station ID

L14<sup>1st cont</sup>

Date 8/7/01

Time 1306-1339

Client MMS

Project 2001 ANIMIDA

Case No. 72105

## Arctic Nearshore Impact Monitoring in the Development Area (ANIMIDA)

### Sampling Location

Station Number L14

Latitude 70° 16.624' N  
147° 33.676' W

Longitude 70° 16.263' N  
147° 33.657' W

TRAWL # 5066 33 min. 2.2 miles  
3.4 knots

### Station Type

BSMP/Northstar/Liberty/Other

### Field Observations and Measurements

Wind Speed \_\_\_\_\_ Wind Direction \_\_\_\_\_ Seas/Ice \_\_\_\_\_

Water Depth \_\_\_\_\_ Conductivity, Temperature, Depth (CTD) \_\_\_\_\_

Doppler Current \_\_\_\_\_ Turbidity \_\_\_\_\_ Instrument Tow \_\_\_\_\_

Comments:

### Samples Collected

Sediments: Core Sample \_\_\_\_\_ Van Veen Grab \_\_\_\_\_ No. of Replicates \_\_\_\_\_

Organics	Metals	Grain Size	TOC	<sup>13</sup> C	Methyl Hg	Other

Sediment Texture (check all that apply):

>50% silt/clay \_\_\_\_\_ Fine \_\_\_\_\_ Coarse Sand \_\_\_\_\_ Gravel \_\_\_\_\_ Shell Hatch \_\_\_\_\_ Mixed \_\_\_\_\_

Indications of Anoxia: Yes \_\_\_\_\_ No \_\_\_\_\_ H<sub>2</sub>S Odor: Yes \_\_\_\_\_ No \_\_\_\_\_

Comments:

### Water/Suspended Sediments:

Surface \_\_\_\_\_ Mid-Water \_\_\_\_\_ Bottom \_\_\_\_\_ Other \_\_\_\_\_

Comments:

### Biota (check species collected for analysis)

Amphipods: Anonyx \_\_\_\_\_ Too small 4 Too small; 1 kept

Fish: Sculpin \_\_\_\_\_ Safron Cod \_\_\_\_\_ Arctic Cod 5 Char \_\_\_\_\_ Cisco \_\_\_\_\_ Flounder \_\_\_\_\_ Whitefish \_\_\_\_\_ Other Swillfish

Clams: Astarte \_\_\_\_\_ Cyrtodaria \_\_\_\_\_ Macoma \_\_\_\_\_ Portlandia \_\_\_\_\_

Comments:

### Quality Control Samples

Field Blank \_\_\_\_\_ Equipment Blank \_\_\_\_\_ Other \_\_\_\_\_

Overall Comments:

Field Personnel:

M. Metz J Gold G Lowrey

Signature:

F. Zuzuki

Date: 08/07/01

<b>Arthur D Little</b>	<b>Station Log</b>	Station ID <u>L14</u> <sup>7-7-01</sup>
		Client <u>MMS</u> Project <u>2001 ANIMIDA</u> Case No. <u>72105</u>
Date <u>8/7/01</u>		
Time <u>1355-1426</u>		

**Arctic Nearshore Impact Monitoring in the Development Area (ANIMIDA)**

*OTter trawl # 6 of 6*

Sampling Location	Station Type
Station Number <u>L14</u>	BSMP/Northstar/Liberty/Other
Latitude <u>70° 16.300' N</u> <u>147° 33.026' W</u>	Longitude <u>70° 16.801' N</u> <u>147° 27.944' W</u>
	<u>31 min</u> <u>~ 2.5 miles @ 36 knots</u>

**Field Observations and Measurements**

Wind Speed 10-15 mph Wind Direction W-SW Seas/Ice \_\_\_\_\_

Water Depth \_\_\_\_\_ Conductivity, Temperature, Depth (CTD) \_\_\_\_\_

Doppler Current \_\_\_\_\_ Turbidity \_\_\_\_\_ Instrument Tow \_\_\_\_\_

Comments: \_\_\_\_\_

**Samples Collected**

Sediments: Core Sample \_\_\_\_\_ Van Veen Grab \_\_\_\_\_ No. of Replicates \_\_\_\_\_

Organics	Metals	Grain Size	TOC	<sup>13</sup> C	Methyl Hg	Other

Sediment Texture (check all that apply):  
 >50% silt/clay \_\_\_\_\_ Fine \_\_\_\_\_ Coarse Sand \_\_\_\_\_ Gravel \_\_\_\_\_ Shell Hatch \_\_\_\_\_ Mixed \_\_\_\_\_  
 Indications of Anoxia: Yes \_\_\_\_\_ No \_\_\_\_\_ H<sub>2</sub>S Odor: Yes \_\_\_\_\_ No \_\_\_\_\_

Comments: \_\_\_\_\_

**Water/Suspended Sediments:**

Surface \_\_\_\_\_ Mid-Water \_\_\_\_\_ Bottom \_\_\_\_\_ Other \_\_\_\_\_

Comments: \_\_\_\_\_

**Biota** (check species collected for analysis)

Amphipods: Annonyx \_\_\_\_\_ *kept*

Fish: Sculpin \_\_\_\_\_ Safron Cod \_\_\_\_\_ Arctic Cod \_\_\_\_\_ Char \_\_\_\_\_ Cisco \_\_\_\_\_ Flounder \_\_\_\_\_ Whitefish \_\_\_\_\_ Other \_\_\_\_\_

Clams: Astarte \_\_\_\_\_ Cyrtodaria \_\_\_\_\_ Macoma \_\_\_\_\_ Portlandia \_\_\_\_\_

Comments: \_\_\_\_\_

**Quality Control Samples**

Field Blank \_\_\_\_\_ Equipment Blank \_\_\_\_\_ Other \_\_\_\_\_

**Overall Comments:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Field Personnel:**

Signature: *Arthur D Little* Date: 08/07/01

Arthur D Little

# Station Log

Station ID

BPS

Date

08/10/01

Time

15:00

Client

MMS

Project

2001 ANIMIDA

Case No.

72105

## Arctic Nearshore Impact Monitoring in the Development Area (ANIMIDA)

Sampling Location

Station Type

Station Number

BPS

BSMP/Northstar/Liberty/Other

Latitude

70° 10' 52.4" N

Longitude

146° 50' 49.4" W

Reference

### Field Observations and Measurements

Wind Speed

8-10 km

Wind Direction

SW

Seas/Ice

2-4 ft / no ice

Water Depth

1 m

Conductivity, Temperature, Depth (CTD)

Doppler Current

Turbidity

Instrument Tow

Comments:

### Samples Collected

Sediments:

Core Sample

Van Veen Grab

No. of Replicates

Organics	Metals	Grain Size	TOC	<sup>13</sup> C	Methyl Hg	Other

Sediment Texture (check all that apply):

>50% silt/clay

Fine

Coarse Sand

Gravel

Shell Hatch

Mixed

Indications of Anoxia:

Yes

No

H<sub>2</sub>S Odor:

Yes

No

Comments:

### Water/Suspended Sediments:

Surface

Mid-Water

Bottom

Other

Comments:

### Biota

(check species collected for analysis)

Amphipods: Annonyx

Fish: Sulpin

Safron Cod

Arctic Cod

Char

Cisco

Flounder

Whitefish

Other

Clams:

Astarte

Cyrtodaria

Macoma

Portlandia

Comments:

### Quality Control Samples

Field Blank

Equipment Blank

Other

Overall Comments:

Single fyke net setup @ Bullen Pt. Shoreline near closed radar facility

17:00 2nd fyke net setup in 2 traps single lead (west of Bullen Pt) GPS coordinates of 2nd trap 70° 10' 14.2" N 146° 53' 38.0" W

Field Personnel:

J Gold G Lanley M Mertz F. Queredi

Signature:

*[Handwritten Signature]*

Date:

08/10/01

Arthur D Little

# Station Log

Station ID

BPS

Date

08/11/01

Time

16:00

Client

MMS

Project

2001 ANIMIDA

Case No.

72105

## Arctic Nearshore Impact Monitoring in the Development Area (ANIMIDA)

16:00 / 16:00 Gill net Bullen pt lagoon 70° 10' 52.4" N 146° 50' 42.4" W 177 51.870' W 177 51.397' W 36/m

Sampling Location

Station Number

BPS

Latitude

(A) 70° 10' 52.4" N

Longitude

146° 50' 42.4" W

Station Type

BSMP/Northstar/Liberty/Other

### Field Observations and Measurements

Wind Speed

5-12 m

Wind Direction

NE

Seas/Ice

L1 / no ice

Water Depth

~ 4'

Conductivity, Temperature, Depth (CTD)

Doppler Current

Turbidity

Instrument Tow

Comments:

### Samples Collected

Sediments:

Core Sample

Van Veen Grab

No. of Replicates

Organics	Metals	Grain Size	TOC	<sup>13</sup> C	Methyl Hg	Other

Sediment Texture (check all that apply):

>50% silt/clay

Fine

Coarse Sand

Gravel

Shell Hatch

Mixed

Indications of Anoxia:

Yes

No

H<sub>2</sub>S Odor: Yes

No

Comments:

### Water/Suspended Sediments:

Surface

Mid-Water

Bottom

Other

Comments:

Biota (check species collected for analysis)

Amphipods: Anonyx

Fish: Sculpin

Safron Cod

Arctic Cod

Char

Cisco

Flounder

Whitefish

Other

Clams:

Astarte

Cyrtodaria

Macoma

Portlandia

Comments:

gillnet (30) arctic (30) L. Cisco (1) Sculpin

### Quality Control Samples

Field Blank

Equipment Blank

Other

Overall Comments:

16:00 Fyke net (A) East pt Bullen GPS not taken, net wings blown out collection (2) deliy vobin (1) safron cod (1) Sculpin (10) L. Cisco (2) sm. arctic c.

18:00 Fyke net (B) West pt Bullen lead detached buried (net cut ~ 8') muddled and redeployed A+B Catches combined

Field Personnel:

M. Mertz, J. Gold, G. Lawley, F. Queredi

Signature:

*[Handwritten Signature]*

Date:

08/11/01

Arthur D Little

# Station Log

Station ID

L15

Date 08/11/01

Time 11:30 - 1:50

Client MMS

Project 2001 ANIMIDA

Case No. 72105

## Arctic Nearshore Impact Monitoring in the Development Area (ANIMIDA)

Sampling Location

Station Number L15

Latitude 82° 00'

Longitude Below

Station Type

BSMP/Northstar/Liberty/Other

### Field Observations and Measurements

Wind Speed 0-5 kts Wind Direction N Seas/Ice \_\_\_\_\_

Water Depth N 20' Conductivity, Temperature, Depth (CTD) \_\_\_\_\_

Doppler Current \_\_\_\_\_ Turbidity \_\_\_\_\_ Instrument Tow \_\_\_\_\_

Comments: \_\_\_\_\_

### Samples Collected

Sediments: Core Sample \_\_\_\_\_ Van Veen Grab \_\_\_\_\_ No. of Replicates \_\_\_\_\_

Organics	Metals	Grain Size	TOC	<sup>13</sup> C	Methyl Hg	Other

Sediment Texture (check all that apply):

>50% silt/clay \_\_\_\_\_ Fine \_\_\_\_\_ Coarse Sand \_\_\_\_\_ Gravel \_\_\_\_\_ Shell Hatch \_\_\_\_\_ Mixed \_\_\_\_\_

Indications of Anoxia: Yes \_\_\_\_\_ No \_\_\_\_\_ H<sub>2</sub>S Odor: Yes \_\_\_\_\_ No \_\_\_\_\_

Comments: \_\_\_\_\_

### Water/Suspended Sediments:

Surface \_\_\_\_\_ Mid-Water ✓ Bottom \_\_\_\_\_ Other \_\_\_\_\_

Comments: \_\_\_\_\_

Biota (check species collected for analysis)

Amphipods: Annonyx \_\_\_\_\_ sp. saved/collected

Fish: Sculpin \_\_\_\_\_ Safron Cod \_\_\_\_\_ Arctic Cod 4 Char \_\_\_\_\_ Cisco \_\_\_\_\_ Flounder \_\_\_\_\_ Whitefish \_\_\_\_\_ Other \_\_\_\_\_

Clams: Astarte \_\_\_\_\_ Cyrtodaria \_\_\_\_\_ Macoma \_\_\_\_\_ Portlandia \_\_\_\_\_

Comments: lots of isopods, brachycephalus juv. cod (too small) sm. sculpin as small

### Quality Control Samples

Field Blank \_\_\_\_\_ Equipment Blank \_\_\_\_\_ Other \_\_\_\_\_

Overall Comments:

147° 30.231'W to 147° 30.484'W ~ 25k

Trawl #1 70° 16.672'N 250m 70° 17.290'N 200m kept, no target sp.

Trawl #2 70° 17.331'N 147° 30.231'W to 80m 70° 16.781'N 147° 30.231'W (net ripped, cord end - repair)

Trawl #3 70° 16.672'N 147° 30.231'W 70m 70° 15.941'N 147° 30.231'W 1 cord kept, no target sp.

Trawl #4 70° 15.381'N 250m 70° 16.183'N 147° 25.518'W to 147° 30.231'W (photos taken)

Field Personnel:

M. Mertz J. Gold G. Lawley F. Querczoli

Signature:

[Signature]

Date:

08/11/01

Arthur D Little

# Station Log

Station ID BPS  
 Client MMS  
 Project 2001 ANIMIDA  
 Case No. 72105

Date 08/12/01  
 Time 0900

## Arctic Nearshore Impact Monitoring in the Development Area (ANIMIDA)

### Sampling Location

Station Number BPS (B)

### Station Type

BSMP/Northstar/Liberty/Other reference

Latitude 70° 10' 52.4" N

Longitude 146° 50' 49.4" W

### Field Observations and Measurements

Wind Speed 0-5 Wind Direction W

Seas/Ice 0-5 Calm/no ice

Water Depth 1 m

Conductivity, Temperature, Depth (CTD)                     

Doppler Current                     

Turbidity                     

Instrument Tow                     

Comments:                     

### Samples Collected

Sediments: Core Sample                      Van Veen Grab                      No. of Replicates 1 grab to jar

Organics	Metals	Grain Size	TOC	<sup>13</sup> C	Methyl Hg	Other
<u>                    </u>	<u>                    </u>	<u>                    </u>	<u>                    </u>	<u>                    </u>	<u>                    </u>	<u>                    </u>

### Sediment Texture (check all that apply):

>50% silt/clay                      Fine                      Coarse Sand  Gravel                      Shell Hatch                      Mixed                     

Indications of Anoxia: Yes                      No  H<sub>2</sub>S Odor: Yes                      No                      01-BPS-120-5-SEEP

Comments: 70° 10' 36.3" N 146° 51' 27.0" Shown on banks of shore - collected as ref.

### Water/Suspended Sediments:

Surface                      Mid-Water                      Bottom                      Other                     

Comments:                     

### Biota (check species collected for analysis)

Amphipods: Annonyx                     

(2) Arky Varden

Fish: Sculpin  Safron Cod                      Arctic Cod                      Char                      Cisco  Flounder                      Whitefish                      Other                     

Clams: Astarte                      Cyrtodaria                      Macoma                      Portlandia                     

Comments:                     

### Quality Control Samples

Field Blank                      Equipment Blank                      Other                     

### Overall Comments:

                      
                      
                      
                    

### Field Personnel:

m mentz J Gold G Lawkey F Quenple

### Signature:

                    

Date: 08/12/01

<b>Arthur D Little</b>	<b>Station Log</b>	Station ID <u>L/16</u>
Date <u>08/12/01</u>		Client <u>MMS</u>
Time <u>11:45</u>		Project <u>2001 ANIMIDA</u>
		Case No. <u>72105</u>

**Arctic Nearshore Impact Monitoring in the Development Area (ANIMIDA)**

Trawl

Sampling Location \_\_\_\_\_ Station Type \_\_\_\_\_  
 Station Number L/16 BSMP/Northstar/Liberty/Other  
 Latitude \* see below Longitude \* see below calm  
clear

Field Observations and Measurements  
 Wind Speed 0.5 Wind Direction W Seas/Ice 0-1' / no ice  
 Water Depth \_\_\_\_\_ Conductivity, Temperature, Depth (CTD) \_\_\_\_\_  
 Doppler Current \_\_\_\_\_ Turbidity \_\_\_\_\_ Instrument Tow \_\_\_\_\_

Comments: \_\_\_\_\_

**Samples Collected**

Sediments: Core Sample \_\_\_\_\_ Van Veen Grab \_\_\_\_\_ No. of Replicates \_\_\_\_\_

Organics	Metals	Grain Size	TOC	<sup>13</sup> C	Methyl Hg	Other

Sediment Texture (check all that apply):  
 >50% silt/clay \_\_\_\_\_ Fine \_\_\_\_\_ Coarse Sand \_\_\_\_\_ Gravel \_\_\_\_\_ Shell Hatch \_\_\_\_\_ Mixed \_\_\_\_\_

Indications of Anoxia: Yes \_\_\_\_\_ No \_\_\_\_\_ H<sub>2</sub>S Odor: Yes \_\_\_\_\_ No \_\_\_\_\_

Comments: \_\_\_\_\_

**Water/Suspended Sediments:**  
 Surface \_\_\_\_\_ Mid-Water \_\_\_\_\_ Bottom \_\_\_\_\_ Other \_\_\_\_\_

Comments: \_\_\_\_\_

**Biota** (check species collected for analysis)

Amphipods: Annonyx \_\_\_\_\_

Fish: Sculpin \_\_\_\_\_ Safron Cod \_\_\_\_\_ Arctic Cod \_\_\_\_\_ Char \_\_\_\_\_ Cisco \_\_\_\_\_ Flounder \_\_\_\_\_ Whitefish \_\_\_\_\_ Other \_\_\_\_\_

Clams: Astarte \_\_\_\_\_ Cyrtodaria \_\_\_\_\_ Macoma \_\_\_\_\_ Portlandia \_\_\_\_\_

Comments: \_\_\_\_\_

**Quality Control Samples**  
 Field Blank \_\_\_\_\_ Equipment Blank \_\_\_\_\_ Other \_\_\_\_\_

Overall Comments: \* trawl #1: start (70 16.009 N / 147 27.268 W) ~19' deep  
 stop (70 16.796 N / 147 30.190 W) 11:50-11:55  
 12:05 trawl #2 70 16.796 - 147 30.190 NW → 70 18.587 147 34.050  
 14:00 trawl #3 70 18.231' 147 33.182 SE → 70 18.139 147 30.741  
 14:30 headed back to Fairport - no samples saved too small and out S

Field Personnel: M. mentz, J. Gold, G. Lawley, F. [unclear]

Signature: [Signature] Date: 08/12/01



Arthur D Little

# Station Log

Station ID

N25

Date

8/13/01

Time

1230 - 1400

Client

MMS

Project

2001 ANIMDA

Case No.

72105

## Arctic Nearshore Impact Monitoring in the Development Area (ANIMDA)

Sampling Location

North Star Gill Net Set

Station Number

N25 70° 29.013' N  
142° 41.067' W

70° 29.059' N  
142° 41.701' W

Station Type

BSMP/Norstar/Liberty/Other

Latitude

Longitude

### Field Observations and Measurements

NO Fish caught.

Wind Speed

Wind Direction

Seas/Ice

Water Depth

30 FT

Conductivity, Temperature, Depth (CTD)

Doppler Current

1 KN East

Turbidity

Instrument Tow

Comments:

### Samples Collected

Sediments:

Core Sample

Van Veen Grab

No. of Replicates

Organics	Metals	Grain Size	TOC	<sup>13</sup> C	Methyl Hg	Other

Sediment Texture (check all that apply):

>50% silt/clay

Fine

Coarse Sand

Gravel

Shell Hatch

Mixed

Indications of Anoxia:

Yes

No

H<sub>2</sub>S Odor: Yes

No

Comments:

### Water/Suspended Sediments:

Surface

Mid-Water

Bottom

Other

Comments:

Biota

(check species collected for analysis)

Amphipods: Anonyx

Fish: Scalpin

Safron Cod

Arctic Cod

Char

Cisco

Flounder

Whitefish

Other

Clams:

Astarte

Cyrtodaria

Macoma

Portlandia

Comments:

### Quality Control Samples

Field Blank

Equipment Blank

Other

Overall Comments:

Field Personnel:

M Mertz J Gold G Lawley

Signature:

for J Gold / M Mertz

Date:

08/13/01

Arthur D Little

# Station Log

Station ID

N25

Date 8/13/01

Time 1242-1310

Client MMS

Project 2001 ANIMIDA

Case No. 72105

## Arctic Nearshore Impact Monitoring in the Development Area (ANIMIDA)

Sampling Location

Station Number

N25

Trawl #1

Station Type

BSMP/Northstar/Liberty/Other

Latitude 70° 29.061'

148° 41.322'

Longitude 70° 29.024'

148° 39.22942

### Field Observations and Measurements

Wind Speed 0-5

Wind Direction N

Seas/Ice

speed 2.5 kn.  
calm (fog)

Water Depth 37 FT

Conductivity, Temperature, Depth (CTD)

Doppler Current

Turbidity

Instrument Tow

Comments:

### Samples Collected

Sediments:

Core Sample

Van Veen Grab

No. of Replicates

Organics	Metals	Grain Size	TOC	<sup>13</sup> C	Methyl Hg	Other

Sediment Texture (check all that apply):

>50% silt/clay

Fine

Coarse Sand

Gravel

Shell Hatch

Mixed

Indications of Anoxia: Yes

No

H<sub>2</sub>S Odor: Yes

No

Comments:

### Water/Suspended Sediments:

Surface

Mid-Water

Bottom

Other

Comments:

### Biota

(check species collected for analysis)

Amphipods: Annonyx

Fish: Sculpin

Safron Cod

Arctic Cod

Char 15

Cisco

Flounder

Whitefish

Other

Clams:

Astarte

Cyrtodaria

Macoma

Portlandia

Comments:

### Quality Control Samples

Field Blank

Equipment Blank

Other

Overall Comments:

Field Personnel:

M Metz J Gold G Lantry

Signature:

J Gold for J Gold

Date:

08/13/01

Arthur D Little

# Station Log

Station ID N25  
 Client MMS  
 Project 2001 ANIMIDA  
 Case No. 72105

Date 8/13/01  
 Time 1320 - 1340

## Arctic Nearshore Impact Monitoring in the Development Area (ANIMIDA)

Sampling Location TERRILL #2 Station Type BSMP  
 Station Number N25 (Northstar/Liberty/Other)  
 Latitude 70° 29.568' Longitude 70° 29.611'  
148° 39.733' 148° 41.813' speed 2.5 kts

Field Observations and Measurements  
 Wind Speed 0-5 Wind Direction N Seas/Ice calm fog  
 Water Depth 39' Conductivity, Temperature, Depth (CTD) —  
 Doppler Current — Turbidity — Instrument Tow —

Comments:

### Samples Collected

Sediments: Core Sample — Van Veen Grab — No. of Replicates —

Organics	Metals	Grain Size	TOC	<sup>13</sup> C	Methyl Hg	Other

Sediment Texture (check all that apply):  
 >50% silt/clay — Fine — Coarse Sand — Gravel — Shell Hatch — Mixed —  
 Indications of Anoxia: Yes — No — H<sub>2</sub>S Odor: Yes — No —

Comments:

### Water/Suspended Sediments:

Surface — Mid-Water — Bottom — Other —

Comments:

### Biota (check species collected for analysis)

Amphipods: Annonyx —  
 Fish: Sculpin — Safron Cod — Arctic Cod 11 Char — Cisco — Flounder — Whitefish — Other —  
 Clams: Astarte — Cyrtodaria — Macoma — Portlandia —

Comments:

### Quality Control Samples

Field Blank — Equipment Blank — Other —

Overall Comments:

Field Personnel:

M Metz J Gold G Lanney

Signature:

F Zylber J Gold

Date:

08/13/01

Arthur D Little

# Station Log

Station ID N25

Date 8/13/01  
Time 1352-1426

Client MMS  
Project 2001 ANIMIDA  
Case No. 72105

### Arctic Nearshore Impact Monitoring in the Development Area (ANIMIDA)

Trawl #3

#### Sampling Location

Station Number N25  
Latitude 70° 21.551'  
148° 39.733'

Station Type BSMP/Northstar/Liberty/Other  
Longitude 70° 29.611'  
148° 41.813' speed 2.5 km

#### Field Observations and Measurements

Wind Speed 0-5 Wind Direction NE Seas/Ice 0-1  
Water Depth 39' Conductivity, Temperature, Depth (CTD) —  
Doppler Current — Turbidity — Instrument Tow —

Comments: \_\_\_\_\_

#### Samples Collected

Sediments:		Core Sample	Van Veen Grab	No. of Replicates		
Organics	Metals	Grain Size	TOC	<sup>13</sup> C	Methyl Hg	Other

Sediment Texture (check all that apply):

>50% silt/clay \_\_\_\_\_ Fine \_\_\_\_\_ Coarse Sand \_\_\_\_\_ Gravel \_\_\_\_\_ Shell Hatch \_\_\_\_\_ Mixed \_\_\_\_\_  
Indications of Anoxia: Yes \_\_\_\_\_ No \_\_\_\_\_ H<sub>2</sub>S Odor: Yes \_\_\_\_\_ No \_\_\_\_\_

Comments: \_\_\_\_\_

#### Water/Suspended Sediments:

Surface \_\_\_\_\_ Mid-Water \_\_\_\_\_ Bottom \_\_\_\_\_ Other \_\_\_\_\_

Comments: \_\_\_\_\_

#### Biota (check species collected for analysis)

Amphipods: Anonyx \_\_\_\_\_  
Fish: Sculpin 3 Saffron Cod \_\_\_\_\_ Arctic Cod next 3 Char \_\_\_\_\_ Cisco \_\_\_\_\_ Flounder \_\_\_\_\_ Whitefish \_\_\_\_\_ Other \_\_\_\_\_  
Clams: Astarte \_\_\_\_\_ Cyrtodaria \_\_\_\_\_ Macoma \_\_\_\_\_ Portlandia \_\_\_\_\_

Comments: \_\_\_\_\_

#### Quality Control Samples

Field Blank \_\_\_\_\_ Equipment Blank \_\_\_\_\_ Other \_\_\_\_\_

Overall Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Field Personnel: M Metz J Gold G Lawley

Signature: J Metz for J Gold

Date: 08/13/01

Arthur D Little

# Station Log

Station ID N25  
 Client MMS  
 Project 2001 ANIMIDA  
 Case No. 72105

Date 8/13/01  
 Time 1427-1502

### Arctic Nearshore Impact Monitoring in the Development Area (ANIMIDA)

*N25 TRN1 #4*  
 Sampling Location 70° 28.547' N 142° 41.911' W 70° 30.085' N 142° 42.160' W  
 Station Number \_\_\_\_\_  
 Latitude 70° 28.547' Longitude 142° 41.911'  
70° 30.085' 142° 42.160'  
70° 28.650' 142° 39.750'

Station Type BSMP/Northstar/Liberty/Other

Field Observations and Measurements  
 Wind Speed 4-8 Wind Direction E Seas/Ice spec'd 3.0 Kn / calm / no ice  
 Water Depth 39' Conductivity, Temperature, Depth (CTD) \_\_\_\_\_  
 Doppler Current \_\_\_\_\_ Turbidity \_\_\_\_\_ Instrument Tow \_\_\_\_\_

Comments: \_\_\_\_\_

#### Samples Collected

Sediments: Core Sample \_\_\_\_\_ Van Veen Grab \_\_\_\_\_ No. of Replicates \_\_\_\_\_

Organics	Metals	Grain Size	TOC	<sup>13</sup> C	Methyl Hg	Other

Sediment Texture (check all that apply):

>50% silt/clay \_\_\_\_\_ Fine \_\_\_\_\_ Coarse Sand \_\_\_\_\_ Gravel \_\_\_\_\_ Shell Hatch \_\_\_\_\_ Mixed \_\_\_\_\_  
 Indications of Anoxia: Yes \_\_\_\_\_ No \_\_\_\_\_ H<sub>2</sub>S Odor: Yes \_\_\_\_\_ No \_\_\_\_\_

Comments: \_\_\_\_\_

#### Water/Suspended Sediments:

Surface \_\_\_\_\_ Mid-Water   Bottom \_\_\_\_\_ Other \_\_\_\_\_

Comments: \_\_\_\_\_

Biota (check species collected for analysis)

Amphipods: Anonyx \_\_\_\_\_  
 Fish: Sculpin \_\_\_\_\_ Safron Cod \_\_\_\_\_ Arctic Cod 1/2 Char \_\_\_\_\_ Cisco \_\_\_\_\_ Flounder \_\_\_\_\_ Whitefish \_\_\_\_\_ Other \_\_\_\_\_  
 Clams: Astarte \_\_\_\_\_ Cyrtodaria \_\_\_\_\_ Macoma \_\_\_\_\_ Portlandia \_\_\_\_\_

Comments: \_\_\_\_\_

#### Quality Control Samples

Field Blank \_\_\_\_\_ Equipment Blank   Other \_\_\_\_\_

Overall Comments: \_\_\_\_\_

Field Personnel: M Metz J Gold G Lourey

Signature: J. R. [unclear] for J. Gold

Date: 08/13/01

<b>Arthur D Little</b>	<b>Station Log</b>	Station ID <u>N25</u>
Date <u>8/13/01</u> Time <u>1510-1540</u>		Client <u>MMS</u> Project <u>2001 ANIMIDA</u> Case No. <u>72105</u>

**Arctic Nearshore Impact Monitoring in the Development Area (ANIMIDA)**

*Trawl # 5*

Sampling Location N25 Station Type BSMP/Northstar/Liberty/Other  
 Station Number N25  
 Latitude 70° 30.022' Longitude 70° 28.650'  
148° 39' 750' *speed 3.0 (KJ)*

**Field Observations and Measurements**  
 Wind Speed 4-8 Wind Direction E Seas/Ice \_\_\_\_\_  
 Water Depth 42' Conductivity, Temperature, Depth (CTD) \_\_\_\_\_  
 Doppler Current \_\_\_\_\_ Turbidity \_\_\_\_\_ Instrument Tow \_\_\_\_\_

Comments: \_\_\_\_\_

**Samples Collected**

Sediments: Core Sample \_\_\_\_\_ Van Veen Grab \_\_\_\_\_ No. of Replicates \_\_\_\_\_

Organics	Metals	Grain Size	TOC	<sup>13</sup> C	Methyl Hg	Other

Sediment Texture (check all that apply):  
 >50% silt/clay \_\_\_\_\_ Fine \_\_\_\_\_ Coarse Sand \_\_\_\_\_ Gravel \_\_\_\_\_ Shell Hatch \_\_\_\_\_ Mixed \_\_\_\_\_  
 Indications of Anoxia: Yes \_\_\_\_\_ No \_\_\_\_\_ H<sub>2</sub>S Odor: Yes \_\_\_\_\_ No \_\_\_\_\_

Comments: \_\_\_\_\_

**Water/Suspended Sediments:**  
 Surface \_\_\_\_\_ Mid-Water \_\_\_\_\_ Bottom \_\_\_\_\_ Other \_\_\_\_\_

Comments: \_\_\_\_\_

**Biota** (check species collected for analysis)

Amphipods: Annonyx \_\_\_\_\_ *rest 3*

Fish: Sculpin \_\_\_\_\_ Safron Cod \_\_\_\_\_ Arctic Cod (1) Char \_\_\_\_\_ Cisco \_\_\_\_\_ Flounder \_\_\_\_\_ Whitefish \_\_\_\_\_ Other \_\_\_\_\_

Clams: Astarte \_\_\_\_\_ Cyrtodaria \_\_\_\_\_ Macoma \_\_\_\_\_ Portlandia \_\_\_\_\_

Comments: \_\_\_\_\_

**Quality Control Samples**  
 Field Blank \_\_\_\_\_ Equipment Blank \_\_\_\_\_ Other \_\_\_\_\_

Overall Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Field Personnel: M. Metz, J Gold, G Lawley

Signature: [Signature] Date: 08/13/01