HARVEST RATES FOR THE 2006 COLVILLE RIVER BROAD WHITEFISH AND BURBOT FISHERIES

January 2007

Prepared by

MJM Research
1012 Shoreland Drive
Lopez Island, WA 98261

for

ConocoPhillips Alaska, Inc.,
P.O. Box 100360
Anchorage, AK 99510-0360

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Conducted by:

Lawrence L. Moulton
and
Jerry Pausanna
MJM Research
1012 Shoreland Drive
Lopez Island, WA 98261

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EXECUTIVE SUMMARY

Moulton, L.L. and J. Pausanna. Harvest rates for the 2006 Colville River broad whitefish and burbot fisheries.

Between April 5 and May 5, 2006, information on burbot fishing success was obtained from 15 fishing groups. The groups expended 30 angler-days of effort, resulting in a catch of 95 burbot. As a result, the average catch per day was 3.4 burbot.

Fishing for broad whitefish typically begins when the river clears following break-up. During break-up, the river can contain a high load of organic peat, which fouls gill nets and renders them ineffective. As a result, most fishers wait until the peat load is at a low level, which may typically be in late June to early July. Summer rain that raises water level will again increase the peat load, and disrupt fishing. During summer 2006, monitored effort totaled 49 net-days. Most (75%) of this effort was in the Upper Nigliq fishing area near Nuiqsut. The most common mesh sizes were 5 3/8 and 5 ½ inch (stretched mesh).

Fishing was sporadic through the summer as there were frequent rain storms in the drainage that resulted in high peat levels during most of the fishing period. There were short pulses of fishing effort when the river cleared followed by extended periods of no fishing when the river was full of detritus. This led to frustration among the fishermen, and a low level of effort compared to recent years.

Broad whitefish, the target species, comprised over 93% of the total observed catch in 2006. Humpback whiteifish were a small portion of the catch. Four species of Pacific salmon made up 5% of the catch, with chum salmon being the most abundant salmon caught.

The overall average catch rate for broad whitefish in 2006 was 7.0 (standard deviation = 2.6) fish per net-day. Highest broad whitefish catch rates were recorded in 4.5 inch mesh, with low to moderate catch rates in the preferred 5 3/8 and 5 ½ in meshes. Lengths of harvested fish were not obtained in 2006, but it is likely the large catches in the small mesh nets were smaller fish in the 400-500 mm

range. The larger meshes target fish in excess of 500 mm.

Tissues from 11 broad whitefish from both the Upper Nigliq and Fish Creek areas were analyzed for polyaromatic hydrocarbons (PAH) in 2006. Fish from each area were processed for muscle and liver analysis, eggs from 7 females were also analyzed. Tissues were analyzed by Analytical Resources, Inc., a laboratory that specializes in detecting PAH in water, sediments or tissues. The analyses were unable to detect any PAH in the sampled tissues at the part per billion level, thus it appears there is at present very little exposure to these compounds.

Catch in the broad whitefish fishery during 2006 was similar to that recorded in 1985 (Moulton et al. 1986). Broad whitefish were by far the dominant catch, followed by incidental numbers of salmon and humpback whitefish. One difference was the absence of Dolly Varden char in the 2006 catch – this species represented 13% of the summer catch in 1985.

The broad whitefish catch rate observed in 2006 (7.0 fish per day, standard deviation = 2.6) was higher than the 1985 catch rate of 3.2 fish per day (standard deviation = 2.2). Differences in distribution of the fishery, mesh sizes, time periods fished, and changes in the fish population size, could all contribute to the differences between years.

Changes in the age structure of the harvested population can reveal effects related to changes in fishing pressure. Age data were not collected in 2006, but samples from 2005 were collected by the NSB/DWM. The age structure from fish harvested in 2005 was not substantially different than that from 1985. In both years, most harvested fish were between 10 and 26 years of age. The small sample size and uncertainty about how well the 2005 data represent the delta-wide harvest preclude detailed analysis of the age distributions.

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HARVEST RATES FOR THE 2006 COLVILLE RIVER BROAD WHITEFISH AND BURBOT FISHERIES

Lawrence L. Moulton

and

Jerry Pausanna

INTRODUCTION

Broad whitefish (*Coregonus nasus.*) and burbot (*Lota lota*) are important to the subsistence lifestyle of Nuiqsut residents and are the target of directed fisheries. The abundance and harvest of Arctic cisco (*C. autumnalis*) has been monitored continuously since 1985 (Moulton et al. 2006), while the broad whitefish harvest was assessed only in 1985 (Moulton et al. 1986), and the burbot fishery has not been studied. In 2005, the North Slope Borough Department of Wildlife Management (NSB/DWM) expressed interest in developing information on the current harvest rates on these two species in order to evaluate current harvest levels and to evaluate future changes in the fishery.

Recent oil field development in the region has raised concerns that contamination from petroleum hydrocarbons may enter the local food supply. To address these concerns, NSB/DWM requested that samples broad whitefish caught in the fishery be evaluated for levels of polyaromatic hydrocarbons (PAH).

Specific objectives of the 2006 survey were to 1) obtain catch rate estimates for the spring burbot fishery, 2) obtain catch rate estimates for the summer broad whitefish fishery, and 3) assess levels of hydrocarbons in the tissues of broad whitefish caught in the subsistence fishery..

METHODS

Fishery Assessment

The study area includes the Colville River from the Itkillik River downstream to Harrison Bay (Figure 1). The 2006 study used three areas of concentrated fishing effort in the Nigliq Channel previously identified in fall fishery studies: 1) the Upper Nigliq Channel near Nuiqsut, 2) the Nanuk area of the Nigliq Channel, and 3) the Nigliq Delta, but also added the Fish Creek Delta (Figure 2) and the traditional burbot harvest location, Tuiqauraq (Figure 3).

The spring burbot fishery based in Nuiqsut begins when daylight increases and weather improves. In 2006, data collection began in early April and continued into early May. The fishery is focused on one location, Tuiqauraq, a small side channel of the Colville River approximately 5 miles form Nuiqsut. Fishers make day trips to the site, then jig for burbot through the ice, which is about 6 feet thick at that time of year.

The summer broad whitefish fishery begins as the river water drops and clears after breakup, typically in late June to early July. Gill nets are set along the Nigliq Channel, in lower Fish Creek, or in the main Colville River upstream from the head of the Niqlig Channel. Fishing can be accomplished through day trips from Nuiqsut, or from extended trips to fishing camps. In 2006, data collection extended from July 11 to August 29.

In 2006, data collection was primarily through direct interview with fishers. A meeting was held with the executive director of the Kuukpik Subsistence Oversight Panel (KSOP) prior to each fishery to identify participants in a log book program. Log books were issued to fishermen who had regularly participated in the fisheries, but few completed fishing logs were returned.

Data collected for the burbot fishery included the number of people participating, and the number of fish caught. All fishing was by jigging, and fishing effort was typically 2 to 4 hours. Effort was standardized to angler days.

During fisher interviews for the broad whitefish fishery, set duration, net length, and mesh size data were recorded so that catch-per-unit-effort (CPUE) could be calculated for the net set. Effort was calculated in net-days by using the start and end dates for each net. Effort data were adjusted for the various net lengths and set durations by standardizing net length to 18 m and set duration to 24 h. Within the main sampling areas, catch rates (CPUE) were estimated by obtaining catch and effort data by mesh size in each fishing area.

Evaluation of Contaminants

Samples of broad whitefish from the Nigliq Channel and Fish Creek were obtained to test for potential tissue contamination. Five fish were obtained from Fish Creek, with another 6 fish from the Nigliq Channel. For each fish, samples of muscle tissue and liver tissue were screened for PAH levels. Eggs from 7 females were also retained for analysis. Tissues were placed in clean jars and frozen until delivered to the Analytical Resources, Inc. laboratory. At the lab, the fish were processed as needed to acquire extracts of the desired tissue (11 skinless muscle samples, 11 livers, 7 egg samples). Extracts were analyzed by combined gas chromatography –mass spectrometry (GCMS) for quantitative identification of 18 individual PAH's as follows:

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	10	< 10 U
91-57-6	2-Methylnaphthalene	10	< 10 U
208-96-8	Acenaphthylene	10	< 10 U
83-32-9	Acenaphthene	10	< 10 U
86-73-7	Fluorene	10	< 10 U
85-01-8	Phenanthrene	10	< 10 U
120-12-7	Anthracene	10	< 10 U
206-44-0	Fluoranthene	10	< 10 U
129-00-0	Pyrene	10	< 10 U
56-55-3	Benzo(a)anthracene	10	< 10 U
218-01-9	Chrysene	10	< 10 U
205-99-2	Benzo(b)fluoranthene	10	< 10 U
207-08-9	Benzo(k)fluoranthene	10	< 10 U
50-32-8	Benzo(a)pyrene	10	< 10 U
193-39-5	Indeno(1,2,3-cd)pyrene	10	< 10 U
53-70-3	Dibenz(a,h)anthracene	10	< 10 U
191-24-2	Benzo(g,h,i)perylene	10	< 10 U
132-64-9	Dibenzofuran	10	< 10 U

RESULTS

Burbot Fishery

Between April 5 and May 5, 2006, information on burbot fishing success was obtained from 15 fishing groups. The groups expended 30 angler-days of effort, resulting in a catch of 95 burbot (Table 1). As a result, the average catch per day was 3.4 burbot.

Broad Whitefish Fishery

Effort

Fishing for broad whitefish typically begins when the river clears following break-up. During break-up, the river can contain a high load of organic peat, which fouls gill nets and renders them ineffective. As a result, most fishers wait until the peat load is at a low level. This may typically be in late June to early July. Summer rain that raises water level will again increase the peat load, and disrupt fishing. During summer 2006, monitored effort totaled 49 net-days (Table 2). Most (75%) of this effort was in the Upper Nigliq fishing area near Nuiqsut. The most common mesh sizes were 5 3/8 and 5 ½ inch (stretched mesh).

Fishing was sporadic through the summer as there were frequent rain storms in the drainage that resulted in high peat levels during most of the fishing period. There were short pulses of fishing effort when the river cleared followed by extended periods of no fishing when the river was full of detritus. This led to frustration among the fishermen, and a low level of effort compared to recent years.

Catch Composition

Broad whitefish, the target species, comprised over 93% of the total observed catch in 2006 (Table 3). Humpback whitefish were a small portion of the catch. Four species of Pacific salmon made up 5% of the catch, with chum salmon being the most abundant salmon caught.

Comparative Catch Rates

The overall average catch rate for broad whitefish in 2006 was 7.0 (standard deviation = 2.6) fish per net-day (Table 4). Highest broad whitefish catch rates were recorded in 4.5 inch mesh, with low to moderate catch rates in the preferred 5 3/8 and 5 ½ in meshes. Lengths of harvested fish were not obtained in 2006, but it is likely the large catches in the small mesh nets were smaller fish in the 400-500 mm range. The larger meshes target fish in excess of 500 mm.

Tissue Hydrocarbons

Tissues from 11 broad whitefish from both the Upper Nigliq and Fish Creek areas were analyzed for polyaromatic hydrocarbons (PAH) in 2006. Fish from each area were processed for muscle and liver analysis, eggs from 7 females were also analyzed. Tissues were analyzed by Analytical Resources, Inc., a laboratory that specializes in detecting PAH in water, sediments or tissues. The analyses were unable to detect any PAH in the sampled tissues at the part per billion level, thus it appears there is at present very little exposure to these compounds. Results of all the laboratory analyses are included in Appendix B.

DISCUSSION

The 2006 evaluation of the burbot fishery was the first assessment of this harvest effort, thus there is no historical data for comparison.

Catch in the broad whitefish fishery during 2006 was similar to that recorded in 1985 (Moulton et al. 1986). Broad whitefish were by far the dominant catch, followed by incidental numbers of salmon and humpback whitefish. One difference was the absence of Dolly Varden char in the 2006 catch – this species represented 13% of the summer catch in 1985.

The broad whitefish catch rate observed in 2006 (7.0 fish per day, standard deviation = 2.6) was higher than the 1985 catch rate of 3.2 fish per day (standard deviation = 2.2). The 1985 CPUE estimate was based on a more intensive survey, which observed almost 180 net days of effort (Moulton et al. 1986). Differences in distribution of the fishery, mesh sizes, time periods fished, and changes in the fish population size, could all contribute to the differences between years.

Changes in the age structure of the harvested population can reveal effects related to changes in fishing pressure. Age data were not collected in 2006, but samples from 2005 were collected by the NSB/DWM. The age structure from fish harvested in 2005 was not substantially different than that from 1985 (Figure). In both years, most harvested fish were between 10 and 26 years of age. The small sample size and uncertainty about how well the 2005 data represent the delta-wide harvest preclude detailed analysis of the age distributions.

The lack of detectable PAH concentrations in broad whitefish tissues, along with similar findings in 2005 for Arctic cisco (Moulton et al. 2006), indicate that contamination of fish from petroleum hydrocarbons is low or non-existent.

ACKNOWLEDGMENTS

The study was funded by the ConocoPhillips Alaska, Inc. The study was administered by Caryn Rea, J. Brady Crouch and Sally Rothwell of ConocoPhillips Alaska. Data from fishery logbooks was provided by Nuiqsut residents, including Lloyd Ipalook and David Pausanna. The Nukapigak family, Anne Lampe, Lydia Souvalik, Robert Kilapsuk also contributed data during the summer fishery.

LITERATURE CITED

Moulton L.L., J. Field, and S. Brotherton. 1986. Assessment of the Colville River fishery in 1985. Chap. 3 *in* Colville River Fish Study, Final Report. Report by Entrix Inc. for ARCO Alaska Inc., North Slope Borough, and the City of Nuiqsut. 83 p.

Moulton, L.L., B.T. Seavey and J. Pausanna. 2006. Harvest rates for the 2005 Colville River fall fishery. Report by MJM Research to ConocoPhillips Alaska, Inc. Lopez Island, WA. 88p.

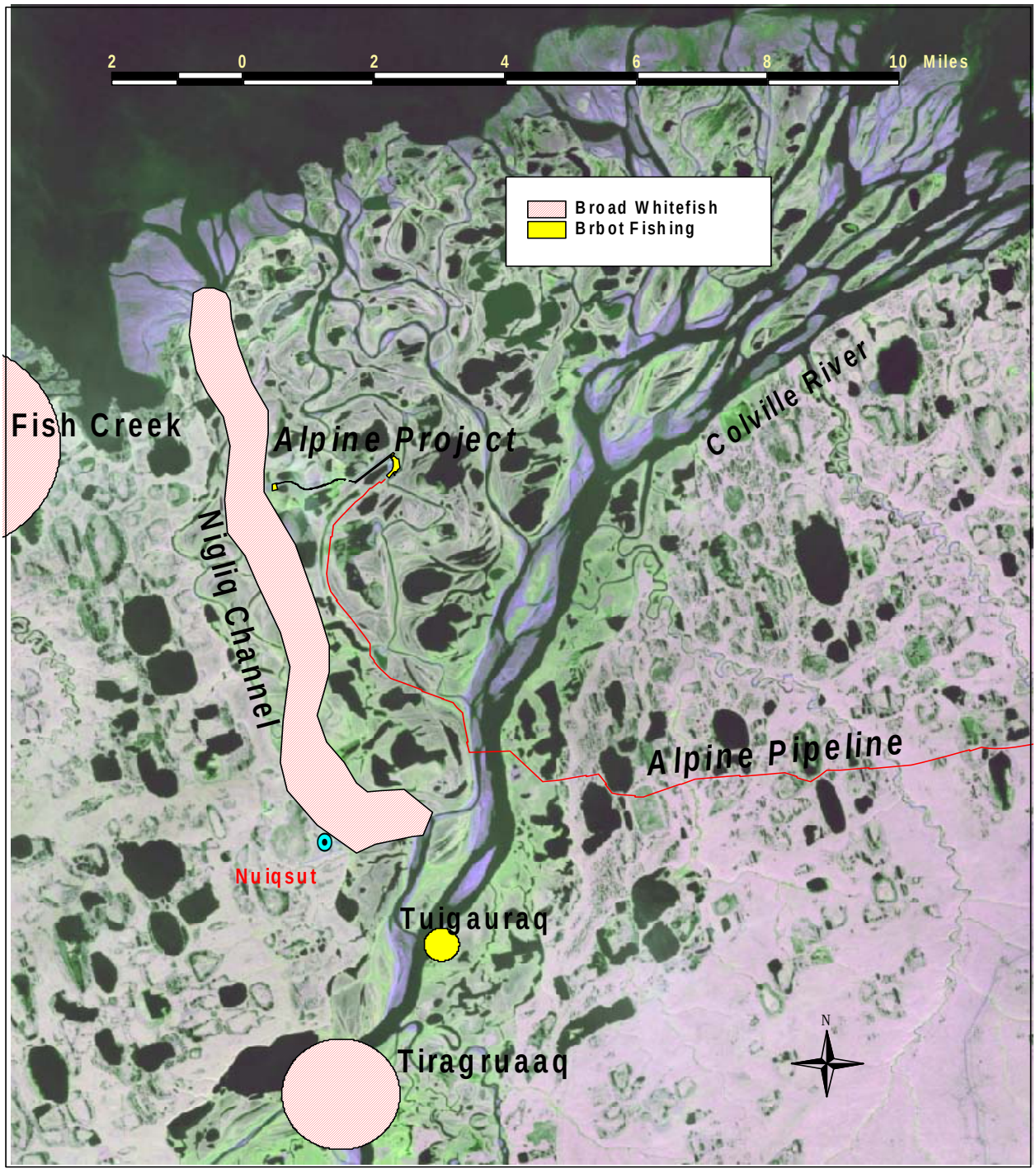

Figure 1. Study area for the 2006 evaluation of the burbot and broad whitefish fishery based in Nuiqsut, main harvest areas for both species are indicated.

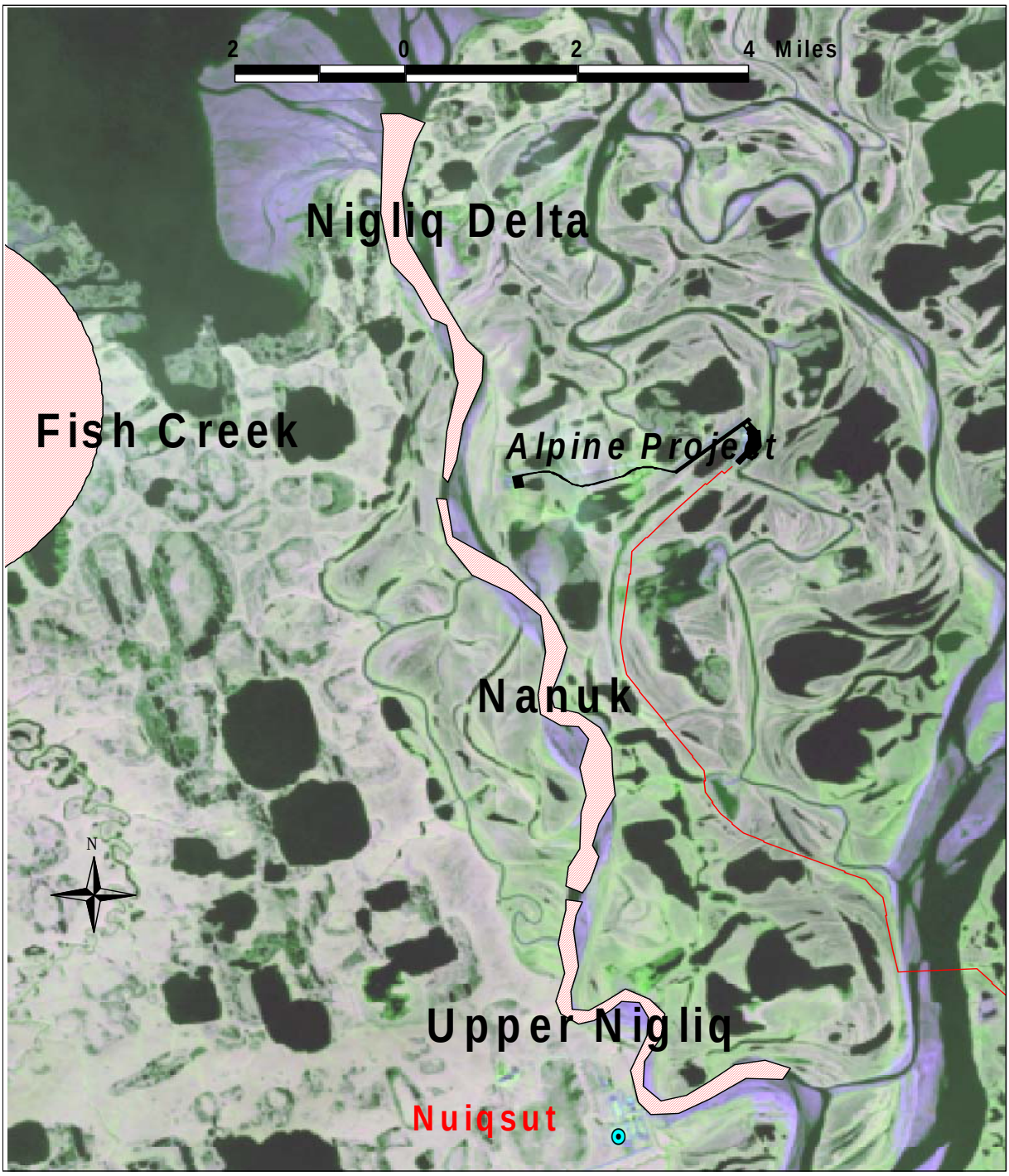

Figure 2. Broad whitefish fishing areas associated with the Nigliq Channel and Fish Creek delta.

Figure 3 Tuigauraq, the burbot fishing area, is a small side channel east of the main river.

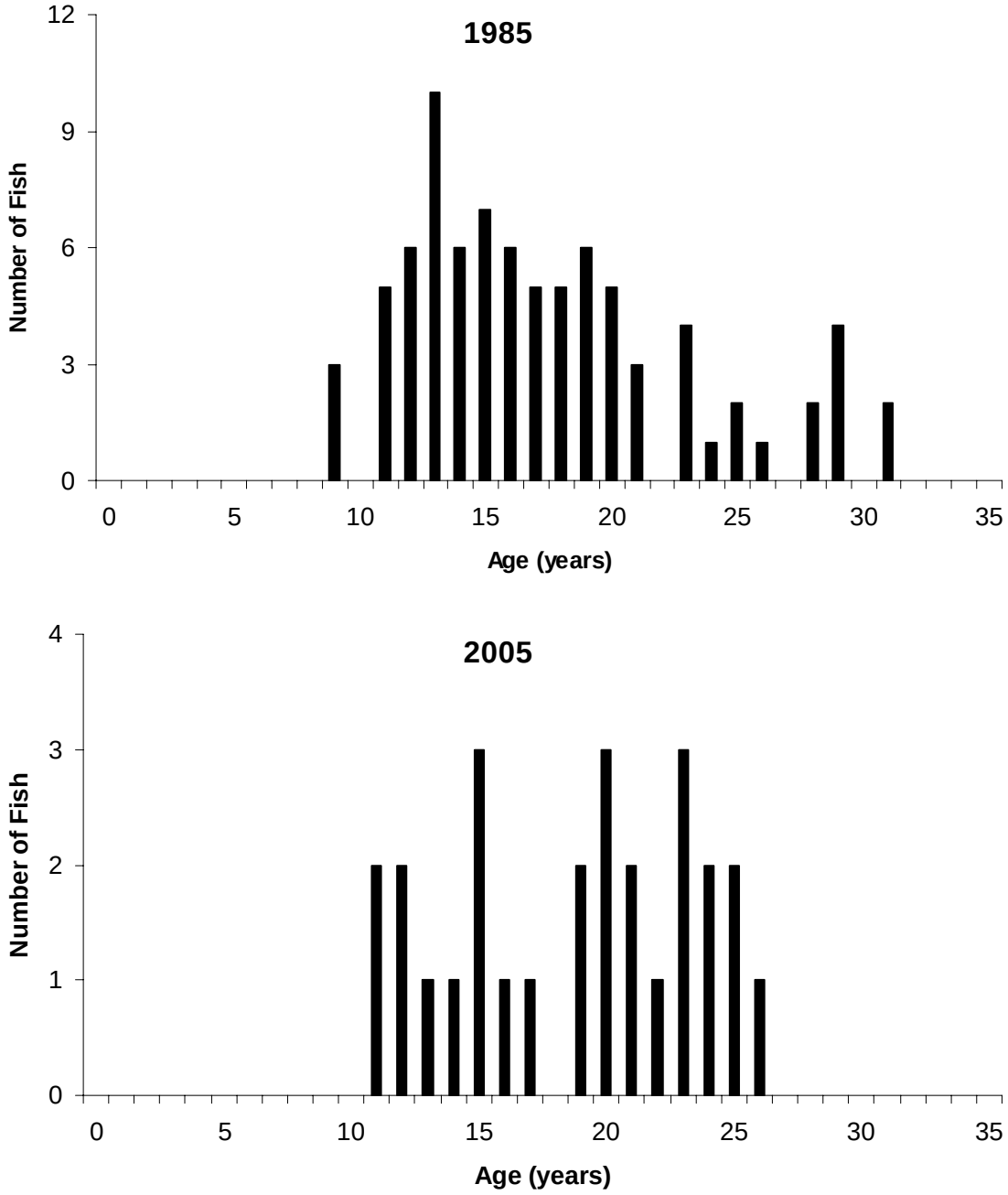

Figure 4. Ages of broad whitefish harvested in 2005 as compared to those harvested in 1985. Substantial differences are not apparent (2005 data from North Slope Borough Department of Wildlife Management).

Table 1. Observed effort and catch rate (CPUE) during 2006 Nuiqsut burbot fishery.

Date	Effort (angler-days)	Catch (number of fish)	CPUE (fish per day)
Apr 07	1	3	3.0
Apr 09	2	9	4.5
Apr 15	3	5	1.7
May 01	10	23	2.3
May 06	5	30	6.0
May 07	9	25	2.8
Total :	30	95	
Average:			3.4

Table 2. Observed effort (in net days) in the 2006 summer fishery for broad whitefish at Nuiqsut, by mesh size and fishing area.

Effort (net-days)

Mesh Size	Fishing Area				
(inches)	50	610	650	670	Total
4.50		9.0			9.0
5.375		16.8			16.8
5.50		11.3	4.8		16.0
unknown	2.0			5.3	7.3
Total	2.0	37.1	4.8	5.3	49.1

Table 3. Observed catch by species in the 2006 Nuiqsut summer gill net fishery

	Fishing Area				
Species	50	610	650	670	Total
Broad whitefish	12	234	70	25	341
Humpback whitefish		8			8
Chum salmon		11			11
Pink salmon		6			6
Chinook salmon		1			1
Sockeye salmon		1			1
Total	12	261	70	25	368

Table 4. Observed CPUE (fish per day) effort in the 2006 summer fishery for broad whitefish at Nuiqsut, by mesh size and fishing area (sets over 12 hours only)

CPUE (fish per day)

Mesh Size	Fishing Area				
(inches)	50	610	650	670	Total
4.50		18.7			18.7
5.375		1.7			1.7
5.50		3.0	10.8		5.3
unknown	6.0			4.7	5.1
Average:	6.0	6.6	10.8	4.7	7.0

APPENDIX A.

Fishery Data

Appendix Table 1. Catch and effort data from 2006 burbot fishing season at Nuiqsut, all effort was expended at Tuigauraq.

Date	Number of Fishers	Number of Burbot	Angler Days	Burbot CPUE
4/7/2006	1	3	1.0	3.00
4/9/2006	2	9	2.0	4.50
4/15/2006	3	5	3.0	1.67
5/1/2006	2	11	2.0	5.50
5/1/2006	4	6	4.0	1.50
5/1/2006	1	3	1.0	3.00
5/1/2006	3	3	3.0	1.00
5/6/2006	1	10	1.0	10.00
5/6/2006	3	16	3.0	5.33
5/6/2006	1	4	1.0	4.00
5/7/2006	2	4	2.0	2.00
5/7/2006	2	8	2.0	4.00
5/7/2006	1	3	1.0	3.00
5/7/2006	2	1	2.0	0.50
5/7/2006	2	9	2.0	4.50

Appendix Table 2. Catch and effort data from 2006 broad whitefish fishing season at Nuiqsut.

Fisher Code	Fishing Area	Date	Net Length (ft)	Mesh (inches)	Set Duration (hrs)	Species	Catch	Effort (net-days	CPUE (fish/ 24 hrs)	Notes
51	610	7/11/2006	100	5.50	24	BDWF	4	1.7	2.40	
51	610	7/11/2006	80	4.50	24	BDWF	35	1.3	26.25	
4	50	7/12/2006	60		24	BDWF	5	1.0	5.00	
51	610	7/12/2006	100	5.50	22	BDWF	3	1.5	2.01	
51	610	7/12/2006	80	4.50	22	HBWF	1	1.2	0.84	
51	610	7/12/2006	80	4.50	22	BDWF	18	1.2	15.07	
4	50	7/13/2006	60		24	BDWF	7	1.0	7.00	
51	610	7/13/2006	100	5.50	24	BDWF	4	1.7	2.40	
51	610	7/13/2006	80	4.50	24	HBWF	5	1.3	3.75	
51	610	7/13/2006	80	4.50	24	BDWF	18	1.3	13.50	
36	670	7/14/2006	80		24	BDWF	2	1.3	1.50	
51	610	7/14/2006	100	5.50	23	BDWF	4	1.6	2.56	
51	610	7/14/2006	80	4.50	23	HBWF	1	1.3	0.80	
51	610	7/14/2006	80	4.50	23	BDWF	14	1.3	11.20	
36	670	7/15/2006	80		24	BDWF	3	1.3	2.25	
51	610	7/15/2006	100	5.50	23	BDWF	7	1.6	4.48	
51	610	7/15/2006	80	4.50	23	BDWF	22	1.3	17.60	
79	670	7/16/2006	80		24	BDWF	6	1.3	4.50	
51	610	7/16/2006	100	5.50	24	BDWF	9	1.7	5.40	
51	610	7/16/2006	80	4.50	24	BDWF	57	1.3	42.75	
51	610	7/17/2006	100	5.50	24	BDWF	3	1.7	1.80	
51	610	7/17/2006	80	4.50	24	BDWF	6	1.3	4.50	
10	650	7/25/2006	80	5.50	1	BDWF	1	0.1	18.00	
10	650	7/29/2006	80	5.50	1	BDWF	4	0.1	72.00	
36	670	7/31/2006	80		24	BDWF	14	1.3	10.50	
25	610	8/1/2006	100	5.375	24	BDWF	5	1.7	3.00	

Appendix Table 1. Catch and effort data from 2006 broad whitefish fishing season at Nuiqsut,

Fisher Code	Fishing Area	Date	Net Length (ft)	Mesh (inches)	Set Duration (hrs)	Species	Catch	Effort (net-days	CPUE (fish/ 24 hrs)	Notes
10	650	8/1/2006	100	5.50	4	BDWF	3	0.3	10.80	
10	650	8/1/2006	80	5.50	4	BDWF	6	0.2	27.00	
25	610	8/2/2006	100	5.375	24	BDWF	6	1.7	3.60	River Dirty - drfit wood flowing down river
10	650	8/2/2006	80	5.50	24	BDWF	12	1.3	9.00	
10	650	8/2/2006	100	5.50	2	BDWF	13	0.1	93.60	
92	610	8/3/2006	60	5.375	30	BDWF	5	1.3	4.00	
92	610	8/3/2006	60	5.375	30	CHUM	2	1.3	1.60	
10	650	8/3/2006	80	5.50	24	BDWF	15	1.3	11.25	
10	650	8/4/2006	80	5.50	24	BDWF	16	1.3	12.00	
25	610	8/9/2006	100	5.375	24	BDWF	0	1.7	0.00	Pulled Net, river stilldirty
25	610	8/9/2006	100	5.375	24	SOCK	1	1.7	0.60	Pulled Net, river stilldirty
25	610	8/21/2006	100	5.375	15	BDWF	0	1.0	0.00	Set net on Aug 20
25	610	8/21/2006	100	5.375	15	PINK	2	1.0	1.92	Set net on Aug 20
25	610	8/22/2006	100	5.375	24	BDWF	0	1.7	0.00	
25	610	8/22/2006	100	5.375	24	HBWF	1	1.7	0.60	
25	610	8/22/2006	100	5.375	24	PINK	2	1.7	1.20	
25	610	8/22/2006	100	5.375	24	CHUM	2	1.7	1.20	
25	610	8/23/2006	100	5.375	24	BDWF	0	1.7	0.00	
25	610	8/23/2006	100	5.375	24	PINK	1	1.7	0.60	
92	610	8/23/2006	60	5.375	24	BDWF	0	1.0	0.00	
92	610	8/23/2006	60	5.375	24	PINK	1	1.0	1.00	
25	610	8/28/2006	100	5.375	24	BDWF	0	1.7	0.00	
25	610	8/28/2006	100	5.375	24	CHIN	1	1.7	0.60	
92	610	8/28/2006	60	5.375	18	BDWF	4	0.8	5.33	
92	610	8/28/2006	60	5.375	18	CHUM	1	0.8	1.33	
25	610	8/28/2006	100	5.375	6	BDWF	3	0.4	7.20	

Appendix Table 1. Catch and effort data from 2006 broad whitefish fishing season at Nuiqsut,

Fisher Code	Fishing Area	Date	Net Length (ft)	Mesh (inches)	Set Duration (hrs)	Species	Catch	Effort (net-days	CPUE (fish/ 24 hrs)	Notes
92	610	8/28/2006	60	5.375	7	BDWF	3	0.3	10.29	
92	610	8/29/2006	60	5.375	18	BDWF	2	0.8	2.67	
92	610	8/29/2006	60	5.375	18	CHUM	4	0.8	5.33	
25	610	8/29/2006	100	5.375	18	BDWF	2	1.3	1.60	
25	610	8/29/2006	100	5.375	18	CHUM	2	1.3	1.60	

BDWF = broad whitefish
HBWF = humpback whiefish
CHUM = chum salmon
PINK = pink salmon
CHIN = chinook salmon
SOCK = sockeye salmon

50 = Main River upstream from Nigliq Channel
610 = Upper Nigliq area
650 = Nanuk area

APPENDIX B

Tissue Hydrocarbon Data

Analytical Resources, Incorporated
Analytical Chemists and Consultants

October 9, 2006

Larry Moulton
MJM Research
lmoulton@rockisland.com

RE: Project: Nuiqsut Broad Whitefish
ARI Job: JV56 & JV58

Dear Larry,

Please find enclosed chain of custody records and analytical results for the above referenced project. Analytical Resources, Inc. accepted 20 fish samples in good condition on September 7, 2006..

The fish samples were prepared and analyzed for SIM PNA's, as requested.

Please refer to the case narrative for anomalies associated with these samples.

Quality control analysis results are included for your review. Copies of the reports and all associated raw data will be kept on file electronically at ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,
ANALYTICAL RESOURCES, INC.

Susan D. Dunnihoo
Client Services Manager
(206) 695-6207
sue@arilabs.com

www.arilabs.com

Enclosures

ANALYTICAL
RESOURCES
INCORPORATED

Case Narrative

Client: MJM Research
Project: Nuiqsut Broad Whitefish
Matrix: Tissue
ARI Job Nos. JV56 & JV58

Sample receipt

Twenty-nine tissue samples were received on September 7, 2006 under ARI Jobs JV56 and JV58. Samples were iced and the cooler temperatures measured by IR thermometer following ARI SOP were -2.2° C, consistent with information that samples were stored frozen. Samples were received in good condition with no discrepancies in paperwork.

SIM PNA by Method 8270

The samples were extracted on 09/18-09/20/2006 and analyzed on 09/26-10/3/2006 within the method recommended holding times for frozen samples.

Samples: The first analysis of the samples showed high lipid content, interfering with internal standard areas. All extracts were returned to extraction for additional cleanups, with the cleanup based on the estimated lipid content, using a Silica Gel fractionation. The second analysis had lower reporting limits and only those results have been included in this report.

There were no other anomalies associated with these samples.

Method Blank: The method blanks were free of contamination.

Surrogates: Surrogate recoveries were within the advisory limits of 30% - 160%

LCS/LCSD: QC samples were also taken through the additional cleanup. All percent recoveries were within the advisory limits of 30% - 160%.

MS/MSD: QC samples were also taken through the additional cleanup. All percent recoveries were within the advisory limits of 30% - 160%.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: JV56	Turn-around Requested:	Page: 1 of 3	
ARI Client Company: NOT Research	Phone: 360-468-4821	Date:	Ice Present? Y
Client Contact: Lawrence Moulton		No. of Coolers: 1	Cooler Temps: -2.2 FROZEN!
Client Project Name: Nuigsut Broad Whitefish			
Client Project #: 0	Samplers: L. Moulton / J. Seigle		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: PAH	Notes/Comments
BDWF-FC-06-01 MUSCLE	7/23/06		TISSUE	1	✓	
BDWF-FC-06-01 LIVER	7/23/06			1	✓	
BDWF-FC-06-01 EGGS	7/23/06			1	✓	
BDWF-FC-06-02 MUSCLE	7/23/06			1	✓	
BDWF-FC-06-02 LIVER	7/23/06			1	✓	
BDWF-FC-06-02 EGGS	7/23/06			1	✓	
BDWF-FC-06-03 MUSCLE	7/23/06			1	✓	
BDWF-FC-06-03 LIVER	7/23/06			1	✓	
BDWF-FC-06-03 EGGS	7/23/06			1	✓	
BDWF-FC-06-04 MUSCLE	7/23/06			1	✓	

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
	(Signature) L C Moulton	(Signature)	(Signature)	(Signature)
	Printed Name: Lawrence Moulton	Printed Name: BRIAN ILeNE	Printed Name:	Printed Name:
	Company: NOT Research	Company: ARI	Company:	Company:
	Date & Time: 9/7/06 10:15	Date & Time: 9/7/06 1015	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: JV56	Turn-around Requested:	Page: 2 of 3	
ARI Client Company: LGL Research	Phone: 360-468-4821	Date:	Ice Present? Y
Client Contact: Lawrence Moulton		No. of Coolers: 1	Cooler Temps: -2.2 Frozen!
Client Project Name: Nuiqsut Broad whitefish			
Client Project #:	Samplers: L. Moulton / J. Seigle		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: PAH	Notes/Comments
BDWF-FC-06-04 LIVER	7/23/06		TISSUE	1	✓	
BDWF-FC-06-05 muscle	7/24/06	2330			✓	
BDWF-FC-06-05 liver	7/24/06	2330			✓	
BDWF-FC-06-05 eggs	7/24/06	2330			✓	
BDWF-NC-06-06 muscle	8/2/06	2330			✓	
BDWF-NC-06-06 liver	8/2/06	2330			✓	
BDWF-NC-06-06 eggs	8/2/06	2330			✓	
BDWF-NC-06-07 muscle	8/2/06	2330			✓	
BDWF-NC-06-07 liver	8/2/06	2330			✓	
BDWF-NC-06-07 eggs	8/2/06	2330			✓	

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	L Moulton			
	Printed Name: Lawrence Moulton	Printed Name: BRIAN MCNEEL	Printed Name:	Printed Name:
	Company: LGL Research	Company: ARI	Company:	Company:
	Date & Time: 9/7/06 1015	Date & Time: 9/7/06 1015	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

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Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 5158	Turn-around Requested:	Page: 3 of 3	
ARI Client Company: MJM Research	Phone: 360-468-4821	Date:	Ice Present? Y
Client Contact: Lawrence Moulton		No. of Coolers: 1	Cooler Temps: -2.2 Frozen!
Client Project Name: Nuiqsut Broad Whitefish			
Client Project #:	Samplers: L. Moulton / J. Seigle		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: PAH	Notes/Comments
BDWF-NC-06-08 muscle	8-2-06	2330	tissue	1	✓	
BDWF-NC-06-08 liver	8-2-06	2330			✓	
BDWF-NC-06-09 muscle	8-2-06	2330			✓	
BDWF-NC-06-09 liver	8-2-06	2330			✓	
BDWF-NC-06-09 eggs	8-2-06	2330			✓	
BDWF-NC-06-10 muscle	8-2-06	2330			✓	
BDWF-NC-06-10 liver	8-2-06	2330			✓	
BDWF-NC-06-11 muscle	8-2-06	2330			✓	
BDWF-NC-06-11 liver	8-2-06	2330	✓	✓	✓	

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: Lawrence Moulton	Printed Name: Brian Kewel	Printed Name:	Printed Name:
	Company: MJM Research	Company: ARI	Company:	Company:
	Date & Time: 9/7/06 1015	Date & Time: 9/7/06 1015	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Cooler Receipt Form

ANALYTICAL RESOURCES INCORPORATED

ARI Client: ~~MG~~ MJM Research Project Name: Nuiqsut Broad Whitefish

COC NO.: ____ Delivered By: Hand

Tracking NO.: ____ Date: 9/7/06

ARI Job No.: JV56 - JV58 Lims NO.: ____

Preliminary Examination Phase:

1. Were intact, properly signed and dated custody seals attached
   To the outside of the cooler? ..... YES (NO)
2. Were custody papers included with the cooler ..... (YES) NO
3. Were custody papers properly filled out (ink, signed etc.)? ..... (YES) NO
4. Complete custody ~~forms~~ and attach all shipping documents ..... (OK) NA

Cooler Accepted BY: [signature] Date: 9/7/06 Time: 1015

Log-IN Phase:

5. Was a temperature blank include in the cooler? ..... YES NO
6. Record Cooler Temperature ..... FROZEN! -2.2 °C
7. What kind of packing material was used? ..... BW
8. Was sufficient ice used (if appropriate)? ..... (YES) NO
9. Were all bottles sealed in separate plastic bags? ..... YES (NO)
10. Did all bottles arrive in good condition (unbroken)? ..... (YES) NO
11. Were all bottle labels complete and legible? ..... (YES) NO
12. Did all bottle labels and tags agree with custody papers? ..... (YES) NO
13. Were all bottles used correct for the requested analyses? ..... (YES) NO
14. Do any of the analyses (bottles) require preservative?
    (If so, Preservation checklist must be attached) ..... YES (NO)
15. Were all VOA vials free of air bubbles? ..... ~~YES~~ ~~NO~~
16. Was sufficient amount of sample sent in each bottle? ..... (YES) NO
17. Notify Project Manager of any discrepancies or concerns ..... (OK) NA

Cooler Opened By: [signature] Date: 9/7/06 Time 1015

Explain any discrepancies or negative responses:

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS
Page 1 of 1

Sample ID: BDWF-FC-06-01 MUSCLE SAMPLE

Lab Sample ID: JV56A
LIMS ID: 06-16353
Matrix: Tissue
Data Release Authorized: MW
Reported: 10/04/06

QC Report No: JV56-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 07/23/06
Date Received: 09/07/06

Date Extracted: 09/18/06
Date Analyzed: 10/03/06 13:35
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.04 g-as-rec
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	79	< 79 U
91-57-6	2-Methylnaphthalene	79	< 79 U
208-96-8	Acenaphthylene	79	< 79 U
83-32-9	Acenaphthene	79	< 79 U
86-73-7	Fluorene	79	< 79 U
85-01-8	Phenanthrene	79	< 79 U
120-12-7	Anthracene	79	< 79 U
206-44-0	Fluoranthene	79	< 79 U
129-00-0	Pyrene	79	< 79 U
56-55-3	Benzo(a)anthracene	79	< 79 U
218-01-9	Chrysene	79	< 79 U
205-99-2	Benzo(b)fluoranthene	79	< 79 U
207-08-9	Benzo(k)fluoranthene	79	< 79 U
50-32-8	Benzo(a)pyrene	79	< 79 U
193-39-5	Indeno(1,2,3-cd)pyrene	79	< 79 U
53-70-3	Dibenz(a,h)anthracene	79	< 79 U
191-24-2	Benzo(g,h,i)perylene	79	< 79 U
132-64-9	Dibenzofuran	79	< 79 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	78.7%
d14-Dibenzo(a,h)anthracen	88.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS

Sample ID: BDWF-FC-06-01 LIVER SAMPLE

Lab Sample ID: JV56B
LIMS ID: 06-16354
Matrix: Tissue
Data Release Authorized: MW
Reported: 10/04/06

QC Report No: JV56-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 07/23/06
Date Received: 09/07/06

Date Extracted: 09/18/06
Date Analyzed: 10/03/06 14:01
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.01 g-as-rec
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	80	< 80 U
91-57-6	2-Methylnaphthalene	80	< 80 U
208-96-8	Acenaphthylene	80	< 80 U
83-32-9	Acenaphthene	80	< 80 U
86-73-7	Fluorene	80	< 80 U
85-01-8	Phenanthrene	80	< 80 U
120-12-7	Anthracene	80	< 80 U
206-44-0	Fluoranthene	80	< 80 U
129-00-0	Pyrene	80	< 80 U
56-55-3	Benzo(a)anthracene	80	< 80 U
218-01-9	Chrysene	80	< 80 U
205-99-2	Benzo(b)fluoranthene	80	< 80 U
207-08-9	Benzo(k)fluoranthene	80	< 80 U
50-32-8	Benzo(a)pyrene	80	< 80 U
193-39-5	Indeno(1,2,3-cd)pyrene	80	< 80 U
53-70-3	Dibenz(a,h)anthracene	80	< 80 U
191-24-2	Benzo(g,h,i)perylene	80	< 80 U
132-64-9	Dibenzofuran	80	< 80 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	78.7%
d14-Dibenzo(a,h)anthracen	85.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS
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Sample ID: BDWF-FC-06-01 EGGS
SAMPLE

Lab Sample ID: JV56C
LIMS ID: 06-16355
Matrix: Tissue
Data Release Authorized: MW
Reported: 10/04/06

QC Report No: JV56-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 07/23/06
Date Received: 09/07/06

Date Extracted: 09/18/06
Date Analyzed: 10/03/06 14:27
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.01 g-as-rec
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	80	< 80 U
91-57-6	2-Methylnaphthalene	80	< 80 U
208-96-8	Acenaphthylene	80	< 80 U
83-32-9	Acenaphthene	80	< 80 U
86-73-7	Fluorene	80	< 80 U
85-01-8	Phenanthrene	80	< 80 U
120-12-7	Anthracene	80	< 80 U
206-44-0	Fluoranthene	80	< 80 U
129-00-0	Pyrene	80	< 80 U
56-55-3	Benzo(a)anthracene	80	< 80 U
218-01-9	Chrysene	80	< 80 U
205-99-2	Benzo(b)fluoranthene	80	< 80 U
207-08-9	Benzo(k)fluoranthene	80	< 80 U
50-32-8	Benzo(a)pyrene	80	< 80 U
193-39-5	Indeno(1,2,3-cd)pyrene	80	< 80 U
53-70-3	Dibenz(a,h)anthracene	80	< 80 U
191-24-2	Benzo(g,h,i)perylene	80	< 80 U
132-64-9	Dibenzofuran	80	< 80 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	78.7%
d14-Dibenzo(a,h)anthracen	77.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS

Sample ID: BDWF-FC-06-02 MUSCLE SAMPLE

Lab Sample ID: JV56D
LIMS ID: 06-16356
Matrix: Tissue
Data Release Authorized: MW
Reported: 10/04/06

QC Report No: JV56-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 07/23/06
Date Received: 09/07/06

Date Extracted: 09/18/06
Date Analyzed: 10/03/06 14:58
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.05 g-as-rec
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	79	< 79 U
91-57-6	2-Methylnaphthalene	79	< 79 U
208-96-8	Acenaphthylene	79	< 79 U
83-32-9	Acenaphthene	79	< 79 U
86-73-7	Fluorene	79	< 79 U
85-01-8	Phenanthrene	79	< 79 U
120-12-7	Anthracene	79	< 79 U
206-44-0	Fluoranthene	79	< 79 U
129-00-0	Pyrene	79	< 79 U
56-55-3	Benzo(a)anthracene	79	< 79 U
218-01-9	Chrysene	79	< 79 U
205-99-2	Benzo(b)fluoranthene	79	< 79 U
207-08-9	Benzo(k)fluoranthene	79	< 79 U
50-32-8	Benzo(a)pyrene	79	< 79 U
193-39-5	Indeno(1,2,3-cd)pyrene	79	< 79 U
53-70-3	Dibenz(a,h)anthracene	79	< 79 U
191-24-2	Benzo(g,h,i)perylene	79	< 79 U
132-64-9	Dibenzofuran	79	< 79 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	90.7%
d14-Dibenzo(a,h)anthracen	103%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS
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Sample ID: BDWF-FC-06-02 LIVER SAMPLE

Lab Sample ID: JV56E
LIMS ID: 06-16357
Matrix: Tissue
Data Release Authorized: MW
Reported: 10/04/06

QC Report No: JV56-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 07/23/06
Date Received: 09/07/06

Date Extracted: 09/18/06
Date Analyzed: 10/03/06 15:23
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.00 g-as-rec
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	80	< 80 U
91-57-6	2-Methylnaphthalene	80	< 80 U
208-96-8	Acenaphthylene	80	< 80 U
83-32-9	Acenaphthene	80	< 80 U
86-73-7	Fluorene	80	< 80 U
85-01-8	Phenanthrene	80	< 80 U
120-12-7	Anthracene	80	< 80 U
206-44-0	Fluoranthene	80	< 80 U
129-00-0	Pyrene	80	< 80 U
56-55-3	Benzo(a)anthracene	80	< 80 U
218-01-9	Chrysene	80	< 80 U
205-99-2	Benzo(b)fluoranthene	80	< 80 U
207-08-9	Benzo(k)fluoranthene	80	< 80 U
50-32-8	Benzo(a)pyrene	80	< 80 U
193-39-5	Indeno(1,2,3-cd)pyrene	80	< 80 U
53-70-3	Dibenz(a,h)anthracene	80	< 80 U
191-24-2	Benzo(g,h,i)perylene	80	< 80 U
132-64-9	Dibenzofuran	80	< 80 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	74.7%
d14-Dibenzo(a,h)anthracen	78.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS
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Sample ID: BDWF-FC-06-02 LIVER MATRIX SPIKE

Lab Sample ID: JV56E
LIMS ID: 06-16357
Matrix: Tissue
Data Release Authorized:
Reported: 10/04/06

QC Report No: JV56-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 07/23/06
Date Received: 09/07/06

Date Extracted: 09/18/06
Date Analyzed: 10/03/06 15:48
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.02 g-as-rec
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	80	< 80 U
91-57-6	2-Methylnaphthalene	80	< 80 U
208-96-8	Acenaphthylene	80	< 80 U
83-32-9	Acenaphthene	80	< 80 U
86-73-7	Fluorene	80	< 80 U
85-01-8	Phenanthrene	80	---
120-12-7	Anthracene	80	< 80 U
206-44-0	Fluoranthene	80	< 80 U
129-00-0	Pyrene	80	< 80 U
56-55-3	Benzo(a)anthracene	80	< 80 U
218-01-9	Chrysene	80	---
205-99-2	Benzo(b)fluoranthene	80	< 80 U
207-08-9	Benzo(k)fluoranthene	80	---
50-32-8	Benzo(a)pyrene	80	< 80 U
193-39-5	Indeno(1,2,3-cd)pyrene	80	< 80 U
53-70-3	Dibenz(a,h)anthracene	80	< 80 U
191-24-2	Benzo(g,h,i)perylene	80	< 80 U
132-64-9	Dibenzofuran	80	< 80 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	77.3%
d14-Dibenzo(a,h)anthracen	84.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS
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Sample ID: BDWF-FC-06-02 LIVER MATRIX SPIKE DUPLICATE

Lab Sample ID: JV56E
LIMS ID: 06-16357
Matrix: Tissue
Data Release Authorized:
Reported: 10/04/06

QC Report No: JV56-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 07/23/06
Date Received: 09/07/06

Date Extracted: 09/18/06
Date Analyzed: 10/03/06 16:13
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.04 g-as-rec
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	79	< 79 U
91-57-6	2-Methylnaphthalene	79	< 79 U
208-96-8	Acenaphthylene	79	< 79 U
83-32-9	Acenaphthene	79	< 79 U
86-73-7	Fluorene	79	< 79 U
85-01-8	Phenanthrene	79	---
120-12-7	Anthracene	79	< 79 U
206-44-0	Fluoranthene	79	< 79 U
129-00-0	Pyrene	79	< 79 U
56-55-3	Benzo(a)anthracene	79	< 79 U
218-01-9	Chrysene	79	---
205-99-2	Benzo(b)fluoranthene	79	< 79 U
207-08-9	Benzo(k)fluoranthene	79	---
50-32-8	Benzo(a)pyrene	79	< 79 U
193-39-5	Indeno(1,2,3-cd)pyrene	79	< 79 U
53-70-3	Dibenz(a,h)anthracene	79	< 79 U
191-24-2	Benzo(g,h,i)perylene	79	< 79 U
132-64-9	Dibenzofuran	79	< 79 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	78.7%
d14-Dibenzo(a,h)anthracen	86.7%

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS

ANALYTICAL RESOURCES INCORPORATED

Sample ID: BDWF-FC-06-02 EGGS SAMPLE

Lab Sample ID: JV56F
LIMS ID: 06-16358
Matrix: Tissue
Data Release Authorized: MW
Reported: 10/04/06

QC Report No: JV56-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 07/23/06
Date Received: 09/07/06

Date Extracted: 09/18/06
Date Analyzed: 10/03/06 16:37
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.06 g-as-rec
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	79	< 79 U
91-57-6	2-Methylnaphthalene	79	< 79 U
208-96-8	Acenaphthylene	79	< 79 U
83-32-9	Acenaphthene	79	< 79 U
86-73-7	Fluorene	79	< 79 U
85-01-8	Phenanthrene	79	< 79 U
120-12-7	Anthracene	79	< 79 U
206-44-0	Fluoranthene	79	< 79 U
129-00-0	Pyrene	79	< 79 U
56-55-3	Benzo(a)anthracene	79	< 79 U
218-01-9	Chrysene	79	< 79 U
205-99-2	Benzo(b)fluoranthene	79	< 79 U
207-08-9	Benzo(k)fluoranthene	79	< 79 U
50-32-8	Benzo(a)pyrene	79	< 79 U
193-39-5	Indeno(1,2,3-cd)pyrene	79	< 79 U
53-70-3	Dibenz(a,h)anthracene	79	< 79 U
191-24-2	Benzo(g,h,i)perylene	79	< 79 U
132-64-9	Dibenzofuran	79	< 79 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	77.3%
d14-Dibenzo(a,h)anthracen	73.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS

Sample ID: BDWF-FC-06-03 MUSCLE SAMPLE

Lab Sample ID: JV56G
LIMS ID: 06-16359
Matrix: Tissue
Data Release Authorized: MW
Reported: 10/04/06

QC Report No: JV56-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 07/23/06
Date Received: 09/07/06

Date Extracted: 09/18/06
Date Analyzed: 10/03/06 17:02
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.04 g-as-rec
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	79	< 79 U
91-57-6	2-Methylnaphthalene	79	< 79 U
208-96-8	Acenaphthylene	79	< 79 U
83-32-9	Acenaphthene	79	< 79 U
86-73-7	Fluorene	79	< 79 U
85-01-8	Phenanthrene	79	< 79 U
120-12-7	Anthracene	79	< 79 U
206-44-0	Fluoranthene	79	< 79 U
129-00-0	Pyrene	79	< 79 U
56-55-3	Benzo(a)anthracene	79	< 79 U
218-01-9	Chrysene	79	< 79 U
205-99-2	Benzo(b)fluoranthene	79	< 79 U
207-08-9	Benzo(k)fluoranthene	79	< 79 U
50-32-8	Benzo(a)pyrene	79	< 79 U
193-39-5	Indeno(1,2,3-cd)pyrene	79	< 79 U
53-70-3	Dibenz(a,h)anthracene	79	< 79 U
191-24-2	Benzo(g,h,i)perylene	79	< 79 U
132-64-9	Dibenzofuran	79	< 79 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	77.3%
d14-Dibenzo(a,h)anthracen	84.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS

Sample ID: BDWF-FC-06-03 LIVER SAMPLE

Lab Sample ID: JV56H
LIMS ID: 06-16360
Matrix: Tissue
Data Release Authorized: MW
Reported: 10/04/06

QC Report No: JV56-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 07/23/06
Date Received: 09/07/06

Date Extracted: 09/18/06
Date Analyzed: 10/03/06 17:27
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.06 g-as-rec
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	79	< 79 U
91-57-6	2-Methylnaphthalene	79	< 79 U
208-96-8	Acenaphthylene	79	< 79 U
83-32-9	Acenaphthene	79	< 79 U
86-73-7	Fluorene	79	< 79 U
85-01-8	Phenanthrene	79	< 79 U
120-12-7	Anthracene	79	< 79 U
206-44-0	Fluoranthene	79	< 79 U
129-00-0	Pyrene	79	< 79 U
56-55-3	Benzo(a)anthracene	79	< 79 U
218-01-9	Chrysene	79	< 79 U
205-99-2	Benzo(b)fluoranthene	79	< 79 U
207-08-9	Benzo(k)fluoranthene	79	< 79 U
50-32-8	Benzo(a)pyrene	79	< 79 U
193-39-5	Indeno(1,2,3-cd)pyrene	79	< 79 U
53-70-3	Dibenz(a,h)anthracene	79	< 79 U
191-24-2	Benzo(g,h,i)perylene	79	< 79 U
132-64-9	Dibenzofuran	79	< 79 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	77.3%
d14-Dibenzo(a,h)anthracen	86.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS

Sample ID: BDWF-FC-06-03 EGGS
SAMPLE

Lab Sample ID: JV56I
LIMS ID: 06-16361
Matrix: Tissue
Data Release Authorized: MW
Reported: 10/04/06

QC Report No: JV56-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 07/23/06
Date Received: 09/07/06

Date Extracted: 09/18/06
Date Analyzed: 10/03/06 17:52
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.02 g-as-rec
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	80	< 80 U
91-57-6	2-Methylnaphthalene	80	< 80 U
208-96-8	Acenaphthylene	80	< 80 U
83-32-9	Acenaphthene	80	< 80 U
86-73-7	Fluorene	80	< 80 U
85-01-8	Phenanthrene	80	< 80 U
120-12-7	Anthracene	80	< 80 U
206-44-0	Fluoranthene	80	< 80 U
129-00-0	Pyrene	80	< 80 U
56-55-3	Benzo(a)anthracene	80	< 80 U
218-01-9	Chrysene	80	< 80 U
205-99-2	Benzo(b)fluoranthene	80	< 80 U
207-08-9	Benzo(k)fluoranthene	80	< 80 U
50-32-8	Benzo(a)pyrene	80	< 80 U
193-39-5	Indeno(1,2,3-cd)pyrene	80	< 80 U
53-70-3	Dibenz(a,h)anthracene	80	< 80 U
191-24-2	Benzo(g,h,i)perylene	80	< 80 U
132-64-9	Dibenzofuran	80	< 80 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	80.0%
d14-Dibenzo(a,h)anthracen	80.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS
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Sample ID: BDWF-FC-06-04 MUSCLE SAMPLE

Lab Sample ID: JV56J
LIMS ID: 06-16362
Matrix: Tissue
Data Release Authorized: MW
Reported: 10/04/06

QC Report No: JV56-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 07/23/06
Date Received: 09/07/06

Date Extracted: 09/18/06
Date Analyzed: 10/03/06 18:17
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.04 g-as-rec
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	79	< 79 U
91-57-6	2-Methylnaphthalene	79	< 79 U
208-96-8	Acenaphthylene	79	< 79 U
83-32-9	Acenaphthene	79	< 79 U
86-73-7	Fluorene	79	< 79 U
85-01-8	Phenanthrene	79	< 79 U
120-12-7	Anthracene	79	< 79 U
206-44-0	Fluoranthene	79	< 79 U
129-00-0	Pyrene	79	< 79 U
56-55-3	Benzo(a)anthracene	79	< 79 U
218-01-9	Chrysene	79	< 79 U
205-99-2	Benzo(b)fluoranthene	79	< 79 U
207-08-9	Benzo(k)fluoranthene	79	< 79 U
50-32-8	Benzo(a)pyrene	79	< 79 U
193-39-5	Indeno(1,2,3-cd)pyrene	79	< 79 U
53-70-3	Dibenz(a,h)anthracene	79	< 79 U
191-24-2	Benzo(g,h,i)perylene	79	< 79 U
132-64-9	Dibenzofuran	79	< 79 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	72.0%
d14-Dibenzo(a,h)anthracen	76.0%

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS

ANALYTICAL RESOURCES INCORPORATED

Sample ID: BDWF-FC-06-04 LIVER SAMPLE

Lab Sample ID: JV56K
LIMS ID: 06-16363
Matrix: Tissue
Data Release Authorized:
Reported: 10/04/06

QC Report No: JV56-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 07/23/06
Date Received: 09/07/06

Date Extracted: 09/18/06
Date Analyzed: 10/03/06 18:41
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.06 g-as-rec
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	79	< 79 U
91-57-6	2-Methylnaphthalene	79	< 79 U
208-96-8	Acenaphthylene	79	< 79 U
83-32-9	Acenaphthene	79	< 79 U
86-73-7	Fluorene	79	< 79 U
85-01-8	Phenanthrene	79	< 79 U
120-12-7	Anthracene	79	< 79 U
206-44-0	Fluoranthene	79	< 79 U
129-00-0	Pyrene	79	< 79 U
56-55-3	Benzo(a)anthracene	79	< 79 U
218-01-9	Chrysene	79	< 79 U
205-99-2	Benzo(b)fluoranthene	79	< 79 U
207-08-9	Benzo(k)fluoranthene	79	< 79 U
50-32-8	Benzo(a)pyrene	79	< 79 U
193-39-5	Indeno(1,2,3-cd)pyrene	79	< 79 U
53-70-3	Dibenz(a,h)anthracene	79	< 79 U
191-24-2	Benzo(g,h,i)perylene	79	< 79 U
132-64-9	Dibenzofuran	79	< 79 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	81.3%
d14-Dibenzo(a,h)anthracen	80.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS
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Sample ID: BDWF-FC-06-05 MUSCLE SAMPLE

Lab Sample ID: JV56L
LIMS ID: 06-16364
Matrix: Tissue
Data Release Authorized: MW
Reported: 10/04/06

QC Report No: JV56-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 07/24/06
Date Received: 09/07/06

Date Extracted: 09/18/06
Date Analyzed: 10/03/06 19:06
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.00 g-as-rec
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	80	< 80 U
91-57-6	2-Methylnaphthalene	80	< 80 U
208-96-8	Acenaphthylene	80	< 80 U
83-32-9	Acenaphthene	80	< 80 U
86-73-7	Fluorene	80	< 80 U
85-01-8	Phenanthrene	80	< 80 U
120-12-7	Anthracene	80	< 80 U
206-44-0	Fluoranthene	80	< 80 U
129-00-0	Pyrene	80	< 80 U
56-55-3	Benzo(a)anthracene	80	< 80 U
218-01-9	Chrysene	80	< 80 U
205-99-2	Benzo(b)fluoranthene	80	< 80 U
207-08-9	Benzo(k)fluoranthene	80	< 80 U
50-32-8	Benzo(a)pyrene	80	< 80 U
193-39-5	Indeno(1,2,3-cd)pyrene	80	< 80 U
53-70-3	Dibenz(a,h)anthracene	80	< 80 U
191-24-2	Benzo(g,h,i)perylene	80	< 80 U
132-64-9	Dibenzofuran	80	< 80 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	65.3%
d14-Dibenzo(a,h)anthracen	69.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS

Sample ID: BDWF-FC-06-05 LIVER SAMPLE

Lab Sample ID: JV56M
LIMS ID: 06-16365
Matrix: Tissue
Data Release Authorized: MW
Reported: 10/04/06

QC Report No: JV56-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 07/24/06
Date Received: 09/07/06

Date Extracted: 09/18/06
Date Analyzed: 10/03/06 19:31
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.01 g-as-rec
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	80	< 80 U
91-57-6	2-Methylnaphthalene	80	< 80 U
208-96-8	Acenaphthylene	80	< 80 U
83-32-9	Acenaphthene	80	< 80 U
86-73-7	Fluorene	80	< 80 U
85-01-8	Phenanthrene	80	< 80 U
120-12-7	Anthracene	80	< 80 U
206-44-0	Fluoranthene	80	< 80 U
129-00-0	Pyrene	80	< 80 U
56-55-3	Benzo(a)anthracene	80	< 80 U
218-01-9	Chrysene	80	< 80 U
205-99-2	Benzo(b)fluoranthene	80	< 80 U
207-08-9	Benzo(k)fluoranthene	80	< 80 U
50-32-8	Benzo(a)pyrene	80	< 80 U
193-39-5	Indeno(1,2,3-cd)pyrene	80	< 80 U
53-70-3	Dibenz(a,h)anthracene	80	< 80 U
191-24-2	Benzo(g,h,i)perylene	80	< 80 U
132-64-9	Dibenzofuran	80	< 80 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	85.3%
d14-Dibenzo(a,h)anthracen	82.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS

Sample ID: BDWF-FC-06-05 EGGS
SAMPLE

Lab Sample ID: JV56N
LIMS ID: 06-16366
Matrix: Tissue
Data Release Authorized: MW
Reported: 10/04/06

QC Report No: JV56-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 07/24/06
Date Received: 09/07/06

Date Extracted: 09/18/06
Date Analyzed: 10/03/06 19:55
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.03 g-as-rec
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	80	< 80 U
91-57-6	2-Methylnaphthalene	80	< 80 U
208-96-8	Acenaphthylene	80	< 80 U
83-32-9	Acenaphthene	80	< 80 U
86-73-7	Fluorene	80	< 80 U
85-01-8	Phenanthrene	80	< 80 U
120-12-7	Anthracene	80	< 80 U
206-44-0	Fluoranthene	80	< 80 U
129-00-0	Pyrene	80	< 80 U
56-55-3	Benzo(a)anthracene	80	< 80 U
218-01-9	Chrysene	80	< 80 U
205-99-2	Benzo(b)fluoranthene	80	< 80 U
207-08-9	Benzo(k)fluoranthene	80	< 80 U
50-32-8	Benzo(a)pyrene	80	< 80 U
193-39-5	Indeno(1,2,3-cd)pyrene	80	< 80 U
53-70-3	Dibenz(a,h)anthracene	80	< 80 U
191-24-2	Benzo(g,h,i)perylene	80	< 80 U
132-64-9	Dibenzofuran	80	< 80 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	92.0%
d14-Dibenzo(a,h)anthracen	69.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS

Sample ID: BDWF-NC-06-06 MUSCLE SAMPLE

Lab Sample ID: JV560
LIMS ID: 06-16367
Matrix: Tissue
Data Release Authorized:
Reported: 10/04/06

QC Report No: JV56-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 08/02/06
Date Received: 09/07/06

Date Extracted: 09/18/06
Date Analyzed: 10/03/06 20:20
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.04 g-as-rec
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	79	< 79 U
91-57-6	2-Methylnaphthalene	79	< 79 U
208-96-8	Acenaphthylene	79	< 79 U
83-32-9	Acenaphthene	79	< 79 U
86-73-7	Fluorene	79	< 79 U
85-01-8	Phenanthrene	79	< 79 U
120-12-7	Anthracene	79	< 79 U
206-44-0	Fluoranthene	79	< 79 U
129-00-0	Pyrene	79	< 79 U
56-55-3	Benzo(a)anthracene	79	< 79 U
218-01-9	Chrysene	79	< 79 U
205-99-2	Benzo(b)fluoranthene	79	< 79 U
207-08-9	Benzo(k)fluoranthene	79	< 79 U
50-32-8	Benzo(a)pyrene	79	< 79 U
193-39-5	Indeno(1,2,3-cd)pyrene	79	< 79 U
53-70-3	Dibenz(a,h)anthracene	79	< 79 U
191-24-2	Benzo(g,h,i)perylene	79	< 79 U
132-64-9	Dibenzofuran	79	< 79 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	76.0%
d14-Dibenzo(a,h)anthracen	84.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS

Sample ID: BDWF-NC-06-06 LIVER SAMPLE

Lab Sample ID: JV56P
LIMS ID: 06-16368
Matrix: Tissue
Data Release Authorized: MW
Reported: 10/04/06

QC Report No: JV56-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 08/02/06
Date Received: 09/07/06

Date Extracted: 09/18/06
Date Analyzed: 10/03/06 20:44
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.00 g-as-rec
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	80	< 80 U
91-57-6	2-Methylnaphthalene	80	< 80 U
208-96-8	Acenaphthylene	80	< 80 U
83-32-9	Acenaphthene	80	< 80 U
86-73-7	Fluorene	80	< 80 U
85-01-8	Phenanthrene	80	< 80 U
120-12-7	Anthracene	80	< 80 U
206-44-0	Fluoranthene	80	< 80 U
129-00-0	Pyrene	80	< 80 U
56-55-3	Benzo(a)anthracene	80	< 80 U
218-01-9	Chrysene	80	< 80 U
205-99-2	Benzo(b)fluoranthene	80	< 80 U
207-08-9	Benzo(k)fluoranthene	80	< 80 U
50-32-8	Benzo(a)pyrene	80	< 80 U
193-39-5	Indeno(1,2,3-cd)pyrene	80	< 80 U
53-70-3	Dibenz(a,h)anthracene	80	< 80 U
191-24-2	Benzo(g,h,i)perylene	80	< 80 U
132-64-9	Dibenzofuran	80	< 80 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	81.3%
d14-Dibenzo(a,h)anthracen	78.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS
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Sample ID: BDWF-NC-06-06 EGGS SAMPLE

Lab Sample ID: JV56Q
LIMS ID: 06-16369
Matrix: Tissue
Data Release Authorized: MW
Reported: 10/04/06

QC Report No: JV56-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 08/02/06
Date Received: 09/07/06

Date Extracted: 09/18/06
Date Analyzed: 10/03/06 21:09
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.05 g-as-rec
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	79	< 79 U
91-57-6	2-Methylnaphthalene	79	< 79 U
208-96-8	Acenaphthylene	79	< 79 U
83-32-9	Acenaphthene	79	< 79 U
86-73-7	Fluorene	79	< 79 U
85-01-8	Phenanthrene	79	< 79 U
120-12-7	Anthracene	79	< 79 U
206-44-0	Fluoranthene	79	< 79 U
129-00-0	Pyrene	79	< 79 U
56-55-3	Benzo(a)anthracene	79	< 79 U
218-01-9	Chrysene	79	< 79 U
205-99-2	Benzo(b)fluoranthene	79	< 79 U
207-08-9	Benzo(k)fluoranthene	79	< 79 U
50-32-8	Benzo(a)pyrene	79	< 79 U
193-39-5	Indeno(1,2,3-cd)pyrene	79	< 79 U
53-70-3	Dibenz(a,h)anthracene	79	< 79 U
191-24-2	Benzo(g,h,i)perylene	79	< 79 U
132-64-9	Dibenzofuran	79	< 79 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	78.7%
d14-Dibenzo(a,h)anthracen	64.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS
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Sample ID: BDWF-NC-06-07 MUSCLE SAMPLE

Lab Sample ID: JV56R
LIMS ID: 06-16370
Matrix: Tissue
Data Release Authorized: MW
Reported: 10/04/06

QC Report No: JV56-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 08/02/06
Date Received: 09/07/06

Date Extracted: 09/18/06
Date Analyzed: 10/03/06 21:33
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.04 g-as-rec
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	79	< 79 U
91-57-6	2-Methylnaphthalene	79	< 79 U
208-96-8	Acenaphthylene	79	< 79 U
83-32-9	Acenaphthene	79	< 79 U
86-73-7	Fluorene	79	< 79 U
85-01-8	Phenanthrene	79	< 79 U
120-12-7	Anthracene	79	< 79 U
206-44-0	Fluoranthene	79	< 79 U
129-00-0	Pyrene	79	< 79 U
56-55-3	Benzo(a)anthracene	79	< 79 U
218-01-9	Chrysene	79	< 79 U
205-99-2	Benzo(b)fluoranthene	79	< 79 U
207-08-9	Benzo(k)fluoranthene	79	< 79 U
50-32-8	Benzo(a)pyrene	79	< 79 U
193-39-5	Indeno(1,2,3-cd)pyrene	79	< 79 U
53-70-3	Dibenz(a,h)anthracene	79	< 79 U
191-24-2	Benzo(g,h,i)perylene	79	< 79 U
132-64-9	Dibenzofuran	79	< 79 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	81.3%
d14-Dibenzo(a,h)anthracen	90.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
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Sample ID: BDWF-NC-06-07 LIVER SAMPLE

Lab Sample ID: JV56S
LIMS ID: 06-16371
Matrix: Tissue
Data Release Authorized:
Reported: 10/04/06

QC Report No: JV56-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 08/02/06
Date Received: 09/07/06

Date Extracted: 09/18/06
Date Analyzed: 10/03/06 21:58
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.04 g-as-rec
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	79	< 79 U
91-57-6	2-Methylnaphthalene	79	< 79 U
208-96-8	Acenaphthylene	79	< 79 U
83-32-9	Acenaphthene	79	< 79 U
86-73-7	Fluorene	79	< 79 U
85-01-8	Phenanthrene	79	< 79 U
120-12-7	Anthracene	79	< 79 U
206-44-0	Fluoranthene	79	< 79 U
129-00-0	Pyrene	79	< 79 U
56-55-3	Benzo(a)anthracene	79	< 79 U
218-01-9	Chrysene	79	< 79 U
205-99-2	Benzo(b)fluoranthene	79	< 79 U
207-08-9	Benzo(k)fluoranthene	79	< 79 U
50-32-8	Benzo(a)pyrene	79	< 79 U
193-39-5	Indeno(1,2,3-cd)pyrene	79	< 79 U
53-70-3	Dibenz(a,h)anthracene	79	< 79 U
191-24-2	Benzo(g,h,i)perylene	79	< 79 U
132-64-9	Dibenzofuran	79	< 79 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	73.3%
d14-Dibenzo(a,h)anthracen	74.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS
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Sample ID: BDWF-NC-06-07 EGGS
SAMPLE

Lab Sample ID: JV56T
LIMS ID: 06-16372
Matrix: Tissue
Data Release Authorized:
Reported: 10/04/06

QC Report No: JV56-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 08/02/06
Date Received: 09/07/06

Date Extracted: 09/18/06
Date Analyzed: 10/03/06 22:23
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.02 g-as-rec
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	80	< 80 U
91-57-6	2-Methylnaphthalene	80	< 80 U
208-96-8	Acenaphthylene	80	< 80 U
83-32-9	Acenaphthene	80	< 80 U
86-73-7	Fluorene	80	< 80 U
85-01-8	Phenanthrene	80	< 80 U
120-12-7	Anthracene	80	< 80 U
206-44-0	Fluoranthene	80	< 80 U
129-00-0	Pyrene	80	< 80 U
56-55-3	Benzo(a)anthracene	80	< 80 U
218-01-9	Chrysene	80	< 80 U
205-99-2	Benzo(b)fluoranthene	80	< 80 U
207-08-9	Benzo(k)fluoranthene	80	< 80 U
50-32-8	Benzo(a)pyrene	80	< 80 U
193-39-5	Indeno(1,2,3-cd)pyrene	80	< 80 U
53-70-3	Dibenz(a,h)anthracene	80	< 80 U
191-24-2	Benzo(g,h,i)perylene	80	< 80 U
132-64-9	Dibenzofuran	80	< 80 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	74.7%
d14-Dibenzo(a,h)anthracen	61.3%

ANALYTICAL RESOURCES INCORPORATED

SIM SW8270 SURROGATE RECOVERY SUMMARY

Matrix: Tissue

QC Report No: JV56-MJM Research
Project: NUIQSUT BROAD WHITEFISH

Client ID	MNP	DBA	TOT OUT
BDWF-FC-06-01 MUSCLE	78.7%	88.0%	0
BDWF-FC-06-01 LIVER	78.7%	85.3%	0
BDWF-FC-06-01 EGGS	78.7%	77.3%	0
BDWF-FC-06-02 MUSCLE	90.7%	103%	0
MB-091806	64.0%	90.7%	0
LCS-091806	72.0%	86.7%	0
BDWF-FC-06-02 LIVER	74.7%	78.7%	0
BDWF-FC-06-02 LIVER M	77.3%	84.0%	0
BDWF-FC-06-02 LIVER M	78.7%	86.7%	0
BDWF-FC-06-02 EGGS	77.3%	73.3%	0
BDWF-FC-06-03 MUSCLE	77.3%	84.0%	0
BDWF-FC-06-03 LIVER	77.3%	86.7%	0
BDWF-FC-06-03 EGGS	80.0%	80.0%	0
BDWF-FC-06-04 MUSCLE	72.0%	76.0%	0
BDWF-FC-06-04 LIVER	81.3%	80.0%	0
BDWF-FC-06-05 MUSCLE	65.3%	69.3%	0
BDWF-FC-06-05 LIVER	85.3%	82.7%	0
BDWF-FC-06-05 EGGS	92.0%	69.3%	0
BDWF-NC-06-06 MUSCLE	76.0%	84.0%	0
BDWF-NC-06-06 LIVER	81.3%	78.7%	0
BDWF-NC-06-06 EGGS	78.7%	64.0%	0
BDWF-NC-06-07 MUSCLE	81.3%	90.7%	0
BDWF-NC-06-07 LIVER	73.3%	74.7%	0
BDWF-NC-06-07 EGGS	74.7%	61.3%	0

	LCS/MB LIMITS (Advisory)	QC LIMITS (Advisory)
(MNP) = d10-2-Methylnaphthalene	(30-160)	(30-160)
(DBA) = d14-Dibenzo(a,h)anthracene	(30-160)	(30-160)

Prep Method: TissM
Log Number Range: 06-16353 to 06-16372

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS

Sample ID: LCS-091806
LAB CONTROL SAMPLE

Lab Sample ID: LCS-091806
LIMS ID: 06-16357
Matrix: Tissue
Data Release Authorized:
Reported: 10/04/06

QC Report No: JV56-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: NA
Date Received: NA

Date Extracted: 09/18/06
Date Analyzed LCS: 10/03/06 13:11
Instrument/Analyst LCS: NT1/VTS

Sample Amount LCS: 5.00 g-as-rec
Final Extract Volume LCS: 4.0 mL
Dilution Factor LCS: 1.00

Analyte	LCS	Spike Added	Recovery
Naphthalene	448	600	74.7%
Acenaphthylene	416	600	69.3%
Acenaphthene	440	600	73.3%
Fluorene	496	600	82.7%
Phenanthrene	512	600	85.3%
Anthracene	480	600	80.0%
Fluoranthene	536	600	89.3%
Pyrene	496	600	82.7%
Benzo(a)anthracene	520	600	86.7%
Chrysene	512	600	85.3%
Benzo(b)fluoranthene	464	600	77.3%
Benzo(k)fluoranthene	568	600	94.7%
Benzo(a)pyrene	488	600	81.3%
Indeno(1,2,3-cd)pyrene	512	600	85.3%
Dibenz(a,h)anthracene	544	600	90.7%
Benzo(g,h,i)perylene	512	600	85.3%
Dibenzofuran	432	600	72.0%

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	72.0%
d14-Dibenzo(a,h)anthracen	86.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS
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Sample ID: BDWF-FC-06-02 LIVER
MATRIX SPIKE

Lab Sample ID: JV56E
LIMS ID: 06-16357
Matrix: Tissue
Data Release Authorized: MW
Reported: 10/04/06

QC Report No: JV56-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 07/23/06
Date Received: 09/07/06

Date Extracted MS/MSD: 09/18/06

Date Analyzed MS: 10/03/06 15:48
MSD: 10/03/06 16:13
Instrument/Analyst MS: NT1/VTS
MSD: NT1/VTS

Sample Amount MS: 5.02 g-as-rec
MSD: 5.04 g-as-rec
Final Extract Volume MS: 4.0 mL
MSD: 4.0 mL
Dilution Factor MS: 1.00
MSD: 1.00

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Phenanthrene	< 80.0 U	526	598	88.0%	532	595	89.4%	1.1%
Chrysene	< 80.0 U	526	598	88.0%	548	595	92.1%	4.1%
Benzo(k)fluoranthene	< 80.0 U	486	598	81.3%	484	595	81.3%	0.4%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS

Sample ID: MB-091806
METHOD BLANK

Lab Sample ID: MB-091806
LIMS ID: 06-16357
Matrix: Tissue
Data Release Authorized: MW
Reported: 10/04/06

QC Report No: JV56-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: NA
Date Received: NA

Date Extracted: 09/18/06
Date Analyzed: 10/03/06 12:46
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.00 g-as-rec
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	80	< 80 U
91-57-6	2-Methylnaphthalene	80	< 80 U
208-96-8	Acenaphthylene	80	< 80 U
83-32-9	Acenaphthene	80	< 80 U
86-73-7	Fluorene	80	< 80 U
85-01-8	Phenanthrene	80	< 80 U
120-12-7	Anthracene	80	< 80 U
206-44-0	Fluoranthene	80	< 80 U
129-00-0	Pyrene	80	< 80 U
56-55-3	Benzo(a)anthracene	80	< 80 U
218-01-9	Chrysene	80	< 80 U
205-99-2	Benzo(b)fluoranthene	80	< 80 U
207-08-9	Benzo(k)fluoranthene	80	< 80 U
50-32-8	Benzo(a)pyrene	80	< 80 U
193-39-5	Indeno(1,2,3-cd)pyrene	80	< 80 U
53-70-3	Dibenz(a,h)anthracene	80	< 80 U
191-24-2	Benzo(g,h,i)perylene	80	< 80 U
132-64-9	Dibenzofuran	80	< 80 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	64.0%
d14-Dibenzo(a,h)anthracen	90.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS
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Sample ID: BDWF-NC-06-08 MUSCLE SAMPLE

Lab Sample ID: JV58A
LIMS ID: 06-16377
Matrix: Tissue
Data Release Authorized:
Reported: 09/27/06

QC Report No: JV58-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 08/02/06
Date Received: 09/07/06

Date Extracted: 09/20/06
Date Analyzed: 09/26/06 12:22
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.09 g-as-rec
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	98	< 98 U
91-57-6	2-Methylnaphthalene	98	< 98 U
208-96-8	Acenaphthylene	98	< 98 U
83-32-9	Acenaphthene	98	< 98 U
86-73-7	Fluorene	98	< 98 U
85-01-8	Phenanthrene	98	< 98 U
120-12-7	Anthracene	98	< 98 U
206-44-0	Fluoranthene	98	< 98 U
129-00-0	Pyrene	98	< 98 U
56-55-3	Benzo(a)anthracene	98	< 98 U
218-01-9	Chrysene	98	< 98 U
205-99-2	Benzo(b)fluoranthene	98	< 98 U
207-08-9	Benzo(k)fluoranthene	98	< 98 U
50-32-8	Benzo(a)pyrene	98	< 98 U
193-39-5	Indeno(1,2,3-cd)pyrene	98	< 98 U
53-70-3	Dibenz(a,h)anthracene	98	< 98 U
191-24-2	Benzo(g,h,i)perylene	98	< 98 U
132-64-9	Dibenzofuran	98	< 98 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	75.0%
d14-Dibenzo(a,h)anthracen	58.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS
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Sample ID: BDWF-NC-06-08 LIVER SAMPLE

Lab Sample ID: JV58B
LIMS ID: 06-16378
Matrix: Tissue
Data Release Authorized:
Reported: 09/27/06

QC Report No: JV58-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 08/02/06
Date Received: 09/07/06

Date Extracted: 09/20/06
Date Analyzed: 09/26/06 20:17
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.07 g-as-rec
Final Extract Volume: 5.0 mL
Dilution Factor: 2.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	200	< 200 U
91-57-6	2-Methylnaphthalene	200	< 200 U
208-96-8	Acenaphthylene	200	< 200 U
83-32-9	Acenaphthene	200	< 200 U
86-73-7	Fluorene	200	< 200 U
85-01-8	Phenanthrene	200	< 200 U
120-12-7	Anthracene	200	< 200 U
206-44-0	Fluoranthene	200	< 200 U
129-00-0	Pyrene	200	< 200 U
56-55-3	Benzo(a)anthracene	200	< 200 U
218-01-9	Chrysene	200	< 200 U
205-99-2	Benzo(b)fluoranthene	200	< 200 U
207-08-9	Benzo(k)fluoranthene	200	< 200 U
50-32-8	Benzo(a)pyrene	200	< 200 U
193-39-5	Indeno(1,2,3-cd)pyrene	200	< 200 U
53-70-3	Dibenz(a,h)anthracene	200	< 200 U
191-24-2	Benzo(g,h,i)perylene	200	< 200 U
132-64-9	Dibenzofuran	200	< 200 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	73.3%
d14-Dibenzo(a,h)anthracen	53.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
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Sample ID: BDWF-NC-06-09 MUSCLE SAMPLE

Lab Sample ID: JV58C
LIMS ID: 06-16379
Matrix: Tissue
Data Release Authorized:
Reported: 09/27/06

QC Report No: JV58-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 08/02/06
Date Received: 09/07/06

Date Extracted: 09/20/06
Date Analyzed: 09/26/06 13:40
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.02 g-as-rec
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	100	< 100 U
91-57-6	2-Methylnaphthalene	100	< 100 U
208-96-8	Acenaphthylene	100	< 100 U
83-32-9	Acenaphthene	100	< 100 U
86-73-7	Fluorene	100	< 100 U
85-01-8	Phenanthrene	100	< 100 U
120-12-7	Anthracene	100	< 100 U
206-44-0	Fluoranthene	100	< 100 U
129-00-0	Pyrene	100	< 100 U
56-55-3	Benzo(a)anthracene	100	< 100 U
218-01-9	Chrysene	100	< 100 U
205-99-2	Benzo(b)fluoranthene	100	< 100 U
207-08-9	Benzo(k)fluoranthene	100	< 100 U
50-32-8	Benzo(a)pyrene	100	< 100 U
193-39-5	Indeno(1,2,3-cd)pyrene	100	< 100 U
53-70-3	Dibenz(a,h)anthracene	100	< 100 U
191-24-2	Benzo(g,h,i)perylene	100	< 100 U
132-64-9	Dibenzofuran	100	< 100 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	75.0%
d14-Dibenzo(a,h)anthracen	71.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS
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Sample ID: BDWF-NC-06-09 LIVER SAMPLE

Lab Sample ID: JV58D
LIMS ID: 06-16380
Matrix: Tissue
Data Release Authorized:
Reported: 09/27/06

QC Report No: JV58-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 08/02/06
Date Received: 09/07/06

Date Extracted: 09/20/06
Date Analyzed: 09/26/06 20:42
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.02 g-as-rec
Final Extract Volume: 5.0 mL
Dilution Factor: 2.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	200	< 200 U
91-57-6	2-Methylnaphthalene	200	< 200 U
208-96-8	Acenaphthylene	200	< 200 U
83-32-9	Acenaphthene	200	< 200 U
86-73-7	Fluorene	200	< 200 U
85-01-8	Phenanthrene	200	< 200 U
120-12-7	Anthracene	200	< 200 U
206-44-0	Fluoranthene	200	< 200 U
129-00-0	Pyrene	200	< 200 U
56-55-3	Benzo(a)anthracene	200	< 200 U
218-01-9	Chrysene	200	< 200 U
205-99-2	Benzo(b)fluoranthene	200	< 200 U
207-08-9	Benzo(k)fluoranthene	200	< 200 U
50-32-8	Benzo(a)pyrene	200	< 200 U
193-39-5	Indeno(1,2,3-cd)pyrene	200	< 200 U
53-70-3	Dibenz(a,h)anthracene	200	< 200 U
191-24-2	Benzo(g,h,i)perylene	200	< 200 U
132-64-9	Dibenzofuran	200	< 200 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	76.7%
d14-Dibenzo(a,h)anthracen	63.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS
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Sample ID: BDWF-NC-06-09 EGGS
SAMPLE

Lab Sample ID: JV58E
LIMS ID: 06-16381
Matrix: Tissue
Data Release Authorized:
Reported: 09/27/06

QC Report No: JV58-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 08/02/06
Date Received: 09/07/06

Date Extracted: 09/20/06
Date Analyzed: 09/26/06 21:07
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.12 g-as-rec
Final Extract Volume: 5.0 mL
Dilution Factor: 3.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	290	< 290 U
91-57-6	2-Methylnaphthalene	290	< 290 U
208-96-8	Acenaphthylene	290	< 290 U
83-32-9	Acenaphthene	290	< 290 U
86-73-7	Fluorene	290	< 290 U
85-01-8	Phenanthrene	290	< 290 U
120-12-7	Anthracene	290	< 290 U
206-44-0	Fluoranthene	290	< 290 U
129-00-0	Pyrene	290	< 290 U
56-55-3	Benzo(a)anthracene	290	< 290 U
218-01-9	Chrysene	290	< 290 U
205-99-2	Benzo(b)fluoranthene	290	< 290 U
207-08-9	Benzo(k)fluoranthene	290	< 290 U
50-32-8	Benzo(a)pyrene	290	< 290 U
193-39-5	Indeno(1,2,3-cd)pyrene	290	< 290 U
53-70-3	Dibenz(a,h)anthracene	290	< 290 U
191-24-2	Benzo(g,h,i)perylene	290	< 290 U
132-64-9	Dibenzofuran	290	< 290 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	85.0%
d14-Dibenzo(a,h)anthracen	40.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS **Sample ID: BDWF-NC-06-09 EGGS**
Page 1 of 1 **DILUTION**

Lab Sample ID: JV58E
LIMS ID: 06-16381
Matrix: Tissue
Data Release Authorized:
Reported: 09/27/06

QC Report No: JV58-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 08/02/06
Date Received: 09/07/06

Date Extracted: 09/20/06
Date Analyzed: 09/27/06 13:16
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.12 g-as-rec
Final Extract Volume: 5.0 mL
Dilution Factor: 10.0
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	980	< 980 U
91-57-6	2-Methylnaphthalene	980	< 980 U
208-96-8	Acenaphthylene	980	< 980 U
83-32-9	Acenaphthene	980	< 980 U
86-73-7	Fluorene	980	< 980 U
85-01-8	Phenanthrene	980	< 980 U
120-12-7	Anthracene	980	< 980 U
206-44-0	Fluoranthene	980	< 980 U
129-00-0	Pyrene	980	< 980 U
56-55-3	Benzo(a)anthracene	980	< 980 U
218-01-9	Chrysene	980	< 980 U
205-99-2	Benzo(b)fluoranthene	980	< 980 U
207-08-9	Benzo(k)fluoranthene	980	< 980 U
50-32-8	Benzo(a)pyrene	980	< 980 U
193-39-5	Indeno(1,2,3-cd)pyrene	980	< 980 U
53-70-3	Dibenz(a,h)anthracene	980	< 980 U
191-24-2	Benzo(g,h,i)perylene	980	< 980 U
132-64-9	Dibenzofuran	980	< 980 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	83.3%
d14-Dibenzo(a,h)anthracen	83.3%

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Sample ID: BDWF-NC-06-10 MUSCLE SAMPLE

Lab Sample ID: JV58F
LIMS ID: 06-16382
Matrix: Tissue
Data Release Authorized:
Reported: 09/27/06

QC Report No: JV58-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 08/02/06
Date Received: 09/07/06

Date Extracted: 09/20/06
Date Analyzed: 09/26/06 14:05
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.12 g-as-rec
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	98	< 98 U
91-57-6	2-Methylnaphthalene	98	< 98 U
208-96-8	Acenaphthylene	98	< 98 U
83-32-9	Acenaphthene	98	< 98 U
86-73-7	Fluorene	98	< 98 U
85-01-8	Phenanthrene	98	< 98 U
120-12-7	Anthracene	98	< 98 U
206-44-0	Fluoranthene	98	< 98 U
129-00-0	Pyrene	98	< 98 U
56-55-3	Benzo(a)anthracene	98	< 98 U
218-01-9	Chrysene	98	< 98 U
205-99-2	Benzo(b)fluoranthene	98	< 98 U
207-08-9	Benzo(k)fluoranthene	98	< 98 U
50-32-8	Benzo(a)pyrene	98	< 98 U
193-39-5	Indeno(1,2,3-cd)pyrene	98	< 98 U
53-70-3	Dibenz(a,h)anthracene	98	< 98 U
191-24-2	Benzo(g,h,i)perylene	98	< 98 U
132-64-9	Dibenzofuran	98	< 98 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	71.7%
d14-Dibenzo(a,h)anthracen	48.3%

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Sample ID: BDWF-NC-06-10 LIVER SAMPLE

Lab Sample ID: JV58G
LIMS ID: 06-16383
Matrix: Tissue
Data Release Authorized:
Reported: 09/27/06

QC Report No: JV58-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 08/02/06
Date Received: 09/07/06

Date Extracted: 09/20/06
Date Analyzed: 09/26/06 21:32
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.09 g-as-rec
Final Extract Volume: 5.0 mL
Dilution Factor: 5.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	490	< 490 U
91-57-6	2-Methylnaphthalene	490	< 490 U
208-96-8	Acenaphthylene	490	< 490 U
83-32-9	Acenaphthene	490	< 490 U
86-73-7	Fluorene	490	< 490 U
85-01-8	Phenanthrene	490	< 490 U
120-12-7	Anthracene	490	< 490 U
206-44-0	Fluoranthene	490	< 490 U
129-00-0	Pyrene	490	< 490 U
56-55-3	Benzo(a)anthracene	490	< 490 U
218-01-9	Chrysene	490	< 490 U
205-99-2	Benzo(b)fluoranthene	490	< 490 U
207-08-9	Benzo(k)fluoranthene	490	< 490 U
50-32-8	Benzo(a)pyrene	490	< 490 U
193-39-5	Indeno(1,2,3-cd)pyrene	490	< 490 U
53-70-3	Dibenz(a,h)anthracene	490	< 490 U
191-24-2	Benzo(g,h,i)perylene	490	< 490 U
132-64-9	Dibenzofuran	490	< 490 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	91.7%
d14-Dibenzo(a,h)anthracen	41.7%

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Sample ID: BDWF-NC-06-11 MUSCLE SAMPLE

Lab Sample ID: JV58H
LIMS ID: 06-16384
Matrix: Tissue
Data Release Authorized:
Reported: 09/27/06

QC Report No: JV58-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 08/02/06
Date Received: 09/07/06

Date Extracted: 09/20/06
Date Analyzed: 09/26/06 14:30
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.01 g-as-rec
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	100	< 100 U
91-57-6	2-Methylnaphthalene	100	< 100 U
208-96-8	Acenaphthylene	100	< 100 U
83-32-9	Acenaphthene	100	< 100 U
86-73-7	Fluorene	100	< 100 U
85-01-8	Phenanthrene	100	< 100 U
120-12-7	Anthracene	100	< 100 U
206-44-0	Fluoranthene	100	< 100 U
129-00-0	Pyrene	100	< 100 U
56-55-3	Benzo(a)anthracene	100	< 100 U
218-01-9	Chrysene	100	< 100 U
205-99-2	Benzo(b)fluoranthene	100	< 100 U
207-08-9	Benzo(k)fluoranthene	100	< 100 U
50-32-8	Benzo(a)pyrene	100	< 100 U
193-39-5	Indeno(1,2,3-cd)pyrene	100	< 100 U
53-70-3	Dibenz(a,h)anthracene	100	< 100 U
191-24-2	Benzo(g,h,i)perylene	100	< 100 U
132-64-9	Dibenzofuran	100	< 100 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	81.7%
d14-Dibenzo(a,h)anthracen	51.7%

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Sample ID: BDWF-NC-06-11 LIVER SAMPLE

Lab Sample ID: JV58I
LIMS ID: 06-16385
Matrix: Tissue
Data Release Authorized:
Reported: 09/27/06

QC Report No: JV58-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 08/02/06
Date Received: 09/07/06

Date Extracted: 09/20/06
Date Analyzed: 09/26/06 14:54
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.14 g-as-rec
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	97	< 97 U
91-57-6	2-Methylnaphthalene	97	< 97 U
208-96-8	Acenaphthylene	97	< 97 U
83-32-9	Acenaphthene	97	< 97 U
86-73-7	Fluorene	97	< 97 U
85-01-8	Phenanthrene	97	< 97 U
120-12-7	Anthracene	97	< 97 U
206-44-0	Fluoranthene	97	< 97 U
129-00-0	Pyrene	97	< 97 U
56-55-3	Benzo(a)anthracene	97	< 97 U
218-01-9	Chrysene	97	< 97 U
205-99-2	Benzo(b)fluoranthene	97	< 97 U
207-08-9	Benzo(k)fluoranthene	97	< 97 U
50-32-8	Benzo(a)pyrene	97	< 97 U
193-39-5	Indeno(1,2,3-cd)pyrene	97	< 97 U
53-70-3	Dibenz(a,h)anthracene	97	< 97 U
191-24-2	Benzo(g,h,i)perylene	97	< 97 U
132-64-9	Dibenzofuran	97	< 97 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	83.3%
d14-Dibenzo(a,h)anthracen	63.3%

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Sample ID: BDWF-NC-06-08 MUSCLE
MATRIX SPIKE

Lab Sample ID: JV58A
LIMS ID: 06-16377
Matrix: Tissue
Data Release Authorized:
Reported: 09/27/06

QC Report No: JV58-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 08/02/06
Date Received: 09/07/06

Date Extracted MS/MSD: 09/20/06

Date Analyzed MS: 09/26/06 12:47
MSD: 09/26/06 13:12
Instrument/Analyst MS: NT1/VTS
MSD: NT1/VTS

Sample Amount MS: 5.10 g-as-rec
MSD: 5.09 g-as-rec
Final Extract Volume MS: 5.0 mL
MSD: 5.0 mL
Dilution Factor MS: 1.00
MSD: 1.00

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Phenanthrene	< 98.2 U	500	588	85.0%	521	589	88.5%	4.1%
Chrysene	< 98.2 U	490	588	83.3%	521	589	88.5%	6.1%
Benzo(k)fluoranthene	< 98.2 U	471	588	80.1%	501	589	85.1%	6.2%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

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Sample ID: BDWF-NC-06-08 MUSCLE MATRIX SPIKE

Lab Sample ID: JV58A
LIMS ID: 06-16377
Matrix: Tissue
Data Release Authorized:
Reported: 09/27/06

QC Report No: JV58-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 08/02/06
Date Received: 09/07/06

Date Extracted: 09/20/06
Date Analyzed: 09/26/06 12:47
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.10 g-as-rec
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	98	< 98 U
91-57-6	2-Methylnaphthalene	98	< 98 U
208-96-8	Acenaphthylene	98	< 98 U
83-32-9	Acenaphthene	98	< 98 U
86-73-7	Fluorene	98	< 98 U
85-01-8	Phenanthrene	98	---
120-12-7	Anthracene	98	< 98 U
206-44-0	Fluoranthene	98	< 98 U
129-00-0	Pyrene	98	< 98 U
56-55-3	Benzo(a)anthracene	98	< 98 U
218-01-9	Chrysene	98	---
205-99-2	Benzo(b)fluoranthene	98	< 98 U
207-08-9	Benzo(k)fluoranthene	98	---
50-32-8	Benzo(a)pyrene	98	< 98 U
193-39-5	Indeno(1,2,3-cd)pyrene	98	< 98 U
53-70-3	Dibenz(a,h)anthracene	98	< 98 U
191-24-2	Benzo(g,h,i)perylene	98	< 98 U
132-64-9	Dibenzofuran	98	< 98 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	80.0%
d14-Dibenzo(a,h)anthracen	86.7%

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Sample ID: BDWF-NC-06-08 MUSCLE MATRIX SPIKE DUPLICATE

Lab Sample ID: JV58A
LIMS ID: 06-16377
Matrix: Tissue
Data Release Authorized:
Reported: 09/27/06

QC Report No: JV58-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: 08/02/06
Date Received: 09/07/06

Date Extracted: 09/20/06
Date Analyzed: 09/26/06 13:12
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.09 g-as-rec
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	98	< 98 U
91-57-6	2-Methylnaphthalene	98	< 98 U
208-96-8	Acenaphthylene	98	< 98 U
83-32-9	Acenaphthene	98	< 98 U
86-73-7	Fluorene	98	< 98 U
85-01-8	Phenanthrene	98	---
120-12-7	Anthracene	98	< 98 U
206-44-0	Fluoranthene	98	< 98 U
129-00-0	Pyrene	98	< 98 U
56-55-3	Benzo(a)anthracene	98	< 98 U
218-01-9	Chrysene	98	---
205-99-2	Benzo(b)fluoranthene	98	< 98 U
207-08-9	Benzo(k)fluoranthene	98	---
50-32-8	Benzo(a)pyrene	98	< 98 U
193-39-5	Indeno(1,2,3-cd)pyrene	98	< 98 U
53-70-3	Dibenz(a,h)anthracene	98	< 98 U
191-24-2	Benzo(g,h,i)perylene	98	< 98 U
132-64-9	Dibenzofuran	98	< 98 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	80.0%
d14-Dibenzo(a,h)anthracen	70.0%

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Sample ID: MB-092006
METHOD BLANK

Lab Sample ID: MB-092006
LIMS ID: 06-16377
Matrix: Tissue
Data Release Authorized:
Reported: 09/27/06

QC Report No: JV58-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: NA
Date Received: NA

Date Extracted: 09/20/06
Date Analyzed: 09/26/06 11:33
Instrument/Analyst: NT1/VTS
GPC Cleanup: No

Sample Amount: 5.00 g-as-rec
Final Extract Volume: 1.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	20	< 20 U
91-57-6	2-Methylnaphthalene	20	< 20 U
208-96-8	Acenaphthylene	20	< 20 U
83-32-9	Acenaphthene	20	< 20 U
86-73-7	Fluorene	20	< 20 U
85-01-8	Phenanthrene	20	< 20 U
120-12-7	Anthracene	20	< 20 U
206-44-0	Fluoranthene	20	< 20 U
129-00-0	Pyrene	20	< 20 U
56-55-3	Benzo(a)anthracene	20	< 20 U
218-01-9	Chrysene	20	< 20 U
205-99-2	Benzo(b)fluoranthene	20	< 20 U
207-08-9	Benzo(k)fluoranthene	20	< 20 U
50-32-8	Benzo(a)pyrene	20	< 20 U
193-39-5	Indeno(1,2,3-cd)pyrene	20	< 20 U
53-70-3	Dibenz(a,h)anthracene	20	< 20 U
191-24-2	Benzo(g,h,i)perylene	20	< 20 U
132-64-9	Dibenzofuran	20	< 20 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	70.3%
d14-Dibenzo(a,h)anthracen	93.7%

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Sample ID: LCS-092006
LAB CONTROL SAMPLE

Lab Sample ID: LCS-092006
LIMS ID: 06-16377
Matrix: Tissue
Data Release Authorized:
Reported: 09/27/06

QC Report No: JV58-MJM Research
Project: NUIQSUT BROAD WHITEFISH
Event: NA
Date Sampled: NA
Date Received: NA

Date Extracted: 09/20/06
Date Analyzed LCS: 09/26/06 11:58
Instrument/Analyst LCS: NT1/VTS

Sample Amount LCS: 5.00 g-as-rec
Final Extract Volume LCS: 1.0 mL
Dilution Factor LCS: 1.00

Analyte	LCS	Spike Added	Recovery
Naphthalene	490	600	81.7%
Acenaphthylene	448	600	74.7%
Acenaphthene	462	600	77.0%
Fluorene	502	600	83.7%
Phenanthrene	506	600	84.3%
Anthracene	470	600	78.3%
Fluoranthene	524	600	87.3%
Pyrene	502	600	83.7%
Benzo(a)anthracene	504	600	84.0%
Chrysene	532	600	88.7%
Benzo(b)fluoranthene	566	600	94.3%
Benzo(k)fluoranthene	540	600	90.0%
Benzo(a)pyrene	502	600	83.7%
Indeno(1,2,3-cd)pyrene	538	600	89.7%
Dibenz(a,h)anthracene	570	600	95.0%
Benzo(g,h,i)perylene	550	600	91.7%
Dibenzofuran	446	600	74.3%

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	78.0%
d14-Dibenzo(a,h)anthracen	101%

ANALYTICAL RESOURCES INCORPORATED

SIM SW8270 SURROGATE RECOVERY SUMMARY

Matrix: Tissue

QC Report No: JV58-MJM Research
Project: NUIQSUT BROAD WHITEFISH

Client ID	MNP	DBA	TOT OUT
MB-092006	70.3%	93.7%	0
LCS-092006	78.0%	101%	0
BDWF-NC-06-08 MUSCLE	75.0%	58.3%	0
BDWF-NC-06-08 MUSCLE	80.0%	86.7%	0
BDWF-NC-06-08 MUSCLE	80.0%	70.0%	0
BDWF-NC-06-08 LIVER	73.3%	53.3%	0
BDWF-NC-06-09 MUSCLE	75.0%	71.7%	0
BDWF-NC-06-09 LIVER	76.7%	63.3%	0
BDWF-NC-06-09 EGGS	85.0%	40.0%	0
BDWF-NC-06-09 EGGS DL	83.3%	83.3%	0
BDWF-NC-06-10 MUSCLE	71.7%	48.3%	0
BDWF-NC-06-10 LIVER	91.7%	41.7%	0
BDWF-NC-06-11 MUSCLE	81.7%	51.7%	0
BDWF-NC-06-11 LIVER	83.3%	63.3%	0

	LCS/MB LIMITS (Advisory)	QC LIMITS (Advisory)
(MNP) = d10-2-Methylnaphthalene	(30-160)	(30-160)
(DBA) = d14-Dibenzo(a,h)anthracene	(30-160)	(30-160)

Prep Method: TissM
Log Number Range: 06-16377 to 06-16385