

# PRINCE WILLIAM SOUND RCAC

## LONG-TERM ENVIRONMENTAL MONITORING PROGRAM

### 2000 - 2002 LTEMP MONITORING REPORT



Presented to:



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# **APPENDIX D**

## **Sediment Quality Control Results**

### **1.0 Procedural Blanks**



<b>QC Sample Type</b>	Lab Sample ID
PROC BLANK	Q19006

ASSOCIATED SAMPLE INFORMATION  
Station Survey Rep KLI Sample ID  
17 Use Batch Info

Matrix	SEDIMENT
Batch	M3029

Dry Weight (g)	10.00	DRY
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ANALYTE	Value (ng/g)	Qual
Naphthalene	0.5	J
C1-Naphthalenes	0.5	J
C2-Naphthalenes	0.3	J
C3-Naphthalenes	0.0	ND
C4-Naphthalenes	0.0	ND
Biphenyl	0.3	J
Acenaphthylene	0.1	J
Acenaphthene	0.1	J
Fluorene	0.2	J
C1-Fluorenes	0.0	ND
C2-Fluorenes	0.0	ND
C3-Fluorenes	0.0	ND
Anthracene	0.1	J
Phenanthrene	0.3	J
C1-Phen/Anthracenes	0.0	ND
C2-Phen/Anthracenes	0.0	ND
C3-Phen/Anthracenes	0.5	J
C4-Phen/Anthracenes	0.0	ND
Dibenzothiophene	0.1	J
C1-Dibenzothiophenes	0.0	ND
C2-Dibenzothiophenes	0.0	ND
C3-Dibenzothiophenes	0.0	ND
Fluoranthene	0.1	J
Pyrene	0.1	J
C1-Fluoranthenes/Pyrenes	1.2	J
Benzo(a)anthracene	0.0	ND
Chrysene	0.1	J
C1-Chrysenes	0.2	J
C2-Chrysenes	0.0	ND
C3-Chrysenes	0.4	J
C4-Chrysenes	0.7	J
Benzo(b)fluoranthene	0.0	ND
Benzo(k)fluoranthene	0.4	J
Benzo(e)pyrene	0.1	J
Benzo(a)pyrene	0.0	ND
Perylene	0.1	J
Indeno(1,2,3-c,d)pyrene	0.0	ND
Dibenzo(a,h)anthracene	0.0	ND
Benzo(g,h,i)perylene	0.1	J

<b>TOTAL PAH (ng/g)</b>	<b>6.3</b>
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(Excluding Perylene)

Specific Isomers	Value (ng/g)	Qual
1-Methylnaphthalene	0.2	J
2-Methylnaphthalene	0.3	J
2,6-Dimethylnaphthalene	0.2	J
1,6,7-Trimethylnaphthalene	0.1	J
1-Methylphenanthrene	0.1	J

  

Surrogate Recoveries	Percent	Qual
Naphthalene-D8	67.9	
Acenaphthene-D10	69.9	
Phenanthrene-D10	72.2	
Chrysene-D12	83.0	
Perylene-D12	44.5	

<b>QC Sample Type</b>	Lab Sample ID
PROC BLANK	Q19607

ASSOCIATED SAMPLE INFORMATION  
Station Survey Rep KLI Sample ID  
19 Use Batch Info

Matrix	SEDIMENT
Batch	M3076

Dry Weight (g) 10.0 DRY

ANALYTE	Value (ng/g)	Qual
Naphthalene	2.1	J
C1-Naphthalenes	1.7	J
C2-Naphthalenes	1.0	J
C3-Naphthalenes	0.2	J
C4-Naphthalenes	0	ND
Biphenyl	2.5	<3xMDL
Acenaphthylene	0.3	J
Acenaphthene	0.1	J
Fluorene	0.8	J
C1-Fluorenes	0.1	J
C2-Fluorenes	0	ND
C3-Fluorenes	0	ND
Anthracene	0.2	J
Phenanthrene	1.1	J
C1-Phen/Anthracenes	0.5	J
C2-Phen/Anthracenes	0.1	J
C3-Phen/Anthracenes	0	ND
C4-Phen/Anthracenes	0	ND
Dibenzothiophene	0.1	J
C1-Dibenzothiophenes	0	ND
C2-Dibenzothiophenes	0	ND
C3-Dibenzothiophenes	0	ND
Fluoranthene	0.5	J
Pyrene	0.5	J
C1-Fluoranthenes/Pyrenes	0	ND
Benzo(a)anthracene	0.2	J
Chrysene	0.3	J
C1-Chrysenes	0	ND
C2-Chrysenes	0	ND
C3-Chrysenes	0	ND
C4-Chrysenes	0	ND
Benzo(b)fluoranthene	0.2	J
Benzo(k)fluoranthene	0	ND
Benzo(e)pyrene	0.2	J
Benzo(a)pyrene	0.2	J
Perylene	0.1	J
Indeno(1,2,3-c,d)pyrene	0	ND
Dibenzo(a,h)anthracene	0.1	J
Benzo(g,h,i)perylene	0.2	J

**TOTAL PAH (ng/g)** 13.2  
(Excluding Perylene)

Specific Isomers	Value (ng/g)	Qual
1-Methylnaphthalene	0.7	J
2-Methylnaphthalene	1.0	J
2,6-Dimethylnaphthalene	0.6	J
1,6,7-Trimethylnaphthalene	0.3	J
1-Methylphenanthrene	0.2	J

  

Surrogate Recoveries	Percent	Qual
Naphthalene-D8	55	
Acenaphthene-D10	60.6	
Phenanthrene-D10	75.7	
Chrysene-D12	66.4	
Perylene-D12	41.6	

<b>QC Sample Type</b>	Lab Sample ID
PROC BLANK	Q19861

ASSOCIATED SAMPLE INFORMATION  
Station Survey Rep KLI Sample ID  
20 Use Batch Info

Matrix	SEDIMENT
Batch	M3105

Dry Weight (g)	10.0	DRY
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ANALYTE	Value (ng/g)	Qual
Naphthalene	0.9	J
C1-Naphthalenes	1.2	J
C2-Naphthalenes	1.0	J
C3-Naphthalenes	0.3	J
C4-Naphthalenes	0	ND
Biphenyl	1.1	<3xMDL
Acenaphthylene	0.2	J
Acenaphthene	1.1	J
Fluorene	2.5	J
C1-Fluorenes	0.7	J
C2-Fluorenes	0	ND
C3-Fluorenes	0	ND
Anthracene	5	<3xMDL
Phenanthrene	8	<3xMDL
C1-Phen/Anthracenes	2.2	<3xMDL
C2-Phen/Anthracenes	0.7	J
C3-Phen/Anthracenes	0	ND
C4-Phen/Anthracenes	0	ND
Dibenzothiophene	0.4	J
C1-Dibenzothiophenes	0.1	J
C2-Dibenzothiophenes	0	ND
C3-Dibenzothiophenes	0	ND
Fluoranthene	5.2	J
Pyrene	4	J
C1-Fluoranthenes/Pyrenes	1.7	J
Benzo(a)anthracene	2.2	J
Chrysene	1.7	J
C1-Chrysenes	0.5	J
C2-Chrysenes	0	ND
C3-Chrysenes	0	ND
C4-Chrysenes	0	ND
Benzo(b)fluoranthene	2	J
Benzo(k)fluoranthene	0.7	J
Benzo(e)pyrene	0.9	J
Benzo(a)pyrene	1.9	J
Perylene	0.3	J
Indeno(1,2,3-c,d)pyrene	0.8	J
Dibenzo(a,h)anthracene	0.1	J
Benzo(g,h,i)perylene	0.6	J
<b>TOTAL PAH (ng/g)</b>	<b>47.9</b>	

(Excluding Perylene)

Specific Isomers	Value (ng/g)	Qual
1-Methylnaphthalene	0.5	J
2-Methylnaphthalene	0.7	J
2,6-Dimethylnaphthalene	0.4	J
1,6,7-Trimethylnaphthalene	0.2	J
1-Methylphenanthrene	0.6	J
Surrogate Recoveries	Percent	Qual
Naphthalene-D8	88.5	
Acenaphthene-D10	86.2	
Phenanthrene-D10	91.8	
Chrysene-D12	97.7	
Perylene-D12	50.2	

<b>QC Sample Type</b>	Lab Sample ID
PROC BLANK	Q20338

ASSOCIATED SAMPLE INFORMATION  
Station Survey Rep KLI Sample ID  
22 Use Batch Info

Matrix	SEDIMENT
Batch	M3206

Dry Weight (g)	10.0	DRY
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ANALYTE	Value (ng/g)	Qual
Naphthalene	0.9	J
C1-Naphthalenes	1.3	J
C2-Naphthalenes	0.6	J
C3-Naphthalenes	0.4	J
C4-Naphthalenes	0	ND
Biphenyl	0.3	J
Acenaphthylene	0.2	J
Acenaphthene	0.1	J
Fluorene	0.2	J
C1-Fluorenes	0	ND
C2-Fluorenes	0	ND
C3-Fluorenes	0	ND
Anthracene	0.2	J
Phenanthrene	0.4	J
C1-Phen/Anthracenes	0.3	J
C2-Phen/Anthracenes	0	ND
C3-Phen/Anthracenes	0	ND
C4-Phen/Anthracenes	0	ND
Dibenzothiophene	0.1	J
C1-Dibenzothiophenes	0	ND
C2-Dibenzothiophenes	0	ND
C3-Dibenzothiophenes	0	ND
Fluoranthene	0.5	J
Pyrene	0.5	J
C1-Fluoranthenes/Pyrenes	0.5	J
Benzo(a)anthracene	0.4	J
Chrysene	0.5	J
C1-Chrysenes	0.3	J
C2-Chrysenes	0	ND
C3-Chrysenes	0	ND
C4-Chrysenes	0	ND
Benzo(b)fluoranthene	0.6	J
Benzo(k)fluoranthene	0.2	J
Benzo(e)pyrene	0.4	J
Benzo(a)pyrene	0.4	J
Perylene	0.3	J
Indeno(1,2,3-c,d)pyrene	0.4	J
Dibenzo(a,h)anthracene	0.1	J
Benzo(g,h,i)perylene	0.3	J

<b>TOTAL PAH (ng/g)</b>	<b>10</b>
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(Excluding Perylene)

Specific Isomers	Value (ng/g)	Qual
1-Methylnaphthalene	0.5	J
2-Methylnaphthalene	0.8	J
2,6-Dimethylnaphthalene	0.2	J
1,6,7-Trimethylnaphthalene	0.2	J
1-Methylphenanthrene	0.1	J

  

Surrogate Recoveries	Percent	Qual
Naphthalene-D8	55.8	
Acenaphthene-D10	69.2	
Phenanthrene-D10	88.9	
Chrysene-D12	101.9	
Perylene-D12	46	



<b>QC Sample Type</b>	Lab Sample ID
PROC BLANK	Q19006

ASSOCIATED SAMPLE INFORMATION  
 Station Survey Rep KLI Sample ID  
 17 Use Batch Info

Matrix	SEDIMENT
Batch	M3029
Dry Weight (g)	10.00 DRY

ANALYTE	Value (ng/g)	Qual
n-C10	0.0	ND
n-C11	0.0	ND
n-C12	0.0	ND
n-C13	0.0	ND
n-C14	0.0	ND
n-C15	0.0	ND
n-C16	0.0	ND
n-C17	4.6	J
Pristane	3.1	J
n-C18	2.4	J
Phytane	2.4	J
n-C19	0.0	ND
n-C20	0.0	ND
n-C21	0.0	ND
n-C22	0.0	ND
n-C23	0.0	ND
n-C24	0.0	ND
n-C25	0.0	ND
n-C26	0.0	ND
n-C27	0.0	ND
n-C28	0.0	ND
n-C29	0.0	ND
n-C30	0.0	ND
n-C31	9.3	J
n-C32	2.4	J
n-C33	0.0	ND
n-C34	3.9	J

**TOTAL AHC (ng/g)** 28.1

<b>TRUAHC (ug/g)</b>	1.6
<b>TOTAL RAHC (ug/g)</b>	0.4
<b>UCM (ug/g)</b>	1.2 J

Surrogate Recoveries	Percent	Qual
C12 (Deuterated)	73.0	
C20 (Deuterated)	59.0	
C24 (Deuterated)	64.0	
C30 (Deuterated)	58.0	

<b>QC Sample Type</b>	Lab Sample ID
PROC BLANK	Q19607

ASSOCIATED SAMPLE INFORMATION  
Station Survey Rep KLI Sample ID  
19 Use Batch Info

Matrix	SEDIMENT
Batch	M3076
Dry Weight (g)	10.0 DRY

ANALYTE	Value (ng/g)	Qual
n-C10	0	ND
n-C11	0	ND
n-C12	0	ND
n-C13	0	ND
n-C14	10.5	J
n-C15	13.2	J
n-C16	0	ND
n-C17	7.7	J
Pristane	0	ND
n-C18	6.1	J
Phytane	0	ND
n-C19	2.3	J
n-C20	0	ND
n-C21	1.1	J
n-C22	0	ND
n-C23	2.6	J
n-C24	0	ND
n-C25	2.5	J
n-C26	0	ND
n-C27	3.1	J
n-C28	1.2	J
n-C29	5.2	J
n-C30	1.0	J
n-C31	0	ND
n-C32	0	ND
n-C33	0	ND
n-C34	0	ND

**TOTAL AHC (ng/g)** 56.6

<b>TRUAHC (ug/g)</b>	0.85
<b>TOTAL RAHC (ug/g)</b>	0.85
<b>UCM (ug/g)</b>	0.0 ND

Surrogate Recoveries	Percent	Qual
C12 (Deuterated)	56.2	
C20 (Deuterated)	70.9	
C24 (Deuterated)	71.1	
C30 (Deuterated)	58	

**QC Sample Type**

Lab Sample ID

PROC BLANK

Q19861

## ASSOCIATED SAMPLE INFORMATION

Station	Survey	Rep	KLI Sample ID
	20		Use Batch Info

Matrix SEDIMENT

Batch M3105

Dry Weight (g)	10.0	DRY
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ANALYTE	Value (ng/g)	Qual
n-C10	0	ND
n-C11	1.9	J
n-C12	7.3	J
n-C13	0	ND
n-C14	4.3	J
n-C15	32.7	J
n-C16	2.1	J
n-C17	4	J
Pristane	0	ND
n-C18	5	J
Phytane	1.8	J
n-C19	0	ND
n-C20	0	ND
n-C21	12.8	J
n-C22	2.3	J
n-C23	2.6	J
n-C24	4.3	J
n-C25	3.5	J
n-C26	3	J
n-C27	2.8	J
n-C28	3.5	J
n-C29	1.9	J
n-C30	0	ND
n-C31	1.8	J
n-C32	1.8	J
n-C33	0	ND
n-C34	0	ND

<b>TOTAL AHC (ng/g)</b>	<b>99.7</b>
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<b>TRUAHC (ug/g)</b>	0.9
<b>TOTAL RAHC (ug/g)</b>	0.9
<b>UCM (ug/g)</b>	0.0 ND

Surrogate Recoveries	Percent	Qual
C12 (Deuterated)	77	
C20 (Deuterated)	86	
C24 (Deuterated)	86	
C30 (Deuterated)	86	

<b>QC Sample Type</b>	Lab Sample ID
PROC BLANK	Q20467

ASSOCIATED SAMPLE INFORMATION  
 Station Survey Rep KLI Sample ID  
 22 Use Batch Info

Matrix	SEDIMENT
Batch	M3223
Dry Weight (g)	10.0 DRY

ANALYTE	Value (ng/g)	Qual
n-C10	0	ND
n-C11	4.1	J
n-C12	1.5	J
n-C13	0	ND
n-C14	3.6	J
n-C15	0	ND
n-C16	0	ND
n-C17	0	ND
Pristane	0	ND
n-C18	0	ND
Phytane	0	ND
n-C19	0	ND
n-C20	0	ND
n-C21	0	ND
n-C22	0.8	J
n-C23	0.8	J
n-C24	0	ND
n-C25	0.9	J
n-C26	1.4	J
n-C27	0.7	J
n-C28	1.3	J
n-C29	7.6	J
n-C30	7.2	J
n-C31	0	ND
n-C32	0	ND
n-C33	0	ND
n-C34	0	ND

**TOTAL AHC (ng/g)** 29.7

<b>TRUAHC (ug/g)</b>	0.04
<b>TOTAL RAHC (ug/g)</b>	0.04
<b>UCM (ug/g)</b>	0.0 ND

Surrogate Recoveries	Percent	Qual
C12 (Deuterated)	83	
C20 (Deuterated)	89	
C24 (Deuterated)	88	
C30 (Deuterated)	92	

## Laboratory QC - TOC Procedural Blanks

SURVEY	LABSAMP_TY	LABSAMP_DE	LABSAMP_ID	BATCH_ID	ANALYTE	VALUE	VALUE_QU	VALUE_UN
17	BLANK	PROC BLANK	PB090600B1	9/6/00	TOC	0.03		%
19	BLANK	PROC BLANK	PB090600B2	6/7/01	TOC	0.02		%
20	BLANK	PROC BLANK	PB090601A	TOC343	TOC	0.03		%
22	BLANK	PROC BLANK	PB050602C	TOC373	TOC	0.03		%



# **APPENDIX D**

## **Sediment Quality Control Results**

### **2.0 Matrix Spike/Spike Duplicates**





<b>QC Sample Type</b>	Lab Sample ID
MATRIX SPIKE	Q19008

ASSOCIATED SAMPLE INFORMATION  
 Station Survey Rep KLI Sample ID  
 GOC-S 17 2 PWS00PAT0008

Matrix	SEDIMENT
Batch	M3029
Wet Weight (g)	20.15 WET
Dry Weight (g)	11.83 DRY
Solids (%)	58.7 DRY

ANALYTE	Value (%)	Qual
Naphthalene	93.5	
Biphenyl	96.3	
Acenaphthylene	91.3	
Acenaphthene	116.2	
Fluorene	106.7	
Anthracene	74.8	
Phenanthrene	99.6	
Dibenzothiophene	95.8	
Fluoranthene	90.1	
Pyrene	99.9	
Benzo(a)anthracene	95.9	
Chrysene	60.2	
Benzo(b)fluoranthene	84.5	
Benzo(k)fluoranthene	58.7	
Benzo(e)pyrene	91.9	
Benzo(a)pyrene	65.5	
Perylene	101.9	
Indeno(1,2,3-c,d)pyrene	42.1	
Dibenzo(a,h)anthracene	29.7	Q
Benzo(g,h,i)perylene	44.9	
<b>TOTAL PAH (%)</b>	<b>85.2</b>	
	<b>(Avg % Recovery)</b>	

Specific Isomers	Value (%)	Qual
1-Methylnaphthalene	99.4	
2-Methylnaphthalene	93.3	
2,6-Dimethylnaphthalene	96.9	
1,6,7-Trimethylnaphthalene	102.7	
1-Methylphenanthrene	97.4	
Surrogate Recoveries	Percent	Qual
Naphthalene-D8	61.0	
Acenaphthene-D10	70.2	
Phenanthrene-D10	79.3	
Chrysene-D12	60.4	
Perylene-D12	42.1	

<b>QC Sample Type</b>	Lab Sample ID
MATRIX SPIKE DUP	Q19009

ASSOCIATED SAMPLE INFORMATION  
 Station Survey Rep KLI Sample ID  
 GOC-S 17 2 PWS00PAT0008

Matrix	SEDIMENT
Batch	M3029
Wet Weight (g)	20.28 WET
Dry Weight (g)	11.90 DRY
Solids (%)	58.7 DRY

ANALYTE	Value (%)	Qual
Naphthalene	78.7	
Biphenyl	87.6	
Acenaphthylene	85.4	
Acenaphthene	101.6	
Fluorene	90.5	
Anthracene	71.9	
Phenanthrene	83.0	
Dibenzothiophene	87.0	
Fluoranthene	75.0	
Pyrene	73.7	
Benzo(a)anthracene	92.0	
Chrysene	96.1	
Benzo(b)fluoranthene	67.4	
Benzo(k)fluoranthene	52.3	
Benzo(e)pyrene	81.3	
Benzo(a)pyrene	48.1	
Perylene	69.5	
Indeno(1,2,3-c,d)pyrene	32.8	Q
Dibenzo(a,h)anthracene	27.0	Q
Benzo(g,h,i)perylene	34.0	Q
<b>TOTAL PAH (%)</b>	<b>74.7</b>	
	<b>(Avg % Recovery)</b>	

Specific Isomers	Value (%)	Qual
1-Methylnaphthalene	90.5	
2-Methylnaphthalene	82.2	
2,6-Dimethylnaphthalene	88.0	
1,6,7-Trimethylnaphthalene	88.9	
1-Methylphenanthrene	83.5	
Surrogate Recoveries	Percent	Qual
Naphthalene-D8	72.5	
Acenaphthene-D10	84.6	
Phenanthrene-D10	91.5	
Chrysene-D12	56.5	
Perylene-D12	38.9	Q

<b>QC Sample Type</b>	Lab Sample ID
MATRIX SPIKE	Q19610

ASSOCIATED SAMPLE INFORMATION  
 Station Survey Rep KLI Sample ID  
 AMT-S 19 1 PWS01PAT0001

Matrix	SEDIMENT
Batch	M3076
Wet Weight (g)	20.07 DRY
Dry Weight (g)	9.49 DRY
Solids (%)	47.3 DRY

ANALYTE	Value (%)	Qual
Naphthalene	54.3	M
Biphenyl	59.4	
Acenaphthylene	72.6	
Acenaphthene	77.2	
Fluorene	79.4	
Anthracene	65.3	
Phenanthrene	95	M
Dibenzothiophene	78.4	
Fluoranthene	81.6	M
Pyrene	81.7	M
Benzo(a)anthracene	93.7	
Chrysene	79.3	M
Benzo(b)fluoranthene	76.5	
Benzo(k)fluoranthene	99.8	
Benzo(e)pyrene	94.7	M
Benzo(a)pyrene	62.2	
Perylene	62.4	
Indeno(1,2,3-c,d)pyrene	77.6	
Dibenzo(a,h)anthracene	73	
Benzo(g,h,i)perylene	78.8	
<b>TOTAL PAH (%)</b>	<b>75.9</b>	
	<b>(Avg % Recovery)</b>	

Specific Isomers	Value (%)	Qual
1-Methylnaphthalene	80.2	
2-Methylnaphthalene	38	M
2,6-Dimethylnaphthalene	61.3	
1,6,7-Trimethylnaphthalene	71.8	
1-Methylphenanthrene	97.1	
Surrogate Recoveries	Percent	Qual
Naphthalene-D8	51.7	
Acenaphthene-D10	77.3	
Phenanthrene-D10	83.9	
Chrysene-D12	98.1	
Perylene-D12	45.2	

<b>QC Sample Type</b>	Lab Sample ID
MATRIX SPIKE DUP	Q19611

ASSOCIATED SAMPLE INFORMATION  
 Station Survey Rep KLI Sample ID  
 AMT-S 19 1 PWS01PAT0001

Matrix	SEDIMENT
Batch	M3076
Wet Weight (g)	20.19 WET
Dry Weight (g)	9.55 DRY
Solids (%)	47.3 DRY

ANALYTE	Value (%)	Qual
Naphthalene	35.8	M
Biphenyl	56.8	
Acenaphthylene	76.8	
Acenaphthene	81.4	
Fluorene	83.6	
Anthracene	69.4	
Phenanthrene	63.4	M
Dibenzothiophene	69.1	
Fluoranthene	66.2	M
Pyrene	63.9	M
Benzo(a)anthracene	89.3	
Chrysene	12.9	M
Benzo(b)fluoranthene	73.6	
Benzo(k)fluoranthene	92.3	
Benzo(e)pyrene	49.5	M
Benzo(a)pyrene	83.6	
Perylene	66.9	
Indeno(1,2,3-c,d)pyrene	60.1	
Dibenzo(a,h)anthracene	64.7	
Benzo(g,h,i)perylene	55.8	
<b>TOTAL PAH (%)</b>	<b>72.1</b>	
	<b>(Avg % Recovery)</b>	

Specific Isomers	Value (%)	Qual
1-Methylnaphthalene	69.3	
2-Methylnaphthalene	24.4	M
2,6-Dimethylnaphthalene	49.9	
1,6,7-Trimethylnaphthalene	68.8	
1-Methylphenanthrene	85.9	
Surrogate Recoveries	Percent	Qual
Naphthalene-D8	48.2	
Acenaphthene-D10	68.4	
Phenanthrene-D10	78.7	
Chrysene-D12	84.5	
Perylene-D12	38.6	Q

<b>QC Sample Type</b>	Lab Sample ID
MATRIX SPIKE	Q19864

ASSOCIATED SAMPLE INFORMATION  
 Station Survey Rep KLI Sample ID  
 GOC-S 20 1 PWS01PAT0007

Matrix	SEDIMENT
Batch	M3105
Wet Weight (g)	20.09 WET
Dry Weight (g)	11.09 DRY
Solids (%)	55.2 DRY

ANALYTE	Value (%)	Qual
Naphthalene	102.3	
Biphenyl	101.1	
Acenaphthylene	97.4	
Acenaphthene	82.6	
Fluorene	104.4	
Anthracene	83	
Phenanthrene	140.3	Q
Dibenzothiophene	92.2	
Fluoranthene	147.1	Q
Pyrene	130.1	Q
Benzo(a)anthracene	118.4	
Chrysene	100.8	
Benzo(b)fluoranthene	112.5	
Benzo(k)fluoranthene	99.1	
Benzo(e)pyrene	112.3	
Benzo(a)pyrene	79.6	
Perylene	76.2	
Indeno(1,2,3-c,d)pyrene	70.4	
Dibenzo(a,h)anthracene	67.4	
Benzo(g,h,i)perylene	78.2	
<b>TOTAL PAH (%)</b>	<b>100.2</b>	
	<b>(Avg % Recovery)</b>	

Specific Isomers	Value (%)	Qual
1-Methylnaphthalene	96.1	
2-Methylnaphthalene	96	
2,6-Dimethylnaphthalene	103.8	
1,6,7-Trimethylnaphthalene	102.4	
1-Methylphenanthrene	112.4	
Surrogate Recoveries	Percent	Qual
Naphthalene-D8	75.2	
Acenaphthene-D10	75	
Phenanthrene-D10	78.2	
Chrysene-D12	80.4	
Perylene-D12	43.8	

<b>QC Sample Type</b>	Lab Sample ID
MATRIX SPIKE DUP	Q19865

ASSOCIATED SAMPLE INFORMATION  
 Station Survey Rep KLI Sample ID  
 GOC-S 20 1 PWS01PAT0007

Matrix	SEDIMENT
Batch	M3105
Wet Weight (g)	20.39 WET
Dry Weight (g)	11.3 DRY
Solids (%)	55.4 DRY

ANALYTE	Value (%)	Qual
Naphthalene	101.7	
Biphenyl	93.9	
Acenaphthylene	88.6	
Acenaphthene	83	
Fluorene	90.8	
Anthracene	79.5	
Phenanthrene	91.6	
Dibenzothiophene	80	
Fluoranthene	97.9	
Pyrene	102.8	
Benzo(a)anthracene	96.2	
Chrysene	78.4	
Benzo(b)fluoranthene	107.5	
Benzo(k)fluoranthene	101.3	
Benzo(e)pyrene	101.4	
Benzo(a)pyrene	85.4	
Perylene	78.5	
Indeno(1,2,3-c,d)pyrene	115.7	
Dibenzo(a,h)anthracene	104	
Benzo(g,h,i)perylene	106	
<b>TOTAL PAH (%)</b>	<b>94.4</b>	
	<b>(Avg % Recovery)</b>	

Specific Isomers	Value (%)	Qual
1-Methylnaphthalene	96.7	
2-Methylnaphthalene	93.7	
2,6-Dimethylnaphthalene	92.6	
1,6,7-Trimethylnaphthalene	95.5	
1-Methylphenanthrene	97.1	
Surrogate Recoveries	Percent	Qual
Naphthalene-D8	71.5	
Acenaphthene-D10	79.1	
Phenanthrene-D10	82	
Chrysene-D12	105.1	
Perylene-D12	52.7	

<b>QC Sample Type</b>	Lab Sample ID
MATRIX SPIKE	Q20341

ASSOCIATED SAMPLE INFORMATION  
 Station Survey Rep KLI Sample ID  
 GOC-S 22 3 PWS02PAT0007

Matrix	SEDIMENT
Batch	M3206
Wet Weight (g)	20.17 DRY
Dry Weight (g)	12.23 DRY
Solids (%)	60.6 DRY

ANALYTE	Value (%)	Qual
Naphthalene	76.2	
Biphenyl	86.2	
Acenaphthylene	83.9	
Acenaphthene	89.6	
Fluorene	77.3	
Anthracene	51.5	
Phenanthrene	12.8	M
Dibenzothiophene	81.6	
Fluoranthene	19.7	M
Pyrene	38.5	M
Benzo(a)anthracene	43.7	
Chrysene	23.5	M
Benzo(b)fluoranthene	72.3	
Benzo(k)fluoranthene	82.2	
Benzo(e)pyrene	83.2	
Benzo(a)pyrene	76.9	
Perylene	76.2	
Indeno(1,2,3-c,d)pyrene	91.9	
Dibenzo(a,h)anthracene	85.9	
Benzo(g,h,i)perylene	89.5	
<b>TOTAL PAH (%)</b>	<b>75.7</b>	
	<b>(Avg % Recovery)</b>	

Specific Isomers	Value (%)	Qual
1-Methylnaphthalene	90.3	
2-Methylnaphthalene	82.7	
2,6-Dimethylnaphthalene	81.8	
1,6,7-Trimethylnaphthalene	82.7	
1-Methylphenanthrene	79.7	
Surrogate Recoveries	Percent	Qual
Naphthalene-D8	57.5	
Acenaphthene-D10	77.3	
Phenanthrene-D10	112.2	
Chrysene-D12	112.3	
Perylene-D12	50.8	

<b>QC Sample Type</b>	Lab Sample ID
MATRIX SPIKE DUP	Q20342

ASSOCIATED SAMPLE INFORMATION  
 Station Survey Rep KLI Sample ID  
 GOC-S 22 3 PWS02PAT0007

Matrix	SEDIMENT
Batch	M3206
Wet Weight (g)	20.16 WET
Dry Weight (g)	11.62 DRY
Solids (%)	57.6 DRY

ANALYTE	Value (%)	Qual
Naphthalene	75.7	
Biphenyl	88.8	
Acenaphthylene	78.5	
Acenaphthene	87.6	
Fluorene	66.5	
Anthracene	49.2	
Phenanthrene	10.1	M
Dibenzothiophene	83.5	
Fluoranthene	22.5	M
Pyrene	36.2	M
Benzo(a)anthracene	50.7	
Chrysene	19.3	M
Benzo(b)fluoranthene	78.4	
Benzo(k)fluoranthene	86.9	
Benzo(e)pyrene	87.4	
Benzo(a)pyrene	75.9	
Perylene	86.1	
Indeno(1,2,3-c,d)pyrene	82.8	
Dibenzo(a,h)anthracene	78.7	
Benzo(g,h,i)perylene	85.8	
<b>TOTAL PAH (%)</b>	<b>78.3</b>	
	<b>(Avg % Recovery)</b>	

Specific Isomers	Value (%)	Qual
1-Methylnaphthalene	87.6	
2-Methylnaphthalene	77.3	
2,6-Dimethylnaphthalene	79.2	
1,6,7-Trimethylnaphthalene	72.3	
1-Methylphenanthrene	85.8	
Surrogate Recoveries	Percent	Qual
Naphthalene-D8	43.6	
Acenaphthene-D10	54.8	
Phenanthrene-D10	63.7	
Chrysene-D12	59.2	
Perylene-D12	26.2	Q

<b>QC Sample Type</b>	Lab Sample ID
MATRIX SPIKE	Q19008

ASSOCIATED SAMPLE INFORMATION  
 Station Survey Rep KLI Sample ID  
 GOC-S 17 2 PWS00PAT0008

Matrix	SEDIMENT
Batch	M3029

Wet Weight (g)	20.15	WET
Dry Weight (g)	11.83	DRY
Solids (%)	58.7	DRY

ANALYTE	Value (%)	Qual
n-C12	84.8	
n-C15	98.8	
n-C17	102.9	
Pristane	96.5	
n-C18	100.9	
n-C20	99.0	
n-C21	100.7	
n-C24	92.5	
n-C28	92.6	
n-C30	90.3	
n-C32	90.5	
n-C34	98.3	

**TOTAL AHC (%)** 95.7

(Avg % Recovery)

Surrogate Recoveries	Percent	Qual
C12 (Deuterated)	73.0	
C20 (Deuterated)	89.0	
C24 (Deuterated)	85.0	
C30 (Deuterated)	84.0	

<b>QC Sample Type</b>	Lab Sample ID
MATRIX SPIKE DUP	Q19009

ASSOCIATED SAMPLE INFORMATION  
 Station Survey Rep KLI Sample ID  
 GOC-S 17 2 PWS00PAT0008

Matrix	SEDIMENT
Batch	M3029

Wet Weight (g)	20.28	WET
Dry Weight (g)	11.90	DRY
Solids (%)	58.7	DRY

ANALYTE	Value (%)	Qual
n-C12	91.3	
n-C15	106.2	
n-C17	108.8	
Pristane	102.4	
n-C18	106.1	
n-C20	102.2	
n-C21	100.5	
n-C24	96.2	
n-C28	96.0	
n-C30	94.5	
n-C32	94.8	
n-C34	102.9	

**TOTAL AHC (%)** 100.2

(Avg % Recovery)

Surrogate Recoveries	Percent	Qual
C12 (Deuterated)	83.0	
C20 (Deuterated)	97.0	
C24 (Deuterated)	92.0	
C30 (Deuterated)	82.0	

<b>QC Sample Type</b>	Lab Sample ID
MATRIX SPIKE	Q19610

ASSOCIATED SAMPLE INFORMATION  
 Station Survey Rep KLI Sample ID  
 AMT-S 19 1 PWS01PAT0001

Matrix	SEDIMENT
Batch	M3076

Wet Weight (g)	20.07	DRY
Dry Weight (g)	9.49	DRY
Solids (%)	47.3	DRY

ANALYTE	Value (%)	Qual
n-C12	79.2	
n-C15	94.6	
n-C17	95.3	
Pristane	89.4	
n-C18	89	
n-C20	84.3	
n-C21	87.3	
n-C24	76.9	
n-C28	71.9	
n-C30	70.4	
n-C32	65.5	
n-C34	78.1	

**TOTAL AHC (%)** 81.8

(Avg % Recovery)

Surrogate Recoveries	Percent	Qual
C12 (Deuterated)	41.4	
C20 (Deuterated)	62	
C24 (Deuterated)	51.9	
C30 (Deuterated)	53.9	

<b>QC Sample Type</b>	Lab Sample ID
MATRIX SPIKE DUP	Q19611

ASSOCIATED SAMPLE INFORMATION  
 Station Survey Rep KLI Sample ID  
 AMT-S 19 1 PWS01PAT0001

Matrix	SEDIMENT
Batch	M3076

Wet Weight (g)	20.19	WET
Dry Weight (g)	9.55	DRY
Solids (%)	47.3	DRY

ANALYTE	Value (%)	Qual
n-C12	106.3	
n-C15	117.9	
n-C17	120.6	Q
Pristane	108.3	
n-C18	114.1	
n-C20	111.8	
n-C21	112	
n-C24	100.3	
n-C28	89.2	
n-C30	83.7	
n-C32	70.3	
n-C34	79.8	

**TOTAL AHC (%)** 101.2

(Avg % Recovery)

Surrogate Recoveries	Percent	Qual
C12 (Deuterated)	79.3	
C20 (Deuterated)	85	
C24 (Deuterated)	92.2	
C30 (Deuterated)	93.7	

<b>QC Sample Type</b>	Lab Sample ID
MATRIX SPIKE	Q19864

ASSOCIATED SAMPLE INFORMATION  
 Station Survey Rep KLI Sample ID  
 GOC-S 20 1 PWS01PAT0007

Matrix	SEDIMENT
Batch	M3105

Wet Weight (g)	20.09	WET
Dry Weight (g)	11.09	DRY
Solids (%)	55.2	DRY

ANALYTE	Value (%)	Qual
n-C12	102.1	
n-C15	100.2	
n-C17	111.3	
Pristane	101.4	
n-C18	107.4	
n-C20	107	
n-C21	109.5	
n-C24	102.3	
n-C28	96.3	
n-C30	94.3	
n-C32	95.9	
n-C34	104.7	

**TOTAL AHC (%)** 102.7  
 (Avg % Recovery)

Surrogate Recoveries	Percent	Qual
C12 (Deuterated)	67	
C20 (Deuterated)	64	
C24 (Deuterated)	62	
C30 (Deuterated)	59	

<b>QC Sample Type</b>	Lab Sample ID
MATRIX SPIKE DUP	Q19865

ASSOCIATED SAMPLE INFORMATION  
 Station Survey Rep KLI Sample ID  
 GOC-S 20 1 PWS01PAT0007

Matrix	SEDIMENT
Batch	M3105

Wet Weight (g)	20.39	WET
Dry Weight (g)	11.3	DRY
Solids (%)	55.4	DRY

ANALYTE	Value (%)	Qual
n-C12	77	
n-C15	83.1	
n-C17	94.7	
Pristane	87.4	
n-C18	92.1	
n-C20	91.3	
n-C21	93.9	
n-C24	88.2	
n-C28	85.7	
n-C30	83.4	
n-C32	85	
n-C34	83.8	

**TOTAL AHC (%)** 87.1  
 (Avg % Recovery)

Surrogate Recoveries	Percent	Qual
C12 (Deuterated)	62	
C20 (Deuterated)	79	
C24 (Deuterated)	77	
C30 (Deuterated)	75	

<b>QC Sample Type</b>	Lab Sample ID
MATRIX SPIKE	Q20470

ASSOCIATED SAMPLE INFORMATION  
 Station Survey Rep KLI Sample ID  
 GOC-S 22 1 PWS02PAT0002

Matrix	SEDIMENT
Batch	M3223

Wet Weight (g)	20.05	WET
Dry Weight (g)	11.08	DRY
Solids (%)	55.2	DRY

ANALYTE	Value (%)	Qual
n-C12	90.2	
n-C15	103.3	
n-C17	110.4	
Pristane	102.5	
n-C18	103.5	
n-C20	96.4	
n-C21	88.9	
n-C24	95.7	
n-C28	96.4	
n-C30	101.4	
n-C32	98.8	
n-C34	119.4	

**TOTAL AHC (%)** 100.6

(Avg % Recovery)

Surrogate Recoveries	Percent	Qual
C12 (Deuterated)	69	
C20 (Deuterated)	80	
C24 (Deuterated)	78	
C30 (Deuterated)	102	

<b>QC Sample Type</b>	Lab Sample ID
MATRIX SPIKE DUP	Q20471

ASSOCIATED SAMPLE INFORMATION  
 Station Survey Rep KLI Sample ID  
 GOC-S 22 1 PWS02PAT0002

Matrix	SEDIMENT
Batch	M3223

Wet Weight (g)	20.05	WET
Dry Weight (g)	11.08	DRY
Solids (%)	55.2	DRY

ANALYTE	Value (%)	Qual
n-C12	90.5	
n-C15	105.7	
n-C17	111.6	
Pristane	103.9	
n-C18	104.3	
n-C20	99.8	
n-C21	106.7	
n-C24	96.3	
n-C28	97.8	
n-C30	100.5	
n-C32	100.3	
n-C34	117.7	

**TOTAL AHC (%)** 102.9

(Avg % Recovery)

Surrogate Recoveries	Percent	Qual
C12 (Deuterated)	67	
C20 (Deuterated)	80	
C24 (Deuterated)	79	
C30 (Deuterated)	103	



# **APPENDIX D**

## Sediment Quality Control Results

### 3.0 Reference Oil



<b>QC Sample Type</b>	Lab Sample ID
GERG STD CHK	W41545

ASSOCIATED SAMPLE INFORMATION  
Station Survey Rep KLI Sample ID  
17 Use Batch Info

Matrix	OIL
Batch	M3029

Volume (mL)	1.00	WET
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ANALYTE	Value (ng/mL)	Qual
Naphthalene	740.4	
C1-Naphthalenes	2979.4	
C2-Naphthalenes	2104.5	
C3-Naphthalenes	1373.4	
C4-Naphthalenes	623.6	
Biphenyl	281.5	
Acenaphthylene	0.9	J
Acenaphthene	10.0	J
Fluorene	233.2	Q
C1-Fluorenes	427.5	
C2-Fluorenes	523.0	
C3-Fluorenes	296.2	
Anthracene	12.5	J
Phenanthrene	377.8	
C1-Phen/Anthracenes	687.9	
C2-Phen/Anthracenes	581.5	
C3-Phen/Anthracenes	407.0	
C4-Phen/Anthracenes	282.3	
Dibenzothiophene	246.4	
C1-Dibenzothiophenes	336.0	
C2-Dibenzothiophenes	426.8	
C3-Dibenzothiophenes	324.6	
Fluoranthene	5.8	J
Pyrene	18.7	J
C1-Fluoranthenes/Pyrenes	73.6	
Benzo(a)anthracene	9.1	J
Chrysene	65.4	
C1-Chrysenes	150.0	
C2-Chrysenes	122.5	
C3-Chrysenes	20.6	
C4-Chrysenes	17.4	J
Benzo(b)fluoranthene	9.4	J
Benzo(k)fluoranthene	0.9	J
Benzo(e)pyrene	16.9	J
Benzo(a)pyrene	4.1	J
Perylene	6.0	J
Indeno(1,2,3-c,d)pyrene	0.5	J
Dibenzo(a,h)anthracene	0.7	J
Benzo(g,h,i)perylene	12.4	J
<b>TOTAL PAH (ng/mL)</b>	<b>13804.5</b>	
(Excluding Perylene)		

Specific Isomers	Value (ng/mL)	Qual
1-Methylnaphthalene	1300.8	
2-Methylnaphthalene	1678.6	
2,6-Dimethylnaphthalene	1129.7	
1,6,7-Trimethylnaphthalene	596.3	
1-Methylphenanthrene	261.3	

<b>QC Sample Type</b>	Lab Sample ID
STD OIL 2000	W42033

ASSOCIATED SAMPLE INFORMATION  
Station Survey Rep KLI Sample ID  
19 Use Batch Info

Matrix	OIL
Batch	M3076

Volume (mL)	1.0 WET
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ANALYTE	Value (ng/mL)	Qual
Naphthalene	745.2	
C1-Naphthalenes	1530.8	
C2-Naphthalenes	1100.1	
C3-Naphthalenes	652.3	
C4-Naphthalenes	426.8	
Biphenyl	75.9	
Acenaphthylene	37.9	
Acenaphthene	14.6	J
Fluorene	103.1	
C1-Fluorenes	224.5	
C2-Fluorenes	294.4	
C3-Fluorenes	193.3	
Anthracene	21.1	
Phenanthrene	160.6	
C1-Phen/Anthracenes	316.6	
C2-Phen/Anthracenes	369.5	
C3-Phen/Anthracenes	236.4	
C4-Phen/Anthracenes	181.2	
Dibenzothiophene	21.6	
C1-Dibenzothiophenes	60.6	
C2-Dibenzothiophenes	58	
C3-Dibenzothiophenes	36	
Fluoranthene	7.6	J
Pyrene	12.6	J
C1-Fluoranthenes/Pyrenes	62.9	
Benzo(a)anthracene	4.7	J
Chrysene	16	J
C1-Chrysenes	28.2	
C2-Chrysenes	43.7	
C3-Chrysenes	7.4	J
C4-Chrysenes	0.3	J
Benzo(b)fluoranthene	0.9	J
Benzo(k)fluoranthene	0.3	J
Benzo(e)pyrene	3.8	J
Benzo(a)pyrene	2	J
Perylene	13.3	J
Indeno(1,2,3-c,d)pyrene	0.2	J
Dibenzo(a,h)anthracene	0.1	J
Benzo(g,h,i)perylene	0.3	J

**TOTAL PAH (ng/mL)** 7051.4  
(Excluding Perylene)

Specific Isomers	Value (ng/mL)	Qual
1-Methylnaphthalene	619.2	
2-Methylnaphthalene	911.6	
2,6-Dimethylnaphthalene	660	
1,6,7-Trimethylnaphthalene	434.1	
1-Methylphenanthrene	98.2	

<b>QC Sample Type</b>	Lab Sample ID
STD OIL 2000	W42214

ASSOCIATED SAMPLE INFORMATION  
Station Survey Rep KLI Sample ID  
20 Use Batch Info

Matrix	OIL
Batch	M3105

Volume (mL) 1.00 WET

ANALYTE	Value (ng/mL)	Qual
Naphthalene	458.7	
C1-Naphthalenes	1307.9	
C2-Naphthalenes	1230.7	
C3-Naphthalenes	800.6	
C4-Naphthalenes	616.1	
Biphenyl	82.4	
Acenaphthylene	36.9	
Acenaphthene	13.4	J
Fluorene	118	
C1-Fluorenes	292.9	
C2-Fluorenes	542.7	
C3-Fluorenes	302.1	
Anthracene	23.2	
Phenanthrene	141.7	
C1-Phen/Anthracenes	300.9	
C2-Phen/Anthracenes	396.4	
C3-Phen/Anthracenes	324.9	
C4-Phen/Anthracenes	165.8	
Dibenzothiophene	19.1	J
C1-Dibenzothiophenes	74.2	
C2-Dibenzothiophenes	62.5	
C3-Dibenzothiophenes	62	
Fluoranthene	6.7	J
Pyrene	12.8	J
C1-Fluoranthenes/Pyrenes	57.1	
Benzo(a)anthracene	2.7	J
Chrysene	10.5	J
C1-Chrysenes	38.9	
C2-Chrysenes	53.8	
C3-Chrysenes	14	J
C4-Chrysenes	16	J
Benzo(b)fluoranthene	1.2	J
Benzo(k)fluoranthene	0.5	J
Benzo(e)pyrene	4.7	J
Benzo(a)pyrene	7.2	J
Perylene	12.5	J
Indeno(1,2,3-c,d)pyrene	0.3	J
Dibenzo(a,h)anthracene	0.2	J
Benzo(g,h,i)perylene	0	ND
<b>TOTAL PAH (ng/mL)</b>	<b>7599.2</b>	

(Excluding Perylene)

Specific Isomers	Value (ng/mL)	Qual
1-Methylnaphthalene	522.5	
2-Methylnaphthalene	785.4	
2,6-Dimethylnaphthalene	729.1	
1,6,7-Trimethylnaphthalene	489.1	
1-Methylphenanthrene	99.6	

<b>QC Sample Type</b>	Lab Sample ID
STD OIL 2000	W42634

ASSOCIATED SAMPLE INFORMATION  
Station Survey Rep KLI Sample ID  
22 Use Batch Info

Matrix	OIL
Batch	M3206

Volume (mL)	1.0 WET
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ANALYTE	Value (ng/mL)	Qual
Naphthalene	693.7	
C1-Naphthalenes	2106.4	
C2-Naphthalenes	2199.7	
C3-Naphthalenes	1996.8	
C4-Naphthalenes	1008.8	
Biphenyl	63.9	
Acenaphthylene	30.6	
Acenaphthene	5.2	J
Fluorene	138.2	
C1-Fluorenes	454.8	Q
C2-Fluorenes	459	
C3-Fluorenes	428.5	
Anthracene	15.8	J
Phenanthrene	134.2	
C1-Phen/Anthracenes	314.3	
C2-Phen/Anthracenes	412.1	
C3-Phen/Anthracenes	299.8	
C4-Phen/Anthracenes	171.2	
Dibenzothiophene	24.5	
C1-Dibenzothiophenes	81.5	
C2-Dibenzothiophenes	80.1	
C3-Dibenzothiophenes	49	
Fluoranthene	5.8	J
Pyrene	7.8	J
C1-Fluoranthenes/Pyrenes	68.1	
Benzo(a)anthracene	4.7	J
Chrysene	11.2	J
C1-Chrysenes	37	
C2-Chrysenes	16.4	J
C3-Chrysenes	7.1	J
C4-Chrysenes	14.6	J
Benzo(b)fluoranthene	3.2	J
Benzo(k)fluoranthene	3.5	J
Benzo(e)pyrene	3.2	J
Benzo(a)pyrene	1.2	J
Perylene	3.1	J
Indeno(1,2,3-c,d)pyrene	0.8	J
Dibenzo(a,h)anthracene	0.5	J
Benzo(g,h,i)perylene	0.1	J

**TOTAL PAH (ng/mL)** 11353.2

(Excluding Perylene)

Specific Isomers	Value (ng/mL)	Qual
1-Methylnaphthalene	870.1	
2-Methylnaphthalene	1236.3	
2,6-Dimethylnaphthalene	836.9	
1,6,7-Trimethylnaphthalene	630.9	
1-Methylphenanthrene	104.4	

**QC Sample Type**

Lab Sample ID

GERG STD CHK

W00358

## ASSOCIATED SAMPLE INFORMATION

Station	Survey	Rep	KLI Sample ID
	17		Use Batch Info

Matrix	OIL
Batch	M3029

Volume (mL)	1.00	WET
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ANALYTE	Value (ng/mL)	Qual
n-C10	1460.2	
n-C11	3307.3	
n-C12	4500.6	
n-C13	4201.2	
n-C14	4804.0	
n-C15	4601.2	
n-C16	4729.7	
n-C17	4122.1	
Pristane	2405.4	
n-C18	3490.4	
Phytane	1891.9	
n-C19	3206.5	
n-C20	2954.7	
n-C21	2961.3	
n-C22	2764.9	
n-C23	2497.2	
n-C24	2389.6	
n-C25	2055.3	
n-C26	1821.1	
n-C27	1381.7	
n-C28	1064.4	
n-C29	1036.7	
n-C30	777.1	
n-C31	553.9	
n-C32	556.2	
n-C33	382.1	
n-C34	291.9	

<b>TOTAL AHC (ng/mL)</b>	<b>66208.3</b>
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<b>TRUAHC (ug/mL)</b>	638.1
<b>TOTAL RAHC (ug/mL)</b>	98.8
<b>UCM (ug/mL)</b>	539.3

**QC Sample Type**

Lab Sample ID

STD OIL 2000

W00560

## ASSOCIATED SAMPLE INFORMATION

Station	Survey	Rep	KLI Sample ID
	19		Use Batch Info

Matrix	OIL
Batch	M3076

Volume (mL)	1.0	WET
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ANALYTE	Value (ng/mL)	Qual
n-C10	3303.9	
n-C11	3760.8	
n-C12	4084.3	
n-C13	4634.4	
n-C14	4444.3	
n-C15	5383.7	
n-C16	7845.5	
n-C17	4783.8	
Pristane	5712	
n-C18	4396.6	
Phytane	2315.8	
n-C19	4116.3	
n-C20	3727.4	
n-C21	3552.7	
n-C22	3187.8	
n-C23	2858.5	
n-C24	2626.9	
n-C25	2580.2	
n-C26	2166.4	
n-C27	1923.3	
n-C28	1648.7	
n-C29	1422.3	
n-C30	1091.3	
n-C31	1214	
n-C32	709.7	
n-C33	698.9	
n-C34	401.5	

<b>TOTAL AHC (ng/mL)</b>	<b>84591</b>
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<b>TRUAHC (ug/mL)</b>	280.7
<b>TOTAL RAHC (ug/mL)</b>	121.2
<b>UCM (ug/mL)</b>	159.5



**QC Sample Type**

Lab Sample ID

STD OIL 2000

W00604

## ASSOCIATED SAMPLE INFORMATION

Station	Survey	Rep	KLI Sample ID
	20		Use Batch Info

Matrix	OIL
Batch	M3105

Volume (mL)	1.0	WET
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ANALYTE	Value (ng/mL)	Qual
n-C10	3577	
n-C11	4439.7	
n-C12	4398.8	
n-C13	4082.5	
n-C14	4306.2	
n-C15	4797.3	
n-C16	5108.3	
n-C17	5104.9	
Pristane	5838.5	
n-C18	4230.8	
Phytane	2264.3	
n-C19	4251.7	
n-C20	3772.6	
n-C21	3734.9	
n-C22	3249.1	
n-C23	2973.4	
n-C24	2736.9	
n-C25	2779.7	
n-C26	2176.7	
n-C27	2199.3	
n-C28	1755	
n-C29	1748.4	
n-C30	1161.7	
n-C31	1193.9	
n-C32	802.3	
n-C33	686.6	
n-C34	371.4	J

<b>TOTAL AHC (ng/mL)</b>	<b>83741.5</b>
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<b>TRUAHC (ug/mL)</b>	301.8
<b>TOTAL RAHC (ug/mL)</b>	123
<b>UCM (ug/mL)</b>	178.85

**QC Sample Type**

Lab Sample ID

STD OIL 2000

W00784

## ASSOCIATED SAMPLE INFORMATION

Station	Survey	Rep	KLI Sample ID
	22		Use Batch Info

Matrix	OIL
Batch	M3223

Volume (mL)	1.0	WET
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ANALYTE	Value (ng/mL)	Qual
n-C10	3175.3	
n-C11	3891.6	
n-C12	3871.1	
n-C13	4264.5	
n-C14	5301.3	
n-C15	5239.1	
n-C16	4892.4	
n-C17	5302.7	
Pristane	5862.4	
n-C18	4043.5	
Phytane	2031.1	
n-C19	3964.6	
n-C20	3500.1	
n-C21	3455.2	
n-C22	3006	
n-C23	2729	
n-C24	2704.8	
n-C25	2513.5	
n-C26	2073.9	
n-C27	1976.2	
n-C28	1620.8	
n-C29	1673.4	
n-C30	1281.9	
n-C31	1001.5	
n-C32	873.5	
n-C33	440.7	
n-C34	260.4	

<b>TOTAL AHC (ng/mL)</b>	<b>80949.8</b>
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<b>TRUAHC (ug/mL)</b>	264.2
<b>TOTAL RAHC (ug/mL)</b>	127.96
<b>UCM (ug/mL)</b>	136.23

# **APPENDIX D**

## **Sediment Quality Control Results**

### **4.0 Standard Reference Materials**



<b>QC Sample Type</b>	Lab Sample ID
SRM NIST 1944	Q19007

ASSOCIATED SAMPLE INFORMATION  
Station Survey Rep KLI Sample ID  
17 Use Batch Info

Matrix	SEDIMENT
Batch	M3029

Dry Weight (g)	1.00	DRY
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ANALYTE	Value (ng/g)	Qual
Naphthalene	1804.0	
C1-Naphthalenes	1665.1	
C2-Naphthalenes	1704.5	
C3-Naphthalenes	1792.0	
C4-Naphthalenes	1619.7	
Biphenyl	255.4	
Acenaphthylene	1530.5	
Acenaphthene	679.6	
Fluorene	1278.3	
C1-Fluorenes	1350.3	
C2-Fluorenes	1904.2	
C3-Fluorenes	2592.5	
Anthracene	2705.5	
Phenanthrene	4585.2	
C1-Phen/Anthracenes	4015.9	
C2-Phen/Anthracenes	3267.1	
C3-Phen/Anthracenes	2431.1	
C4-Phen/Anthracenes	775.9	
Dibenzothiophene	507.1	
C1-Dibenzothiophenes	755.3	
C2-Dibenzothiophenes	973.2	
C3-Dibenzothiophenes	886.5	
Fluoranthene	8300.2	
Pyrene	8929.1	
C1-Fluoranthenes/Pyrenes	4640.2	
Benzo(a)anthracene	5652.0	
Chrysene	5154.4	
C1-Chrysenes	5175.0	
C2-Chrysenes	2872.2	
C3-Chrysenes	137.0	
C4-Chrysenes	293.9	
Benzo(b)fluoranthene	6501.6	
Benzo(k)fluoranthene	3916.7	
Benzo(e)pyrene	4207.0	
Benzo(a)pyrene	7086.6	
Perylene	816.7	
Indeno(1,2,3-c,d)pyrene	3213.5	
Dibenzo(a,h)anthracene	796.3	
Benzo(g,h,i)perylene	2842.1	

**TOTAL PAH (ng/g)** 108796.3

(Excluding Perylene)

Specific Isomers	Value (ng/g)	Qual
1-Methylnaphthalene	605.9	
2-Methylnaphthalene	1059.1	
2,6-Dimethylnaphthalene	879.3	
1,6,7-Trimethylnaphthalene	643.9	
1-Methylphenanthrene	1286.1	
Surrogate Recoveries	Percent	Qual
Naphthalene-D8	52.0	
Acenaphthene-D10	62.9	
Phenanthrene-D10	84.8	
Chrysene-D12	91.8	
Perylene-D12	91.0	

<b>QC Sample Type</b>	Lab Sample ID
SRM NIST 1944	Q19608

ASSOCIATED SAMPLE INFORMATION  
Station Survey Rep KLI Sample ID  
19 Use Batch Info

Matrix	SEDIMENT
Batch	M3076

Dry Weight (g) 1.02 DRY

ANALYTE	Value (ng/g)	Qual
Naphthalene	1675.1	
C1-Naphthalenes	1527.1	
C2-Naphthalenes	1582.6	
C3-Naphthalenes	1460.2	
C4-Naphthalenes	2012.4	
Biphenyl	226.7	
Acenaphthylene	1854.7	
Acenaphthene	649.8	
Fluorene	1174	
C1-Fluorenes	1600.5	
C2-Fluorenes	2220.6	
C3-Fluorenes	4600.5	
Anthracene	5146.2	Q
Phenanthrene	6121.4	
C1-Phen/Anthracenes	6293.9	
C2-Phen/Anthracenes	6742.8	
C3-Phen/Anthracenes	5556.3	
C4-Phen/Anthracenes	6185.9	
Dibenzothiophene	669.8	
C1-Dibenzothiophenes	1342.4	
C2-Dibenzothiophenes	2315.1	
C3-Dibenzothiophenes	0	ND
Fluoranthene	11940.9	
Pyrene	13273.1	
C1-Fluoranthenes/Pyrenes	12298.9	
Benzo(a)anthracene	5962.7	
Chrysene	5987.3	
C1-Chrysenes	5804.5	
C2-Chrysenes	3401.8	
C3-Chrysenes	382.7	
C4-Chrysenes	366.9	
Benzo(b)fluoranthene	6160.1	
Benzo(k)fluoranthene	2449.1	
Benzo(e)pyrene	3764.6	
Benzo(a)pyrene	6412.5	Q
Perylene	1178.3	
Indeno(1,2,3-c,d)pyrene	2984.8	
Dibenzo(a,h)anthracene	567.1	
Benzo(g,h,i)perylene	2725.3	

**TOTAL PAH (ng/g)** 145440.1

(Excluding Perylene)

Specific Isomers	Value (ng/g)	Qual
1-Methylnaphthalene	589.2	
2-Methylnaphthalene	937.9	
2,6-Dimethylnaphthalene	779.6	
1,6,7-Trimethylnaphthalene	668.5	
1-Methylphenanthrene	1772.2	
Surrogate Recoveries	Percent	Qual
Naphthalene-D8	46.2	
Acenaphthene-D10	68.9	
Phenanthrene-D10	79.3	
Chrysene-D12	115.6	
Perylene-D12	60.4	

<b>QC Sample Type</b>	Lab Sample ID
SRM NIST 1944	Q19862

ASSOCIATED SAMPLE INFORMATION  
Station Survey Rep KLI Sample ID  
20 Use Batch Info

Matrix	SEDIMENT
Batch	M3105

Dry Weight (g) 1.06 DRY

ANALYTE	Value (ng/g)	Qual
Naphthalene	1391.4	
C1-Naphthalenes	1354.9	
C2-Naphthalenes	1630	
C3-Naphthalenes	1634.3	
C4-Naphthalenes	2287.6	
Biphenyl	167.1	
Acenaphthylene	1038.3	
Acenaphthene	391.3	
Fluorene	727.4	
C1-Fluorenes	1073	
C2-Fluorenes	2111.4	
C3-Fluorenes	2526.1	
Anthracene	3716.4	Q
Phenanthrene	4103.4	
C1-Phen/Anthracenes	4462.6	
C2-Phen/Anthracenes	4759.9	
C3-Phen/Anthracenes	3269.9	
C4-Phen/Anthracenes	3698	
Dibenzothiophene	510.4	
C1-Dibenzothiophenes	1059.9	
C2-Dibenzothiophenes	1734.2	
C3-Dibenzothiophenes	1538.8	
Fluoranthene	6625.4	
Pyrene	6986.8	
C1-Fluoranthenes/Pyrenes	6979.4	
Benzo(a)anthracene	4447.1	
Chrysene	3944.8	
C1-Chrysenes	4299.4	
C2-Chrysenes	2762.7	
C3-Chrysenes	449.1	
C4-Chrysenes	243.4	
Benzo(b)fluoranthene	5451.6	
Benzo(k)fluoranthene	1616.4	
Benzo(e)pyrene	3005.3	
Benzo(a)pyrene	5760.7	
Perylene	623.2	
Indeno(1,2,3-c,d)pyrene	3715.9	
Dibenzo(a,h)anthracene	816.6	
Benzo(g,h,i)perylene	3466.6	

**TOTAL PAH (ng/g)** 105757.4

(Excluding Perylene)

Specific Isomers	Value (ng/g)	Qual
1-Methylnaphthalene	499.6	
2-Methylnaphthalene	855.3	
2,6-Dimethylnaphthalene	533.6	
1,6,7-Trimethylnaphthalene	426.1	
1-Methylphenanthrene	1216.7	
Surrogate Recoveries	Percent	Qual
Naphthalene-D8	49	
Acenaphthene-D10	92.2	
Phenanthrene-D10	84.9	
Chrysene-D12	82.1	
Perylene-D12	67	

<b>QC Sample Type</b>	Lab Sample ID
SRM NIST 1944	Q20339

ASSOCIATED SAMPLE INFORMATION  
Station Survey Rep KLI Sample ID  
22 Use Batch Info

Matrix	SEDIMENT
Batch	M3206

Dry Weight (g) 1.18 DRY

ANALYTE	Value (ng/g)	Qual
Naphthalene	2387.6	
C1-Naphthalenes	2049.1	
C2-Naphthalenes	2805.1	
C3-Naphthalenes	2252.9	
C4-Naphthalenes	2901.2	
Biphenyl	190.2	
Acenaphthylene	46	
Acenaphthene	574.3	
Fluorene	1006.8	
C1-Fluorenes	2772.1	
C2-Fluorenes	2518.3	
C3-Fluorenes	6012.8	
Anthracene	4019	Q
Phenanthrene	5908.1	
C1-Phen/Anthracenes	6572.3	
C2-Phen/Anthracenes	7037.3	
C3-Phen/Anthracenes	5478.6	
C4-Phen/Anthracenes	6197.2	
Dibenzothiophene	785.8	
C1-Dibenzothiophenes	1799.5	
C2-Dibenzothiophenes	2668.4	
C3-Dibenzothiophenes	2667.4	
Fluoranthene	12750.9	Q
Pyrene	13090.4	
C1-Fluoranthenes/Pyrenes	10358.6	
Benzo(a)anthracene	5350.4	
Chrysene	4378.3	
C1-Chrysenes	4902	
C2-Chrysenes	228.7	
C3-Chrysenes	409.3	
C4-Chrysenes	786.9	
Benzo(b)fluoranthene	4896.4	
Benzo(k)fluoranthene	1713.3	
Benzo(e)pyrene	3309.8	
Benzo(a)pyrene	5526.9	
Perylene	1194.7	
Indeno(1,2,3-c,d)pyrene	2874.7	
Dibenzo(a,h)anthracene	655.8	
Benzo(g,h,i)perylene	2493.9	

**TOTAL PAH (ng/g)** 142376.1

(Excluding Perylene)

Specific Isomers	Value (ng/g)	Qual
1-Methylnaphthalene	720.5	
2-Methylnaphthalene	1328.6	
2,6-Dimethylnaphthalene	720.5	
1,6,7-Trimethylnaphthalene	628.3	
1-Methylphenanthrene	1836.7	
Surrogate Recoveries	Percent	Qual
Naphthalene-D8	28.1	Q
Acenaphthene-D10	60.4	
Phenanthrene-D10	66.6	
Chrysene-D12	93.8	
Perylene-D12	51.4	



**QC Sample Type**

Lab Sample ID

SRM NIST 1944

Q19007

## ASSOCIATED SAMPLE INFORMATION

Station	Survey	Rep	KLI Sample ID
	17		Use Batch Info

Matrix	SEDIMENT
Batch	M3029

Dry Weight (g)	1.00	DRY
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ANALYTE	Value (ng/g)	Qual
n-C10	614.2	
n-C11	179.6	
n-C12	142.5	
n-C13	556.8	
n-C14	274.5	
n-C15	512.3	
n-C16	665.0	
n-C17	1332.6	
Pristane	4419.6	
n-C18	222.2	
Phytane	3446.2	
n-C19	2920.2	
n-C20	297.2	
n-C21	2151.3	
n-C22	343.6	
n-C23	149.4	J
n-C24	2137.6	
n-C25	1786.5	
n-C26	2398.8	
n-C27	981.0	
n-C28	8482.2	
n-C29	1585.2	
n-C30	2379.6	
n-C31	1988.9	
n-C32	1513.5	
n-C33	1580.7	
n-C34	2702.9	

<b>TOTAL AHC (ng/g)</b>	<b>45763.8</b>
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<b>TRUAHC (ug/g)</b>	5037.9
<b>TOTAL RAHC (ug/g)</b>	177.2
<b>UCM (ug/g)</b>	4860.7

Surrogate Recoveries	Percent	Qual
C12 (Deuterated)	65.0	
C20 (Deuterated)	70.0	
C24 (Deuterated)	53.0	
C30 (Deuterated)	66.0	

**QC Sample Type**

Lab Sample ID

SRM NIST 1944

Q19608

## ASSOCIATED SAMPLE INFORMATION

Station	Survey	Rep	KLI Sample ID
	19		Use Batch Info

Matrix	SEDIMENT
Batch	M3076

Dry Weight (g)	1.02	DRY
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ANALYTE	Value (ng/g)	Qual
n-C10	0	ND
n-C11	0	ND
n-C12	125.7	J
n-C13	601.9	
n-C14	326.1	
n-C15	873.3	
n-C16	4111.2	
n-C17	573.6	
Pristane	4610.2	
n-C18	1775.8	
Phytane	3734.3	
n-C19	927.5	
n-C20	891.5	
n-C21	938	
n-C22	1437.8	
n-C23	282.7	
n-C24	799.5	
n-C25	1064.2	
n-C26	2231.8	
n-C27	894.8	
n-C28	4795.7	
n-C29	1972.1	
n-C30	519.6	
n-C31	2606	
n-C32	2261.3	
n-C33	2174.7	
n-C34	330.4	J

<b>TOTAL AHC (ng/g)</b>	<b>40859.5</b>
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<b>TRUAHC (ug/g)</b>	3981.8
<b>TOTAL RAHC (ug/g)</b>	184.1
<b>UCM (ug/g)</b>	3797.7

Surrogate Recoveries	Percent	Qual
C12 (Deuterated)	27.9	M
C20 (Deuterated)	78.1	
C24 (Deuterated)	38.8	M
C30 (Deuterated)	38.9	M

**QC Sample Type**

Lab Sample ID

SRM NIST 1944

Q19862

## ASSOCIATED SAMPLE INFORMATION

Station	Survey	Rep	KLI Sample ID
	20		Use Batch Info

Matrix	SEDIMENT
Batch	M3105

Dry Weight (g)	1.06	DRY
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ANALYTE	Value (ng/g)	Qual
n-C10	0	ND
n-C11	0	ND
n-C12	123.3	J
n-C13	0	ND
n-C14	201.3	
n-C15	257	J
n-C16	410.5	J
n-C17	833.2	
Pristane	3296.6	
n-C18	301.6	J
Phytane	2816.4	
n-C19	850.7	
n-C20	285.5	J
n-C21	161.4	J
n-C22	0	ND
n-C23	379.3	
n-C24	1063.1	
n-C25	1703.1	
n-C26	223.8	
n-C27	1630.4	
n-C28	137.7	J
n-C29	1038.2	
n-C30	0	ND
n-C31	1495.5	
n-C32	0	ND
n-C33	799.7	
n-C34	0	ND

<b>TOTAL AHC (ng/g)</b>	<b>18008.3</b>
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<b>TRUAHC (ug/g)</b>	3427.82
<b>TOTAL RAHC (ug/g)</b>	150.01
<b>UCM (ug/g)</b>	3277.81

Surrogate Recoveries	Percent	Qual
C12 (Deuterated)	110	
C20 (Deuterated)	89	
C24 (Deuterated)	83	
C30 (Deuterated)	133	Q

**QC Sample Type**

Lab Sample ID

SRM NIST 1944

C41081

## ASSOCIATED SAMPLE INFORMATION

Station	Survey	Rep	KLI Sample ID
	22		Use Batch Info

Matrix SEDIMENT

Batch M3223

Dry Weight (g)	1.99	DRY
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ANALYTE	Value (ng/g)	Qual
n-C10	147.8	
n-C11	88.9	
n-C12	62.2	J
n-C13	90.3	
n-C14	639.9	
n-C15	596.6	
n-C16	467.6	
n-C17	1004.1	
Pristane	2647.8	
n-C18	329.5	
Phytane	1674.8	
n-C19	1086.2	
n-C20	0	ND
n-C21	470.5	
n-C22	1315.8	
n-C23	50.5	J
n-C24	152.5	J
n-C25	0	ND
n-C26	0	ND
n-C27	0	ND
n-C28	0	ND
n-C29	1950.6	
n-C30	1205.8	
n-C31	1560	
n-C32	2340.1	ND
n-C33	1072.5	ND
n-C34	0	ND

<b>TOTAL AHC (ng/g)</b>	<b>18953.8</b>
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<b>TRUAHC (ug/g)</b>	1383
<b>TOTAL RAHC (ug/g)</b>	65.43
<b>UCM (ug/g)</b>	1317.56

Surrogate Recoveries	Percent	Qual
C12 (Deuterated)	32	Q
C20 (Deuterated)	69	
C24 (Deuterated)	58	
C30 (Deuterated)	130	M

## Laboratory QC - TOC SRMs

SURVEY	LABSAMP_TY	LABSAMP_DE	LABSAMP_ID	BATCH_ID	ANALYTE	VALUE	VALUE_QU	UNIT
19	SRM	SRM NIST 1944	SRM060701A	6/7/01	TOC	3.71		%
20	SRM	SRM NIST 1944	SRM090601A	TOC343	TOC	4.58		%
	SRM	SRM NIST 1944	SRM090601B	TOC343	TOC	4.46		%
22	SRM	SRM NIST 1944	SRM050602E	TOC373	TOC	4.01		%



# **APPENDIX D**

## **Sediment Quality Control Results**

### **5.0 Duplicates**





<b>QC Sample Type</b>	Lab Sample ID
DUPLICATE	Q19010

ASSOCIATED SAMPLE INFORMATION  
Station Survey Rep KLI Sample ID  
GOC-S 17 2 PWS00PAT0008

Matrix	SEDIMENT
Batch	M3029
Wet Weight (g)	20.55 WET
Dry Weight (g)	12.06 DRY
Solids (%)	58.7 DRY

ANALYTE	Value (ng/g)	Qual
Naphthalene	3.9	J
C1-Naphthalenes	6.1	
C2-Naphthalenes	5.4	
C3-Naphthalenes	4.5	
C4-Naphthalenes	3.2	
Biphenyl	1.5	
Acenaphthylene	1.0	
Acenaphthene	1.3	
Fluorene	5.0	
C1-Fluorenes	5.0	
C2-Fluorenes	6.6	
C3-Fluorenes	4.7	
Anthracene	2.5	
Phenanthrene	14.0	
C1-Phen/Anthracenes	6.6	
C2-Phen/Anthracenes	4.1	
C3-Phen/Anthracenes	2.3	
C4-Phen/Anthracenes	1.0	J
Dibenzothiophene	1.8	
C1-Dibenzothiophenes	1.8	
C2-Dibenzothiophenes	2.2	
C3-Dibenzothiophenes	1.6	
Fluoranthene	13.5	
Pyrene	7.4	
C1-Fluoranthenes/Pyrenes	2.8	
Benzo(a)anthracene	2.4	
Chrysene	4.5	
C1-Chrysenes	2.1	
C2-Chrysenes	2.1	
C3-Chrysenes	0.1	J
C4-Chrysenes	0.0	ND
Benzo(b)fluoranthene	2.0	
Benzo(k)fluoranthene	0.9	
Benzo(e)pyrene	1.4	
Benzo(a)pyrene	1.1	
Perylene	3.2	J
Indeno(1,2,3-c,d)pyrene	0.4	J
Dibenzo(a,h)anthracene	0.2	J
Benzo(g,h,i)perylene	0.6	J

**TOTAL PAH (ng/g)** 127.3  
(Excluding Perylene)

Specific Isomers	Value (ng/g)	Qual
1-Methylnaphthalene	2.0	J
2-Methylnaphthalene	4.1	J
2,6-Dimethylnaphthalene	2.4	
1,6,7-Trimethylnaphthalene	1.7	
1-Methylphenanthrene	2.2	
Surrogate Recoveries	Percent	Qual
Naphthalene-D8	50.6	
Acenaphthene-D10	68.3	
Phenanthrene-D10	66.8	
Chrysene-D12	40.7	
Perylene-D12	27.1	Q

<b>QC Sample Type</b>	Lab Sample ID
DUPLICATE	Q19609

ASSOCIATED SAMPLE INFORMATION  
Station Survey Rep KLI Sample ID  
AMT-S 19 1 PWS01PAT0001

Matrix	SEDIMENT
Batch	M3076
Wet Weight (g)	20.21 WET
Dry Weight (g)	9.56 DRY
Solids (%)	47.3 DRY

ANALYTE	Value (ng/g)	Qual
Naphthalene	7	
C1-Naphthalenes	12.2	
C2-Naphthalenes	11.4	
C3-Naphthalenes	10	
C4-Naphthalenes	13.4	
Biphenyl	3.1	
Acenaphthylene	3.8	
Acenaphthene	1.4	J
Fluorene	7.4	
C1-Fluorenes	10.2	
C2-Fluorenes	24.6	
C3-Fluorenes	26.1	
Anthracene	11.8	
Phenanthrene	16.7	
C1-Phen/Anthracenes	19.3	
C2-Phen/Anthracenes	47.6	
C3-Phen/Anthracenes	54.2	
C4-Phen/Anthracenes	38.8	
Dibenzothiophene	2.6	
C1-Dibenzothiophenes	7.5	
C2-Dibenzothiophenes	30.4	
C3-Dibenzothiophenes	58.2	
Fluoranthene	18.8	
Pyrene	18.9	
C1-Fluoranthenes/Pyrenes	33.7	
Benzo(a)anthracene	9.8	
Chrysene	29.5	
C1-Chrysenes	57.8	
C2-Chrysenes	87.7	
C3-Chrysenes	12.3	
C4-Chrysenes	0.3	J
Benzo(b)fluoranthene	16.2	
Benzo(k)fluoranthene	2.9	
Benzo(e)pyrene	23.2	
Benzo(a)pyrene	13.7	
Perylene	10.4	
Indeno(1,2,3-c,d)pyrene	5.3	
Dibenzo(a,h)anthracene	2.8	
Benzo(g,h,i)perylene	9.6	

**TOTAL PAH (ng/g)** 760.1  
(Excluding Perylene)

Specific Isomers	Value (ng/g)	Qual
1-Methylnaphthalene	4.5	
2-Methylnaphthalene	7.6	
2,6-Dimethylnaphthalene	6.6	
1,6,7-Trimethylnaphthalene	4	
1-Methylphenanthrene	5.7	
Surrogate Recoveries	Percent	Qual
Naphthalene-D8	51.6	
Acenaphthene-D10	68.7	
Phenanthrene-D10	81.8	
Chrysene-D12	97.9	
Perylene-D12	35.6	Q

<b>QC Sample Type</b>	Lab Sample ID
DUPLICATE	Q19863

ASSOCIATED SAMPLE INFORMATION  
Station Survey Rep KLI Sample ID  
GOC-S 20 1 PWS01PAT0007

Matrix	SEDIMENT
Batch	M3105
Wet Weight (g)	20.13 WET
Dry Weight (g)	11.03 DRY
Solids (%)	54.8 DRY

ANALYTE	Value (ng/g)	Qual
Naphthalene	2.3	J
C1-Naphthalenes	3.3	J
C2-Naphthalenes	3.3	
C3-Naphthalenes	3.1	
C4-Naphthalenes	2.1	
Biphenyl	1.6	
Acenaphthylene	1.2	
Acenaphthene	0.6	J
Fluorene	3.5	
C1-Fluorenes	3.5	J
C2-Fluorenes	4.4	J
C3-Fluorenes	3.1	J
Anthracene	3.9	
Phenanthrene	10	
C1-Phen/Anthracenes	5.7	
C2-Phen/Anthracenes	4.1	
C3-Phen/Anthracenes	2.8	
C4-Phen/Anthracenes	1.6	
Dibenzothiophene	1.2	
C1-Dibenzothiophenes	1.7	
C2-Dibenzothiophenes	2.2	
C3-Dibenzothiophenes	1.6	
Fluoranthene	11.4	
Pyrene	7.6	
C1-Fluoranthenes/Pyrenes	4.1	J
Benzo(a)anthracene	2.9	J
Chrysene	4.1	
C1-Chrysenes	2.6	J
C2-Chrysenes	0.7	J
C3-Chrysenes	0.1	J
C4-Chrysenes	0	ND
Benzo(b)fluoranthene	3.2	J
Benzo(k)fluoranthene	1.0	J
Benzo(e)pyrene	2.1	
Benzo(a)pyrene	1.8	J
Perylene	1.3	J
Indeno(1,2,3-c,d)pyrene	1.4	J
Dibenzo(a,h)anthracene	0.2	J
Benzo(g,h,i)perylene	1.2	J
<b>TOTAL PAH (ng/g)</b>	<b>111.2</b>	
(Excluding Perylene)		

Specific Isomers	Value (ng/g)	Qual
1-Methylnaphthalene	1.0	J
2-Methylnaphthalene	2.2	J
2,6-Dimethylnaphthalene	1.7	
1,6,7-Trimethylnaphthalene	1.3	
1-Methylphenanthrene	1.8	
Surrogate Recoveries	Percent	Qual
Naphthalene-D8	80.3	
Acenaphthene-D10	88.4	
Phenanthrene-D10	92.7	
Chrysene-D12	89.9	
Perylene-D12	32.4	Q

<b>QC Sample Type</b>	Lab Sample ID
DUPLICATE	Q20340

ASSOCIATED SAMPLE INFORMATION  
Station Survey Rep KLI Sample ID  
GOC-S 22 3 PWS02PAT0007

Matrix	SEDIMENT
Batch	M3206
Wet Weight (g)	20.25 WET
Dry Weight (g)	7.95 DRY
Solids (%)	39.3 DRY

ANALYTE	Value (ng/g)	Qual
Naphthalene	3.4	J
C1-Naphthalenes	5.1	J
C2-Naphthalenes	4.1	
C3-Naphthalenes	4.2	
C4-Naphthalenes	1.2	J
Biphenyl	1.0	J
Acenaphthylene	1.4	
Acenaphthene	1.0	J
Fluorene	3.7	J
C1-Fluorenes	5.2	J
C2-Fluorenes	3.4	J
C3-Fluorenes	1.2	J
Anthracene	3.6	
Phenanthrene	8.3	J
C1-Phen/Anthracenes	4.8	
C2-Phen/Anthracenes	3.8	
C3-Phen/Anthracenes	1.6	J
C4-Phen/Anthracenes	0.2	J
Dibenzothiophene	1.5	
C1-Dibenzothiophenes	1.5	J
C2-Dibenzothiophenes	2	
C3-Dibenzothiophenes	1.1	J
Fluoranthene	12.7	
Pyrene	9.9	
C1-Fluoranthenes/Pyrenes	7.1	J
Benzo(a)anthracene	5.6	
Chrysene	5.8	
C1-Chrysenes	2.4	J
C2-Chrysenes	0.9	J
C3-Chrysenes	0.1	J
C4-Chrysenes	0	ND
Benzo(b)fluoranthene	3.7	J
Benzo(k)fluoranthene	1.6	J
Benzo(e)pyrene	2	J
Benzo(a)pyrene	3.3	J
Perylene	1.8	J
Indeno(1,2,3-c,d)pyrene	1.3	J
Dibenzo(a,h)anthracene	0.4	J
Benzo(g,h,i)perylene	1.2	J
<b>TOTAL PAH (ng/g)</b>	<b>121</b>	
(Excluding Perylene)		

Specific Isomers	Value (ng/g)	Qual
1-Methylnaphthalene	1.8	J
2-Methylnaphthalene	3.3	J
2,6-Dimethylnaphthalene	1.7	
1,6,7-Trimethylnaphthalene	1.2	J
1-Methylphenanthrene	1.4	
Surrogate Recoveries	Percent	Qual
Naphthalene-D8	54.8	
Acenaphthene-D10	73	
Phenanthrene-D10	85.6	
Chrysene-D12	93.9	
Perylene-D12	39.2	Q

<b>QC Sample Type</b>	Lab Sample ID
DUPLICATE	Q19010

ASSOCIATED SAMPLE INFORMATION  
Station Survey Rep KLI Sample ID  
GOC-S 17 2 PWS00PAT0008

Matrix SEDIMENT  
Batch M3029

Wet Weight (g) 20.55 WET  
Dry Weight (g) 12.06 DRY  
Solids (%) 58.7 DRY

ANALYTE	Value (ng/g)	Qual
n-C10	0.0	ND
n-C11	2.2	J
n-C12	3.0	J
n-C13	0.0	ND
n-C14	3.9	J
n-C15	5.7	J
n-C16	4.9	J
n-C17	25.3	
Pristane	25.7	
n-C18	9.7	J
Phytane	1.8	J
n-C19	9.5	J
n-C20	9.9	J
n-C21	13.5	J
n-C22	8.6	J
n-C23	26.8	
n-C24	10.9	J
n-C25	63.1	
n-C26	24.0	
n-C27	271.4	
n-C28	21.6	
n-C29	118.2	
n-C30	17.4	
n-C31	99.8	
n-C32	24.4	
n-C33	47.6	
n-C34	35.7	

**TOTAL AHC (ng/g)** 884.4

<b>TRUAHC (ug/g)</b>	14.0
<b>TOTAL RAHC (ug/g)</b>	2.3
<b>UCM (ug/g)</b>	11.7

Surrogate Recoveries	Percent	Qual
C12 (Deuterated)	56.0	
C20 (Deuterated)	76.0	
C24 (Deuterated)	77.0	
C30 (Deuterated)	71.0	

<b>QC Sample Type</b>	Lab Sample ID
DUPLICATE	Q19609

ASSOCIATED SAMPLE INFORMATION  
Station Survey Rep KLI Sample ID  
AMT-S 19 1 PWS01PAT0001

Matrix	SEDIMENT
Batch	M3076
Wet Weight (g)	20.21 WET
Dry Weight (g)	9.56 DRY
Solids (%)	47.3 DRY

ANALYTE	Value (ng/g)	Qual
n-C10	0	ND
n-C11	0	ND
n-C12	5.7	J
n-C13	10.1	
n-C14	17.1	
n-C15	63.8	
n-C16	381.9	
n-C17	79.6	
Pristane	160.4	
n-C18	80.5	
Phytane	93.5	
n-C19	46.1	
n-C20	88.5	
n-C21	51.2	
n-C22	73.1	
n-C23	63.8	
n-C24	38.8	J
n-C25	126	
n-C26	38.1	
n-C27	420.9	
n-C28	155.2	
n-C29	285.7	
n-C30	147.2	
n-C31	293.1	
n-C32	431.9	
n-C33	422.4	
n-C34	442.9	

**TOTAL AHC (ng/g)** 4017

<b>TRUAHC (ug/g)</b>	246.1
<b>TOTAL RAHC (ug/g)</b>	12.3
<b>UCM (ug/g)</b>	233.9

Surrogate Recoveries	Percent	Qual
C12 (Deuterated)	40.2	
C20 (Deuterated)	49.2	
C24 (Deuterated)	43.1	
C30 (Deuterated)	54	

<b>QC Sample Type</b>	Lab Sample ID
DUPLICATE	Q19863

ASSOCIATED SAMPLE INFORMATION  
 Station Survey Rep KLI Sample ID  
 GOC-S 20 1 PWS01PAT0007

Matrix SEDIMENT  
 Batch M3105

Wet Weight (g) 20.13 WET  
 Dry Weight (g) 11.03 DRY  
 Solids (%) 54.8 DRY

ANALYTE	Value (ng/g)	Qual
n-C10	0	ND
n-C11	14	J
n-C12	1.8	J
n-C13	1.5	J
n-C14	3.5	J
n-C15	7.1	J
n-C16	1.6	J
n-C17	18.6	J
Pristane	13.1	J
n-C18	12.2	J
Phytane	17.1	
n-C19	9.4	J
n-C20	5.7	J
n-C21	13.8	J
n-C22	7.3	J
n-C23	17.2	J
n-C24	9	J
n-C25	32.7	
n-C26	12.3	
n-C27	174.4	
n-C28	11	J
n-C29	71.8	
n-C30	11.7	J
n-C31	77.5	
n-C32	6.6	J
n-C33	39	
n-C34	1.5	J

**TOTAL AHC (ng/g)** 591.4

<b>TRUAHC (ug/g)</b>	34.4
<b>TOTAL RAHC (ug/g)</b>	2
<b>UCM (ug/g)</b>	32.39

Surrogate Recoveries	Percent	Qual
C12 (Deuterated)	68	
C20 (Deuterated)	76	
C24 (Deuterated)	75	
C30 (Deuterated)	75	

<b>QC Sample Type</b>	Lab Sample ID
DUPLICATE	Q20469

ASSOCIATED SAMPLE INFORMATION  
Station Survey Rep KLI Sample ID  
GOC-S 22 1 PWS02PAT0002

Matrix SEDIMENT  
Batch M3223

Wet Weight (g) 20.09 WET  
Dry Weight (g) 11.1 DRY  
Solids (%) 55.2 DRY

ANALYTE	Value (ng/g)	Qual
n-C10	35.4	
n-C11	31.7	
n-C12	2	J
n-C13	2.4	J
n-C14	9.7	
n-C15	18.5	J
n-C16	6.6	J
n-C17	21.3	J
Pristane	19.1	J
n-C18	13.2	J
Phytane	6.1	J
n-C19	17.7	J
n-C20	29.1	J
n-C21	24.6	J
n-C22	104.9	
n-C23	27.7	
n-C24	10.7	J
n-C25	63.3	
n-C26	22.3	
n-C27	384.3	
n-C28	29.7	
n-C29	215.6	
n-C30	39.1	
n-C31	164	
n-C32	0	ND
n-C33	95.9	
n-C34	0	ND

**TOTAL AHC (ng/g)** 1394.8

<b>TRUAHC (ug/g)</b>	7.97
<b>TOTAL RAHC (ug/g)</b>	0.46
<b>UCM (ug/g)</b>	7.51

Surrogate Recoveries	Percent	Qual
C12 (Deuterated)	66	
C20 (Deuterated)	77	
C24 (Deuterated)	75	
C30 (Deuterated)	107	



## Laboratory QC - Total Organic Carbon Duplicates

SURVEY	STN_ID	REP	SAMPLE ID	LABSAMP_ID	BATCH_ID	ANALYTE	RESULT VALUE	DUPLICATE VALUE	UNIT	RPD	UNIT
19	GOC-S	3	PWS01PAT0006	C38074D	6/7/01	TOC	0.31	0.32	%	4	%
20	GOC-S	1	PWS01PAT0007	C39505D	TOC343	TOC	0.48	0.47	%	1	%
22	GOC-S	1	PWS02PAT0002	C41080D	TOC373	TOC	0.51	0.55	%	7	%

## Laboratory QC - Particle Grain Size Duplicates

SURVEY	STN_ID	REP	SAMPLE ID	LABSAMP_ID	BATCH_ID	ANALYTE	RESULT VALUE	DUPLICATE VALUE	RPD	UNIT
17	AMT-S	3	PWS00PGS0012	C36265D	09/10/00	SAND	3	3.1	2.0	%
		3	PWS00PGS0012	C36265D	09/10/00	SILT	46.5	46.2	0.5	%
		3	PWS00PGS0012	C36265D	09/10/00	CLAY	50.5	50.7	0.4	%
19	GOC-S	3	PWS01PGS0006	C38038D	5/22/01	SAND	13.0	13.9	6.4	%
		3	PWS01PGS0006	C38038D	5/22/01	SILT	49.8	48.7	2.3	%
		3	PWS01PGS0006	C38038D	5/22/01	CLAY	37.1	37.4	0.8	%
20	AMT-S	3	PWS01PGS0012	C39449D	9/11/2001	SAND	3.6	3.9	7.4	%
		3	PWS01PGS0012	C39449D	9/11/2001	SILT	47.3	47.6	0.7	%
		3	PWS01PGS0012	C39449D	9/11/2001	CLAY	49.1	48.5	1.2	%
22	GOC-S	3	PWS02PGS0007	C41091D	4/24/2002	SAND	14.5	14.09	2.9	%
		3	PWS02PGS0007	C41091D	4/24/2002	SILT	49.7	49.79	0.2	%
		3	PWS02PGS0007	C41091D	4/24/2002	CLAY	35.8	36.12	0.9	%