



## King County

Department of Natural Resources and Parks  
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To: Brandi Lubliner, WDOE  
From: Colin Elliott  
Subject: Narrative for RSMP Interlab comparison study for IAA No. C1700005

The following narrative summarizes the lab results of the marine nearshore sediment samples split between the King County Environmental Lab (KCEL) and the Manchester Environmental Lab (MEL). This interlab comparison study was conducted as part of the Regional Stormwater Monitoring Program (RSMP) Project to compare the data generated by both labs for marine sediments.

#### 1. Study Design

The Quality Assurance Project Plan (QAPP) defined the following scope for the interlab study:

*The RSMP will target 10 samples for an inter-lab comparison study. The laboratory comparison study conducted for the RSMP stream sample showed few and minor differences between MEL and KCEL but different analytical techniques between the 2 labs will be used for the nearshore sediments for the PAHs, phthalates and selected metals. The samples tested by KCEL will include only a subset of the PAHs reported by MEL.*

Sediments were collected by King County staff from 11 sites during the Nearshore sampling events but as per the QAPP, only 10 were analyzed by both labs. Sediments for PAHs/Phthalates were split into 8 oz glass jars obtained from MEL immediately following sieving in the field to 2 mm. Samples for metals were split from the sediment sieved at KCEL using a 2 mm plastic sieve. The samples sent to MEL were subsampled into 4 oz glass jars.

Study Location ID	Field Collection Date	KCEL Sample ID	MEL sample ID
02-NUGA	8/24/2016	L65939-1	1608049-02
03-NUGA	8/25/2016	L65939-2	1608049-03
06-NUGA	8/24/2016	L65939-3	1608049-06
07-NUGA	8/24/2016	L65939-4	1608049-07
16-NUGA	8/25/2016	L65939-5	1608049-16
18-NUGA	8/24/2016	L65939-6	1608049-18
19-NUGA	8/25/2016	L65939-7	1608049-19
23-NUGA	8/24/2016	L65939-8	1608049-23
44-NUGA	8/25/2016	L65939-10	1608049-44
45-NUGA	8/24/2016	L65939-9	1608049-45

## 2. Summary of Results

The results reported by each lab are summarized in the attached tables. The metals and PAH/Phthalate data from both labs are compared on a dry weight basis. The relative percent difference (RPD) between the values was calculated when detectable responses were reported from both labs for a particular parameter. The resulting RPD was compared to the field replicate acceptance limits listed in Table 14 of the QAPP.

### 2.1 Total Metals:

The same analytical methods were used by both labs for the analysis of Mercury (EPA 7471B) and Arsenic, Cadmium, Lead, Selenium, Silver and Tin (EPA 6020A). For Chromium, Copper, Nickel and Zinc, KCEL used EPA Method 6010C while these elements were tested by EPA 6020A by MEL. The results are summarized below.

- i. Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Tin and Zinc values reported for all samples were above the reporting limits for both labs. Only the RPD for Chromium (23.9%) and the RPD for Tin (32.3%) in Sample in Sample 44-NUGA exceeded the 20% lab replicate limit. The results for these metals should be considered comparable with no observed bias.
- ii. Selenium values were below the detection limits for KCEL for all except 2 of the 10 samples while MEL reported results above their reporting limit for all samples. For the 2 samples where both labs reported values, the RPDs exceeded the 20% limit, with the MEL values being 20 to 30% higher than the KCEL results. There is evidence of a bias in the results for Selenium between the 2 labs.
- iii. Silver values were below reporting limits for both labs for all except 2 of the 10 samples. For only one of these 2 samples did both labs have reportable values. The resulting RPD exceeded the 20% limit (45.5%), likely due to the expected variability for levels measured near the reporting limit. Results between the labs should be considered comparable.
- iv. Mercury values reported for all samples were above the reporting limits for both labs. Only the RPD for Sample 07-NUGA (27.3%) slightly exceeded the 20% lab replicate limit. The results for these metals should be considered comparable with no observed bias.

### 2.2 PAHs and Phthalates:

The methods used by KCEL and MEL for testing of PAHs and Phthalates in marine sediments are both based on GC/MS/SIM analysis but there are calibration/quantitation differences between the methods. The isotope dilution quantitation technique is used by MEL while internal standard calibration is used by KCEL. The other significant difference between the labs was the list of parameters reported. The KCEL method only targets the parameters reported for the RSMP Stream Sediments. The MEL parameter list is equivalent to the PSEMP Offshore sediment monitoring program and includes 12 additional PAHs compared to KCEL. For the Benzofluoranthenes, MEL and KCEL report results in a slightly different manner. KCEL reports the combined concentration of all 3 isomers (b, j and k) while MEL reports the b and j isomers as individual parameters. Prior to comparison with the KCEL value, the two results for Benzo(b)fluoranthene and

Benzo(k)fluoranthene reported by MEL were summed. As was done for metals, the RPD values were determined only for parameters where results were reported above the reporting limit for each lab.

Out of the 280 sets of common results reported by both labs, 87 RPD values were calculated. Listed below are the 27 sets where the RPD value exceeded the 40 % lab replicate limit:

Location ID	Parameter Name	RPD
02-NUGA	Benz[a]anthracene	50.8
	Chrysene	43.6
06-NUGA	Naphthalene	-65.7
07-NUGA	Benzo(a)pyrene	-48.5
	Fluoranthene	-40.2
16-NUGA	Phenanthrene	-48.3
18-NUGA	Benzo(a)pyrene	-47.3
	Benzofluoranthenes, Total (b+k+j)	-42.2
	Chrysene	-50.4
	Perylene	-45.4
23-NUGA	2-Methylnaphthalene	-44.5
	Acenaphthene	-47.8
	Acenaphthylene	-40.4
	Naphthalene	-61.7
44-NUGA	1-Methylnaphthalene	44.3
	Fluoranthene	-49.4
	Pyrene	-42.6
45-NUGA	Benz[a]anthracene	-58.3
	Benzo(a)pyrene	-74.5
	Benzo(ghi)perylene	-75.3
	Benzofluoranthenes, Total (b+k+j)	-52.2
	Chrysene	-78.3
	Fluoranthene	-73.0
	Indeno(1,2,3-cd)pyrene	-69.9
	Perylene	-59.4
	Phenanthrene	-85.9
Pyrene	-69.6	

The majority of the results where the RPD could be calculated show acceptable precision (60 out of 87 are within the 40% field replicate limit). Even though the comparison to the precision criteria is generally acceptable, the fact that the RPD values are routinely negative (76 out of the 87 RPD values), indicates the MEL results are typically higher than the KCEL results. This would be expected since the isotope dilution method used by MEL is intended to compensate for any losses that may occur during sample preparation.

## Metals Data Table

Location ID	Parameter (units = mg/Kg)	KCEL Lab ID #	KCEL Result Value	KCEL Qual	KCEL Reporting Limit	MEL Lab ID #	MEL Result Value	MEL Qual	MEL Reporting Limit	RPD
02-NUGA	Arsenic	L65939-1	1.46		0.032	1608049-02	1.48		0.05	-0.7
03-NUGA	Arsenic	L65939-2	1.8		0.033	1608049-03	1.73		0.05	2.0
06-NUGA	Arsenic	L65939-3	3.19		0.031	1608049-06	3.31		0.05	-1.8
07-NUGA	Arsenic	L65939-4	2.02		0.033	1608049-07	1.95		0.05	1.8
16-NUGA	Arsenic	L65939-5	1.52		0.033	1608049-16	1.67		0.05	-4.7
18-NUGA	Arsenic	L65939-6	1.56		0.033	1608049-18	1.65		0.05	-2.8
19-NUGA	Arsenic	L65939-7	1.97		0.032	1608049-19	2.02		0.051	-1.3
23-NUGA	Arsenic	L65939-8	2		0.034	1608049-23	2.01		0.05	-0.2
44-NUGA	Arsenic	L65939-10	1.66		0.032	1608049-44	1.87		0.053	-5.9
45-NUGA	Arsenic	L65939-9	1.99		0.032	1608049-45	2.35		0.05	-8.3
02-NUGA	Cadmium	L65939-1	0.061	JT	0.017	1608049-02	0.064		0.05	-2.4
03-NUGA	Cadmium	L65939-2	0.0842		0.017	1608049-03	0.099		0.05	-8.1
06-NUGA	Cadmium	L65939-3	0.24		0.016	1608049-06	0.218		0.05	4.8
07-NUGA	Cadmium	L65939-4	0.0881		0.017	1608049-07	0.084		0.05	2.4
16-NUGA	Cadmium	L65939-5	0.111		0.016	1608049-16	0.117		0.05	-2.6
18-NUGA	Cadmium	L65939-6	0.071	JT	0.017	1608049-18	0.08		0.05	-6.0
19-NUGA	Cadmium	L65939-7	0.069	JT	0.015	1608049-19	0.075		0.051	-4.2
23-NUGA	Cadmium	L65939-8	0.203		0.017	1608049-23	0.195		0.05	2.0
44-NUGA	Cadmium	L65939-10	0.054	JT	0.015	1608049-44	0.059		0.053	-4.4
45-NUGA	Cadmium	L65939-9	0.108		0.016	1608049-45	0.117		0.05	-4.0
02-NUGA	Chromium	L65939-1	17.9		0.19	1608049-02	20.7		0.252	-7.3
03-NUGA	Chromium	L65939-2	17.4		0.2	1608049-03	14.7		0.25	8.4
06-NUGA	Chromium	L65939-3	8.55		0.19	1608049-06	9.62		0.251	-5.9
07-NUGA	Chromium	L65939-4	10.7		0.2	1608049-07	12.8		0.25	-8.9
16-NUGA	Chromium	L65939-5	12.9		0.2	1608049-16	17		0.252	-13.7
18-NUGA	Chromium	L65939-6	19.3		0.2	1608049-18	22.8		0.25	-8.3
19-NUGA	Chromium	L65939-7	13.2		0.19	1608049-19	15.3		0.257	-7.4

23-NUGA	Chromium	L65939-8	10.5		0.19	1608049-23	12.2		0.25	-7.5
44-NUGA	Chromium	L65939-10	15.3		0.19	1608049-44	24.9		0.265	-23.9
45-NUGA	Chromium	L65939-9	14		0.19	1608049-45	18.8		0.25	-14.6
02-NUGA	Copper	L65939-1	6.16		0.26	1608049-02	5.72		0.05	3.7
03-NUGA	Copper	L65939-2	2.98		0.27	1608049-03	3		0.05	-0.3
06-NUGA	Copper	L65939-3	7.89		0.26	1608049-06	9.06		0.05	-6.9
07-NUGA	Copper	L65939-4	3.65		0.27	1608049-07	3.69		0.05	-0.5
16-NUGA	Copper	L65939-5	3.42		0.27	1608049-16	3.81		0.05	-5.4
18-NUGA	Copper	L65939-6	3.93		0.28	1608049-18	4.15		0.05	-2.7
19-NUGA	Copper	L65939-7	3.41		0.27	1608049-19	3.61		0.051	-2.8
23-NUGA	Copper	L65939-8	5.29		0.26	1608049-23	5.48		0.05	-1.8
44-NUGA	Copper	L65939-10	4.22		0.27	1608049-44	5.13		0.053	-9.7
45-NUGA	Copper	L65939-9	3.99		0.26	1608049-45	4.46		0.05	-5.6
02-NUGA	Lead	L65939-1	2.74		0.032	1608049-02	2.97		0.05	-4.0
03-NUGA	Lead	L65939-2	1.32		0.033	1608049-03	1.41		0.05	-3.3
06-NUGA	Lead	L65939-3	6.81		0.031	1608049-06	7.23		0.05	-3.0
07-NUGA	Lead	L65939-4	2.58		0.033	1608049-07	2.74		0.05	-3.0
16-NUGA	Lead	L65939-5	1.94		0.033	1608049-16	2.3		0.05	-8.5
18-NUGA	Lead	L65939-6	2.51		0.033	1608049-18	2.86		0.05	-6.5
19-NUGA	Lead	L65939-7	0.935		0.032	1608049-19	1.03		0.051	-4.8
23-NUGA	Lead	L65939-8	4.42		0.034	1608049-23	4.77		0.05	-3.8
44-NUGA	Lead	L65939-10	1.26		0.032	1608049-44	1.56		0.053	-10.6
45-NUGA	Lead	L65939-9	4.08		0.032	1608049-45	4.83		0.05	-8.4
02-NUGA	Nickel	L65939-1	28.7		0.34	1608049-02	29.9		0.05	-2.0
03-NUGA	Nickel	L65939-2	14.2		0.33	1608049-03	14.9		0.05	-2.4
06-NUGA	Nickel	L65939-3	6.45		0.34	1608049-06	7.41		0.05	-6.9
07-NUGA	Nickel	L65939-4	12.1		0.33	1608049-07	12.6		0.05	-2.0
16-NUGA	Nickel	L65939-5	12.8		0.33	1608049-16	15.5		0.05	-9.5
18-NUGA	Nickel	L65939-6	16.4		0.35	1608049-18	19.1		0.05	-7.6

19-NUGA	Nickel	L65939-7	15.6		0.33	1608049-19	15.9		0.051	-1.0
23-NUGA	Nickel	L65939-8	9.71		0.32	1608049-23	10.3		0.05	-2.9
44-NUGA	Nickel	L65939-10	18.9		0.33	1608049-44	22.8		0.053	-9.4
45-NUGA	Nickel	L65939-9	12		0.32	1608049-45	14.8		0.05	-10.4
02-NUGA	Selenium	L65939-1	0.17	U	0.17	1608049-02	0.334		0.252	NA
03-NUGA	Selenium	L65939-2	0.17	U	0.17	1608049-03	0.368		0.25	NA
07-NUGA	Selenium	L65939-4	0.17	U	0.17	1608049-07	0.389		0.25	NA
16-NUGA	Selenium	L65939-5	0.16	U	0.16	1608049-16	0.37		0.252	NA
18-NUGA	Selenium	L65939-6	0.17	U	0.17	1608049-18	0.371		0.25	NA
19-NUGA	Selenium	L65939-7	0.15	U	0.15	1608049-19	0.317		0.257	NA
44-NUGA	Selenium	L65939-10	0.15	U	0.15	1608049-44	0.364		0.265	NA
45-NUGA	Selenium	L65939-9	0.16	U	0.16	1608049-45	0.398		0.25	NA
06-NUGA	Selenium	L65939-3	0.18	JT	0.16	1608049-06	0.357		0.251	-33.0
23-NUGA	Selenium	L65939-8	0.21	JT	0.17	1608049-23	0.334		0.25	-22.8
02-NUGA	Silver	L65939-1	0.013	U	0.013	1608049-02	0.05	U	0.05	NA
03-NUGA	Silver	L65939-2	0.013	U	0.013	1608049-03	0.05	U	0.05	NA
06-NUGA	Silver	L65939-3	0.026	JT	0.013	1608049-06	0.05	U	0.05	NA
07-NUGA	Silver	L65939-4	0.013	U	0.013	1608049-07	0.05	U	0.05	NA
16-NUGA	Silver	L65939-5	0.013	U	0.013	1608049-16	0.05	U	0.05	NA
18-NUGA	Silver	L65939-6	0.013	U	0.013	1608049-18	0.05	U	0.05	NA
19-NUGA	Silver	L65939-7	0.013	U	0.013	1608049-19	0.051	U	0.051	NA
44-NUGA	Silver	L65939-10	0.013	UJG	0.013	1608049-44	0.053	U	0.053	NA
45-NUGA	Silver	L65939-9	0.013	U	0.013	1608049-45	0.05	U	0.05	NA
23-NUGA	Silver	L65939-8	0.021	JT	0.013	1608049-23	0.056		0.05	-45.5
02-NUGA	Tin	L65939-1	0.43	JT	0.15	1608049-02	0.34	J	0.05	11.7
03-NUGA	Tin	L65939-2	0.23	JT	0.17	1608049-03	0.24		0.05	-2.1
06-NUGA	Tin	L65939-3	0.623		0.17	1608049-06	0.48		0.05	13.0
07-NUGA	Tin	L65939-4	0.32	JT	0.17	1608049-07	0.28		0.05	6.7
16-NUGA	Tin	L65939-5	0.27	JT	0.17	1608049-16	0.29		0.05	-3.6

18-NUGA	Tin	L65939-6	0.28	JT	0.17	1608049-18	0.3		0.05	-3.4
19-NUGA	Tin	L65939-7	0.19	JT	0.15	1608049-19	0.18		0.05	2.7
23-NUGA	Tin	L65939-8	0.626		0.16	1608049-23	0.66		0.05	-2.6
44-NUGA	Tin	L65939-10	0.21	JT	0.17	1608049-44	0.41		0.05	-32.3
45-NUGA	Tin	L65939-9	0.36	JT	0.16	1608049-45	0.33		0.05	4.3
02-NUGA	Zinc	L65939-1	23.2		0.34	1608049-02	24.4		2.52	-2.5
03-NUGA	Zinc	L65939-2	15.1		0.33	1608049-03	15.5		2.5	-1.3
06-NUGA	Zinc	L65939-3	17.3		0.34	1608049-06	19.4		2.51	-5.7
07-NUGA	Zinc	L65939-4	17.6		0.33	1608049-07	19.5		2.5	-5.1
16-NUGA	Zinc	L65939-5	16.7		0.33	1608049-16	19.7		2.52	-8.2
18-NUGA	Zinc	L65939-6	17.6		0.35	1608049-18	20.1		2.5	-6.6
19-NUGA	Zinc	L65939-7	14.6		0.33	1608049-19	15.8		2.57	-3.9
23-NUGA	Zinc	L65939-8	16.2		0.32	1608049-23	18.1		2.5	-5.5
44-NUGA	Zinc	L65939-10	19.4		0.33	1608049-44	21.7		2.65	-5.6
45-NUGA	Zinc	L65939-9	17.7		0.32	1608049-45	20.9		2.5	-8.3
02-NUGA	Mercury	L65939-1	0.0093	JT	0.0064	1608049-02	0.008		0.003	7.5
03-NUGA	Mercury	L65939-2	0.011	JT	0.0064	1608049-03	0.013		0.003	-8.3
06-NUGA	Mercury	L65939-3	0.0643		0.0062	1608049-06	0.067		0.003	-2.1
07-NUGA	Mercury	L65939-4	0.035	JT	0.0066	1608049-07	0.02		0.003	27.3
16-NUGA	Mercury	L65939-5	0.013	JT	0.0068	1608049-16	0.01		0.003	13.0
18-NUGA	Mercury	L65939-6	0.013	JT	0.0067	1608049-18	0.016		0.003	-10.3
19-NUGA	Mercury	L65939-7	0.0092	JT	0.0063	1608049-19	0.008		0.003	7.0
23-NUGA	Mercury	L65939-8	0.039	JT	0.0065	1608049-23	0.037		0.003	2.6
44-NUGA	Mercury	L65939-10	0.009	JT	0.0063	1608049-44	0.009		0.003	0.0
45-NUGA	Mercury	L65939-9	0.017	JT	0.0062	1608049-45	0.017		0.003	0.0

## PAH/Phthalates Data Table

Location ID	Parameter (units = ug/Kg)	KCEL Lab ID #	KCEL Result Value	KCEL Qual	KCEL Reporting Limit	MEL Lab ID #	MEL Result Value	MEL Qual	MEL Reporting Limit	RPD
02-NUGA	1-Methylnaphthalene	L65939-1	0.43	U	0.43	1608049-02	1.01	U	1.01	NA
03-NUGA	1-Methylnaphthalene	L65939-2	0.44	U	0.44	1608049-03	1.02	U	1.02	NA
06-NUGA	1-Methylnaphthalene	L65939-3	0.95	JT	0.43	1608049-06	0.89	NJ	1.01	3.3
07-NUGA	1-Methylnaphthalene	L65939-4	0.49	JT	0.44	1608049-07	0.982	U	0.982	NA
16-NUGA	1-Methylnaphthalene	L65939-5	0.44	U	0.44	1608049-16	0.207	NJ	1.02	NA
18-NUGA	1-Methylnaphthalene	L65939-6	0.44	U	0.44	1608049-18	0.242	J	1.02	NA
19-NUGA	1-Methylnaphthalene	L65939-7	0.42	U	0.42	1608049-19	0.964	U	0.964	NA
23-NUGA	1-Methylnaphthalene	L65939-8	1.3	JT	0.43	1608049-23	2.4		0.999	-29.7
44-NUGA	1-Methylnaphthalene	L65939-10	0.44	JT	0.42	1608049-44	0.17	NJ	1.04	44.3
45-NUGA	1-Methylnaphthalene	L65939-9	0.43	U	0.43	1608049-45	0.263	J	1	NA
02-NUGA	2-Chloronaphthalene	L65939-1	0.86	U	0.86	1608049-02	2.03	U	2.03	NA
03-NUGA	2-Chloronaphthalene	L65939-2	0.9	U	0.9	1608049-03	2.04	U	2.04	NA
06-NUGA	2-Chloronaphthalene	L65939-3	0.87	U	0.87	1608049-06	2.03	U	2.03	NA
07-NUGA	2-Chloronaphthalene	L65939-4	0.9	U	0.9	1608049-07	1.96	U	1.96	NA
16-NUGA	2-Chloronaphthalene	L65939-5	0.9	U	0.9	1608049-16	2.04	U	2.04	NA
18-NUGA	2-Chloronaphthalene	L65939-6	0.9	U	0.9	1608049-18	2.04	U	2.04	NA
19-NUGA	2-Chloronaphthalene	L65939-7	0.86	U	0.86	1608049-19	1.93	U	1.93	NA
23-NUGA	2-Chloronaphthalene	L65939-8	0.87	U	0.87	1608049-23	2	U	2	NA
44-NUGA	2-Chloronaphthalene	L65939-10	0.86	U	0.86	1608049-44	2.08	U	2.08	NA
45-NUGA	2-Chloronaphthalene	L65939-9	0.87	U	0.87	1608049-45	2.01	U	2.01	NA
02-NUGA	2-Methylnaphthalene	L65939-1	0.43	U	0.43	1608049-02	1.01	U	1.01	NA
03-NUGA	2-Methylnaphthalene	L65939-2	0.44	U	0.44	1608049-03	1.02	U	1.02	NA
06-NUGA	2-Methylnaphthalene	L65939-3	0.83	JT	0.43	1608049-06	1.55	NJ	1.01	-30.3
07-NUGA	2-Methylnaphthalene	L65939-4	0.44	U	0.44	1608049-07	0.982	U	0.982	NA
16-NUGA	2-Methylnaphthalene	L65939-5	0.44	U	0.44	1608049-16	0.341	NJ	1.02	NA
18-NUGA	2-Methylnaphthalene	L65939-6	0.44	U	0.44	1608049-18	1.02	U	1.02	NA
19-NUGA	2-Methylnaphthalene	L65939-7	0.42	U	0.42	1608049-19	0.964	U	0.964	NA
23-NUGA	2-Methylnaphthalene	L65939-8	1.9	JT	0.43	1608049-23	4.95		0.999	-44.5
44-NUGA	2-Methylnaphthalene	L65939-10	0.42	U	0.42	1608049-44	0.295	NJ	1.04	NA
45-NUGA	2-Methylnaphthalene	L65939-9	0.43	U	0.43	1608049-45	0.389	NJ	1	NA
02-NUGA	Acenaphthene	L65939-1	0.43	U	0.43	1608049-02	2.03	U	2.03	NA
03-NUGA	Acenaphthene	L65939-2	0.44	U	0.44	1608049-03	2.04	U	2.04	NA
06-NUGA	Acenaphthene	L65939-3	0.77	JT	0.43	1608049-06	1.38	NJ	2.03	-28.4
07-NUGA	Acenaphthene	L65939-4	0.44	U	0.44	1608049-07	1.96	U	1.96	NA
16-NUGA	Acenaphthene	L65939-5	0.44	U	0.44	1608049-16	2.04	U	2.04	NA
18-NUGA	Acenaphthene	L65939-6	0.44	U	0.44	1608049-18	2.04	U	2.04	NA
19-NUGA	Acenaphthene	L65939-7	0.42	U	0.42	1608049-19	1.93	U	1.93	NA
23-NUGA	Acenaphthene	L65939-8	1.8	JT	0.43	1608049-23	5.09		2	-47.8
44-NUGA	Acenaphthene	L65939-10	0.42	U	0.42	1608049-44	2.08	U	2.08	NA
45-NUGA	Acenaphthene	L65939-9	0.43	U	0.43	1608049-45	2.01	U	2.01	NA
02-NUGA	Acenaphthylene	L65939-1	0.43	U	0.43	1608049-02	1.01	U	1.01	NA
03-NUGA	Acenaphthylene	L65939-2	0.44	U	0.44	1608049-03	1.02	U	1.02	NA
06-NUGA	Acenaphthylene	L65939-3	2.7		0.43	1608049-06	4.99		1.01	-29.8



07-NUGA	Acenaphthylene	L65939-4	0.44	U	0.44	1608049-07	0.689	J	0.982	NA
16-NUGA	Acenaphthylene	L65939-5	0.44	U	0.44	1608049-16	0.315	NJ	1.02	NA
18-NUGA	Acenaphthylene	L65939-6	0.44	U	0.44	1608049-18	1.02	U	1.02	NA
19-NUGA	Acenaphthylene	L65939-7	0.42	U	0.42	1608049-19	0.964	U	0.964	NA
23-NUGA	Acenaphthylene	L65939-8	2.27		0.43	1608049-23	5.35		0.999	-40.4
44-NUGA	Acenaphthylene	L65939-10	0.42	U	0.42	1608049-44	1.04	U	1.04	NA
45-NUGA	Acenaphthylene	L65939-9	0.43	U	0.43	1608049-45	1.24		1	NA
02-NUGA	Anthracene	L65939-1	0.86	U	0.86	1608049-02	0.215	J	1.01	NA
03-NUGA	Anthracene	L65939-2	0.9	U	0.9	1608049-03	0.166	J	1.02	NA
06-NUGA	Anthracene	L65939-3	6.76		0.87	1608049-06	9.96		1.01	-19.1
07-NUGA	Anthracene	L65939-4	0.9	U	0.9	1608049-07	0.769	J	0.982	NA
16-NUGA	Anthracene	L65939-5	1.2	JT	0.9	1608049-16	1.16		1.02	1.7
18-NUGA	Anthracene	L65939-6	0.9	U	0.9	1608049-18	0.686	J	1.02	NA
19-NUGA	Anthracene	L65939-7	0.86	U	0.86	1608049-19	0.0989	J	0.964	NA
23-NUGA	Anthracene	L65939-8	14.2		0.87	1608049-23	19.8		0.999	-16.5
44-NUGA	Anthracene	L65939-10	1.3	JT	0.86	1608049-44	1.04	U	1.04	NA
45-NUGA	Anthracene	L65939-9	1.3	JT	0.87	1608049-45	2.64		1	-34.0
02-NUGA	Benz[a]anthracene	L65939-1	0.91	JT	0.86	1608049-02	0.297	J	1.01	50.8
03-NUGA	Benz[a]anthracene	L65939-2	0.9	UJ	0.9	1608049-03	0.319	J	1.02	NA
06-NUGA	Benz[a]anthracene	L65939-3	13.7		0.87	1608049-06	14.9		1.01	-4.2
07-NUGA	Benz[a]anthracene	L65939-4	1.2	JT	0.9	1608049-07	1.49		0.982	-10.8
16-NUGA	Benz[a]anthracene	L65939-5	1.3	JT	0.9	1608049-16	1.58		1.02	-9.7
18-NUGA	Benz[a]anthracene	L65939-6	1.3	JT	0.9	1608049-18	2.04		1.02	-22.2
19-NUGA	Benz[a]anthracene	L65939-7	0.86	U	0.86	1608049-19	0.148	J	0.964	NA
23-NUGA	Benz[a]anthracene	L65939-8	23.1		0.87	1608049-23	19.2		0.999	9.2
44-NUGA	Benz[a]anthracene	L65939-10	0.94	JT	0.86	1608049-44	0.647	J	1.04	18.5
45-NUGA	Benz[a]anthracene	L65939-9	1.4	JT	0.87	1608049-45	5.32	NJ	1	-58.3
02-NUGA	Benzo(a)pyrene	L65939-1	0.86	U	0.86	1608049-02	2.03	U	2.03	NA
03-NUGA	Benzo(a)pyrene	L65939-2	0.9	UJ	0.9	1608049-03	2.04	U	2.04	NA
06-NUGA	Benzo(a)pyrene	L65939-3	18		0.87	1608049-06	21.8	J	2.03	-9.5
07-NUGA	Benzo(a)pyrene	L65939-4	1	JT	0.9	1608049-07	2.88	J	1.96	-48.5
16-NUGA	Benzo(a)pyrene	L65939-5	0.9	U	0.9	1608049-16	2.39	U	2.04	NA
18-NUGA	Benzo(a)pyrene	L65939-6	1.3	JT	0.9	1608049-18	3.63	J	2.04	-47.3
19-NUGA	Benzo(a)pyrene	L65939-7	0.86	U	0.86	1608049-19	1.93	U	1.93	NA
23-NUGA	Benzo(a)pyrene	L65939-8	20.6		0.87	1608049-23	23.5	J	2	-6.6
44-NUGA	Benzo(a)pyrene	L65939-10	0.86	U	0.86	1608049-44	1.15	U	2.08	NA
45-NUGA	Benzo(a)pyrene	L65939-9	1.3	JT	0.87	1608049-45	8.89	J	2.01	-74.5
02-NUGA	Benzo(ghi)perylene	L65939-1	0.86	U	0.86	1608049-02	0.336	J	1.01	NA
03-NUGA	Benzo(ghi)perylene	L65939-2	0.9	UJ	0.9	1608049-03	0.451	J	1.02	NA
06-NUGA	Benzo(ghi)perylene	L65939-3	13.2		0.87	1608049-06	16.7		1.01	-11.7
07-NUGA	Benzo(ghi)perylene	L65939-4	1.1	JT	0.9	1608049-07	1.95		0.982	-27.9
16-NUGA	Benzo(ghi)perylene	L65939-5	0.9	U	0.9	1608049-16	1.34		1.02	NA
18-NUGA	Benzo(ghi)perylene	L65939-6	0.99	JT	0.9	1608049-18	1.87		1.02	-30.8
19-NUGA	Benzo(ghi)perylene	L65939-7	0.86	U	0.86	1608049-19	0.216	J	0.964	NA
23-NUGA	Benzo(ghi)perylene	L65939-8	10.7		0.87	1608049-23	13.8		0.999	-12.7
44-NUGA	Benzo(ghi)perylene	L65939-10	0.86	U	0.86	1608049-44	0.509	J	1.04	NA

45-NUGA	Benzo(ghi)perylene	L65939-9	1	JT	0.87	1608049-45	7.09		1	-75.3
02-NUGA	Benzofluoranthenes, Total (b+k+j)	L65939-1	1.1	JT	0.86	1608049-02	0.86	J	2.03	12.2
03-NUGA	Benzofluoranthenes, Total (b+k+j)	L65939-2	1.1	JT	0.9	1608049-03	1.17	J	2.04	-3.1
06-NUGA	Benzofluoranthenes, Total (b+k+j)	L65939-3	50.8		0.87	1608049-06	57.20		2.03	-5.9
07-NUGA	Benzofluoranthenes, Total (b+k+j)	L65939-4	2.5	JT	0.9	1608049-07	4.01	J	1.96	-23.2
16-NUGA	Benzofluoranthenes, Total (b+k+j)	L65939-5	2.4	JT	0.9	1608049-16	3.82	J	2.04	-22.8
18-NUGA	Benzofluoranthenes, Total (b+k+j)	L65939-6	2.9	JT	0.9	1608049-18	7.14		2.04	-42.2
19-NUGA	Benzofluoranthenes, Total (b+k+j)	L65939-7	0.86	U	0.86	1608049-19	0.59	J	1.93	NA
23-NUGA	Benzofluoranthenes, Total (b+k+j)	L65939-8	54.7		0.87	1608049-23	62.70		2	-6.8
44-NUGA	Benzofluoranthenes, Total (b+k+j)	L65939-10	1.3	JT	0.86	1608049-44	1.97	J	2.08	-20.5
45-NUGA	Benzofluoranthenes, Total (b+k+j)	L65939-9	3.9	JT	0.87	1608049-45	12.41		2.01	-52.2
02-NUGA	Bis(2-Ethylhexyl) Phthalate	L65939-1	22	U	22	1608049-02	35.7	U	25.3	NA
03-NUGA	Bis(2-Ethylhexyl) Phthalate	L65939-2	23	U	23	1608049-03	35.8	U	25.4	NA
06-NUGA	Bis(2-Ethylhexyl) Phthalate	L65939-3	22	UJ	22	1608049-06	43	U	25.3	NA
07-NUGA	Bis(2-Ethylhexyl) Phthalate	L65939-4	23	U	23	1608049-07	37.4	U	24.6	NA
16-NUGA	Bis(2-Ethylhexyl) Phthalate	L65939-5	23	U	23	1608049-16	36.3	U	25.5	NA
18-NUGA	Bis(2-Ethylhexyl) Phthalate	L65939-6	23	U	23	1608049-18	37.1	U	25.4	NA
19-NUGA	Bis(2-Ethylhexyl) Phthalate	L65939-7	22	U	22	1608049-19	35.5	U	24.1	NA
23-NUGA	Bis(2-Ethylhexyl) Phthalate	L65939-8	22	U	22	1608049-23	33.4	U	25	NA
44-NUGA	Bis(2-Ethylhexyl) Phthalate	L65939-10	22	U	22	1608049-44	38.2	U	26	NA
45-NUGA	Bis(2-Ethylhexyl) Phthalate	L65939-9	22	U	22	1608049-45	37.3	U	25.1	NA
02-NUGA	Butyl benzyl phthalate	L65939-1	4.3	U	4.3	1608049-02	27.3	U	25.3	NA
03-NUGA	Butyl benzyl phthalate	L65939-2	4.4	U	4.4	1608049-03	27.4	U	25.4	NA
06-NUGA	Butyl benzyl phthalate	L65939-3	4.3	U	4.3	1608049-06	28.3	U	25.3	NA
07-NUGA	Butyl benzyl phthalate	L65939-4	4.4	U	4.4	1608049-07	26.8	U	24.6	NA
16-NUGA	Butyl benzyl phthalate	L65939-5	4.4	U	4.4	1608049-16	27.8	U	25.5	NA
18-NUGA	Butyl benzyl phthalate	L65939-6	4.4	U	4.4	1608049-18	27.6	U	25.4	NA
19-NUGA	Butyl benzyl phthalate	L65939-7	4.2	U	4.2	1608049-19	26.3	U	24.1	NA
23-NUGA	Butyl benzyl phthalate	L65939-8	4.3	U	4.3	1608049-23	26.5	U	25	NA
44-NUGA	Butyl benzyl phthalate	L65939-10	4.2	U	4.2	1608049-44	27.6	U	26	NA
45-NUGA	Butyl benzyl phthalate	L65939-9	4.3	U	4.3	1608049-45	27.3	U	25.1	NA
02-NUGA	Carbazole	L65939-1	0.86	U	0.86	1608049-02	5.06	U	5.06	NA
03-NUGA	Carbazole	L65939-2	0.9	U	0.9	1608049-03	5.09	U	5.09	NA

06-NUGA	Carbazole	L65939-3	1.4	JT	0.87	1608049-06	1.73	J	5.07	-10.5
07-NUGA	Carbazole	L65939-4	0.9	U	0.9	1608049-07	4.91	U	4.91	NA
16-NUGA	Carbazole	L65939-5	0.9	U	0.9	1608049-16	5.11	U	5.11	NA
18-NUGA	Carbazole	L65939-6	0.9	U	0.9	1608049-18	5.09	U	5.09	NA
19-NUGA	Carbazole	L65939-7	0.86	U	0.86	1608049-19	4.82	U	4.82	NA
23-NUGA	Carbazole	L65939-8	2.1	JT	0.87	1608049-23	2.17	J	4.99	-1.6
44-NUGA	Carbazole	L65939-10	0.86	U	0.86	1608049-44	0.275	J	5.2	NA
45-NUGA	Carbazole	L65939-9	0.87	U	0.87	1608049-45	5.02	U	5.02	NA
02-NUGA	Chrysene	L65939-1	1.3	JT	0.86	1608049-02	0.511	J	1.01	43.6
03-NUGA	Chrysene	L65939-2	0.9	UJ	0.9	1608049-03	0.439	J	1.02	NA
06-NUGA	Chrysene	L65939-3	18.9		0.87	1608049-06	26.7		1.01	-17.1
07-NUGA	Chrysene	L65939-4	0.96	JT	0.9	1608049-07	2.15		0.982	-38.3
16-NUGA	Chrysene	L65939-5	1.1	JT	0.9	1608049-16	2.26		1.02	-34.5
18-NUGA	Chrysene	L65939-6	1.2	JT	0.9	1608049-18	3.64		1.02	-50.4
19-NUGA	Chrysene	L65939-7	0.86	U	0.86	1608049-19	0.289	J	0.964	NA
23-NUGA	Chrysene	L65939-8	35.6		0.87	1608049-23	33.7		0.999	2.7
44-NUGA	Chrysene	L65939-10	0.86	U	0.86	1608049-44	1.8		1.04	NA
45-NUGA	Chrysene	L65939-9	1	JT	0.87	1608049-45	8.2		1	-78.3
02-NUGA	Dibenzo(a,h)anthracene	L65939-1	0.86	U	0.86	1608049-02	1.01	U	1.01	NA
03-NUGA	Dibenzo(a,h)anthracene	L65939-2	0.9	U	0.9	1608049-03	1.02	U	1.02	NA
06-NUGA	Dibenzo(a,h)anthracene	L65939-3	3.6	JT	0.87	1608049-06	4.74		1.01	-13.7
07-NUGA	Dibenzo(a,h)anthracene	L65939-4	0.9	U	0.9	1608049-07	0.572	NJ	0.982	NA
16-NUGA	Dibenzo(a,h)anthracene	L65939-5	0.9	U	0.9	1608049-16	0.486	NJ	1.02	NA
18-NUGA	Dibenzo(a,h)anthracene	L65939-6	0.9	U	0.9	1608049-18	0.72	J	1.02	NA
19-NUGA	Dibenzo(a,h)anthracene	L65939-7	0.86	U	0.86	1608049-19	0.964	U	0.964	NA
23-NUGA	Dibenzo(a,h)anthracene	L65939-8	3.8	JT	0.87	1608049-23	4.64		0.999	-10.0
44-NUGA	Dibenzo(a,h)anthracene	L65939-10	0.86	U	0.86	1608049-44	1.04	U	1.04	NA
45-NUGA	Dibenzo(a,h)anthracene	L65939-9	0.87	U	0.87	1608049-45	1.09		1	NA
02-NUGA	Dibenzofuran	L65939-1	0.86	U	0.86	1608049-02	1.01	U	1.01	NA
03-NUGA	Dibenzofuran	L65939-2	0.9	U	0.9	1608049-03	1.02	U	1.02	NA
06-NUGA	Dibenzofuran	L65939-3	1.1	JT	0.87	1608049-06	2.11		1.01	-31.5
07-NUGA	Dibenzofuran	L65939-4	0.9	U	0.9	1608049-07	0.982	U	0.982	NA
16-NUGA	Dibenzofuran	L65939-5	0.9	U	0.9	1608049-16	1.02	U	1.02	NA
18-NUGA	Dibenzofuran	L65939-6	0.9	U	0.9	1608049-18	1.02	U	1.02	NA
19-NUGA	Dibenzofuran	L65939-7	0.86	U	0.86	1608049-19	0.964	U	0.964	NA
23-NUGA	Dibenzofuran	L65939-8	3.95		0.87	1608049-23	6.67		0.999	-25.6
44-NUGA	Dibenzofuran	L65939-10	0.86	U	0.86	1608049-44	1.04	U	1.04	NA
45-NUGA	Dibenzofuran	L65939-9	0.87	U	0.87	1608049-45	1	U	1	NA
02-NUGA	Dibutyl phthalate	L65939-1	3.7	UJ	2.2	1608049-02	36.9	U	10.1	NA
03-NUGA	Dibutyl phthalate	L65939-2	4.7	UJ	2.3	1608049-03	30.8	U	10.2	NA
06-NUGA	Dibutyl phthalate	L65939-3	3.6	UJ	2.2	1608049-06	37.7	U	10.1	NA
07-NUGA	Dibutyl phthalate	L65939-4	11	UJ	2.3	1608049-07	25.3	U	9.82	NA
16-NUGA	Dibutyl phthalate	L65939-5	4.8	UJ	2.3	1608049-16	37.7	U	10.2	NA
18-NUGA	Dibutyl phthalate	L65939-6	3.6	UJ	2.3	1608049-18	37.7	U	10.2	NA
19-NUGA	Dibutyl phthalate	L65939-7	3.5	UJ	2.2	1608049-19	36	U	9.64	NA
23-NUGA	Dibutyl phthalate	L65939-8	4.2	UJ	2.2	1608049-23	27.5	U	9.99	NA

44-NUGA	Dibutyl phthalate	L65939-10	3.6	UJ	2.2	1608049-44	27.1	U	10.4	NA
45-NUGA	Dibutyl phthalate	L65939-9	4.3	UJ	2.2	1608049-45	33.3	U	10	NA
02-NUGA	Diethyl phthalate	L65939-1	43	U	43	1608049-02	19.4		10.1	NA
03-NUGA	Diethyl phthalate	L65939-2	44	U	44	1608049-03	10.2	U	10.2	NA
06-NUGA	Diethyl phthalate	L65939-3	43	U	43	1608049-06	20		10.1	NA
07-NUGA	Diethyl phthalate	L65939-4	44	U	44	1608049-07	9.82	U	9.82	NA
16-NUGA	Diethyl phthalate	L65939-5	44	U	44	1608049-16	10.2	U	10.2	NA
18-NUGA	Diethyl phthalate	L65939-6	44	U	44	1608049-18	16.3		10.2	NA
19-NUGA	Diethyl phthalate	L65939-7	42	U	42	1608049-19	17.5		9.64	NA
23-NUGA	Diethyl phthalate	L65939-8	43	U	43	1608049-23	9.99	U	9.99	NA
44-NUGA	Diethyl phthalate	L65939-10	66	JT	42	1608049-44	10.4	U	10.4	NA
45-NUGA	Diethyl phthalate	L65939-9	43	U	43	1608049-45	10	U	10	NA
02-NUGA	Dimethyl phthalate	L65939-1	2.2	U	2.2	1608049-02	10.1	U	10.1	NA
03-NUGA	Dimethyl phthalate	L65939-2	2.3	U	2.3	1608049-03	10.2	U	10.2	NA
06-NUGA	Dimethyl phthalate	L65939-3	2.2	U	2.2	1608049-06	10.1	U	10.1	NA
07-NUGA	Dimethyl phthalate	L65939-4	2.3	U	2.3	1608049-07	9.82	U	9.82	NA
16-NUGA	Dimethyl phthalate	L65939-5	2.3	U	2.3	1608049-16	10.2	U	10.2	NA
18-NUGA	Dimethyl phthalate	L65939-6	2.3	U	2.3	1608049-18	10.2	U	10.2	NA
19-NUGA	Dimethyl phthalate	L65939-7	2.2	U	2.2	1608049-19	9.64	U	9.64	NA
23-NUGA	Dimethyl phthalate	L65939-8	2.2	U	2.2	1608049-23	9.99	U	9.99	NA
44-NUGA	Dimethyl phthalate	L65939-10	2.2	U	2.2	1608049-44	10.4	U	10.4	NA
45-NUGA	Dimethyl phthalate	L65939-9	2.2	U	2.2	1608049-45	10	U	10	NA
02-NUGA	Di-N-Octyl Phthalate	L65939-1	2.2	U	2.2	1608049-02	25.3	U	25.3	NA
03-NUGA	Di-N-Octyl Phthalate	L65939-2	2.3	U	2.3	1608049-03	25.4	U	25.4	NA
06-NUGA	Di-N-Octyl Phthalate	L65939-3	2.2	U	2.2	1608049-06	25.3	U	25.3	NA
07-NUGA	Di-N-Octyl Phthalate	L65939-4	2.3	U	2.3	1608049-07	24.6	U	24.6	NA
16-NUGA	Di-N-Octyl Phthalate	L65939-5	2.3	U	2.3	1608049-16	25.5	U	25.5	NA
18-NUGA	Di-N-Octyl Phthalate	L65939-6	2.3	U	2.3	1608049-18	33.4		25.4	NA
19-NUGA	Di-N-Octyl Phthalate	L65939-7	2.2	U	2.2	1608049-19	31.6	U	24.1	NA
23-NUGA	Di-N-Octyl Phthalate	L65939-8	2.2	U	2.2	1608049-23	25	U	25	NA
44-NUGA	Di-N-Octyl Phthalate	L65939-10	2.2	U	2.2	1608049-44	26	U	26	NA
45-NUGA	Di-N-Octyl Phthalate	L65939-9	2.2	U	2.2	1608049-45	25.1	U	25.1	NA
02-NUGA	Fluoranthene	L65939-1	0.86	U	0.86	1608049-02	1.2		1.01	NA
03-NUGA	Fluoranthene	L65939-2	0.9	UJ	0.9	1608049-03	0.98	J	1.02	NA
06-NUGA	Fluoranthene	L65939-3	25.8		0.87	1608049-06	41.7		1.01	-23.6
07-NUGA	Fluoranthene	L65939-4	1.5	JT	0.9	1608049-07	3.52		0.982	-40.2
16-NUGA	Fluoranthene	L65939-5	2.5	JT	0.9	1608049-16	5.06		1.02	-33.9
18-NUGA	Fluoranthene	L65939-6	1.6	JT	0.9	1608049-18	1.62		1.02	-0.6
19-NUGA	Fluoranthene	L65939-7	0.86	U	0.86	1608049-19	0.539	J	0.964	NA
23-NUGA	Fluoranthene	L65939-8	40.6		0.87	1608049-23	54.8		0.999	-14.9
44-NUGA	Fluoranthene	L65939-10	1.5	JT	0.86	1608049-44	4.43		1.04	-49.4
45-NUGA	Fluoranthene	L65939-9	2.5	JT	0.87	1608049-45	16	J	1	-73.0
02-NUGA	Fluorene	L65939-1	0.86	U	0.86	1608049-02	0.246	J	1.01	NA
03-NUGA	Fluorene	L65939-2	0.9	U	0.9	1608049-03	1.02	U	1.02	NA
06-NUGA	Fluorene	L65939-3	2.5	JT	0.87	1608049-06	4.11		1.01	-24.4
07-NUGA	Fluorene	L65939-4	0.9	U	0.9	1608049-07	0.982	U	0.982	NA

16-NUGA	Fluorene	L65939-5	0.9	U	0.9	1608049-16	0.44	J	1.02	NA
18-NUGA	Fluorene	L65939-6	0.9	U	0.9	1608049-18	1.02	U	1.02	NA
19-NUGA	Fluorene	L65939-7	0.86	U	0.86	1608049-19	0.964	U	0.964	NA
23-NUGA	Fluorene	L65939-8	4.9		0.87	1608049-23	7.8		0.999	-22.8
44-NUGA	Fluorene	L65939-10	0.86	U	0.86	1608049-44	0.253	J	1.04	NA
45-NUGA	Fluorene	L65939-9	0.87	U	0.87	1608049-45	1.01		1	NA
02-NUGA	Indeno(1,2,3-cd)pyrene	L65939-1	0.86	U	0.86	1608049-02	0.284	NJ	1.01	NA
03-NUGA	Indeno(1,2,3-cd)pyrene	L65939-2	0.9	UJ	0.9	1608049-03	0.38	J	1.02	NA
06-NUGA	Indeno(1,2,3-cd)pyrene	L65939-3	12.6		0.87	1608049-06	13.8		1.01	-4.5
07-NUGA	Indeno(1,2,3-cd)pyrene	L65939-4	1.1	JT	0.9	1608049-07	1.4	NJ	0.982	-12.0
16-NUGA	Indeno(1,2,3-cd)pyrene	L65939-5	0.9	U	0.9	1608049-16	0.994	NJ	1.02	NA
18-NUGA	Indeno(1,2,3-cd)pyrene	L65939-6	0.9	U	0.9	1608049-18	1.83		1.02	NA
19-NUGA	Indeno(1,2,3-cd)pyrene	L65939-7	0.86	U	0.86	1608049-19	0.156	NJ	0.964	NA
23-NUGA	Indeno(1,2,3-cd)pyrene	L65939-8	10.5		0.87	1608049-23	11.7		0.999	-5.4
44-NUGA	Indeno(1,2,3-cd)pyrene	L65939-10	0.86	U	0.86	1608049-44	0.436	NJ	1.04	NA
45-NUGA	Indeno(1,2,3-cd)pyrene	L65939-9	0.88	JT	0.87	1608049-45	4.97		1	-69.9
02-NUGA	Naphthalene	L65939-1	0.43	U	0.43	1608049-02	2.03	U	2.03	NA
03-NUGA	Naphthalene	L65939-2	0.44	U	0.44	1608049-03	2.04	U	2.04	NA
06-NUGA	Naphthalene	L65939-3	1.1	JT	0.43	1608049-06	5.32		2.03	-65.7
07-NUGA	Naphthalene	L65939-4	0.44	U	0.44	1608049-07	1.44	J	1.96	NA
16-NUGA	Naphthalene	L65939-5	0.44	U	0.44	1608049-16	1.19	J	2.04	NA
18-NUGA	Naphthalene	L65939-6	0.44	U	0.44	1608049-18	2.04	U	2.04	NA
19-NUGA	Naphthalene	L65939-7	0.44	JT	0.42	1608049-19	1.93	U	1.93	NA
23-NUGA	Naphthalene	L65939-8	6.09		0.43	1608049-23	25.7		2	-61.7
44-NUGA	Naphthalene	L65939-10	0.42	U	0.42	1608049-44	1.21	J	2.08	NA
45-NUGA	Naphthalene	L65939-9	0.43	U	0.43	1608049-45	2.01	U	2.01	NA
02-NUGA	Perylene	L65939-1	0.86	U	0.86	1608049-02	0.631	J	1.01	NA
03-NUGA	Perylene	L65939-2	0.9	U	0.9	1608049-03	0.819	J	1.02	NA
06-NUGA	Perylene	L65939-3	4.72		0.87	1608049-06	8.18	J	1.01	-26.8
07-NUGA	Perylene	L65939-4	0.9	U	0.9	1608049-07	1.41	J	0.982	NA
16-NUGA	Perylene	L65939-5	0.9	U	0.9	1608049-16	2.08	J	1.02	NA
18-NUGA	Perylene	L65939-6	0.92	JT	0.9	1608049-18	2.45	J	1.02	-45.4
19-NUGA	Perylene	L65939-7	0.86	U	0.86	1608049-19	0.415	NJ	0.964	NA
23-NUGA	Perylene	L65939-8	5.19		0.87	1608049-23	8.13	J	0.999	-22.1
44-NUGA	Perylene	L65939-10	0.86	U	0.86	1608049-44	1.06	J	1.04	NA
45-NUGA	Perylene	L65939-9	0.88	JT	0.87	1608049-45	3.45	J	1	-59.4
02-NUGA	Phenanthrene	L65939-1	0.86	U	0.86	1608049-02	0.776	J	1.01	NA
03-NUGA	Phenanthrene	L65939-2	0.9	UJ	0.9	1608049-03	0.515	J	1.02	NA
06-NUGA	Phenanthrene	L65939-3	14		0.87	1608049-06	19.6		1.01	-16.7
07-NUGA	Phenanthrene	L65939-4	0.9	U	0.9	1608049-07	2.03		0.982	NA
16-NUGA	Phenanthrene	L65939-5	1	JT	0.9	1608049-16	2.87		1.02	-48.3
18-NUGA	Phenanthrene	L65939-6	0.9	U	0.9	1608049-18	1.66		1.02	NA
19-NUGA	Phenanthrene	L65939-7	0.86	U	0.86	1608049-19	0.427	J	0.964	NA
23-NUGA	Phenanthrene	L65939-8	23.8		0.87	1608049-23	24.1		0.999	-0.6
44-NUGA	Phenanthrene	L65939-10	0.86	U	0.86	1608049-44	3.71		1.04	NA
45-NUGA	Phenanthrene	L65939-9	0.91	JT	0.87	1608049-45	12		1	-85.9

02-NUGA	Pyrene	L65939-1	0.86	U	0.86	1608049-02	1.1	J	2.03	NA
03-NUGA	Pyrene	L65939-2	0.9	UJ	0.9	1608049-03	0.899	J	2.04	NA
06-NUGA	Pyrene	L65939-3	31.4		0.87	1608049-06	42.4		2.03	-14.9
07-NUGA	Pyrene	L65939-4	2	JT	0.9	1608049-07	4.57		1.96	-39.1
16-NUGA	Pyrene	L65939-5	2.5	JT	0.9	1608049-16	4.87		2.04	-32.2
18-NUGA	Pyrene	L65939-6	2.1	JT	0.9	1608049-18	1.65	J	2.04	12.0
19-NUGA	Pyrene	L65939-7	0.86	U	0.86	1608049-19	0.519	J	1.93	NA
23-NUGA	Pyrene	L65939-8	44.4		0.87	1608049-23	66.1		2	-19.6
44-NUGA	Pyrene	L65939-10	1.1	JT	0.86	1608049-44	2.73		2.08	-42.6
45-NUGA	Pyrene	L65939-9	3.5	JT	0.87	1608049-45	19.5	J	2.01	-69.6
02-NUGA	Retene	L65939-1	0.86	U	0.86	1608049-02	0.418	J	5.06	NA
03-NUGA	Retene	L65939-2	0.9	U	0.9	1608049-03	0.401	J	5.09	NA
06-NUGA	Retene	L65939-3	5.54	J	0.87	1608049-06	5.84		5.07	-2.6
07-NUGA	Retene	L65939-4	0.9	U	0.9	1608049-07	0.424	J	4.91	NA
16-NUGA	Retene	L65939-5	0.9	U	0.9	1608049-16	0.816	J	5.11	NA
18-NUGA	Retene	L65939-6	1.2	JT	0.9	1608049-18	1.26	J	5.09	-2.4
19-NUGA	Retene	L65939-7	0.86	U	0.86	1608049-19	0.181	J	4.82	NA
23-NUGA	Retene	L65939-8	3.6	JT	0.87	1608049-23	2.72	J	4.99	13.9
44-NUGA	Retene	L65939-10	0.86	U	0.86	1608049-44	0.286	J	5.2	NA
45-NUGA	Retene	L65939-9	1.3	JT	0.87	1608049-45	1.4	J	5.02	-3.7