Hylebos Waterway Fish Inju'ry Studies Individual Data and Quality Assurance Results CASE NARRATIVE

Reproductive Injury in Flatfish DNA Adducts

DNA Adducts

Performance Evaluation

The PPL performance standard met ³²P-labehng criteria.

Calibration

There were no deviations from the QA/SOP calibration criteria. All the calibration data that were used to quantitate DNA adducts met the initial and continuing criteria detailed in the "Commencement Bay Quality Assurance Plan" (QA Plan).

Method Blank

The acceptance criteria were met for the method blank.

Sample Duplicates

Two samples were processed and analyzed in duplicate. The relative percent differences (RPD) for all analytes were less than 50%.

Commentary on Samples:

Data for sample 153-93 (#94-3568) was inadvertently left out of the initial draft and is now included.

Further inspection of the chromatograms for samples 153-22 (#94-3540), 62 (#94.3656) and 108 (#94-3690) indicated that that quantitation was not practical and the results were changed to CNQ (chromatogram not quantifiable).

Missing sample analyses:

Several samples (n=4) were lost because sufficient DNA could not be extracted. In addition, twenty-seven samples were lost because the chromatograms were not quantifiable.

Values reported that are less than 10 nmo/lmol.

If the storage phosphor images of the radioactivity distribution on the chromatograms are sufficiently clean and distinct, then values less than 10 nmols DNA adducts/mol DNA for the large diagonal radioactive zone containing adducts derived from polycylic aromatic compounds can be obtained. For the chromatography standards, the limit of detection for a single, well resolved spot is 0.1 nmol DNA adduct/mol DNA.

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ppl#	sample#	species	capture date	capture site	nmol DNA adducts/mol DNA bases
PPL set 1					· · ·
153-01	94.3514	English sole	Dec-94	Colvos Passage	10
153-02	94.3515	English sole	Dec-94	Colvos Passage	7
153-03	94.3516	English sole	Dec-94	Colvos Passage	7
153-04	94.3518	English sole	Dec-94	Colvos Passage	CNQ*
153-05	94.3520	English sole	Dec-94	Colvos Passage	6
153-06	94.3521	English sole	Dec-94	Colvos Passage	5
153-07	94.3523	English sole	Dec-94	Colvos Passage	6
153-08	94.3526	English sole	Dec-94	Colvos Passage	5
153-09	94.3527	English sole	Dec-94	Colvos Passage	4
153-10	94.3528	English sole	Dec-94	Colvos Passage	4
153-11	94.3529	English sole	Dec-94	Colvos Passage	5
153-12	94.3530	English sole	Dec-94	Colvos Passage	6
153-13	94.3531	English sole	Dec-94	Colvos Passage	8
153-14	94.3532	English sole	Dec-94	Colvos Passage	8
153-15	94.3533	English sole	Dec-94	Colvos Passage	8
153-16	94.3534	English sole	Dec-94	Colvos Passage	7
153-17	94.3535	English sole	. Dec-94	Colvos Passage	6
153-18	94.3536	English sole	Dec-94	Colvos Passage	6
153-19	94.3537	English sole	Dec-94	Colvos Passage	CNQ
153-20	94.3538	English sole	Dec-94	Colvos Passage	CNQ
153-21	94.3539	English sole	Dec-94	Colvos Passage	<10
153-22	94.3540	English sole	Dec-94	Colvos Passage	CNQ
153-23	94.3541	English sole	Dec-94	Colvos Passage	<11
153-24	94.3542	English sole	Dec-94	Colvos Passage	. <10
153-25	94.3543	English sole	Dec-94	Colvos Passage	<10
153-26	94.3544	English sole	Dec-94	Hylebos	CNQ
153-27	94.3546	English sole	Dec-94	Hylebos	CNQ
153-28	94.3548	English sole	Dec-94	Hylebos	39
153-29	94.3550	English sole	Dec-94	Hylebos	. 88
153-30	94.3552	English sole	Dec-94	Hylebos	75
153-31a	94.3554	English sole	Dec-94	Hylebos	63
153-31b	64	replicate	••	99	83
153-32	94.3558	English sole	Dec-94	Hylebos	CNQ
153-33	94.3560	English sole	Dec-94	Hylebos	11
153-34	94.3562	English sole	Dec-94	Hylebos	33
153-35	94.3564	English sole	Dec-94	Hylebos	28
153-36	94.3565	English sole	Dec-94	Hylebos	17
153-37	94.3566	English sole	Dec-94	Hylebos	22
153-38	94.3567	English sole	Dec-94	Hylebos	CNQ
153-39	94.3568	English sole	Dec-94	Hylebos	27
153-40	94.3569	English sole	e Dec-94	Hylebos	33
153-41a	94.3572	English sole	e Dec-94	Hylebos	47
153-41b	69	replicate	17	17	44
153-42	94.3574	English sole	e Dec-94	Hylebos	69

Reproductive Injury in Flatfish DNA Adducts

153-43 94.3575 English sole Dec-94 Hylebos 177 153-44 94.3576 English sole Dec-94 Hylebos 59 153-45 94.3578 English sole Dec-94 Hylebos 68 153-46 94.3578 English sole Dec-94 Hylebos 68 153-47 94.3581 English sole Dec-94 Hylebos 88 153-47 94.3587 English sole Dec-94 Hylebos 32 153-48 94.3587 English sole Dec-94 Hylebos 13 153-50 94.3589 English sole Dec-94 Hylebos 13 153-51 94.3590 English sole Dec-94 Hylebos NDR** 153-53 94.3591 English sole Dec-94 Hylebos NDR** 153-54 94.3593 English sole Dec-94 Hylebos 17 153-55 94.3594 English sole Dec-94 Hylebos 13
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153-67 94.3661 English sole Jan-95 Colvos Passage 4
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153-69 94.3663 English sole Jan-95 Colvos Passage CNQ
153-70 94.3664 English sole Jan-95 Colvos Passage 3
153-71 94.3666 English sole Jan-95 Colvos Passage 4
153-72 94.3669 English sole Jan-95 Colvos Passage 5
153-73 94.3670 English sole Jan-95 Colvos Passage CNO
153-74 94.3672 English sole Jan-95 Colvos Passage NDR
153-75 94.3681 English sole Jan-95 Colvos Passage NDR
153-76 94.3682 English sole Jan-95 Colvos Passage CNO
153-77 94.3683 English sole Jan-95 Colvos Passage 6
153-78 94.3684 English sole Jan-95 Colvos Passage 5
153-79 94.3685 English sole Jan-95 Colvos Passage NIDR

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153-80 94.3687 English sole Jan-95 Colvos Passage CNQ 153-81 94.3688 English sole Jan-95 Colvos Passage 3 153-82 94.3694 English sole Jan-95 Colvos Passage 3 153-83 94.3594 English sole Jan-95 Hylebos CNQ 153-84 94.3596 English sole Jan-95 Hylebos 36 153-85 94.3596 English sole Jan-95 Hylebos 36 153-86 94.3602 English sole Jan-95 Hylebos 34 153-89 94.3602 English sole Jan-95 Hylebos 12 153-90 94.3605 English sole Jan-95 Hylebos 12 153-91 94.3605 English sole Jan-95 Hylebos 31 153-92 94.3605 English sole Jan-95 Hylebos 31 153-93 94.3616 English sole Jan-95 Hylebos 47 <t< th=""><th>ppl#</th><th>sample#</th><th>species</th><th>capture date</th><th>capture site</th><th>nmol DNA adducts/mol DNA bases</th></t<>	ppl#	sample#	species	capture date	capture site	nmol DNA adducts/mol DNA bases			
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153-87 94.3598 English sole Jan-95 Hylebos 94 153-88 94.3602 English sole Jan-95 Hylebos 22 153-90 94.3603 English sole Jan-95 Hylebos 22 153-91 94.3604 English sole Jan-95 Hylebos 7 153-92 94.3605 English sole Jan-95 Hylebos 7 153-93 94.3605 English sole Jan-95 Hylebos 7 153-94 94.3615 English sole Jan-95 Hylebos 31 153-95 94.3616 English sole Jan-95 Hylebos 8 153-96 94.3617 English sole Jan-95 Hylebos 8 153-97 94.3628 English sole Jan-95 Hylebos 8 153-98 94.3629 English sole Jan-95 Hylebos 11 153-109 94.3629 English sole Jan-95 Hylebos 11 153-101 94.3631 English sole Jan-95 Hylebos 11 153-	153-86	94.3596	English sole	Jan-95	Hylebos	36			
153-88 94.3600 English sole Jan-95 Hylebos 22 153-90 94.3603 English sole Jan-95 Hylebos 22 153-90 94.3604 English sole Jan-95 Hylebos 12 153-91 94.3607 English sole Jan-95 Hylebos 7 153-92 94.3607 English sole Jan-95 Hylebos 7 153-94 94.3615 English sole Jan-95 Hylebos 9 153-95 94.3617 English sole Jan-95 Hylebos 9 153-96 94.3617 English sole Jan-95 Hylebos 8 153-96 94.3628 English sole Jan-95 Hylebos 11 153-99 94.3629 English sole Jan-95 Hylebos 11 153-99 94.3629 English sole Jan-95 Hylebos 11 153-99 94.3623 English sole Jan-95 Hylebos 11 153-101 94.3630 English sole Jan-95 Hylebos 11 153-	153-87	94.3598	English sole	Jan-95	Hylebos	9			
153-89 94.3602 English sole Jan-95 Hylebos 22 153-90 94.3603 English sole Jan-95 Hylebos 26 153-91 94.3604 English sole Jan-95 Hylebos 7 153-92 94.3605 English sole Jan-95 Hylebos 7 153-93 94.3607 English sole Jan-95 Hylebos 31 153-94 94.3616 English sole Jan-95 Hylebos 9 153-95 94.3616 English sole Jan-95 Hylebos 47 153-96 94.3618 English sole Jan-95 Hylebos 47 153-97 94.3618 English sole Jan-95 Hylebos 11 153-98 94.3629 English sole Jan-95 Hylebos CNQ 153-101 94.3630 English sole Jan-95 Hylebos 11 153-102 94.3632 English sole Jan-95 Hylebos 11 153-103 94.3633 English sole Jan-95 Hylebos 11 <td< td=""><td>153-88</td><td>94.3600</td><td>English sole</td><td>Jan-95</td><td>Hylebos</td><td>34</td></td<>	153-88	94.3600	English sole	Jan-95	Hylebos	34			
153-90 94.3603 English sole Jan-95 Hylebos 26 153-91 94.3604 English sole Jan-95 Hylebos 7 153-92 94.3607 English sole Jan-95 Hylebos 7 153-93 94.3607 English sole Jan-95 Hylebos CNQ 153-94 94.3616 English sole Jan-95 Hylebos 9 153-95 94.3616 English sole Jan-95 Hylebos 9 153-96 94.3618 English sole Jan-95 Hylebos 8 153-97 94.3628 English sole Jan-95 Hylebos CNQ 153-99 94.3629 English sole Jan-95 Hylebos 11 153-99 94.3622 English sole Jan-95 Hylebos 20 153-101 94.3633 English sole Jan-95 Hylebos 20 153-102 94.3633 English sole Jan-95 Hylebos 20 153-103 94.3633 English sole Jan-95 Hylebos 6 1	153-89	94.3602	English sole	Jan-95	Hylebos	22			
153-91 94.3604 English sole Jan-95 Hylebos 12 153-92 94.3605 English sole Jan-95 Hylebos 7 153-93 94.3605 English sole Jan-95 Hylebos 31 153-94 94.3615 English sole Jan-95 Hylebos 9 153-95 94.3618 English sole Jan-95 Hylebos 9 153-96 94.3618 English sole Jan-95 Hylebos 8 153-97 94.3628 English sole Jan-95 Hylebos CNQ 153-99 94.3629 English sole Jan-95 Hylebos CNQ 153-99 94.3629 English sole Jan-95 Hylebos CNQ 153-100 94.3620 English sole Jan-95 Hylebos 11 153-101 94.3631 English sole Jan-95 Hylebos 11 153-102 94.3632 English sole Jan-95 Hylebos 11 153-103 94.3635 English sole Jan-95 Hylebos 11 <	153-90	94.3603	English sole	Jan-95	Hylebos	26			
153-92 94.3605 English sole Jan-95 Hylebos 7 153-93 94.3607 English sole Jan-95 Hylebos 31 153-94 94.3615 English sole Jan-95 Hylebos 9 153-95 94.3616 English sole Jan-95 Hylebos 9 153-96 94.3617 English sole Jan-95 Hylebos 8 153-97 94.3618 English sole Jan-95 Hylebos 8 153-98 94.3628 English sole Jan-95 Hylebos 11 153-99 94.3629 English sole Jan-95 Hylebos CNQ 153-94 94.3629 English sole Jan-95 Hylebos CNQ 153-100 94.3630 English sole Jan-95 Hylebos 20 153-101 94.3632 English sole Jan-95 Hylebos 11 153-102 94.3635 English sole Jan-95 Hylebos 20 153-103 94.3637 English sole Jan-95 Hylebos 10 <td< td=""><td>153-91</td><td>94.3604</td><td>English sole</td><td>Jan-95</td><td>Hylebos</td><td>12</td></td<>	153-91	94.3604	English sole	Jan-95	Hylebos	12			
153-93 94.3607 English sole Jan-95 Hylebos CNQ 153-94 94.3615 English sole Jan-95 Hylebos 31 153-95 94.3616 English sole Jan-95 Hylebos 9 153-96 94.3617 English sole Jan-95 Hylebos 47 153-97 94.3618 English sole Jan-95 Hylebos 8 153-98 94.3629 English sole Jan-95 Hylebos 11 153-99 94.3629 English sole Jan-95 Hylebos 11 153-91 94.3629 English sole Jan-95 Hylebos 11 153-100 94.3630 English sole Jan-95 Hylebos 20 133-101 153-101 94.3631 English sole Jan-95 Hylebos 20 11 153-102 94.3633 English sole Jan-95 Hylebos 20 11 153-103 94.3635 English sole Jan-95 Hylebos 10 133-104 94.3635 English sole Jan-95 Hylebos	153-92	94.3605	English sole	Jan-95	Hylebos	7			
153-94 94.3615 English sole Jan-95 Hylebos 31 153-95 94.3616 English sole Jan-95 Hylebos 9 153-96 94.3617 English sole Jan-95 Hylebos 47 153-97 94.3618 English sole Jan-95 Hylebos 8 153-99 94.3629 English sole Jan-95 Hylebos CNQ 153-99 94.3629 English sole Jan-95 Hylebos CNQ 153-100 94.3629 English sole Jan-95 Hylebos 20 153-101 94.3631 English sole Jan-95 Hylebos 20 153-102 94.3633 English sole Jan-95 Hylebos 20 153-103 94.3634 English sole Jan-95 Hylebos 20 153-104 94.3635 English sole Jan-95 Hylebos 32 153-105 94.3636 English sole Jan-95 Hylebos 32 153-106 94.3636 English sole Jan-95 Hylebos 31	153-93	94.3607	English sole	Jan-95	Hylebos	CNQ			
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153-96 94.3617 English sole Jan-95 Hylebos 47 153-97 94.3618 English sole Jan-95 Hylebos 8 153-98 94.3629 English sole Jan-95 Hylebos 11 153-99 94.3629 English sole Jan-95 Hylebos 11 153-99 94.3629 English sole Jan-95 Hylebos 11 153-97 94.3629 English sole Jan-95 Hylebos 11 153-100 94.3630 English sole Jan-95 Hylebos 20 153-101 94.3633 English sole Jan-95 Hylebos 20 153-102 94.3633 English sole Jan-95 Hylebos 20 153-103 94.3633 English sole Jan-95 Hylebos 20 153-104 94.3637 English sole Jan-95 Hylebos 32 153-105 94.3637 English sole Jan-95 Hylebos 10 153-106 94.3643 English sole Jan-95 Hylebos 10	153-95	94.3616	English sole	Jan-95	Hylebos	9			
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153-98 94.3628 English sole Jan-95 Hylebos CNQ 153-99 94.3629 English sole Jan-95 Hylebos 11 153-99a 94.3629 English sole Jan-95 Hylebos CNQ 153-100 94.3630 English sole Jan-95 Hylebos 20 153-101 94.3631 English sole Jan-95 Hylebos 20 153-102 94.3632 English sole Jan-95 Hylebos 47 153-102 94.3633 English sole Jan-95 Hylebos 20 153-104 94.3633 English sole Jan-95 Hylebos 20 153-105 94.3635 English sole Jan-95 Hylebos 20 153-104 94.3634 English sole Jan-95 Hylebos 32 153-107 94.3637 English sole Jan-95 Hylebos 10 153-108 94.3647 English sole Jan-95 Hylebos 11 153-109 94.3647 English sole Jan-95 Hylebos 11 <t< td=""><td>153-97</td><td>94.3618</td><td>English sole</td><td>Jan-95</td><td>Hylebos</td><td>8</td></t<>	153-97	94.3618	English sole	Jan-95	Hylebos	8			
153-99 94.3629 English sole Jan-95 Hylebos 11 153-99a 94.3629 English sole Jan-95 Hylebos CNQ 153-100 94.3630 English sole Jan-95 Hylebos 11 153-101 94.3631 English sole Jan-95 Hylebos 20 153-102 94.3632 English sole Jan-95 Hylebos 47 153-103 94.3633 English sole Jan-95 Hylebos 47 153-104 94.3635 English sole Jan-95 Hylebos 20 153-105 94.3635 English sole Jan-95 Hylebos 6 153-104 94.3636 English sole Jan-95 Hylebos 6 153-107 94.3637 English sole Jan-95 Hylebos 10 153-108 94.3644 English sole Jan-95 Hylebos 11 153-110 94.3645 English sole Jan-95 Hylebos 11 153-110 94.3647 English sole Jan-95 Hylebos CNQ <tr< td=""><td>153-98</td><td>94.3628</td><td>English sole</td><td>Jan-95</td><td>Hylebos</td><td>CNQ</td></tr<>	153-98	94.3628	English sole	Jan-95	Hylebos	CNQ			
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153-103 94.3633 English sole Jan-95 Hylebos 11 153-104 94.3634 English sole Jan-95 Hylebos 20 153-105 94.3635 English sole Jan-95 Hylebos 6 153-106 94.3636 English sole Jan-95 Hylebos 32 153-106 94.3637 English sole Jan-95 Hylebos 32 153-107 94.3637 English sole Jan-95 Hylebos 10 153-107 94.3639 English sole Jan-95 Hylebos 10 153-108 94.3643 English sole Jan-95 Hylebos 11 153-109 94.3644 English sole Jan-95 Hylebos 31 153-110 94.3647 English sole Jan-95 Hylebos CNQ 153-111 94.3647 English sole Jan-95 Hylebos CNQ 153-112 94.3648 English sole Jan-95 Hylebos 7 salmon sperm DNA blank 1 1 1.34 1 Benzo[a]pyrene-	153-102	94.3632	English sole	Jan-95	Hylebos	47			
153-104 94.3634 English sole Jan-95 Hylebos 20 153-105 94.3635 English sole Jan-95 Hylebos 6 153-106 94.3636 English sole Jan-95 Hylebos 32 153-106 94.3637 English sole Jan-95 Hylebos 32 153-107 94.3637 English sole Jan-95 Hylebos 10 153-108 94.3639 English sole Jan-95 Hylebos 10 153-108 94.3644 English sole Jan-95 Hylebos 11 153-109 94.3644 English sole Jan-95 Hylebos 31 153-110 94.3647 English sole Jan-95 Hylebos CNQ 153-111 94.3647 English sole Jan-95 Hylebos CNQ 153-112 94.3648 English sole Jan-95 Hylebos 7 salmon sperm DNA blank 1 1 1 1 Benzo[a]pyrene-DNA adduct standard 5 uL 1.43 1.43 1 Benzo[a]pyrene-DNA adduct standard 10 uL <td>153-103</td> <td>94.3633</td> <td>English sole</td> <td>Jan-95</td> <td>Hylebos</td> <td>11</td>	153-103	94.3633	English sole	Jan-95	Hylebos	11			
153-105 94.3635 English sole Jan-95 Hylebos 6 153-106 94.3636 English sole Jan-95 Hylebos 32 153-107 94.3637 English sole Jan-95 Hylebos 10 153-108 94.3639 English sole Jan-95 Hylebos 10 153-108 94.3644 English sole Jan-95 Hylebos 11 153-109 94.3644 English sole Jan-95 Hylebos 31 153-109 94.3645 English sole Jan-95 Hylebos 31 153-110 94.3647 English sole Jan-95 Hylebos CNQ 153-111 94.3647 English sole Jan-95 Hylebos CNQ 153-112 94.3648 English sole Jan-95 Hylebos 7 153-112 94.3648 English sole Jan-95 Hylebos 7 salmon sperm DNA blank 1 1 1.34 1 Benzo[a]pyrene-DNA adduct standard 5 uL 1.34 1.43 Benzo[a]pyrene-DNA adduct standard	153-104	94.3634	English sole	Jan-95	Hylebos	20			
153-106 94.3636 English sole Jan-95 Hylebos 32 153-107 94.3637 English sole Jan-95 Hylebos 10 153-108 94.3639 English sole Jan-95 Hylebos 10 153-109 94.3644 English sole Jan-95 Hylebos 11 153-109 94.3644 English sole Jan-95 Hylebos 31 153-109 94.3647 English sole Jan-95 Hylebos 31 153-110 94.3647 English sole Jan-95 Hylebos CNQ 153-111 94.3647 English sole Jan-95 Hylebos CNQ 153-111 94.3647 English sole Jan-95 Hylebos CNQ 153-112 94.3648 English sole Jan-95 Hylebos 7 153-113 94.3649 English sole Jan-95 Hylebos 7 salmon sperm DNA blank 1 1 1.34 1 Benzo[a]pyrene-DNA adduct standard 5 uL 1.43 2.68 Benzo[a]pyrene-DNA adduct standard	153-105	94.3635	English sole	Jan-95	Hylebos	6			
153-107 94.3637 English sole Jan-95 Hylebos 10 153-108 94.3639 English sole Jan-95 Hylebos <10	153-106	94.3636	English sole	Jan-95	Hylebos	32			
153-10894.3639English soleJan-95Hylebos<10153-10994.3644English soleJan-95Hylebos11153-11094.3645English soleJan-95Hylebos31153-11194.3647English soleJan-95HylebosCNQ153-111b94.3647English soleJan-95HylebosCNQ153-111b94.3647English soleJan-95HylebosCNQ153-11294.3648English soleJan-95HylebosCNQ153-11394.3649English soleJan-95Hylebos7salmon sperm DNA blank11Benzo[a]pyrene-DNA adduct standard 5 uL1.34Benzo[a]pyrene-DNA adduct standard 5 uL1.43Benzo[a]pyrene-DNA adduct standard 10 uL2.68Benzo[a]pyrene-DNA adduct standard 10 uL2.78*CNQ = chromatogram not quantifiable**NDR = No DNA recovered	153-107	94.3637	English sole	Jan-95	Hylebos	10			
153-10994.3644English soleJan-95Hylebos11153-11094.3645English soleJan-95Hylebos31153-111a94.3647English soleJan-95HylebosCNQ153-111b94.3647English soleJan-95HylebosCNQ153-11294.3648English soleJan-95HylebosCNQ153-11394.3649English soleJan-95HylebosCNQ153-11394.3649English soleJan-95Hylebos7salmon sperm DNA blank11134Benzo[a]pyrene-DNA adduct standard5 uL1.34Benzo[a]pyrene-DNA adduct standard10 uL2.68Benzo[a]pyrene-DNA adduct standard10 uL2.78*CNQ = chromatogram not quantifiable**NDR = No DNA recovered	153-108	94.3639	English sole	Jan-95	Hylebos	<10			
153-11094.3645English soleJan-95Hylebos31153-111a94.3647English soleJan-95HylebosCNQ153-111b94.3647English soleJan-95HylebosCNQ153-11294.3648English soleJan-95HylebosCNQ153-11394.3649English soleJan-95Hylebos7salmon sperm DNA blank11Benzo[a]pyrene-DNA adduct standard5 uL1.34Benzo[a]pyrene-DNA adduct standard1 uL2.68Benzo[a]pyrene-DNA adduct standard10 uL2.78*CNQ = chromatogram not quantifiable**NDR = No DNA recovered	153-109	94.3644	English sole	Jan-95	Hylebos	11			
153-111a94.3647English soleJan-95HylebosCNQ153-111b94.3647English soleJan-95HylebosCNQ153-11294.3648English soleJan-95HylebosCNQ153-11394.3649English soleJan-95Hylebos7salmon sperm DNA blank11Benzo[a]pyrene-DNA adduct standard 5 uL1.34Benzo[a]pyrene-DNA adduct standard 5 uL1.43Benzo[a]pyrene-DNA adduct standard 10 uL2.68Benzo[a]pyrene-DNA adduct standard 10 uL2.78*CNQ = chromatogram not quantifiable	153-110	94.3645	English sole	Jan-95	Hylebos	31			
153-111b 94.3647 English sole Jan-95 Hylebos CNQ 153-112 94.3648 English sole Jan-95 Hylebos CNQ 153-113 94.3649 English sole Jan-95 Hylebos 7 salmon sperm DNA blank 1 1 1 Benzo[a]pyrene-DNA adduct standard 5 uL 1.34 1.43 Benzo[a]pyrene-DNA adduct standard 10 uL 2.68 2.68 Benzo[a]pyrene-DNA adduct standard 10 uL 2.78 2.78 *CNQ = chromatogram not quantifiable	153-111a	94.3647	English sole	Jan-95	Hylebos	CNQ			
153-112 94.3648 English sole Jan-95 Hylebos CNQ 153-113 94.3649 English sole Jan-95 Hylebos 7 salmon sperm DNA blank 1 1 1 Benzo[a]pyrene-DNA adduct standard 5 uL 1.34 1.43 Benzo[a]pyrene-DNA adduct standard 5 uL 1.43 2.68 Benzo[a]pyrene-DNA adduct standard 10 uL 2.68 2.78 *CNQ = chromatogram not quantifiable **NDR = No DNA recovered 1	153-111b	94.3647	English sole	Jan-95	Hylebos	CNQ			
153-113 94.3649 English sole Jan-95 Hylebos 7 salmon sperm DNA blank 1 1 1 Benzo[a]pyrene-DNA adduct standard 5 uL 1.34 1 Benzo[a]pyrene-DNA adduct standard 5 uL 1.43 1 Benzo[a]pyrene-DNA adduct standard 10 uL 2.68 2.68 Benzo[a]pyrene-DNA adduct standard 10 uL 2.78 2.78 *CNQ = chromatogram not quantifiable **NDR = No DNA recovered	153-112	94.3648	English sole	Jan-95	Hylebos	CNQ			
salmon sperm DNA blank 1 Benzo[a]pyrene-DNA adduct standard 5 uL 1.34 Benzo[a]pyrene-DNA adduct standard 5 uL 1.43 Benzo[a]pyrene-DNA adduct standard 10 uL 2.68 Benzo[a]pyrene-DNA adduct standard 10 uL 2.78 *CNQ = chromatogram not quantifiable	153-113	94.3649	English sole	Jan-95	Hylebos	7			
salmon sperm DNA blank 1 Benzo[a]pyrene-DNA adduct standard 5 uL 1.34 Benzo[a]pyrene-DNA adduct standard 5 uL 1.43 Benzo[a]pyrene-DNA adduct standard 10 uL 2.68 Benzo[a]pyrene-DNA adduct standard 10 uL 2.78 *CNQ = chromatogram not quantifiable **NDR = No DNA recovered									
Benzo[a]pyrene-DNA adduct standard 5 uL 1.34 Benzo[a]pyrene-DNA adduct standard 5 uL 1.43 Benzo[a]pyrene-DNA adduct standard 10 uL 2.68 Benzo[a]pyrene-DNA adduct standard 10 uL 2.78 *CNQ = chromatogram not quantifiable **NDR = No DNA recovered	salmon sperm DNA blank 1								
Benzo[a]pyrene-DNA adduct standard 5 uL 1.43 Benzo[a]pyrene-DNA adduct standard 10 uL 2.68 Benzo[a]pyrene-DNA adduct standard 10 uL 2.78 *CNQ = chromatogram not quantifiable **NDR = No DNA recovered	Benzo[a]r	vrene-DNA	adduct stand	ard 5 uL		1.34			
Benzo[a]pyrene-DNA adduct standard 10 uL 2.68 Benzo[a]pyrene-DNA adduct standard 10 uL 2.78 *CNQ = chromatogram not quantifiable **NDR = No DNA recovered	Benzolalı	yrene-DNA	adduct stand	ard 5 uL	1	1.43			
Benzo[a]pyrene-DNA adduct standard 10 uL 2.78 *CNQ = chromatogram not quantifiable **NDR = No DNA recovered	Benzolali	yrene-DNA	adduct stand		2.68				
*CNQ = chromatogram not quantifiable **NDR = No DNA recovered	Benzo[a]pyrene-DNA adduct standard 10 uL 2.78								
*CNQ = chromatogram not quantifiable **NDR = No DNA recovered		1		1	1 .				
**NDR = No DNA recovered	*CNO=	chromatogr	am not quant	ifiable					
	**NDR = No DNA recovered								