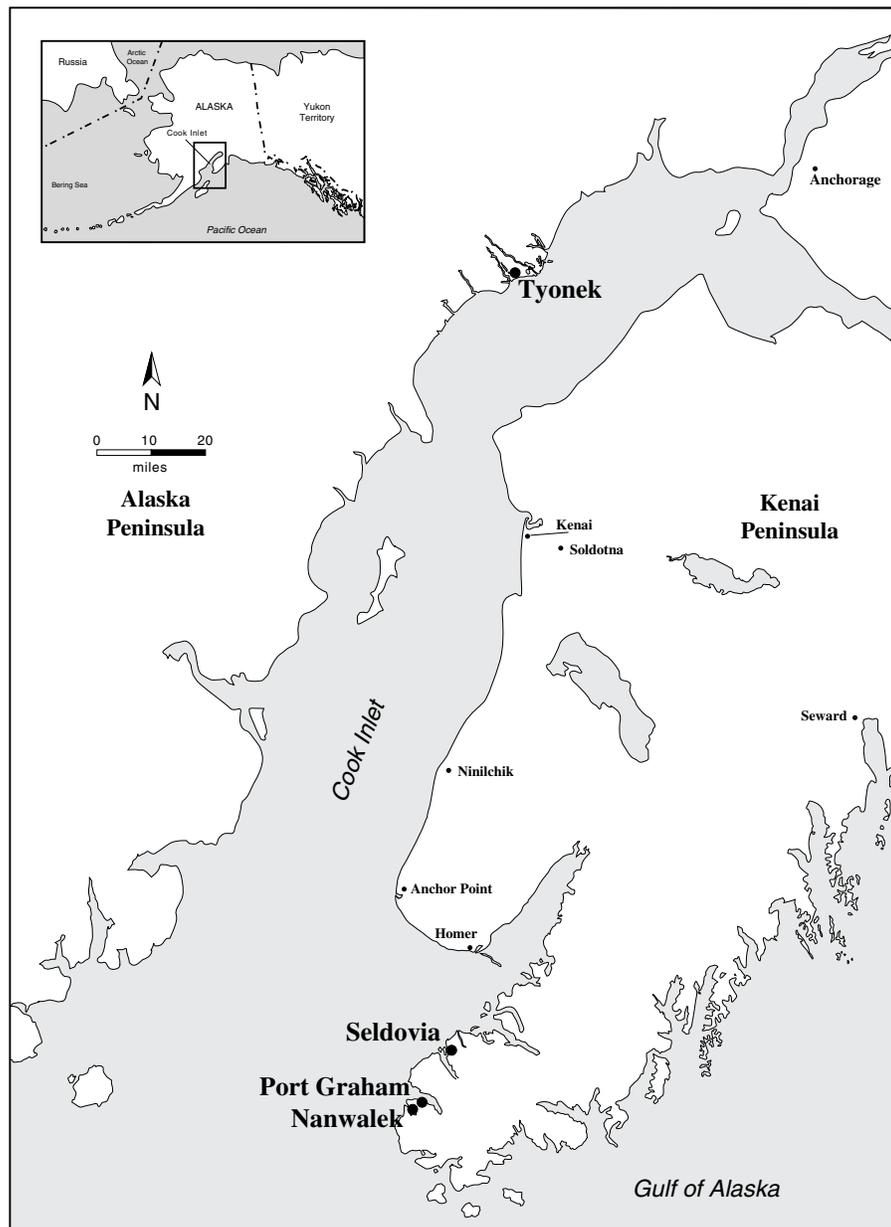




Appendix L

DynCorp data review narratives for target analytes



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MEMORANDUM

DATE: August 6, 1998

TO: Jeff Bigler, Project Officer
EPA SASD

FROM: Pornkeo Chinyavong, Quality Assurance Chemist
Sample Control Center

SUBJECT: **Revised** Data Review Narrative for Organochlorine Pesticide Analysis for Episode 4864

This revised narrative supersedes the narrative dated July 13, 1998. Since then data were received for all target analytes for samples 41878 and 41946, and for the Group II analytes (gamma-BHC, gamma-chlordane, endosulfan I, endosulfan II, dieldrin, endrin, oxychlordane, heptachlor epoxide, o,p'-DDD and p,p'-DDD) for samples 41840 - 41845, 41849 - 41853, 41902 - 41904, 41935 - 41937, 41955, and 41957 (i.e., the salmon samples that required extensive extract clean up for the Group II pesticides). In addition, data were resubmitted for the Group II analytes for samples 41846 - 41848, 41956, and 42084 (halibut and seabass samples). This review narrative addresses all organochlorine pesticides data associated with Episode 4864.

Pacific Analytical, Inc., (PAI) submitted results for organochlorine pesticides analyzed by Method 1656 for 116 samples in Episode 4864 for the Cook Inlet Contamination Study. Please refer to Table I for EPA and field sample number cross references.

These data have been reviewed in accordance with SCC's *Data Review Guidelines for Pesticides and Herbicides Analyses by Methods 1656, 1657, and 1658* (Draft, June 1998). Based on this review, all data are considered to be of acceptable quality with the qualifiers described below and detailed in the attached Data Review Summary Table (Table II).

Quantitation

On all Form 1s, PAI reported sample results based on method detection limits (i.e., the qualitative limit) as opposed to minimum levels (i.e., the quantitative limit). In order to maintain consistency with the database and current reporting protocols associated with this project, SCC will report only the values that are at or above the minimum levels in the database. Please note that the minimum levels provided in the database for these samples have been adjusted to reflect the actual sample sizes.

Some sample results in this episode are marked with a "J" flag on Form 1s, which indicates an estimated result that is below the laboratory's method detection limit. In keeping with current EAD practices, and to maintain consistency, all "J" flagged results will be reported in the database as non-detects at the minimum levels.

Multiple Qualifiers

Some of the analytical results were affected by multiple qualifiers. In cases where these qualifiers suggest different biases, SCC considers the data to be the best obtainable. The impact of each QC failure and its associated qualifier is described in this data review narrative. Where multiple QC failures occur, the cumulative effects of the associated qualifiers is documented in Table II.

Calibration Verification (CALVER)

Recoveries for several analytes were above the method-specified criteria in the CALVERs associated with some samples. Therefore, SCC considers the data for those samples to be of acceptable quality, but they may represent maximum values. These cases are detailed in Table II.

Surrogate Recoveries

For sample 41934, surrogate recoveries were above the method-specified criteria. Therefore, SCC considers the data for all detected analytes in this sample to be of acceptable quality, but they may represent maximum values. These analytes are listed in Table II.

Ongoing Precision and Recovery (OPR)

For all OPR analyses, endosulfan II coeluted with p,p'-DDT and o,p'-DDT on the primary column and with cis-nonachlor on the secondary column. Consequently, the laboratory could not determine endosulfan II recoveries for some of the OPR samples. Endosulfan II results in the field samples were not as adversely affected by coelution problems, due to the fact that either (1) the coeluting compounds were not present in the field sample, (2) if they were, they only coeluted on one of the two columns, thereby allowing quantitation of endosulfan II, or (3) endosulfan II was not present in the field samples. Because endosulfan II recoveries were not ascertained in some OPRs, however, SCC considers endosulfan II data in all affected field samples to be the best obtainable. These cases are detailed in Table II.

For some of the OPR analyses, endosulfan I coeluted with alpha-chlordane on the primary column and was not recovered on the secondary column. Endosulfan I results in the field samples were not adversely affected by coelution problems due to the fact that either the coeluting compound was not present in the field sample or, if it was, it only coeluted in one column, thereby allowing quantitation of endosulfan I on the other column. Because endosulfan I recoveries were not ascertained in these OPRs, however, SCC considers endosulfan I data in the affected samples to be the best obtainable. These cases are detailed in Table II.

Endosulfan I was recovered below the method-specified criteria in the OPR associated with several samples in this episode. Therefore, SCC considers endosulfan I data for these samples to be of acceptable quality, but they may represent minimum values. These cases are detailed in Table II.

Gamma-BHC was recovered below the method-specified criteria in the OPR associated with samples 41878 and 41946. Therefore, SCC considers gamma-BHC data for these samples to be of acceptable quality, but they may represent minimum values. These cases are detailed in Table II.

Matrix Spike/Matrix Spike Duplicate

Matrix spike and matrix spike duplicate (MS/MSD) samples were prepared for several samples in this episode. In some instances, the MS/MSD recoveries were not within the method-specified criteria. In other instances, the relative percent differences (RPDs) between the MS and MSD values exceeded the method-specified criteria. Specific failures and recommended data qualifiers are detailed in Table II.

For all MS/MSD analyses, endosulfan II coeluted with p,p'-DDT and o,p'-DDT on the primary column and with cis-nonachlor on the secondary column. Consequently, the laboratory could not determine endosulfan II recoveries for some of the MS/MSD samples. Endosulfan II results in the field samples were not as adversely affected by coelution problems, due to the fact that either (1) the coeluting compounds were not present in the field sample, (2) if they were, they only coeluted on one of the two columns, thereby allowing quantitation of endosulfan II, or (3) endosulfan II was not present in the field samples. Because endosulfan II recoveries were not ascertained in some MS/MSDs, however, SCC considers endosulfan II data in all affected field samples to be the best obtainable. These cases are detailed in Table II.

For some of the MS/MSD analyses, endosulfan I coeluted with alpha-chlordane on the primary column and was not recovered on the secondary column. Endosulfan I results in the field samples were not adversely affected by coelution problems due to the fact that either the coeluting compound was not present in the field sample or, if it was, it only coeluted in one column, thereby allowing quantitation of endosulfan I on the other column. Because endosulfan I recoveries were not ascertained in these MS/MSDs, however, SCC considers endosulfan I data in the affected samples to be the best obtainable. These cases are detailed in Table II.

For sample 42084, MS/MSD samples were not analyzed for Group II analytes due to an oversight by the laboratory. However, SCC considers the data to be of acceptable quality because all other QC samples indicate that laboratory performance was in control, and because Group II analytes were not detected in the field samples.

Holding Times

Samples 41878 and 41946 exhibited no surrogate recovery in the initial analyses. The laboratory subsequently re-extracted these samples, at which point the method-specified holding time had expired. Therefore, SCC considers the data for all detected analytes in these samples to be of acceptable quality, but they may represent minimum values. These cases are detailed in Table II.

If you have any questions regarding the analysis of these samples or this data review, please contact me at (703) 461-2346 or by facsimile at (703) 461-8056.

Attachments

cc: Lori Lee, EPA
Sean Donahoe, Tetra Tech
Steve Ellis, EVS Consultants
Carrie Buswell, DynCorp

Table II
DATA REVIEW SUMMARY TABLE

EPISODE: 4864

ANALYSIS: 1656

PROJECT: AMS

REVIEWER: P.Chinyavong

SAMPLE(S)	ANALYTE(S)	ACTION	REASON	SCC QUAL	LEVEL
41841, 41843, 41844, 41845	p,p'-DDT	Acceptable quality, but may represent maximum values	Analyte recovery was above method-specified criteria in the CALVERs	NA	NA
41849	p,p'-DDT	Best obtainable data	Analyte recovery was above method-specified criteria in the CALVERs, and RPD value between MS/MSD exceeded criteria	NA	NA
41842	gamma-BHC	Acceptable quality, but may represent maximum values	Analyte recovery was above method-specified criteria in the CALVER	NA	NA
41840 - 41842	heptachlor epoxide endrin	Acceptable quality, but may represent maximum values	Analyte recoveries were above method-specified criteria in the CALVER	NA	NA
41840 41841	endosulfan II	Best obtainable data	Analyte recovery was above method-specified criteria in the CALVER, and OPR recovery could not be determined due to coelution	NA	NA
41840 - 41842, 41848, 41853	gamma-chlordane	Acceptable quality, but may represent maximum values	Analyte recovery was above method-specified criteria in the CALVERs	NA	NA
41840 - 41842, 41848, 41851, 41852	dieldrin	Acceptable quality, but may represent maximum values	Analyte recovery was above method-specified criteria in the CALVERs	NA	NA

**Table II
DATA REVIEW SUMMARY TABLE**

EPISODE: 4864

ANALYSIS: 1656

PROJECT: AMS

REVIEWER: P.Chinyavong

SAMPLE(S)	ANALYTE(S)	ACTION	REASON	SCC QUAL	LEVEL
41934	o,p'-DDE, p,p'-DDE, o,p'-DDT, p,p'-DDT, p,p'-DDD, hexachlorobenzene, alpha-chlordane, trans-nonachlor, cis-nonachlor, oxychlordane, dieldrin	Acceptable quality, but may represent maximum values	Surrogate recoveries were above method- specified criteria	NA	NA
41934	gamma-BHC	Best obtainable data	Surrogate recoveries were above method- specified criteria, and analyte recovery was below method- specified criteria in the MS/MSD	NA	NA
41934	pentachloroanisole	Best obtainable data	Surrogate recoveries were above method- specified criteria, and RPD between MS/MSD exceeded criteria	NA	NA
41878 41946	gamma-BHC	Acceptable quality, but may represent minimum value	Recovery was below method-specified criteria in the OPR, and extraction holding times exceeded	NA	NA
All samples except for 41867 - 41880, 41890 - 41901, 41909, 41934, 41953, 41954, 41961, 41963, 42084	endosulfan I	Best obtainable data	Coeluted with other target analyte on primary column and not recovered on secondary column in the OPRs	NA	NA
41867, 41909, 41934, 42084	endosulfan I	Best obtainable data	Coeluted with other target analyte on primary column and not recovered on secondary column; OPR and MS/MSD recovery could not be determined	NA	NA

**Table II
DATA REVIEW SUMMARY TABLE**

EPISODE: 4864

ANALYSIS: 1656

PROJECT: AMS

REVIEWER: P.Chinyavong

SAMPLE(S)	ANALYTE(S)	ACTION	REASON	SCC QUAL	LEVEL
41868 - 41880, 41890 - 41901	endosulfan I	Acceptable quality, but may represent minimum value	Recoveries were below method-specified criteria in the OPRs	NA	NA
all samples except for 41849, 41867 - 41880, 41890 - 41902, 41909, 41934, 41953, 41954, 41961, 41963, 42084	endosulfan II	Best obtainable data	Coeluted with other target analytes on both columns; OPR recovery could not be determined	NA	NA
41867, 41902, 41934, 42084	endosulfan II	Best obtainable data	Coeluted with other target analytes on both columns; OPR and MS/MSD recovery could not be determined	NA	NA
41849 41909	endosulfan II	Best obtainable data	OPR recovery could not be determined, and recovered below method-specified criteria in the MS/MSD	NA	NA
41849	p,p'-DDE	Acceptable quality, but may represent maximum value	Recoveries were above method-specified criteria in the MS/MSD	NA	
41867	o,p'-DDD, p,p'-DDD, gamma-BHC, oxychlordane, heptachlor epoxide, gamma- chlordane, alpha-chlordane, dieldrin, endrin, cis-nonachlor	Best obtainable data	RPD between MS/MSD exceeded criteria	NA	NA
42084	o,p'-DDE, p,p'-DDE, trans-nonachlor	Best obtainable data	RPD between MS/MSD exceeded criteria	NA	NA
41946	hexachlorobenzene, oxychlordane, heptachlor epoxide, endrin	Acceptable quality, but may represent minimum values	Extraction holding times exceeded	NA	NA

MEMORANDUM

DATE: September 26, 2000

TO: Jeff Bigler, Project Officer
EPA SASD

FROM: Patrick Redmiles, Quality Assurance Chemist
Sample Control Center

SUBJECT: Data Review Narrative for Polynuclear Aromatic Hydrocarbon Organic Analyses for Episode 4864, Cook Inlet Study

Axys Analytical Services, Ltd., through Ecology and Environment, Inc., submitted organic analytical data (Axys Method PH-01 ver. 2) for samples in Episode 4864. Please refer to Table I for EPA and field sample number cross references. These data have been reviewed in accordance with SCC's *Data Review Guidelines for Volatile & Semivolatile Organic Analysis* (Draft, August 1997). Based on this review, all data are considered to be of acceptable quality, with the qualifiers described below and detailed in the attached Data Review Summary Table.

Surrogate Recovery

The result for pyrene-d₁₀ in sample 41842 was below the method-specified limit. Therefore, SCC considers the results for the affected compounds to be the best obtainable. These cases are detailed in the attached Data Review Summary Table.

Ion Abundance Ratio

A number of compounds were reported by the laboratory with an associated value, but were flagged as non-detects due to ion abundance ratio failures. SCC confirmed these ion abundance ratio failures, which indicate that an unknown interferent, and not the target analyte, was the cause of the instrument response, by reviewing the mass spectra. Consequently, these results are reported in the database as nondetects. These cases are detailed in the attached Data Review Summary Table.

Blanks

Analytes were detected in several of the laboratory analysis blanks, and in one of the field blanks. The levels of these compounds, however, were far below the quantitation limit of the field samples. Therefore, SCC believes these aqueous blank results have no impact on the field sample results.

If you have any questions regarding the analysis of these samples or the review of these data, please contact SCC's Cook Inlet Study Data Review Team Coordinator, Pornkeo Chinyavong, at (703) 519-1377 or by facsimile at (703) 684-0610.

Attachments

cc: Lori Lee, EPA
Sean Donahoe, Tetra Tech
Steve Ellis, EZS Consultants
Carrie Buswell, DynCorp

DATA REVIEW SUMMARY TABLE

EPISODE: 4864
PROJECT: Cook Inlet Study

ANALYSIS: PAH
REVIEWER: P. Redmiles

SAMPLE(S)	ANALYTE(S)	ACTION	REASON	SCC QUAL	LEVEL $\mu\text{g}/\text{kg}$
41842	C2 phenanthrene/anthracene C3 phenanthrene/anthracene C4 phenanthrene/anthracene C1 fluoranthene/pyrenes C2 fluoranthene/pyrenes	consider to be best obtainable	surrogate pyrene-d ₁₀ recovery below limits	NA	NA
41840	naphthalene C1 dibenzothiophenes dehydroabietane 3,4,7,12a-tetramethyloctahydrochrysene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	2.2 1.1 1.4 0.5
41841	naphthalene benzo[a]fluoranthene toluenethiol dehydroabietane tetrahydroretene 3,4,7,12a-tetramethyloctahydrochrysene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	2.2 2.6 2.2 1.4 1.3 0.5
41842	naphthalene acenaphthene cyclopenta[cd]pyrene benz[a]anthracene dehydroabietane tetrahydroretene 3,4,7,12a-tetramethyloctahydrochrysene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	2.2 0.8 0.5 0.9 1.4 1.3 0.5
41843, 41853	naphthalene acenaphthene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	2.2 0.8
41844	acenaphthene 3,4,7,12a-tetramethyloctahydrochrysene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	0.8 0.5
41846	benzo[a]fluoranthene 3,4,7,12a-tetramethyloctahydrochrysene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	2.6 0.5
41847	tetrahydroretene 3,4,7,12a-tetramethyloctahydrochrysene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	1.3 0.5
41848	acenaphthene benzo[a]fluoranthene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	0.8 2.6

DATA REVIEW SUMMARY TABLE, cont

EPISODE: 4864
PROJECT: Cook Inlet Study

ANALYSIS: PAH
REVIEWER: P. Redmiles

SAMPLE(S)	ANALYTE(S)	ACTION	REASON	SCC QUAL	LEVEL µg/kg
41849	acenaphthene fluoranthene dehydroabietane tetrahydroretene 3,4,7,12a-tetramethyloctahydrochrysene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	0.8 1.7 1.4 1.3 0.5
41850	acenaphthene toluenethiol tetrahydroretene 3,4,7,12a-tetramethyloctahydrochrysene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	0.8 2.2 1.3 0.5
41845, 41852, 41860, 41880, 41890, 41892, 41923, 41925, 41938, 41947, 41948, 41949, 41957	acenaphthene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	0.8
41862	chrysene/triphenylene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	0.5
41876	fluorene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	0.7
41903	3,4,7,12a-tetramethyloctahydrochrysene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	0.5
41910	dehydroabietane	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	1.4
41915	pimanthrene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	1.6
41926, 41927	benzo[e]pyrene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	1
41932	acenaphthene dehydroabietane tetrahydroretene 3,4,7,12a-tetramethyloctahydrochrysene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	0.8 1.4 1.3 0.5

DATA REVIEW SUMMARY TABLE, cont

EPISODE: 4864
PROJECT: Cook Inlet Study

ANALYSIS: PAH
REVIEWER: P. Redmiles

41933	3,4,7,12a-tetramethyloctahydrochrysene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	0.5
SAMPLE(S)	ANALYTE(S)	ACTION	REASON	SCC QUAL	LEVEL µg/kg
41934	dehydroabietane bisnorsimonellite tetrahydroretene 3,4,7,12a-tetramethyloctahydrochrysene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	1.4 1.3 1.3 0.5
41935	naphthalene acenaphthene toluenethiol dehydroabietane	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	2.2 0.8 2.2 1.4
41936	acenaphthene toluenethiol	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	0.8 2.2
41937, 41955	naphthalene acenaphthene toluenethiol	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	2.2 0.8 2.2
41944	norabietatetraene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	1.4
41956	acenaphthene cyclopenta[cd]pyrene 3,4,7,12a-tetramethyloctahydrochrysene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	0.8 0.5 0.5
41959	toluenethiol dehydroabietane	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	2.2 1.4

MEMORANDUM

DATE: June 17, 1998

TO: Jeff Bigler, Project Officer
EPA SASD

FROM: Pornkeo Chinyavong, Quality Assurance Chemist
Sample Control Center

SUBJECT: Data Review Narrative for Toxic Polychlorinated Biphenyls Analyses by EPA Method 1668 for Episode 4864

Axys Analytical Services, Ltd., through Ecology & Environment, Inc., submitted toxic polychlorinated biphenyls analytical data for 113 samples in Episode 4864 for the Cook Inlet Contamination Study. Please refer to Table I for EPA and field sample number cross references. These data have been reviewed in accordance with SCC's *General Data Review Guidelines for Use with the 1600 Series Methods, Various Classics and Organics Methods*. Based on this review, all data are considered to be of acceptable quality with the clarification provided below.

Minimum Levels (ML)

2,3,3',4,4',5-HxCB and 2,3,3',4,4',5'-HxCB coeluted on the primary column. Consequently, the laboratory quantitated these analytes using the results from the confirmation column (on which the analytes did not coelute). In reporting the minimum levels (MLs, also known as quantitation limits) for those samples in which these analytes were not detected, the laboratory incorrectly derived the ML from the primary column, thereby reporting MLs that, because the compounds coeluted, were two times the method-specified level. As a result, SCC has corrected the ML values in the database to reflect the appropriate method-specified MLs, adjusted for sample size differences where necessary.

If you have any questions regarding the analysis of these samples or this data review, please contact me at (703) 519-1377 or by facsimile at (703) 684-0610.

Attachments

cc: Lori Lee, EPA
Sean Donahoe, Tetra Tech
Steve Ellis, EZS Consultants
Carrie Buswell, DynCorp

MEMORANDUM

DATE: June 26, 1998

TO: Jeff Bigler,
EPA SASD

FROM: Jojean Bolton, 
Sample Control Center

SUBJECT: Data Review Narrative for Trace Metals Analysis by Method 1638 for the Cook
Inlet Contamination Study-Revised

This data review narrative supercedes the original sent to you on June 22, 1998.

Battelle Laboratories, through Ecology & Environment, Inc., submitted trace metals data for samples in Episode 4864. Refer to the attached Table I for EPA sample numbers and corresponding field sample numbers.

These data have been reviewed in accordance with SCC's *General Data Review Guidelines for Use with the 1600 Series Methods and Method 1638: Determination of Trace Elements in Ambient Waters by Inductively Coupled Plasma-Mass Spectrometry*. Based on this review, all data are considered to be of acceptable quality with the qualifications described below.

Multiple Qualifiers

Some of the analytical results were affected by multiple data qualifiers. The effect of each QC failure and its associated qualifier is described below in this data review narrative. In cases where these qualifiers suggest different biases, SCC considers the data to be the best obtainable. Where multiple QC failures occurred, the cumulative effect for the associated qualifiers is documented in the Data Review Summary Table (Table II).

Blanks

The method blanks (MBs) associated with these samples had one or more elements detected at levels greater than the method detection limit but below the quantitation limit. The data quality is affected as follows:

- **Sample Results Less than Five Times Blank Results:** When the sample result is less than five times the blank result, there is no means by which to ascertain whether the presence of the analyte may be attributed to contamination. Therefore, SCC recommends that the data be reported in the database as non-detects at the instrument detection limit, adjusted for dilution. These instances are detailed in the attached Data Review Summary Table (Table II).



- Sample Results Greater than Five Times but Less than Ten Times Blank Results: SCC considers these data to be of acceptable quality, but cautions the data user that the results may represent maximum values. These instances are detailed in the attached Data Review Summary Table (Table II)
- Sample Results Greater than Ten Times Blank Results or Analyte Not Detected in Sample: SCC does not believe the presence of the analyte in the blank adversely affects the data in those cases where the sample results are greater than ten times the associated blank results or when the analyte is not detected in the associated samples. Because SCC considers such data to be acceptable without qualification, these cases do not merit further detail.

Field Blanks

Chromium (Cr) and lead (Pb) were detected in field blank samples 41961 and 41964 at levels exceeding the quantitation limits of the field samples. For associated samples with results that are less than five times the field blank result, there is no way to ascertain whether the presence of the analyte may be attributed to contamination. SCC considers these data to be the best obtainable. For associated samples with results that are greater than five times but less than ten times the field blank result, SCC considers these data to be of acceptable quality, but cautions the user that the results may represent maximum values. These instances are detailed in the attached Data Review Summary Table (Table II). For samples with results greater than ten times the field blank result or in which the analyte is not detected, SCC does not believe the presence of the analyte in the field blank adversely affects the data. Because SCC considers such data to be acceptable without qualification, these cases do not merit further detail.

Matrix Spike/Matrix Spike Duplicate Analyses

For sample 41854, the matrix spike (MS) recovery exceeded the specified criteria and the relative percent difference (RPD) between the MS and matrix spike duplicate (MSD) exceeded the specified criteria for arsenic (As). Therefore, SCC considers the As data for this sample to be the best obtainable.

For sample 41854, the MS and MSD recoveries were zero for barium (Ba). The laboratory indicated that there may be possible contamination in the original sample that resulted in an elevated result. Therefore, SCC believes that the Ba data for this sample should be excluded from the database.

For sample 41854, the MS and MSD recoveries were below the specified criteria and the RPD between the MS and MSD exceeded the specified criteria for Cr. Therefore, SCC considers the Cr data for this sample to be the best obtainable.

For sample 41864, the MS and MSD recoveries exceeded the specified criteria for Ba. Therefore, SCC considers the Ba data for this sample to be of acceptable quality, but it may represent a maximum value.

For sample 41874, the MSD recovery exceeded the specified criteria and the RPD between the MS and MSD exceeded the specified criteria for Ba analysis. Therefore, SCC considers the Ba data for this sample to be the best obtainable.

For sample 41929, the MSD recovery was below the specified criteria and the RPD between the MS and MSD exceeded the specified criteria for As. Therefore, SCC considers the As data for this sample to be the best obtainable.

For sample 41929, the MS and MSD recoveries exceeded the specified criteria and the RPD between the MS and MSD exceeded the specified criteria for Ba. Therefore, SCC considers the Ba data for this sample to be the best obtainable.

Ongoing Precision and Recovery (OPR) Standards

For some samples, the associated ongoing precision and recovery (OPR) standards exceeded specified criteria for Cr and Ba. Therefore, SCC considers the Cr and Ba data to be of acceptable quality, but they may be maximum values. These instances are detailed in the attached Data Review Summary Table (Table II).

If you have any questions regarding these analyses or the review of these data, please contact SCC's Cook Inlet Data Review Coordinator, Pornkeo Chinyavong, at (703) 519-1377 or by facsimile at (703) 684-0610.

Attachments

cc: Lori Lee, EPA
Sean Donahoe, Tetra Tech
Steve Ellis, EVS Consultants
Carrie Buswell, DynCorp

DATA REVIEW SUMMARY TABLE (TABLE II)

EPISODE: 4864

ANALYSIS: Trace Metals

PROJECT: Cook Inlet Study

REVIEWER: J. Bolton

SAMPLE(S)	ANALYTE	ACTION	REASON	SCC QUAL	LEVEL
41926, 41927, 41951	As	Data considered of acceptable quality, but may be maximum value	Sample result >5x but <10x blank result	NA	NA
41854	As	Best obtainable data	MS recovery exceeded criteria; RPD exceeded criteria	NA	NA
41929	As	Best obtainable data	MSD recovery was below criteria; RPD exceeded criteria	NA	NA
41840, 41842, 41847, 41948, 41851, 41947-41949, 41956, 41960	Ba	Report in database as non-detects	Sample results <5x blank result	NA	Refer to database
41841, 41846, 41852, 41862, 41908, 41923, 41926, 41935, 41936, 41937, 41941, 41952, 41955	Ba	Data considered of acceptable quality, but may be maximum values	Sample results >5x but <10x blank result	NA	NA
41926, 41952	Ba	Data considered of acceptable quality, but may be maximum values	Sample results >5x but <10x blank result; OPR recovery exceeded criteria	NA	NA
41854	Ba	Exclude from the database	MS and MSD recoveries were zero	Exclude	NA
41864	Ba	Data considered of acceptable quality, but may be maximum value	MS and MSD recoveries exceeded criteria	NA	NA
41874	Ba	Best obtainable data	MSD recovery exceeded criteria; RPD exceeded criteria	NA	NA
41929	Ba	Best obtainable data	MS and MSD recoveries exceeded criteria; RPD exceeded criteria	NA	NA
41925, 41927, 41928, 41950, 41951	Ba	Data considered of acceptable quality, but may be maximum values	OPR recovery exceeded criteria	NA	NA
41932-41937, 41955, 41956, 42084	Cd	Report in database as non-detects	Sample results <5x blank result	NA	Refer to database
41845, 41869, 41873, 41874, 41875, 41878, 41890, 41892, 41893, 41957, 41958	Cd	Data considered of acceptable quality, but may be maximum values	Sample results >5x but <10x blank result	NA	NA
41919, 41932-41934	Cr	Report in database as non-detects	Sample results <5x blank result	NA	Refer to database
41841, 41920-41922, 41929, 41930	Cr	Data considered of acceptable quality, but may be maximum values	Sample results >5x but <10x blank result	NA	NA

DATA REVIEW SUMMARY TABLE (TABLE II)

EPISODE: 4864

ANALYSIS: Trace Metals

PROJECT: Cook Inlet Study

REVIEWER: J. Bolton

SAMPLE(S)	ANALYTE	ACTION	REASON	SCC QUAL	LEVEL
41841, 41921, 41922, 41930	Cr	Data considered of acceptable quality, but may be maximum values	Sample results >5x but <10x blank result; OPR recovery exceeded criteria	NA	NA
41854	Cr	Best obtainable data	MS and MSD recoveries were below criteria; RPD exceeded criteria	NA	NA
41923-41928, 41935-41952, 41955-41960, 42084	Cr	Data considered of acceptable quality, but may be maximum values	OPR recovery exceeded criteria	NA	NA
41846, 41848, 41857, 41860, 41863, 41866-41868, 41873-41875, 41897, 41899, 41900, 41907, 41914, 41918, 41921-41923, 41929, 41930, 41938, 41939, 41944-41946, 41949	Cr	Data considered of acceptable quality, but may be maximum values	Sample results >5x but <10x field blank sample 41961 result	NA	NA
41840, 41841, 41843, 41845, 41850, 41858, 41859, 41861, 41862, 41870, 41871, 41876-41878, 41880, 41890-41893, 41895, 41896, 41902, 41903, 41906, 41908, 41909, 41915-41917, 41924-41928, 41936, 41937, 41941-41943, 41947, 41948, 41950-41952, 41955-41957, 41959, 41960, 42084	Cr	Best obtainable data	Sample results <5x field blank sample 41961 result	NA	NA
41858, 41870, 41876, 41878, 41880, 41892, 41908, 41924, 41925, 41926, 41927, 41928, 41947, 41951, 41952, 41960	Cr	Data considered of acceptable quality, but may be maximum values	Sample results >5x but <10x field blank sample 41964 result	NA	NA
41934, 41950	Pb	Report in database as non-detects	Sample results <5x blank result	NA	Refer to database
41908, 41920, 41923, 41928, 41938, 41940, 41952, 41959	Pb	Data considered of acceptable quality, but may be maximum values	Sample results >5x but <10x blank result	NA	NA
41952	Pb	Data considered of acceptable quality, but may be maximum values	Sample results >5x but <10x field blank sample 41961 result	NA	NA
41923	Se	Report in database as non-detect	Sample result <5x blank result	NA	200 µg/kg
41921, 41938, 41939, 41940, 41944, 41945	Se	Data considered of acceptable quality, but may be maximum values	Sample results >5x but <10x blank result	NA	NA

MEMORANDUM

DATE: June 26, 1998

TO: Jeff Bigler,
EPA SASD

FROM: Jojean Bolton, 
Sample Control Center

SUBJECT: Data Review Narrative for Arsenic Analysis by Method 1632 for the Cook Inlet Contamination Study-Revised

This data review narrative supercedes the original sent to you on June 22, 1998.

Battelle Laboratories, through Ecology & Environment, Inc., submitted total inorganic arsenic (TIAs), monomethylarsonate (MMA), dimethylarsinate (DMA), and arsenic III/V (As III/V) data for samples in Episode 4864. Refer to the attached Table I for EPA sample numbers and corresponding field sample numbers.

These data have been reviewed in accordance with SCC's *General Data Review Guidelines for Use with the 1600 Series Methods and Method 1632: Analysis of Arsenic and Arsenic Species in Water and Tissue (Revision 2.0, Draft March 1998)*. Based on this review, all data are of acceptable quality with the qualifications described below.

Matrix Spike/Matrix Spike Duplicate Analyses

For sample 41845, the relative percent difference (RPD) between the matrix spike (MS) and matrix spike duplicate (MSD) samples exceeded the specified criteria for MMA analysis. Therefore, SCC considers the MMA data for this sample to be the best obtainable.

For samples 41854 and 41956, the MS and MSD recoveries were below the specified criteria and the RPD between the MS and MSD samples exceeded the specified criteria for MMA analysis. Therefore, SCC considers the MMA data for these samples to be the best obtainable.

For samples 41854 and 41947, the RPD between the MS and MSD samples exceeded the specified criteria for As III analysis. Therefore, SCC considers the As III data for these samples to be the best obtainable. Because the results for As V are mathematically derived from the associated TIAs and As III results, SCC also considers the As V data for these samples to be the best obtainable.

For samples 41874, 41908, and 41929, the MS and/or MSD recoveries were below the specified criteria for MMA analysis. Therefore, SCC considers the MMA data for these samples to be of acceptable quality, but they may represent minimum values.



For samples 41917, 41925, and 41947, the RPDs between the MS and MSD samples exceeded the specified criteria for TIAs analysis. Therefore, SCC considers the TIAs data for these samples to be the best obtainable. Because the results for As V are mathematically derived from the associated TIAs and As III results, SCC considers the As V data for these samples to be the best obtainable.

For sample 41941, the MS recovery exceeded the specified criteria for As III analysis. Because As III was not detected in the sample 41941, SCC believes that the As III data for this sample is not adversely affected by the QC failure and is of acceptable quality.

For sample 41956, the MS and MSD recoveries were below the specified criteria for TIAs analysis. Therefore, SCC considers the TIAs data for this sample to be of acceptable quality, but it may represent a minimum value. Because As V is mathematically derived from the TIAs and As III results, SCC considers the As V data for this sample to be of acceptable quality, but it may represent a minimum value.

Technical Note-As III results greater than TIAs results

By definition, TIAs is equal to the sum of the As III and As V in a given sample. For some samples in this episode, the concentrations of As III were greater than the concentration of TIAs. In these instances, the differences between the results may be attributable to analysis aliquot variations or to the fact that the As III and TIAs results are at levels just above the quantitation limits. For these samples, the relative percent differences between the As III and TIAs results are below 20 percent, indicating that the differences are within reasonable limits. Therefore, SCC considers this As III, As V, and TIAs data to be of acceptable quality.

If you have any questions regarding these analyses or the review of these data, please contact SCC's Cook Inlet Data Review Coordinator, Pornkeo Chinyavong, at (703) 519-1377 or by facsimile at (703) 684-0610.

Attachments

cc: Lori Lee, EPA
Sean Donahoe, Tetra Tech
Steve Ellis, EVS Consultants
Carrie Buswell, DynCorp

DATA REVIEW SUMMARY TABLE (TABLE II)

EPISODE: 4864

ANALYSIS: Arsenic

PROJECT: Cook Inlet Study

REVIEWER: J. Bolton

SAMPLE(S)	ANALYTE	ACTION	REASON	SCC QUAL	LEVEL
41917, 41925, 41947	TIAs/As V	Best obtainable data	RPDs exceeded criteria	NA	NA
41956	TIAs/As V	Data considered of acceptable quality, but may be minimum value.	MS/MSD recoveries were below criteria	NA	NA
41845	MMA	Best obtainable data	RPD exceeded criteria	NA	NA
41854, 41956	MMA	Best obtainable data	MS/MSD recoveries were below criteria; RPDs exceeded criteria	NA	NA
41874, 41908, 41929	MMA	Data considered of acceptable quality, but may be minimum values	MS and/or MSD recoveries were below criteria	NA	NA
41854, 41947	As III/As V	Best obtainable data	RPDs exceeded criteria	NA	NA

MEMORANDUM

DATE: June 26, 1998

TO: Jeff Bigler,
EPA SASD

FROM: Jojean Bolton, 
Sample Control Center

SUBJECT: Data Review Narrative for Total Mercury Analysis by Method 1631 for the Cook Inlet Contamination Study-**Revised**

This data review narrative supercedes the original sent to you on June 22, 1998.

Battelle Laboratories, through Ecology & Environment, Inc., submitted total mercury data for samples in Episode 4864. Refer to the attached Table I for EPA sample numbers and corresponding field sample numbers.

These data have been reviewed in accordance with SCC's *General Data Review Guidelines for Use with the 1600 Series Methods and Method 1631: Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrophotometry*. Based on this review, all data are considered to be of acceptable quality with the qualification described below.

Blanks

The method blanks (MBs) and some bubbler blanks (BBs) associated with these samples had total mercury detected at levels greater than method detection limit but less than the quantitation limit. The data quality is affected as follows:

- **Sample Results Less than Five Times Blank Results:** When the sample result is less than five times the blank result, there is no means by which to ascertain whether the presence of total mercury may be attributed to contamination. Therefore, SCC recommends that the data be included in the database as non-detects at the method detection limit. These instances are detailed in the attached Data Review Summary Table (Table II).
- **Sample Results Greater than Five Times but Less than Ten Times Blank Results:** SCC considers these data to be of acceptable quality, but cautions the data user that the results may represent maximum values. These instances are detailed in the attached Data Review Summary Table (Table II).



- Sample Results Greater than Ten Times Blank Results or Analyte Not Detected in Sample: SCC does not believe the presence of total mercury in the blank adversely affects the data in those cases where the sample results are greater than ten times the associated blank results or when the analyte is not detected in the associated samples. Because SCC considers such data to be acceptable without qualification, these cases do not merit further detail.

If you have any questions regarding these analyses or the review of these data, please contact SCC's Cook Inlet Data Review Coordinator, Pornkeo Chinyavong, at (703) 519-1377 or by facsimile at (703) 684-0610.

Attachments

cc: Lori Lee, EPA
Sean Donahoe, Tetra Tech
Steve Ellis, EVS Consultants
Carrie Buswell, DynCorp

DATA REVIEW SUMMARY TABLE (TABLE II)

EPISODE: 4864

ANALYSIS: Total Mercury

PROJECT: Cook Inlet Study

REVIEWER: J. Bolton

SAMPLE(S)	ANALYTE(S)	ACTION	REASON	SCC QUAL	LEVEL
41856	Total Mercury	Report in database as non-detect	Sample result <5x blank result	NA	10 µg/kg
41840, 41842, 41846, 41852, 41855, 41857, 41859, 41866, 41867, 41874, 41879	Total Mercury	Data are of acceptable quality, but may be maximum values	Sample results >5x but <10x blank result	NA	NA

MEMORANDUM

DATE: June 26, 1998

TO: Jeff Bigler,
EPA SASD

FROM: Jojean Bolton,
Sample Control Center



SUBJECT: Data Review Narrative for Methyl Mercury Analysis by Method 1630 for the Cook Inlet Contamination Study-Revised

This data review narrative supercedes the original sent to you on June 22, 1998.

Battelle Laboratories, through Ecology & Environment, Inc., submitted methyl mercury data for samples in Episode 4864. Refer to the attached Table I for EPA sample numbers and corresponding field sample numbers.

These data have been reviewed in accordance with SCC's *General Data Review Guidelines for Use with the 1600 Series Methods and Method 1630: Methyl Mercury in Water by Distillation, Aqueous Ethylation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrophotometry*. Based on this review, all data are considered to be of acceptable quality with the qualification described below.

Method Blank

The method blank (MB) associated with some samples had methyl mercury detected at levels greater than the method detection limit. Because these sample results were greater than ten times the MB result, SCC does not believe the presence of methyl mercury in the blank adversely affects the data. These data are considered to be of acceptable quality, and these instances do not merit further details.

If you have any questions regarding these analyses or the review of these data, please contact SCC's Cook Inlet Data Review Coordinator, Pornkeo Chinyavong, at (703) 519-1377 or by facsimile at (703) 684-0610.

Attachments

cc: Lori Lee, EPA
Sean Donahoe, Tetra Tech
Steve Ellis, EVS Consultants
Carrie Buswell, DynCorp



MEMORANDUM

DATE: August 6, 1998

TO: Jeff Bigler, Project Officer
EPA SASD

FROM: Pornkeo Chinyavong, Quality Assurance Chemist *PC*
Sample Control Center

SUBJECT: Revised Data Review Narrative for Organochlorine Pesticide Analysis for Episode 4864

This revised narrative supersedes the narrative dated July 13, 1998. Since then data were received for all target analytes for samples 41878 and 41946, and for the Group II analytes (gamma-BHC, gamma-chlordane, endosulfan I, endosulfan II, dieldrin, endrin, oxychlordane, heptachlor epoxide, o,p'-DDD and p,p'-DDD) for samples 41840 - 41845, 41849 - 41853, 41902 - 41904, 41935 - 41937, 41955, and 41957 (i.e., the salmon samples that required extensive extract clean up for the Group II pesticides). In addition, data were resubmitted for the Group II analytes for samples 41846 - 41848, 41956, and 42084 (halibut and seabass samples). This review narrative addresses all organochlorine pesticides data associated with Episode 4864.

Pacific Analytical, Inc., (PAI) submitted results for organochlorine pesticides analyzed by Method 1656 for 116 samples in Episode 4864 for the Cook Inlet Contamination Study. Please refer to Table I for EPA and field sample number cross references.

These data have been reviewed in accordance with SCC's *Data Review Guidelines for Pesticides and Herbicides Analyses by Methods 1656, 1657, and 1658* (Draft, June 1998). Based on this review, all data are considered to be of acceptable quality with the qualifiers described below and detailed in the attached Data Review Summary Table (Table II).

Quantitation

On all Form 1s, PAI reported sample results based on method detection limits (i.e., the qualitative limit) as opposed to minimum levels (i.e., the quantitative limit). In order to maintain consistency with the database and current reporting protocols associated with this project, SCC will report only the values that are at or above the minimum levels in the database. Please note that the minimum levels provided in the database for these samples have been adjusted to reflect the actual sample sizes.

Some sample results in this episode are marked with a "J" flag on Form 1s, which indicates an estimated result that is below the laboratory's method detection limit. In keeping with current EAD practices, and to maintain consistency, all "J" flagged results will be reported in the database as non-detects at the minimum levels.



Multiple Qualifiers

Some of the analytical results were affected by multiple qualifiers. In cases where these qualifiers suggest different biases, SCC considers the data to be the best obtainable. The impact of each QC failure and its associated qualifier is described in this data review narrative. Where multiple QC failures occur, the cumulative effects of the associated qualifiers is documented in Table II.

Calibration Verification (CALVER)

Recoveries for several analytes were above the method-specified criteria in the CALVERs associated with some samples. Therefore, SCC considers the data for those samples to be of acceptable quality, but they may represent maximum values. These cases are detailed in Table II.

Surrogate Recoveries

For sample 41934, surrogate recoveries were above the method-specified criteria. Therefore, SCC considers the data for all detected analytes in this sample to be of acceptable quality, but they may represent maximum values. These analytes are listed in Table II.

Ongoing Precision and Recovery (OPR)

For all OPR analyses, endosulfan II coeluted with p,p'-DDT and o,p'-DDT on the primary column and with cis-nonachlor on the secondary column. Consequently, the laboratory could not determine endosulfan II recoveries for some of the OPR samples. Endosulfan II results in the field samples were not as adversely affected by coelution problems, due to the fact that either (1) the coeluting compounds were not present in the field sample, (2) if they were, they only coeluted on one of the two columns, thereby allowing quantitation of endosulfan II, or (3) endosulfan II was not present in the field samples. Because endosulfan II recoveries were not ascertained in some OPRs, however, SCC considers endosulfan II data in all affected field samples to be the best obtainable. These cases are detailed in Table II.

For some of the OPR analyses, endosulfan I coeluted with alpha-chlordane on the primary column and was not recovered on the secondary column. Endosulfan I results in the field samples were not adversely affected by coelution problems due to the fact that either the coeluting compound was not present in the field sample or, if it was, it only coeluted in one column, thereby allowing quantitation of endosulfan I on the other column. Because endosulfan I recoveries were not ascertained in these OPRs, however, SCC considers endosulfan I data in the affected samples to be the best obtainable. These cases are detailed in Table II.

Endosulfan I was recovered below the method-specified criteria in the OPR associated with several samples in this episode. Therefore, SCC considers endosulfan I data for these samples to be of acceptable quality, but they may represent minimum values. These cases are detailed in Table II.

Gamma-BHC was recovered below the method-specified criteria in the OPR associated with samples 41878 and 41946. Therefore, SCC considers gamma-BHC data for these samples to be of acceptable quality, but they may represent minimum values. These cases are detailed in Table II.

Matrix Spike/Matrix Spike Duplicate

Matrix spike and matrix spike duplicate (MS/MSD) samples were prepared for several samples in this episode. In some instances, the MS/MSD recoveries were not within the method-specified criteria. In other instances, the relative percent differences (RPDs) between the MS and MSD values exceeded the method-specified criteria. Specific failures and recommended data qualifiers are detailed in Table II.

For all MS/MSD analyses, endosulfan II coeluted with p,p'-DDT and o,p'-DDT on the primary column and with cis-nonachlor on the secondary column. Consequently, the laboratory could not determine endosulfan II recoveries for some of the MS/MSD samples. Endosulfan II results in the field samples were not as adversely affected by coelution problems, due to the fact that either (1) the coeluting compounds were not present in the field sample, (2) if they were, they only coeluted on one of the two columns, thereby allowing quantitation of endosulfan II, or (3) endosulfan II was not present in the field samples. Because endosulfan II recoveries were not ascertained in some MS/MSDs, however, SCC considers endosulfan II data in all affected field samples to be the best obtainable. These cases are detailed in Table II.

For some of the MS/MSD analyses, endosulfan I coeluted with alpha-chlordane on the primary column and was not recovered on the secondary column. Endosulfan I results in the field samples were not adversely affected by coelution problems due to the fact that either the coeluting compound was not present in the field sample or, if it was, it only coeluted in one column, thereby allowing quantitation of endosulfan I on the other column. Because endosulfan I recoveries were not ascertained in these MS/MSDs, however, SCC considers endosulfan I data in the affected samples to be the best obtainable. These cases are detailed in Table II.

For sample 42084, MS/MSD samples were not analyzed for Group II analytes due to an oversight by the laboratory. However, SCC considers the data to be of acceptable quality because all other QC samples indicate that laboratory performance was in control, and because Group II analytes were not detected in the field samples.

Holding Times

Samples 41878 and 41946 exhibited no surrogate recovery in the initial analyses. The laboratory subsequently re-extracted these samples, at which point the method-specified holding time had expired. Therefore, SCC considers the data for all detected analytes in these samples to be of acceptable quality, but they may represent minimum values. These cases are detailed in Table II.

If you have any questions regarding the analysis of these samples or this data review, please contact me at (703) 461-2346 or by facsimile at (703) 461-8056.

Attachments

cc: Lori Lee, EPA
Sean Donahoe, Tetra Tech
Steve Ellis, EVS Consultants
Carrie Buswell, DynCorp

Table II
DATA REVIEW SUMMARY TABLE

EPISODE: 4864

ANALYSIS: 1656

PROJECT: AMS

REVIEWER: P.Chinyavong

SAMPLE(S)	ANALYTE(S)	ACTION	REASON	SCC QUAL	LEVEL
41841, 41843, 41844, 41845	p,p'-DDT	Acceptable quality, but may represent maximum values	Analyte recovery was above method-specified criteria in the CALVERS	NA	NA
41849	p,p'-DDT	Best obtainable data	Analyte recovery was above method-specified criteria in the CALVERs, and RPD value between MS/MSD exceeded criteria	NA	NA
41842	gamma-BHC	Acceptable quality, but may represent maximum values	Analyte recovery was above method-specified criteria in the CALVER	NA	NA
41840 - 41842	heptachlor epoxide endrin	Acceptable quality, but may represent maximum values	Analyte recoveries were above method-specified criteria in the CALVER	NA	NA
41840 41841	endosulfan II	Best obtainable data	Analyte recovery was above method-specified criteria in the CALVER, and OPR recovery could not be determined due to coelution -	NA	NA
41840 - 41842, 41848, 41853	gamma-chlordane	Acceptable quality, but may represent maximum values	Analyte recovery was above method-specified criteria in the CALVERs	NA	NA
41840 - 41842, 41848, 41851, 41852	dieldrin	Acceptable quality, but may represent maximum values	Analyte recovery was above method-specified criteria in the CALVERs	NA	NA

**Table II
DATA REVIEW SUMMARY TABLE**

EPISODE: 4864

ANALYSIS: 1656

PROJECT: AMS

REVIEWER: P. Chinyavong

SAMPLE(S)	ANALYTE(S)	ACTION	REASON	SCC QUAL	LEVEL
41934	o,p'-DDE, p,p'-DDE, o,p'-DDT, p,p'-DDT, p,p'-DDD, hexachlorobenzene, alpha-chlordane, trans-nonachlor, cis-nonachlor, oxychlordane, dieldrin	Acceptable quality, but may represent maximum values	Surrogate recoveries were above method- specified criteria	NA	NA
41934	gamma-BHC	Best obtainable data	Surrogate recoveries were above method- specified criteria, and analyte recovery was below method- specified criteria in the MS/MSD	NA	NA
41934	pentachloroanisole	Best obtainable data	Surrogate recoveries were above method- specified criteria, and RPD between MS/MSD exceeded criteria	NA	NA
41878 41946	gamma-BHC	Acceptable quality, but may represent minimum value	Recovery was below method-specified criteria in the OPR, and extraction holding times exceeded	NA	NA
All samples except for 41867 - 41880, 41890 - 41901, 41909, 41934, 41953, 41954, 41961, 41963, 42084	endosulfan I	Best obtainable data	Coeluted with other target analyte on primary column and not recovered on secondary column in the OPRs	NA	NA
41867, 41909, 41934, 42084	endosulfan I	Best obtainable data	Coeluted with other target analyte on primary column and not recovered on secondary column; OPR and MS/MSD recovery could not be determined	NA	NA

**Table II
DATA REVIEW SUMMARY TABLE**

EPISODE: 4864

ANALYSIS: 1656

PROJECT: AMS

REVIEWER: P.Chinyavong

SAMPLE(S)	ANALYTE(S)	ACTION	REASON	SCC QUAL	LEVEL
41868 - 41880, 41890 - 41901	endosulfan I	Acceptable quality, but may represent minimum value	Recoveries were below method-specified criteria in the OPRs	NA	NA
all samples except for 41849, 41867 - 41880, 41890 - 41902, 41909, 41934, 41953, 41954, 41961, 41963, 42084	endosulfan II	Best obtainable data	Coeluted with other target analytes on both columns; OPR recovery could not be determined	NA	NA
41867, 41902, 41934, 42084	endosulfan II	Best obtainable data	Coeluted with other target analytes on both columns; OPR and MS/MSD recovery could not be determined	NA	NA
41849 41909	endosulfan II	Best obtainable data	OPR recovery could not be determined, and recovered below method-specified criteria in the MS/MSD	NA	NA
41849	p,p'-DDE	Acceptable quality, but may represent maximum value	Recoveries were above method-specified criteria in the MS/MSD	NA	
41867	o,p'-DDD, p,p'-DDD, gamma-BHC, oxychlorane, heptachlor epoxide, gamma- chlordane, alpha-chlordane, dieldrin, endrin, cis-nonachlor	Best obtainable data	RPD between MS/MSD exceeded criteria	NA	NA
42084	o,p'-DDE, p,p'-DDE, trans-nonachlor	Best obtainable data	RPD between MS/MSD exceeded criteria	NA	NA
41946	hexachlorobenzene, oxychlorane, heptachlor epoxide, endrin	Acceptable quality, but may represent minimum values	Extraction holding times exceeded	NA	NA

MEMORANDUM

DATE: June 18, 1998

TO: Jeff Bigler, Project Officer
EPA SASD

FROM: Patrick Redmiles, Quality Assurance Chemist
Sample Control Center

SUBJECT: Data Review Narrative for Polynuclear Aromatic Hydrocarbon Organic Analyses for Episode 4864, Cook Inlet Study

Axys Analytical Services, Ltd., through Ecology and Environment, Inc., submitted organic analytical data (Axys Method PH-01 ver. 2) for samples in Episode 4864. Please refer to Table I for EPA and field sample number cross references. These data have been reviewed in accordance with SCC's *Data Review Guidelines for Volatile & Semivolatile Organic Analysis* (Draft, August 1997). Based on this review, all data are considered to be of acceptable quality, with the qualifiers described below and detailed in the attached Data Review Summary Table.

Surrogate Recovery

The result for pyrene-d₁₀ in sample 41842 was below the method-specified limit. Therefore, SCC considers the results for the affected compounds to be the best obtainable. These cases are detailed in the attached Data Review Summary Table.

Ion Abundance Ratio

A number of compounds were reported by the laboratory with an associated value, but were flagged as non-detects due to ion abundance ratio failures. SCC confirmed these ion abundance ratio failures, which indicate that an unknown interferent, and not the target analyte, was the cause of the instrument response, by reviewing the mass spectra. Consequently, these results are reported in the database as nondetects. These cases are detailed in the attached Data Review Summary Table.

Blanks

Analytes were detected in several of the laboratory analysis blanks, and in one of the field blanks. The levels of these compounds, however, were far below the quantitation limit of the field samples. Therefore, SCC believes these aqueous blank results have no impact on the field sample results.



If you have any questions regarding the analysis of these samples or the review of these data, please contact SCC's Cook Inlet Study Data Review Team Coordinator, Pornkeo Chinyavong, at (703) 519-1377 or by facsimile at (703) 684-0610.

Attachments

cc: Lori Lee, EPA
Sean Donahoe, Tetra Tech
Steve Ellis, EZS Consultants
Carrie Buswell, DynCorp

DATA REVIEW SUMMARY TABLE

EPISODE: 4864
PROJECT: Cook Inlet Study

ANALYSIS: PAH
REVIEWER: P. Redmiles

SAMPLE(S)	ANALYTE(S)	ACTION	REASON	SCC QUAL	LEVEL µg/kg
41842	C2 phenanthrene/anthracene C3 phenanthrene/anthracene C4 phenanthrene/anthracene C1 fluoranthene/pyrenes C2 fluoranthene/pyrenes	consider to be best obtainable	surrogate pyrene-d ₁₀ recovery below limits	NA	NA
41840	naphthalene C1 dibenzothiophenes dehydroabietane 3,4,7,12a-tetramethyloctahydrochrysene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	2.2 1.1 1.4 0.5
41841	naphthalene benzo[a]fluoranthene toluenethiol dehydroabietane tetrahydroretene 3,4,7,12a-tetramethyloctahydrochrysene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	2.2 2.6 2.2 1.4 1.3 0.5
41842	naphthalene acenaphthene cyclopenta[cd]pyrene benz[a]anthracene dehydroabietane tetrahydroretene 3,4,7,12a-tetramethyloctahydrochrysene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	2.2 0.8 0.5 0.9 1.4 1.3 0.5
41843, 41853	naphthalene acenaphthene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	2.2 0.8
41844	acenaphthene 3,4,7,12a-tetramethyloctahydrochrysene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	0.8 0.5
41846	benzo[a]fluoranthene 3,4,7,12a-tetramethyloctahydrochrysene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	2.6 0.5
41847	tetrahydroretene 3,4,7,12a-tetramethyloctahydrochrysene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	1.3 0.5
41848	acenaphthene benzo[a]fluoranthene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	0.8 2.6

DATA REVIEW SUMMARY TABLE, cont

EPISODE: 4864
PROJECT: Cook Inlet Study

ANALYSIS: PAH
REVIEWER: P. Redmiles

SAMPLE(S)	ANALYTE(S)	ACTION	REASON	SCC QUAL	LEVEL µg/kg
41849	acenaphthene fluoranthene dehydroabietane tetrahydroretene 3,4,7,12a-tetramethyloctahydrochrysene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	0.8 1.7 1.4 1.3 0.5
41850	acenaphthene toluenethiol tetrahydroretene 3,4,7,12a-tetramethyloctahydrochrysene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	0.8 2.2 1.3 0.5
41845, 41852, 41860, 41880, 41890, 41892, 41923, 41925, 41938, 41947, 41948, 41949, 41957	acenaphthene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	0.8
41862	chrysene/triphenylene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	0.5
41876	fluorene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	0.7
41903	3,4,7,12a-tetramethyloctahydrochrysene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	0.5
41910	dehydroabietane	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	1.4
41915	pimanthrene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	1.6
41926, 41927	benzo[e]pyrene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	1
41932	acenaphthene dehydroabietane tetrahydroretene 3,4,7,12a-tetramethyloctahydrochrysene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	0.8 1.4 1.3 0.5
41933	3,4,7,12a-tetramethyloctahydrochrysene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	0.5

DATA REVIEW SUMMARY TABLE, cont

EPISODE: 4864
PROJECT: Cook Inlet Study

ANALYSIS: PAH
REVIEWER: P. Redmiles

SAMPLE(S)	ANALYTE(S)	ACTION	REASON	SCC QUAL	LEVEL µg/kg
41934	dehydroabietane bismorsimonellite tetrahydroretene 3,4,7,12a-tetramethyloctahydrochrysene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	1.4 1.3 1.3 0.5
41935	naphthalene acenaphthene toluenethiol dehydroabietane	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	2.2 0.8 2.2 1.4
41936	acenaphthene toluenethiol	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	0.8 2.2
41937, 41955	naphthalene acenaphthene toluenethiol	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	2.2 0.8 2.2
41944	norabietatetraene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	1.4
41956	acenaphthene cyclopenta[cd]pyrene 3,4,7,12a-tetramethyloctahydrochrysene	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	0.8 0.5 0.5
41959	toluenethiol dehydroabietane	enter in database as nondetects	compounds failed ion abundance ratio limits	NA	2.2 1.4

MEMORANDUM

DATE: June 17, 1998

TO: Jeff Bigler, Project Officer
EPA SASD

FROM: Pornkeo Chinyavong, Quality Assurance Chemist *PC*
Sample Control Center

SUBJECT: Data Review Narrative for Toxic Polychlorinated Biphenyls Analyses by EPA Method 1668 for Episode 4864

Axys Analytical Services, Ltd., through Ecology & Environment, Inc., submitted toxic polychlorinated biphenyls analytical data for 113 samples in Episode 4864 for the Cook Inlet Contamination Study. Please refer to Table I for EPA and field sample number cross references. These data have been reviewed in accordance with SCC's *General Data Review Guidelines for Use with the 1600 Series Methods, Various Classics and Organics Methods*. Based on this review, all data are considered to be of acceptable quality with the clarification provided below.

Minimum Levels (ML)

2,3,3',4,4',5-HxCB and 2,3,3',4,4',5'-HxCB coeluted on the primary column. Consequently, the laboratory quantitated these analytes using the results from the confirmation column (on which the analytes did not coelute). In reporting the minimum levels (MLs, also known as quantitation limits) for those samples in which these analytes were not detected, the laboratory incorrectly derived the ML from the primary column, thereby reporting MLs that, because the compounds coeluted, were two times the method-specified level. As a result, SCC has corrected the ML values in the database to reflect the appropriate method-specified MLs, adjusted for sample size differences where necessary.

If you have any questions regarding the analysis of these samples or this data review, please contact me at (703) 519-1377 or by facsimile at (703) 684-0610.

Attachments

cc: Lori Lee, EPA
Sean Donahoe, Tetra Tech
Steve Ellis, EZS Consultants
Carrie Buswell, DynCorp

MEMORANDUM

DATE: June 17, 1998

TO: Jeff Bigler, Project Officer
EPA SASD

FROM: Pornkeo Chinyavong, Quality Assurance Chemist *PC*
Sample Control Center

SUBJECT: Data Review Narrative for Dioxin/Furan Analyses by EPA Method 1613 for Episode 4864

Axys Analytical Services, Ltd., through Ecology & Environment, Inc., submitted dioxin/furan analytical data for samples in Episode 4864 for the Cook Inlet Contamination Study. Please refer to Table I for EPA and field sample number cross references. These data have been reviewed in accordance with SCC's *Data Review Guidelines for Dioxin/Furan Analysis by EPA Method 1613* (Draft, January 1997). Based on this review, all data are considered to be of acceptable quality.

If you have any questions regarding the analysis of these samples or this data review, please contact me at (703) 519-1377 or by facsimile at (703) 684-0610.

Attachments

cc: Lori Lee, EPA
Sean Donahoe, Tetra Tech
Steve Ellis, EZS Consultants
Carrie Buswell, DynCorp