



Terry Tamminen
Agency Secretary
CalEPA



Department of Toxic Substances Control

Edwin F. Lowry, Director
Hazardous Materials Laboratory
700 Heinz Avenue, Suite 100
Berkeley, California 94710



Arnold Schwarzenegger
Governor

MEMORANDUM

TO: Gerard Abrams
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

FROM: Fred Seto, Ph.D.
Hazardous Materials Laboratory
Department of Toxic Substances Control
700 Heinz Avenue, Suite 100
Berkeley, CA 94710

DATE: February 11, 2004

SUBJECT: Review of Data Packages, Boeing Rocketdyne-Santa Susana Field
Laboratory RFI
Columbia/Paragon Analytics, Inc: Energetics (Method 8330)
Ceimic Corporation: Polychlorinated Biphenyls (PCBs) (Method 8082)

As requested, we have reviewed the data packages for Energetics and PCBs. The analytical results and the associated reporting limits for Energetics (Method 8330) and for PCBs (Method 8082) are shown in Table 1 and Table 2. The data packages contain 14 soil samples. They are described below.

<u>SDG No.</u>	<u>Sample No.</u>	<u>Date Collected</u>	<u>Matrix (No of Sample)</u>	<u>Method</u>
4148	RS506	12/5/97	Soil (1)	8330
4148	RS518, RS521 RS522	12/9/97	Soil (3)	8330
0196	RS648, RS650	1/23/98	Soil (2)	8330
RJ503	RJ503, RJ504 RJ505, RJ006 RJ007, RJ008 RJ009, RJ010	6/29/00	Soil (8)	8082

We have evaluated, where applicable, the holding times, initial calibrations, calibration verifications, method blanks, surrogates, laboratory control samples (LCS), matrix spike/matrix spike duplicate (MS/MSD), analyte identification and quantitation. Our data review results are summarized in Table 3. We have the following comments:

For Energetics (Method 8330): HMX was detected in samples RS518 (3,000 ug/Kg), RS521 (13,000 ug/Kg), RS522 (4,700 ug/Kg) and RS650 (20,000 ug/Kg). RDX was detected in samples RS521 (650 ug/Kg) and RS522 (16,000 ug/Kg). The holding times, initial calibration, calibration verifications, method blanks, and LCS were within the control limits. Confirmation of HMX and RDX were performed by analyzing the positive samples with a secondary liquid chromatography (LC) column. No MS/MSD results were provided to evaluate analytical precision and accuracy. The surrogate (1,4-Dinitrobenzene) recoveries for samples RS521 and RS522 were zero. So, the detected HMX and RDX in samples S521 and RS522 should be qualified as estimates.

For PCBs (Method 8082): Aroclor 1254 was detected in samples RJ503 (284 ug/Kg), RJ505 (49 ug/Kg), RJ006 (277 ug/kg), RJ007 (1350 ug/Kg), RJ008 (280 ug/Kg) and RJ009 (71 ug/Kg). The holding times, initial calibration, calibration verification, method blanks, and LCS were within control limits. The surrogates (Tetrachloro-m-xylene and Decachlorobiphenyl) recoveries were acceptable. Confirmation of Aroclor 1254 was performed by using a second gas chromatography (GC) column of dissimilar stationary phase based on the technique of pattern match. No MS/MSD results were provided to evaluate analytical precision and accuracy.

Conclusion

Generally, most of quality assurance/quality control (QA/QC) requirements are met. For Energetics (Method 8330), the surrogate (1,4-Dinitrobenzene) recoveries for samples RS521 and RS522 were zero and no MS/MSD data were provided. Therefore, the reported results for these two samples should be qualified as estimates. For the other samples, reported results may be acceptable because the surrogate recoveries and

LCS data are satisfactory. For PCBs (Method 8082), reported results may be acceptable because the surrogate recoveries and LCS data are satisfactory.

If you have any questions, please contact Fred Seto or James Cheng at (510)540-3003.

CC: Bart Simmons, Ph.D.
Cindy Dingman
Lorna Garcia
James Cheng

TABLE 1: Analytical Results and Reporting Limits for Energetics

Analyte	RS506 (ug/Kg)	RS518 (ug/Kg)	RS521 (ug/Kg)	RS522 (ug/Kg)	RS648 (ug/Kg)	RS650 (ug/Kg)	Report- ing Limit (ug/Kg)
HMX	ND	3,000	13,000	4,700	ND	20,000	2,200
RDX	ND	ND	650	16,000	ND	ND	510
1,3,5- Trinitrobenzene	ND	ND	ND	ND	ND	ND	250
1,3- Dinitrobenzene	ND	ND	ND	ND	ND	ND	250
Tetryl	ND	ND	ND	ND	ND	ND	650
Nitrobenzene	ND	ND	ND	ND	ND	ND	260
2,4,6- Trinitrotoluene	ND	ND	ND	ND	ND	ND	250
4-Amino-2,6- DNT	ND	ND	ND	ND	ND	ND	250
2-Amino-4,6- DNT	ND	ND	ND	ND	ND	ND	250
2,6- Dinitrotoluene	ND	ND	ND	ND	ND	ND	260
2,4- Dinitrotoluene	ND	ND	ND	ND	ND	ND	250
2-Nitrotoluene	ND	ND	ND	ND	ND	ND	250
4-Nitrotoluene	ND	ND	ND	ND	ND	ND	250
3-Nitrotoluene	ND	ND	ND	ND	ND	ND	250

ND = Non detect

TABLE 2: Analytical Results and Reporting Limits for PCBs

Analyte	RJ503 (ug/Kg)	RJ504 (ug/Kg)	RJ505 (ug/Kg)	RJ006 (ug/Kg)	RJ007 (ug/Kg)	RJ008 (ug/Kg)	RJ009 (ug/Kg)	RJ010 (ug/Kg)	Report- ing Limit (ug/Kg)
Aroclor-1016	ND	ND	ND	ND	ND* (180)	ND	ND	ND	34
Aroclor-1221	ND	ND	ND	ND	ND* (360)	ND	ND	ND	68
Aroclor 1232	ND	ND	ND	ND	ND* (180)	ND	ND	ND	34
Aroclor 1242	ND	ND	ND	ND	ND* (180)	ND	ND	ND	34
Aroclor-1248	ND	ND	ND	ND	ND* (180)	ND	ND	ND	34
Aroclor-1254	284	ND	49	277	1,350	280	71	ND	34
Aroclor-1260	ND	ND	ND	ND	ND* (180)	ND	ND	ND	34

ND = Non detect

* Sample RJ007 was analyzed at a five-fold dilution. Therefore, reporting limits for the Aroclors were elevated.

TABLE 3: Data Review Summary

QA/QC REQUIREMENTS	ACCEPTABILITY	
	Energetics (Method 8330)	PCBs (Method 8082)
	6-soil : ID Nos: RS506, RS518, RS521, RS522, RS648, RS650	8-soil: ID Nos: RJ503, RJ504, RJ505, RJ006, RJ007, RJ008, RJ009, RJ010
1. Holding Times	Yes	Yes
2. Initial Calibration	Yes	Yes
3. Calibration Verification	Yes	Yes
4. Method Blanks	Yes	Yes
5. Surrogates	Yes, except RS521 and RS522	Yes
6. Laboratory Control Samples	Yes	Yes
7. Matrix Spike/Matrix Spike Duplicate	Not Provided	Not Provided
8. Identification	Yes	Yes
9. Quantitation	Yes	Yes