FULLERTON LABORATORY
1511 E. ORANGETHORPE AVE.
FULLERTON, CA 92831
PHONE (714) 447-6868

*SPL, INC.*

*REPORT APPROVAL SHEET*

*WORK ORDER NUMBER:* *97 - 03 - 017*

*Approved for release by:*

*Joel Grice, Laboratory Manager* for

*Date:* 3-25-97

*Michael J. Crisostomo, Project Manager*

*Date:* 3-25-97

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# CASE NARRATIVE

## SPL Workorder Number: 9703017

Southern Petroleum Laboratories (SPL) Fullerton is pleased to present the following results of laboratory analyses to Montgomery Watson-Pasadena for the MDRC project, located in Torrance, CA. On March 3, 1997, eleven (11) samples were received by the laboratory. The samples were received intact and within the 2°C - 6°C preservation temperature range.

On March 5, 1997, a faxed request was received requesting that samples B37-GS-52-4ft. and B37-GS-59-6ft be analyzed for PCBs by EPA 8080. These analyses were performed at SPL's Houston laboratory. Additionally, on March 10, 1997, a request for VOCs by EPA 8260 and SVOCs by EPA 8270 was received. The analyses to be reported under this cover are for samples B37-GS-52-4ft and B37-GS-52-4ft. The VOCs were analyzed at SPL's Fullerton laboratory under Fullerton workorder number 9703017; the SVOCs were analyzed at SPL's Houston laboratory under Houston workorder number 9703366.

Please note that VOC analyses of samples B37-GS-52-4ft and B37-GS-59-6ft were performed at Orange Coast Laboratories and are being submitted to Montgomery Watson under an Orange Coast Laboratory workorder.

If you have any questions regarding information presented in this report please call me at (714) 447-6868. Please refer to workorder 9703017 to expedite service.

Michael J. Crisostomo
Project Manager

FULLERTON LABORATORY
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**Certificate of Analysis No. 9703017**

**Client:** Montgomery Watson
**Client Address:** 250 N. Madison Avenue
Pasadena CA 91101
**Attention:** Nancy Matsumoto

**Project Name** MDRC C-6 Facility Building 37
**Site:** Torrance, CA
**Method:** 418.1*

**Report Date:** 3/25/97
**Date(s) Received:** 3/3/97
**Date(s) Sampled:** 3/3/97
**Date(s) Analyzed:** 3/4/97

**Project Number:** 120603501090010
**Matrix:** SOIL

**Units:** mg/Kg

| Sample ID | Petroleum Extractables |
|---|---|
| B37-GS-51-4ft. | ND<10 |
| B37-GS-52-4ft. | 3900 |
| B37-GS-53-2.5ft. | 120 |
| B37-GS-54-3ft. | 19 |
| B37-GS-55-6ft. | ND<10 |
| B37-GS-56-5ft. | ND<10 |
| B37-GS-57-3ft. | 25 |
| B37-GS-58-5.5ft. | ND<10 |
| B37-GS-59-6ft. | 49 |
| B37-GS-60-5ft. | ND<10 |
| B37-GS-61-5.5ft. | ND<10 |

Results reported at Practical Quantitation Limits unless otherwise specified.

* Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
** Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd ed.

SPL California License Number 2178

Certificate of Analysis No. 9703017

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**Client:** Montgomery Watson
**Client Address:** 250 N. Madison Avenue
Pasadena, CA 91101
**Attention:** Nancy Matsumoto

**Report Date:** 3/25/97
**Date(s) Received:** 3/3/97
**Date(s) Sampled:** 3/3/97
**Date(s) Analyzed:** 3/11/97,3/6/97, 3/5/97,3/4/97

**Project Name:** MDRC C-6 Facility Building 37
**Site:** Torrance, CA

**Project Number:** 120603501090010
**Matrix:** SOIL

| Analyte | Units | EPA Method | B37-GS-51-4ft. | B37-GS-52-4ft. | B37-GS-53-2.5ft. | B37-GS-54-3ft. | B37-GS-55-6ft. |
|---|---|---|---|---|---|---|---|
| Antimony, Total | mg/Kg | 6010A*** | ND<0.500 | ND<0.500 | ND<0.500 | ND<0.500 | ND<0.500 |
| Arsenic, Total | mg/Kg | 6010A*** | ND<0.11 | ND<0.11 | ND<0.11 | ND<0.11 | ND<0.11 |
| Barium, Total | mg/Kg | 6010A*** | 96.3 | 42.4 | 106 | 106 | 185 |
| Beryllium, Total | mg/Kg | 6010A*** | ND<0.06 | ND<0.06 | ND<0.06 | ND<0.06 | ND<0.06 |
| Cadmium, Total | mg/Kg | 6010A*** | 0.64 | 0.28 | 4.14 | 0.34 | 0.66 |
| Chromium, Total | mg/Kg | 6010A*** | 16.7 | 6.87 | 46.7 | 15.4 | 21.6 |
| Cobalt, Total | mg/Kg | 6010A*** | 9.14 | 3.31 | 10.3 | 10.0 | 12.7 |
| Copper, Total | mg/Kg | 6010A*** | 14.4 | 5.38 | 25.7 | 13.8 | 20.9 |
| Lead, Total | mg/Kg | 6010A*** | 5.64 | 3.84 | 18.3 | 4.94 | 5.76 |
| Mercury Digestion in Soil | N/A | 7471A*** | 03/04/97 | 03/04/97 | 03/04/97 | 03/04/97 | 03/11/97 |
| Mercury, Total | mg/Kg | 7471A*** | ND<0.200 | ND<0.200 | ND<0.200 | ND<0.200 | ND<0.200 |
| Molybdenum,Total | mg/Kg | 6010A*** | ND<2.50 | ND<2.50 | ND<2.50 | ND<2.50 | ND<2.50 |
| Nickel, Total | mg/Kg | 6010A *** | 9.25 | ND<5.00 | 12.0 | 9.34 | 12.4 |
| Selenium, Total | mg/Kg | 6010A*** | ND<5.00 | ND<5.00 | ND<5.00 | ND<5.00 | ND<5.00 |
| Silver, Total | mg/Kg | 6010A*** | ND<5.00 | ND<5.00 | ND<5.00 | ND<5.00 | ND<5.00 |
| Thallium, Total | mg/Kg | 6010A*** | ND<0.500 | ND<0.500 | ND<0.500 | ND<0.500 | ND<0.500 |
| Vanadium, Total | mg/Kg | 6010A*** | 30.8 | 11.5 | 36.0 | 34.3 | 40.8 |
| Zinc, Total | mg/Kg | 6010A*** | 40.5 | 19.9 | 78.8 | 37.0 | 89.5 |

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**Certificate of Analysis No. 9703017**

**Client:** Montgomery Watson
**Client Address:** 250 N. Madison Avenue
Pasadena, CA 91101
**Attention:** Nancy Matsumoto

**Report Date:** 3/25/97
**Date(s) Received:** 3/3/97
**Date(s) Sampled:** 3/3/97
**Date(s) Analyzed:** 3/11/97,3/6/97, 3/5/97,3/4/97

**Project Name:** MDRC C-6 Facility Building 37
**Site:** Torrance, CA

**Project Number:** 120603501090010
**Matrix:** SOIL

| Analyte | Units | EPA Method | B37-GS-56-5ft. | B37-GS-57-3ft. | B37-GS-58-5.5ft. | B37-GS-59-6ft. | B37-GS-60-5ft. |
|---|---|---|---|---|---|---|---|
| Antimony, Total | mg/Kg | 6010A*** | ND<0.500 | ND<0.500 | ND<0.500 | ND<0.500 | ND<0.500 |
| Arsenic, Total | mg/Kg | 6010A*** | ND<0.11 | ND<0.11 | ND<0.11 | ND<0.11 | ND<0.11 |
| Barium, Total | mg/Kg | 6010A*** | 235 | 125 | 103 | 124 | 124 |
| Beryllium, Total | mg/Kg | 6010A*** | ND<0.06 | ND<0.06 | ND<0.06 | ND<0.06 | ND<0.06 |
| Cadmium, Total | mg/Kg | 6010A*** | 0.26 | 0.20 | 0.42 | 0.26 | 0.35 |
| Chromium, Total | mg/Kg | 6010A*** | 26.9 | 20.2 | 16.1 | 21.2 | 21.0 |
| Cobalt, Total | mg/Kg | 6010A*** | 9.13 | 11.0 | 10.0 | 10.3 | 11.8 |
| Copper, Total | mg/Kg | 6010A*** | 26.8 | 16.8 | 15.6 | 23.0 | 21.6 |
| Lead, Total | mg/Kg | 6010A*** | 6.26 | 4.78 | 4.64 | 5.90 | 5.18 |
| Mercury Digestion in Soil | N/A | 7471A*** | 03/11/97 | 03/11/97 | 03/11/97 | 03/11/97 | 03/11/97 |
| Mercury, Total | mg/Kg | 7471A*** | ND<0.200 | ND<0.200 | ND<0.200 | ND<0.200 | ND<0.200 |
| Molybdenum,Total | mg/Kg | 6010A*** | ND<2.50 | ND<2.50 | ND<2.50 | ND<2.50 | ND<2.50 |
| Nickel, Total | mg/Kg | 6010A *** | 13.3 | 15.0 | 10.2 | 13.8 | 15.5 |
| Selenium, Total | mg/Kg | 6010A*** | ND<5.00 | ND<5.00 | ND<5.00 | ND<5.00 | ND<5.00 |
| Silver, Total | mg/Kg | 6010A*** | ND<5.00 | ND<5.00 | ND<5.00 | ND<5.00 | ND<5.00 |
| Thallium, Total | mg/Kg | 6010A*** | ND<0.500 | ND<0.500 | ND<0.500 | ND<0.500 | ND<0.500 |
| Vanadium, Total | mg/Kg | 6010A*** | 48.8 | 45.2 | 32.6 | 45.6 | 42.2 |
| Zinc, Total | mg/Kg | 6010A*** | 89.7 | 55.5 | 47.2 | 67.4 | 62.4 |

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**Certificate of Analysis No. 9703017**

**Client:** Montgomery Watson
**Client Address:** 250 N. Madison Avenue
Pasadena, CA 91101
**Attention:** Nancy Matsumoto

**Project Name:** MDRC C-6 Facility Building 37
**Site:** Torrance, CA

**Report Date:** 3/25/97
**Date(s) Received:** 3/3/97
**Date(s) Sampled:** 3/3/97
**Date(s) Analyzed:** 3/11/97,3/6/97, 3/5/97,3/4/97
**Project Number:** 120603501090010
**Matrix:** SOIL

| Analyte | Units | EPA Method | B37-GS-61-5.5ft. |
|---|---|---|---|
| Antimony, Total | mg/Kg | 6010A*** | ND<0.500 |
| Arsenic, Total | mg/Kg | 6010A*** | ND<0.11 |
| Barium, Total | mg/Kg | 6010A*** | 126 |
| Beryllium, Total | mg/Kg | 6010A*** | ND<0.06 |
| Cadmium, Total | mg/Kg | 6010A*** | 0.52 |
| Chromium, Total | mg/Kg | 6010A*** | 15.3 |
| Cobalt, Total | mg/Kg | 6010A*** | 10.6 |
| Copper, Total | mg/Kg | 6010A*** | 14.7 |
| Lead, Total | mg/Kg | 6010A*** | 4.81 |
| Mercury Digestion in Soil | N/A | 7471A*** | 03/11/97 |
| Mercury, Total | mg/Kg | 7471A*** | ND<0.200 |
| Molybdenum,Total | mg/Kg | 6010A*** | ND<2.50 |
| Nickel, Total | mg/Kg | 6010A *** | 10.1 |
| Selenium, Total | mg/Kg | 6010A*** | ND<5.00 |
| Silver, Total | mg/Kg | 6010A*** | ND<5.00 |
| Thallium, Total | mg/Kg | 6010A*** | ND<0.500 |
| Vanadium, Total | mg/Kg | 6010A*** | 33 |
| Zinc, Total | mg/Kg | 6010A*** | 46.8 |

Results reported at Practical Quantitation Limits unless otherwise specified.

* Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
** Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd ed.

Results for Arsenic, Beryllium, Cadmium, and total Chromium are presented using the MDL as a reference.

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**Certificate of Analysis No. 9703017**

**Client:** Montgomery Watson
**Client Address:** 250 N. Madison Avenue
Pasadena CA 91101
**Attention:** Nancy Matsumoto

**Project Name** MDRC C-6 Facility Building 37
**Site:** Torrance, CA
**Method:** 3050A***

**Report Date:** 3/25/97
**Date(s) Received:** 3/3/97
**Date(s) Sampled:** 3/3/97
**Date(s) Analyzed:** 3/5/97,3/4/97

**Project Number:** 120603501090010
**Matrix:** SOIL

**Units:** N/A

| Sample ID | Digestion-Solids 3050A |
|---|---|
| B37-GS-51-4ft. | 03/04/97 |
| B37-GS-52-4ft. | 03/04/97 |
| B37-GS-53-2.5ft. | 03/04/97 |
| B37-GS-54-3ft. | 03/05/97 |
| B37-GS-55-6ft. | 03/05/97 |
| B37-GS-56-5ft. | 03/05/97 |
| B37-GS-57-3ft. | 03/05/97 |
| B37-GS-58-5.5ft. | 03/05/97 |
| B37-GS-59-6ft. | 03/05/97 |
| B37-GS-60-5ft. | 03/05/97 |
| B37-GS-61-5.5ft. | 03/05/97 |

Results reported at Practical Quantitation Limits unless otherwise specified.

* Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
** Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd ed.

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# Certificate of Analysis No. 9703017

| | | | |
|---|---|---|---|
| **Client:** | Montgomery Watson | **Report Date:** | 3/25/97 |
| **Client Address:** | 250 N. Madison Avenue<br>Pasadena, CA 91101 | **Date(s) Received:** | 3/3/97 |
| | | **Date(s) Sampled:** | 3/3/97 |
| **Attention:** | Nancy Matsumoto | **Date(s) Analyzed:** | 3/14/97 |
| **Project Name:** | MDRC C6-Facility Building 37 | **Project Number:** | 120603501090010 |
| **Site:** | Torrance, CA | **Matrix:** | SOIL |
| **Method:** | 8270 Soil, Semivolatile Organics | **Units:** | ug/Kg |

| Analyte | B37-GS-52-4ft. | B37-GS-59-6ft. |
|---|---|---|
| Acenaphthene | ND<330 | ND<330 |
| Acenaphthylene | ND<330 | ND<330 |
| Aniline | ND<330 | ND<330 |
| Anthracene | ND<330 | ND<330 |
| Benzo (a) Anthracene | ND<330 | ND<330 |
| Benzo (b) Fluoranthene | ND<330 | ND<330 |
| Benzo (k) Fluoranthene | ND<330 | ND<330 |
| Benzo (a) Pyrene | ND<330 | ND<330 |
| Benzoic Acid | ND<1600 | ND<1600 |
| Benzo (g,h,i) Perylene | ND<330 | ND<330 |
| Benzyl alcohol | ND<330 | ND<330 |
| 4-Bromophenylphenyl ether | ND<330 | ND<330 |
| Butylbenzylphthalate | ND<330 | ND<330 |
| di-n-Butyl phthalate | ND<330 | ND<330 |
| Carbazole | ND<330 | ND<330 |
| 4-Chloroaniline | ND<330 | ND<330 |
| bis (2-Chloroethoxy) Methane | ND<330 | ND<330 |
| bis (2-Chloroethyl) Ether | ND<330 | ND<330 |
| bis (2-Chloroisopropyl) Ether | ND<330 | ND<330 |
| 4-Chloro-3-Methylphenol | ND<330 | ND<330 |
| 2-Chloronaphthalene | ND<330 | ND<330 |
| 2-Chlorophenol | ND<330 | ND<330 |
| 4-Chlorophenylphenyl ether | ND<330 | ND<330 |
| Chrysene | ND<330 | ND<330 |
| Dibenz (a,h) Anthracene | ND<330 | ND<330 |
| Dibenzofuran | ND<330 | ND<330 |
| 1,2-Dichlorobenzene | ND<330 | ND<330 |
| 1,3-Dichlorobenzene | ND<330 | ND<330 |
| 1,4-Dichlorobenzene | ND<330 | ND<330 |
| 3,3'-Dichlorobenzidine | ND<330 | ND<330 |
| 2,4-Dichlorophenol | ND<330 | ND<330 |
| Diethylphthalate | ND<330 | ND<330 |
| 2,4-Dimethylphenol | ND<330 | ND<330 |
| Dimethyl Phthalate | ND<330 | ND<330 |
| 4,6-Dinitro-2-Methylphenol | ND<800 | ND<800 |
| 2,4-Dinitrophenol | ND<800 | ND<800 |
| 2,4-Dinitrotoluene | ND<330 | ND<330 |
| 2,6-Dinitrotoluene | ND<330 | ND<330 |

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# Certificate of Analysis No. 9703017

| | | | |
|---|---|---|---|
| **Client:** | Montgomery Watson | **Report Date:** | 3/25/97 |
| **Client Address:** | 250 N. Madison Avenue<br>Pasadena, CA 91101 | **Date(s) Received:** | 3/3/97 |
| | | **Date(s) Sampled:** | 3/3/97 |
| **Attention:** | Nancy Matsumoto | **Date(s) Analyzed:** | 3/14/97 |
| **Project Name:** | MDRC C6-Facility Building 37 | **Project Number:** | 120603501090010 |
| **Site:** | Torrance, CA | **Matrix:** | SOIL |
| **Method:** | 8270 Soil, Semivolatile Organics | **Units:** | ug/Kg |

| Analyte | B37-GS-52-4ft. | B37-GS-59-6ft. |
|---|---|---|
| 1,2-Diphenylhydrazine | ND<330 | ND<330 |
| bis (2-Ethylhexyl)Phthalate | 2100 | ND<330 |
| Fluoranthene | ND<330 | ND<330 |
| Fluorene | ND<330 | ND<330 |
| Hexachlorobenzene | ND<330 | ND<330 |
| Hexachlorobutadiene | ND<330 | ND<330 |
| Hexachloroethane | ND<330 | ND<330 |
| Hexachlorocyclopentadiene | ND<330 | ND<330 |
| Indeno(1,2,3-cd)Pyrene | ND<330 | ND<330 |
| Isophorone | ND<330 | ND<330 |
| 2-Methylnaphthalene | ND<330 | ND<330 |
| 2-Methylphenol | ND<330 | ND<330 |
| 4-Methylphenol | ND<330 | ND<330 |
| Napthalene | ND<330 | ND<330 |
| 2-Nitroaniline | ND<800 | ND<800 |
| 3-Nitroaniline | ND<800 | ND<800 |
| 4-Nitroaniline | ND<800 | ND<800 |
| Nitrobenzene | ND<330 | ND<330 |
| 2-Nitrophenol | ND<330 | ND<330 |
| 4-Nitrophenol | ND<800 | ND<800 |
| N-Nitrosodiphenylamine | ND<330 | ND<330 |
| N-Nitroso-Di-n-Propylamine | ND<330 | ND<330 |
| Di-n-Octyl Phthalate | ND<330 | ND<330 |
| Pentachlorophenol | ND<800 | ND<800 |
| Phenanthrene | ND<330 | ND<330 |
| Phenol | ND<330 | ND<330 |
| Pyrene | ND<330 | ND<330 |
| Pyridine | ND<330 | ND<330 |
| 1,2,4-Trichlorobenzene | ND<330 | ND<330 |
| 2,4,5-Trichlorophenol | ND<800 | ND<800 |
| 2,4,6-Trichlorophenol | ND<330 | ND<330 |

Results reported at Practical Quantitation Limits unless otherwise specified.

*Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd ed.

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**Certificate of Analysis No. 9703017**

**Client:** Montgomery Watson
**Client Address:** 250 N. Madison Avenue
Pasadena, CA 91101
**Attention:** Nancy Matsumoto
**Project Name** MDRC C-6 Facility Building 37
**Site:** Torrance, CA

**Report Date:** 3/25/97
**Date(s) Received:** 3/3/97
**Date(s) Sampled:** 3/3/97
**Date(s) Analyzed:** 3/10/97
**Project Number:** 120603501090010
**Matrix:** SOIL

**Method:** 8080, Polychlorinated biphenyls

**Units:** µg/Kg

| Analyte | B37-GS-52-4ft. | B37-GS-59-6ft. |
|---|---|---|
| PCB-1016 | ND<17 | ND<17 |
| PCB-1221 | ND<17 | ND<17 |
| PCB-1232 | ND<17 | ND<17 |
| PCB-1242 | ND<17 | ND<17 |
| PCB-1248 | ND<17 | ND<17 |
| PCB-1254 | ND<17 | ND<17 |
| PCB-1260 | ND<17 | ND<17 |

Results reported at Practical Quantitation Limits unless otherwise specified.

* Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
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**Certificate of Analysis No. 9703017**

**Client:** Montgomery Watson
**Client Address:** 250 N. Madison Avenue
Pasadena CA 91101
**Attention:** Nancy Matsumoto

**Report Date:** 3/25/97
**Date(s) Received:** 3/3/97
**Date(s) Sampled:** 3/3/97
**Date(s) Analyzed:** 3/14/97

**Project Name** MDRC C-6 Facility Building 37
**Site:** Torrance, CA
**Method:** 3550A

**Project Number:** 120603501090010
**Matrix:** SOIL
**Units:** N/A

| Sample ID | Ultrasonic Extraction 3550A |
|---|---|
| B37-GS-52-4ft. | 03/14/97 |
| B37-GS-59-6ft. | 03/14/97 |

Results reported at Practical Quantitation Limits unless otherwise specified.

* Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
** Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd ed.

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# *QUALITY CONTROL*

# *DOCUMENTATION*

FULLERTON LABORATORY
1511 E. ORANGETHORPE AVE.
FULLERTON, CA 92831
PHONE (714) 447-6868

** SPL QUALITY CONTROL REPORT **

Matrix: Soil

Reported on: 03/04/97
Analyzed on: 03/04/97
Analyst: SB

This sample was randomly selected for use in the SPL quality control program. Samples chosen are fortified with a known concentration in duplicate. The results are as follows:

Petroleum Extractables
Method 418.1*

| SPL Sample ID Number | Method Blank mg/Kg | Sample Result mg/Kg | Spike Added mg/Kg | Matrix Spike Result mg/Kg | Matrix Spike Recovery % | Matrix Spike Duplicate Result mg/Kg | Matrix Spike Duplicate Recovery % | RPD (%) | QC LIMITS (Advisory) RPD Max | QC LIMITS (Advisory) % REC |
|---|---|---|---|---|---|---|---|---|---|---|
| 9703017-01A | ND | ND | 500 | 464 | 92.8 | 458 | 91.6 | 1.3 | 20 | 80 -120 |

PETHS030497 -9703008

Samples in batch:

9703017-01A 9703017-02A 9703017-03A 9703017-04A
9703017-05A 9703017-06A 9703017-07A 9703017-08A
9703017-09A 9703017-10A 9703017-11A

COMMENTS:

FULLERTON LABORATORY
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# ** SPL QUALITY CONTROL REPORT **

Matrix: Soil

Reported on: 03/04/97
Analyzed on: 03/04/97
Analyst: SB

This sample was randomly selected for use in the SPL quality control program. Samples chosen are fortified with a known concentration in duplicate. The results are as follows:

Petroleum Extractables
Method 418.1*

| SPL Sample ID Number | Blank Value mg/Kg | LCS Concentration mg/Kg | Measured Concentration mg/Kg | % Recovery | QC Limits Recovery |
|---|---|---|---|---|---|
| LCS | ND | 500 | 495 | 99.0 | 80 - 120 |

PETHS030497 -9703008

Samples in batch:

9703017-01A 9703017-02A 9703017-03A 9703017-04A
9703017-05A 9703017-06A 9703017-07A 9703017-08A
9703017-09A 9703017-10A 9703017-11A

COMMENTS:

# QUALITY CONTROL INFORMATION
# METALS

FULLERTON LABORATORY
1511 E. ORANGETHORPE AVE.
FULLERTON, CA 92831
PHONE (714) 447-6868

## MS/MSD Results

**Date:** 3/6/97
**Sample ID:** 9702226-14

**Matrix:** Soil
**Includes:** 9702215-1-2; 9702216-1-3; 9702227-1; 9702226-7-8, 11-13; 9702228-1; 9703017-1-3

| Parameter | LMB | LCS Rec. (%) | Acceptability Range (%) | MS Rec. (%) | | MSD Rec. (%) | | Acceptability Range (%) | RPD | RPD Range (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony, Sb | ND | 103 | 84-117 | 56.1 | ** | 57.1 | ** | 80-120 | 1.8 | 20 |
| Arsenic, As | ND | 106 | 85-117 | 73.3 | ** | 74.2 | ** | 80-120 | 1.2 | 20 |
| Barium, Ba | ND | 103 | 62-136 | 77.8 | ** | 76.2 | ** | 80-120 | 2.0 | 20 |
| Beryllium, Be | ND | 102 | 85-111 | 85.4 | | 84.9 | | 80-120 | 0.5 | 20 |
| Cadmium, Cd | ND | 100 | 86-112 | 86.1 | | 85.9 | | 80-120 | 0.2 | 20 |
| Chromium, Cr | ND | 102 | 83-110 | 82.8 | | 81.8 | | 80-120 | 1.1 | 20 |
| Cobalt, Co | ND | 101 | 85-112 | 79.0 | ** | 78.6 | ** | 80-120 | 0.5 | 20 |
| Copper, Cu | ND | 102 | 84-111 | 88.2 | | 86.6 | | 80-120 | 1.9 | 20 |
| Lead, Pb | ND | 102 | 85-110 | 77.6 | ** | 77.5 | ** | 80-120 | 0.2 | 20 |
| Molybdenum, Mo | ND | 99.0 | 83-110 | 81.4 | | 81.2 | | 80-120 | 0.2 | 20 |
| Nickel, Ni | ND | 102 | 86-110 | 80.1 | | 79.2 | ** | 80-120 | 1.1 | 20 |
| Selenium, Se | ND | 102 | 84-111 | 74.9 | ** | 73.9 | ** | 80-120 | 1.3 | 20 |
| Silver, Ag | ND | 105 | 80-125 | 69.5 | ** | 69.4 | ** | 80-120 | 0.2 | 20 |
| Thallium, Tl | ND | 100 | 83-109 | 72.8 | ** | 73.4 | ** | 80-120 | 0.9 | 20 |
| Vanadium, V | ND | 101 | 84-109 | 86.5 | | 84.6 | | 80-120 | 2.2 | 20 |
| Zinc, Zn | ND | 106 | 88-117 | 88.9 | | 86.8 | | 80-120 | 2.3 | 20 |

**Matrix Effect

LMB = Laboratory Method Blank
LCS = Laboratory Control Sample
LCSD = Laboratory Control Sample Duplicate
ND = Not Detected

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference

FULLERTON LABORATORY
1511 E. ORANGETHORPE AVE.
FULLERTON, CA 92831
PHONE (714) 447-6868

** SPL QUALITY CONTROL REPORT **

Matrix: Soil

Reported on: 03/07/97
Analyzed on: 03/05/97
Analyst: GQ

This sample was randomly selected for use in the SPL quality control program. Samples chosen are fortified with a known concentration in duplicate. The results are as follows:

Mercury, Total
METHOD 7471A***

| SPL Sample ID Number | Method Blank mg/Kg | Sample Result mg/Kg | Spike Added mg/Kg | Matrix Spike Result mg/Kg | Matrix Spike Recovery % | Matrix Spike Duplicate Result mg/Kg | Matrix Spike Duplicate Recovery % | RPD (%) | QC LIMITS (Advisory) RPD Max | QC LIMITS (Advisory) % REC |
|---|---|---|---|---|---|---|---|---|---|---|
| 9702226-14A | ND | ND | .0010 | .00104 | 104 | .00102 | 102 | 1.9 | 20 | 80 -120 |

HGS030597 -9703020

Samples in batch:

| | | | |
|---|---|---|---|
| 9702205-01B | 9702205-02B | 9702205-03B | 9702215-01A |
| 9702215-02A | 9702216-01A | 9702216-02A | 9702216-03A |
| 9702226-07A | 9702226-08A | 9702226-11A | 9702226-14A |
| 9702227-01A | 9702228-01A | 9703017-01A | 9703017-02A |
| 9703017-03A | 9703017-04A | | |

COMMENTS:

FULLERTON LABORATORY
1511 E. ORANGETHORPE AVE.
FULLERTON, CA 92831
PHONE (714) 447-6868

# ** SPL QUALITY CONTROL REPORT **

Matrix: Soil

Reported on: 03/07/97
Analyzed on: 03/05/97
Analyst: GQ

This sample was randomly selected for use in the SPL quality control program. Samples chosen are fortified with a known concentration in duplicate. The results are as follows:

Mercury, Total
METHOD 7471A***

| SPL Sample ID Number | Blank Value mg/Kg | LCS Concentration mg/Kg | Measured Concentration mg/Kg | % Recovery | QC Limits Recovery |
|---|---|---|---|---|---|
| LCS | ND | .0010 | .0010 | 100 | 80 - 120 |

HGS030597 -9703020

Samples in batch:

| | | | |
|---|---|---|---|
| 9702205-01B | 9702205-02B | 9702205-03B | 9702215-01A |
| 9702215-02A | 9702216-01A | 9702216-02A | 9702216-03A |
| 9702226-07A | 9702226-08A | 9702226-11A | 9702226-14A |
| 9702227-01A | 9702228-01A | 9703017-01A | 9703017-02A |
| 9703017-03A | 9703017-04A | | |

COMMENTS:

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

# SPL Blank QC Report



**Matrix:** Soil
**Sample ID:** BLANK
**Batch:** E970314044703

**Reported on:** 03/17/97 14:09
**Analyzed on:** 03/14/97 15:42
**Analyst:** LH

**METHOD 8270 BLANK H073B02**

| Compound | Result | Detection Limit | Units |
|---|---|---|---|
| Pyridine | ND | 330 | ug/Kg |
| Phenol | ND | 330 | ug/Kg |
| Aniline | ND | 330 | ug/Kg |
| bis(2-Chloroethyl)ether | ND | 330 | ug/Kg |
| 2-Chlorophenol | ND | 330 | ug/Kg |
| 1,3-Dichlorobenzene | ND | 330 | ug/Kg |
| 1,4-Dichlorobenzene | ND | 330 | ug/Kg |
| Benzyl alcohol | ND | 330 | ug/Kg |
| 1,2-Dichlorobenzene | ND | 330 | ug/Kg |
| 2-Methylphenol | ND | 330 | ug/Kg |
| bis(2-chloroisopropyl)ethe | ND | 330 | ug/Kg |
| 4-Methylphenol | ND | 330 | ug/Kg |
| N-Nitroso-di-n-propylamine | ND | 330 | ug/Kg |
| Hexachloroethane | ND | 330 | ug/Kg |
| Nitrobenzene | ND | 330 | ug/Kg |
| Isophorone | ND | 330 | ug/Kg |
| 2-Nitrophenol | ND | 330 | ug/Kg |
| 2,4-Dimethylphenol | ND | 330 | ug/Kg |
| Benzoic acid | ND | 1600 | ug/Kg |
| bis(2-Chloroethoxy)methane | ND | 330 | ug/Kg |
| 2,4-Dichlorophenol | ND | 330 | ug/Kg |
| 1,2,4-Trichlorobenzene | ND | 330 | ug/Kg |
| Naphthalene | ND | 330 | ug/Kg |
| 4-Chloroaniline | ND | 330 | ug/Kg |
| Hexachlorobutadiene | ND | 330 | ug/Kg |
| 4-Chloro-3-methylphenol | ND | 330 | ug/Kg |
| 2-Methylnaphthalene | ND | 330 | ug/Kg |
| Hexachlorocyclopentadiene | ND | 330 | ug/Kg |
| 2,4,6-Trichlorophenol | ND | 330 | ug/Kg |
| 2,4,5-Trichlorophenol | ND | 800 | ug/Kg |
| 2-Chloronaphthalene | ND | 330 | ug/Kg |
| 2-Nitroaniline | ND | 800 | ug/Kg |
| Dimethylphthalate | ND | 330 | ug/Kg |
| 2,6-Dinitrotoluene | ND | 330 | ug/Kg |

**Notes**
ND - Not detected.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

# SPL Blank QC Report



**Matrix:** Soil
**Sample ID:** BLANK
**Batch:** E970314044703

**Reported on:** 03/17/97 14:09
**Analyzed on:** 03/14/97 15:42
**Analyst:** LH

**METHOD 8270 BLANK H073B02**

| Compound | Result | Detection Limit | Units |
|---|---|---|---|
| Acenaphthylene | ND | 330 | ug/Kg |
| 3-Nitroaniline | ND | 800 | ug/Kg |
| Acenaphthene | ND | 330 | ug/Kg |
| 2,4-Dinitrophenol | ND | 800 | ug/Kg |
| 4-Nitrophenol | ND | 800 | ug/Kg |
| Dibenzofuran | ND | 330 | ug/Kg |
| 2,4-Dinitrotoluene | ND | 330 | ug/Kg |
| Diethylphthalate | ND | 330 | ug/Kg |
| 4-Chlorophenyl-phenylether | ND | 330 | ug/Kg |
| Fluorene | ND | 330 | ug/Kg |
| 4-Nitroaniline | ND | 800 | ug/Kg |
| 4,6-Dinitro-2-methylphenol | ND | 800 | ug/Kg |
| n-Nitrosodiphenylamine | ND | 330 | ug/Kg |
| 1,2-Diphenylhydrazine | ND | 330 | ug/Kg |
| 4-Bromophenyl-phenylether | ND | 330 | ug/Kg |
| Hexachlorobenzene | ND | 330 | ug/Kg |
| Pentachlorophenol | ND | 800 | ug/Kg |
| Phenanthrene | ND | 330 | ug/Kg |
| Anthracene | ND | 330 | ug/Kg |
| Carbazole | ND | 330 | ug/Kg |
| Di-n-butylphthalate | ND | 330 | ug/Kg |
| Fluoranthene | ND | 330 | ug/Kg |
| Pyrene | ND | 330 | ug/Kg |
| Butylbenzylphthalate | ND | 330 | ug/Kg |
| 3,3'-Dichlorobenzidine | ND | 330 | ug/Kg |
| Benzo[a]anthracene | ND | 330 | ug/Kg |
| Chrysene | ND | 330 | ug/Kg |
| bis(2-Ethylhexyl)phthalate | ND | 330 | ug/Kg |
| Di-n-octylphthalate | ND | 330 | ug/Kg |
| Benzo[b]fluoranthene | ND | 330 | ug/Kg |
| Benzo[k]fluoranthene | ND | 330 | ug/Kg |
| Benzo[a]pyrene | ND | 330 | ug/Kg |
| Indeno[1,2,3-cd]pyrene | ND | 330 | ug/Kg |
| Dibenz[a,h]anthracene | ND | 330 | ug/Kg |

**Notes**
ND - Not detected.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

# SPL Blank QC Report



**Matrix:** Soil
**Sample ID:** BLANK
**Batch:** E970314044703

**Reported on:** 03/17/97 14:09
**Analyzed on:** 03/14/97 15:42
**Analyst:** LH

**METHOD 8270 BLANK H073B02**

| Compound | Result | Detection Limit | Units |
|---|---|---|---|
| Benzo[g,h,i]perylene | ND | 330 | ug/Kg |

| Surrogate | Result | QC Criteria | Units |
|---|---|---|---|
| Nitrobenzene-d5 | 88 | 23-120 | % Recovery |
| 2-Fluorobiphenyl | 78 | 30-115 | % Recovery |
| Terphenyl-d14 | 79 | 18-137 | % Recovery |
| Phenol-d5 | 69 | 24-113 | % Recovery |
| 2-Fluorophenol | 63 | 25-121 | % Recovery |
| 2,4,6-Tribromophenol | 113 | 19-122 | % Recovery |

**Samples in Batch** 9703366-01 9703366-02

**Notes**

ND - Not detected.

# SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPL Contract:

Lab Code: Case No.: 9703535 SAS No.: SDG No.:

Matrix Spike - EPA Sample No.: 9703071-04B Level(low/med) LOW

| COMPOUND | SPIKE ADDED (ug/Kg) | SAMPLE CONCENTRATION (ug/Kg) | MS CONCENTRATION (ug/Kg) | MS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| Phenol | 2500 | 0 | 1200 | 48 | 12-110 |
| 2-Chlorophenol | 2500 | 0 | 1400 | 56 | 27-123 |
| 1,4-Dichlorobenzene | 1600 | 0 | 1100 | 69 | 36- 97 |
| N-Nitroso-di-n-prop.(1) | 1600 | 0 | 1200 | 75 | 41-116 |
| 1,2,4-Trichlorobenzene | 1600 | 0 | 1500 | 94 | 39- 98 |
| 4-Chloro-3-methylphenol | 2500 | 0 | 2000 | 80 | 23- 97 |
| Acenaphthene | 1600 | 0 | 1000 | 63 | 46-118 |
| 4-Nitrophenol | 2500 | 0 | 2200 | 88 | 30-150 |
| 2,4-Dinitrotoluene | 1600 | 0 | 1200 | 75 | 50-150 |
| Pentachlorophenol | 2500 | 0 | 2000 | 80 | 9-103 |
| Pyrene | 1600 | 0 | 720 | 45 | 26-127 |

| COMPOUND | SPIKE ADDED (ug/Kg) | MSD CONCENTRATION (ug/Kg) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| Phenol | 2500 | 1200 | 48 | 0 | 42 | 12-110 |
| 2-Chlorophenol | 2500 | 1400 | 56 | 0 | 40 | 27-123 |
| 1,4-Dichlorobenzene | 1600 | 1100 | 69 | 0 | 28 | 36- 97 |
| N-Nitroso-di-n-prop.(1) | 1600 | 1300 | 81 | 8 | 38 | 41-116 |
| 1,2,4-Trichlorobenzene | 1600 | 1500 | 94 | 0 | 28 | 39- 98 |
| 4-Chloro-3-methylphenol | 2500 | 1900 | 76 | 5 | 42 | 23- 97 |
| Acenaphthene | 1600 | 1100 | 69 | 9 | 31 | 46-118 |
| 4-Nitrophenol | 2500 | 2100 | 84 | 5 | 50 | 30-150 |
| 2,4-Dinitrotoluene | 1600 | 1200 | 75 | 0 | 50 | 50-150 |
| Pentachlorophenol | 2500 | 2000 | 80 | 0 | 50 | 9-103 |
| Pyrene | 1600 | 750 | 47 | 4 | 31 | 26-127 |

(1) N-Nitroso-di-n-propylamine

# Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 11 outside limits
Spike Recovery: 0 out of 22 outside limits

SPL Houston Labs

RECOVERY REPORT

Client Name:
Sample Matrix: SOLID
Lab Smp Id: LCS
Level: LOW
Data Type: MS DATA
SpikeList File: 8270s.spk
Method File: /chem1/h.i/h970314.b/h8270sQ.m
Misc Info: E073S1/H073B02/H073CC1

Client SDG: h970314
Fraction: SV

Operator: LH
SampleType: MS
Quant Type: ISTD

| SPIKE COMPOUND | CONC ADDED ug/Kg | CONC RECOVERED ug/Kg | % RECOVERED | LIMITS |
|---|---|---|---|---|
| 5 Phenol | 2500 | 1300 | 53.86 | 12-110 |
| 9 2-Chlorophenol | 2500 | 1600 | 62.82 | 27-123 |
| 12 1,4-Dichlorobenzen | 1600 | 1100 | 71.42 | 36-97 |
| 21 N-Nitroso-di-n-pro | 1600 | 1300 | 82.27 | 41-116 |
| 31 1,2,4-Trichloroben | 1600 | 1600 | 97.70 | 39-98 |
| 36 4-Chloro-3-methylp | 2500 | 2000 | 82.36 | 23-97 |
| 49 Acenaphthene | 1600 | 1200 | 72.69 | 46-118 |
| 51 4-Nitrophenol | 2500 | 2500 | 100.06 | 30-150 |
| 53 2,4-Dinitrotoluene | 1600 | 1400 | 88.12 | 50-150 |
| 64 Pentachlorophenol | 2500 | 2000 | 81.61 | 9-103 |
| 71 Pyrene | 1600 | 690 | 42.91 | 26-127 |

| SURROGATE COMPOUND | CONC ADDED ug/Kg | CONC RECOVERED ug/Kg | % RECOVERED | LIMITS |
|---|---|---|---|---|
| $ 23 Nitrobenzene-d5 | 1600 | 1500 | 93.11 | 23-120 |
| $ 41 2-Fluorobiphenyl | 1600 | 1300 | 79.93 | 30-115 |
| $ 72 Terphenyl-d14 | 1600 | 1200 | 77.36 | 18-137 |
| $ 3 2-Fluorophenol | 2500 | 1600 | 64.50 | 25-121 |
| $ 4 Phenol-d5 | 2500 | 1600 | 62.15 | 24-113 |
| $ 61 2,4,6-Tribromophen | 2500 | 3000 | 121.18 | 19-122 |

** SPL BATCH QUALITY CONTROL REPORT **
METHOD 8080

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Matrix: Soil
Units: µg/Kg

Batch Id: VARB970310104200

## LABORATORY CONTROL SAMPLE

| SPIKE COMPOUNDS | Method Blank Result <2> | Spike Added <3> | Blank Spike Result <1> | Blank Spike Recovery % | QC Limits(**) (Mandatory) % Recovery Range |
|---|---|---|---|---|---|
| PCB-1254 | ND | 333 | 379.18 | 114 | 34 - 131 |

## MATRIX SPIKES

| SPIKE COMPOUNDS | Sample Results <2> | Spike Added <3> | Matrix Spike Result <1> | Matrix Spike Recovery <4> | Matrix Spike Duplicate Result <1> | Matrix Spike Duplicate Recovery <5> | MS/MSD Relative % Difference | QC Limits(***) (Advisory) RPD Max. | QC Limits(***) (Advisory) Recovery Range |
|---|---|---|---|---|---|---|---|---|---|
| PCB-1254 | ND | 333 | 295.43 | 88.7 | 356.04 | 107 | 18.7 | 33 | 34 - 131 |

Analyst: LT
Sequence Date: 03/10/97
SPL ID of sample spiked: 9702B88-01A
Sample File ID: A_C7015.TXO
Method Blank File ID:
Blank Spike File ID: B_C7101.TXO
Matrix Spike File ID: A_B7244.TXO
Matrix Spike Duplicate File ID: A_B7245.TXO

* = Values Outside QC Range. « = Data outside Method Specification limits.
NC = Not Calculated (Sample exceeds spike by factor of 4 or more)
ND = Not Detected/Below Detection Limit
% Recovery = [( <1> - <2> ) / <3> ] x 100
LCS % Recovery = (<1> / <3> ) x 100
Relative Percent Difference = |(<4> - <5> | / [(<4> + <5> ) x 0.5] x 100
(**) = Source: 8080, Table 3
(***) = Source: SPL-Houston Historical Data

SAMPLES IN BATCH(SPL ID): 9703366-01A 9703366-02A 9703367-01A

# *CHAIN OF CUSTODY*

# *AND*

# *SAMPLE RECEIPT CHECKLIST*

# SPL, Inc.

## Analysis Request & Chain of Custody Record

SPL Workorder No: 9703017

C- 04761



Client Name: Montgomery Watson

Address/Phone: 250 N Madison Ave, Pasadena CA

Client Contact: Fred Strauss (818) 568-6582

Project Name: McDonnell Douglas - C6 facility

Project Number: 1206035. 01090010

Project Location: C6 facility, Bldg 37, Torrance, CA

Invoice To: Fred Strauss (818) 568-6582

Requested Analysis

| SAMPLE ID | DATE | TIME | comp | grab | matrix (W=water S=soil SL=sludge O=other:) | bottle (P=plastic A=amber glass G=glass V=vial) | size (1=1 liter 4=4oz 40=vial 8=8oz 16=16oz) | pres. (1=HCl 2=HNO3 3=H2SO4 O=other:) | Number of Containers | TRPH | Title 22 Metals |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B37-GS-51-4' | 3/3/97 | 09:35 | | X | Soil | 12" x 2" brass sleeve | approx 1/2 OZ | Ice | 2 | X | X |
| B37-GS-52-4' | 3/3/97 | 09:40 | | X | Soil | | | | 2 | X | X |
| B37-GS-53-2.5' | 3/3/97 | 09:50 | | X | Soil | | | | 2 | X | X |
| B37-GS-54-3' | 3/3/97 | 09:55 | | X | Soil | | | | 2 | X | X |
| B37-GS-55-6' | 3/3/97 | 10:00 | | X | Soil | | | | 2 | X | X |
| B37-GS-56-5' | 3/3/97 | 10:10 | | X | Soil | | | | 2 | X | X |
| B37-GS-57-3' | 3/3/97 | 11:35 | | X | Soil | | | | 2 | X | X |
| B37-GS-58-5.5' | 3/3/97 | 11:40 | | X | Soil | | | | 2 | X | X |
| B37-GS-59-6' | 3/3/97 | 11:45 | | X | Soil | | | | 2 | X | X |
| B37-GS-60-5' | 3/3/97 | 11:50 | | X | Soil | | | | 2 | X | X |

Client/Consultant Remarks: 24 hr on TRPH only. Standard otherwise

Laboratory remarks:

Intact? ☑ Y ☐ N

Temp: 2.0°C

Requested TAT

TRPH only

24hr ☒ 72hr ☐ all others

48hr ☐ Standard ☒

Other ☐ _____

Special Reporting Requirements: Fax Results ☐ Raw Data ☐ Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐

Special Detection Limits (specify):

PM review (initial):

| | | | |
|---|---|---|---|
| 1. Relinquished by Sampler: Ivan Vargas. | date 3/3/97 | time 1700 | 2. Received by: [signature] 3/3/97 1810 |
| 3. Relinquished by: | date | time | 4. Received by: |
| 5. Relinquished by: | date | time | 6. Received by Laboratory: |

☐ 8880 Interchange Drive, Houston, TX 77054 (713) 660-0901

☐ 459 Hughes Drive, Traverse City, MI 49684 (616) 947-5777

☐ 500 Ambassador Caffery Parkway, Scott, LA 70583 (318) 237-4775

☐ 1511 E. Orangethorpe Avenue, Fullerton, CA 92631 (714) 447-6868

# SPL, Inc.

## Analysis Request & Chain of Custody Record

SPL Workorder No: 9703017

C- 04451



Client Name: Montgomery Watson

Address/Phone: 250 N Madison Ave, Pasadena (818) 568-6582

Client Contact: Fred Strauss (818) 568-6582

Project Name: McDonell Douglas - C6 facility

Project Number: 1206035.010900010

Project Location: C6 facility, Bldg 37, Torrance, CA

Invoice To: Fred Strauss (818) 568-6582

matrix: W=water S=soil SL=sludge O=other:
bottle: P=plastic A=amber glass G=glass V=vial
size: 1=1 liter 4=4oz 40=vial 8=8oz 16=16oz
pres.: 1=HCl 2=HNO3 3=H2SO4 O=other:

Requested Analysis

| SAMPLE ID | DATE | TIME | comp | grab | matrix | bottle | size | pres. | Number of Containers | TRPH | Title 22 Metals | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B37-GS-61-5.5' | 3/3/97 | 11:55 | | X | Soil | 1 2" x 8" SS sleeve | approx 12 oz | Ice | 2 | x | x | | | | | | | |

Client/Consultant Remarks: 24 hr. on TRPH only. Standard otherwise

Laboratory remarks:

Intact? ☑ Y ☐ N

Temp: 2.0 C

Requested TAT

TRPH only

24hr ☒ 72hr ☐

48hr ☐ Standard ☒ all other

Other ☐ _____

Special Reporting Requirements: Fax Results ☐ Raw Data ☐ Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐

Special Detection Limits (specify):

PM review (initial):

| | date | time | | |
|---|---|---|---|---|
| 1. Relinquished by Sampler: Ivan Vargas | 3/3/97 | 1700 | 2. Received by: [signature] | 3/3/97 1810 |
| 3. Relinquished by: | date | time | 4. Received by: | |
| 5. Relinquished by: | date | time | 6. Received by Laboratory: | |

☐ 8880 Interchange Drive, Houston, TX 77054 (713) 660-0901

☐ Hughes Drive, Traverse City, MI 49684 (616) 947-5777

☐ 500 Ambassador Caffery Parkway, Scott, LA 70583 (318) 237-4775

☐ 1511 E. Orangethorpe Avenue, Fullerton, CA 92( (714) 447-686

# SPL Fullerton Environmental Laboratory
## Sample Receiving Checklist

SPL Workorder Number: 9703017

Date: 3/3/97 Time: 1810

| | Yes | No | N/A |
|---|---|---|---|
| 1. Chain of Custody Record Present? | ✓ | * | |
| 2. Chain of Custody Record Properly Completed? | ✓ | * | |
| 3. Custody Seals on Shipping Container? | ✓ | | |
| 4. Custody Seals on Sample Container? | | ✓ | |
| 5. All Custody Seals Intact? | ✓ | * | |
| 6. All Samples Received Intact? | ✓ | * | |
| 7. All Samples Labeled Correctly? | ✓ | * | |
| 8. Samples are Chilled at 2°C - 6°C | ✓ | * | |

* See Non-Conformance / Sample Condition Notification Form only if box with "*" is checked.

Internal Temperature of Shipping Container 2.0 °C

Samples Were Delivered by:

| | |
|---|---|
| SPL Courier | G. Polano |
| Client Representative | |
| Federal Express | |
| UPS | |
| DHL | |
| Other: | |

**All samples will be disposed 30 days from the report date for this workorder, unless otherwise specified by the client.**

Samples Checked by: [signature]

I:\data\forms\loginchk.wpd

8880 Interchange Drive, Houston, Texas 77054 713/660-0901

# INTEROFFICE SAMPLE TRANSFER
# CHAIN-OF-CUSTODY FORM

PAGE 1 OF 1

ORIGINATING LAB: Fullerton RECEIVING LAB: TX/MI/LA DATE: 3-6-97

ATTENTION: Brent Barron/Gary Byar REPORT RESULTS TO: -Mike Crisostomo -Diane Suzuki

REPORT RESULTS BY: [x] VERBAL [ ] WRITTEN [x] FAX FAX# EDT

CLIENT NAME: Montgomery Water PROJECT #: 9703017 DATE NEEDED: 3/11/97

| HEADING FOR ANALYSIS: | INVOICE TO: |
|---|---|
| COMPANY: Montgomery Water | COMPANY: SPL Fullerton |
| ADDRESS: | ADDRESS: |
| ATTN: | ATTN: Mike Crisostomo Diane Suzuki |

| SAMPLE NO. IDENTIFICATION | DATE/TIME COLLECTED | LAB SAMPLE NUMBER | SAMPLE MATRIX | ANALYSES REQUESTED | QUOTED PRICE |
|---|---|---|---|---|---|
| | 3/3/97 9:40 | 9703017-02B | Soil | PCBS/PRP6P | $65.00 |
| | 11:45 | -09B | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| RELINQUISHED BY (SIGNATURE) | DATE | TIME | RECEIVED BY (SIGNATURE) | DATE | TIME |
|---|---|---|---|---|---|
| 1. | 3/6/97 | 17:09 | | 3/8/97 | 0945 |
| 2. | | | 4°C NOT intact | | |

NOTES: Fed Ex: 3425303803

# SPL Houston Environmental Laboratory

## Sample Login Checklist

| Date: | Time: |
|---|---|
| 3-8-97 | 0945 |

SPL Sample ID:

97-03-366

| | | | Yes | No |
|---|---|---|---|---|
| 1 | Chain-of-Custody (COC) form is present. | | ✓ | |
| 2 | COC is properly completed. | | ✓ | |
| 3 | If no, Non-Conformance Worksheet has been completed. | | | |
| 4 | Custody seals are present on the shipping container. | | ✓ | |
| 5 | If yes, custody seals are intact. | | ✓ | |
| 6 | All samples are tagged or labeled. | | ✓ | |
| | If no, Non-Conformance Worksheet has been completed. | | | |
| 8 | Sample containers arrived intact | | ✓ | |
| 9 | Temperature of samples upon arrival: | | 4° C | |
| 10 | Method of sample delivery to SPL: | SPL Delivery | | |
| | | Client Delivery | | |
| | | FedEx Delivery (airbill #) | 3925303803 | |
| | | Other: | | |
| 11 | Method of sample disposal: | SPL Disposal | ✓ | |
| | | HOLD | | |
| | | Return to Client | | |

| Name: | Date: |
|---|---|
| [illegible] | 3-8-97 |

**ORANGE COAST ANALYTICAL, INC.**
3002 Dow, Suite 532, Tustin, CA 92780 (714) 832-0064 Fax (714) 832-0067
4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

*Montgomery Watson*
ATTN: Mr. Fred Strauss
250 N. Madison Ave.
Pasadena, CA 91101

***Client Project ID:*** McDonnell Douglas
***Client Project #:*** 1206035-01090010

***Sample Description:*** Soil, B37-GS-52-4'
***Laboratory Sample Number:*** 97030683
***Laboratory Reference #:*** MWI 8710

***Sampled:*** 03-03-97
***Received:*** 03-17-97
***Analyzed:*** 03-17-97
***Reported:*** 03-24-97

Volatile Organics by GC/MS (EPA 8260)

| ***ANALYTE*** | ***CAS NUMBER*** | ***DETECTION LIMIT (ug/kg)*** | ***SAMPLE RESULT (ug/kg)*** |
|---|---|---|---|
| Benzene | 71-43-2 | 2.5 | N.D. |
| Bromodichloromethane | 75-27-4 | 2.5 | N.D. |
| Bromoform | 75-25-2 | 2.5 | N.D. |
| Bromomethane | 74-83-9 | 2.5 | N.D. |
| Carbon Disulfide | 75-15-0 | 5.0 | N.D. |
| Carbon tetrachloride | 56-23-5 | 2.5 | N.D. |
| Chlorobenzene | 108-90-7 | 2.5 | N.D. |
| Chlorodibromomethane | 124-48-1 | 2.5 | N.D. |
| Chloroethane | 75-00-3 | 2.5 | N.D. |
| 2-Chloroethyl vinyl ether | 110-75-8 | 5.0 | N.D. |
| Chloroform | 67-66-3 | 2.5 | N.D. |
| Chloromethane | 74-87-3 | 2.5 | N.D. |
| 1,1-Dichloroethane | 75-35-3 | 2.5 | N.D. |
| 1,2-Dichloroethane | 107-06-2 | 2.5 | N.D. |
| 1,1-Dichloroethene | 75-35-4 | 2.5 | N.D. |
| Trans 1,2-Dichloroethene | 156-60-5 | 2.5 | N.D. |
| 1,2-Dichloropropane | 78-87-5 | 2.5 | N.D. |
| cis-1,3-Dichloropropene | 10061-01-5 | 2.5 | N.D. |
| trans-1,3-Dichloropropene | 10061-02-6 | 2.5 | N.D. |
| Ethylbenzene | 100-41-4 | 2.5 | N.D. |
| Methylene chloride | 75-09-2 | 5.0 | N.D. |
| Styrene | 100-42-5 | 2.5 | N.D. |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 2.5 | N.D. |
| Tetrachloroethene | 127-18-4 | 2.5 | N.D. |
| Toluene | 108-88-3 | 2.5 | N.D. |
| 1,1,1-Trichloroethane | 71-55-6 | 2.5 | N.D. |
| 1,1,2-Trichloroethane | 79-00-5 | 2.5 | N.D. |
| Trichloroethene | 79-01-6 | 2.5 | N.D. |
| Trichlorofluoromethane | 75-69-4 | 5.0 | N.D. |
| Vinyl acetate | 108-05-4 | 5.0 | N.D. |
| Vinyl chloride | 75-01-4 | 2.5 | N.D. |
| Total Xylenes | 1330-20-7 | 2.5 | N.D. |
| Dichlorofluoromethane | 75-71-8 | 2.5 | N.D. |
| cis-1-2,-Dichloroethane | 156-59-4 | 2.5 | N.D. |
| 2,2-Dichloropropane | 590-20-7 | 2.5 | N.D. |
| Bromochloromethane | 74-97-5 | 2.5 | N.D. |
| 1,1-Dichloropropene | 563-58-6 | 2.5 | N.D. |
| 1,2-Dichloropropane | 78-87-5 | 2.5 | N.D. |
| Dibromomethane | 74-95-3 | 2.5 | N.D. |
| trans-1,3-Dichloropropane | 10061-02-6 | 2.5 | N.D. |
| 1,1,2-Trichloroethane | 79-00-5 | 2.5 | N.D. |
| 1,2-Dibromoethane | 106-93-4 | 2.5 | N.D. |

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4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

Sample Description: Soil, B37-GS-52-4'

Laboratory Sample Number: 97030683

Volatile Organics by GC/MS (EPA 8260)

| ANALYTE | CAS NUMBER | DETECTION LIMIT (ug/kg) | SAMPLE RESULT (ug/kg) |
|---|---|---|---|
| 1,3-Dichloropropane | 142-28-9 | 2.5 | N.D. |
| Dibromochloromethane | 124-48-1 | 2.5 | N.D. |
| Isopropylbenzene | 98-82-8 | 2.5 | N.D. |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 2.5 | N.D. |
| 1,2,3-Trichloropropane | 96-18-4 | 2.5 | N.D. |
| Bromobenzene | 108-86-1 | 2.5 | N.D. |
| n-Propylbenzene | 103-65-1 | 2.5 | N.D. |
| 2-Chlorotoluene | 95-49-8 | 2.5 | N.D. |
| 1,3,5-Trimethylbenzene | 108-67-8 | 2.5 | N.D. |
| 4-Chlorotoluene | 106-43-4 | 2.5 | N.D. |
| tert-Butylbenzene | 98-06-6 | 2.5 | N.D. |
| 1,2,4-Trimethylbenzene | 95-63-6 | 2.5 | N.D. |
| sec-Butylbenzene | 135-98-8 | 2.5 | N.D. |
| 4-Isopropyltoluene | 99-87-6 | 2.5 | N.D. |
| 1,3-Dichlorobenzene | 541-73-1 | 2.5 | N.D. |
| 1,4-Dichlorobenzene | 106-46-7 | 2.5 | N.D. |
| n-Butylbenzene | 104-51-8 | 2.5 | N.D. |
| 1,2-Dichlorobenzene | 95-50-1 | 2.5 | N.D. |
| 1-2-Dibromo-2-CPA | 96-12-8 | 5.0 | N.D. |
| 1,2,4-Trichlorobenzene | 120-82-1 | 2.5 | N.D. |
| Hexachlorobutadiene | 87-68-3 | 2.5 | N.D. |
| Naphthalene | 91-20-3 | 2.5 | N.D. |
| 1,2,3-Trichlorobenzene | 87-61-6 | 2.5 | N.D. |

Analytes reported as N.D. were not present above the stated limit of detection.

*ORANGE COAST ANALYTICAL*

*Mark Noorani*
*Laboratory Director*

| *Surrogate Recoveries* | % |
|---|---|
| *Dibromofluoromethane* | *107* |
| *Toluene-d8* | *93* |
| *4-Bromofluorobenbzene* | *84* |

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# QC DATA REPORT

Analysis : Volatile Organics by GC/MS (EPA 8260)

Date of Analysis : 03/17/97
Laboratory Sample No : 97030511
Laboratory Reference No : MWI 8710

| Analyte | R1 (ppb) | SP (ppb) | MS (ppb) | MSD (ppb) | PR1 % | PR2 % | RPD % |
|---|---|---|---|---|---|---|---|
| Benzene | 0.0 | 50 | 48 | 51 | 96 | 102 | 6 |
| 1,1-Dichloroethene | 0.0 | 50 | 43 | 51 | 86 | 102 | 17 |
| Trichloroethene | 0.0 | 50 | 46 | 45 | 92 | 90 | 2 |
| Toluene | 0.0 | 50 | 47 | 50 | 94 | 100 | 6 |
| Chlorobenzene | 0.0 | 50 | 48 | 49 | 96 | 98 | 2 |

Definition of Terms :

| | |
|---|---|
| R1 | Results Of First Analysis |
| SP | Spike Concentration Added to Sample |
| MS | Matrix Spike Results |
| MSD | Matrix Spike Duplicate Results |
| PR1 | Percent Recovery Of MS: {(MS-R1) / SP} x100 |
| PR2 | Percent Recovery Of MSD: {(MSD-R1) / SP} x 100 |
| RPD | Relative Percent Difference: {(MS-MSD) / (MS+MSD)} x 100 x 2 |

ORANGE COAST ANALYTICAL

Mark Noorani

MARK NOORANI
Laboratory Director

# SPL, Inc.

## Analysis Request & Chain of Custody Record

SPL Workorder No: 9703017

C- 04674

page 1 of 1

Client Name: SPL Fullerton

Address/Phone: 1511 E. Orangethorpe Ave. Fullerton

Client Contact: Mike Crisostomo

Project Name: Montgomery Watson Pasadena/MDRC

Project Number:

Project Location:

Invoice To: SPL Fullerton - Mike Crisostomo

| SAMPLE ID | DATE | TIME | comp | grab | matrix (W=water S=soil SL=sludge O=other:) | bottle (P=plastic A=amber glass G=glass V=vial) | size (1=1 liter 4=4oz 40=vial 8=8oz 16=16oz) | pres. (1=HCl 2=HNO3 3=H2SO4 O=other:) | Number of Containers | Requested Analysis: 8260* |
|---|---|---|---|---|---|---|---|---|---|---|
| B37-GS-52-4' | 3/3/97 | | | | S | SS Sleeve | — | — | 1 | ✓ |
| B37-GS-59-6' | 3/3/97 | | | | S | SS Sleeve | — | — | 1 | ✓ |

Client/Consultant Remarks:

Laboratory remarks: * Hold time expires 3/17/97!! Sue Marie

Intact? ☐ Y ☐ N

Temp:

Requested TAT: 24hr ☐ 72hr ☐ 48hr ☐ Standard ☒ Other ☐ _____

Special Reporting Requirements: Fax Results ☒ Raw Data ☐ Standard QC ☒ Level 3 QC ☐ Level 4 QC ☐

Special Detection Limits (specify):

PM review (initial):

| | | | |
|---|---|---|---|
| 1. Relinquished by Sampler: Dan Harris | date 3/17/97 | time 12:52 | 2. Received by: |
| 3. Relinquished by: | date | time | 4. Received by: |
| 5. Relinquished by: | date 3-17-97 | time 12:52 | 6. Received by Laboratory: M. Van Cavar |

☐ 8880 Interchange Drive, Houston, TX 77054 (713) 660-0901

☐ 459 ...ughes Drive, Traverse City, MI 49684 (616) 947-5777

☐ 500 Ambassador Caffery Parkway, Scott, LA 70583 (318) 237-4775

☒ 1511 E. Orangethorpe Avenue, Fullerton, CA 92631 ( ) 447-6868

BOE-C6-0107936