

Multi-Media Sampling Report for the Brandeis-Bardin Institute and the Santa Monica Mountains Conservancy

Brandeis-Bardin Ravine Analytical Data



March 10, 1993

Prepared by:

McLaren/Hart

ENVIRONMENTAL ENGINEERING CORPORATION

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VOLATILE ORGANIC COMPOUNDS

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868-52

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Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: ~~BB15001SE~~
Sample Number: 89555

Matrix: Soil

Date Sampled: 4/22/92
Date Analyzed: 5/01/92

Date Received: 4/23/92
Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



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VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868- 52

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COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	94	70 - 121
Toluene-D8	106	81 - 117
4-Bromofluorobenzene	93	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}

Preparation Method: EPA 5030

Lab Project-Sample ID: 5868-55

Page 1 of 2

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012Sample Description: BB15002SE
Sample Number: 89561

Matrix: Soil

Date Sampled: 4/22/92
Date Analyzed: 4/30/92Date Received: 4/23/92
Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5

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VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868- 55

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COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	95	70 - 121
Toluene-D8	107	81 - 117
4-Bromofluorobenzene	95	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy M. McLaren for CM Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



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VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868-58

Page 1 of 2

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB15003SE
Sample Number: 89567

Matrix: Soil

Date Sampled: 4/22/92
Date Analyzed: 4/30/92

Date Received: 4/23/92
Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868- 58

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COMPOUND	ANALYTE	REPORTING
	CONCENTRATION {c} ug/Kg (ppb)	LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5
SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	94	70 - 121
Toluene-D8	104	81 - 117
4-Bromofluorobenzene	86	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy M. McLaren Loren Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868-61

Page 1 of 2

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: ~~BB15004SE~~
Sample Number: 89573

Matrix: Soil

Date Sampled: 4/22/92
Date Analyzed: 4/30/92

Date Received: 4/23/92
Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868- 61

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COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	94	70 - 121
Toluene-D8	112	81 - 117
4-Bromofluorobenzene	90	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868-64

Page 1 of 2

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: ~~RR15805SE~~
Sample Number: 89579

Matrix: Soil

Date Sampled: 4/22/92
Date Analyzed: 4/30/92

Date Received: 4/23/92
Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



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VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868- 64

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COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	94	70 - 121
Toluene-D8	110	81 - 117
4-Bromofluorobenzene	89	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald Lorcum Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



SEMI-VOLATILE ORGANIC COMPOUNDS

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-51

Page 1 of 3

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: ~~BB15001SD~~
Sample Number: 89554

Matrix: Soil

Date Sampled: 4/22/92
Date Extracted: 4/27/92

Date Received: 4/23/92
Date Analyzed: 4/28/92

Batch Number: 920427-1901

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



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SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-51

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



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SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-51

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SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	71	25 - 121
Phenol-d5.....	70	24 - 113
Nitrobenzene-d5.....	61	23 - 120
2-Fluorobiphenyl.....	66	30 - 115
2,4,6-Tribromophenol.....	77	19 - 122
Terphenyl-d14.....	105	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald Loren
Cheryl Matterson, Associate Chemist

Date: 5/06/92

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-54

Page 1 of 3

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: **BB15002SD**
Sample Number: 89560

Matrix: Soil

Date Sampled: 4/22/92
Date Extracted: 4/27/92

Date Received: 4/23/92
Date Analyzed: 4/28/92

Batch Number: 920427-1901

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-54

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-54

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	65	25 - 121
Phenol-d5.....	69	24 - 113
Nitrobenzene-d5.....	59	23 - 120
2-Fluorobiphenyl.....	64	30 - 115
2,4,6-Tribromophenol.....	70	19 - 122
Terphenyl-d14.....	94	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald Larcum Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-57

Page 1 of 3

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: ~~BB15003SD~~
Sample Number: 89566

Matrix: Soil

Date Sampled: 4/22/92
Date Extracted: 4/27/92

Date Received: 4/23/92
Date Analyzed: 4/29/92

Batch Number: 920427-1901

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



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SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-57

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-57

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	81	25 - 121
Phenol-d5.....	81	24 - 113
Nitrobenzene-d5.....	72	23 - 120
2-Fluorobiphenyl.....	79	30 - 115
2,4,6-Tribromophenol.....	84	19 - 122
Terphenyl-d14.....	116	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald Loren Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-60

Page 1 of 3

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: ~~BB15004SD~~
Sample Number: 89572

Matrix: Soil

Date Sampled: 4/22/92
Date Extracted: 4/27/92

Date Received: 4/23/92
Date Analyzed: 4/29/92

Batch Number: 920427-1901

Dilution Factor: 2

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	670
Bis(2-chloroethyl)ether.....	670
2-Chlorophenol.....	670
1,3-Dichlorobenzene.....	670
1,4-Dichlorobenzene.....	670
Benzyl alcohol.....	670
2-Methylphenol.....	670
1,2-Dichlorobenzene.....	670
Bis(2-Chloroisopropyl)ether.....	670
4-Methylphenol.....	670
N-Nitroso-di-n-propylamine.....	670
Hexachloroethane.....	670
Nitrobenzene.....	670
Isophorone.....	670
2,4-Dimethylphenol.....	670
1,2,4-Trichlorobenzene.....	670
2-Nitrophenol.....	670
Benzoic acid.....	3300
Bis(2-Chloroethoxy)methane.....	670
2,4-Dichlorophenol.....	670
Naphthalene.....	670
4-Chloroaniline.....	670
Hexachlorobutadiene.....	670
4-Chloro-3-methylphenol.....	670
2-Methylnaphthalene.....	670
Hexachlorocyclopentadiene.....	670
2,4,6-Trichlorophenol.....	670
2,4,5-Trichlorophenol.....	670
2-Chloronaphthalene.....	670
3-Nitroaniline.....	3300
Dimethylphthalate.....	670
2,6-Dinitrotoluene.....	670
Acenaphthylene.....	670
2-Nitroaniline.....	3300



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SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-60

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		670
2,4-Dinitrophenol.....		3300
4-Nitrophenol.....		3300
2,4-Dinitrotoluene.....		670
Dibenzofuran.....		670
Diethylphthalate.....		670
alpha-BHC {b}.....		670
4-Chlorophenyl phenyl ether.....		670
Fluorene.....		670
4-Nitroaniline.....		3300
4,6-Dinitro-2-methylphenol.....		3300
N-Nitrosodiphenylamine.....		670
4-Bromophenyl phenyl ether.....		670
beta-BHC {b}.....		670
Lindane {b}.....		670
Hexachlorobenzene.....		670
Pentachlorophenol.....		3300
Phenanthrene.....		670
Anthracene.....		670
Delta-BHC {b}.....		670
Heptachlor {b}.....		670
Aldrin {b}.....		670
Endrin {b}.....		670
Butyl benzyl phthalate.....		670
Fluoranthene.....		670
Heptachlor Epoxide.....		670
Pyrene.....		670
Dieldrin {b}.....		670
4,4'-DDE {b}.....		670
Endosulfan sulfate.....		670
4,4'-DDT {b}.....		670
4,4'-DDD {b}.....		670
Di-n-butylphthalate.....		670
3,3'-Dichlorobenzidine.....		1300
Benzo(a)anthracene.....		670
Bis(2-Ethylhexyl)phthalate.....		670
Chrysene.....		670
Di-n-octylphthalate.....		670
Benzo(b)fluoranthene.....		670
Benzo(k)fluoranthene.....		670
Benzo(a)pyrene.....		670
Indeno(1,2,3-c,d)pyrene.....		670
Dibenzo(a,h)anthracene.....		670
Benzo(g,h,i)perylene.....		670

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SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-60

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	76	25 - 121
Phenol-d5.....	75	24 - 113
Nitrobenzene-d5.....	62	23 - 120
2-Fluorobiphenyl.....	69	30 - 115
2,4,6-Tribromophenol.....	79	19 - 122
Terphenyl-d14.....	82	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.
- {d} The sample was diluted 2 fold due to the presence of non-target analyte interferences.

Approved By: Nancy Mcclaren Loren
Cheryl Matterson, Associate Chemist

Date: 5/06/92

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-63

Page 1 of 3

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: ~~BB15005SD~~
Sample Number: 89578

Matrix: Soil

Date Sampled: 4/22/92
Date Extracted: 4/27/92

Date Received: 4/23/92
Date Analyzed: 4/29/92

Batch Number: 920427-1901

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



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SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-63

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



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SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-63

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	85	25 - 121
Phenol-d5.....	81	24 - 113
Nitrobenzene-d5.....	73	23 - 120
2-Fluorobiphenyl.....	79	30 - 115
2,4,6-Tribromophenol.....	82	19 - 122
Terphenyl-d14.....	111	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM
Cheryl Matterson, Associate Chemist

Date: 5/06/92

The cover letter and attachments are integral parts of this report.



METALS

PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5868-53

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: **BB15001SF**
Sample Number: 89556

Matrix: Soil

Date Sampled: 4/22/92

Date Received: 4/23/92

Date Digested: 4/27/92 {b}

Batch Number: 920427-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	5/01/92
Arsenic (As)/7060.....	2.0	1	.50	5/01/92
Beryllium (Be)/6010.....		1	.25	5/04/92
Cadmium (Cd)/6010.....		1	.50	5/01/92
Chromium (Cr)/6010.....	7.6	1	1.0	5/01/92
Copper (Cu)/6010.....	5.2	1	1.0	5/01/92
Lead (Pb)/6010.....	7.6	1	2.5	5/01/92
Mercury (Hg)/7471.....		1	.25	4/27/92
Nickel (Ni)/6010.....	4.2	1	1.0	5/01/92
Selenium (Se)/7740.....		1	.25	4/30/92
Silver (Ag)/6010.....		1	1.0	5/01/92
Thallium (Tl)/7841.....		1	.50	5/01/92
Zinc (Zn)/6010.....	45.	1	1.0	5/01/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 4/27/92, Batch # 920427-1102; and Hg was digested on 4/27/92, Batch # 920427-1103 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 5/07/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5868-56

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: **BB15002SF**
Sample Number: 89562

Matrix: Soil

Date Sampled: 4/22/92
Date Digested: 4/27/92 {b}

Date Received: 4/23/92
Batch Number: 920427-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	5/01/92
Arsenic (As)/7060.....	2.4	1	.50	5/01/92
Beryllium (Be)/6010.....		1	.25	5/04/92
Cadmium (Cd)/6010.....		1	.50	5/01/92
Chromium (Cr)/6010.....	8.8	1	1.0	5/01/92
Copper (Cu)/6010.....	5.3	1	1.0	5/01/92
Lead (Pb)/6010.....	8.6	1	2.5	5/01/92
Mercury (Hg)/7471.....		1	.25	4/27/92
Nickel (Ni)/6010.....	5.0	1	1.0	5/01/92
Selenium (Se)/7740.....		1	.25	4/30/92
Silver (Ag)/6010.....		1	1.0	5/01/92
Thallium (Tl)/7841.....		1	.50	5/01/92
Zinc (Zn)/6010.....	49.	1	1.0	5/01/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 4/27/92, Batch # 920427-1102; and Hg was digested on 4/27/92, Batch # 920427-1103.
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald Loren Date: 5/07/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5868-59

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB15003SF
Sample Number: 89568

Matrix: Soil

Date Sampled: 4/22/92
Date Digested: 4/27/92 {b}

Date Received: 4/23/92
Batch Number: 920427-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	5/01/92
Arsenic (As)/7060.....	1.9	1	.50	5/01/92
Beryllium (Be)/6010.....		1	.25	5/04/92
Cadmium (Cd)/6010.....		1	.50	5/01/92
Chromium (Cr)/6010.....	7.4	1	1.0	5/01/92
Copper (Cu)/6010.....	5.3	1	1.0	5/01/92
Lead (Pb)/6010.....	9.8	1	2.5	5/01/92
Mercury (Hg)/7471.....		1	.25	4/27/92
Nickel (Ni)/6010.....	4.5	1	1.0	5/01/92
Selenium (Se)/7740.....		1	.25	4/30/92
Silver (Ag)/6010.....		1	1.0	5/01/92
Thallium (Tl)/7841.....		1	.50	5/01/92
Zinc (Zn)/6010.....	51.	1	1.0	5/01/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 4/27/92, Batch # 920427-1102; and Hg was digested on 4/27/92, Batch # 920427-1103.
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald Loren Date: 5/07/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5868-62

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: **BB15004SF**
Sample Number: 89574

Matrix: Soil

Date Sampled: 4/22/92
Date Digested: 4/27/92 {b}

Date Received: 4/23/92
Batch Number: 920427-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	5/01/92
Arsenic (As)/7060.....	2.7	1	.50	5/01/92
Beryllium (Be)/6010.....	.30	1	.25	5/04/92
Cadmium (Cd)/6010.....		1	.50	5/01/92
Chromium (Cr)/6010.....	12.	1	1.0	5/01/92
Copper (Cu)/6010.....	6.2	1	1.0	5/01/92
Lead (Pb)/6010.....	21.	1	2.5	5/01/92
Mercury (Hg)/7471.....		1	.25	4/27/92
Nickel (Ni)/6010.....	5.5	1	1.0	5/01/92
Selenium (Se)/7740.....		1	.25	4/30/92
Silver (Ag)/6010.....	1.2	1	1.0	5/01/92
Thallium (Tl)/7841.....		1	.50	5/01/92
Zinc (Zn)/6010.....	54.	1	1.0	5/01/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 4/27/92, Batch # 920427-1102; and Hg was digested on 4/27/92, Batch # 920427-1103 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McFarland So. cm Date: 5/07/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5868-65

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB15005SF
Sample Number: 89580

Matrix: Soil

Date Sampled: 4/22/92
Date Digested: 4/27/92 {b}

Date Received: 4/23/92
Batch Number: 920427-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	5/01/92
Arsenic (As)/7060.....	2.8	1	.50	5/01/92
Beryllium (Be)/6010.....	.28	1	.25	5/04/92
Cadmium (Cd)/6010.....		1	.50	5/01/92
Chromium (Cr)/6010.....	9.8	1	1.0	5/01/92
Copper (Cu)/6010.....	5.9	1	1.0	5/01/92
Lead (Pb)/6010.....	12.	1	2.5	5/01/92
Mercury (Hg)/7471.....		1	.25	4/27/92
Nickel (Ni)/6010.....	6.0	1	1.0	5/01/92
Selenium (Se)/7740.....		1	.25	4/30/92
Silver (Ag)/6010.....		1	1.0	5/01/92
Thallium (Tl)/7841.....		1	.50	5/01/92
Zinc (Zn)/6010.....	51.	1	1.0	5/01/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 4/27/92, Batch # 920427-1102; and Hg was digested on 4/27/92, Batch # 920427-1103 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald Loren Date: 5/07/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



RADIONUCLIDES

Table1. Results of the analyses for iodine-129 and strontium-90 in thirty (30) soil samples.

Sample ID Number	Sample Description	Collection Date	Lab Code	Conc. pCi/g wet		Conc. pCi/g dry	
				I-129	Date Analyzed	Sr-90	Date Analyzed
89575	BB15005SA	04/22/92	SPS-2158	<0.2	06/30	<0.01	07/11
89581	BB00007SA	04/22/92	SPS-2159	<0.3	06/30	0.02±0.02	07/11
89851	BB16001BSA	04/22/92	SPS-2160	<0.3	06/30	0.03±0.01	07/11
89857	BB16002SA	04/22/92	SPS-2161	<0.3	07/11	0.09±0.01	07/15
89863	BB16002SA	04/22/92	SPS-2162	<0.3	07/20	0.02±0.01	07/16
89869	BB16004SA	04/22/92	SPS-2163	<0.3	07/11	0.15±0.02	07/15
89875	BB16005SA	04/22/92	SPS-2164	<0.3	07/07	0.04±0.01	08/11
89881	BB00006SA	04/22/92	SPS-2165	<0.2	07/07	0.12±0.02	07/15
89892	BB16001ASA	04/22/92	SPS-2166	<0.3	07/07	0.08±0.01	07/16
89301	BB17001SA	04/21/92	SPS-2167	<0.3	07/08	0.01±0.01	07/16
89307	BB17002SA	04/21/92	SPS-2168	<0.3	07/08	0.02±0.01	07/11
89313	BB17003SA	04/21/92	SPS-2169	<0.2	07/08	0.01±0.01	07/16
89319	BB17004SA	04/21/92	SPS-2170	<0.2	07/08	0.03±0.01	08/11
Dup	BB17004SA	04/21/92	SPS-2170D	<0.2	07/08	0.02±0.01	08/11
89551	BB15001SA	04/21/92	SPS-2171	<0.3	07/09	0.01±0.01	08/11
89557	BB15002SA	04/21/92	SPS-2172	<0.3	07/09	<0.01	07/16
89563	BB15003SA	04/21/92	SPS-2173	<0.3	07/10	0.01±0.01	07/15
89569	BB15004SA	04/21/92	SPS-2174	<0.2	07/10	<0.01	07/11
90151	BB18001ASA	04/21/92	SPS-2175	<0.3	07/10	0.02±0.01	07/16
90157	BB18002ASA	04/21/92	SPS-2176	<0.3	07/13	0.02±0.01	08/11
90163	BB18002SA	04/21/92	SPS-2177	<0.3	07/13	<0.01	07/11
90170	BB18003SA	04/21/92	SPS-2178	<0.2	07/13	0.01±0.01	07/15
89219	BB18001SA	04/21/92	SPS-2179	<0.3	07/14	0.02±0.01	08/11
89225	BB18003ASA	04/21/92	SPS-2180	<0.2	07/14	<0.01	07/16
89213	BB18003BSA	04/21/92	SPS-2181	<0.3	07/14	<0.01	07/16
89207	BB18002BSA	04/21/92	SPS-2182	<0.3	07/18	0.02±0.01	08/11
89201	BB18001BSA	04/21/92	SPS-2183	<0.3	07/17	0.01±0.01	08/11
90401	BB19001SA	04/23/92	SPS-2184	<0.3	07/17	0.08±0.02	08/11
90407	BB19002SA	04/23/92	SPS-2185	<0.3	07/18	0.09±0.02	08/11
90413	BB19003SA	04/23/92	SPS-2186	<0.3	07/18	0.02±0.01	08/11
90419	BB19004SA	04/23/92	SPS-2187	<0.3	07/18	0.03±0.01	08/11

The error given is the probable counting error at 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

RUN DATE 06/25/92
PAGE 1WORK ORDER NUMBER 3-1296
CUSTOMER P.O. NUMBER 04-0029403-012
DATE RECEIVED 04/27/92
DELIVERY DATE 05/30/92ERIC SMITH
MCLAREN/KART
16755 VON KARMAN AVE
IRVINE CA 92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-X U/M	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-X	LAB.
74357	89552	88150015B	04/22	1230	PU-238 PU-239	2.2 +-0.7 E-01 L.T. 1. E-02		06/08 06/08		6 6
74358	89553	88150015C	04/22	1230	BE-7 K-40 MN-54 CO-58 FE-59 CO-60 ZN-65 ZR-95 RU-103 RU-106 I-131 CS-134 CS-137 BA-140 CE-141 CE-144 RA-226 TH-228	L.T. 4. E-01 2.08+-0.21E 01 L.T. 3. E-02 L.T. 4. E-02 L.T. 1. E-01 L.T. 3. E-02 L.T. 9. E-02 L.T. 5. E-02 L.T. 3. E-02 L.T. 6. E-01 L.T. 4. E-02 4.47+-2.58E-02 L.T. 2. E-01 L.T. 1. E-01 L.T. 2. E-01 1.02+-0.49E 00 7.39+-0.74E-01		05/27 05/27 05/27 05/27 05/27 05/27 05/27 05/27 05/27 05/27 05/27 05/27 05/27 05/27 05/27 05/27 05/27		4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
74359	89558	88150025B	04/22	1155	PU-238 PU-239	6.7 +-2.5 E-02 L.T. 5. E-03		06/08 06/08		6 6
74360	89559	88150025C	04/22	1155	BE-7 K-40 MN-54 CO-58 FE-59 CO-60 ZN-65	L.T. 4. E-01 2.16+-0.22E 01 L.T. 3. E-02 L.T. 4. E-02 L.T. 1. E-01 L.T. 3. E-02 L.T. 9. E-02		05/27 05/27 05/27 05/27 05/27 05/27 05/27		4 4 4 4 4 4 4

The H-3 result for 74358 and 74364 has been withdrawn.
firmed by an alternate method.*Indication* 11-3-92

The H-3 results of several samples analyzed by the same analytical method were not con-

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

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92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAB.
74360	89559	BB150025C	04/22	1155	ZR-95	L.T. 4. E-02		05/27		4
					RU-103	L.T. 4. E-02		05/27		4
					RU-106	L.T. 2. E-01		05/27		4
					I-131	L.T. 5. E-01		05/27		4
					CS-134	L.T. 3. E-02		05/27		4
					CS-137	4.42+-2.15E-02		05/27		4
					BA-140	L.T. 2. E-01		05/27		4
					CE-141	L.T. 7. E-02		05/27		4
					CE-144	L.T. 2. E-01		05/27		4
					RA-226	8.43+-4.23E-01		05/27		4
					TH-228	7.27+-0.73E-01		05/27		4
					H-3	L.T. 2. E-02		06/22		5
74361	89564	BB150035B	04/22	1135	PU-238	L.T. 5. E-02		06/10		6
					PU-239	L.T. 1. E-02		06/10		6
74362	89565	BB150035C	04/22	1135	BE-7	L.T. 3. E-01		05/27		4
					K-40	2.16+-0.22E 01		05/27		4
					MN-54	L.T. 3. E-02		05/27		4
					CO-58	L.T. 3. E-02		05/27		4
					FE-59	L.T. 9. E-02		05/27		4
					CO-60	L.T. 3. E-02		05/27		4
					ZN-65	L.T. 7. E-02		05/27		4
					ZR-95	L.T. 4. E-02		05/27		4
					RU-103	L.T. 4. E-02		05/27		4
					RU-106	L.T. 2. E-01		05/27		4
					I-131	L.T. 5. E-01		05/27		4
					CS-134	L.T. 3. E-02		05/27		4
					CS-137	3.89+-2.03E-02		05/27		4
					BA-140	L.T. 2. E-01		05/27		4
					CE-141	L.T. 8. E-02		05/27		4
					CE-144	L.T. 2. E-01		05/27		4
					RA-226	1.79+-0.41E 00		05/27		4

TELEDYNE ISOTOPIES

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16755 VON KARMAN AVE
IRVINE CA

92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-X U/M	MTD-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-X	LAR.
74362	89565	88150033C	04/22	1135	TH-228 H-3	1.31+-0.13E 00 L.T. 9. E-03		05/27 06/22		4 5
74363	89570	88150045B	04/22	1115	PU-238 PU-239	L.T. 5. E-02 L.T. 1. E-02		06/10 06/10		6 6
74364	89571	88150045C	04/22	1115	8E-7 K-40 MN-54 CO-58 FE-59 CO-60 ZN-65 ZR-95 RU-103 RU-106 I-131 CS-134 CS-137 BA-140 CE-141 CE-144 RA-226 TH-228	L.T. 4. E-01 2.17+-0.22E 01 L.T. 3. E-02 L.T. 4. E-02 L.T. 1. E-01 L.T. 3. E-02 L.T. 8. E-02 L.T. 4. E-02 L.T. 5. E-02 L.T. 3. E-01 L.T. 5. E-01 L.T. 3. E-02 4.29+-2.48E-02 L.T. 2. E-01 L.T. 8. E-02 L.T. 2. E-01 1.40+-0.41E 00 6.75+-0.68E-01		05/27 05/27 05/27 05/27 05/27 05/27 05/27 05/27 05/27 05/27 05/27 05/27 05/27 05/27 05/27 05/27 05/27 05/27 05/27		4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
74365	89576	88150055B	04/22	1100	PU-238 PU-239	5.5 +-4.2 E-02 L.T. 1. E-02		06/10 06/10		6 6

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

RUN DATE 06/25/92
PAGE 4WORK ORDER NUMBER 3-1296
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DATE RECEIVED 04/27/92
DELIVERY DATE 05/30/92ERIC SMITH
MCLAREN/HART
16755 VON KARMAN AVE
IRVINE CA 92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCIT/GM DRY)	NUCL-UNIT-% U/M	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAB.
74366	89577 88150055C		04/22	1100	BE-7	L.T. 4. E-01		05/28		4
					K-40	2.16+-0.22E 01		05/28		4
					MN-54	L.T. 3. E-02		05/28		4
					CO-58	L.T. 4. E-02		05/28		4
					FE-59	L.T. 1. E-01		05/28		4
					CO-60	L.T. 3. E-02		05/28		4
					ZN-65	L.T. 9. E-02		05/28		4
					ZR-95	L.T. 5. E-02		05/28		4
					RU-103	L.T. 5. E-02		05/28		4
					RU-106	L.T. 3. E-01		05/28		4
					I-131	L.T. 6. E-01		05/28		4
					CS-134	L.T. 4. E-02		05/28		4
					CS-137	5.20+-2.45E-02		05/28		4
					BA-140	L.T. 2. E-01		05/28		4
					CE-141	L.T. 1. E-01		05/28		4
					CE-144	L.T. 2. E-01		05/28		4
					RA-226	1.47+-0.53E 00		05/28		4
					TH-228	8.04+-0.80E-01		05/28		4
					H-3	NOT ANALYZED				5
74367	89852 881600185B		04/22	0915	PU-238	L.T. 3. E-02		06/10		6
					PU-239	L.T. 1. E-02		06/10		6
74368	89853 881600185C		04/22	0915	BE-7	L.T. 5. E-01		05/28		4
					K-40	2.01+-0.20E 01		05/28		4
					MN-54	L.T. 4. E-02		05/28		4
					CO-58	L.T. 5. E-02		05/28		4
					FE-59	L.T. 1. E-01		05/28		4
					CO-60	L.T. 4. E-02		05/28		4
					ZN-65	L.T. 1. E-01		05/28		4
					ZR-95	L.T. 6. E-02		05/28		4
					RU-103	L.T. 6. E-02		05/28		4
					RU-106	L.T. 3. E-01		05/28		4

A small quantity of water was extracted from T1#74366. The distillation procedure was not effective in providing an adequate quantity of sufficiently clean water, thus the H-3 analysis could not be completed.

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

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DATE RECEIVED

04/27/92

DELIVERY DATE

05/30/92

ERIC SMITH
MCLAREN/HART
1655 VON KARMAN AVE
IRVINE CA 92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M #	MIO-COUNT		VOLUME - UNITS ASH-WGHT-%	LAB.
			START DATE	STOP DATE				DATE	TIME		
74376	89877 88160035C		04/22	0900	BE-7	L.T. 4. E-01		06/01		4	
					K-40	2.34+-0.23E 01		06/01		4	
					MN-54	L.T. 3. E-02		06/01		4	
					CO-58	L.T. 4. E-02		06/01		4	
					FE-59	L.T. 1. E-01		06/01		4	
					CO-60	L.T. 3. E-02		06/01		4	
					ZN-65	L.T. 8. E-02		06/01		4	
					ZR-95	L.T. 5. E-02		06/01		4	
					RU-103	L.T. 5. E-02		06/01		4	
					RU-106	L.T. 3. E-01		06/01		4	
					I-131	L.T. 9. E-01		06/01		4	
					CS-134	L.T. 4. E-02		06/01		4	
					CS-137	L.T. 4. E-02		06/01		4	
					BA-140	L.T. 3. E-01		06/01		4	
					CE-141	L.T. 1. E-01		06/01		4	
					CE-144	L.T. 2. E-01		06/01		4	
					RA-226	1.66+-0.49E 00		06/01		4	
					TH-228	8.77+-0.88E-01		06/01		4	
					H-3	2.6 +-0.3 E-01		06/21		5	

LAST PAGE OF REPORT

SEND 1 COPIES TO MC4805 ERIC SMITH

APPROVED BY J. GUENTHER 06/25/92

2 - GAS LAB. 3 - RADIO CHEMISTRY LAB.

4 - GEILII GAMMA SPEC LAB.

5 - TRITIUM GAS/L.S. LAB. 6 - ALPHA SPEC LAB.

TIV H-3 {pCi/l}

74360 L.T. 2. E 02
74362 L.T. 2. E 02

74368 L.T. 2. E 02
74370 1.1 +-0.1 E 03
74371 1.3 +-0.3 E 03
74372 1.3 +-0.2 E 03
74376 1.5 +-0.2 E 03

The H-3 result for TIV's 74358 and 74364 has been withdrawn. The H-3 results of several samples analyzed by the same analytical method were not confirmed by an alternate method.

Handwritten: 11-3-92



VOLATILE ORGANIC COMPOUNDS

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868-88

Page 1 of 2

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB16001ASE
Sample Number: 89896

Matrix: Soil

Date Sampled: 4/22/92
Date Analyzed: 4/30/92

Date Received: 4/23/92
Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....	25	25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868- 88

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	91	70 - 121
Toluene-D8	111	81 - 117
4-Bromofluorobenzene	86	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.
- {d} Acetone, a common laboratory contaminant, was detected in the sample. The associated method blank indicated no such contamination.

Approved By: Nancy McDonald Lorc Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868-72

Page 1 of 2

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: ~~BB16001~~BSE
Sample Number: 89855

Matrix: Soil

Date Sampled: 4/22/92
Date Analyzed: 4/30/92

Date Received: 4/23/92
Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868- 72

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	93	70 - 121
Toluene-D8	105	81 - 117
4-Bromofluorobenzene	95	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868-75

Page 1 of 2

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB16002SE
Sample Number: 89861

Matrix: Soil

Date Sampled: 4/22/92
Date Analyzed: 4/30/92

Date Received: 4/23/92
Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



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VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868- 75

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	95	70 - 121
Toluene-D8	113	81 - 117
4-Bromofluorobenzene	85	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald Forem Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868-78

Page 1 of 2

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB16003SE
Sample Number: 89867

Matrix: Soil

Date Sampled: 4/22/92
Date Analyzed: 4/30/92

Date Received: 4/23/92
Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868- 78

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COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	96	70 - 121
Toluene-D8	107	81 - 117
4-Bromofluorobenzene	91	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868-81

Page 1 of 2

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB16004SE
Sample Number: 89873

Matrix: Soil

Date Sampled: 4/22/92
Date Analyzed: 4/30/92

Date Received: 4/23/92
Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868- 81

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	89	70 - 121
Toluene-D8	117	81 - 117
4-Bromofluorobenzene	77	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy Mcclanahan for CM Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868-84

Page 1 of 2

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB16005SE
Sample Number: 89879

Matrix: Soil

Date Sampled: 4/22/92
Date Analyzed: 4/30/92

Date Received: 4/23/92
Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



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VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868- 84

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	95	70 - 121
Toluene-D8	103	81 - 117
4-Bromofluorobenzene	99	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846,
3rd Edition for Method 8240.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated
values. No entry in "Analyte Concentration" means the compound
is not detected at all.

Approved By: Nancy McDonald for CM Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



SEMI-VOLATILE ORGANIC COMPOUNDS

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-87

Page 1 of 3

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB16001ASD
Sample Number: 89895

Matrix: Soil

Date Sampled: 4/22/92
Date Extracted: 4/27/92

Date Received: 4/23/92
Date Analyzed: 4/29/92

Batch Number: 920427-1901

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-87

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....	200	330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-87

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	72	25 - 121
Phenol-d5.....	69	24 - 113
Nitrobenzene-d5.....	62	23 - 120
2-Fluorobiphenyl.....	58	30 - 115
2,4,6-Tribromophenol.....	74	19 - 122
Terphenyl-d14.....	88	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for Ch Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-71

Page 1 of 3

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB16001BSD

Sample Number: 89854

Matrix: Soil

Date Sampled: 4/22/92

Date Received: 4/23/92

Date Extracted: 4/27/92

Date Analyzed: 4/29/92

Batch Number: 920427-1901

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600

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SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-71

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330


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SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-71

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	57	25 - 121
Phenol-d5.....	59	24 - 113
Nitrobenzene-d5.....	49	23 - 120
2-Fluorobiphenyl.....	51	30 - 115
2,4,6-Tribromophenol.....	69	19 - 122
Terphenyl-d14.....	87	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM
Cheryl Matterson, Associate Chemist

Date: 5/06/92

The cover letter and attachments are integral parts of this report.



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SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-74

Page 1 of 3

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB16002SD
Sample Number: 89860

Matrix: Soil

Date Sampled: 4/22/92
Date Extracted: 4/27/92

Date Received: 4/23/92
Date Analyzed: 4/29/92

Batch Number: 920427-1901

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-74

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-74

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	66	25 - 121
Phenol-d5.....	65	24 - 113
Nitrobenzene-d5.....	57	23 - 120
2-Fluorobiphenyl.....	53	30 - 115
2,4,6-Tribromophenol.....	70	19 - 122
Terphenyl-d14.....	85	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald Loren Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



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SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-77

Page 1 of 3

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB16003SD
Sample Number: 89866

Matrix: Soil

Date Sampled: 4/22/92
Date Extracted: 4/27/92

Date Received: 4/23/92
Date Analyzed: 4/29/92

Batch Number: 920427-1901

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-77

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-77

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	59	25 - 121
Phenol-d5.....	65	24 - 113
Nitrobenzene-d5.....	48	23 - 120
2-Fluorobiphenyl.....	57	30 - 115
2,4,6-Tribromophenol.....	70	19 - 122
Terphenyl-d14.....	82	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for cm Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-80

Page 1 of 3

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB16004SD
Sample Number: 89872

Matrix: Soil

Date Sampled: 4/22/92
Date Extracted: 4/27/92

Date Received: 4/23/92
Date Analyzed: 4/29/92

Batch Number: 920427-1901

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



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SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-80

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-80

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	76	25 - 121
Phenol-d5.....	72	24 - 113
Nitrobenzene-d5.....	64	23 - 120
2-Fluorobiphenyl.....	62	30 - 115
2,4,6-Tribromophenol.....	72	19 - 122
Terphenyl-d14.....	87	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald Lecom
Cheryl Matterson, Associate Chemist

Date: 5/06/92

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-83

Page 1 of 3

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB16005SD
Sample Number: 89878

Matrix: Soil

Date Sampled: 4/22/92
Date Extracted: 4/27/92

Date Received: 4/23/92
Date Analyzed: 4/29/92

Batch Number: 920427-1901

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-83

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



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SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-83

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	74	25 - 121
Phenol-d5.....	69	24 - 113
Nitrobenzene-d5.....	58	23 - 120
2-Fluorobiphenyl.....	56	30 - 115
2,4,6-Tribromophenol.....	69	19 - 122
Terphenyl-d14.....	84	18 - 137

COMMENTS:

{a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.

{b} Additional compounds.

{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM
Cheryl Matterson, Associate Chemist

Date: 5/06/92

The cover letter and attachments are integral parts of this report.



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METALS

PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5868-89

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB16001ASF
Sample Number: 89897

Matrix: Soil

Date Sampled: 4/22/92
Date Digested: 4/27/92 {b}

Date Received: 4/23/92
Batch Number: 920427-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	5/01/92
Arsenic (As)/7060.....	2.7	1	.50	5/01/92
Beryllium (Be)/6010.....	.42	1	.25	5/04/92
Cadmium (Cd)/6010.....		1	.50	5/01/92
Chromium (Cr)/6010.....	14.	1	1.0	5/01/92
Copper (Cu)/6010.....	7.5	1	1.0	5/01/92
Lead (Pb)/6010.....	8.0	1	2.5	5/01/92
Mercury (Hg)/7471.....		1	.25	4/27/92
Nickel (Ni)/6010.....	8.1	1	1.0	5/01/92
Selenium (Se)/7740.....		1	.25	4/30/92
Silver (Ag)/6010.....		1	1.0	5/01/92
Thallium (Tl)/7841.....		1	.50	5/01/92
Zinc (Zn)/6010.....	44.	1	1.0	5/01/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 4/27/92, Batch # 920427-1105; and Hg was digested on 4/27/92, Batch # 920427-1106 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for cm Date: 5/07/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5868-73

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB16001BSF
Sample Number: 89856

Matrix: Soil

Date Sampled: 4/22/92
Date Digested: 4/27/92 {b}

Date Received: 4/23/92
Batch Number: 920427-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	5/01/92
Arsenic (As)/7060.....	2.4	1	.50	5/01/92
Beryllium (Be)/6010.....		1	.25	5/04/92
Cadmium (Cd)/6010.....		1	.50	5/01/92
Chromium (Cr)/6010.....	5.8	1	1.0	5/01/92
Copper (Cu)/6010.....	3.0	1	1.0	5/01/92
Lead (Pb)/6010.....	3.3	1	2.5	5/01/92
Mercury (Hg)/7471.....		1	.25	4/27/92
Nickel (Ni)/6010.....	2.8	1	1.0	5/01/92
Selenium (Se)/7740.....		1	.25	4/30/92
Silver (Ag)/6010.....		1	1.0	5/01/92
Thallium (Tl)/7841.....		1	.50	5/01/92
Zinc (Zn)/6010.....	19.	1	1.0	5/01/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 4/27/92, Batch # 920427-1102; and Hg was digested on 4/27/92, Batch # 920427-1103 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald Sr. CM Date: 5/07/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5868-76

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: ~~BB16002SF~~
Sample Number: 89862

Matrix: Soil

Date Sampled: 4/22/92
Date Digested: 4/27/92 {b}

Date Received: 4/23/92
Batch Number: 920427-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	5/01/92
Arsenic (As)/7060.....	2.6	1	.50	5/01/92
Beryllium (Be)/6010.....	.32	1	.25	5/04/92
Cadmium (Cd)/6010.....		1	.50	5/01/92
Chromium (Cr)/6010.....	10.	1	1.0	5/01/92
Copper (Cu)/6010.....	6.3	1	1.0	5/01/92
Lead (Pb)/6010.....	5.0	1	2.5	5/01/92
Mercury (Hg)/7471.....		1	.25	4/27/92
Nickel (Ni)/6010.....	6.5	1	1.0	5/01/92
Selenium (Se)/7740.....		1	.25	4/30/92
Silver (Ag)/6010.....		1	1.0	5/01/92
Thallium (Tl)/7841.....		1	.50	5/01/92
Zinc (Zn)/6010.....	36.	1	1.0	5/01/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 4/27/92, Batch # 920427-1102; and Hg was digested on 4/27/92, Batch # 920427-1103 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald-Loren Date: 5/07/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5868-79

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB16003SF
Sample Number: 89868

Matrix: Soil

Date Sampled: 4/22/92
Date Digested: 4/27/92 {b}

Date Received: 4/23/92
Batch Number: 920427-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	5/01/92
Arsenic (As)/7060.....	1.1	1	.50	5/01/92
Beryllium (Be)/6010.....		1	.25	5/04/92
Cadmium (Cd)/6010.....		1	.50	5/01/92
Chromium (Cr)/6010.....	4.9	1	1.0	5/01/92
Copper (Cu)/6010.....	2.7	1	1.0	5/01/92
Lead (Pb)/6010.....	2.4	1	2.5	5/01/92
Mercury (Hg)/7471.....		1	.25	4/27/92
Nickel (Ni)/6010.....	2.9	1	1.0	5/01/92
Selenium (Se)/7740.....		1	.25	4/30/92
Silver (Ag)/6010.....		1	1.0	5/01/92
Thallium (Tl)/7841.....		1	.50	5/01/92
Zinc (Zn)/6010.....	18.	1	1.0	5/01/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 4/27/92, Batch # 920427-1105; and Hg was digested on 4/27/92, Batch # 920427-1106 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 5/07/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5868-82

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB16004SF
Sample Number: 89874

Matrix: Soil

Date Sampled: 4/22/92

Date Digested: 4/27/92 {b}

Date Received: 4/23/92

Batch Number: 920427-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	5/01/92
Arsenic (As)/7060.....	2.5	1	.50	5/01/92
Beryllium (Be)/6010.....	.39	1	.25	5/04/92
Cadmium (Cd)/6010.....		1	.50	5/01/92
Chromium (Cr)/6010.....	9.9	1	1.0	5/01/92
Copper (Cu)/6010.....	6.5	1	1.0	5/01/92
Lead (Pb)/6010.....	14.	1	2.5	5/01/92
Mercury (Hg)/7471.....		1	.25	4/27/92
Nickel (Ni)/6010.....	5.7	1	1.0	5/01/92
Selenium (Se)/7740.....		1	.25	4/30/92
Silver (Ag)/6010.....		1	1.0	5/01/92
Thallium (Tl)/7841.....		1	.50	5/01/92
Zinc (Zn)/6010.....	120.	1	1.0	5/01/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 4/27/92, Batch # 920427-1105; and Hg was digested on 4/27/92, Batch # 920427-1106.
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for cm Date: 5/07/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5868-85

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB16005SF
Sample Number: 89880

Matrix: Soil

Date Sampled: 4/22/92
Date Digested: 4/27/92 {b}

Date Received: 4/23/92
Batch Number: 920427-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	5/01/92
Arsenic (As)/7060.....	1.6	1	.50	5/01/92
Beryllium (Be)/6010.....		1	.25	5/04/92
Cadmium (Cd)/6010.....		1	.50	5/01/92
Chromium (Cr)/6010.....	5.0	1	1.0	5/01/92
Copper (Cu)/6010.....	2.5	1	1.0	5/01/92
Lead (Pb)/6010.....	2.6	1	2.5	5/01/92
Mercury (Hg)/7471.....		1	.25	4/27/92
Nickel (Ni)/6010.....	2.8	1	1.0	5/01/92
Selenium (Se)/7740.....		1	.25	4/30/92
Silver (Ag)/6010.....		1	1.0	5/01/92
Thallium (Tl)/7841.....		1	.50	5/01/92
Zinc (Zn)/6010.....	18.	1	1.0	5/01/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 4/27/92, Batch # 920427-1105; and Hg was digested on 4/27/92, Batch # 920427-1106.
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 5/07/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



RADIONUCLIDES

Table1. Results of the analyses for iodine-129 and strontium-90 in thirty (30) soil samples.

Sample ID Number	Sample Description	Collection Date	Lab Code	Conc. pCi/g wet		Conc. pCi/g dry	
				I-129	Date Analyzed	Sr-90	Date Analyzed
89575	BB15005SA	04/22/92	SPS-2158	<0.2	06/30	<0.01	07/11
89581	BB00007SA	04/22/92	SPS-2159	<0.3	06/30	0.02±0.02	07/11
89851	BB16001BSA	04/22/92	SPS-2160	<0.3	06/30	0.03±0.01	07/11
89857	BB16002SA	04/22/92	SPS-2161	<0.3	07/11	0.09±0.01	07/15
89863	BB16002SA	04/22/92	SPS-2162	<0.3	07/20	0.02±0.01	07/16
89869	BB16004SA	04/22/92	SPS-2163	<0.3	07/11	0.15±0.02	07/15
89875	BB16005SA	04/22/92	SPS-2164	<0.3	07/07	0.04±0.01	08/11
89881	BB00006SA	04/22/92	SPS-2165	<0.2	07/07	0.12±0.02	07/15
89892	BB16001ASA	04/22/92	SPS-2166	<0.3	07/07	0.08±0.01	07/16
89301	BB17001SA	04/21/92	SPS-2167	<0.3	07/08	0.01±0.01	07/16
89307	BB17002SA	04/21/92	SPS-2168	<0.3	07/08	0.02±0.01	07/11
89313	BB17003SA	04/21/92	SPS-2169	<0.2	07/08	0.01±0.01	07/16
89319	BB17004SA	04/21/92	SPS-2170	<0.2	07/08	0.03±0.01	08/11
Dup	BB17004SA	04/21/92	SPS-2170D	<0.2	07/08	0.02±0.01	08/11
89551	BB15001SA	04/21/92	SPS-2171	<0.3	07/09	0.01±0.01	08/11
89557	BB15002SA	04/21/92	SPS-2172	<0.3	07/09	<0.01	07/16
89563	BB15003SA	04/21/92	SPS-2173	<0.3	07/10	0.01±0.01	07/15
89569	BB15004SA	04/21/92	SPS-2174	<0.2	07/10	<0.01	07/11
90151	BB18001ASA	04/21/92	SPS-2175	<0.3	07/10	0.02±0.01	07/16
90157	BB18002ASA	04/21/92	SPS-2176	<0.3	07/13	0.02±0.01	08/11
90163	BB18002SA	04/21/92	SPS-2177	<0.3	07/13	<0.01	07/11
90170	BB18003SA	04/21/92	SPS-2178	<0.2	07/13	0.01±0.01	07/15
89219	BB18001SA	04/21/92	SPS-2179	<0.3	07/14	0.02±0.01	08/11
89225	BB18003ASA	04/21/92	SPS-2180	<0.2	07/14	<0.01	07/16
89213	BB18003BSA	04/21/92	SPS-2181	<0.3	07/14	<0.01	07/16
89207	BB18002BSA	04/21/92	SPS-2182	<0.3	07/18	0.02±0.01	08/11
89201	BB18001BSA	04/21/92	SPS-2183	<0.3	07/17	0.01±0.01	08/11
90401	BB19001SA	04/23/92	SPS-2184	<0.3	07/17	0.08±0.02	08/11
90407	BB19002SA	04/23/92	SPS-2185	<0.3	07/18	0.09±0.02	08/11
90413	BB19003SA	04/23/92	SPS-2186	<0.3	07/18	0.02±0.01	08/11
90419	BB19004SA	04/23/92	SPS-2187	<0.3	07/18	0.03±0.01	08/11

The error given is the probable counting error at 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.

TELEPHONE ISOTOPIES

REPORT OF ANALYSIS

RUN DATE 07/07/92

PAGE 1

WORK ORDER NUMBER

IRELL SMITH
MCLAREN/HART
16755 VON KARMAN AVE
IRVINE CA 92714

3 1297

CUSTOMER P.O. NUMBER

04-0029403-012

DATE RECEIVED

04/27/92

DELIVERY DATE

05/30/92

SOIL

COLLECTION-DATE

STOP

START

SIA

CUSTOMER'S

IDENTIFICATION

NUM

NUCLIDE

ACTIVITY

NUCL-UNIT-%

MID-COUNT

TIME

VOLUME - UNITS

ASH-WGT-%

LAB.

PU-238

1.1. 4. F-02

06/09

6

PU-239

1.1. 8. F-03

06/09

6

BE-7

1.1. 5. E-01

06/01

4

K-40

2.10+-0.21E 01

06/01

4

MN-54

1.1. 4. F-02

06/01

4

CU-58

1.1. 5. F-02

06/01

4

FE-59

1.1. 1. F-03

06/01

4

CU-60

1.1. 4. F-02

06/01

4

ZN-65

1.1. 1. F-01

06/01

4

ZR-95

1.1. 6. F-02

06/01

4

RU-103

1.1. 7. F-02

06/01

4

RU-106

1.1. 3. F-01

06/01

4

I-131

1.1. 1. E-00

06/01

4

CS-134

1.1. 5. E-02

06/01

4

CS-137

7.01+-2.18E-02

06/01

4

BA-140

1.1. 3. F-02

06/01

4

CE-141

1.1. 1. E-01

06/01

4

CE-144

1.1. 2. E-01

06/01

4

RA-226

2.33+-0.50E 00

06/01

4

TH-228

1.31+-0.13E 00

06/01

4

U-235

2.0 +-0.3 E-01

06/22

5

PU-238

1.1. 5. E-02

06/08

6

PU-239

1.1. 3. E-02

06/08

6

74384 90402

RB19001SH

04/22 0830

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

RUN DATE 06/25/92

PAGE 4

WORK ORDER NUMBER

3-1296

CUSTOMER P.O. NUMBER

04-0029403-012

DATE RECEIVED

04/27/92

DELIVERY DATE

05/30/92

ERIC SMITH

MCLAREN/HART

16755 VON KARMAN AVE

IRVINE CA

92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PC/GM DRY)	NUCL-UNIT-% U/M	MID-COUNT		VOLUME - UNITS ASH-WGHT-%	LAB.
			START DATE	STOP DATE				DATE	TIME		
74366	89577 00150055C		04/22	1100	BE-7	L.T. 4. E-01		05/28			4
					K-40	2.16+-0.22E 01		05/28			4
					MN-54	L.T. 3. E-02		05/28			4
					CO-58	L.T. 4. E-02		05/28			4
					FE-59	L.T. 1. E-01		05/28			4
					CO-60	L.T. 3. E-02		05/28			4
					ZN-65	L.T. 9. E-02		05/28			4
					ZR-95	L.T. 5. E-02		05/28			4
					RU-103	L.T. 5. E-02		05/28			4
					RU-106	L.T. 3. E-01		05/28			4
					I-131	L.T. 6. E-01		05/28			4
					CS-134	L.T. 4. E-02		05/28			4
					CS-137	5.20+-2.45E-02		05/28			4
					BA-140	L.T. 2. E-01		05/28			4
					CE-141	L.T. 1. E-01		05/28			4
					CE-144	L.T. 2. E-01		05/28			4
					RA-226	1.47+-0.53E 00		05/28			4
					TH-228	8.04+-0.80E-01		05/28			4
					H-3	NOT ANALYZED					5
74367	89852 001600185B		04/22	0915	PU-238	L.T. 3. E-02		06/10			6
					PU-239	L.T. 1. E-02		06/10			6
74368	89853 001600185C		04/22	0915	BE-7	L.T. 5. E-01		05/28			4
					K-40	2.01+-0.20E 01		05/28			4
					MN-54	L.T. 4. E-02		05/28			4
					CO-58	L.T. 5. E-02		05/28			4
					FE-59	L.T. 1. E-01		05/28			4
					CO-60	L.T. 4. E-02		05/28			4
					ZN-65	L.T. 1. E-01		05/28			4
					ZR-95	L.T. 6. E-02		05/28			4
					RU-103	L.T. 3. E-01		05/28			4
					RU-106			05/28			4

A small quantity of water was extracted from 11#74366. The distillation procedure was not effective in providing an adequate quantity of sufficiently clean water, thus the H-3 analysis could not be completed.

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

RUN DATE 06/25/92
PAGE 5

WORK ORDER NUMBER

3-1296

CUSTOMER P.O. NUMBER

04-0029403-012

DELIVERY DATE

05/30/92

ERIC SMITH
MCLAREN/HART
16755 VON KARMAN AVE
IRVINE CA

92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAB.
74368	89853 8816001BSC		04/22 0915		I-131 CS-134 CS-137 BA-140 CE-141 CE-144 RA-226 TH-228 H-3	L.T. 8. E-01 L.T. 4. E-02 L.T. 4. E-02 L.T. 2. E-01 L.T. 1. E-01 L.T. 3. E-01 L.T. 8. E-01 6.32+-0.63E-01 L.T. 3. E-02		05/28 05/28 05/28 05/28 05/28 05/28 05/28 05/28 06/22	4 4 4 4 4 4 4 4 5	
74369	89858 8816002SB		04/22 0835		PU-238 PU-239 H-3	6.6 +-6.1 E-02 L.T. 2. E-02 6.0 +-0.8 E-01		06/10 06/10 06/21	6 6 5	
74370	89859 8816002SC		04/22 0835		PU-238 PU-239	L.T. 2. E-02 L.T. 9. E-03		06/08 06/08	6 6	
74371	89864 8816003SB		04/22 0840		BE-7 K-40 MN-54 CD-58 FE-59 CO-60 ZN-65 ZR-95 RU-103 RU-106 I-131 CS-134 CS-137 BA-140 CE-141	L.T. 4. E-01 2.40+-0.24E 01 L.T. 3. E-02 L.T. 4. E-02 L.T. 1. E-01 L.T. 3. E-02 L.T. 8. E-02 L.T. 5. E-02 L.T. 6. E-02 L.T. 3. E-01 L.T. 1. E 00 L.T. 3. E-02 L.T. 3. E-02 L.T. 3. E-01 L.T. 1. E-01	06/08 06/08 06/08 06/08 06/08 06/08 06/08 06/08 06/08 06/08 06/08 06/08 06/08 06/08 06/08	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4		
74372	89865 8016003SC		04/22 0840							

TELEDYNE ISOTOPIES

REPORT OF ANALYSIS

RUN DATE 06/25/92

PAGE 6

WORK ORDER NUMBER

ERIC SMITH
MCLAREN/HART
16755 VON KARMAN AVE
IRVINE CA

3-1296

CUSTOMER P.O. NUMBER

04-0029403-012

DATE RECEIVED

04/27/92

DELIVERY DATE

05/30/92

92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M *	MID-COUNT		VOLUME - UNITS	
			START DATE	STOP TIME				DATE	TIME	ASH-WGHT-%	LAB.
74372	89865 88160035C		04/22	0840	CE-144 RA-226 TH-228 H-3	L.T. 2. E-01 1.49+-0.38E 00 7.81+-0.78E-01 2.4 +-0.3 E-01		06/08 06/08 06/08 06/21			4 4 4 5
74373	89870 88160045B		04/22	0850	PU-238 PU-239	L.T. 7. E-02 L.T. 3. E-02		06/10 06/10			6 6
74374	89871 88160045C		04/22	0850	BE-7 K-40 MN-54 CO-58 FE-59 CO-60 ZN-65 ZR-95 RU-103 RU-106 I-131 CS-134 CS-137 BA-140 CE-141 CE-144 RA-226 TH-228 H-3	L.T. 5. E-01 2.16+-0.22E 01 L.T. 4. E-02 L.T. 5. E-02 L.T. 1. E-01 L.T. 4. E-02 L.T. 9. E-02 L.T. 7. E-02 L.T. 7. E-02 L.T. 4. E-01 L.T. 1. E 00 L.T. 5. E-02 3.36+-0.40E-01 L.T. 4. E-01 L.T. 1. E-01 L.T. 3. E-01 2.38+-0.60E 00 1.70+-0.17E 00 4.2 +-0.5 E-01		06/01 06/01 06/01 06/01 06/01 06/01 06/01 06/01 06/01 06/01 06/01 06/01 06/01 06/01 06/01 06/01 06/01 06/21			4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 5
74375	89876 88160055B		04/22	0900	PU-238 PU-239	L.T. 2. E-02 L.T. 5. E-03		06/10 06/10			6 6

TELEDYNE ISOTOPIES

REPORT OF ANALYSIS

RUN DATE 06/25/92
PAGE 7WORK ORDER NUMBER 3-1296
CUSTOMER P.O. NUMBER 04-0029403-012
DATE RECEIVED 04/27/92
DELIVERY DATE 05/30/92ERIC SMITH
MCLAREN/HART
16755 VON KARMAN AVE
IRVINE CA 92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP TIME	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M	MTD-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAB.
74376	89877	BB160055C	04/22	0900	BE-7	L.T. 4. E-01		06/01		4
					K-40	2.34+-0.23E 01		06/01		4
					MN-54	L.T. 3. E-02		06/01		4
					CO-58	L.T. 4. E-02		06/01		4
					FE-59	L.T. 1. E-01		06/01		4
					CO-60	L.T. 3. E-02		06/01		4
					ZN-65	L.T. 8. E-02		06/01		4
					ZR-95	L.T. 5. E-02		06/01		4
					RU-103	L.T. 5. E-02		06/01		4
					RU-106	L.T. 3. E-01		06/01		4
					I-131	L.T. 9. E-01		06/01		4
					CS-134	L.T. 4. E-02		06/01		4
					CS-137	L.T. 4. E-02		06/01		4
					BA-140	L.T. 3. E-01		06/01		4
					CE-141	L.T. 1. E-01		06/01		4
					CE-144	L.T. 2. E-01		06/01		4
					RA-226	1.66+-0.49E 00		06/01		4
					TH-228	8.77+-0.88E-01		06/01		4
					H-3	2.6 +-0.3 E-01		06/21		5

LAST PAGE OF REPORT

SEND 1 COPIES TO MC4805 ERIC SMITH

APPROVED BY J. GUENTHER 06/25/92

2 - GAS LAB. 3 - RADIO CHEMISTRY LAB. 4 - GE(LII) GAMMA SPEC LAB. 5 - TRITIUM GAS/L.S. LAB. 6 - ALPHA SPEC LAB.

TIN H-3 (PCI/I)

74358	L.T. 2. E 02
74360	L.T. 2. E 02
74362	L.T. 2. E 02
74364	L.T. 2. E 02
74368	L.T. 2. E 02
74370	1.1 +-0.1 E 03
74372	1.3 +-0.3 E 03
74374	1.3 1-0.2 E 03
74376	1.5 1-0.2 E 03

TELEPHONE ISOTOPIES

REPORT OF ANALYSIS

RUN DATE 09/16/92

DATE RECEIVED 09/11/92 DELIVERY DATE 10/14/92

CUSTOMER P.O. NUMBER 04-0029403-012

WORK ORDER NUMBER 3-3578

ERIC SMITH
MCLAREN/HART
16755 VON KARMAN AVE
IRVINE CA 92714

S O I L

TELEPHONE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP TIME	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M #	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	PAGE
74370	89859 BB160025C		04/22	0935	RE-7	L.T. 4. E-01		05/28	4	1
					K-40	2.05+-0.21E 01		05/28	4	
					MN-54	L.T. 3. E-02		05/28	4	
					CO-58	L.T. 4. E-02		05/28	4	
					FE-59	L.T. 1. E-01		05/28	4	
					CO-60	L.T. 4. E-02		05/28	4	
					ZN-65	L.T. 8. E-02		05/28	4	
					ZR-95	L.T. 5. E-02		05/28	4	
					RU-103	L.T. 5. E-02		05/28	4	
					RU-106	L.T. 3. E-01		05/28	4	
					I-131	L.T. 7. E-01		05/28	4	
					CS-134	L.T. 4. E-02		05/28	4	
					CS-137	L.T. 4. E-02		05/28	4	
					BA-140	L.T. 3. E-01		05/28	4	
					CE-141	L.T. 9. E-02		05/28	4	
					CE-144	L.T. 2. E-01		05/28	4	
					RA-226	2.33+-0.44E 00		05/28	4	
					TH-228	1.66+-0.17E 00		05/28	4	

LAST PAGE OF REPORT

SEND 1 COPIES TO MC480S ERIC SMITH

APPROVED BY J. GUENTHER 09/16/92

J. Guenther

2 - GAS LAB. 3 - RADIO CHEMISTRY LAB. 4 - GEILLI GAMMA SPEC LAB. 5 - TRITIUM GAS/L.S. LAB. 6 - ALPHA SPEC LAB.

TELEPHONE ISOTOPIES

REPORT OF ANALYSIS

RUN DATE 10/07/02

PAGE 1

WORK ORDER NUMBER

CUSTOMER P.O. NUMBER

DELIVERY DATE

ERIC SMITH
MCLADEN/HART
16755 VON KARMAN AVE
IRVINE CA

3-3796

04-0029403-012

10/20/92

92714

S O I L

TELEPHONE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (%CI/GM DRY)	NUCL-UNIT-% U/M	MID-COUNT		VOLUME - UNITS ASH-WGT-%
			START DATE	STOP DATE				DATE	TIME	
89782	BR13024SA	88901	03/17 1430		H-3	3.6 +-2.1 E-02		09/29		5
89783	BR15003SA	89563	04/22 1135		H-3	NOT ANALYZED				5
89784	BR06007SA	89157	03/17 0840		H-3	3.9 +-1.4 E-02		09/29		5
89785	BR04025SA	88201	03/13 1030		H-3	2.8 +-1.3 E-02		09/29		5
89786	BR05026SA	88225	03/13 1605		H-3	3.7 +-1.0 E-02		09/29		5
89787	BR02007SA	88457	/		H-3	2.1 +-1.1 E-02		09/29		5
89788	BR02045SA	89907	03/19 1000		H-3	NOT ANALYZED		09/29		5
89789	BR15004SA	89569	04/22 1115		H-3	NOT ANALYZED		09/29		5
89790	BR12020SA	90069	03/18 1055		H-3	L.T. 7. E-03		09/29		5
89791	BR03005SA	90125	03/17 1200		H-3	L.T. 3. E-02		09/24		5
89792	BR16001SA	89892	04/22 1000		H-3	2.0 +-0.2 E-01		09/30		5
89793	BR04029SA	88213	03/13 1145		H-3	4.8 +-1.5 E-02		09/30		5
89794	BR14094SA	88419	03/16 1540		H-3	NOT ANALYZED		09/30		5
89795	BR11006SA	89275	03/18 1640		H-3	2.1 +-1.1 E-02		09/30		5
89796	BR02074SA	88451	03/10		H-3	NOT ANALYZED				5

TELETYPE ISOTOPES

REPORT OF ANALYSIS

PUN DATE 10/07/02

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WORK ORDER NUMBER

3-3706

CUSTOMER P.O. NUMBER

04-0029401-C12

DATE RECEIVED

09/17/02

DELIVERY DATE

10/20/02

ERIC SMITH

MCLAREN/HART

16755 VON KARMAN AVE

IRVINE CA

92714

SOIL

TELETYPE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	TIME	NUCLIDE	ACTIVITY (PCI/CM DRY)	NUCL-UNIT-% U/M	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAR.
89797	SM030155A	88307	03/11			H-3	L.T. R. E-02		09/30		
89798	88030255A	90101	03/17	1040		H-3	5.1 +-2.5 E-02		09/30		
89799	881600185A	89851	04/22	0915		H-3	3.6 +-2.0 E-02		09/30		
89800	88040975A	88262	03/16	1115		H-3	NOT ANALYZED				
89801	88130395A	88913	03/17	1540		H-3	2.5 +-1.2 E-02		10/02		
89802	88150015A	89551	04/22	1230		H-3	NOT ANALYZED				
89803	88040235A	88256	03/16	1100		H-3	2.2 +-0.8 E-02		10/02		
89804	88020715A	89801	03/19	1000		H-3	NOT ANALYZED				

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J. Guenther

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TIME	H-3 (PCI/L)	Water (ml)
013024 89782	120±70	11.2
150023 89784	380±140	8.5
010025 89785	160±70	17.5
010027 89786	200±70	12.6
010029 89787	170±90	17.1
010031 89790	L.T. 200	8.6
010033 89791	L.T. 200	13.2
010035 89792	955±100	13.4
010037 89793	240±70	20.5
010039 89795	160±80	16.1
010041 89797	L.T. 200	9.8
010043 89798	240±120	18.4
010045 89799	220±120	25.3
010047 89801	170±80	15.2
010049 89803	230±90	11.6

The samples listed as not analyzed were samples for which insufficient water was extracted from the soil.

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

RUN DATE 09/16/92

PAGE 1

WORK ORDER NUMBER

3-3339

CUSTOMER P.O. NUMBER

04-0029403-012

DATE RECEIVED

08/21/92

DELIVERY DATE

09/23/92

ERIC SMITH

MCLAREN/HART

16745 VON KARMAN AVE

IRVINE CA

92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/CM DRY)	NUCL-UNIT-% U/M	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAB.
			START DATE	STOP DATE						
✓ 87180	8803017SA	90119	1922	03/17	H-3	L.T. 3. E-02		09/14		5
✓ 87181	8803079SA	90113	1921	03/17	H-3	L.T. 4. E-02		09/14		5
✓ 87182	8805089SA	90007	1925	03/18	H-3	L.T. 2. E-02		09/14		5
✓ 87183	8806066SA	89169	1917	03/17	H-3	L.T. 3. E-02		09/14		5
✓ 87184	8813010SA	88925	1913	03/17	H-3	L.T. 2. E-02		09/14		5
87185	8816002SA	89857	2161	04/22	H-3	1.5 + -0.3 E-01		09/14		5
87186	8816003SA	89863	2162	04/22	H-3	3.1 + -0.3 E-01		09/14		5
87187	8816004SA	89869	2163	04/22	H-3	5.9 + -0.6 E-01		09/14		5
87188	8816005SA	89875	2164	04/22	H-3	3.7 + -0.4 E-01		09/14		5
✓ 87189	8803092SA	90107	1920	03/17	H-3	L.T. 3. E-02		09/14		5

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TELEDYNE ISOTOPIES
REPORT OF ANALYSIS

RUN DATE 09/16/92
PAGE 1

WORK ORDER NUMBER 3-3339
CUSTOMER P.O. NUMBER 04-0029403-012
DATE RECEIVED 08/21/92
DELIVERY DATE 09/23/92

ERIC SMITH
MCLAREN/HART
16755 VON KARMAN AVE
IRVINE CA 92714

SOIL

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP TIME	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M %	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAB.
✓ 87180	8803017SA	90119	1922	03/17	H-3	L.T. 3. E-02		09/14		5
✓ 87181	8803079SA	90113	1921	03/17	H-3	L.T. 4. E-02		09/14		5
✓ 87182	8805089SA	90007	1925	03/18	H-3	L.T. 2. E-02		09/14		5
✓ 87183	8806066SA	89169	1917	03/17	H-3	L.T. 3. E-02		09/14		5
✓ 87184	8813010SA	88925	1913	03/17	H-3	L.T. 2. E-02		09/14		5
87185	8816002SA	89857	2161	04/22	H-3	1.5 +-0.3 E-01		09/14		5
87186	8816003SA	89863	2162	04/22	H-3	3.1 +-0.3 E-01		09/14		5
87187	8816004SA	89869	2163	04/22	H-3	5.9 +-0.6 E-01		09/14		5
87188	8816005SA	89875	2164	04/22	H-3	3.7 +-0.4 E-01		09/14		5
✓ 87189	8803092SA	90107	1920	03/17	H-3	L.T. 3. E-02		09/14		5

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TELEDYNE ISOTOPES

REPORT OF ANALYSIS

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WORK ORDER NUMBER

ERIC SMITH
MCLAREN/HART
16755 VON KARMAN AVE
IRVINE CA 92714

CUSTOMER P.O. NUMBER

04-0029403-012

DATE RECEIVED

08/21/92

DELIVERY DATE

09/23/92

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP TIME	NUCLIDE	ACTIVITY IPC/GM DRY	NUCL-UNIT-% U/M	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAB.
✓ 87180	8803017SA	90119	1922	03/17	H-3	L.T. 3.	E-02	09/14		5
✓ 87181	8803079SA	90113	1921	03/17	H-3	L.T. 4.	E-02	09/14		5
✓ 87182	8805089SA	90007	1925	03/18	H-3	L.T. 2.	E-02	09/14		5
✓ 87183	8806066SA	89169	1917	03/17	H-3	L.T. 3.	E-02	09/14		5
✓ 87184	8813010SA	88925	1913	03/17	H-3	L.T. 2.	E-02	09/14		5
87185	8816002SA	89857	2161	04/22	H-3	1.5 +-0.3	E-01	09/14		5
87186	8816003SA	89863	2162	04/22	H-3	3.1 +-0.3	E-01	09/14		5
87187	8816004SA	89869	2163	04/22	H-3	5.9 +-0.6	E-01	09/14		5
87188	8816005SA	89875	2164	04/22	H-3	3.7 +-0.4	E-01	09/14		5
✓ 87189	8803092SA	90107	1920	03/17	H-3	L.T. 3.	E-02	09/14		5

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TELEDYNE ISOTOPIES

REPORT OF ANALYSIS

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WORK ORDER NUMBER

CUSTOMER P.O. NUMBER

DATE RECEIVED

DELIVERY DATE

ERIC SMITH

MCLAREN/HART

16755 VON KARMAN AVE

IRVINE CA

3-3339

04-0029403-012

08/21/92

09/23/92

92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-X U/M	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-X	LAB.
✓ 87180	8803017SA 90119	1922	03/17		H-3	L.T. 3. E-02		09/14		5
✓ 87181	8803079SA 90113	1921	03/17		H-3	L.T. 4. E-02		09/14		5
✓ 87182	8805089SA 90007	1925	03/18		H-3	L.T. 2. E-02		09/14		5
✓ 87183	8806066SA 89169	1917	03/17		H-3	L.T. 3. E-02		09/14		5
✓ 87184	8813010SA 88925	1913	03/17		H-3	L.T. 2. E-02		09/14		5
87185	8816002SA 89857	2161	04/22		H-3	1.5 +-0.3 E-01		09/14		5
87186	8816003SA 89863	2162	04/22		H-3	3.1 +-0.3 E-01		09/14		5
87187	8816004SA 89869	2163	04/22		H-3	5.9 +-0.6 E-01		09/14		5
87188	8816005SA 89875	2164	04/22		H-3	3.7 +-0.4 E-01		09/14		5
✓ 87189	8803092SA 90107	1920	03/17		H-3	L.T. 3. E-02		09/14		5

LAST PAGE OF REPORT

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WATER

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Modified {a}

Preparation Method: EPA 5030

Lab Project-Sample ID: 5868-90

Page 1 of 2

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB16001BWH

Sample Number: 197301

Matrix: Water

Date Sampled: 4/22/92

Date Received: 4/23/92

Date Analyzed: 4/27/92

Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/L (ppb)	REPORTING LIMIT ug/L (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Modified

Preparation Method: EPA 5030

Lab Project-Sample ID: 5868-90

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/L (ppb)	REPORTING LIMIT ug/L (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	100	76 - 114
Toluene-D8	100	88 - 110
4-Bromofluorobenzene	99	86 - 115

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Modified {a}

Preparation Method: EPA 5030

Lab Project-Sample ID: 5879-1

Page 1 of 2

Project Name: Rocketdyne

Project Number: 040029403012

Sample Description: BB16RD30-WH

Sample Number: 197861

Matrix: Water

Date Sampled: 4/23/92

Date Received: 4/25/92

Date Analyzed: 4/30/92

Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/L (ppb)	REPORTING LIMIT ug/L (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....	3	5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....	13	5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....	38	5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Modified

Preparation Method: EPA 5030

Lab Project-Sample ID: 5879-1

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/L (ppb)	REPORTING LIMIT ug/L (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	101	76 - 114
Toluene-D8	101	88 - 110
4-Bromofluorobenzene	106	86 - 115

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 5/11/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



POLYNUCLEAR AROMATICS
Analytical Method: EPA 610
Preparation Method: EPA 3510

Lab Project-Sample ID: 5879-2
Project Name: Rocketdyne
Project Number: 040029403012

Sample Description: BB16001BWG
Sample Number: 197305
Date Sampled: 4/23/92
Date Extracted: 4/29/92
Batch Number: 920429-1902

Matrix: Water
Date Received: 4/25/92
Date Analyzed: 5/01/92
Dilution Factor: 1

ANALYTE	ANALYTE CONCENTRATION {a} = ug/L (ppb)	REPORTING LIMIT ug/L (ppb)
Naphthalene.....		10
Acenaphthylene.....		10
Acenaphthene.....		10
Fluorene.....		10
Phenanthrene.....		10
Anthracene.....		10
Fluoranthene.....		10
Pyrene.....		10
Benzo(a)anthracene.....		20
Chrysene.....		20
Benzo(b)fluoranthene.....		20
Benzo(k)fluoranthene.....		20
Benzo(a)pyrene.....		20
Indeno(1,2,3-c,d)pyrene.....		50
Dibenz(a,h)anthracene.....		50
Benzo(g,h,i)perylene.....		50

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorobiphenyl	91	43 - 116

COMMENTS:

{a} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected.

Approved by: Nancy McDonald for CM Date: 5/12/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3010 {a}

ab Project-Sample ID: 5879-3

Project Name: Rocketdyne
Project Number: 040029403012

Sample Description: BB16001BWF
Sample Number: 197312

Matrix: Water

Date Sampled: 4/23/92
Date Digested: 4/29/92 {b}

Date Received: 4/25/92
Batch Number: 920429-1301 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} ug/L (ppb)	DILUTION FACTOR	REPORTING LIMIT ug/L (ppb)	DATE ANALYZED
Antimony (Sb)/6010.....		1	50	5/01/92
Arsenic (As)/7060.....		1	10	5/01/92
Beryllium (Be)/6010.....		1	5	5/01/92
Cadmium (Cd)/6010.....		1	10	5/01/92
Chromium (Cr)/6010.....		1	10	5/01/92
Copper (Cu)/6010.....		1	20	5/01/92
Lead (Pb)/7421.....		1	3	5/01/92
Mercury (Hg)/7470.....		1	.5	4/30/92
Nickel (Ni)/6010.....		1	20	5/01/92
Selenium (Se)/7740.....		1	5	4/30/92
Silver (Ag)/6010.....		1	10	5/01/92
Thallium (Tl)/7841.....		1	10	5/01/92
Zinc (Zn)/6010.....		1	20	5/01/92

COMMENTS:

- {a} Applies to all metals except As, Pb, Se, Tl and Hg. EPA Method 3020 used for As, Pb, Se and Tl digestion. EPA Method 7470 used for Hg digestion.
- {b} Applies to all metals except As, Pb, Se, Tl and Hg. As, Pb, Se and Tl were digested on 4/29/92, Batch # 920429-1302 ; and Hg was digested on 4/29/92, Batch # 920429-1303 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald Loren Date: 5/11/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



Table: Results of the analyses for iodine-129 in three (3) and strontium-90 in fifteen (15) water samples.

Sample ID Number	Sample Description	Collection Date	Lab Code	Concentration pCi/L			
				I-129	Date Analyzed	Sr-90	Date Analyzed
197855	BB16RD30WA	04/23/92	SPW-2139	ND		<0.3	06/06
197874	BB19003WA	04/23/92	2140	ND		<0.4	06/06
197310	BB16001BWA	04/23/92	2141	ND		1.8±0.5	06/06
197317	BB16001AWA	04/23/92	2142	ND		1.1±0.3	06/06
197890	DCWA	04/23/92	2143	ND		<0.4	06/06
197891	Dup. SPW-2143	04/23/92	2144	ND		<0.3	06/06
197311	BB16001BWC	04/23/92	2145	<1.8	06/09	ND	
197893	DCWC	04/23/92	2146	<2.0	06/09	ND	
197894	Dup. SPW-2146	04/23/92	2147	<2.6	06/09	ND	
197122	BB18003WC	04/21/92	2148	<1.6	06/10	ND	
197123	BB00001WC	04/21/92	2149	<1.7	06/11	ND	
197109	BB18003WA	04/21/92	2150	ND		<0.3	06/06
197110	BB00001WA	04/21/92	2151	ND		1.0±0.4	06/06
197130	BB18000RA	04/21/92	2152	ND		<0.3	06/06
171835	✓ BB1WA	04/21/92	2153	ND		<0.4	06/06
171836	Dup. SPW-2153	04/21/92	2154	ND		<0.3	06/06
197135	BB18000RC	04/21/92	2155	<1.7	06/11	ND	
171838	✓ BB1WC	04/21/92	2156	<1.7	06/11	ND	
171839	Dup. SPW-2156	04/21/92	2157	<1.6	06/11	ND	

Less than (<) values are based on 3 sigma counting error for background sample. The error given is the probable counting error at 95% confidence level.

ND - no data, analysis not required.

TRILEADYNE ISOTOPIES

REPORT OF ANALYSIS

RUN DATE 10/02/92

PAGE 1

WORK ORDER NUMBER

3-3759

CUSTOMER P.O. NUMBER

04-0029403-012

DATE RECEIVED

09/16/92

DELIVERY DATE

10/19/92

ERIC SMITH

MCLAREN/HART

16755 VON KARMAN AVE

IRVINE CA

92714

WATER - SURFACE

TRILEADYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/LITER)	NUCL-UNIT-% U/M	MTO-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAB.
74407	197308 R816001ME		04/23 0950		H-3	1.3 ±0.7 E 02		09/19		5
74411	197315 B816001AME		04/23 1350		H-3	1.5 ±0.1 E 03		09/19		5

J. Guenther

LAST PAGE OF REPORT

APPROVED BY J. GUENTHER 10/02/92

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2 - GAS LAB.

3 - RADIO CHEMISTRY LAB.

4 - CELLI GAMMA SPEC LAB.

5 - TRITIUM GAS/L.S. LAB.

6 - ALPHA SPEC LAB.

These are reanalyses as requested by the customer.

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

RUN DATE 07/07/92

PAGE 1

DATE RECEIVED 04/27/92

CUSTOMER P.O. NUMBER 04-0029403-012

WORK ORDER NUMBER 3-1298

DELIVERY DATE 05/30/92

3-1298

ERIC SMITH
MCLAREN/HART
16755 VON KARMAN AVE
IRVINE CA 92714

WATER - SURFACE

TELEDYNE SAMPLE NUMBER 74401 197870 RB19003WD

CUSTOMER'S IDENTIFICATION STA NUM

COLLECTION-DATE

START STOP

DATE TIME DATE TIME

NUCLIDE

ACTIVITY (PCI/LITER)

NUCL-UNIT-% U/M

MID-COUNT

TIME

DATE

VOLUME - UNITS

ASH-WGHT-%

LAB.

74401	197870	RB19003WD	04/23	0830	BE-7	L.T.	4.	E 01			05/24	4	
					K-40	L.T.	5.	E 01			05/24	4	
					MN-54	L.T.	3.	E 00			05/24	4	
					CD-58	L.T.	4.	E 00			05/24	4	
					FE-59	L.T.	1.	E 01			05/24	4	
					CD-60	L.T.	3.	E 00			05/24	4	
					ZN-65	L.T.	7.	E 00			05/24	4	
					ZR-95	L.T.	4.	E 00			05/24	4	
					RU-103	L.T.	6.	E 00			05/24	4	
					RU-106	L.T.	3.	E 01			05/24	4	
					I-131	L.T.	5.	E 01			05/24	4	
					CS-134	L.T.	3.	E 00			05/24	4	
					CS-137	L.T.	3.	E 00			05/24	4	
					BA-140	L.T.	2.	E 01			05/24	4	
					CE-141	L.T.	9.	F 00			05/24	4	
					CE-144	L.T.	2.	E 01			05/24	4	
					RA-226	L.T.	6.	E 01			05/24	4	
					TH-228	L.T.	6.	E 00			05/24	4	
74402	197871	RB19003WI	04/23	0830	GR-A	L.T.	4.	E 00			05/08	3	
					GP-R	4.9	+2.5	E 00			05/08	3	
74403	197872	RB19003WF	04/23	0830	H-3	L.T.	1.	F 02			06/27	5	
74404	197873	RB19003WA	04/23	0830	PU-238	L.T.	4.	E-01			05/23	6	
					PU-239	L.T.	3.	E-01			05/23	6	
74405	197306	RB16001WD	04/23	0950	BE-7	L.T.	3.	F 01			05/24	4	
					K-40	L.T.	5.	E 01			05/24	4	
					MN-54	L.T.	3.	F 00			05/24	4	
					CD-58	L.T.	3.	F 00			05/24	4	
					FE-59	L.T.	8.	F 00			05/24	4	
					CD-60	L.T.	3.	E 00			05/24	4	

TELEDYNE ISOTOPIES

REPORT OF ANALYSIS

PRINT DATE 07/07/92

PAGE 2

DATE RECEIVED 04/27/92
DELIVERY DATE 05/30/92CUSTOMER P.O. NUMREP
04-0029403-012WORK ORDER NUMBER
3-1298ERIC SMITH
MCLAREN/HART
14755 VON KARMAN AVE
IRVINE CA 92714

WATER - SURFACE

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY I PCT/LITER	NUCL-UNIT-% U/M	MIC-COUNT		VOLUME - UNITS ASH-WGHT-%	LAB.
			START DATE	STOP DATE				TIME DATE	TIME DATE		
74405	197306 BB16001WD		04/23	0950	ZN-65	L.T. 5. F 00		05/24			4
					ZR-95	L.T. 3. F 00		05/24			4
					RU-103	L.T. 5. E 00		05/24			4
					RU-106	L.T. 2. E 01		05/24			4
					I-131	L.T. 4. E 01		05/24			4
					CS-134	L.T. 3. E 00		05/24			4
					CS-137	L.T. 2. E 00		05/24			4
					BA-140	L.T. 2. E 01		05/24			4
					CE-141	L.T. 9. E 00		05/24			4
					CE-144	L.T. 2. E 01		05/24			4
					RA-226	L.T. 6. E 01		05/24			4
					TH-228	L.T. 6. F 00		05/24			4
74406	197307 BB16001RHT		04/23	0950	GR-A	L.T. 5. E 00		05/08			3
					GR-B	2.5 +-0.4 E 01		05/08			3
74407	197308 BB16001ME		04/23	0950	H-3	L.T. 1. F 02		06/27			5
					PU-238	L.T. 2. E-01		05/23			4
74408	197309 BB16001RWB		04/23	1140	PU-239	L.T. 6. F-02		05/23			4
					BE-7	L.T. 4. E 01		05/24			4
74409	197313 BB16001AWD		04/23	1330	K-40	L.T. 9. F 01		05/24			4
					MN-54	L.T. 3. E 00		05/24			4
					CO-58	L.T. 4. E 00		05/24			4
					FE-59	L.T. 1. E 01		05/24			4
					CO-60	L.T. 4. F 00		05/24			4
					ZN-65	L.T. 7. E 00		05/24			4
					ZR-95	L.T. 5. E 00		05/24			4
					RU-103	L.T. 6. F 00		05/24			4
					RU-106	L.T. 3. F 01		05/24			4
					I-131	L.T. 5. E 01		05/24			4
					CS-134	L.T. 4. F 00		05/24			4

TELETYPE ISOTOPE

REPORT OF ANALYSIS

RUN DATE 07/07/92

PAGE 3

WORK ORDER NUMBER

CUSTOMER P.O. NUMBER

DATE RECEIVED

DELIVERY DATE

ERIC SMITH
MCLAREN/HART
16755 VON KARMAN AVE
IRVINE CA

3-1298

04-0029403-012

04/27/92

05/30/92

92714

WATER - SURFACE

TELETYPE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/LITER)	NUCL-UNIT-% U/M #	MID-COUNT		VOLUME - UNITS ASH-WGHT-%	LAR.
			START DATE	STOP DATE				TIME DATE	TIME		
74409	197313 BB16001AWD		04/23	1330	CS-137	L.T. 3. E 00		05/24			4
					BA-140	L.T. 2. E 01		05/24			4
					CE-141	L.T. 9. E 00		05/24			4
					CE-144	L.T. 2. E 01		05/24			4
					RA-226	L.T. 6. E 01		05/24			4
					TH-228	L.T. 6. E 00		05/24			4
74410	197314 BB16001AW1		04/23	1330	GR-A	L.T. 5. E 00		05/08			3
					GR-B	2.0 +-0.4 E 01		05/08			3
74411	197315 BB16001AWE		04/23	1350	H-3	1.5 +-0.1 E 03		06/28			5
74412	197316 BB16001AWR		04/23	1350	PU-238	L.T. 8. E-01		05/23			6
					PU-239	L.T. 6. E-01		05/23			6
74413	197892 DCWR		04/23	1400	PU-238	L.T. 8. E-01		05/23			6
					PU-239	L.T. 2. E-01		05/23			6
74414	197895 DCW0		04/23	1400	DE-7	L.T. 4. E 01		05/26			4
					K-40	L.T. 6. E 01		05/26			4
					MN-54	L.T. 3. E 00		05/26			4
					CO-58	L.T. 4. E 00		05/26			4
					FE-59	L.T. 1. E 01		05/26			4
					CO-60	L.T. 4. E 00		05/26			4
					ZN-65	L.T. 7. E 00		05/26			4
					ZR-95	L.T. 4. E 00		05/26			4
					RU-103	L.T. 6. E 00		05/26			4
					RU-106	L.T. 3. F 01		05/26			4
					I-131	L.T. 6. E 01		05/26			4
					CS-134	L.T. 3. F 00		05/26			4
					CS-137	L.T. 4. E 00		05/26			4
					BA-140	L.T. 2. E 01		05/26			4
					CE-141	L.T. 1. E 01		05/26			4

TELETYPE ISOTYPES

REPORT OF ANALYSIS

PUN DATE 07/07/92

WORK ORDER NUMBER

CUSTOMER P.O. NUMBER

DATE RECEIVED

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04-0029403-012

05/30/92

ERIC SMITH
MCLAREN/HART
16255 VON KARMAN AVE
IRVINE CA 92714

WATER - SURFACE

TELETYPE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/LITER)	NUCL-UNIT-X U/M %	MID-COUNT		VOLUME - UNITS ASH-WGHT-X %	LAB.
			START DATE	STOP DATE				TIME	DATE		
74392	171037	FB1WB	04/23	1115	PU-238	1.1. 3. E-01		05/26	05/26		6
					PU-239	1.1. 1. E-01		05/26	05/26		6
74393	171040-1	FB1WD	04/23	1115	BE-7	1.1. 4. F 01		05/26	05/26		4
					K-40	1.1. 5. F 01		05/26	05/26		4
					MN-54	1.1. 3. E 00		05/26	05/26		4
					CO-58	1.1. 4. E 00		05/26	05/26		4
					FE-59	1.1. 1. E 01		05/26	05/26		4
					CO-60	1.1. 4. E 00		05/26	05/26		4
					ZN-65	1.1. 8. E 00		05/26	05/26		4
					ZR-95	1.1. 4. F 00		05/26	05/26		4
					RU-103	1.1. 6. E 00		05/26	05/26		4
					RU-106	1.1. 3. F 01		05/26	05/26		4
					I-131	1.1. 6. E 01		05/26	05/26		4
					CS-134	1.1. 4. E 00		05/26	05/26		4
					CS-137	1.1. 5. E 00		05/26	05/26		4
					RA-140	1.1. 2. F 01		05/26	05/26		4
					CE-141	1.1. 1. F 01		05/26	05/26		4
					CE-144	1.1. 3. F 01		05/26	05/26		4
					RA-226	1.1. 7. E 01		05/26	05/26		4
					TH-228	1.1. 7. E 00		05/26	05/26		4
74394	17042	FB1WF	04/23	1115	H-3	1.1. 1. F 02		06/25	06/25		5
74395	197051	BB160010WD	04/23	1400	BE-7	1.1. 5. F 01		05/24	05/24		4
					K-40	1.1. 5. F 01		05/24	05/24		4
					MN-54	1.1. 4. F 00		05/24	05/24		4
					CO-58	1.1. 4. E 00		05/24	05/24		4
					FE-59	1.1. 1. E 01		05/24	05/24		4
					CO-60	1.1. 4. E 00		05/24	05/24		4
					ZN-65	1.1. 8. E 00		05/24	05/24		4
					ZR-95	1.1. 5. E 00		05/24	05/24		4
					RU-103	1.1. 7. E 00		05/24	05/24		4

TELETYPE ISOTOPES

REPORT OF ANALYSIS

RUN DATE 07/07/92

WORK ORDER NUMBER

3-1297

CUSTOMER P.O. NUMBER

04-0029403-012

DATE RECEIVED

04/27/92

DELIVERY DATE

05/30/92

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ERIC SMITH
MCLAREN/HART
16755 VON KARMAN AVE
IRVINE CA 92714

WATER - SURFACE

TELETYPE SAMPLE NUMBER

74395

CUSTOMER'S IDENTIFICATION

0816R030M

STA NUM

04/23 1400

COLLECTION-DATE

RU-106

NUCLIDE

ACTIVITY (PC/LITER)

1.1. 4. E 01

NUCL-UNIT-X U/M

05/24

MID-COUNT TIME

DATE

VOLUME - UNITS

ASH-WGHT-X %

LAB.

74396

0816R030M

04/23 1400

GR-A

1.1. 4. E 00

06/18

DATE

VOLUME - UNITS

ASH-WGHT-X %

LAB.

74397

0816R030M

04/23 1400

H-3

1.1. 1. E 02

06/25

DATE

VOLUME - UNITS

ASH-WGHT-X %

LAB.

74398

0816R030M

04/23 1400

PU-238

1.1. 3. E-01

05/26

DATE

VOLUME - UNITS

ASH-WGHT-X %

LAB.

LAST PAGE OF REPORT

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APPROVED BY J. GUENTHER 07/07/92

2 - GAS LAB.

3 - RADIO CHEMISTRY LAB.

4 - GELIUM GAMMA SPEC LAB.

5 - TRITIUM GAS/L.S. LAB.

6 - ALPHA SPEC LAB.



VOLATILE ORGANIC COMPOUNDS

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868-40

Page 1 of 2

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB17001SE
Sample Number: 89305

Matrix: Soil

Date Sampled: 4/21/92
Date Analyzed: 5/01/92

Date Received: 4/23/92
Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868- 40

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	91	70 - 121
Toluene-D8	115	81 - 117
4-Bromofluorobenzene	85	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for cm Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868-43

Page 1 of 2

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB17002SE
Sample Number: 89311

Matrix: Soil

Date Sampled: 4/21/92
Date Analyzed: 5/01/92

Date Received: 4/23/92
Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868- 43

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	98	70 - 121
Toluene-D8	116	81 - 117
4-Bromofluorobenzene	83	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868-46

Page 1 of 2

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: ~~BB17003SE~~
Sample Number: 89317

Matrix: Soil

Date Sampled: 4/21/92
Date Analyzed: 5/01/92

Date Received: 4/23/92
Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868- 46

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	87	70 - 121
Toluene-D8	117	81 - 117
4-Bromofluorobenzene	84	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846,
3rd Edition for Method 8240.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated
values. No entry in "Analyte Concentration" means the compound
is not detected at all.

Approved By: Nancy McDonald Loren Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868-49

Page 1 of 2

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BBI7004SE
Sample Number: 89323

Matrix: Soil

Date Sampled: 4/21/92
Date Analyzed: 5/01/92

Date Received: 4/23/92
Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....	2	5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868- 49

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	92	70 - 121
Toluene-D8	116	81 - 117
4-Bromofluorobenzene	86	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



SEMI-VOLATILE ORGANIC COMPOUNDS

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-39

Page 1 of 3

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB17001SD
Sample Number: 89304

Matrix: Soil

Date Sampled: 4/21/92
Date Extracted: 4/27/92

Date Received: 4/23/92
Date Analyzed: 4/28/92

Batch Number: 920427-1901

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-39

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-39

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	65	25 - 121
Phenol-d5.....	68	24 - 113
Nitrobenzene-d5.....	60	23 - 120
2-Fluorobiphenyl.....	62	30 - 115
2,4,6-Tribromophenol.....	78	19 - 122
Terphenyl-d14.....	92	18 - 137

COMMENTS:

{a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.

{b} Additional compounds.

{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM
Cheryl Matterson, Associate Chemist

Date: 5/06/92

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-42

Page 1 of 3

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB17002SD
Sample Number: 89310

Matrix: Soil

Date Sampled: 4/21/92
Date Extracted: 4/27/92

Date Received: 4/23/92
Date Analyzed: 4/28/92

Batch Number: 920427-1901

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



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SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-42

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-42

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	74	25 - 121
Phenol-d5.....	70	24 - 113
Nitrobenzene-d5.....	60	23 - 120
2-Fluorobiphenyl.....	61	30 - 115
2,4,6-Tribromophenol.....	76	19 - 122
Terphenyl-d14.....	84	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-45

Page 1 of 3

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB17003SD

Sample Number: 89316

Matrix: Soil

Date Sampled: 4/21/92

Date Received: 4/23/92

Date Extracted: 4/27/92

Date Analyzed: 4/28/92

Batch Number: 920427-1901

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-45

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



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SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-45

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	69	25 - 121
Phenol-d5.....	66	24 - 113
Nitrobenzene-d5.....	58	23 - 120
2-Fluorobiphenyl.....	61	30 - 115
2,4,6-Tribromophenol.....	81	19 - 122
Terphenyl-d14.....	94	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-48

Page 1 of 3

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: ~~BBI~~7004SD
Sample Number: 89322

Matrix: Soil

Date Sampled: 4/21/92
Date Extracted: 4/27/92

Date Received: 4/23/92
Date Analyzed: 4/28/92

Batch Number: 920427-1901

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-48

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-48

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	65	25 - 121
Phenol-d5.....	65	24 - 113
Nitrobenzene-d5.....	63	23 - 120
2-Fluorobiphenyl.....	63	30 - 115
2,4,6-Tribromophenol.....	79	19 - 122
Terphenyl-d14.....	91	18 - 137

COMMENTS:

{a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.

{b} Additional compounds.

{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald Serem
Cheryl Matterson, Associate Chemist

Date: 5/06/92

The cover letter and attachments are integral parts of this report.



METALS

PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5868-41

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: **BB17001SF**
Sample Number: 89306

Matrix: Soil

Date Sampled: 4/21/92
Date Digested: 4/27/92 {b}

Date Received: 4/23/92
Batch Number: 920427-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	5/01/92
Arsenic (As)/7060.....	2.4	1	.50	5/01/92
Beryllium (Be)/6010.....	.39	1	.25	5/04/92
Cadmium (Cd)/6010.....		1	.50	5/01/92
Chromium (Cr)/6010.....	12.	1	1.0	5/01/92
Copper (Cu)/6010.....	6.7	1	1.0	5/01/92
Lead (Pb)/6010.....	9.7	1	2.5	5/01/92
Mercury (Hg)/7471.....		1	.25	4/27/92
Nickel (Ni)/6010.....	6.6	1	1.0	5/01/92
Selenium (Se)/7740.....		1	.25	4/30/92
Silver (Ag)/6010.....		1	1.0	5/01/92
Thallium (Tl)/7841.....		1	.50	5/01/92
Zinc (Zn)/6010.....	42.	1	1.0	5/01/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 4/27/92, Batch # 920427-1102; and Hg was digested on 4/27/92, Batch # 920427-1103 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald Coram Date: 5/07/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5868-44

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB17002SF
Sample Number: 89312

Matrix: Soil

Date Sampled: 4/21/92
Date Digested: 4/27/92 {b}

Date Received: 4/23/92
Batch Number: 920427-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	5/01/92
Arsenic (As)/7060.....	3.0	1	.50	5/01/92
Beryllium (Be)/6010.....	.32	1	.25	5/04/92
Cadmium (Cd)/6010.....		1	.50	5/01/92
Chromium (Cr)/6010.....	16.	1	1.0	5/01/92
Copper (Cu)/6010.....	8.6	1	1.0	5/01/92
Lead (Pb)/6010.....	11.	1	2.5	5/01/92
Mercury (Hg)/7471.....		1	.25	4/27/92
Nickel (Ni)/6010.....	8.4	1	1.0	5/01/92
Selenium (Se)/7740.....		1	.25	4/30/92
Silver (Ag)/6010.....		1	1.0	5/01/92
Thallium (Tl)/7841.....		1	.50	5/01/92
Zinc (Zn)/6010.....	46.	1	1.0	5/01/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 4/27/92, Batch # 920427-1102; and Hg was digested on 4/27/92, Batch # 920427-1103.
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDaniel Serem Date: 5/07/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5868-47

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB17003SF
Sample Number: 89318

Matrix: Soil

Date Sampled: 4/21/92

Date Received: 4/23/92

Date Digested: 4/27/92 {b}

Batch Number: 920427-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	5/01/92
Arsenic (As)/7060.....	2.6	1	.50	5/01/92
Beryllium (Be)/6010.....	.44	1	.25	5/04/92
Cadmium (Cd)/6010.....		1	.50	5/01/92
Chromium (Cr)/6010.....	12.	1	1.0	5/01/92
Copper (Cu)/6010.....	8.3	1	1.0	5/01/92
Lead (Pb)/6010.....	14.	1	2.5	5/01/92
Mercury (Hg)/7471.....		1	.25	4/27/92
Nickel (Ni)/6010.....	8.6	1	1.0	5/01/92
Selenium (Se)/7740.....		1	.25	4/30/92
Silver (Ag)/6010.....		1	1.0	5/01/92
Thallium (Tl)/7841.....		1	.50	5/01/92
Zinc (Zn)/6010.....	40.	1	1.0	5/01/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 4/27/92, Batch # 920427-1102; and Hg was digested on 4/27/92, Batch # 920427-1103 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald Sr. CM Date: 5/07/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5868-50

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: ~~BB17004SF~~
Sample Number: 89324

Matrix: Soil

Date Sampled: 4/21/92
Date Digested: 4/27/92 {b}

Date Received: 4/23/92
Batch Number: 920427-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	5/01/92
Arsenic (As)/7060.....	1.9	1	.50	5/01/92
Beryllium (Be)/6010.....	.46	1	.25	5/04/92
Cadmium (Cd)/6010.....		1	.50	5/01/92
Chromium (Cr)/6010.....	14.	1	1.0	5/01/92
Copper (Cu)/6010.....	8.3	1	1.0	5/01/92
Lead (Pb)/6010.....	14.	1	2.5	5/01/92
Mercury (Hg)/7471.....		1	.25	4/27/92
Nickel (Ni)/6010.....	8.3	1	1.0	5/01/92
Selenium (Se)/7740.....		1	.25	4/30/92
Silver (Ag)/6010.....		1	1.0	5/01/92
Thallium (Tl)/7841.....		1	.50	5/01/92
Zinc (Zn)/6010.....	43.	1	1.0	5/01/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 4/27/92, Batch # 920427-1102; and Hg was digested on 4/27/92, Batch # 920427-1103.
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 5/07/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



RADIONUCLIDES

Table1. Results of the analyses for iodine-129 and strontium-90 in thirty (30) soil samples.

Sample ID Number	Sample Description	Collection Date	Lab Code	Conc. pCi/g wet		Conc. pCi/g dry	
				I-129	Date Analyzed	Sr-90	Date Analyzed
89575	BB15005SA	04/22/92	SPS-2158	<0.2	06/30	<0.01	07/11
89581	BB00007SA	04/22/92	SPS-2159	<0.3	06/30	0.02±0.02	07/11
89851	BB16001BSA	04/22/92	SPS-2160	<0.3	06/30	0.03±0.01	07/11
89857	BB16002SA ₃	04/22/92	SPS-2161	<0.3	07/11	0.09±0.01	07/15
89863	BB16002SA	04/22/92	SPS-2162	<0.3	07/20	0.02±0.01	07/16
89869	BB16004SA	04/22/92	SPS-2163	<0.3	07/11	0.15±0.02	07/15
89875	BB16005SA	04/22/92	SPS-2164	<0.3	07/07	0.04±0.01	08/11
89881	BB00006SA	04/22/92	SPS-2165	<0.2	07/07	0.12±0.02	07/15
89892	BB16001ASA	04/22/92	SPS-2166	<0.3	07/07	0.08±0.01	07/16
89301	BB17001SA	04/21/92	SPS-2167	<0.3	07/08	0.01±0.01	07/16
89307	BB17002SA	04/21/92	SPS-2168	<0.3	07/08	0.02±0.01	07/11
89313	BB17003SA	04/21/92	SPS-2169	<0.2	07/08	0.01±0.01	07/16
89319	BB17004SA	04/21/92	SPS-2170	<0.2	07/08	0.03±0.01	08/11
Dup	BB17004SA	04/21/92	SPS-2170D	<0.2	07/08	0.02±0.01	08/11
89551	BB15001SA	04/21/92	SPS-2171	<0.3	07/09	0.01±0.01	08/11
89557	BB15002SA	04/21/92	SPS-2172	<0.3	07/09	<0.01	07/16
89563	BB15003SA	04/21/92	SPS-2173	<0.3	07/10	0.01±0.01	07/15
89569	BB15004SA	04/21/92	SPS-2174	<0.2	07/10	<0.01	07/11
90151	BB18001ASA	04/21/92	SPS-2175	<0.3	07/10	0.02±0.01	07/16
90157	BB18002ASA	04/21/92	SPS-2176	<0.3	07/13	0.02±0.01	08/11
90163	BB18002SA	04/21/92	SPS-2177	<0.3	07/13	<0.01	07/11
90170	BB18003SA	04/21/92	SPS-2178	<0.2	07/13	0.01±0.01	07/15
89219	BB18001SA	04/21/92	SPS-2179	<0.3	07/14	0.02±0.01	08/11
89225	BB18003ASA	04/21/92	SPS-2180	<0.2	07/14	<0.01	07/16
89213	BB18003BSA	04/21/92	SPS-2181	<0.3	07/14	<0.01	07/16
89207	BB18002BSA	04/21/92	SPS-2182	<0.3	07/18	0.02±0.01	08/11
89201	BB18001BSA	04/21/92	SPS-2183	<0.3	07/17	0.01±0.01	08/11
90401	BB19001SA	04/23/92	SPS-2184	<0.3	07/17	0.08±0.02	08/11
90407	BB19002SA	04/23/92	SPS-2185	<0.3	07/18	0.09±0.02	08/11
90413	BB19003SA	04/23/92	SPS-2186	<0.3	07/18	0.02±0.01	08/11
90419	BB19004SA	04/23/92	SPS-2187	<0.3	07/18	0.03±0.01	08/11

The error given is the probable counting error at 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

 ADDITIONAL DATA 10/06/92
 RUN DATE 06/17/92

 WORK ORDER NUMBER 3-1294
 CUSTOMER P.O. NUMBER 04-0029403-012
 DATE RECEIVED 04/27/92
 DELIVERY DATE 05/30/92
 PAGE 4

 ERIC SMITH
 MCLAREN/HART
 16755 VON KARMAN AVE
 IRVINE CA 92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	TIME	STOP DATE	SAMPLE	NUCLIDE	ACTIVITY (PC/GM DRY)	NUCL-UNIT-% U/M	MIO-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAB.
74323	89227	8818002ASC	04/21	1110		PU-238	NOT RECEIVED	1.9 +-0.6 E-01		06/06		3
74324	89302	88170015B	04/21	1545		PU-239		L.T. 2. E-02		06/06		6
74325	89303	88170015C	04/21	1545		BE-7		L.T. 4. E-01		05/22		4
						K-40		2.23+-0.22E 01		05/22		4
						MN-54		L.T. 4. E-02		05/22		4
						CO-58		L.T. 5. E-02		05/22		4
						FE-59		L.T. 1. E-01		05/22		4
						CO-60		L.T. 4. E-02		05/22		4
						ZN-65		L.T. 1. E-01		05/22		4
						ZA-95		L.T. 6. E-02		05/22		4
						RU-103		L.T. 5. E-02		05/22		4
						RU-106		L.T. 3. E-01		05/22		4
						I-131		L.T. 5. E-01		05/22		4
						CS-134		L.T. 5. E-02		05/22		4
						CS-137		7.71+-3.21E-02		05/22		4
						BA-140		L.T. 2. E-01		05/22		4
						CE-141		L.T. 9. E-02		05/22		4
						CE-144		L.T. 2. E-01		05/22		4
						RA-226		2.35+-0.54E 00		05/22		4
						TH-228		1.22+-0.12E 00		05/22		4
						H-3		2.7 +-1.7 E-02		06/09		5
74326	89308	88170025B	04/21	1520		PU-238		5.5 +-2.4 E-02		06/06		6
						PU-239		L.T. 5. E-03		06/06		6
74327	89309	88170025C	04/21	1520		BE-7		L.T. 5. E-01		05/22		4
						K-40		2.06+-0.21E 01		05/22		4
						MN-54		L.T. 4. E-02		05/22		4
						CO-58		L.T. 5. E-02		05/22		4
						FE-59		L.T. 1. E-01		05/22		4

The second analysis of T1#74324 for Pu-238 gave the result of L.T. 9. E-03 pCi/g. Statistical variations in the sample count rate and the background rate probably caused the small, positive first results which had relatively large counting errors.

Handwritten:
 10 1 11

TELEDYNE I PES

REPORT OF ANALYSIS

RUN DATE 06/17/92

WORK ORDER NUMBER

ERIC SMITH
MCLAREN/HART
16755 VON KARMAN AVE
IRVINE CA 92714

3-1294

CUSTOMER P.O. NUMBER

04-0029403-012

DATE RECEIVED

04/27/92

DELIVERY DATE

05/30/92

PAGE 5

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	TIME	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M %	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-% *	LAR.
74327	89309	88170025C	04/21	1520	CO-60	L.T. 4. E-02		05/22		4
					ZN-65	L.T. 1. E-01		05/22		4
					ZR-95	L.T. 6. E-02		05/22		4
					RU-103	L.T. 5. E-02		05/22		4
					RU-106	L.T. 3. E-01		05/22		4
					I-131	L.T. 5. E-01		05/22		4
					CS-134	L.T. 5. E-02		05/22		4
					CS-137	1.58+-0.39E-01		05/22		4
					BA-140	L.T. 2. E-01		05/22		4
					CE-141	L.T. 1. E-01		05/22		4
					CE-144	L.T. 2. E-01		05/22		4
					RA-226	1.67+-0.59E 00		05/22		4
					TH-228	1.06+-0.11E 00		05/22		4
					H-3	L.T. 2. E-02		06/09		5
74328	89314	88170035B	04/21	1510	PU-238	5.5 +-3.1 E-02		06/06		6
					PU-239	L.T. 7. E-03		06/06		6
74329	89315	88170035C	04/21	1510	BE-7	L.T. 4. E-01		05/26		4
					K-40	2.02+-0.20E 01		05/26		4
					MN-54	L.T. 4. E-02		05/26		4
					CO-58	L.T. 5. E-02		05/26		6
					FE-59	L.T. 1. E-01		05/26		4
					CO-60	L.T. 4. E-02		05/26		4
					ZN-65	L.T. 8. E-02		05/26		4
					ZR-95	L.T. 6. E-02		05/26		4
					RU-103	L.T. 6. E-02		05/26		4
					RU-106	L.T. 3. E-01		05/26		4
					I-131	L.T. 7. E-01		05/26		4
					CS-134	L.T. 5. E-02		05/26		4
					CS-137	1.25+-0.26E-01		05/26		4
					BA-140	L.T. 3. E-01		05/26		4
					CE-141	L.T. 1. E-01		05/26		4

TELEDYNE I PFS
REPORT OF ANALYSIS

ADDITIONAL DATA 24/92
ADDITIONAL DATA 07/01/92
RUN DATE 06/17/92

WORK ORDER NUMBER

ERIC SMITH
MCLAREN/HART
16755 VON KARMAN AVE
IRVINE CA 92714

3-1294

CUSTOMER P.O. NUMBER

04-0029403-012

DATE RECEIVED

04/27/92

DELIVERY DATE

05/30/92

PAGE 6

S O I L

TELEDYNE
SAMPLE
NUMBER

CUSTOMER'S
IDENTIFICATION

COLLECTION-DATE
START STOP

DATE TIME DATE TIME NUCLIDE

NUCL-UNIT-%
U/M

ACTIVITY
(PCI/GM DRY)

MID-COUNT
TIME
DATE

VOLUME - UNITS
ASH-WGHT-%

LAB.

74329 89315 88170035C

04/21 1510

CE-144
RA-226
TH-228
H-3

L.T. 2. E-01
2.52+-0.59E 00
1.57+-0.16E 00
3.2 +-0.1 E 00

05/26
05/26
05/26
06/09

4
4
4
5

74330 89320 88170045B

04/21 1500

PU-238
PU-239

L.T. 4. E-02
L.T. 7. E-03

06/06
06/06

6
6

74331 89321 88170045C

04/21 1500

BE-7
K-40
MN-54
CO-58
FE-59
CO-60
ZN-65
ZR-95
RU-103
RU-106
I-131
CS-134
CS-137
BA-140
CE-141
CE-144
RA-226
TH-228
H-3

L.T. 4. E-01
2.17+-0.22E 01
L.T. 4. E-02
L.T. 5. E-02
L.T. 1. E-01
L.T. 4. E-02
L.T. 9. E-02
L.T. 6. E-02
L.T. 3. E-01
L.T. 5. E-01
L.T. 5. E-02
2.27+-0.33E-01
L.T. 2. E-01
L.T. 9. E-02
L.T. 2. E-01
3.06+-0.59E 00
1.41+-0.14E 00
3.4 +-0.1 E 00

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74332 89331 88000065B

04/21 1500

PU-238
PU-239

3.3 +-0.8 E-01
L.T. 1. E-02

06/06
06/06

6
6

SEND 1 COPIES TO MC4805 ERIC SMITH

2 - GAS LAB.

3 - RADIO CHEMISTRY LAB.

4 - GEILII GAMMA SPEC LAB.

5 - TRITIUM GAS/L.S. LAB.

6 - ALPHA SPEC LAB.

LAST PAGE OF REPORT

APPROVED BY J. GUENTHER 06/17/92

The second H-3 analysis of T1#74329 gave result of 3.4 +-0.1 E 00 pCi/g (1.1 +-0.1 E 04 pCi/l).
T1#74331 was analyzed for H-3 a second time on 07/16 with result of 3.2 +-0.1 E 00 pCi/g (9.3 +-0.2 E 03 pCi/l).
Both second analyses were by the gas counting method.

7-24-92



VOLATILE ORGANIC COMPOUNDS

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868-33

Page 1 of 2

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB18001SE
Sample Number: 89223

Matrix: Soil

Date Sampled: 4/21/92
Date Analyzed: 5/04/92

Date Received: 4/23/92
Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868- 33

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	94	70 - 121
Toluene-D8	109	81 - 117
4-Bromofluorobenzene	84	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868-3

Page 1 of 2

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB18001ASE
Sample Number: 90155

Matrix: Soil

Date Sampled: 4/21/92
Date Analyzed: 5/01/92

Date Received: 4/23/92
Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



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VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868- 3

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COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	89	70 - 121
Toluene-D8	114	81 - 117
4-Bromofluorobenzene	89	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868-24

Page 1 of 2

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: ~~BB18001~~BSE
Sample Number: 89205

Matrix: Soil

Date Sampled: 4/21/92
Date Analyzed: 5/01/92

Date Received: 4/23/92
Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868- 24

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COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	96	70 - 121
Toluene-D8	106	81 - 117
4-Bromofluorobenzene	95	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



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VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868-9

Page 1 of 2

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB18002SE
Sample Number: 90168

Matrix: Soil

Date Sampled: 4/21/92
Date Analyzed: 5/01/92

Date Received: 4/23/92
Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868- 9

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COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	94	70 - 121
Toluene-D8	115	81 - 117
4-Bromofluorobenzene	94	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846,
3rd Edition for Method 8240.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated
values. No entry in "Analyte Concentration" means the compound
is not detected at all.

Approved By: Nancy McDonald for CM Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868-6

Page 1 of 2

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB18002ASE

Sample Number: 90161

Matrix: Soil

Date Sampled: 4/21/92

Date Received: 4/23/92

Date Analyzed: 5/01/92

Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



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VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868- 6

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COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	91	70 - 121
Toluene-D8	112	81 - 117
4-Bromofluorobenzene	90	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846,
3rd Edition for Method 8240.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated
values. No entry in "Analyte Concentration" means the compound
is not detected at all.

Approved By: Nancy McDonald Loren Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



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VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868-27

Page 1 of 2

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB18002BSE
Sample Number: 89211

Matrix: Soil

Date Sampled: 4/21/92
Date Analyzed: 5/04/92

Date Received: 4/23/92
Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868- 27

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COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	97	70 - 121
Toluene-D8	99	81 - 117
4-Bromofluorobenzene	94	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846,
3rd Edition for Method 8240.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated
values. No entry in "Analyte Concentration" means the compound
is not detected at all.

Approved By: Danay McDonald Loren Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868-12

Page 1 of 2

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: ~~BB18003SE~~
Sample Number: 90174

Matrix: Soil

Date Sampled: 4/21/92
Date Analyzed: 5/01/92

Date Received: 4/23/92
Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



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VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868- 12

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COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	100	70 - 121
Toluene-D8	106	81 - 117
4-Bromofluorobenzene	102	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald Loren Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868-36

Page 1 of 2

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: ~~8618003ASE~~
Sample Number: 89229

Matrix: Soil

Date Sampled: 4/21/92
Date Analyzed: 5/04/92

Date Received: 4/23/92
Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868- 36

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	92	70 - 121
Toluene-D8	116	81 - 117
4-Bromofluorobenzene	82	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.
- {d} Sample was analyzed on 05/01/92 and exhibited low internal standard recoveries. The sample was reanalyzed on 05/04/92 and again exhibited low internal standard recoveries, indicating the presence of a matrix effect.

Approved By: Nancy McDonald for cm Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868-30

Page 1 of 2

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB18003BSE
Sample Number: 89217

Matrix: Soil

Date Sampled: 4/21/92
Date Analyzed: 5/01/92

Date Received: 4/23/92
Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....	1	5
o-Xylene.....		5
Styrene.....		5

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868- 30

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COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	89	70 - 121
Toluene-D8	110	81 - 117
4-Bromofluorobenzene	87	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



SEMI-VOLATILE ORGANIC COMPOUNDS

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-32

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Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB18001SD
Sample Number: 89222

Matrix: Soil

Date Sampled: 4/21/92
Date Extracted: 4/27/92

Date Received: 4/23/92
Date Analyzed: 4/28/92

Batch Number: 920427-1901

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl) ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl) ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy) methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-32

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-32

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	69	25 - 121
Phenol-d5.....	69	24 - 113
Nitrobenzene-d5.....	61	23 - 120
2-Fluorobiphenyl.....	65	30 - 115
2,4,6-Tribromophenol.....	86	19 - 122
Terphenyl-d14.....	93	18 - 137

COMMENTS:

{a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.

{b} Additional compounds.

{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald LarcM
Cheryl Matterson, Associate Chemist

Date: 5/06/92

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-2

Page 1 of 3

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB18001ASD
Sample Number: 90154

Matrix: Soil

Date Sampled: 4/21/92
Date Extracted: 4/27/92

Date Received: 4/23/92
Date Analyzed: 4/27/92

Batch Number: 920427-1901

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-2

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-2

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	57	25 - 121
Phenol-d5.....	63	24 - 113
Nitrobenzene-d5.....	60	23 - 120
2-Fluorobiphenyl.....	62	30 - 115
2,4,6-Tribromophenol.....	77	19 - 122
Terphenyl-d14.....	83	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald Loren
Cheryl Matterson, Associate Chemist

Date: 5/06/92

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-23

Page 1 of 3

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: **BB18001BSD**
Sample Number: 89204

Matrix: Soil

Date Sampled: 4/21/92
Date Extracted: 4/27/92

Date Received: 4/23/92
Date Analyzed: 4/28/92

Batch Number: 920427-1901

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl) ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl) ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy) methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



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SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-23

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-23

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	69	25 - 121
Phenol-d5.....	68	24 - 113
Nitrobenzene-d5.....	61	23 - 120
2-Fluorobiphenyl.....	62	30 - 115
2,4,6-Tribromophenol.....	82	19 - 122
Terphenyl-d14.....	81	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM
Cheryl Matterson, Associate Chemist

Date: 5/06/92

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-8

Page 1 of 3

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB18002SD
Sample Number: 90167

Matrix: Soil

Date Sampled: 4/21/92
Date Extracted: 4/27/92

Date Received: 4/23/92
Date Analyzed: 4/28/92

Batch Number: 920427-1901

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl) ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-8

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-8

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	63	25 - 121
Phenol-d5.....	67	24 - 113
Nitrobenzene-d5.....	64	23 - 120
2-Fluorobiphenyl.....	67	30 - 115
2,4,6-Tribromophenol.....	84	19 - 122
Terphenyl-d14.....	93	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-5

Page 1 of 3

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB18002ASD
Sample Number: 90160

Matrix: Soil

Date Sampled: 4/21/92
Date Extracted: 4/27/92

Date Received: 4/23/92
Date Analyzed: 4/28/92

Batch Number: 920427-1901

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



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SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-5

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330

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SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-5

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	63	25 - 121
Phenol-d5.....	72	24 - 113
Nitrobenzene-d5.....	64	23 - 120
2-Fluorobiphenyl.....	65	30 - 115
2,4,6-Tribromophenol.....	84	19 - 122
Terphenyl-d14.....	88	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM
Cheryl Matterson, Associate Chemist

Date: 5/06/92

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-26

Page 1 of 3

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB18002BSD
Sample Number: 89210

Matrix: Soil

Date Sampled: 4/21/92
Date Extracted: 4/27/92

Date Received: 4/23/92
Date Analyzed: 4/28/92

Batch Number: 920427-1901

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-26

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



McLarenTM
Hart

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-26

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	60	25 - 121
Phenol-d5.....	64	24 - 113
Nitrobenzene-d5.....	59	23 - 120
2-Fluorobiphenyl.....	66	30 - 115
2,4,6-Tribromophenol.....	84	19 - 122
Terphenyl-d14.....	84	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM
Cheryl Matterson, Associate Chemist

Date: 5/06/92

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-11

Page 1 of 3

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB18003SD
Sample Number: 90173

Matrix: Soil

Date Sampled: 4/21/92
Date Extracted: 4/27/92

Date Received: 4/23/92
Date Analyzed: 4/29/92

Batch Number: 920427-1901

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-11

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-11

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	72	25 - 121
Phenol-d5.....	67	24 - 113
Nitrobenzene-d5.....	57	23 - 120
2-Fluorobiphenyl.....	59	30 - 115
2,4,6-Tribromophenol.....	72	19 - 122
Terphenyl-d14.....	74	18 - 137

COMMENTS:

{a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.

{b} Additional compounds.

{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM
Cheryl Matterson, Associate Chemist

Date: 5/06/92

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-35

Page 1 of 3

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: ~~BB16002ASD~~
Sample Number: 89228

Matrix: Soil

Date Sampled: 4/21/92
Date Extracted: 4/27/92

Date Received: 4/23/92
Date Analyzed: 4/28/92

Batch Number: 920427-1901

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-35

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-35

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SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	41	25 - 121
Phenol-d5.....	53	24 - 113
Nitrobenzene-d5.....	59	23 - 120
2-Fluorobiphenyl.....	62	30 - 115
2,4,6-Tribromophenol.....	74	19 - 122
Terphenyl-d14.....	83	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy M. McDonald Serem Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-29

Page 1 of 3

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB18003BSD
Sample Number: 89216

Matrix: Soil

Date Sampled: 4/21/92
Date Extracted: 4/27/92

Date Received: 4/23/92
Date Analyzed: 4/28/92

Batch Number: 920427-1901

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl) ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl) ether.....	330
4-Methylphenol.....	88 330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy) methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-29

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5868-29

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	58	25 - 121
Phenol-d5.....	58	24 - 113
Nitrobenzene-d5.....	50	23 - 120
2-Fluorobiphenyl.....	55	30 - 115
2,4,6-Tribromophenol.....	72	19 - 122
Terphenyl-d14.....	72	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for cm
Cheryl Matterson, Associate Chemist

Date: 5/06/92

The cover letter and attachments are integral parts of this report.



METALS

PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5868-34

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB18001SF
Sample Number: 89224

Matrix: Soil

Date Sampled: 4/21/92
Date Digested: 4/27/92 {b}

Date Received: 4/23/92
Batch Number: 920427-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	5/01/92
Arsenic (As)/7060.....	8.8	4	2.0	5/01/92
Beryllium (Be)/6010.....	.31	1	.25	5/04/92
Cadmium (Cd)/6010.....		1	.50	5/01/92
Chromium (Cr)/6010.....	9.3	1	1.0	5/01/92
Copper (Cu)/6010.....	6.1	1	1.0	5/01/92
Lead (Pb)/6010.....	26.	1	2.5	5/01/92
Mercury (Hg)/7471.....	.35	1	.25	4/27/92
Nickel (Ni)/6010.....	6.2	1	1.0	5/01/92
Selenium (Se)/7740.....		1	.25	4/30/92
Silver (Ag)/6010.....		1	1.0	5/01/92
Thallium (Tl)/7841.....		1	.50	5/01/92
Zinc (Zn)/6010.....	32.	1	1.0	5/01/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 4/27/92, Batch # 920427-1102; and Hg was digested on 4/27/92, Batch # 920427-1103.
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} The sample for Arsenic was diluted 4 fold to bring target analyte within linear working range.

Approved by: Cheryl Matterson Date: 5/07/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5868-4

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: **BB18001ASF**
Sample Number: 90156

Matrix: Soil

Date Sampled: 4/21/92
Date Digested: 4/27/92 {b}

Date Received: 4/23/92
Batch Number: 920427-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	5/01/92
Arsenic (As)/7060.....	1.9	1	.50	5/01/92
Beryllium (Be)/6010.....		1	.25	5/04/92
Cadmium (Cd)/6010.....		1	.50	5/01/92
Chromium (Cr)/6010.....	6.5	1	1.0	5/01/92
Copper (Cu)/6010.....	3.9	1	1.0	5/01/92
Lead (Pb)/6010.....	9.8	1	2.5	5/01/92
Mercury (Hg)/7471.....		1	.25	4/27/92
Nickel (Ni)/6010.....	4.1	1	1.0	5/01/92
Selenium (Se)/7740.....		1	.25	4/30/92
Silver (Ag)/6010.....		1	1.0	5/01/92
Thallium (Tl)/7841.....		1	.50	5/01/92
Zinc (Zn)/6010.....	25.	1	1.0	5/01/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 4/27/92, Batch # 920427-1102; and Hg was digested on 4/27/92, Batch # 920427-1103.
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM
Cheryl Matterson, Association Chemist

Date: 5/07/92

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5868-25

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB18001BSF
Sample Number: 89206

Matrix: Soil

Date Sampled: 4/21/92
Date Digested: 4/27/92 {b}

Date Received: 4/23/92
Batch Number: 920427-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	5/01/92
Arsenic (As)/7060.....	5.1	1	.50	5/01/92
Beryllium (Be)/6010.....	.39	1	.25	5/04/92
Cadmium (Cd)/6010.....		1	.50	5/01/92
Chromium (Cr)/6010.....	6.5	1	1.0	5/01/92
Copper (Cu)/6010.....	4.1	1	1.0	5/01/92
Lead (Pb)/6010.....	5.3	1	2.5	5/01/92
Mercury (Hg)/7471.....		1	.25	4/27/92
Nickel (Ni)/6010.....	4.2	1	1.0	5/01/92
Selenium (Se)/7740.....		1	.25	4/30/92
Silver (Ag)/6010.....		1	1.0	5/01/92
Thallium (Tl)/7841.....		1	.50	5/01/92
Zinc (Zn)/6010.....	36.	1	1.0	5/01/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 4/27/92, Batch # 920427-1102; and Hg was digested on 4/27/92, Batch # 920427-1103.
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald Loren Date: 5/07/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5868-10

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012Sample Description: BB18002SF
Sample Number: 90169

Matrix: Soil

Date Sampled: 4/21/92
Date Digested: 4/27/92 {b}Date Received: 4/23/92
Batch Number: 920427-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	5/01/92
Arsenic (As)/7060.....	4.2	1	.50	5/01/92
Beryllium (Be)/6010.....		1	.25	5/04/92
Cadmium (Cd)/6010.....		1	.50	5/01/92
Chromium (Cr)/6010.....	5.9	1	1.0	5/01/92
Copper (Cu)/6010.....	3.8	1	1.0	5/01/92
Lead (Pb)/6010.....	4.1	1	2.5	5/01/92
Mercury (Hg)/7471.....		1	.25	4/27/92
Nickel (Ni)/6010.....	2.9	1	1.0	5/01/92
Selenium (Se)/7740.....		1	.25	4/30/92
Silver (Ag)/6010.....		1	1.0	5/01/92
Thallium (Tl)/7841.....		1	.50	5/01/92
Zinc (Zn)/6010.....	22.	1	1.0	5/01/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 4/27/92, Batch # 920427-1102; and Hg was digested on 4/27/92, Batch # 920427-1103.
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald Loren Date: 5/07/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5868-7

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB18002ASF
Sample Number: 90162

Matrix: Soil

Date Sampled: 4/21/92
Date Digested: 4/27/92 {b}

Date Received: 4/23/92
Batch Number: 920427-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	5/01/92
Arsenic (As)/7060.....	2.5	1	.50	5/01/92
Beryllium (Be)/6010.....	.39	1	.25	5/04/92
Cadmium (Cd)/6010.....		1	.50	5/01/92
Chromium (Cr)/6010.....	11.	1	1.0	5/01/92
Copper (Cu)/6010.....	6.9	1	1.0	5/01/92
Lead (Pb)/6010.....	10.	1	2.5	5/01/92
Mercury (Hg)/7471.....		1	.25	4/27/92
Nickel (Ni)/6010.....	7.3	1	1.0	5/01/92
Selenium (Se)/7740.....		1	.25	4/30/92
Silver (Ag)/6010.....		1	1.0	5/01/92
Thallium (Tl)/7841.....		1	.50	5/01/92
Zinc (Zn)/6010.....	41.	1	1.0	5/01/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 4/27/92, Batch # 920427-1102; and Hg was digested on 4/27/92, Batch # 920427-1103.
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald Cor-Em Date: 5/07/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5868-28

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB18002BSF
Sample Number: 89212

Matrix: Soil

Date Sampled: 4/21/92
Date Digested: 4/27/92 {b}

Date Received: 4/23/92
Batch Number: 920427-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	5/01/92
Arsenic (As)/7060.....	24.	4	2.0	5/01/92
Beryllium (Be)/6010.....	.33	1	.25	5/04/92
Cadmium (Cd)/6010.....		1	.50	5/01/92
Chromium (Cr)/6010.....	10.	1	1.0	5/01/92
Copper (Cu)/6010.....	5.7	1	1.0	5/01/92
Lead (Pb)/6010.....	6.0	1	2.5	5/01/92
Mercury (Hg)/7471.....		1	.25	4/27/92
Nickel (Ni)/6010.....	5.6	1	1.0	5/01/92
Selenium (Se)/7740.....		1	.25	4/30/92
Silver (Ag)/6010.....		1	1.0	5/01/92
Thallium (Tl)/7841.....		1	.50	5/01/92
Zinc (Zn)/6010.....	36.	1	1.0	5/01/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 4/27/92, Batch # 920427-1102; and Hg was digested on 4/27/92, Batch # 920427-1103.
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} The sample for Arsenic was diluted 4 fold to bring target analyte within linear working range.

Approved by: Nancy McDonald Loren Date: 5/07/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5868-13

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB18003SF
Sample Number: 90175

Matrix: Soil

Date Sampled: 4/21/92
Date Digested: 4/27/92 {b}

Date Received: 4/23/92
Batch Number: 920427-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	5/01/92
Arsenic (As)/7060.....	4.4	1	.50	5/01/92
Beryllium (Be)/6010.....		1	.25	5/04/92
Cadmium (Cd)/6010.....		1	.50	5/01/92
Chromium (Cr)/6010.....	4.8	1	1.0	5/01/92
Copper (Cu)/6010.....	2.9	1	1.0	5/01/92
Lead (Pb)/6010.....	4.0	1	2.5	5/01/92
Mercury (Hg)/7471.....		1	.25	4/27/92
Nickel (Ni)/6010.....	2.7	1	1.0	5/01/92
Selenium (Se)/7740.....		1	.25	4/30/92
Silver (Ag)/6010.....		1	1.0	5/01/92
Thallium (Tl)/7841.....		1	.50	5/01/92
Zinc (Zn)/6010.....	19.	1	1.0	5/01/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 4/27/92, Batch # 920427-1102; and Hg was digested on 4/27/92, Batch # 920427-1103.
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Cheryl Matterson for cm Date: 5/07/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5868-37

Project Name: Rocketdyne SSFL

Project Number: 04.0029403.012

Sample Description: ~~BB18002ASF~~

Sample Number: 89230

Matrix: Soil

Date Sampled: 4/21/92

Date Digested: 4/27/92 {b}

Date Received: 4/23/92

Batch Number: 920427-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	5/01/92
Arsenic (As)/7060.....	2.2	1	.50	5/01/92
Beryllium (Be)/6010.....	.30	1	.25	5/04/92
Cadmium (Cd)/6010.....		1	.50	5/01/92
Chromium (Cr)/6010.....	8.1	1	1.0	5/01/92
Copper (Cu)/6010.....	4.6	1	1.0	5/01/92
Lead (Pb)/6010.....	7.8	1	2.5	5/01/92
Mercury (Hg)/7471.....		1	.25	4/27/92
Nickel (Ni)/6010.....	4.3	1	1.0	5/01/92
Selenium (Se)/7740.....		1	.25	4/30/92
Silver (Ag)/6010.....		1	1.0	5/01/92
Thallium (Tl)/7841.....		1	.50	5/01/92
Zinc (Zn)/6010.....	34.	1	1.0	5/01/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 4/27/92, Batch # 920427-1102; and Hg was digested on 4/27/92, Batch # 920427-1103.
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM
Cheryl Matterson, Association Chemist

Date: 5/07/92

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5868-31

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB18003BSF
Sample Number: 89218

Matrix: Soil

Date Sampled: 4/21/92
Date Digested: 4/27/92 {b}

Date Received: 4/23/92
Batch Number: 920427-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	5/01/92
Arsenic (As)/7060.....	2.5	1	.50	5/01/92
Beryllium (Be)/6010.....		1	.25	5/04/92
Cadmium (Cd)/6010.....		1	.50	5/01/92
Chromium (Cr)/6010.....	4.9	1	1.0	5/01/92
Copper (Cu)/6010.....	3.4	1	1.0	5/01/92
Lead (Pb)/6010.....	5.0	1	2.5	5/01/92
Mercury (Hg)/7471.....		1	.25	4/27/92
Nickel (Ni)/6010.....	2.9	1	1.0	5/01/92
Selenium (Se)/7740.....		1	.25	4/30/92
Silver (Ag)/6010.....		1	1.0	5/01/92
Thallium (Tl)/7841.....		1	.50	5/01/92
Zinc (Zn)/6010.....	19.	1	1.0	5/01/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 4/27/92, Batch # 920427-1102; and Hg was digested on 4/27/92, Batch # 920427-1103.
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Cheryl Matterson Date: 5/07/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



RADIONUCLIDES

Table1. Results of the analyses for iodine-129 and strontium-90 in thirty (30) soil samples.

Sample ID Number	Sample Description	Collection Date	Lab Code	Conc. pCi/g wet		Conc. pCi/g dry	
				I-129	Date Analyzed	Sr-90	Date Analyzed
89575	BB15005SA	04/22/92	SPS-2158	<0.2	06/30	<0.01	07/11
89581	BB00007SA	04/22/92	SPS-2159	<0.3	06/30	0.02±0.02	07/11
89851	BB16001BSA	04/22/92	SPS-2160	<0.3	06/30	0.03±0.01	07/11
89857	BB16002SA ₃	04/22/92	SPS-2161	<0.3	07/11	0.09±0.01	07/15
89863	BB16002SA	04/22/92	SPS-2162	<0.3	07/20	0.02±0.01	07/16
89869	BB16004SA	04/22/92	SPS-2163	<0.3	07/11	0.15±0.02	07/15
89875	BB16005SA	04/22/92	SPS-2164	<0.3	07/07	0.04±0.01	08/11
89881	BB00006SA	04/22/92	SPS-2165	<0.2	07/07	0.12±0.02	07/15
89892	BB16001ASA	04/22/92	SPS-2166	<0.3	07/07	0.08±0.01	07/16
89301	BB17001SA	04/21/92	SPS-2167	<0.3	07/08	0.01±0.01	07/16
89307	BB17002SA	04/21/92	SPS-2168	<0.3	07/08	0.02±0.01	07/11
89313	BB17003SA	04/21/92	SPS-2169	<0.2	07/08	0.01±0.01	07/16
89319	BB17004SA	04/21/92	SPS-2170	<0.2	07/08	0.03±0.01	08/11
Dup	BB17004SA	04/21/92	SPS-2170D	<0.2	07/08	0.02±0.01	08/11
89551	BB15001SA	04/21/92	SPS-2171	<0.3	07/09	0.01±0.01	08/11
89557	BB15002SA	04/21/92	SPS-2172	<0.3	07/09	<0.01	07/16
89563	BB15003SA	04/21/92	SPS-2173	<0.3	07/10	0.01±0.01	07/15
89569	BB15004SA	04/21/92	SPS-2174	<0.2	07/10	<0.01	07/11
90151	BB18001ASA	04/21/92	SPS-2175	<0.3	07/10	0.02±0.01	07/16
90157	BB18002ASA	04/21/92	SPS-2176	<0.3	07/13	0.02±0.01	08/11
90163	BB18002SA	04/21/92	SPS-2177	<0.3	07/13	<0.01	07/11
90170	BB18003SA	04/21/92	SPS-2178	<0.2	07/13	0.01±0.01	07/15
89219	BB18001SA	04/21/92	SPS-2179	<0.3	07/14	0.02±0.01	08/11
89225	BB18003ASA	04/21/92	SPS-2180	<0.2	07/14	<0.01	07/16
89213	BB18003BSA	04/21/92	SPS-2181	<0.3	07/14	<0.01	07/16
89207	BB18002BSA	04/21/92	SPS-2182	<0.3	07/18	0.02±0.01	08/11
89201	BB18001BSA	04/21/92	SPS-2183	<0.3	07/17	0.01±0.01	08/11
90401	BB19001SA	04/23/92	SPS-2184	<0.3	07/17	0.08±0.02	08/11
90407	BB19002SA	04/23/92	SPS-2185	<0.3	07/18	0.09±0.02	08/11
90413	BB19003SA	04/23/92	SPS-2186	<0.3	07/18	0.02±0.01	08/11
90419	BB19004SA	04/23/92	SPS-2187	<0.3	07/18	0.03±0.01	08/11

The error given is the probable counting error at 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

RUN DATE 06/24/92

PAGE 1

WORK ORDER NUMBER

3-1295

CUSTOMER P.O. NUMBER

04-0029403-012

DATE RECEIVED

04/27/92

DELIVERY DATE

05/30/92

ERIC SMITH
MCLAREN/HART
16755 VON KARMAN AVE
IRVINE CA

92714

SOIL

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAB.
74335	90152 8818002AS8		04/21	1145	PU-238	4.3 +-4.0 E-02		06/08		6
					PU-239	L.T. 2. E-02		06/08		6
74336	90153 8818002ASC		04/21	1145	BE-7	L.T. 5. E-01		05/27		4
					K-40	2.10+-0.21E 01		05/27		4
					MN-54	L.T. 4. E-02		05/27		4
					CO-58	L.T. 4. E-02		05/27		4
					FE-59	L.T. 1. E-01		05/27		4
					CO-60	L.T. 4. E-02		05/27		4
					ZN-65	L.T. 1. E-01		05/27		4
					ZR-95	L.T. 6. E-02		05/27		4
					RU-103	L.T. 6. E-02		05/27		4
					RU-106	L.T. 3. E-01		05/27		4
					T-131	L.T. 8. E-01		05/27		4
					CS-134	L.T. 5. E-02		05/27		4
					CS-137	1.06+-0.33E-01		05/27		4
					BA-140	L.T. 3. E-01		05/27		4
					CE-141	L.T. 1. E-01		05/27		4
					CE-144	L.T. 3. E-01		05/27		4
					RA-226	1.89+-0.60E 00		05/27		4
					TH-228	1.23+-0.12E 00		05/27		4
					H-3	2.9 +-1.8 E-02		06/20		5
74337	90158 8818002AS8		04/21	1200	PU-238	L.T. 3. E-02		05/28		6
					PU-239	L.T. 1. E-02		05/28		6
74338	90159 8818002ASC		04/21	1200	BE-7	L.T. 5. E-01		05/22		4
					K-40	2.04+-0.20E 01		05/22		4
					MN-54	L.T. 4. E-02		05/22		4
					CO-58	L.T. 5. E-02		05/22		4
					FE-59	L.T. 1. E-01		05/22		4
					CO-60	L.T. 5. E-02		05/22		4
					ZN-65	L.T. 1. E-01		05/22		4

TELEDYNE ISOTOPIES

REPORT OF ANALYSIS

RUN DATE 06/24/92

PAGE 2

WORK ORDER NUMBER

3-1295

CUSTOMER P.O. NUMBER

04-0029403-012

DATE RECEIVED

04/27/92

DELIVERY DATE

05/30/92

ERIC SMITH
MCLAREN/HART
16755 VON KARMAN AVE
IRVINE CA 92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAB.
74338	90159	8018002ASC	04/21	1200	ZR-95	L.T. 6. E-02		05/22		4
					RU-103	L.T. 6. E-02		05/22		4
					RU-106	L.T. 4. E-01		05/22		4
					I-131	L.T. 5. E-01		05/22		4
					CS-134	L.T. 5. E-02		05/22		4
					CS-137	6.26+-2.65E-02		05/22		4
					BA-140	L.T. 2. E-01		05/22		4
					CE-141	L.T. 1. E-01		05/22		4
					CE-144	L.T. 3. E-01		05/22		4
					RA-226	2.17+-0.61E 00		05/22		4
					TH-228	1.28+-0.13E 00		05/22		4
					H-3	L.T. 3. E-02		06/20		5
74339	90164	801800258	04/21	1230	PU-238	L.T. 2. E-02		05/28		6
					PU-239	L.T. 1. E-02		05/28		6
74340	90165	80180025C	04/21	1230	BE-7	L.T. 4. E-01		05/26		4
					K-40	2.05+-0.21E 01		05/26		4
					MN-54	L.T. 3. E-02		05/26		4
					CO-58	L.T. 4. E-02		05/26		4
					FE-59	L.T. 1. E-01		05/26		4
					CO-60	L.T. 3. E-02		05/26		4
					ZN-65	L.T. 9. E-02		05/26		4
					ZR-95	L.T. 5. E-02		05/26		4
					RU-103	L.T. 5. E-02		05/26		4
					RU-106	L.T. 3. E-01		05/26		4
					I-131	L.T. 6. E-01		05/26		4
					CS-134	L.T. 4. E-02		05/26		4
					CS-137	5.66+-2.29E-02		05/26		4
					BA-140	L.T. 2. E-01		05/26		4
					CE-141	L.T. 8. E-02		05/26		4
					CE-144	L.T. 2. E-01		05/26		4
					RA-226	1.08+-0.45E 00		05/26		4

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

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PAGE 3

WORK ORDER NUMBER

3-1295

CUSTOMER P.O. NUMBER

04-0029403-012

DATE RECEIVED

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DELIVERY DATE

05/30/92

ERIC SMITH

MCLAREN/HART

16755 VON KARMAN AVE

IRVINE CA

92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M ϕ	MID-COUNT		VOLUME - UNITS ASH-WGHT-% ϕ	LAB.
			START DATE	STOP DATE				DATE	TIME		
74340	90165 88180025C		04/21	1230	TH-228 H-3	7.00+-0.70E-01 L.T. 2. E-02		05/26 06/20		4 5	
74341	90171 88180035B		04/21	1245	PU-238 PU-239	L.T. 1. E-01 L.T. 3. E-02		06/08 06/08		6 6	
74342	90172 88180035C		04/21	1245	BE-7 K-40 MN-54 CO-58 FE-59 CO-60 ZN-65 ZR-95 RU-103 RU-106 I-131 CS-134 CS-137 BA-140 CE-141 CE-144 RA-226 TH-228 H-3	L.T. 3. E-01 1.95+-0.19E 01 L.T. 3. E-02 L.T. 3. E-02 L.T. 1. E-01 L.T. 3. E-02 L.T. 8. E-02 L.T. 5. E-02 L.T. 5. E-02 L.T. 3. E-01 L.T. 5. E-01 L.T. 4. E-02 L.T. 3. E-02 L.T. 2. E-01 L.T. 9. E-02 L.T. 2. E-01 1.02+-0.46E 00 7.30+-0.73E-01 L.T. 2. E-02		05/26 05/26 05/26 05/26 05/26 05/26 05/26 05/26 05/26 05/26 05/26 05/26 05/26 05/26 05/26 05/26 05/26 06/20		4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 5	

TH-3 (pCi/l)
74336 1.2 +-0.8 E 02
74338 L.T. 1. E 02
74340 L.T. 1. E 02
74342 L.T. 1. E 02

TELEDYNE I 3ES

REPORT OF ANALYSIS

RUN DATE 06/17/92

PAGE 1

WORK ORDER NUMBER

3-1294

CUSTOMER P.O. NUMBER

04-0029403-012

DATE RECEIVED

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DELIVERY DATE

05/30/92

ERIC SMITH
MCLAREN/HART
16755 VON KARMAN AVE
IRVINE CA 92714

S O T L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCT/GM DRY)	NUCL-UNIT-% U/M #	MTO-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAR.
74314	89202	BB180018SB	04/21	0905	PU-238	L.T. 2. E-02		05/23		6
					PU-239	L.T. 1. E-02		05/23		6
74315	89203	BB180018SC	04/21	0910	BE-7	L.T. 3. E-01		05/22		4
					K-40	2.25+-0.22E 01		05/22		4
					MN-54	L.T. 3. E-02		05/22		4
					CO-58	L.T. 4. E-02		05/22		4
					FE-59	L.T. 1. E-01		05/22		4
					CO-60	L.T. 3. E-02		05/22		4
					ZN-65	L.T. 8. E-02		05/22		4
					ZR-95	L.T. 4. E-02		05/22		4
					RU-103	L.T. 5. E-02		05/22		4
					RU-106	L.T. 3. E-01		05/22		4
					I-131	L.T. 4. E-01		05/22		4
					CS-134	L.T. 4. E-02		05/22		4
					CS-137	L.T. 3. E-02		05/22		4
					BA-140	L.T. 1. E-01		05/22		4
					CE-141	L.T. 7. E-02		05/22		4
					CE-144	L.T. 2. E-01		05/22		4
					RA-226	1.92+-0.44E 00		05/22		4
					TH-228	1.09+-0.11E 00		05/22		4
					H-3	5.0 +-1.5 E-02		06/13		5
74316	89208	BB180028SB	04/21	0935	PU-238	L.T. 2. E-02		05/23		6
					PU-239	L.T. 7. E-03		05/23		6
74317	89209	BB180028SC	04/21	0940	BE-7	L.T. 5. E-01		05/26		4
					K-40	1.93+-0.19E 01		05/26		4
					MN-54	L.T. 4. E-02		05/26		4
					CO-58	L.T. 5. E-02		05/26		4
					FE-59	L.T. 1. E-01		05/26		4
					CO-60	L.T. 4. E-02		05/26		4
					ZN-65	L.T. 1. E-01		05/26		4

REPORT OF ANALYSIS

DATE RECEIVED	DELIVERY DATE
04/27/92	05/30/92

CUSTOMER P.O. NUMBER
04-0029403-012

WORK ORDER NUMBER
3-1294

ERIC SMITH
MCLAREN/HART
116755 VON KARMAN AVE
IRVINE CA

92714

105

TELEPHONE	SAMPLE	NUMBER
1	1	1
2	2	2
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94	94	94
95	95	95
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98	98	98
99	99	99
100	100	100

CUSTOMER'S IDENTIFICATION	STA	COLLECTION-DATE
	NUM	START STOP
	DATE	TIME DATE TIME

COLLECTION-DATE	START	STOP	TIME DATE	TIME	NUCIDE
-----------------	-------	------	-----------	------	--------

MID-COUNT
TIME TIME

ACTIVITY NUCLEONIC UNIT-2
PCP/CM DRY 11/14 8

VOLUME - UNITS
ASH-WGHT-2 2

74317 89209 8818002ASC

2R-95

04/21 0940

T. 6. E-02

74318 89214 8818003858

04/21 1000

2. E-02

05/23

4

74319 89215 001800385C

04/21 1000

4. E-01

05/26

K-40
HN-54
CO-58
FE-59
CO-60
ZN-65
ZR-95
RU-103
RU-106
I-131
CS-134
CS-137
BA-140
CE-141
CE-144
RA-226

0.11+0.21E 01
3. E-02
4. E-02
1. E-01
3. E-02
8. E-02
4. E-02
5. E-02
3. E-01
6. E-01
4. E-02
03+2.84E-02
2. E-01
1. E-02
8. E-02
2. E-01
13+0.41E00

05/26

4 4 4 4 4 4 4 4 4 4 4 4 4 4 4

1

TELEDYNE ISL ES

REPORT OF ANALYSIS

PUN DATE 06/17/92

WORK ORDER NUMBER

ERIC SMITH
MCLAREN/HAPT
16755 VON KARMAN AVE
IRVINE CA

CUSTOMER P.O. NUMBER

04-0029403-012

DATE RECEIVED

04/27/92

PAGE 4

DELIVERY DATE

05/30/92

92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAB.
74323	89227 8818002ASC		04/21	1110	SAMPLE	NOT RECEIVED				
74324	89302 8817001SB		04/21	1545	PU-238 PU-239	1.9 +-0.6 E-01 L.T. 2. E-02		06/06 06/06		3 6 6
74325	89303 8817001SC		04/21	1545	BE-7 K-40 MN-54 CO-58 FE-59 CO-60 ZN-65 ZR-95 RU-103 RU-106 I-131 CS-134 CS-137 BA-140 CE-141 CE-144 RA-226 TH-228 H-3	L.T. 4. E-01 2.23+-0.22E 01 L.T. 4. E-02 L.T. 5. E-02 L.T. 1. E-01 L.T. 4. E-02 L.T. 1. E-01 L.T. 6. E-02 L.T. 5. E-02 L.T. 3. E-01 L.T. 5. E-01 L.T. 5. E-02 7.71+-3.21E-02 L.T. 2. E-01 L.T. 9. E-02 L.T. 2. E-01 2.35+-0.54E 00 1.22+-0.12E 00 2.7 +-1.7 E-02		05/22 05/22 05/22 05/22 05/22 05/22 05/22 05/22 05/22 05/22 05/22 05/22 05/22 05/22 05/22 05/22 05/22 06/09		4 4 4 4 3 4 4 4 4 4 4 4 4 4 4 4 4 5
74326	89308 8817002SB		04/21	1520	PU-238 PU-239	5.5 +-2.4 E-02 L.T. 5. E-03		06/06 06/06		6 6
74327	89309 8817002SC		04/21	1520	BE-7 K-40 MN-54 CO-58 FE-59	L.T. 5. E-01 2.06+-0.21E 01 L.T. 4. E-02 L.T. 5. E-02 L.T. 1. E-01		05/22 05/22 05/22 05/22 05/22		4 4 4 4 4

WATER

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868-14

Page 1 of 2

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB18003WH
Sample Number: 197101

Matrix: Water

Date Sampled: 4/21/92
Date Analyzed: 4/27/92

Date Received: 4/23/92
Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/L (ppb)	REPORTING LIMIT ug/L (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5

1

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Modified
Preparation Method: EPA 5030

Lab Project-Sample ID: 5868-14

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/L (ppb)	REPORTING LIMIT ug/L (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	99	76 - 114
Toluene-D8	100	88 - 110
4-Bromofluorobenzene	99	86 - 115

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 5/06/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



POLYNUCLEAR AROMATICS
Analytical Method: EPA 610
Preparation Method: EPA 3510

Lab Project-Sample ID: 5868-16
Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB18003WF
Sample Number: 197116
Date Sampled: 4/21/92
Date Extracted: 4/28/92
Batch Number: 920428-2601

Matrix: Water
Date Received: 4/23/92
Date Analyzed: 5/01/92
Dilution Factor: 1

ANALYTE CONCENTRATION {a} ug/L (ppb)	REPORTING LIMIT ug/L (ppb)
Naphthalene.....	10
Acenaphthylene.....	10
Acenaphthene.....	10
Fluorene.....	10
Phenanthrene.....	10
Anthracene.....	10
Fluoranthene.....	10
Pyrene.....	10
Benzo(a)anthracene.....	20
Chrysene.....	20
Benzo(b)fluoranthene.....	20
Benzo(k)fluoranthene.....	20
Benzo(a)pyrene.....	20
Indeno(1,2,3-c,d)pyrene.....	50
Dibenz(a,h)anthracene.....	50
Benzo(g,h,i)perylene.....	50

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorobiphenyl	87	43 - 116

COMMENTS:

{a} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected.

Approved by: Nancy McLaren, Sr. Chem Date: 5/06/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3010 {a}

Lab Project-Sample ID: 5868-18

Project Name: Rocketdyne SSFL
Project Number: 04.0029403.012

Sample Description: BB18003WG
Sample Number: 197124

Matrix: Water

Date Sampled: 4/21/92
Date Digested: 4/29/92 {b}

Date Received: 4/23/92
Batch Number: 920429-1301 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} ug/L (ppb)	DILUTION FACTOR	REPORTING LIMIT ug/L (ppb)	DATE ANALYZED
Antimony (Sb)/6010.....		1	50	5/01/92
Arsenic (As)/7060.....		1	10	5/01/92
Beryllium (Be)/6010.....		1	5	5/01/92
Cadmium (Cd)/6010.....		1	10	5/01/92
Chromium (Cr)/6010.....		1	10	5/01/92
Copper (Cu)/6010.....		1	20	5/01/92
Lead (Pb)/7421.....		1	3	5/01/92
Mercury (Hg)/7470.....		1	.5	4/30/92
Nickel (Ni)/6010.....		1	20	5/01/92
Selenium (Se)/7740.....		1	5	4/30/92
Silver (Ag)/6010.....		1	10	5/01/92
Thallium (Tl)/7841.....		1	10	5/01/92
Zinc (Zn)/6010.....		1	20	5/01/92

COMMENTS:

- {a} Applies to all metals except As, Pb, Se, Tl and Hg. EPA Method 3020 used for As, Pb, Se and Tl digestion. EPA Method 7470 used for Hg digestion.
- {b} Applies to all metals except As, Pb, Se, Tl and Hg. As, Pb, Se and Tl were digested on 4/29/92, Batch # 920429-1302 ; and Hg was digested on 4/29/92, Batch # 920429-1303 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McFarland Corum Date: 5/07/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



Table: Results of the analyses for iodine-129 in three (3) and strontium-90 in fifteen (15) water samples.

Sample ID Number	Sample Description	Collection Date	Lab Code	Concentration pCi/L			
				I-129	Date Analyzed	Sr-90	Date Analyzed
197855	BB16RD30WA	04/23/92	SPW-2139	ND		<0.3	06/06
197874	BB19003WA	04/23/92	2140	ND		<0.4	06/06
197310	BB16001BWA	04/23/92	2141	ND		1.8±0.5	06/06
197317	BB16001AWA	04/23/92	2142	ND		1.1±0.3	06/06
197890	DCWA	04/23/92	2143	ND		<0.4	06/06
197891	Dup. SPW-2143	04/23/92	2144	ND		<0.3	06/06
197311	BB16001BWC	04/23/92	2145	<1.8	06/09	ND	
197893	DCWC	04/23/92	2146	<2.0	06/09	ND	
197894	Dup. SPW-2146	04/23/92	2147	<2.6	06/09	ND	
197122	BB18003WC	04/21/92	2148	<1.6	06/10	ND	
197123	BB00001WC	04/21/92	2149	<1.7	06/11	ND	
197109	BB18003WA	04/21/92	2150	ND		<0.3	06/06
197110	BB00001WA	04/21/92	2151	ND		1.0±0.4	06/06
197130	BB18000RA	04/21/92	2152	ND		<0.3	06/06
171835	7B1WA	04/21/92	2153	ND		<0.4	06/06
171836	Dup. SPW-2153	04/21/92	2154	ND		<0.3	06/06
197135	BB18000RC	04/21/92	2155	<1.7	06/11	ND	
171838	7B1WC	04/21/92	2156	<1.7	06/11	ND	
171839	Dup. SPW-2156	04/21/92	2157	<1.6	06/11	ND	

Less than (<) values are based on 3 sigma counting error for background sample. The error given is the probable counting error at 95% confidence level.

ND - no data, analysis not required.

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

RUN DATE 06/09/92
PAGE 3

WORK ORDER NUMBER

3-1681

CUSTOMER P.O. NUMBER

04-0029403-012

DATE RECEIVED

05/20/92

DELIVERY DATE

06/22/92

ERIC SMITH
MCLAREN/HART
16755 VON KARMAN AVE
IRVINE CA 92714

WATER - SURFACE

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	TIME	NUCLIDE	ACTIVITY (PCI/LITER)	NUCL-UNIT-% U/M	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAB.
69556	197158	8G01002WE	03/12	1530	I-129	L.T. 7. E 00		06/02		3
70345	171858	SM08001WE	11/25		I-129	L.T. 6. E 00		06/02		3
70447	170680	8B04001WE	03/16	1405	I-129	L.T. 7. E 00		06/03		3
74347	197118	8B18003WE	04/21	1320	I-129	L.T. 7. E 00		06/03		3
74348	197119	8B00001WE	04/23	0830	I-129	L.T. 6. E 00		06/03		3
74403	197872	8B19003WE	04/23	0830	I-129	L.T. 7. E 00		06/03		3
74407	197308	8B16001WE	04/23	0950	I-129	L.T. 6. E 00		06/03		3

LAST PAGE OF REPORT

APPROVED BY J. GUENTHER 06/09/92

SEND 1 COPIES TO MC4805 ERIC SMITH

2 - GAS LAB. 3 - RADIO CHEMISTRY LAB. 4 - GE(LI) GAMMA SPEC LAB. 5 - TRITIUM GAS/L.S. LAB. 6 - ALPHA SPEC LAB.

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

RUN DATE 06/24/92

PAGE 5

WORK ORDER NUMBER

3-1295

CUSTOMER P.O. NUMBER

04-0029403-012

DATE RECEIVED

04/27/92

DELIVERY DATE

05/30/92

ERIC SMITH
MCLAREN/HART
16755 VON KARMAN AVE
IRVINE CA 92714

WATER - SURFACE

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	TIME	STOP DATE	NUCLIDE	ACTIVITY (PCI/LITER)	NUCL-UNIT-% U/M %	MTD-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAB.
74343	197111 BB18003WD		04/21	1300		BE-7	L.T. 4. E 01		05/24		4
						K-40	L.T. 5. E 01		05/24		4
						MN-54	L.T. 3. E 00		05/24		4
						CO-58	L.T. 4. E 00		05/24		4
						FE-59	L.T. 9. E 00		05/24		4
						CO-60	L.T. 4. E 00		05/24		4
						ZN-65	L.T. 8. E 00		05/24		4
						ZR-95	L.T. 4. E 00		05/24		4
						RU-103	L.T. 6. E 00		05/24		4
						RU-106	L.T. 3. E 01		05/24		4
						I-131	L.T. 6. E 01		05/24		4
						CS-134	L.T. 4. E 00		05/24		4
						CS-137	L.T. 4. E 00		05/24		4
						BA-140	L.T. 2. E 01		05/24		4
						CE-141	L.T. 1. E 01		05/24		4
						CE-144	L.T. 3. E 01		05/24		4
						RA-226	L.T. 8. E 01		05/24		4
						TH-228	L.T. 7. E 00		05/24		4
74344	197114 BB18003WI		04/21	1300		GR-A	L.T. 2. E 00		05/08		3
						GR-B	L.T. 3. E 00		05/08		3
74345	197113 BB00001WI		04/21	1300		BE-7	L.T. 4. E 01		05/24		4
						K-40	L.T. 7. E 01		05/24		4
						MN-54	L.T. 3. E 00		05/24		4
						CO-58	L.T. 5. E 00		05/24		4
						FE-59	L.T. 1. E 01		05/24		4
						CO-60	L.T. 4. E 00		05/24		4
						ZN-65	L.T. 8. E 00		05/24		4
						ZR-95	L.T. 5. E 00		05/24		4
						RU-103	L.T. 6. E 00		05/24		4
						RU-106	L.T. 3. E 01		05/24		4
						I-131	L.T. 7. E 01		05/24		4

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

RUN DATE 06/24/92

DELIVERY DATE

DATE RECEIVED

CUSTOMER P.O. NUMBER

WORK ORDER NUMBER

ERIC SMITH
MCCAREN/HART
16755 VON KARMAN AVE
IRVINE CA 92714

3-1295

04-0029403-012

05/30/92

04/27/92

PAGE 6

WATER - SURFACE

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	TIME	NUCLIDE	ACTIVITY (PCT/LITER)	NUCL-UNIT-% U/M %	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAB.
74345	197113 8800001WD		04/21	1300		CS-134 CS-137 BA-140 CE-141 CE-144 RA-226 TH-228	L.T. 4. E 00 L.T. 4. E 00 L.T. 2. E 01 L.T. 1. E 01 L.T. 3. E 01 L.T. 1. E 02 L.T. 8. E 00		05/24 05/24 05/24 05/24 05/24 05/24 05/24		4 4 4 4 4 4 4
74346	197115 8800001WI		04/21	1310		GR-A GR-B	L.T. 2. E 00 4.1 +-2.0 E 00		05/08 05/08		3 3
74347	197118 8818003WE		04/21	1320		H-3	L.T. 1. E 02		06/20		5
74348	197119 881800001WE		04/21	1320		H-3	L.T. 1. E 02		06/20		5
74349	197120 8818003WB		04/21	1320		PU-238 PU-239 PU-238 PU-239	L.T. 2. E-01 L.T. 8. E-02 L.T. 2. E-01 L.T. 9. E-02		05/19 05/19 06/08 06/08		6 6 6 6
74350	197121 8800001WB		04/21	1320							

LAST PAGE OF REPORT

SEND 1 COPIES TO MC4805 ERIC SMITH

APPROVED BY J. GUENTHER 06/24/92

2 - GAS LAB.

3 - RADIO CHEMISTRY LAB.

4 - GE(LI) GAMMA SPEC LAB.

5 - TRITIUM GAS/L.S. LAB. 6 - ALPHA SPEC LAB.

VOLATILE ORGANIC COMPOUNDS

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5879-23

Page 1 of 2

Project Name: Rocketdyne
Project Number: 040029403012

Sample Description: BB19001SE
Sample Number: 90405

Matrix: Soil

Date Sampled: 4/23/92
Date Analyzed: 5/06/92

Date Received: 4/25/92
Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



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VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5879- 23

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5
SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	92	70 - 121
Toluene-D8	117	81 - 117
4-Bromofluorobenzene	86	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 5/12/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5879-14

Page 1 of 2

Project Name: Rocketdyne
Project Number: 040029403012

Sample Description: BB19002SE
Sample Number: 90411

Matrix: Soil

Date Sampled: 4/23/92
Date Analyzed: 5/04/92

Date Received: 4/25/92
Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5879- 14

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COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5
SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	96	70 - 121
Toluene-D8	105	81 - 117
4-Bromofluorobenzene	91	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald Loren Date: 5/12/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5879-17

Page 1 of 2

Project Name: Rocketdyne
Project Number: 040029403012

Sample Description: BB19003SE
Sample Number: 90417

Matrix: Soil

Date Sampled: 4/23/92
Date Analyzed: 5/04/92

Date Received: 4/25/92
Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



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VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5879- 17

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	100	70 - 121
Toluene-D8	103	81 - 117
4-Bromofluorobenzene	89	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846,
3rd Edition for Method 8240.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated
values. No entry in "Analyte Concentration" means the compound
is not detected at all.

Approved By: Nancy McDonald for CM Date: 5/12/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5879-20

Page 1 of 2

Project Name: Rocketdyne
Project Number: 040029403012

Sample Description: BB19004SE
Sample Number: 90423

Matrix: Soil

Date Sampled: 4/23/92
Date Analyzed: 5/04/92

Date Received: 4/25/92
Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



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VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5879- 20

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	94	70 - 121
Toluene-D8	117	81 - 117
4-Bromofluorobenzene	84	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald Loren Date: 5/12/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



SEMI-VOLATILE ORGANIC COMPOUNDS

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5879-22

Page 1 of 3

Project Name: Rocketdyne
Project Number: 040029403012

Sample Description: BB19001SD
Sample Number: 90404

Matrix: Soil

Date Sampled: 4/23/92
Date Extracted: 4/29/92

Date Received: 4/25/92
Date Analyzed: 5/01/92

Batch Number: 920429-2601

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5879-22

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330

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SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5879-22

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	54	25 - 121
Phenol-d5.....	60	24 - 113
Nitrobenzene-d5.....	47	23 - 120
2-Fluorobiphenyl.....	54	30 - 115
2,4,6-Tribromophenol.....	82	19 - 122
Terphenyl-d14.....	66	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By:

Nancy McDonald for CM
Cheryl Matterson, Associate Chemist

Date: 5/11/92

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5879-13

Page 1 of 3

Project Name: Rocketdyne
Project Number: 040029403012

Sample Description: BB19002SD
Sample Number: 90410

Matrix: Soil

Date Sampled: 4/23/92
Date Extracted: 4/29/92

Date Received: 4/25/92
Date Analyzed: 5/01/92

Batch Number: 920429-2601

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



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SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5879-13

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



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SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5879-13

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	64	25 - 121
Phenol-d5.....	72	24 - 113
Nitrobenzene-d5.....	58	23 - 120
2-Fluorobiphenyl.....	64	30 - 115
2,4,6-Tribromophenol.....	100	19 - 122
Terphenyl-d14.....	≈68	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By:

Nancy McDonald For CM
Cheryl Matterson, Associate Chemist

Date: 5/11/92

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5879-16

Page 1 of 3

Project Name: Rocketdyne
Project Number: 040029403012

Sample Description: BB19003SD
Sample Number: 90416

Matrix: Soil

Date Sampled: 4/23/92
Date Extracted: 4/29/92

Date Received: 4/25/92
Date Analyzed: 5/04/92

Batch Number: 920429-2601

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



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SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5879-16

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330

McLarenTM
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SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5879-16

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	81	25 - 121
Phenol-d5.....	85	24 - 113
Nitrobenzene-d5.....	59	23 - 120
2-Fluorobiphenyl.....	60	30 - 115
2,4,6-Tribromophenol.....	96	19 - 122
Terphenyl-d14.....	74	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald Loren Date: 5/11/92
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5879-19

Page 1 of 3

Project Name: Rocketdyne
Project Number: 040029403012

Sample Description: BB19004SD
Sample Number: 90422

Matrix: Soil

Date Sampled: 4/23/92
Date Extracted: 4/29/92

Date Received: 4/25/92
Date Analyzed: 5/06/92

Batch Number: 920429-2601

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



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SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5879-19

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



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Hart™

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}
Preparation Method: EPA 3550

Lab Project-Sample ID: 5879-19

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	64	25 - 121
Phenol-d5.....	64	24 - 113
Nitrobenzene-d5.....	48	23 - 120
2-Fluorobiphenyl.....	50	30 - 115
2,4,6-Tribromophenol.....	60	19 - 122
Terphenyl-d14.....	≈ 64	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 5/11/92
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



METALS

PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5879-24

Project Name: Rocketdyne
Project Number: 040029403012

Sample Description: BB19001SF
Sample Number: 90406

Matrix: Soil

Date Sampled: 4/23/92
Date Digested: 4/27/92 {b}

Date Received: 4/25/92
Batch Number: 920427-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	5/01/92
Arsenic (As)/7060.....	2.6	1	.50	5/01/92
Beryllium (Be)/6010.....	.41	1	.25	5/04/92
Cadmium (Cd)/6010.....		1	.50	5/01/92
Chromium (Cr)/6010.....	11.	1	1.0	5/01/92
Copper (Cu)/6010.....	8.1	1	1.0	5/01/92
Lead (Pb)/6010.....	17.	1	2.5	5/01/92
Mercury (Hg)/7471.....		1	.25	4/27/92
Nickel (Ni)/6010.....	6.2	1	1.0	5/01/92
Selenium (Se)/7740.....		1	.25	4/30/92
Silver (Ag)/6010.....		1	1.0	5/01/92
Thallium (Tl)/7841.....		1	.50	4/30/92
Zinc (Zn)/6010.....	110.	1	1.0	5/01/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 4/27/92, Batch # 920427-1105; and Hg was digested on 4/27/92, Batch # 920427-1106 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 5/12/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5879-15

Project Name: Rocketdyne
Project Number: 040029403012

Sample Description: BB19002SF
Sample Number: 90412

Matrix: Soil

Date Sampled: 4/23/92
Date Digested: 4/27/92 {b}

Date Received: 4/25/92
Batch Number: 920427-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION={c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	5/01/92
Arsenic (As)/7060.....	2.7	1	.50	5/01/92
Beryllium (Be)/6010.....	.44	1	.25	5/04/92
Cadmium (Cd)/6010.....		1	.50	5/01/92
Chromium (Cr)/6010.....	13.	1	1.0	5/01/92
Copper (Cu)/6010.....	8.8	1	1.0	5/01/92
Lead (Pb)/6010.....	16.	1	2.5	5/01/92
Mercury (Hg)/7471.....		1	.25	4/27/92
Nickel (Ni)/6010.....	6.9	1	1.0	5/01/92
Selenium (Se)/7740.....		1	.25	4/30/92
Silver (Ag)/6010.....		1	1.0	5/01/92
Thallium (Tl)/7841.....		1	.50	4/30/92
Zinc (Zn)/6010.....	52.	1	1.0	5/01/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 4/27/92, Batch # 920427-1105; and Hg was digested on 4/27/92, Batch # 920427-1106.
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 5/12/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5879-18

Project Name: Rocketdyne
Project Number: 040029403012

Sample Description: BB19003SF
Sample Number: 90418

Matrix: Soil

Date Sampled: 4/23/92
Date Digested: 4/27/92 {b}

Date Received: 4/25/92
Batch Number: 920427-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	5/01/92
Arsenic (As)/7060.....	1.8	1	.50	5/01/92
Beryllium (Be)/6010.....	.27	1	.25	5/04/92
Cadmium (Cd)/6010.....		1	.50	5/01/92
Chromium (Cr)/6010.....	7.4	1	1.0	5/01/92
Copper (Cu)/6010.....	4.5	1	1.0	5/01/92
Lead (Pb)/6010.....	4.5	1	2.5	5/01/92
Mercury (Hg)/7471.....		1	.25	4/27/92
Nickel (Ni)/6010.....	3.9	1	1.0	5/01/92
Selenium (Se)/7740.....		1	.25	4/30/92
Silver (Ag)/6010.....		1	1.0	5/01/92
Thallium (Tl)/7841.....		1	.50	4/30/92
Zinc (Zn)/6010.....	58.	1	1.0	5/01/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 4/27/92, Batch # 920427-1105; and Hg was digested on 4/27/92, Batch # 920427-1106 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 5/12/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5879-21

Project Name: Rocketdyne
Project Number: 040029403012

Sample Description: BB19004SF
Sample Number: 90424

Matrix: Soil

Date Sampled: 4/23/92
Date Digested: 4/27/92 {b}

Date Received: 4/25/92
Batch Number: 920427-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	5/01/92
Arsenic (As)/7060.....	1.9	1	.50	5/01/92
Beryllium (Be)/6010.....	.32	1	.25	5/04/92
Cadmium (Cd)/6010.....		1	.50	5/01/92
Chromium (Cr)/6010.....	5.5	1	1.0	5/01/92
Copper (Cu)/6010.....	3.4	1	1.0	5/01/92
Lead (Pb)/6010.....	5.9	1	2.5	5/01/92
Mercury (Hg)/7471.....		1	.25	4/27/92
Nickel (Ni)/6010.....	2.6	1	1.0	5/01/92
Selenium (Se)/7740.....		1	.25	4/30/92
Silver (Ag)/6010.....		1	1.0	5/01/92
Thallium (Tl)/7841.....		1	.50	4/30/92
Zinc (Zn)/6010.....	44.	1	1.0	5/01/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 4/27/92, Batch # 920427-1105; and Hg was digested on 4/27/92, Batch # 920427-1106 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald Loren Date: 5/12/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



RADIONUCLIDES

Table1. Results of the analyses for iodine-129 and strontium-90 in thirty (30) soil samples.

Sample ID Number	Sample Description	Collection Date	Lab Code	Conc. pCi/g wet		Conc. pCi/g dry	
				I-129	Date Analyzed	Sr-90	Date Analyzed
89575	BB15005SA	04/22/92	SPS-2158	<0.2	06/30	<0.01	07/11
89581	BB00007SA	04/22/92	SPS-2159	<0.3	06/30	0.02±0.02	07/11
89851	BB16001BSA	04/22/92	SPS-2160	<0.3	06/30	0.03±0.01	07/11
89857	BB16002SA ³	04/22/92	SPS-2161	<0.3	07/11	0.09±0.01	07/15
89863	BB16002SA	04/22/92	SPS-2162	<0.3	07/20	0.02±0.01	07/16
89869	BB16004SA	04/22/92	SPS-2163	<0.3	07/11	0.15±0.02	07/15
89875	BB16005SA	04/22/92	SPS-2164	<0.3	07/07	0.04±0.01	08/11
89881	BB00006SA	04/22/92	SPS-2165	<0.2	07/07	0.12±0.02	07/15
89892	BB16001ASA	04/22/92	SPS-2166	<0.3	07/07	0.08±0.01	07/16
89301	BB17001SA	04/21/92	SPS-2167	<0.3	07/08	0.01±0.01	07/16
89307	BB17002SA	04/21/92	SPS-2168	<0.3	07/08	0.02±0.01	07/11
89313	BB17003SA	04/21/92	SPS-2169	<0.2	07/08	0.01±0.01	07/16
89319	BB17004SA	04/21/92	SPS-2170	<0.2	07/08	0.03±0.01	08/11
Dup	BB17004SA	04/21/92	SPS-2170D	<0.2	07/08	0.02±0.01	08/11
89551	BB15001SA	04/21/92	SPS-2171	<0.3	07/09	0.01±0.01	08/11
89557	BB15002SA	04/21/92	SPS-2172	<0.3	07/09	<0.01	07/16
89563	BB15003SA	04/21/92	SPS-2173	<0.3	07/10	0.01±0.01	07/15
89569	BB15004SA	04/21/92	SPS-2174	<0.2	07/10	<0.01	07/11
90151	BB18001ASA	04/21/92	SPS-2175	<0.3	07/10	0.02±0.01	07/16
90157	BB18002ASA	04/21/92	SPS-2176	<0.3	07/13	0.02±0.01	08/11
90163	BB18002SA	04/21/92	SPS-2177	<0.3	07/13	<0.01	07/11
90170	BB18003SA	04/21/92	SPS-2178	<0.2	07/13	0.01±0.01	07/15
89219	BB18001SA	04/21/92	SPS-2179	<0.3	07/14	0.02±0.01	08/11
89225	BB18003ASA	04/21/92	SPS-2180	<0.2	07/14	<0.01	07/16
89213	BB18003BSA	04/21/92	SPS-2181	<0.3	07/14	<0.01	07/16
89207	BB18002BSA	04/21/92	SPS-2182	<0.3	07/18	0.02±0.01	08/11
89201	BB18001BSA	04/21/92	SPS-2183	<0.3	07/17	0.01±0.01	08/11
90401	BB19001SA	04/23/92	SPS-2184	<0.3	07/17	0.08±0.02	08/11
90407	BB19002SA	04/23/92	SPS-2185	<0.3	07/18	0.09±0.02	08/11
90413	BB19003SA	04/23/92	SPS-2186	<0.3	07/18	0.02±0.01	08/11
90419	BB19004SA	04/23/92	SPS-2187	<0.3	07/18	0.03±0.01	08/11

The error given is the probable counting error at 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.

TELEPHONE ISOTOPE

REPORT OF ANALYSIS

RUN DATE 07/07/02

WORK ORDER NUMBER

ERIC SMITH
MCLEAN/HART
16755 VON KARMAN AVE
IRVINE CA 92714

3-1297

CUSTOMER P.O. NUMBER

04-0029403-032

DATE RECEIVED

04/27/92

PAGE 2

DELIVERY DATE

05/30/92

SOIL

TELEPHONE
SAMPLE
NUMBER

74386 90408 00190025B

COLLECTION-DATE
START STOP

04/22 0830

STA
NUM

CUSTOMER'S
IDENTIFICATION

MUCIIDE

ACTIVITY
(PCI/GM DRY)

MUCI-UNIT-Z
U/M

MID-COUNT
TIME
DATE

VOLUME - UNITS
ASH-WEIGHT-Z

LAB.

BE-7	1.1. 7. E-01					06/17		4
K-40	1.90+-0.20E 01					06/17		4
MN-54	1.1. 4. E-02					06/17		4
CU-58	1.1. 6. E-02					06/17		4
FE-59	1.1. 2. E-01					06/17		4
CO-60	1.1. 5. E-02					06/17		4
ZN-65	1.1. 1. E-01					06/17		4
ZR-95	1.1. 9. E-02					06/17		4
RU-103	1.1. 1. E-01					06/17		4
RU-106	1.1. 4. E-01					06/17		4
I-131	1.1. 5. E 00					06/17		4
CS-134	1.1. 5. E-02					06/17		4
CS-137	2.95+-0.51E-01					06/17		4
BA-140	1.1. 7. E-01					06/17		4
CF-141	1.1. 2. E-01					06/17		4
CE-144	1.1. 3. E-01					06/17		4
RA-226	2.23+-0.66E 00					06/17		4
TH-228	1.15+-0.12E 00					06/17		4
H-3	NOT ANALYZED					06/24		5
PU-238	1.1. 6. E-02					06/08		6
PU-239	1.1. 1. E-02					06/08		6
BC-7	1.1. 1. E 00					06/22		4
K-40	2.32+-0.23E 01					06/22		4
MN-54	1.1. 7. E-02					06/22		4
CU-58	1.1. 1. E-01					06/22		4
FE-59	1.1. 3. E-01					06/22		4
CO-60	1.1. 7. E-02					06/22		4
ZN-65	1.1. 2. E-01					06/22		4
ZR-95	1.1. 1. E-01					06/22		4
RU-103	1.1. 2. E-01					06/22		4
RU-106	1.1. 6. E-01					06/22		4

11074385 may have inadvertently been dried in its entirety for the gamma analysis.

TELETYPE ISOTOPLS

REPORT OF ANALYSIS

RUN DATE 01/07/02

WORK ORDER NUMBER

DATE RECEIVED

CUSTOMER P.O. NUMBER

DELIVERY DATE

PAGE 3

ERIC SMITH
MCJAREN/HART
16755 VON KAPLAN AVE
IRVINE CA 92714

3-1297

04-0029403-012

05/30/92

S O I L

TELETYPE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-X U/M %	HID-COUNT		VOLUME - UNITS	
			START DATE	STOP DATE				DATE	TIME	ASH-WGHT-X	LAB.
74387 90409	BB190025C		04/22	0840	I-131	L.T. 1. E-01		06/22			4
					CS-134	L.T. 6. E-02		06/22			4
					CS-137	2.35+-0.59E-01		06/22			4
					BA-140	L.T. 2. E-00		06/22			4
					CE-141	L.T. 3. E-01		06/22			4
					CE-144	L.T. 5. E-01		06/22			4
					RA-226	2.24+-1.05E-00		06/22			4
					TH-228	1.61+-0.16E-00		06/22			4
					H-3	L.T. 3. E-02		06/22			5
					PU-238	L.T. 7. E-02		06/09			6
					PU-239	L.T. 1. E-02		06/09			6
					BE-7	L.T. 4. E-01		06/02			4
					K-40	2.16+-0.22E-01		06/02			4
					MN-54	L.T. 4. E-02		06/02			4
74389 90415	BB190035C		04/23	0855	CO-58	L.T. 4. E-02		06/02			4
					FE-59	L.T. 1. E-01		06/02			4
					CO-60	L.T. 3. E-02		06/02			4
					ZN-65	L.T. 9. E-02		06/02			4
					ZR-95	L.T. 6. E-02		06/02			4
					RU-103	L.T. 6. E-02		06/02			4
					RU-106	L.T. 3. E-01		06/02			4
					I-131	L.T. 1. E-00		06/02			4
					CS-134	L.T. 4. E-02		06/02			4
					CS-137	L.T. 4. E-02		06/02			4
					BA-140	L.T. 3. E-01		06/02			4
					CE-141	L.T. 1. E-01		06/02			4
					CE-144	L.T. 2. E-01		06/02			4
					RA-226	2.20+-5.12E-01		06/02			4
					TH-228	1.87+-0.19E-01		06/02			4
					H-3	2.8 +-1.4 E-02		06/23			5

E. A. H.

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WATER

PRIORITY POLLUTANT METALS

Preparation Method: EPA 3010 {a}

ab Project-Sample ID: 5879-11

Project Name: Rocketdyne
Project Number: 040029403012

Sample Description: BB19003WF
Sample Number: 197876

Matrix: Water

Date Sampled: 4/23/92
Date Digested: 4/29/92 {b}

Date Received: 4/25/92
Batch Number: 920429-1301 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} ug/L (ppb)	DILUTION FACTOR	REPORTING LIMIT ug/L (ppb)	DATE ANALYZED
Antimony (Sb)/6010.....		1	50	5/01/92
Arsenic (As)/7060.....		1	10	5/01/92
Beryllium (Be)/6010.....		1	5	5/01/92
Cadmium (Cd)/6010.....		1	10	5/01/92
Chromium (Cr)/6010.....		1	10	5/01/92
Copper (Cu)/6010.....		1	20	5/01/92
Lead (Pb)/7421.....		1	3	5/01/92
Mercury (Hg)/7470.....		1	.5	4/30/92
Nickel (Ni)/6010.....		1	20	5/01/92
Selenium (Se)/7740.....		1	5	4/30/92
Silver (Ag)/6010.....		1	10	5/01/92
Thallium (Tl)/7841.....		1	10	5/01/92
Zinc (Zn)/6010.....		1	20	5/01/92

COMMENTS:

- {a} Applies to all metals except As, Pb, Se, Tl and Hg. EPA Method 3020 used for As, Pb, Se and Tl digestion. EPA Method 7470 used for Hg digestion.
- {b} Applies to all metals except As, Pb, Se, Tl and Hg. As, Pb, Se and Tl were digested on 4/29/92, Batch # 920429-1302 ; and Hg was digested on 4/29/92, Batch # 920429-1303 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 5/11/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



POLYNUCLEAR AROMATICS
Analytical Method: EPA 610
Preparation Method: EPA 3510

Lab Project-Sample ID: 5879-10
Project Name: Rocketdyne
Project Number: 040029403012

Sample Description: BB19003WG
Sample Number: 197869
Date Sampled: 4/23/92
Date Extracted: 4/29/92
Batch Number: 920429-1902

Matrix: Water
Date Received: 4/25/92
Date Analyzed: 5/01/92
Dilution Factor: 1

ANALYTE	ANALYTE CONCENTRATION {a} ug/L (ppb)	REPORTING LIMIT ug/L (ppb)
Naphthalene.....		10
Acenaphthylene.....		10
Acenaphthene.....		10
Fluorene.....		10
Phenanthrene.....		10
Anthracene.....		10
Fluoranthene.....		10
Pyrene.....		10
Benzo(a)anthracene.....		20
Chrysene.....		20
Benzo(b)fluoranthene.....		20
Benzo(k)fluoranthene.....		20
Benzo(a)pyrene.....		20
Indeno(1,2,3-c,d)pyrene.....		50
Dibenz(a,h)anthracene.....		50
Benzo(g,h,i)perylene.....		50

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorobiphenyl	87	43 - 116

COMMENTS:

{a} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected.

Approved by: Nancy McDonald for CM Date: 5/12/92
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Modified {a}
Preparation Method: EPA 5030

Lab Project-Sample ID: 5879-9

Page 1 of 2

Project Name: Rocketdyne
Project Number: 040029403012

Sample Description: BB19003WH
Sample Number: 197865

Matrix: Water

Date Sampled: 4/23/92
Date Analyzed: 4/30/92

Date Received: 4/25/92
Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/L (ppb)	REPORTING LIMIT ug/L (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Modified
Preparation Method: EPA 5030

Lab Project-Sample ID: 5879-9

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/L (ppb)	REPORTING LIMIT ug/L (ppb)
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1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	102	76 - 114
Toluene-D8	105	88 - 110
4-Bromofluorobenzene	106	86 - 115

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
{b} Additional compounds.
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 5/11/92
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



Table: Results of the analyses for iodine-129 in three (3) and strontium-90 in two (2) water samples.

Sample ID Number	Sample Description	Collection Date	Lab Code	Concentration pCi/L			
				I-129	Date Analyzed	Sr-90	Date Analyzed
171817	BB16003RA	04/22/92	SPW-2227	ND		<0.4	06/20
171818	BB16003RA	04/22/92	2228	ND		<0.4	06/20
171820	BB16005RC	04/22/92	2229	<1.2	06/11	ND	
171821	BB16005RC	04/22/92	2230	<2.0	06/08	ND	
197875	BB19003WC	04/22/92	2231	<1.8	06/08	ND	

Less than (<) values are based on 3 sigma counting error for background sample.

ND - no data, analysis not required.

Table: Results of the analyses for iodine-129 in three (3) and strontium-90 in fifteen (15) water samples.

Sample ID Number	Sample Description	Collection Date	Lab Code	Concentration pCi/L			
				I-129	Date Analyzed	Sr-90	Date Analyzed
197855	BB16RD30WA	04/23/92	SPW-2139	ND		<0.3	06/06
197874	BB19003WA	04/23/92	2140	ND		<0.4	06/06
197310	BB16001BWA	04/23/92	2141	ND		1.8±0.5	06/06
197317	BB16001AWA	04/23/92	2142	ND		1.1±0.3	06/06
197890	DCWA	04/23/92	2143	ND		<0.4	06/06
197891	Dup. SPW-2143	04/23/92	2144	ND		<0.3	06/06
197311	BB16001BWC	04/23/92	2145	<1.8	06/09	ND	
197893	DCWC	04/23/92	2146	<2.0	06/09	ND	
197894	Dup. SPW-2146	04/23/92	2147	<2.6	06/09	ND	
197122	BB18003WC	04/21/92	2148	<1.6	06/10	ND	
197123	BB00001WC	04/21/92	2149	<1.7	06/11	ND	
197109	BB18003WA	04/21/92	2150	ND		<0.3	06/06
197110	BB00001WA	04/21/92	2151	ND		1.0±0.4	06/06
197130	BB18000RA	04/21/92	2152	ND		<0.3	06/06
171835	✓ 7B1WA	04/21/92	2153	ND		<0.4	06/06
171836	Dup. SPW-2153	04/21/92	2154	ND		<0.3	06/06
197135	BB18000RC	04/21/92	2155	<1.7	06/11	ND	
171838	✓ 7B1WC	04/21/92	2156	<1.7	06/11	ND	
171839	Dup. SPW-2156	04/21/92	2157	<1.6	06/11	ND	

Less than (<) values are based on 3 sigma counting error for background sample. The error given is the probable counting error at 95% confidence level.

ND - no data, analysis not required.

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

RUN DATE 07/07/02

PAGE 1

WORK ORDER NUMBER

3-1298

CUSTOMER P.O. NUMBER

04-0029403-012

DATE RECEIVED

04/27/92

DELIVERY DATE

05/30/92

ERIC SMITH
MCLADEN/HART
16755 VON KARMAN AVE
IRVINE CA

92714

WATER - SURFACE

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PC/LITER)	NUCL-UNIT-2 U/M	MID-COUNT		VOLUME - UNITS ASH-WEIGHT-%	LAB.
			START DATE	STOP DATE				DATE	TIME		
74401	197870 RB19003WD		04/23	0830	BE-7 K-40 MN-54 CO-58 FE-59 CO-60 ZN-65 ZR-95 RU-103 RU-106 I-131 CS-134 CS-137 BA-140 CE-141 CE-144 RA-226 TH-228	L.T. 4. E 01 L.T. 5. E 01 L.T. 3. E 00 L.T. 4. E 00 L.T. 1. E 01 L.T. 3. E 00 L.T. 7. E 00 L.T. 4. E 00 L.T. 6. E 00 L.T. 3. E 01 L.T. 5. E 01 L.T. 3. E 00 L.T. 3. E 00 L.T. 2. E 01 L.T. 9. F 00 L.T. 2. E 01 L.T. 6. E 01 L.T. 6. E 00		05/24 05/24 05/24 05/24 05/24 05/24 05/24 05/24 05/24 05/24 05/24 05/24 05/24 05/24 05/24 05/24 05/24 05/24	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4		
74402	197871 RB19003WI		04/23	0830	GR-A GP-R	L.T. 4. E 00 4.9 +-2.5 E 00		05/08 05/08	3 3		
74403	197872 RB19003WE		04/23	0830	H-3	L.T. 1. E 02		06/27	5		
74404	197873 RB19003WR		04/23	0830	PU-238 PU-239	L.T. 4. E-01 L.T. 3. E-01		05/23 05/23	6 6		
74405	197306 RB16003WD		04/23	0950	BE-7 K-40 MN-54 CO-58 FE-59 CN-60	L.T. 3. E 01 L.T. 5. E 01 L.T. 3. E 00 L.T. 3. F 00 L.T. R. F 00 L.T. 3. F 00		05/24 05/24 05/24 05/24 05/24 05/24	4 4 4 4 4 4		

TELEDYNE ISOTOPIES

REPORT OF ANALYSIS

RUN DATE 06/09/92

PAGE 3

WORK ORDER NUMBER

3-1681

CUSTOMER P.O. NUMBER

04-0029403-012

DELIVERY DATE

06/22/92

PAGE 3

ERIC SMITH
MCLAREN/HART
16755 VON KARMAN AVE
IRVINE CA

92714

WATER - SURFACE

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/LITER)	NUCL-UNIT-X U/M	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-X LAB.
69556	197158	8C01002WE	03/12	1530	I-129	L.T. 7. E 00		06/02	3
70345	171858	SM08001WE	11/25		I-129	L.T. 6. E 00		06/02	3
70447	170680	8804001WE	03/16	1405	I-129	L.T. 7. E 00		06/03	3
74347	197118	8818003WE	04/21	1320	I-129	L.T. 7. E 00		06/03	3
74348	197119	8800001WE	04/23	0830	I-129	L.T. 6. E 00		06/03	3
74403	197872	8819003WE	04/23	0830	I-129	L.T. 7. E 00		06/03	3
74407	197308	8816001WE	04/23	0950	I-129	L.T. 6. E 00		06/03	3

LAST PAGE OF REPORT

APPROVED BY J. GUENTHER 06/09/92

SEND 1 COPIES TO MC4805 ERIC SMITH

2 - GAS LAB. 3 - RADIO CHEMISTRY LAB. 4 - GE(LI) GAMMA SPEC LAB. 5 - TRITIUM GAS/L.S. LAB. 6 - ALPHA SPEC LAB.