



Environmental • Geotechnical • Special Inspections • Materials Testing

TERRASEARCH inc.

SERVING NORTHERN CALIFORNIA SINCE 1969

ENVIRONMENTAL PROTECTION

99 APR 30 PM 1:42

Project No. E7744
April 26, 1999

GEOTECHNICAL

GEOLOGICAL

ENVIRONMENTAL

SPECIAL INSPECTIONS

MATERIALS TESTING

Mr. John Hughes
Citation Homes
404 Saratoga Avenue, Suite 100
Santa Clara, California 95050

Subject: Proposed Residential Development
Future Tract 7003
Union City, California
**ADDITIONAL SURFICIAL METAL AND
ORGANOCHLORIDE PESTICIDE PHASE II
ENVIRONMENTAL SAMPLING**

600 Taggart

Reference: (1) *Phase II Environmental Site Assessment*
By Terrasearch, Inc.
Dated March 19, 1999

Dear Mr. Hughes:

In accordance with your authorization, **TERRASEARCH, inc.** has conducted an additional surficial metal and organochloride pesticide Phase II Environmental Site Assessment for the above referenced site. This additional environmental work was performed at the request of the Union City Environmental Programs Division and the Alameda County Department of Environmental Health based on the findings in our recent Phase II Environmental Site Assessment (Reference 1). In our initial report, laboratory analysis showed pesticides DDE and Endrin were detected in a soil sample taken at 2 feet below ground surface (bgs). To further evaluate the extent of pesticides and metals within the surficial soil, **TERRASEARCH, inc.** proposed the additional sampling of 4 four-point composite soil-samples (1 composite sample per acre) at the site.

On Thursday, April 8, 1999, a **TERRASEARCH, inc.** field geologist was on-site to perform the additional soil sampling. A backhoe was used to break through the overlying concrete and asphalt to reach the native surficial soil. A total of 6 four-point soil samples were collected at the site (see Figure 1, Sample Location Map). The samples were placed in a pre-chilled ice chest and delivered under chain-of-custody documentation to Entech Analytical Labs, a State certified laboratory (CA ELAP# 1-2346) in Sunnyvale, California. Each four-point sample was composited by the laboratory and analyzed for organochloride pesticides and the metals arsenic (As), lead (Pb), and mercury (Hg) using EPA Methods 8081A, 6010, and 7471. The results of the laboratory analysis are listed in Table 1, and are attached to Appendix A.

SAN JOSE:
6840 Via Del Oro
Suite 110
San Jose, CA 95119
(408) 362-4920
Fax: (408) 362-4926

DUBLIN:
11840 Dublin Blvd.
Dublin, CA 94568
(925) 833-9297
Fax: (925) 833-9548

ELK GROVE:
8788 Elk Grove Blvd.
Building 3, Suite 14
Elk Grove, CA 95624
(916) 686-2878

FREMONT:
43353-B Osgood Rd.
Fremont, CA 94538
(510) 413-0100
Fax: (510) 413-0101

TABLE 1

**LABORATORY ANALYSIS OF SOIL SAMPLES FOR As, Pb, Hg and
ORGANOCHLORIDE PESTICIDES**

| Sample ID | Sample Depth (feet) | As (mg/Kg) | Pb (mg/Kg) | Hg (mg/Kg) | DDE (mg/Kg) | DDT (mg/Kg) | OTHER PESTICIDES (mg/Kg) | TOTAL PESTICIDES (mg/Kg) |
|------------|---------------------|------------|------------|------------|-------------------|-------------------|-------------------------------------|--------------------------|
| E1-A,B,C,D | 0.5 | N.D. | 15 | N.D. | 0.1 ¹ | 0.43 ¹ | Delta-BHC - 0.12 Dieldrin - 0.67 | 0.22 |
| E2-A,B,C,D | 0.5 | N.D. | 20 | N.D. | 0.63 ² | N.D. | N.D. | 0.63 |
| E3-A,B,C,D | 0.5 | N.D. | 14 | N.D. | N.D. | N.D. | N.D. | <0.3 |
| E4-A,B,C,D | 0.5 | N.D. | 21 | 0.18 | 1.04 ¹ | N.D. | DDT - 0.11 | 1.15 |
| E5-A,B,C,D | 0.5 | N.D. | 10 | N.D. | 0.46 ¹ | N.D. | N.D. | 0.46 |
| E6-A,B,C,D | 0.5 | N.D. | 17 | N.D. | 1.3 ² | N.D. | N.D. | 1.3 |
| Averages | 0.5 | <0.1 | 16.1 | 0.13 | 0.58 ² | 0.37 ¹ | 0.15 | 0.63 |

As = Arsenic using EPA Methods 6010.

Pb = Lead using EPA Methods 6010.

Hg = Mercury using EPA Methods 7471.

DDE = 1,1-dichloro-2,2-bis(p-chlorophenyl)ethylene using EPA Method 8081A.

DDT = 1,1,1-trichloro-2,2-bis-(p-chlorophenyl)ethane using EPA Method 8081A.

mg/Kg = Milligrams per kilogram, equivalent to parts per million (ppm).

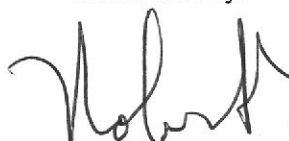
N.D. = Not Detected (below detection limits)

Laboratory analytical results reported that arsenic was not detected in any of the composited soil samples analyzed from the site. Mercury was detected in one soil sample and lead was detected in all soil samples analyzed, but were reported within background levels. Organochloride pesticides were detected in most of the composited soil samples analyzed (organochloride pesticides were not detected in composited soil sample E3-A,B,C,D) at or below the action levels for the Cal EPA. Furthermore, the average total organochloride pesticide concentration at the site was 0.63 mg/Kg, which is well below the action level.

Based on the laboratory analytical results, *TERRASEARCH, inc.* recommends that further environmental work is **not** warranted at the site, and the site should be closed.


Should you have any questions relating to the contents of this report or require any additional information, please contact our office at your convenience.

Reviewed by:

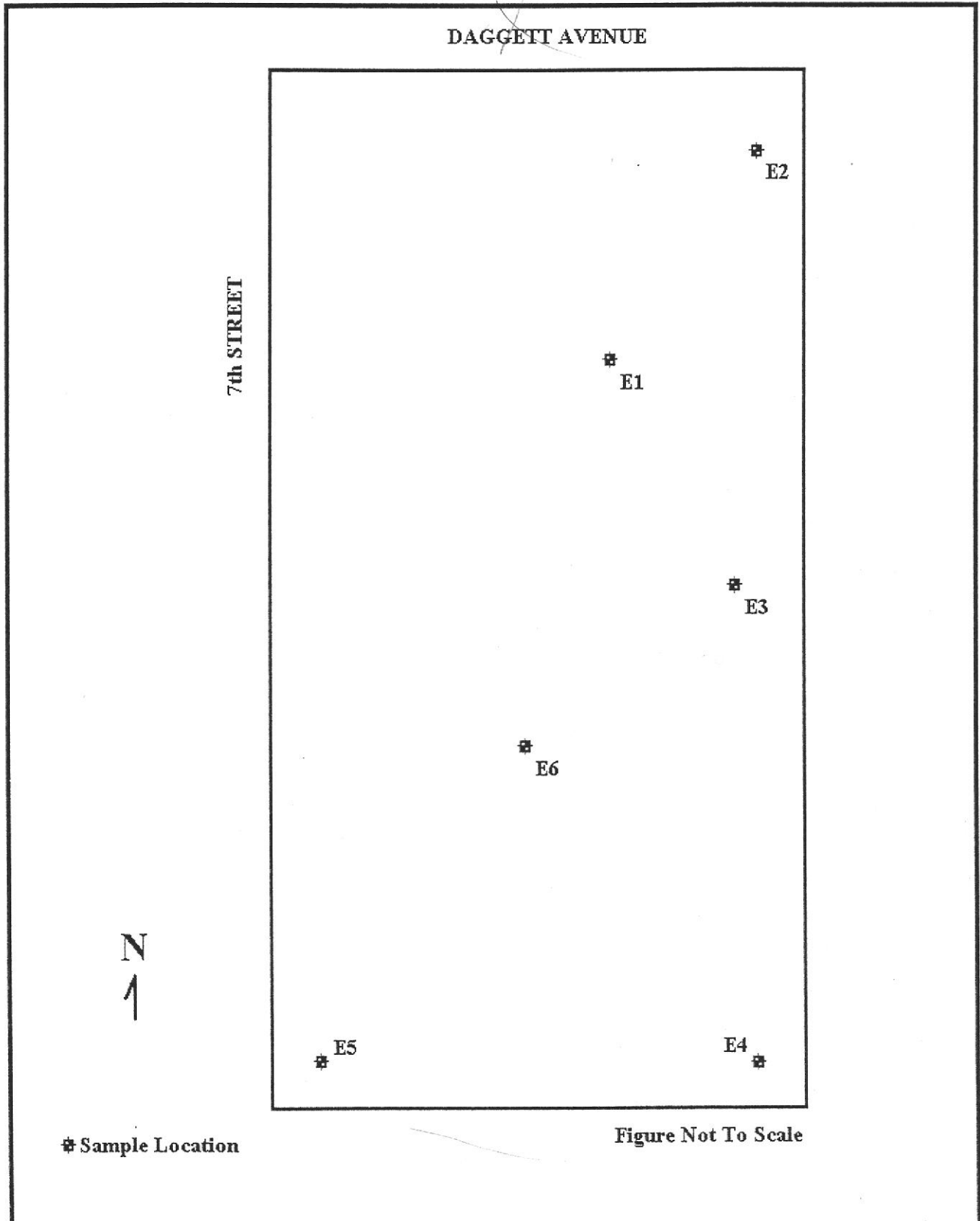

Robert D. Campbell, C.E.G.
Environmental Manager



Very truly yours,
TERRASEARCH, inc.


Chris Winn
Staff Geologist

Copies: 3 to Citation Homes Central



APPENDIX A

**LABORATORY ANALYTICAL REPORT AND
CHAIN-OF-CUSTODY FORMS**

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • Telephone: (408) 735-1550 (800) 287-1799 • Fax: (408) 735-1554

Chain of Custody/Analysis Work Order

Client: Terrasearch
 Address: 11840 Dublin Blvd
Dublin, CA 94568
 Contact: Chris Winn
 Telephone #: (925) 833-9297 Fax: (925) 833-9548
 Date Received: 4/8/99
 Turn Around: Standard

Project ID: 600 Daggett Ave.
Union City
 Purchase Order #: E7744

| | |
|-------------------------------|--------------|
| Sampler/Company: | Telephone #: |
| Special Instructions/Comments | |

LAB USE ONLY

Samples arrived chilled and intact:

Yes No

Notes: _____

| Sample Information | | | | | | | | Requested Analysis | | | | | | | |
|-----------------------------------|------------|----------------|--------|--------------------------------------|----------------|-------|------------------|---------------------|-------|----------------------|--|--|--|--|--|
| Lab # | Sample ID | Grab/Composite | Matrix | Date Collected | Time Collected | Pres. | Sample Container | PCB | Pest. | Metals | | | | | |
| G88988 | E1-A,B,C,D | Comp(4:1) | Soil | 4/8/99 | | None | Bag | X | X | X | | | | | |
| G88989 | E2-A,B,C,D | ↓ | ↓ | ↓ | | ↓ | ↓ | X | X | X | | | | | |
| G88990 | E3-A,B,C,D | ↓ | ↓ | ↓ | | ↓ | ↓ | X | X | X | | | | | |
| G88991 | E4-A,B,C,D | ↓ | ↓ | ↓ | | ↓ | ↓ | X | X | X | | | | | |
| G88992 | E5-A,B,C,D | ↓ | ↓ | ↓ | | ↓ | ↓ | X | X | X | | | | | |
| G88993 | E6-A,B,C,D | ↓ | ↓ | ↓ | | ↓ | ↓ | X | X | X | | | | | |
| Relinq. By: <u>[Signature]</u> | | | | Received By: <u>[Signature]</u> #501 | | | | Date: <u>4/9/99</u> | | Time: <u>900</u> | | | | | |
| Relinq. By: <u>Chris Winn</u> 501 | | | | Received By: <u>ng/mazo</u> | | | | Date: <u>4/9/99</u> | | Time: <u>12:15pm</u> | | | | | |
| Relinq. By: _____ | | | | Received By: _____ | | | | Date: _____ | | Time: _____ | | | | | |

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Subcontract Chain of Custody

19879

| Subcontract Lab: | | Date Sent: | Project Name: | | Due Date: | |
|-----------------------|--------|-------------------|---------------|------------|------------|-------|
| Acculabs - Danie | | 04/09/99 | Terrasearch | | 04/16/99 | |
| Sample ID and Source | Matrix | Required Analysis | Date Taken | Time Taken | Containers | Pres? |
| 01 G8980 (B-1) | Soil | 8080 PEST | 4/6/99 | | 40g jar | |
| 02 G8981 (B-2) | | | | | | |
| 03 G8982 (B-3) | | | | | | |
| 04 G8983 (B-4) | | | | | | |
| 05 G8984 (B-5) | | | | | | |
| 06 G8985 (B-6) | | | | | | |
| 07 G8986 (B-7) | | | | | | |
| 08 G8987 (B-8) | ✓ | ✓ | ✓ | | | ✓ |
| 09 G8988 (E1-A,B,C,D) | Soil | 8080 PEST | 4/8/98 | | 40g jar | |
| 10 G8989 (E2-A,B,C,D) | | | | | | |
| 11 G8990 (E3-A,B,C,D) | | | | | | |
| 12 G8991 (E4-A,B,C,D) | | | | | | |
| 13 G8992 (E5-A,B,C,D) | | | | | | |
| 14 G8993 (E6-A,B,C,D) | ✓ | ✓ | ✓ | | | ✓ |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

| | | | |
|-------------------------------------|--------------------------------------|-------------------|---------------|
| Relinquished By: <i>W. Trazo</i> | Received By: <i>Cal Overnight</i> | Date: 04/09/99 | Time: 6 pm |
| Relinquished By: CA ON | Received By: <i>Joy G. Surpan</i> | Date: 4/12/99 | Time: 0900 |
| Relinquished By: | Received By: | Date: | Time: |

Notes: _____

Entech Analytical Labs, Inc.

CA ELAP# I-2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Terrasearch
11840 Dublin Blvd.
Dublin, CA 94568
Attn: Chris Winn

Date: 4/20/99
Date Received: 4/9/99
Project: 600 Daggett Ave, Union City
PO #: E7744
Sampled By: Client

Certified Analytical Report

Soil Sample Analysis: (All results in mg/kg)

| | | | | | | | | | | |
|--------------------|------------|-----|------|--|--|--|--|--|------|--------|
| Sample ID | E1-A,B,C,D | | | | | | | | | |
| Sample Date | 4/8/99 | | | | | | | | | |
| Sample Time | | | | | | | | | | |
| Lab # | G8988 | | | | | | | | | |
| | Result | DF | DLR | | | | | | PQL | Method |
| Extraction | TTLIC | | | | | | | | | 3050 |
| 6010 Analysis Date | 4/15/99 | | | | | | | | | |
| Arsenic | ND | 1.0 | 5.0 | | | | | | 5.0 | 6010 |
| Lead | 15 | 1.0 | 5.0 | | | | | | 5.0 | 6010 |
| 7471 Analysis Date | 4/15/99 | | | | | | | | | |
| Mercury | ND | 1.0 | 0.10 | | | | | | 0.10 | 7471 |


Michelle L. Anderson, Lab Director

DF=Dilution Factor
PQL= Practical Quantitation Limit

ND=None Detected above DLR
DLR=Detection Reporting Limit

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# I-2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

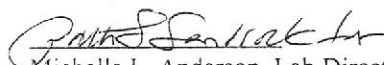
Terrasearch
11840 Dublin Blvd.
Dublin, CA 94568
Attn: Chris Winn

Date: 4/20/99
Date Received: 4/9/99
Project: 600 Daggett Ave, Union City
PO #: E7744
Sampled By: Client

Certified Analytical Report

Soil Sample Analysis: (All results in mg/kg)

| Sample ID | E2-A,B,C,D | | | E3-A,B,C,D | | | E4-A,B,C,D | | | | |
|--------------------|------------|-----|------|------------|-----|------|------------|-----|------|------|--------|
| Sample Date | 4/8/99 | | | 4/8/99 | | | 4/8/99 | | | | |
| Sample Time | | | | | | | | | | | |
| Lab # | G8989 | | | G8990 | | | G8991 | | | | |
| | Result | DF | DLR | Result | DF | DLR | Result | DF | DLR | PQL | Method |
| Extraction | TTLC | | | TTLC | | | TTLC | | | | 3050 |
| 6010 Analysis Date | 4/15/99 | | | 4/15/99 | | | 4/15/99 | | | | |
| Arsenic | ND | 1.0 | 5.0 | ND | 1.0 | 5.0 | ND | 1.0 | 5.0 | 5.0 | 6010 |
| Lead | 20 | 1.0 | 5.0 | 14 | 1.0 | 5.0 | 21 | 1.0 | 5.0 | 5.0 | 6010 |
| 7471 Analysis Date | 4/15/99 | | | 4/15/99 | | | 4/15/99 | | | | |
| Mercury | ND | 1.0 | 0.10 | ND | 1.0 | 0.10 | 0.18 | 1.0 | 0.10 | 0.10 | 7471 |


Michelle L. Anderson, Lab Director

DF=Dilution Factor
PQL= Practical Quantitation Limit

ND=None Detected above DLR
DLR=Detection Reporting Limit

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# I-2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

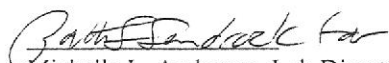
Terrasearch
11840 Dublin Blvd.
Dublin, CA 94568
Attn: Chris Winn

Date: 4/20/99
Date Received: 4/9/99
Project: 600 Daggett Ave, Union City
PO #: E7744
Sampled By: Client

Certified Analytical Report

Soil Sample Analysis: (All results in mg/kg)

| Sample ID | E5-A,B,C,D | | | E6-A,B,C,D | | | | | |
|--------------------|------------|-----|------|------------|-----|------|--|------|--------|
| Sample Date | 4/8/99 | | | 4/8/99 | | | | | |
| Sample Time | | | | | | | | | |
| Lab # | G8992 | | | G8993 | | | | | |
| | Result | DF | DLR | Result | DF | DLR | | PQL | Method |
| Extraction | TTLC | | | TTLC | | | | | 3050 |
| 6010 Analysis Date | 4/15/99 | | | 4/15/99 | | | | | |
| Arsenic | ND | 1.0 | 5.0 | ND | 1.0 | 5.0 | | 5.0 | 6010 |
| Lead | 10 | 1.0 | 5.0 | 17 | 1.0 | 5.0 | | 5.0 | 6010 |
| 7471 Analysis Date | 4/15/99 | | | 4/15/99 | | | | | |
| Mercury | ND | 1.0 | 0.10 | ND | 1.0 | 0.10 | | 0.10 | 7471 |


Michelle L. Anderson, Lab Director

DF=Dilution Factor
PQL= Practical Quantitation Limit

ND=None Detected above DLR
DLR=Detection Reporting Limit

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# I-2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

April 20, 1999

Chris Winn
Terrasearch
11840 Dublin Blvd.
Dublin, CA 94568

Subject: 6 Soil Samples
Lab #'s: G8988 through G8993
Project Name: 600 Daggett Ave, Union City
Project Number:
P.O. Number: E7744
Method(s): EPA 8080
Subcontract Lab(s): Acculabs, Inc. (CA ELAP #2330)

Dear Chris Winn,

Chemical analysis on the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. USEPA protocols for sample storage and preservation were followed.

Entech Analytical Labs, Inc. is certified by the State of California (#I-2346). If you have any questions regarding procedures or results, please call me at 408-735-1550.

Sincerely,



Michelle L. Anderson
Lab Director



Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ■ 530-757-0920 ■ Fax 753-6091

Sample Log 19879

April 22, 1999

Michelle Anderson
Entech Analytical Labs, Inc.
525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

Subject : 6 Soil samples
Project Name : Terrasearch
Project Number :

Dear Ms. Anderson,

Chemical analysis on the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. USEPA protocols for sample storage and preservation were followed.

Acculabs - Davis is certified by the State of Arizona (AZ0583) and the State of California (# 2330). If you have any questions regarding procedures or results, please call me at 530-757-0920.

Sincerely,

Tom Kwoka



Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ■ 530-757-0920 ■ Fax 753-6091

Subject : 6 Soil samples
Project Name : Terrasearch
Project Number :

Sample Log 19879
April 22, 1999

Case Narrative

Analysis: Pesticides by EPA 8081A

Sample G8991(E4-A,B,C,D) was analyzed at a 1:5 dilution due to sample matrix interferences. Quantitation of both surrogates was not possible due to matrix interferences.

Matrix Spike and Matrix Spike Duplicate results for Endrin and 4,4'-DDT were below control chart limits due to sample matrix effects. The recoveries for these two compounds in the Laboratory Control Spike were within control chart limits.


Tom Kwoka



Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ■ 530-757-0920 ■ Fax 753-6091

EPA 8081A

Sample Log 19879
April 20, 1999

Sample Name : **G8988(E1-A,B,C,D)**

Project Name : Terrasearch

Project Number :

Sample Date : 04/08/99

Date Extracted : 04/16/99

Extr. Method : EPA 3550

QC Batch : PS990405

Date Analyzed : 04/17/99

Date Received : 04/12/99

Dilution : 1:1

Sample Matrix : Soil

Lab Number : 19879-09

| Parameter | MRL | Measured Conc. | Units |
|----------------------------|---------------|----------------|------------|
| alpha-BHC | 0.0050 | <0.0050 | mg/Kg |
| gamma-BHC | 0.0050 | <0.0050 | mg/Kg |
| beta-BHC | 0.0050 | <0.0050 | mg/Kg |
| Heptachlor | 0.0050 | <0.0050 | mg/Kg |
| delta-BHC | 0.0050 | .012 | mg/Kg |
| Aldrin | 0.0050 | <0.0050 | mg/Kg |
| Heptachlor Epoxide | 0.0050 | <0.0050 | mg/Kg |
| gamma-Chlordane | 0.0050 | <0.0050 | mg/Kg |
| Endosulfan 1 | 0.0050 | <0.0050 | mg/Kg |
| alpha-Chlordane | 0.0050 | <0.0050 | mg/Kg |
| Dieldrin | 0.010 | .067 | mg/Kg |
| DDE | 0.010 | .10 | mg/Kg |
| Endrin | 0.010 | <0.010 | mg/Kg |
| Endosulfan 2 | 0.010 | <0.010 | mg/Kg |
| DDD | 0.010 | <0.010 | mg/Kg |
| Endrin Aldehyde | 0.010 | <0.010 | mg/Kg |
| DDT | 0.010 | .043 | mg/Kg |
| Endosulfan Sulfate | 0.010 | <0.010 | mg/Kg |
| Methoxychlor | 0.050 | <0.050 | mg/Kg |
| Chlordane Technical | 0.10 | <0.10 | mg/Kg |
| Toxaphene | 0.20 | <0.20 | mg/Kg |
| Tetrachloro-m-xylene (sur) | (60-138) | 117 | % Recovery |
| Decachlorobiphenyl (sur) | (54-166) | 118 | % Recovery |

MRL = Method Reporting Limit

Conc. = Concentration

E = Concentration exceeded calibration range.

Approved By :


Tom Kwacka



Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ■ 530-757-0920 ■ Fax 753-6091

EPA 8081A

Sample Log 19879
April 20, 1999

Sample Name : **G8989(E2-A,B,C,D)**

Project Name : Terrasearch
Project Number :
Sample Date : 04/08/99
Date Extracted : 04/16/99
Extr. Method : EPA 3550
QC Batch : PS990405

Date Analyzed : 04/19/99
Date Received : 04/12/99
Dilution : 1:5
Sample Matrix : Soil
Lab Number : 19879-10

| Parameter | MRL | Measured Conc. | Units |
|----------------------------|--------------|----------------|------------|
| alpha-BHC | 0.025 | < 0.025 | mg/Kg |
| gamma-BHC | 0.025 | < 0.025 | mg/Kg |
| beta-BHC | 0.025 | < 0.025 | mg/Kg |
| Heptachlor | 0.025 | < 0.025 | mg/Kg |
| delta-BHC | 0.025 | < 0.025 | mg/Kg |
| Aldrin | 0.025 | < 0.025 | mg/Kg |
| Heptachlor Epoxide | 0.025 | < 0.025 | mg/Kg |
| gamma-Chlordane | 0.025 | < 0.025 | mg/Kg |
| Endosulfan 1 | 0.025 | < 0.025 | mg/Kg |
| alpha-Chlordane | 0.025 | < 0.025 | mg/Kg |
| Dieldrin | 0.050 | < 0.050 | mg/Kg |
| DDE | 0.050 | .63 | mg/Kg |
| Endrin | 0.050 | < 0.050 | mg/Kg |
| Endosulfan 2 | 0.050 | < 0.050 | mg/Kg |
| DDD | 0.050 | < 0.050 | mg/Kg |
| Endrin Aldehyde | 0.050 | < 0.050 | mg/Kg |
| DDT | 0.050 | < 0.050 | mg/Kg |
| Endosulfan Sulfate | 0.050 | < 0.050 | mg/Kg |
| Methoxychlor | 0.25 | < 0.25 | mg/Kg |
| Chlordane Technical | 0.50 | < 0.50 | mg/Kg |
| Toxaphene | 1.0 | <1.0 | mg/Kg |
| Tetrachloro-m-xylene (sur) | (60-138) | 116 | % Recovery |
| Decachlorobiphenyl (sur) | (54-166) | 149 | % Recovery |

MRL = Method Reporting Limit

Conc. = Concentration

E = Concentration exceeded calibration range.

Approved By :


Tom Kwoka



Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ■ 530-757-0920 ■ Fax 753-6091

EPA 8081A

Sample Log 19879
April 20, 1999

Sample Name : G8990(E3-A,B,C,D)

Project Name : Terrasearch
Project Number :
Sample Date : 04/08/99
Date Extracted : 04/16/99
Extr. Method : EPA 3550
QC Batch : PS990405

Date Analyzed : 04/17/99
Date Received : 04/12/99
Dilution : 1:1
Sample Matrix : Soil
Lab Number : 19879-11

| Parameter | MRL | Measured Conc. | Units |
|----------------------------|----------|----------------|------------|
| alpha-BHC | 0.0050 | <0.0050 | mg/Kg |
| gamma-BHC | 0.0050 | <0.0050 | mg/Kg |
| beta-BHC | 0.0050 | <0.0050 | mg/Kg |
| Heptachlor | 0.0050 | <0.0050 | mg/Kg |
| delta-BHC | 0.0050 | <0.0050 | mg/Kg |
| Aldrin | 0.0050 | <0.0050 | mg/Kg |
| Heptachlor Epoxide | 0.0050 | <0.0050 | mg/Kg |
| gamma-Chlordane | 0.0050 | <0.0050 | mg/Kg |
| Endosulfan 1 | 0.0050 | <0.0050 | mg/Kg |
| alpha-Chlordane | 0.0050 | <0.0050 | mg/Kg |
| Dieldrin | 0.010 | <0.010 | mg/Kg |
| DDE | 0.010 | <0.010 | mg/Kg |
| Endrin | 0.010 | <0.010 | mg/Kg |
| Endosulfan 2 | 0.010 | <0.010 | mg/Kg |
| DDD | 0.010 | <0.010 | mg/Kg |
| Endrin Aldehyde | 0.010 | <0.010 | mg/Kg |
| DDT | 0.010 | <0.010 | mg/Kg |
| Endosulfan Sulfate | 0.010 | <0.010 | mg/Kg |
| Methoxychlor | 0.050 | <0.050 | mg/Kg |
| Chlordane Technical | 0.10 | <0.10 | mg/Kg |
| Toxaphene | 0.20 | <0.20 | mg/Kg |
| Tetrachloro-m-xylene (sur) | (60-138) | 115 | % Recovery |
| Decachlorobiphenyl (sur) | (54-166) | 120 | % Recovery |

MRL = Method Reporting Limit

Conc. = Concentration

E = Concentration exceeded calibration range.

Approved By :


Tom Kwoka



Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ■ 530-757-0920 ■ Fax 753-6091

EPA 8081A

Sample Log 19879

April 20, 1999

Sample Name : **G8991(E4-A,B,C,D)**

Project Name : Terrasearch

Project Number :

Sample Date : 04/08/99

Date Extracted : 04/16/99

Extr. Method : EPA 3550

QC Batch : PS990405

Date Analyzed : 04/20/99

Date Received : 04/12/99

Dilution : 1:5

Sample Matrix : Soil

Lab Number : 19879-12

| Parameter | MRL | Measured Conc. | Units |
|----------------------------|--------------|----------------|------------|
| alpha-BHC | 0.025 | < 0.025 | mg/Kg |
| gamma-BHC | 0.025 | < 0.025 | mg/Kg |
| beta-BHC | 0.025 | < 0.025 | mg/Kg |
| Heptachlor | 0.025 | < 0.025 | mg/Kg |
| delta-BHC | 0.025 | < 0.025 | mg/Kg |
| Aldrin | 0.025 | < 0.025 | mg/Kg |
| Heptachlor Epoxide | 0.025 | < 0.025 | mg/Kg |
| gamma-Chlordane | 0.025 | < 0.025 | mg/Kg |
| Endosulfan 1 | 0.025 | < 0.025 | mg/Kg |
| alpha-Chlordane | 0.025 | < 0.025 | mg/Kg |
| Dieldrin | 0.050 | < 0.050 | mg/Kg |
| DDE | 0.050 | 1.04 | mg/Kg |
| Endrin | 0.050 | < 0.050 | mg/Kg |
| Endosulfan 2 | 0.050 | < 0.050 | mg/Kg |
| DDD | 0.050 | .11 | mg/Kg |
| Endrin Aldehyde | 0.050 | < 0.050 | mg/Kg |
| DDT | 0.050 | < 0.050 | mg/Kg |
| Endosulfan Sulfate | 0.050 | < 0.050 | mg/Kg |
| Methoxychlor | 0.25 | < 0.25 | mg/Kg |
| Chlordane Technical | 0.50 | < 0.50 | mg/Kg |
| Toxaphene | 1.0 | <1.0 | mg/Kg |
| Tetrachloro-m-xylene (sur) | (60-138) | DIL OUT | % Recovery |
| Decachlorobiphenyl (sur) | (54-166) | DIL OUT | % Recovery |

MRL = Method Reporting Limit

Conc. = Concentration

E = Concentration exceeded calibration range.

Approved By :


Tom Kwoka



Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ■ 530-757-0920 ■ Fax 753-6091

EPA 8081A

Sample Log 19879

April 20, 1999

Sample Name : **G8992(E5-A,B,C,D)**

Project Name : Terrasearch

Project Number :

Sample Date : 04/08/99

Date Extracted : 04/16/99

Extr. Method : EPA 3550

QC Batch : PS990405

Date Analyzed : 04/20/99

Date Received : 04/12/99

Dilution : 1:5

Sample Matrix : Soil

Lab Number : 19879-13

| Parameter | MRL | Measured Conc. | Units |
|----------------------------|--------------|----------------|------------|
| alpha-BHC | 0.025 | < 0.025 | mg/Kg |
| gamma-BHC | 0.025 | < 0.025 | mg/Kg |
| beta-BHC | 0.025 | < 0.025 | mg/Kg |
| Heptachlor | 0.025 | < 0.025 | mg/Kg |
| delta-BHC | 0.025 | < 0.025 | mg/Kg |
| Aldrin | 0.025 | < 0.025 | mg/Kg |
| Heptachlor Epoxide | 0.025 | < 0.025 | mg/Kg |
| gamma-Chlordane | 0.025 | < 0.025 | mg/Kg |
| Endosulfan 1 | 0.025 | < 0.025 | mg/Kg |
| alpha-Chlordane | 0.025 | < 0.025 | mg/Kg |
| Dieldrin | 0.050 | < 0.050 | mg/Kg |
| DDE | 0.050 | .46 | mg/Kg |
| Endrin | 0.050 | < 0.050 | mg/Kg |
| Endosulfan 2 | 0.050 | < 0.050 | mg/Kg |
| DDD | 0.050 | < 0.050 | mg/Kg |
| Endrin Aldehyde | 0.050 | < 0.050 | mg/Kg |
| DDT | 0.050 | < 0.050 | mg/Kg |
| Endosulfan Sulfate | 0.050 | < 0.050 | mg/Kg |
| Methoxychlor | 0.25 | < 0.25 | mg/Kg |
| Chlordane Technical | 0.50 | < 0.50 | mg/Kg |
| Toxaphene | 1.0 | <1.0 | mg/Kg |
| Tetrachloro-m-xylene (sur) | (60-138) | 135 | % Recovery |
| Decachlorobiphenyl (sur) | (54-166) | 151 | % Recovery |

MRL = Method Reporting Limit

Conc. = Concentration

E = Concentration exceeded calibration range.

Approved By :


Tom Kwoka



Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ■ 530-757-0920 ■ Fax 753-6091

EPA 8081A

Sample Log 19879
April 21, 1999

Sample Name : G8993(E6-A,B,C,D)

Project Name : Terrasearch
Project Number :
Sample Date : 04/08/99
Date Extracted : 04/16/99
Extr. Method : EPA 3550
QC Batch : PS990405

Date Analyzed : 04/20/99
Date Received : 04/12/99
Dilution : 1:10
Sample Matrix : Soil
Lab Number : 19879-14

| Parameter | MRL | Measured Conc. | Units |
|----------------------------|-------------|----------------|------------|
| alpha-BHC | 0.050 | < 0.050 | mg/Kg |
| gamma-BHC | 0.050 | < 0.050 | mg/Kg |
| beta-BHC | 0.050 | < 0.050 | mg/Kg |
| Heptachlor | 0.050 | < 0.050 | mg/Kg |
| delta-BHC | 0.050 | < 0.050 | mg/Kg |
| Aldrin | 0.050 | < 0.050 | mg/Kg |
| Heptachlor Epoxide | 0.050 | < 0.050 | mg/Kg |
| gamma-Chlordane | 0.050 | < 0.050 | mg/Kg |
| Endosulfan 1 | 0.050 | < 0.050 | mg/Kg |
| alpha-Chlordane | 0.050 | < 0.050 | mg/Kg |
| Dieldrin | 0.10 | < 0.10 | mg/Kg |
| DDE | 0.10 | 1.3 | mg/Kg |
| Endrin | 0.10 | < 0.10 | mg/Kg |
| Endosulfan 2 | 0.10 | < 0.10 | mg/Kg |
| DDD | 0.10 | < 0.10 | mg/Kg |
| Endrin Aldehyde | 0.10 | < 0.10 | mg/Kg |
| DDT | 0.10 | < 0.10 | mg/Kg |
| Endosulfan Sulfate | 0.10 | < 0.10 | mg/Kg |
| Methoxychlor | 0.50 | < 0.50 | mg/Kg |
| Chlordane Technical | 1.0 | <1.0 | mg/Kg |
| Toxaphene | 2.0 | <2.0 | mg/Kg |
| Tetrachloro-m-xylene (sur) | (60-138) | DIL OUT | % Recovery |
| Decachlorobiphenyl (sur) | (54-166) | DIL OUT | % Recovery |

MRL = Method Reporting Limit

Conc. = Concentration

E = Concentration exceeded calibration range.

Approved By :

Tom Kwoka
Tom Kwoka

Acculabs Inc.

April 19, 1999


QC Report
Pesticides/PCB's by EPA 8081A\8082

QC Batch PS990405

Matrix: Soil

Method Blank

| Parameter | MRL(mg/Kg) | Measured Value(mg/Kg) |
|---------------------|------------|-----------------------|
| Aldrin | (.0050) | <.0050 |
| alpha-BHC | (.0050) | <.0050 |
| beta-BHC | (.0050) | <.0050 |
| delta-BHC | (.0050) | <.0050 |
| gamma-BHC | (.0050) | <.0050 |
| Chlordane Technical | (0.10) | <0.10 |
| gamma-Chlordane | (.0050) | <.0050 |
| alpha-Chlordane | (.0050) | <.0050 |
| 4,4'-DDD | (0.010) | <0.010 |
| 4,4'-DDE | (0.010) | <0.010 |
| 4,4'-DDT | (0.010) | <0.010 |
| Dieldrin | (0.010) | <0.010 |
| Endosulfan 1 | (.0050) | <.0050 |
| Endosulfan 2 | (0.010) | <0.010 |
| Endosulfan Sulfate | (0.010) | <0.010 |
| Endrin | (0.010) | <0.010 |
| Endrin Aldehyde | (0.010) | <0.010 |
| Heptachlor | (.0050) | <.0050 |
| Heptachlor Epoxide | (.0050) | <.0050 |
| Toxaphene | (0.20) | <0.20 |
| PCB1016 | (0.10) | <0.10 |
| PCB1221 | (0.20) | <0.20 |
| PCB1232 | (0.10) | <0.10 |
| PCB1242 | (0.10) | <0.10 |
| PCB1248 | (0.10) | <0.10 |
| PCB1254 | (0.10) | <0.10 |
| PCB1260 | (0.10) | <0.10 |



Tom Kwoka
Lab Director

Acculabs Inc.

April 19, 1999

QC Report
Pesticides\PCB's by EPA 8081A\8082

QC Batch PS990405

Matrix: Soil


Spike and Spike Duplicate Results

| Parameter | Matrix Spike (%Rec) | Matrix Spike Dup. (%Rec) | RPD % |
|------------|---------------------|--------------------------|-------|
| gamma-BHC | 83 | 77 | 8 |
| Heptachlor | 74 | 68 | 8 |
| Aldrin | 71 | 71 | 0 |
| Dieldrin | 46 | 44 | 4 |
| Endrin | 2 | 1 | 67 |
| 4,4'-DDT | 37 | 28 | 28 |

Spiked sample ID 19879-01.

Laboratory Control Spike

| Parameter | Laboratory Control Spike-(%Rec) |
|------------|---------------------------------|
| gamma-BHC | 114 |
| Heptachlor | 102 |
| Aldrin | 84 |
| Dieldrin | 93 |
| Endrin | 101 |
| 4,4'-DDT | 97 |
| PCB 1016 | 94 |
| PCB 1260 | 94 |



Tom Kwoka
Lab Director

QUALITY CONTROL RESULTS SUMMARY

METHOD: ICP

QC Batch #: SM990409

Matrix: Solid

Units: mg/kg

Date Analyzed: 04/15/99

Extraction Method: EPA 3050

Spiked Sample: Blank Spike

| PARAMETER | Method # | MB mg/kg | SA mg/kg | SR mg/kg | SP mg/kg | SP %R | SPD g/Kg | SPD %R | RPD | QC LIMITS | |
|------------|----------|-------------|-------------|-------------|-------------|----------|-------------|-----------|-----|-----------|--------|
| | | | | | | | | | | RPD | %R |
| Antimony | 6010 | <1.0 | 50. | na | na | na | na | na | na | 25.0 | 69-100 |
| Arsenic | 6010 | <1.0 | 50. | 0.0 | 41. | 81 | 43. | 85 | 5.3 | 25.0 | 64-106 |
| Barium | 6010 | <1.0 | 50. | na | na | na | na | na | na | 25.0 | 75-112 |
| Beryllium | 6010 | <1.0 | 50. | na | na | na | na | na | na | 25.0 | 70-110 |
| Cadmium | 6010 | <1.0 | 50. | 0.0 | 42. | 84 | 44. | 87 | 3.9 | 25.0 | 70-100 |
| Chromium | 6010 | <1.0 | 50. | 0.0 | 45. | 91 | 47. | 93 | 2.7 | 25.0 | 67-112 |
| Cobalt | 6010 | <1.0 | 50. | na | na | na | na | na | na | 25.0 | 66-110 |
| Copper | 6010 | <1.0 | 50. | na | na | na | na | na | na | 25.0 | 73-110 |
| Lead | 6010 | <1.0 | 50. | 0.0 | 42. | 85 | 43. | 87 | 2.2 | 25.0 | 63-115 |
| Molybdenum | 6010 | <1.0 | 50. | na | na | na | na | na | na | 25.0 | 69-112 |
| Nickel | 6010 | <1.0 | 50. | 0.0 | 43. | 85 | 44. | 88 | 3.0 | 25.0 | 73-112 |
| Selenium | 6010 | <1.0 | 50. | na | na | na | na | na | na | 25.0 | 65-104 |
| Silver | 6010 | <1.0 | 50. | na | na | na | na | na | na | 25.0 | 70-113 |
| Thallium | 6010 | <1.0 | 50. | na | na | na | na | na | na | 25.0 | 69-106 |
| Vanadium | 6010 | <1.0 | 50. | na | na | na | na | na | na | 25.0 | 67-115 |
| Zinc | 6010 | <1.0 | 50. | 0.0 | 43. | 85 | 44. | 89 | 3.9 | 25.0 | 68-104 |

Note: LCS and LCSD results reported for the following Parameters:

All

Definition of Terms:

na: Not Analyzed in QC batch

MB: Method Blank

SA: Spike Added

SR: Sample Result

SP: Spike Result

SP (%R): Spike % Recovery

SPD: Spike Duplicate Result

SPD (%R): Spike Duplicate % Recovery

QUALITY CONTROL RESULTS SUMMARY

METHOD: ICP

QC Batch #: SM990408

Matrix: Solid

Units: mg/kg

Date Analyzed: 04/14/99

Extraction Method: EPA 3050

Spiked Sample: Blank Spike

| PARAMETER | Method # | MB | SA | SR | SP | SP | SPD | SPD | RPD | QC LIMITS | |
|------------|----------|-------|-------|-------|-------|----|------|-----|-----|-----------|--------|
| | | mg/kg | mg/kg | mg/kg | mg/kg | %R | g/Kg | %R | | RPD | %R |
| Antimony | 6010 | <1.0 | 50. | na | na | na | na | na | na | 25.0 | 69-100 |
| Arsenic | 6010 | <1.0 | 50. | 0.0 | 43. | 86 | 41. | 83 | 4.2 | 25.0 | 64-106 |
| Barium | 6010 | <1.0 | 50. | na | na | na | na | na | na | 25.0 | 75-112 |
| Beryllium | 6010 | <1.0 | 50. | na | na | na | na | na | na | 25.0 | 70-110 |
| Cadmium | 6010 | <1.0 | 50. | na | na | na | na | na | na | 25.0 | 70-100 |
| Chromium | 6010 | <1.0 | 50. | na | na | na | na | na | na | 25.0 | 67-112 |
| Cobalt | 6010 | <1.0 | 50. | na | na | na | na | na | na | 25.0 | 66-110 |
| Copper | 6010 | <1.0 | 50. | na | na | na | na | na | na | 25.0 | 73-110 |
| Lead | 6010 | <1.0 | 50. | 0.0 | 42. | 84 | 42. | 83 | 0.4 | 25.0 | 63-115 |
| Molybdenum | 6010 | <1.0 | 50. | na | na | na | na | na | na | 25.0 | 69-112 |
| Nickel | 6010 | <1.0 | 50. | na | na | na | na | na | na | 25.0 | 73-112 |
| Selenium | 6010 | <1.0 | 50. | na | na | na | na | na | na | 25.0 | 65-104 |
| Silver | 6010 | <1.0 | 50. | na | na | na | na | na | na | 25.0 | 70-113 |
| Thallium | 6010 | <1.0 | 50. | na | na | na | na | na | na | 25.0 | 69-106 |
| Vanadium | 6010 | <1.0 | 50. | na | na | na | na | na | na | 25.0 | 67-115 |
| Zinc | 6010 | <1.0 | 50. | na | na | na | na | na | na | 25.0 | 68-104 |

Note: LCS and LCSD results reported for the following Parameters:

All

Definition of Terms:

- na: Not Analyzed in QC batch
- MB: Method Blank
- SA: Spike Added
- SR: Sample Result
- SP: Spike Result
- SP (%R): Spike % Recovery
- SPD: Spike Duplicate Result
- SPD (%R): Spike Duplicate % Recovery

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Cold Vapor Atomic Absorption

QC Batch #: SHG990411

Matrix: Soil

Units: mg/kg

Date Analyzed: 04/16/99

Quality Control Sample: Blank Spike

| PARAMETER | Method # | MB mg/kg | SA mg/kg | SR mg/kg | SP mg/kg | SP %R | SPD mg/kg | SPD %R | RPD | QC LIMITS %R |
|-----------|----------|-------------|-------------|-------------|-------------|----------|--------------|-----------|------|-----------------|
| Mercury | 7471 | <0.050 | 0.20 | 0.000 | 0.18 | 91 | 0.20 | 101 | 11.0 | 77-113 |

Note: LCS and LCSD results reported for the following Parameters:
All

Definition of Terms:

- MB: Method Blank
- SA: Spike Added
- SR: Sample Result
- SP: Spike Result
- SP (%R) Spike % Recovery
- SPD Spike Duplicate Result
- SPD (%R) Spike Duplicate % Recovery