Carson Dorn, Inc.
712 West 12th Street Juneau, Alaska 99801

May 22, 2014

Mr. Bruce Wanstall
Field Operations Project Manager
ADEC Contaminated Sites Program
410 Willoughby Suite 302
Juneau, AK 99803

Re: Soil Sampling Results - Craig Bulk Plant/Wards Cove Packing Site Stockpile

Dear Mr. Wanstall,

Enclosed is the Analytical Report for soil samples collected from stockpiled soil generated at the Craig Bulk Plant/Wards Cove Packing Site (site) in Craig, Alaska.

Two soil samples (CB-1 and CB-2) and one associated duplicate (CB-Dup) were collected. Soil samples were analyzed for DRO using Alaska Method AK102. DRO was detected at concentration of 69 mg/kg in CB-1 and 51 mg/kg in CB-2. RRO was detected at concentration of 88 mg/kg in CB-1. All detected constituents are below Method Two Soil Cleanup Levels in Table B2 of 18 AAC 75.341.

Sincerely

Jolene M Cox, Environmental Professional

Tel: 907 586 4447
Fax: 907 586 5917

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Anchorage
2000 West International Airport Road
Suite A10
Anchorage, AK 99502-1119
Tel: (907)563-9200

TestAmerica Job ID: 230-111-1
Client Project/Site: Craig Biocell
Revision: 1

For:
Carson Dorn, Inc
712 West 12th Street
Juneau, Alaska 99801

Attn: Tom Carson

*Authorized for release by:*
*5/22/2014 9:44:14 AM*

Johanna Dreher, Project Manager I
(907)563-9200
johanna.dreher@testamericainc.com

# Table of Contents

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CNF | Contains no Free Liquid |
| DER | Duplicate error ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision level concentration |
| MDA | Minimum detectable activity |
| EDL | Estimated Detection Limit |
| MDC | Minimum detectable concentration |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| NC | Not Calculated |
| ND | Not detected at the reporting limit (or MDL or EDL if shown) |
| PQL | Practical Quantitation Limit |
| QC | Quality Control |
| RER | Relative error ratio |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |

# Case Narrative

Client: Carson Dorn, Inc
Project/Site: Craig Biocell

TestAmerica Job ID: 230-111-1

## Job ID: 230-111-1

### Laboratory: TestAmerica Anchorage

**Narrative**

**Job Narrative**
**230-111-1**

**Comments**
Report revised on 5/22/14

The client requested by phone on 5/20/14 that Residual Range Organics (RRO) by AK103 be reported. The RRO request was not included on the Chain of Custody (COC) received with the samples. RRO was added to the login and reported.

**Receipt**
The samples were received on 5/13/2014 1:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.1° C.

**GC Semi VOA**
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

**General Chemistry**
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

**Organic Prep**
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

# Detection Summary

Client: Carson Dorn, Inc
Project/Site: Craig Biocell

TestAmerica Job ID: 230-111-1

## Client Sample ID: CB-1 — Lab Sample ID: 230-111-1

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| C10-C25 | 63 | | 22 | | mg/Kg | 1 | ☼ | AK102 & 103 | Total/NA |
| Residual Range Organics (RRO) (C25-C36) | 80 | | 54 | | mg/Kg | 1 | ☼ | AK102 & 103 | Total/NA |

## Client Sample ID: CB-2 — Lab Sample ID: 230-111-2

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| C10-C25 | 51 | | 20 | | mg/Kg | 1 | ☼ | AK102 & 103 | Total/NA |

## Client Sample ID: CB-Dup — Lab Sample ID: 230-111-3

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| C10-C25 | 69 | | 20 | | mg/Kg | 1 | ☼ | AK102 & 103 | Total/NA |
| Residual Range Organics (RRO) (C25-C36) | 88 | | 50 | | mg/Kg | 1 | ☼ | AK102 & 103 | Total/NA |

This Detection Summary does not include radiochemical test results.

## Client Sample ID: CB-1

**Lab Sample ID: 230-111-1**
**Date Collected: 05/11/14 17:30**
**Matrix: Solid**
**Date Received: 05/13/14 13:00**
**Percent Solids: 90.9**

### Method: AK102 & 103 - Alaska - Diesel Range Organics & Residual Range Organics (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| C10-C25 | 63 | | 22 | | mg/Kg | ☼ | 05/15/14 09:18 | 05/15/14 18:28 | 1 |
| Residual Range Organics (RRO) (C25-C36) | 80 | | 54 | | mg/Kg | ☼ | 05/15/14 09:18 | 05/15/14 18:28 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctadecane* | *77* | | *50 - 150* | *05/15/14 09:18* | *05/15/14 18:28* | *1* |
| *n-Triacontane (Surr)* | *80* | | *50 - 150* | *05/15/14 09:18* | *05/15/14 18:28* | *1* |

## Client Sample ID: CB-2

**Lab Sample ID: 230-111-2**
**Date Collected: 05/11/14 17:30**
**Matrix: Solid**
**Date Received: 05/13/14 13:00**
**Percent Solids: 89.4**

### Method: AK102 & 103 - Alaska - Diesel Range Organics & Residual Range Organics (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| C10-C25 | 51 | | 20 | | mg/Kg | ☼ | 05/15/14 09:18 | 05/15/14 19:01 | 1 |
| Residual Range Organics (RRO) (C25-C36) | ND | | 50 | | mg/Kg | ☼ | 05/15/14 09:18 | 05/15/14 19:01 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctadecane* | *94* | | *50 - 150* | *05/15/14 09:18* | *05/15/14 19:01* | *1* |
| *n-Triacontane (Surr)* | *105* | | *50 - 150* | *05/15/14 09:18* | *05/15/14 19:01* | *1* |

## Client Sample ID: CB-Dup

**Lab Sample ID: 230-111-3**
**Date Collected: 05/11/14 17:30**
**Matrix: Solid**
**Date Received: 05/13/14 13:00**
**Percent Solids: 92.3**

### Method: AK102 & 103 - Alaska - Diesel Range Organics & Residual Range Organics (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| C10-C25 | 69 | | 20 | | mg/Kg | ☼ | 05/15/14 09:18 | 05/15/14 19:01 | 1 |
| Residual Range Organics (RRO) (C25-C36) | 88 | | 50 | | mg/Kg | ☼ | 05/15/14 09:18 | 05/15/14 19:01 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctadecane* | *80* | | *50 - 150* | *05/15/14 09:18* | *05/15/14 19:01* | *1* |
| *n-Triacontane (Surr)* | *85* | | *50 - 150* | *05/15/14 09:18* | *05/15/14 19:01* | *1* |

# Surrogate Summary

Client: Carson Dorn, Inc
Project/Site: Craig Biocell

TestAmerica Job ID: 230-111-1

## Method: AK102 & 103 - Alaska - Diesel Range Organics & Residual Range Organics (GC)

**Matrix: Solid** **Prep Type: Total/NA**

| | | Percent Surrogate Recovery (Acceptance Limits) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1COD | acontane (S | | | | | | | | |
| Lab Sample ID | Client Sample ID | (50-150) | (50-150) | | | | | | | | |
| 230-111-1 | CB-1 | 77 | 80 | | | | | | | | |
| 230-111-2 | CB-2 | 94 | 105 | | | | | | | | |
| 230-111-3 | CB-Dup | 80 | 85 | | | | | | | | |
| LCS 230-492/2-A | Lab Control Sample | 88 | 85 | | | | | | | | |
| LCSD 230-492/3-A | Lab Control Sample Dup | 87 | 84 | | | | | | | | |
| MB 230-492/1-A | Method Blank | 91 | 92 | | | | | | | | |

**Surrogate Legend**

1COD = 1-Chlorooctadecane

n-Triacontane (Surr) = n-Triacontane (Surr)

## Method: AK102 & 103 - Alaska - Diesel Range Organics & Residual Range Organics (GC)

**Lab Sample ID: MB 230-492/1-A**
**Matrix: Solid**
**Analysis Batch: 498**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 492**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| C10-C25 | ND | | 20 | | mg/Kg | | 05/15/14 09:18 | 05/15/14 16:18 | 1 |
| Residual Range Organics (RRO) (C25-C36) | ND | | 50 | | mg/Kg | | 05/15/14 09:18 | 05/15/14 16:18 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctadecane* | *91* | | *50 - 150* | *05/15/14 09:18* | *05/15/14 16:18* | *1* |
| *n-Triacontane (Surr)* | *92* | | *50 - 150* | *05/15/14 09:18* | *05/15/14 16:18* | *1* |

**Lab Sample ID: LCS 230-492/2-A**
**Matrix: Solid**
**Analysis Batch: 498**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 492**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C10-C25 | | | 127 | 114 | | mg/Kg | | 90 | 75 - 125 | | |
| Residual Range Organics (RRO) (C25-C36) | | | 129 | 118 | | mg/Kg | | 91 | 60 - 120 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctadecane* | *88* | | *50 - 150* |
| *n-Triacontane (Surr)* | *85* | | *50 - 150* |

**Lab Sample ID: LCSD 230-492/3-A**
**Matrix: Solid**
**Analysis Batch: 498**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 492**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C10-C25 | | | 127 | 107 | | mg/Kg | | 84 | 75 - 125 | 7 | 20 |
| Residual Range Organics (RRO) (C25-C36) | | | 129 | 116 | | mg/Kg | | 90 | 60 - 120 | 2 | 20 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctadecane* | *87* | | *50 - 150* |
| *n-Triacontane (Surr)* | *84* | | *50 - 150* |

# QC Association Summary

Client: Carson Dorn, Inc
Project/Site: Craig Biocell

TestAmerica Job ID: 230-111-1

## GC Semi VOA

### Prep Batch: 492

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 230-111-1 | CB-1 | Total/NA | Solid | 3545 | |
| 230-111-2 | CB-2 | Total/NA | Solid | 3545 | |
| 230-111-3 | CB-Dup | Total/NA | Solid | 3545 | |
| LCS 230-492/2-A | Lab Control Sample | Total/NA | Solid | 3545 | |
| LCSD 230-492/3-A | Lab Control Sample Dup | Total/NA | Solid | 3545 | |
| MB 230-492/1-A | Method Blank | Total/NA | Solid | 3545 | |

### Analysis Batch: 495

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 230-111-2 | CB-2 | Total/NA | Solid | AK102 & 103 | 492 |

### Analysis Batch: 498

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 230-111-1 | CB-1 | Total/NA | Solid | AK102 & 103 | 492 |
| 230-111-3 | CB-Dup | Total/NA | Solid | AK102 & 103 | 492 |
| LCS 230-492/2-A | Lab Control Sample | Total/NA | Solid | AK102 & 103 | 492 |
| LCSD 230-492/3-A | Lab Control Sample Dup | Total/NA | Solid | AK102 & 103 | 492 |
| MB 230-492/1-A | Method Blank | Total/NA | Solid | AK102 & 103 | 492 |

## General Chemistry

### Analysis Batch: 499

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 230-111-1 | CB-1 | Total/NA | Solid | Moisture | |
| 230-111-2 | CB-2 | Total/NA | Solid | Moisture | |
| 230-111-3 | CB-Dup | Total/NA | Solid | Moisture | |

# Lab Chronicle

Client: Carson Dorn, Inc
Project/Site: Craig Biocell

TestAmerica Job ID: 230-111-1

## Client Sample ID: CB-1

**Lab Sample ID: 230-111-1**

**Date Collected: 05/11/14 17:30**
**Matrix: Solid**
**Date Received: 05/13/14 13:00**
**Percent Solids: 90.9**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3545 | | | 492 | 05/15/14 09:18 | KDC | TAL ANC |
| Total/NA | Analysis | AK102 & 103 | | 1 | 498 | 05/15/14 18:28 | KDC | TAL ANC |
| Total/NA | Analysis | Moisture | | 1 | 499 | 05/15/14 09:46 | KDC | TAL ANC |

## Client Sample ID: CB-2

**Lab Sample ID: 230-111-2**

**Date Collected: 05/11/14 17:30**
**Matrix: Solid**
**Date Received: 05/13/14 13:00**
**Percent Solids: 89.4**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3545 | | | 492 | 05/15/14 09:18 | KDC | TAL ANC |
| Total/NA | Analysis | AK102 & 103 | | 1 | 495 | 05/15/14 19:01 | KDC | TAL ANC |
| Total/NA | Analysis | Moisture | | 1 | 499 | 05/15/14 09:46 | KDC | TAL ANC |

## Client Sample ID: CB-Dup

**Lab Sample ID: 230-111-3**

**Date Collected: 05/11/14 17:30**
**Matrix: Solid**
**Date Received: 05/13/14 13:00**
**Percent Solids: 92.3**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3545 | | | 492 | 05/15/14 09:18 | KDC | TAL ANC |
| Total/NA | Analysis | AK102 & 103 | | 1 | 498 | 05/15/14 19:01 | KDC | TAL ANC |
| Total/NA | Analysis | Moisture | | 1 | 499 | 05/15/14 09:46 | KDC | TAL ANC |

**Laboratory References:**

TAL ANC = TestAmerica Anchorage, 2000 West International Airport Road, Suite A10, Anchorage, AK 99502-1119, TEL (907)563-9200

# Certification Summary

Client: Carson Dorn, Inc
Project/Site: Craig Biocell

TestAmerica Job ID: 230-111-1

## Laboratory: TestAmerica Anchorage

The certifications listed below are applicable to this report.

| Authority | Program | EPA Region | Certification ID | Expiration Date |
|---|---|---|---|---|
| Alaska | State Program | 10 | AK00975 | 06-30-14 |
| Alaska (UST) | State Program | 10 | UST-067 | 06-16-14 |

# Method Summary

Client: Carson Dorn, Inc
Project/Site: Craig Biocell

TestAmerica Job ID: 230-111-1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| AK102 & 103 | Alaska - Diesel Range Organics & Residual Range Organics (GC) | ADEC | TAL ANC |
| Moisture | Percent Moisture | EPA | TAL ANC |

**Protocol References:**

ADEC = Alaska Department of Environmental Conservation

EPA = US Environmental Protection Agency

**Laboratory References:**

TAL ANC = TestAmerica Anchorage, 2000 West International Airport Road, Suite A10, Anchorage, AK 99502-1119, TEL (907)563-9200

# Sample Summary

Client: Carson Dorn, Inc
Project/Site: Craig Biocell

TestAmerica Job ID: 230-111-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 230-111-1 | CB-1 | Solid | 05/11/14 17:30 | 05/13/14 13:00 |
| 230-111-2 | CB-2 | Solid | 05/11/14 17:30 | 05/13/14 13:00 |
| 230-111-3 | CB-Dup | Solid | 05/11/14 17:30 | 05/13/14 13:00 |

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2000 W [illegible] 230-111 Chain of Custody

[illegible]-1317 253-922-2310 FAX 922-5047 ☐
[illegible]-5302 509-924-9200 FAX 924-9290 ☐
[illegible]-7145 503-906-9200 FAX 906-9210 ☐
[illegible]-1119 907-563-9200 FAX 563-9210 ☒

# CHAIN OF CUSTODY REPORT

**Work Order #:** 230-111

CLIENT: Carson Dorn Inc

REPORT TO: Jolene Cox
ADDRESS: jcox@carsondorn.com
PHONE: 907-586-4447 FAX: 907-586-5917

INVOICE TO: Jolene Cox
Carson Dorn Inc 907-586-4447
712 W 12th St
Juneau AK 99801

P.O. NUMBER:

PROJECT NAME: Craig Biocell
PROJECT NUMBER:
SAMPLED BY: Steve Haavig

**TURNAROUND REQUEST** in Business Days *

Organic & Inorganic Analyses: ☒ STD. | 7 | 5 | 4 | 3 | 2 | 1 | <1

Petroleum Hydrocarbon Analyses: 5 STD. | 4 | 3 | 2 | 1 | <1

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges.

| | CLIENT SAMPLE IDENTIFICATION | SAMPLING DATE/TIME | PRESERVATIVE | REQUESTED ANALYSES: DRO | MATRIX (W, S, O) | # OF CONT. | LOCATION/ COMMENTS | TA WO ID |
|---|---|---|---|---|---|---|---|---|
| 1 | CB-1 | 5/11/14 1730 | | ✓ | S | 1 | | 01 |
| 2 | CB-2 | 5/11/14 1730 | | ✓ | S | 1 | | 02 |
| 3 | CB-Dup | 5/11/14 1730 | | ✓ | S | 1 | | 03 |
| 4 | | | | | | | | |
| 5 | | | | | | | | |
| 6 | | | | | | | | |
| 7 | | | | | | | | |
| 8 | | | | | | | | |
| 9 | | | | | | | | |
| 10 | | | | | | | | |

RELEASED BY: PRINT NAME: Steven Haavig FIRM: CDI DATE: 5/12/14 TIME: 1100

RECEIVED BY: PRINT NAME: Andrew Pick FIRM: TA-AK DATE: 5/13/14 TIME: 13:00

RELEASED BY: PRINT NAME: FIRM: DATE: TIME:

RECEIVED BY: PRINT NAME: FIRM: DATE: TIME:

ADDITIONAL REMARKS: all samples -6" depth

TEMP: 4.7 regular - 5.1°C corrected

PAGE 1 OF 1

TAL-1000 (0612)

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5/22/2014

# Login Sample Receipt Checklist

Client: Carson Dorn, Inc

Job Number: 230-111-1

**Login Number: 111**

**List Source: TestAmerica Anchorage**

**List Number: 1**

**Creator: Pilch, Andrew C**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | True | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | 5.1 C, IR Gun used b/c no temp blank |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | True | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time. | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

# Laboratory Data Review Checklist

| | | | |
|---|---|---|---|
| Completed by: | Jolene Cox | | |
| Title: | Environmental Professional | Date: | May 20, 2014 |
| CS Report Name: | Craig Bulk Plant/Wards Cove Packing Site | Report Date: | May 20, 2014 |
| Consultant Firm: | Carson Dorn, Inc. | | |
| Laboratory Name: | TestAmerica | Laboratory Report Number: | 230-111-1 |
| ADEC File Number: | | ADEC RecKey Number: | |

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

(•) Yes ( ) No ( ) NA (Please explain.) Comments:

b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

( ) Yes ( ) No ( ) NA (Please explain) Comments:

2. Chain of Custody (COC)

a. COC information completed, signed, and dated (including released/received by)?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

b. Correct analyses requested?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

The client requested by phone on 5/20/14 that Residual Range Organics (RRO) by AK103 be reported. The RRO request was not included on the Chain of Custody (COC) received with the samples. RRO was added to the login and reported.

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (4° ± 2° C)?

◉ Yes ○ No ○ NA (Please explain) Comments:

b. Sample preservation acceptable - acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

◉ Yes ○ No ○ NA (Please explain) Comments:

c. Sample condition documented - broken, leaking (Methanol), zero headspace (VOC vials)?

◉ Yes ○ No ○ NA (Please explain) Comments:

d. If there were any discrepancies, were they documented? - For example, incorrect sample containers/ preservation, sample temperature outside of acceptance range, insufficient or missing samples, etc.?

○ Yes ○ No ○ NA (Please explain) Comments:

e. Data quality or usability affected? (Please explain)

Comments:

4. Case Narrative

a. Present and understandable?

◉ Yes ○ No ○ NA (Please explain) Comments:

b. Discrepancies, errors or QC failures identified by the lab?

○ Yes ○ No ○ NA (Please explain) Comments:

c. Were all corrective actions documented?

○ Yes ○ No ○ NA (Please explain) Comments:

d. What is the effect on data quality/usability according to the case narrative?

Comments:

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

◉ Yes ○ No ○ NA (Please explain) Comments:

b. All applicable holding times met?

◉ Yes ○ No ○ NA (Please explain) Comments:

c. All soils reported on a dry weight basis?

◉ Yes ○ No ○ NA (Please explain) Comments:

d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level for the project?

◉ Yes ○ No ○ NA (Please explain) Comments:

e. Data quality or usability affected? (Please explain)

Comments:

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

◉ Yes ○ No ○ NA (Please explain) Comments:

ii. All method blank results less than PQL?

◉ Yes ○ No ○ NA (Please explain) Comments:

iii. If above PQL, what samples are affected? Comments:

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

○ Yes ○ No ○ NA (Please explain) Comments:

v. Data quality or usability affected? (Please explain) Comments:

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics - One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

◉ Yes ○ No ○ NA (Please explain) Comments:

ii. Metals/Inorganics - One LCS and one sample duplicate reported per matrix, analysis and 20 samples?

○ Yes ○ No ○ NA (Please explain) Comments:

iii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

◉ Yes ○ No ○ NA (Please explain) Comments:

iv. Precision - All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/DMSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

◉ Yes ○ No ○ NA (Please explain) Comments:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

vi. Do the affected samples(s) have data flags? If so, are the data flags clearly defined?

○ Yes ○ No ○ NA (Please explain) Comments:

vii. Data quality or usability affected? (Please explain) Comments:

c. Surrogates - Organics Only

i. Are surrogate recoveries reported for organic analyses - field, QC and laboratory samples?

◉ Yes ○ No ○ NA (Please explain) Comments:

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

◉ Yes ○ No ○ NA (Please explain) Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

○ Yes ○ No ○ NA (Please explain) Comments:

iv. Data quality or usability affected? (Use the comment box to explain.).

Comments:

d. Trip Blank - Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

○ Yes ○ No ○ NA (Please explain.) Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

○ Yes ○ No ○ NA (Please explain.) Comments:

iii. All results less than PQL?

○ Yes ○ No ○ NA (Please explain.) Comments:

iv. If above PQL, what samples are affected?

Comments:

v. Data quality or usability affected? (Please explain.)

Comments:

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

◉ Yes ○ No ○ NA (Please explain) Comments:

ii. Submitted blind to lab?

◉ Yes ○ No ○ NA (Please explain.) Comments:

iii. Precision - All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute Value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where $R_1$ = Sample Concentration

$R_2$ = Field Duplicate Concentration

◉ Yes ○ No ○ NA (Please explain) Comments:

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

○ Yes ○ No ○ NA (Please explain) Comments:

f. Decontamination or Equipment Blank (if applicable)

○ Yes ○ No ○ NA (Please explain) Comments:

i. All results less than PQL?

○ Yes ○ No ○ NA (Please explain) Comments:

ii. If above PQL, what samples are affected?

Comments:

iii. Data quality or usability affected? (Please explain.)

Comments:

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

○ Yes ○ No ○ NA (Please explain) Comments:

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