
Central Valley Regional Water Quality Control Board

TO: Clay L. Rodgers
Assistant Executive Officer

Dale W. Harvey
Supervising Engineer

FROM: Joshua G. Mahoney
Water Resource Control Engineer

DATE: 29 March 2017

**SUBJECT: DRAFT - COLLECTION OF FRUIT SAMPLES IRRIGATED WITH BLENDED
PRODUCED WASTEWATER IN CAWELO WATER DISTRICT**

Central Valley Regional Water Quality Control Board (Central Valley Water Board) staff observed the collection of citrus samples (i.e., navals, mandarins, and lemons) by Advanced Environmental Concepts, Inc., a third party consulting group collecting samples on behalf of Cawelo Water District. Central Valley Water Board staff (Staff) obtained ownership of all citrus samples throughout the sampling event. Citrus samples were mailed to Weck Laboratories, Inc., for analysis.

PRESENT PARTIES

Sample Team from Advanced Environmental Concepts, Inc. (AEC)

Representatives from Cawelo Water District (Cawelo)

Central Valley Regional Water Quality Control Board (Central Valley Water Board)

- W. Dale Harvey, Supervising Engineer
- Joshua Mahoney, Water Resource Control Engineer

University of the Pacific (UOP)

- Dr. William Stringfellow, Professor and Director
- Ben Grafius, Assistant

GENERAL SAMPLING PROCEDURES

Equipment:

1. Nitrile gloves
2. Wipes
3. Mason jars (hereafter sample container)
4. Ice chests

Fruit Handling:

1. Nitrile gloves were used while handling fruit.
2. Cut fruit vine with trimmers.

3. Wipe the fruit.
4. Place the fruit in the sample container.
5. Seal the container and tape the lid.
6. Sample containers remain in the ice chest until delivered to the laboratory.

Fruit Selection Criteria:

1. Minimum distance from main road was five tree rows.
2. Minimum distance from access road was six trees.
3. Samples collected from the same tree were picked from different branches.
4. All samples were ripe.
5. No unfavorable features or colors.
6. Samples were representative of the fruit an average consumer would find at a store.

SAMPLE SITES

Site 1

Site Name: Wastewater-1_Mandarin-1
Fruit Type: Mandarin
Fruits per Sample Container: 3-4

Sample Containers per Tree: 1
Tree Row: 21 (from the east)
Tree Count from the road: 8, 9, and 10

Sample Time for AEC: 09:15 and 09:20 (duplicate)

Sample Names:

A-M-1 (AEC sample)
A-M-11 (AEC duplicate sample)
Treat-1 (UOP sample)

Notes: Duplicate samples were collected from the same trees.

Site 2

Site Name: Wastewater-2_Naval-1
Fruit Type: Naval
Fruits per Sample Container: 2

Sample Containers per Tree: 1
Tree Row: 13 (from the north)
Tree Count from the road: 12, 13, and 15

Sample Time: 09:51

Sample Names:

A-O-1 (AEC sample)
Treat-2 (UOP sample)

Notes: Tree 14 was skipped due to available fruits too large for the sample container.

Site 3

Site Name: Wastewater-3_Mandarin-2
Fruit Type: Mandarin
Fruits per Sample Container: 4

Sample Containers per Tree: 1
Tree Row: 15 (from the east)
Tree Count from the road: 8, 9, and 10

Sample Time: 10:22

Sample Names:

A-M-2 (AEC sample)
Treat-3 (UOP sample)

Notes: NA

Site 4

Site Name: Wastewater-4_Lemon-1
Fruit Type: Lemon
Fruits per Sample Container: 2

Sample Containers per Tree: 1
Tree Row: 14 (from the west)
Tree Count from the road: 6, 7, and 8

Sample Time: 10:55

Sample Names:

A-L-1 (AEC sample)
A-L-11 (AEC duplicate sample)
Treat-4 (UOP sample)

Notes: Duplicate samples were collected from the same trees.

Site 5

Site Name: Wastewater-5_Lemon-2
Fruit Type: Lemon
Fruits per Sample Container: 2

Sample Containers per Tree: 1
Tree Row: 10 (from the west)
Tree Count from the road: 7, 8, and 9

Sample Time: 11:36

Sample Names:

A-L-2 (AEC sample)
Treat-5 (UOP sample)

Notes: Samples collected from an organic farm.

Site 6

Site Name: Wastewater-6_Naval-2
Fruit Type: Naval
Fruits per Sample Container: 2

Sample Containers per Tree: 1
Tree Row: 7 (from the west)
Tree Count from the road: 7, 8, and 13

Sample Time: 12:05

Sample Names:

A-O-2 (AEC sample)
Treat-6 (UOP sample)

Notes: Fruit and trees had a white film from a recent spray event.
Trees 9, 10, 11, and 12 were skipped due to the limited selection available.
Trees were recently picked.

Site 7

Site Name: Wastewater-7_Mandarin-3
Fruit Type: Mandarin
Fruits per Sample Container: 3-4

Sample Containers per Tree: 1
Tree Row: 9 (from the east)
Tree Count from the road: 10, 11, and 12

Sample Time: 12:57

Sample Names:

A-M-3 (AEC sample)
Treat-7 (UOP sample)

Notes: One fruit sample container had three mandarins due to the size of the fruit.

Site 8

Site Name: Wastewater-8_Lemon-3
Fruit Type: Lemon
Fruits per Sample Container: 2

Sample Containers per Tree: 1
Tree Row: 14 (from the east)
Tree Count from the road: 7, 8, and 9

Sample Time: 13:19

Sample Names:

A-L-3 (AEC sample)
Treat-8 (UOP sample)

Notes: NA

Site 9

Site Name: Wastewater-9_Naval-3
Fruit Type: Naval
Fruits per Sample Container: 2

Sample Containers per Tree: 1
Tree Row: 10 (from the north)
Tree Count from the road: 6, 8, 10, and 11

Sample Time: 13:55

Sample Names:

A-O-3 (AEC sample)
A-O-11 (AEC duplicate sample)
Treat-9 (UOP sample)

Notes: Duplicate samples were collected from the same trees.
An additional tree was required due to the limited fruit available on Tree 10.
White film was observed on all trees and fruit.

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SITE PHOTOS

TIME STAMP ON PICTURES IS ONE HOUR FAST

Site 1 – Mandarin Tree



Site 4 – Lemon Tree



Site 9 – Naval Tree



Site 3 – Collecting Fruit Samples



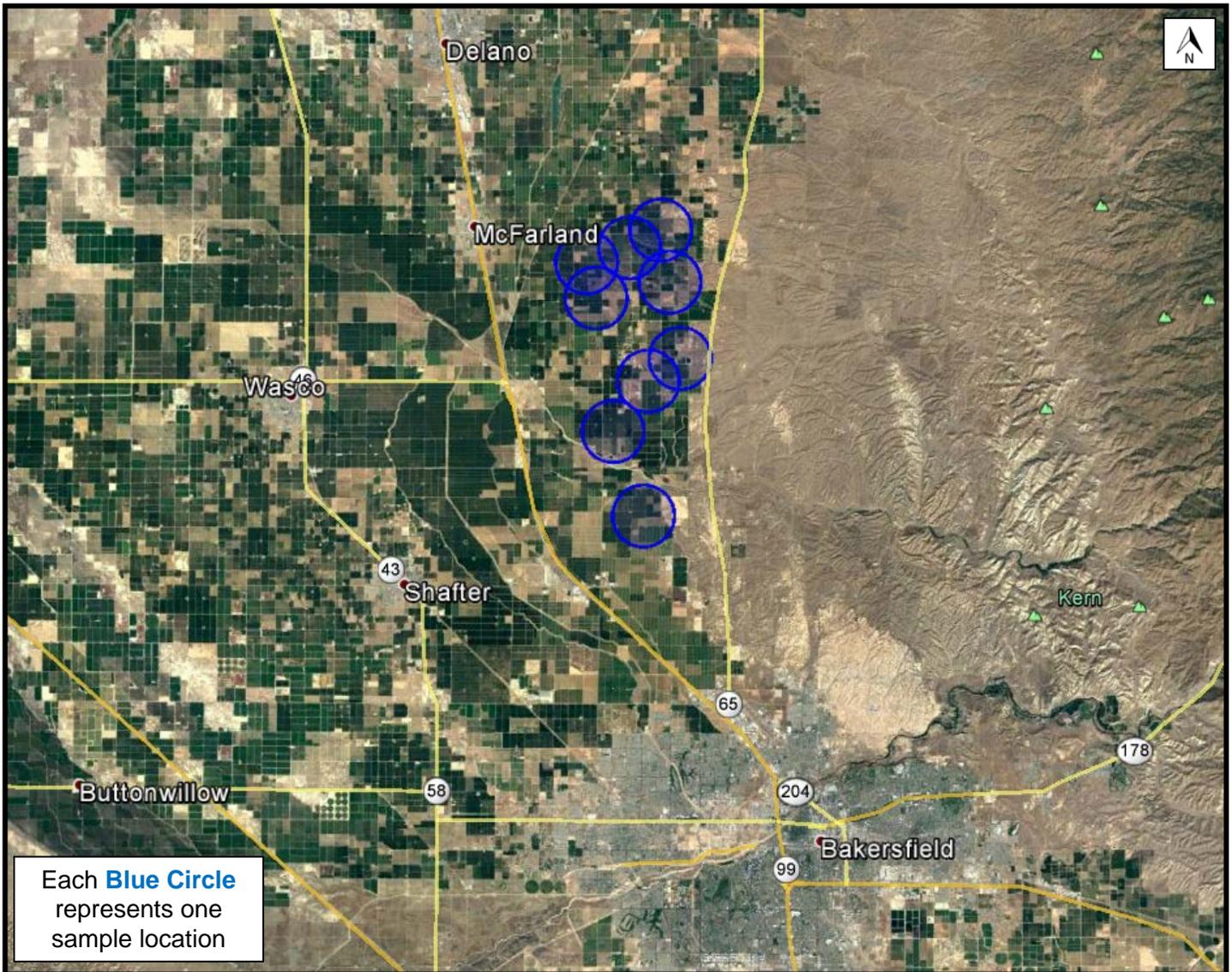
Site 6 – Cleaning Fruit



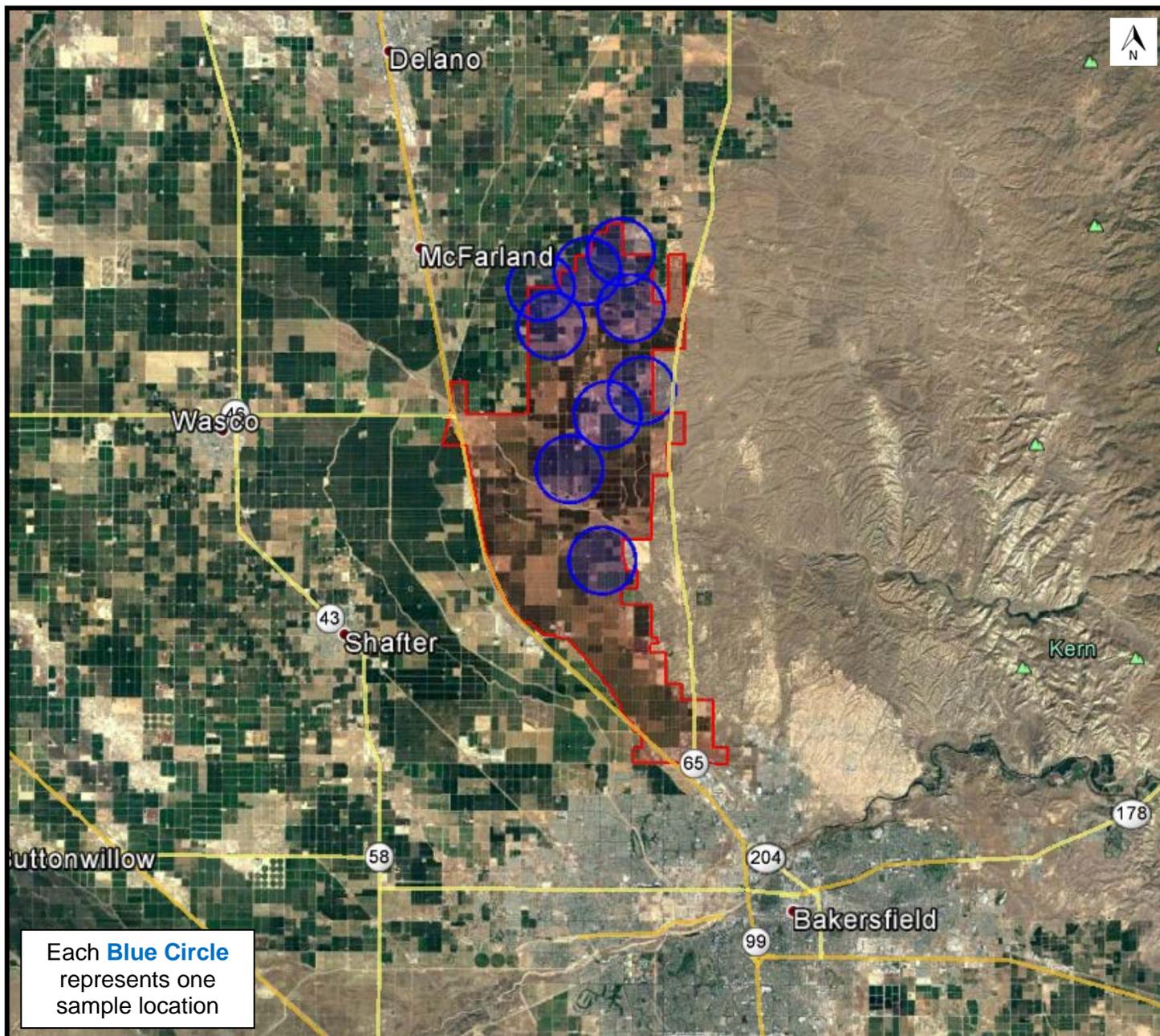
Site 9 – Sealing Sample Containers



SITE MAP Sample Locations



SITE MAP
Sample Locations within Cawelo Water District's
Service Territory



SITE MAP
Sample Locations with Cawelo Water District's
Service Territory and Storage Reservoirs

