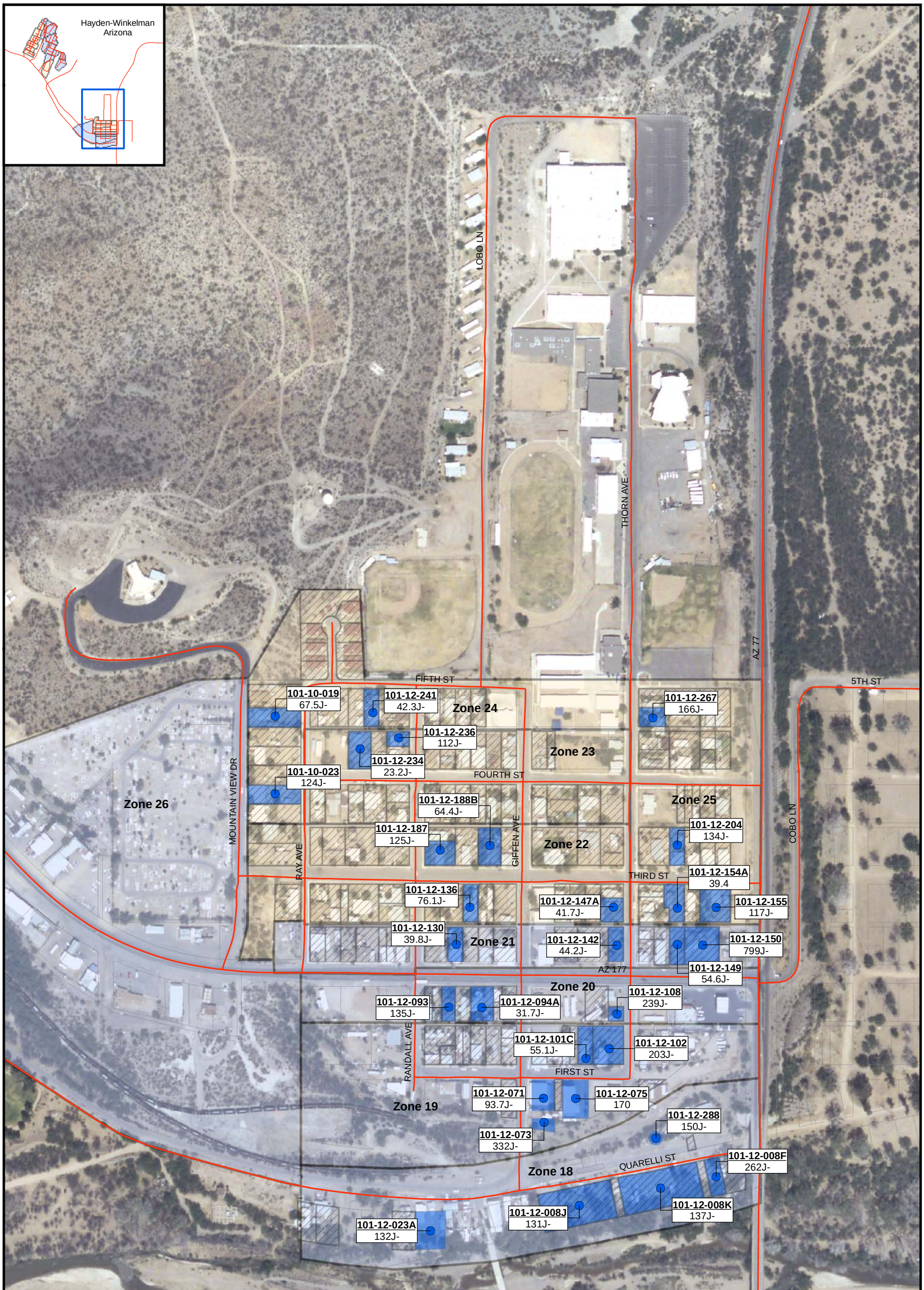

Legend

Sample Location/ Concentration Range Color Key

- 0 - 3,100 mg/kg
- 3,101 - 8,699 mg/kg*
- 8,700 - 17,100 mg/kg*
- > 17,100 mg/kg*

Shape Key

- Residential Sample

- Parcel with Habitable Housing
- Parcel Boundary
- Road

Parcel Zones

- Category 1
- Category 2

Notes:

[1] 101-12-023A = Parcel ID
[2] Cu = Copper
[3] J- = Estimated value, biased low
[4] mg/kg = milligrams per kilogram
[5] R-SRL = Residential Soil Remediation Level

[6] All concentrations are in mg/kg
[7] Soil concentrations in **RED** exceed Arizona-R-SRLs
[8] Arizona R-SRL for Cu = 3,100 mg/kg
[9] If a duplicate sample was collected, the higher concentration of the two is posted.
[10] * = Copper concentrations do not exceed 3,100 mg/kg

[11] Aerial Source: Environmental Protection Agency, 2004.

N W E S

0 150 300 600 Feet

FIGURE 4-21
RESIDENTIAL SUBSURFACE SOIL LABORATORY RESULTS FOR COPPER
WINKELMAN, ARIZONA
ASARCO, LLC Hayden Plant Site
Hayden, Arizona

The data on this figure are derived from tables 4-11 and E-2.

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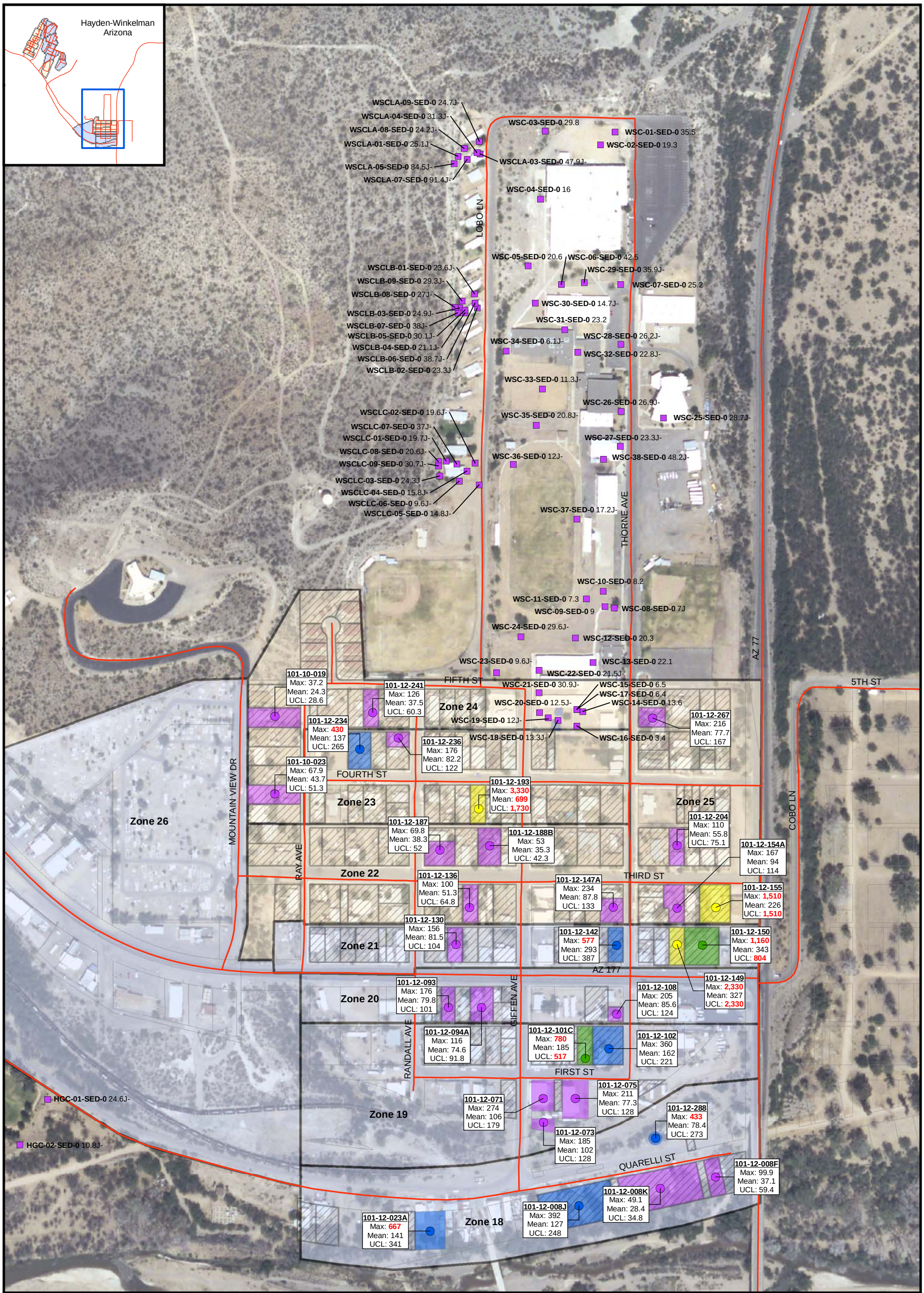
\\MADISON\GROUPS\EMS\GIS_LIBRARY\ASARCO\MAPFILES\03_FINAL\FIG4-21_RES_SUBSURFACESOILLABRESULTS_WINKELMAN_COPPER.MXD TJW 7/25/2008 14:30:23



Legend

Sample Location/ Concentration Range Color Key

- 0 - 212 mg/kg
- 213 - 400 mg/kg
- 401 - 1,199 mg/kg
- 1,200 - 2,400 mg/kg
- > 2,400 mg/kg*

Shape Key

- Residential Sample
- Non-residential Sample

- Parcel with Habitable Housing
- Parcel Boundary
- Road

Parcel Zones

- Category 1
- Category 2

Notes:

[1] 101-12-023A = Parcel ID
[2] Max = Maximum Concentration
[3] Mean = Arithmetic Mean Concentration
[4] UCL = 95% Upper Confidence Limit
[5] 95% UCL was used for color key designation
[6] Pb = Lead
[7] J = Estimated value
[8] J- = Estimated value, biased low
[9] mg/kg = milligrams per kilogram
[10] R-SRL = Residential Soil Remediation Level
[11] All concentrations are in mg/kg
[12] Soil concentrations in **RED** exceed Arizona-R-SRLs
[13] Arizona R-SRL Pb = 400 mg/kg
[14] If a duplicate sample was collected, the higher concentration of the two is posted.
[15] * = Lead concentrations do not exceed 2,400 mg/kg
[16] For Arithmetic Mean and 95% UCL, values based on 9 samples per parcel.
[17] Aerial Source: Environmental Protection Agency, 2004.

N W E S

0 150 300 600 Feet

FIGURE 4-22
RESIDENTIAL AND NON-RESIDENTIAL SURFACE SOIL LABORATORY RESULTS FOR LEAD
WINKELMAN, ARIZONA
ASARCO, LLC Hayden Plant Site
Hayden, Arizona

The data on this figure are derived from tables 4-6, 4-10, and D-1.

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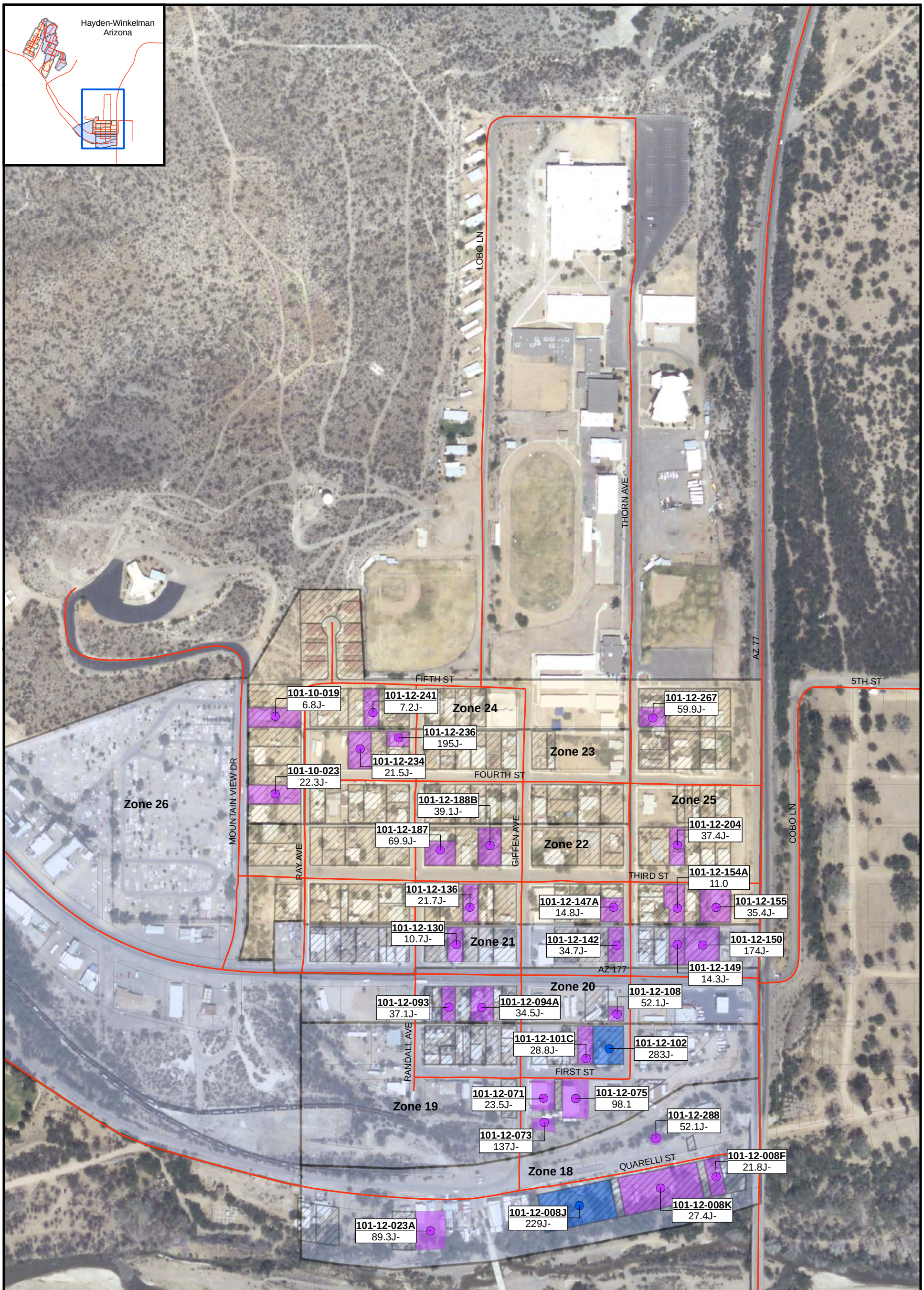
\\MADISON\GROUPS\EMS\GIS_LIBRARY\ASARCO\MAPFILES\03_FINAL\FIG4-22_RES_SURFACESOILLABRESULTS_WINKELMAN_LEAD_NONRES.MXD TJW 7/25/2008 14:01:08



Legend

Sample Location/ Concentration Range Color Key

- 0 - 212 mg/kg
- 213 - 400 mg/kg
- 401 - 1,199 mg/kg*
- 1,200 - 2,400 mg/kg*
- > 2,400 mg/kg*

Shape Key

- Residential Sample

- Parcel with Habitable Housing
- Parcel Boundary
- Road

Parcel Zones

- Category 1
- Category 2

Notes:

[1] 101-12-023A = Parcel ID
[2] Pb = Lead
[3] J- = Estimated value, biased low
[4] mg/kg = milligrams per kilogram
[5] R-SRL = Residential Soil Remediation Level

[6] All concentrations are in mg/kg
[7] Soil concentrations in **RED** exceed Arizona-R-SRLs
[8] Arizona R-SRL for Pb = 400 mg/kg
[9] If a duplicate sample was collected, the higher concentration of the two is posted.
[10] * = Lead concentrations do not exceed 400 mg/kg

[11] Aerial Source: Environmental Protection Agency, 2004.

N W E S

0 150 300 600 Feet

FIGURE 4-23
RESIDENTIAL SUBSURFACE SOIL LABORATORY RESULTS FOR LEAD
WINKELMAN, ARIZONA
ASARCO, LLC Hayden Plant Site
Hayden, Arizona

The data on this figure are derived from tables 4-11 and E-2.

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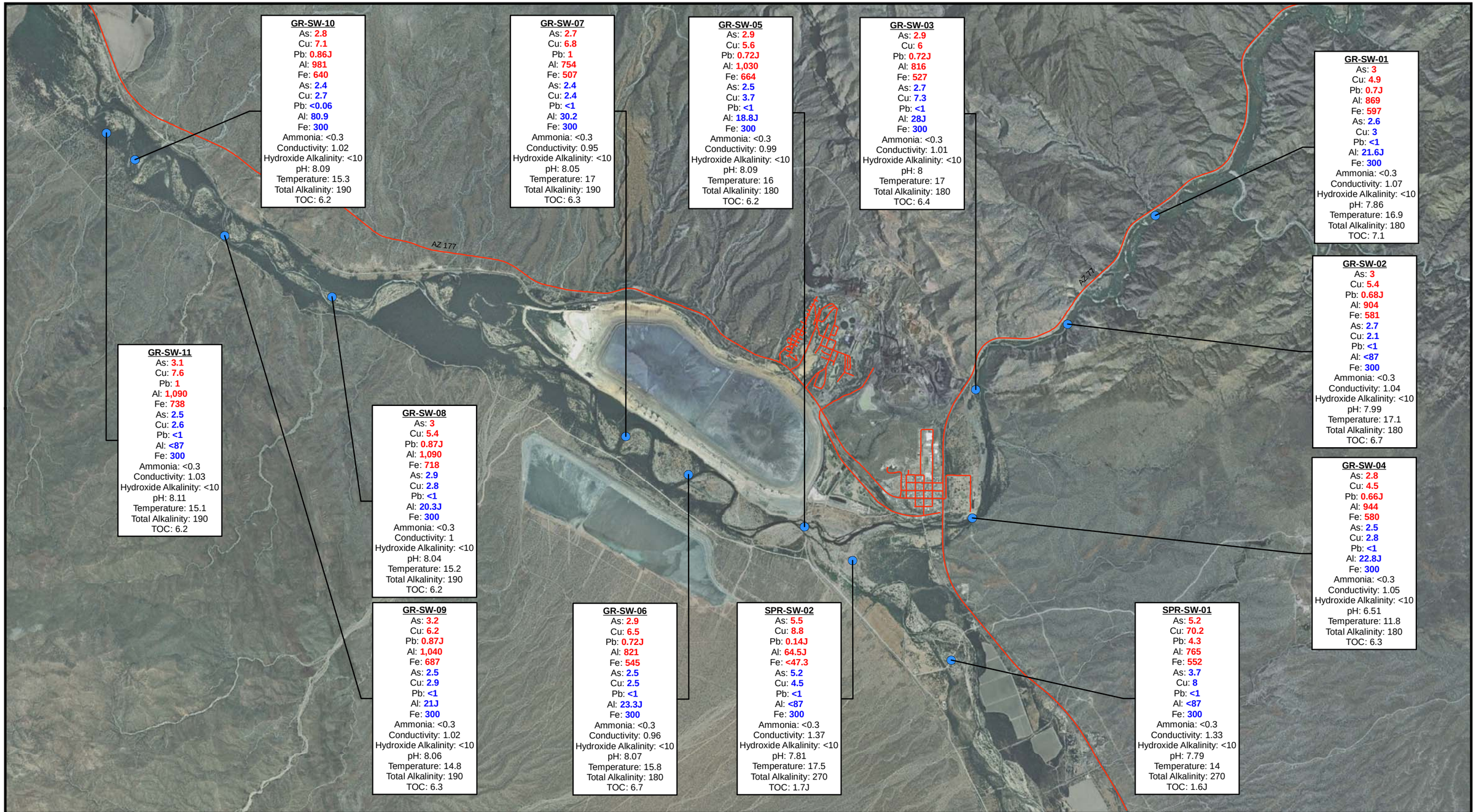
\\MADISON\GROUPS\EMS\GIS_LIBRARY\ASARCO\MAPFILES\03_FINAL\FIG4-23_RES_SUBSURFACESOILLABRESULTS_WINKELMAN_LEAD.MXD TJW 7/25/2008 14:35:12



Legend

- Surface Water Sample Location
- Road

Notes:

[1] GR-SW-01 = Location ID
[2] As = Arsenic
[3] Cu = Copper
[4] Pb = Lead
[5] Al = Aluminum
[6] Fe = Iron
[7] J = Estimated value
[8] < = Less than Limit of Detection (LOD)
[9] TOC = Total Organic Carbon
[10] Concentrations of total metals are indicated in **RED**
[11] Concentrations of dissolved metals are indicated in **BLUE**

[12] Total metal and dissolved metal concentrations are in micrograms per liter (µg/L).
[13] Ammonia, Hydroxide Alkalinity, Total Alkalinity, and TOC concentrations are in milligrams per liter (mg/L).
[14] Conductivity is reported in millisiemens per centimeter (mS/cm).
[15] Temperature is reported in degrees Celsius (°C).
[16] Aerial Source: ESRI I3 Imagery Prime World 2D dataset, April 26, 1992; October 12, 1992; June 17, 2005

N
W E
S

0 1,900 3,800 7,600 Feet

FIGURE 4-24
SELECTED SURFACE WATER SAMPLING RESULTS
WINTER 2006
ASARCO, LLC Hayden Plant Site
Hayden, Arizona
The data on this figure are derived from tables 4-12 and 4-13.

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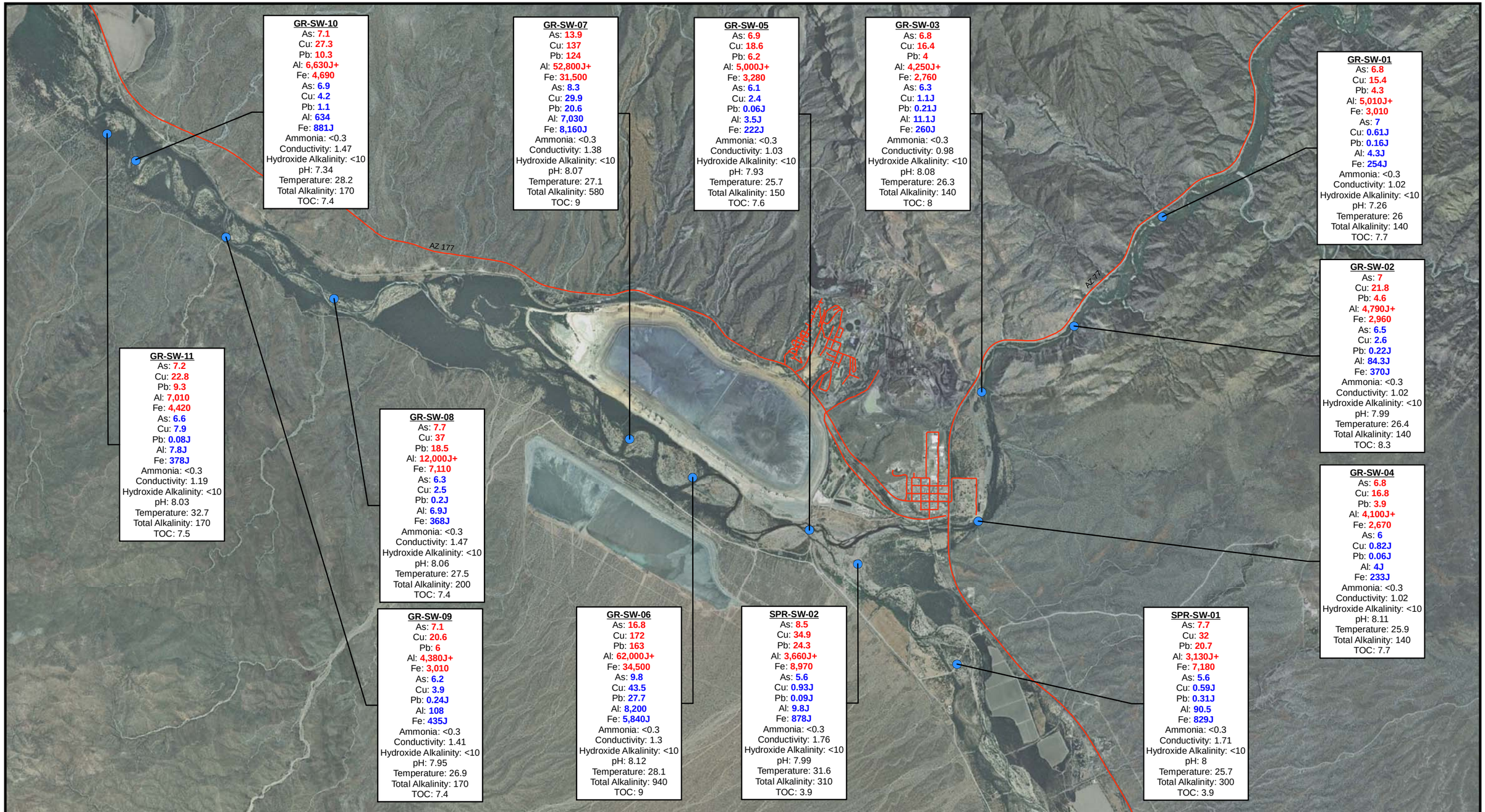
\\MADISON\GROUPS\EMS\GIS_LIBRARY\ASARCO\MAPFILES\03_FINAL\FIG4-24_SURFACE_WATER_SAMPLE_WINTER2006.MXD TJW 7/25/2008



Legend

- Surface Water Sample Location
- Road

Notes:

[1] GR-SW-01 = Location ID
[2] As = Arsenic
[3] Cu = Copper
[4] Pb = Lead
[5] Al = Aluminum
[6] Fe = Iron
[7] J = Estimated value
[8] J+ = Estimated value, biased high
[9] < = Less than Limit of Detection (LOD)
[10] TOC = Total Organic Carbon
[11] Concentrations of total metals are indicated in **RED**
[12] Concentrations of dissolved metals are indicated in **BLUE**
[13] Total metal and dissolved metal concentrations are in micrograms per liter (µg/L).
[14] Ammonia, Hydroxide Alkalinity, Total Alkalinity, and TOC concentrations are in milligrams per liter (mg/L).
[15] Conductivity is reported in millisiemens per centimeter (mS/cm).
[16] Temperature is reported in degrees Celsius (°C).
[17] Aerial Source: ESRI I3 Imagery Prime World 2D dataset, April 26, 1992; October 12, 1992; June 17, 2005

N W E S

0 1,900 3,800 7,600 Feet

FIGURE 4-25
SELECTED SURFACE WATER SAMPLING RESULTS
SUMMER 2006
ASARCO, LLC Hayden Plant Site
Hayden, Arizona

The data on this figure are derived from tables 4-12 and 4-13.

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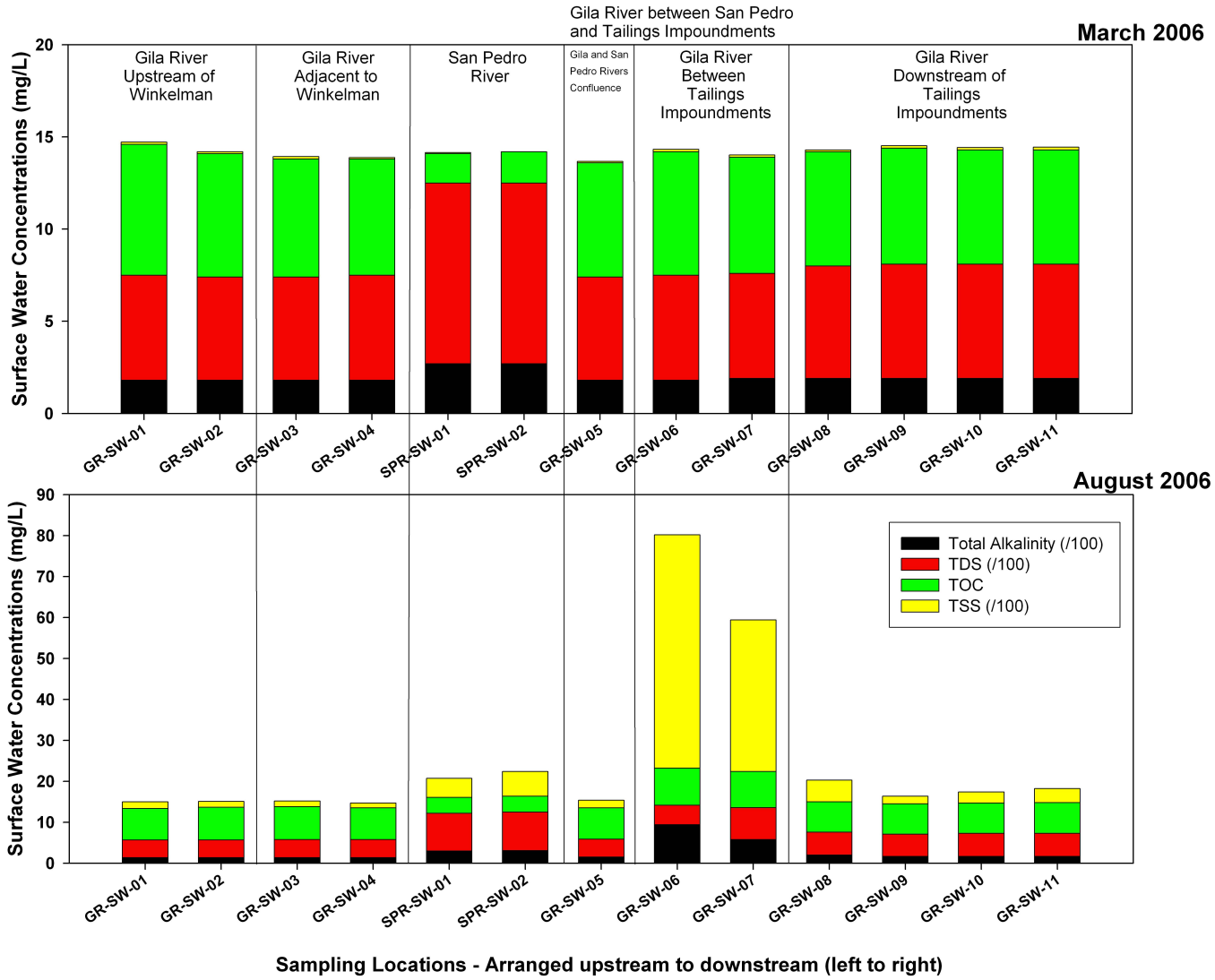
\\MADISON\GROUPS\EMS\GIS_LIBRARY\ASARCO\MAPFILES\03_FINAL\FIG4-25_SURFACE_WATER_SAMPLE_SUMMER2006.MXD TJW 7/25/2008



Notes:

[1] mg/L = milligrams per liter

[2] TDS = Total Dissolved Solids

[3] TOC = Total Organic Carbon

[4] TSS = Total Suspended Solids

FIGURE 4-26

HISTOGRAMS OF CONCENTRATIONS OF GENERAL CHEMISTRY PARAMETERS IN SURFACE WATER SAMPLES, HAYDEN, ARIZONA

ASARCO, LLC Hayden Plant Site

Hayden, Arizona

The data on this figure are derived from table 4-12.

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