

Colorado – Lower Gila Watershed

Watershed Description

This watershed is defined by the Colorado River drainage area, from Hoover Dam at Lake Mead to the Mexico border near Yuma. It does not include the Bill Williams River drainage or the Gila River above Painted Rocks Dam.

Land ownership is divided approximately as: 89% federal, 6% state, 4% tribal, and 1% private. Except for communities along the Colorado River (e.g., Yuma, Bullhead City, Lake Havasu City, Kingman), most of this 14,459 square mile watershed is sparsely populated with only 187,700 people (2000 census).

Due in part to the sparse population, six wildlife refuges and three wilderness areas have been established in this watershed, along with several military bases with live fire exercise areas. All of these have restricted land uses. Tribal and private land is primarily along the Colorado River and lower Gila River and is intensively cultivated. Open grazing occurs across the watershed.

Elevations range from 5,450 feet (above sea level) in the mountains near Lake Mohave to 80 feet along the Colorado River as it flows into Mexico. The area contains low desert fauna and flora, and support warmwater aquatic communities where perennial waters exist.

Water Resources

Precipitation is meager, varying from 3 to 10 inches a year. Perennial water is limited to the Colorado River mainstem and its reservoirs, with irrigation return flow providing perennial flow in the Gila River near Yuma.

An estimate of surface water resources in the Colorado – Lower Gila Watershed is provided in the following table. Waters on Tribal lands are not assessed by ADEQ; therefore, those statistics are shown separately.

Estimated Surface Water Resources in the Colorado – Grand – Lower Gila Watershed

	Perennial	Intermittent	Ephemeral
Stream miles	375	145	13,545
Lake acres	36,860	0	

Additional Water Resources on Tribal Lands – Not Assessed

	Perennial	Intermittent	Ephemeral
Stream miles	75	0	535
Lake acres	245	0	

Ambient monitoring focuses on perennial waters; however, special investigations may identify water quality problems on intermittent and even ephemeral waters. Estimated miles and acres are based on USGS digitized hydrology at 1:100,000 and have been rounded to the nearest 5 miles or 5 acres.

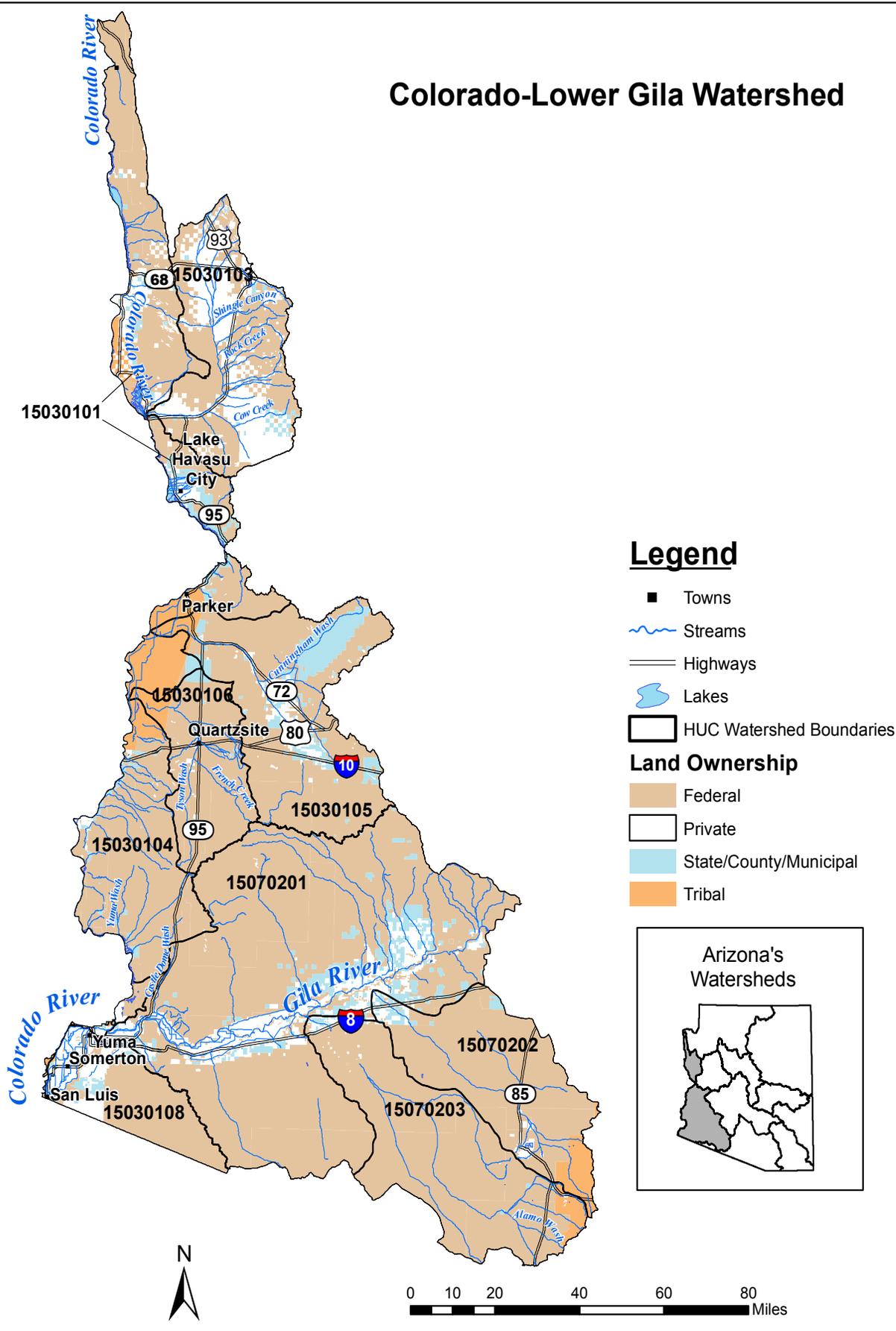
Assessments

The Colorado - Lower Gila Watershed is separated into the following drainage areas (subwatersheds):

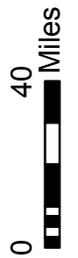
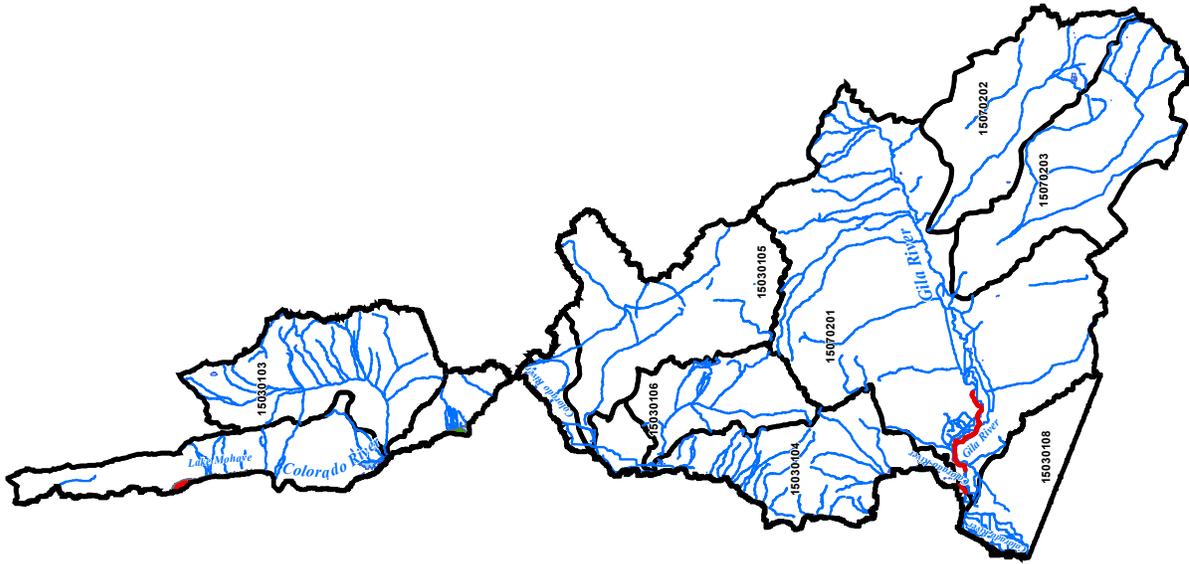
15030101	Mohave -Havasu
15030103	Sacramento Wash
15030104	Imperial Reservoir
15030105	Bouse Wash
15030106	Tyson Wash
15030107	Lower Colorado
15030108	Yuma Desert
15070201	Lower Gila
15070202	Tenmile Wash
15070203	San Cristobal Wash

These drainage areas and the surface waters assessed as “attaining” or “impaired” are illustrated on the following watershed map. Methods used to complete these assessments are described in the “Surface Water Assessment Methods and Technical Support” document.

Colorado-Lower Gila Watershed



Colorado / Lower Gila Watershed 2012/2014 Assessment for Streams and Lakes



<p>Legend</p> <p>Assessed Lakes - 2012 ADEQ and EPA Listings</p> <ul style="list-style-type: none"> Attaining (Green) Inconclusive (Purple) Not Attaining (Orange) EPA Impaired (Brown) Impaired (Red) <p>HUC Watershed Boundaries (Black outline)</p> <p>Assessed Streams - 2012 ADEQ and EPA Listings</p> <ul style="list-style-type: none"> Attaining (Green) Inconclusive (Purple) Not Attaining (Orange) EPA Impaired (Brown) Impaired (Red) <p>Lakes (Blue shape)</p> <p>Streams (Blue line)</p>		<p>See Individual HUC Printouts for Waters not Labeled</p> <p>N</p>
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IMPAIRMENT STATUS

Selenium (2004)

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
AGI - Inconclusive • AGL - Inconclusive • A&Wc - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Selenium ^d	2 ug/L	11/16/2006	2.1 ug/L	A&Wc chronic remains impaired. 4 exceedances in the assessment period. Note: These exceedances are based on dissolved selenium concentrations.
		5/17/2007	2.2 ug/L	
		8/29/2007	2.2 ug/L	
		11/28/2007	2.2 ug/L	

Monitoring Summary

Sampling period:

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW HOOVER DAM USGS 09421500	CLCLR346.35	101484	USGS	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(6-14 dissolved) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, selenium, silver, uranium, zinc	(3-6) Nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-14) Dissolved oxygen, pH, SSC, total dissolved solids, fluoride, pesticides

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	<i>E. coli</i> , lead, copper, manganese, arsenic, chromium, boron
Missing Seasonal Distribution	Dissolved oxygen, <i>E. coli</i> , lead, copper, manganese, arsenic, chromium, boron
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
High	Collect selenium samples to support TMDL development. Collect all core parameters to represent at least 3 seasons during the assessment period.

Impairment Discussion
Reach remains impaired for selenium (2004). No new samples since last assessment.

Selenium (2010)
 IMPAIRMENT STATUS

DWS - Attaining • FC - Attaining • FBC - Attaining
 AGI - Attaining • AGL - Attaining • A&Ww - Impaired

No Exceedances

Monitoring Summary
 Sampling period: 8/31/2006 - 7/15/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW PARKER DAM USGS 09427520	CLCLR195.22	100742	USGS	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(6-8) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(8) Nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-8) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, fluoride

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
High	Collect more selenium samples for TMDL development. Good core parameter coverage with small number of samples.

Impairment Discussion
Reach remains impaired for selenium (2010). No new samples since last assessment.

COLORADO RIVER

Imperial Dam - Gila River
15030107-003
15.3 Miles

Category 5
Impaired

IMPAIRMENT STATUS

Selenium (2010)

DWS - Attaining • FC - Attaining • FBC - Attaining
AGI - Attaining • AGL - Attaining • A&Ww - Impaired

No Exceedances

Monitoring Summary

Sampling period: 8/29/2006 - 7/22/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE IMPERIAL DAM USGS 09429490	CLCLR048.36	100752	USGS	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(5-8) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(1-9) Nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-9) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, fluoride

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
High	Collect selenium samples in support of TMDL development. Good core parameter coverage.

Impairment Discussion
Reach remains impaired for selenium (2010). No new data since last assessment.

Selenium and low dissolved oxygen (2006)

DWS - Attaining • FC - Attaining • FBC - Attaining
AGI - Attaining • AGL - Attaining • A&Ww - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Boron	1000 ug/L (AGI) 1400 ug/L (DWS) 186667 ug/L (FBC)	2/14/2007	310000 ug/L	AGI, DWS, and FBC are attaining with 1 exceedance in 12 samples (binomial).
Dissolved oxygen	6.0 mg/L	8/30/2006	5.5 mg/L	A&Ww remains impaired with 3 exceedances in 23 samples. No new data since last assessment.
		8/28/2007	5.5 mg/L	
		7/23/2008	5.6 mg/L	
Manganese	10000 ug/L (AGI) 980 ug/L (DWS)	2/14/2007	130000 ug/L	AGI and DWS are attaining with 1 exceedance in 13 samples (binomial).
Mercury ^d	0.01 ug/L	1/29/2008	0.011 ug/L	A&Ww is attaining. This exceedance occurred during a storm event and does not represent chronic conditions.
SSC	80 mg/L	12/20/2007	143 mg/L	A&Ww is attaining. No annual median exceedances.
Selenium	2 ug/L	8/30/2006	2.3 ug/L	A&Ww remains impaired. No new samples since last assessment.
		4/9/2008	2.2 ug/L	

Monitoring Summary
Sampling period: 8/30/2006 - 12/4/2008

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE MORELOS DAM USGS 09522000	CLCLR023.30	100744	USGS	USGS
BELOW YUMA WWTP	CLCLR026.80	105308	ADEQ	Ambient
ABOVE YUMA WWTP	CLCLR029.59	105309	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(10-16) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(6-27) Ammonia, nitrate, nitrite, nitrite/nitrate, nitrogen, phosphate, phosphorus, total Kjeldahl nitrogen	(4-27) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, pesticides, fluoride

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Selenium

Priority	Monitoring Recommendations
High	Collect samples to support dissolved oxygen and selenium TMDLs. Collect more samples for parameters showing exceedances (boron and manganese). Good core parameter coverage.

Impairment Discussion
Reach remains impaired for selenium and dissolved oxygen (2006). There are 7 dissolved selenium values over a two year period (2007-2008) though the average is only slightly higher than the (total) standard. Situation seems slightly improved from 2002-2004 where the average value was about 2.5 ug/L.

GILA RIVER

Coyote Wash - Fortuna Wash
15070201-003
28.3 Miles

Category 5
Impaired

Colorado - Lower Gila

IMPAIRMENT STATUS

Boron and selenium (2004)

FC - Attaining • FBC - Attaining • AGI - Impaired
AGL - Attaining • A&Ww - Impaired

No Exceedances

Monitoring Summary

Sampling period: 2/13/2007 - 5/30/2007

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
NEAR DOME, AZ USGS 09520280	CLGLR010.53	100455	ADEQ	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
(1-3) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(3) Nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(2-3) Dissolved oxygen, <i>E. coli</i> , pH, SSC, total dissolved solids, organic compounds/pesticides

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Boron, copper (dissolved)
Missing Seasonal Distribution	Boron, copper (dissolved)
Lab Detection Limits Not Low Enough	Selenium

Priority	Monitoring Recommendations
High	Collect boron and selenium samples in support of TMDL development. Use a lower detection limit for selenium.

Impairment Discussion
Reach remains impaired for boron and selenium (2004). No new data since the last assessment. All selenium data had method reporting limits above the A&W chronic standard.



LAKE HAVASU

15030101-0590
19783 Acres

Category 2

Attaining some uses

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
AGI - Attaining • AGL - Attaining • A&Ww - Attaining

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Beryllium	4 ug/L (DWS) 84 ug/L (FC)	10/28/2008	130 ug/L	DWS and FC are inconclusive with 1 exceedance in 5 samples (binomial).
<i>E. coli</i>	235 cfu/100 mL, SSM Because of the size of this reservoir, ADEQ assesses bacteria exceedances at each site.	North Rotary Beach	7/17/2008 1230 cfu/100 mL	FBC is inconclusive with only 1 exceedance.
		South Rotary Beach	7/24/2008 411 cfu/100 mL	FBC is inconclusive for South Rotary Beach and Middle Rotary Beach. Exceedances at each site occurred only 4 days apart (in different aggregated weeks), and subsequent monitoring by Mohave County Health Department showed no exceedances.
			7/28/2008 1300 cfu/100 mL	
		Middle Rotary Beach	7/24/2008 2420 cfu/100 mL	FBC is inconclusive with 1 geometric mean exceedance for Middle Rotary Beach. Not enough samples to calculate any other monthly geometric means for this site.
	7/28/2008 1986 cfu/100 mL			
126 cfu/100 mL, Geometric mean	Middle Rotary Beach	7/17/2008 - 7/29/2008 147 cfu/100 mL		

Monitoring Summary

Sampling period: 1/31/2007 - 6/3/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
MID LAKE	CLHAV-B	100102	ADEQ	Clean Lakes Program
AT PARKER DAM USGS 09427500	CLHAV-A	100098	ADEQ	Clean Lakes Program
AT THOMPSON BAY	CLHAV-TB2	106242	ADEQ	Clean Lakes Program
SITE C	CLHAV-C	100099	ADEQ	Clean Lakes Program

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
COLORADO RIVER	CLHAV-CRA	100101	ADEQ	Clean Lakes Program
SOUTH ROTARY BEACH	CLHAV-SROTS	100121	ADEQ	Clean Lakes Program
MIDDLE ROTARY BEACH	CLHAV-MROTS	100122	ADEQ	Clean Lakes Program
NORTH ROTARY BEACH SHORE	CLHAV-NROTS	100123	MOHD	Clean Lakes Program
AT WEST STATE BEACH SHORE	CLHAV-WSBSH	100171	ADEQ	Clean Lakes Program
AT EAST STATE BEACH SHORELINE	CLHAV-ESBSH	100117	ADEQ	Clean Lakes Program
AT CRAZY HORSE COVE	CLHAV-CHC	100139	ADEQ	Clean Lakes Program
OFF WINDSOR BEACH	CLHAV-OFFWB	100155	ADEQ	Clean Lakes Program
AT NORTH CHANNEL	CLHAV-NCH	100168	MOHD	Beach Monitoring (<i>E. coli</i>)
CRAZY HORSE BEACH	CLHAV-CRAZ	102352	ADEQ	Clean Lakes Program
WINDSOR COVE	CLHAV-WIND	102363	ADEQ	Clean Lakes Program
MID THOMPSON BAY	CLHAV-TB	100170	ADEQ	Clean Lakes Program
AT LONDON BRIDGE	CLHAV-MC	100150	ADEQ	Clean Lakes Program
AT NAUTICAL COVE	CLHAV-NAUTC	100151	ADEQ	Clean Lakes Program
AT WINDSOR BEACH SOUTH OF BOAT RAMP	CLHAV-WBSR	100130	ADEQ	Clean Lakes Program

Metal Samples	Nutrients & Related Samples	Other Samples
(17-26) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(25-26) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(28-35) Dissolved oxygen, <i>E. coli</i> , pH, total dissolved solids, fluoride

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Beryllium, <i>E. coli</i>
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	Cadmium (dissolved), copper (dissolved), lead (dissolved), mercury (dissolved), nickel (dissolved), selenium, silver (dissolved), thallium, zinc (dissolved), barium, chromium, boron

Priority	Monitoring Recommendations
High	Collect more <i>E. coli</i> samples to stay on top of situation. Collect additional beryllium samples due to the exceedance. Use a lower lab detection limit for selenium and collect additional selenium samples (Colorado River is impaired for selenium in upstream reaches). Good core parameter coverage.



LAKE MOHAVE

15030101-0960
27044 Acres

Category 5

Impaired

Colorado - Lower Gila

IMPACTMENT STATUS

Selenium (2010)

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
AGI - Inconclusive • AGL - Inconclusive • A&Wc - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Selenium	2 ug/L	3/28/2007	2.9 ug/L	A&Wc remains impaired. No new samples since last assessment.
		8/14/2007	2.2 ug/L	
		9/11/2007	3.3 ug/L	
		2/5/2008	2.2 ug/L	
		5/13/2008	2.4 ug/L	
		7/8/2008	2.5 ug/L	
		12/9/2008	2.8 ug/L	

Monitoring Summary

Sampling period: 12/11/2006 - 3/3/2009

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
WILLOW BEACH FISH HATCHERY	CLMOHWBFH	107202	USFWS	Permit monitoring
AT DAVIS DAM USGS 09422500	CLMOH-A	100030	ADEQ	CLP

Metal Samples	Nutrients & Related Samples	Other Samples
(1-28) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, zinc	(1) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1) Dissolved oxygen, pH, total dissolved solids, fluoride

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , lead, copper, manganese, nitrite/nitrate, fluoride, arsenic, chromium, boron
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , lead, copper, manganese, nitrite/nitrate, fluoride, arsenic, chromium, boron
Lab Detection Limits Not Low Enough	Cadmium (dissolved), arsenic, barium, chromium

Priority	Monitoring Recommendations
High	Collect selenium samples to support TMDL development. Needs core parameter sample number and seasonal distribution coverage.

Impairment Discussion
Remains impaired for selenium (2010). No new data since last assessment.

PAINTED ROCK BORROW PIT LAKE

15070201-1010
186 Acres

Category 5
Impaired

Low dissolved oxygen (1992)

FC - Impaired • FBC - Inconclusive AGL - Inconclusive
AGL - Inconclusive • A&Wc - Impaired

Monitoring Summary

Sampling period: No current data

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
Southwest Shore	CLPRL-D	102515	COE	Ambient

Metal Samples	Nutrients & Related Samples	Other Samples
None	None	None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , lead, copper, manganese, boron
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), <i>E. coli</i> , lead, copper, manganese, boron
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Medium	Collect pesticide and dissolved oxygen samples to support TMDL development when the lake refills.

Impairment Discussion
Fish consumption advisories for pesticides in effect since 1991. EPA relisted DDT metabolites, toxaphene, and chlordane in 2002. Based on recent water quality and fish tissue data ADEQ is proposing to delist this waterbody for pesticides.