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BEFORE THE
ARIZONA NAVIGABLE STREAM ADJUDICATION COMMISSION

IN THE MATTER OF THE NAVIGABILITY OF THE GILA RIVER FROM THE NEW MEXICO BORDER TO THE CONFLUENCE WITH THE COLORADO RIVER, GREENLEE, GRAHAM, GILA, PINAL, MARICOPA AND YUMA COUNTIES, ARIZONA	No. 03-007-NAV **ARIZONA STATE LAND DEPARTMENT'S NAVIGABILITY MEMORANDUM**

I. Introduction.

The Arizona State Land Department ("ASLD" or the "State") files this memorandum in response to the Arizona Navigable Stream Adjudication Commission's ("ANSAC" or "Commission") question whether any of the six pending rivers (the Gila River, Upper Salt River, Gila River, Verde River, San Pedro River, and Santa Cruz River) were navigable in their natural and ordinary condition at statehood, as directed by the Court of Appeals in *State ex rel. Winkleman v. Ariz. Navigable Stream Adjudication Comm'n,* 224 Ariz. 230, 229 P.3d 242 (App. 2010). This Commission must, as a matter of law, perform two separate and distinct tasks, it must: (1) analyze each river system on a segment-by-segment basis pursuant to the dictates of *PPL Montana*, LLC v. Montana, 565 U.S. ___, 132 S.Ct. 1216 (2012), something that was not originally required of the parties or the Commission in this matter; and (2) assess the navigability of each segment in the River's ordinary and natural condition prior to the massive diversion of waters for irrigation that began in the mid-to-late nineteenth century, prior to Arizona's statehood. The State previously submitted a Memorandum to ANSAC on January 27, 2012, that recommended how ANSAC should comply with the *Winkleman* decision. *See* Attachment A. On June 8, 2012, the State submitted a Memorandum on the United States Supreme Court's

decision in *PPL Montana,* 132 S.Ct. 1215 (2012). *See* Attachment B. In its *PPL Montana* Memorandum, the State recommended segments for the six pending rivers currently at issue before ANSAC. The Gila River was previously divided into approximately six, stream, study reaches. This division is not consistent with ordinary and natural physical characteristics of this river system, and accordingly the State has recommended different segmentation based on the River's physical characteristics. *See* Table 1 (River Segments Within The Gila River); Attachment C, comparison of reaches with recommended segmentation for the Gila River.

Table 1.
River Segments Within The Gila River

	Segment Boundaries	Comments
Gila River	1 – New Mexico to Gila Box	Alluvial river valley
	2 – Gila Box	Bedrock canyon, popular boating reach
	3 – Gila Box to San Carlos Reservoir	Alluvial river valley
	4 – San Carlos Canyon	Bedrock canyon, limited access
	5 – San Carlos Canyon to Ashurst-Hayden Dam	Deep valleys, some boating
	6 – Ashurst-Hayden Dam to Salt River Confluence	Losing stream, limited record
	7 – Salt River Confluence to Dome	Alluvial river valley, historical boating
	8 – Dome to Colorado River Backwater	Alluvial river valley, historical boating

Attachment B, ASLD ANSAC PPL Memorandum June 8th, 2012.

This Memorandum, therefore, addresses the Gila River on a segment-by-segment basis.

As the *Winkleman* Court instructed, ANSAC must determine "what the River would have looked like on February 14, 1912, in its ordinary (i.e., usual, absent major flooding or drought) and natural (i.e., without man-made dams, canals, or other diversions) condition." *State ex rel. Winkleman v. Ariz. Navigable Stream Adjudication Comm'n*, 224 Ariz. at 241, 229 P.3d at 253; *see PPL Montana, LLC v. Montana,* 132 S.Ct. at 1228 (title navigability determined at statehood based on the "natural and ordinary condition").

The *Daniel Ball* test requires that ANSAC determine the ordinary and natural characteristics of the Gila River, and whether, at statehood, the River was used or was susceptible to being used as a highway for commerce. *Winkleman,* 224 Ariz. at 239, 229 P.3d at 251; *see Utah v. United States,* 403 U.S. 9, 12 (1971); *United States v. Utah,* 283 U.S. 64, 77-81 (1931); *United States v. Holt State Bank,* 270 U.S. 49, 52-53, 56-57 (1926); *The Daniel Ball,* 77 U.S. (10 Wall.) 557, 563 (1870). The River was navigable within the meaning of the federal test because its ordinary and natural physical characteristics could have supported navigation, and because it was actually boated even as it flows were increasingly depleted.

II. The Ordinary and Natural Physical Characteristics of the Gila River Were Sufficient to Support Navigation and Commerce.

A. The Gila River's Ordinary and Natural Physical Characteristics – Its Hydrology, Hydraulics, and River Conditions – Demonstrate that the River Was Susceptible to Use as a Highway for Commerce.

1. Gila River Segments.

The Gila River in its ordinary and natural condition was capable of being used for transportation or commerce. *See United States v. Utah*, 283 U.S. at 82 ("question of . . . susceptibility in the ordinary condition of the rivers, rather than of the mere manner or extent of actual use, is the crucial question. . . . The extent of existing commerce is not the test."); *PPL Montana,* 132 S.Ct. at 1233.

In its ordinary and natural condition, the Gila River from the New Mexico border to the Colorado River confluence consists of several river segments defined by their navigability characteristics, hydrology, geology, and geography. Over its length, which spans the diverse terrain of the entire State of Arizona, the Gila River flows through alternating reaches of narrow bedrock canyons and broad, alluvial, river valleys. E.I. 2, ASLD Upper Gila Report, 4-6, 8-5. On the basis of these navigability characteristics, the Gila River should have been segmented as indicated in Table 1.

a. Segment 1: New Mexico to Gila Box.

This segment extends from the Arizona/New Mexico border to the upstream end of the Gila Box near Apache Grove. In Segment 1, the river canyon has an average width of about 2,000 feet, with floodplains that alternate from side to side, as the main channel meanders across the canyon bottom. *Arizona State Land Department's Arizona Stream Navigability Study for the Upper Gila River, Safford to the State Boundary* (rev. June 2003 by JE Fuller/Hydrology & Geomorphology, Inc.) Evidence Item ("E. I."), 2, ("ASLD Upper Gila Report"), 4-6. Segment 1 is perennial, with reliable flow throughout the year. E.I. 2, ASLD Upper Gila Report, 5-32. The channel in Segment 1 has a pool and riffle pattern (E.I. 2, ASLD Upper Gila Report, 4-7), with numerous Class I to II riffles and rapids. E.I. 2, ASLD Upper Gila Report, 6-5. Segment 1 is distinguished from Segment 2 based on its broad alluvial valley, degree of historical disturbance, fewer rapids, and slightly lower flow rate.

b. **Segment 2: Gila Box.** This segment extends through the Gila Box Canyon and Wilderness Area. Segment 2 is located mostly within relatively narrow canyons of the Central Mountain Province. E.I. 2, ASLD Upper Gila Report, 4-6. Therefore, the geomorphology of most of the Upper Gila River is controlled by bedrock outcrops in the bed or at the margins of these canyons. E.I. 2, ASLD Upper Gila Report, 4-6. The average width of the canyons in Segment 2 is about 500 feet, with very narrow floodplain terraces. E.I. 2, ASLD Upper Gila Report, 4-6. In the latter reaches, moderate floods tend to fill the entire canyon bottom. E.I. 2, ASLD Upper Gila Report, 4-6. Segment 2 is located primarily within the Bureau of Land Management Gila Box Riparian National Conservation Area. E.I. 2, ASLD Upper Gila Report, 5-5. Segment 2 is perennial, with reliable flow throughout the year. E.I. 2, ASLD Upper Gila Report, 4-7. Segment 2 has a pool and riffle pattern, with numerous Class II rapids. E.I. 2, ASLD Upper Gila Report, 4-6. Segment 2 is distinguished from Segment 3 based on its slightly higher flow rate, more difficult river access, lesser degree of historical disturbance, and record of historical and modern boating.

c. **Segment 3: Gila Box to San Carlos Reservoir.** This segment extends from the downstream end of the Gila Box canyon through the Safford Valley to what is now the San Carlos Reservoir. Segment 3 is located within a deep alluvial valley. E.I. 2, ASLD Upper Gila Report, 4-6. The river flows in a broad valley more than a mile wide, and is subject to shifting of the channel and floodplain geometry in response to floods. E.I. 2, ASLD Upper Gila Report, 4-6. During sustained periods of low flow with no large floods, the channel has tended to narrow. E.I. 2, ASLD Upper Gila Report, 4-6. The Safford Valley is populated and is one of the finest irrigated portions of the State. *Arizona State Land Department's Arizona Stream Navigability Study for the Gila River: Colorado River Confluence to the Town of Safford* (rev. June 2003 by JE Fuller/Hydrology & Geomorphology, Inc.) (Evidence Item ["E. I."] No. 4) ("ASLD Lower Gila Report"), VI-2. This valley extends northwest from a point 10 miles above Solomon to a point about six miles below the mouth of San Carlos River on the San Carlos Indian Reservation. E.I. 4, ASLD Lower Gila Report, VI-2. Segment 3 is perennial, with reliable flow throughout the year. E.I. 4, ASLD Lower Gila Report, VII-6. Segment 3 has a pool and riffle pattern, with mostly Class I riffles and few, if any, rapids. E.I. 2, ASLD Upper Gila Report, 4-9, Table 2. Segment 3 is distinguished from Segment 4 based on its alluvial river valley location, ease of access, and historical disturbance.

d. Segment 4: San Carlos Canyon. This segment extends from the San Carlos Reservoir impoundment to the San Pedro River confluence near Winkleman. The River in Segment 4 flows within a deep, narrow, bedrock canyon with few access points. E.I. 4, ASLD Lower Gila Report, VII-2. The River remains in a southwesterly canyon from a short distance just below the Coolidge Dam, to about one mile above the mouth of the San Pedro River at Winkleman/Hayden. E.I. 4, ASLD Lower Gila Report, VI-2. The River is located within the San Carlos Indian Reservation, the Needles Eye Wilderness, and private lands. E.I. 4, ASLD Lower Gila Report, VII-8, VIII-2, VIII-6. Segment 4 is perennial, with reliable flow throughout the year. E.I. 4, ASLD Lower Gila Report, VII-6. Segment 4 is distinguished from Segment 5 based on its canyon topography, more difficult river access, and lesser degree of historical disturbance.

e. Segment 5: San Carlos Canyon to Ashurst-Hayden Dam. This segment extends from Winkleman to the Hayden-Ashurst Irrigation Diversion Dam. Downstream of the San Carlos Canyon, the country then broadens into an unnamed valley of considerable size, extending northwest for a distance of about 20 miles from Hayden, past Kearny, to below the mouth of Mineral Creek. E.I. 4, ASLD Lower Gila Report, VI-2. From the mouth of Mineral Creek the river flows west in canyon again until North and South Buttes are reached, a distance of about 15 miles, where the river opens onto the plains region of south-central Arizona. E.I. 4, ASLD Lower Gila Report, VI-2. The river in Segment 5 flows within a moderately deep valley between low mountains and hills, mostly on private lands. E.I. 4, ASLD Lower Gila Report, VIII-1. Segment 5 is perennial, with reliable flow throughout the year. E.I. 4, ASLD Lower Gila Report, VII-6. The channel in Segment 5 has a pool and riffle pattern, with numerous Class II rapids. Segment 5 is distinguished from Segment 6 based on its more reliable flow, confined geometry, and its record of historical and modern boating.

f. Segment 6: Ashurst-Hayden Dam to Salt River Confluence.

This segment extends from the Hayden Ashurst Irrigation Diversion Dam to the confluence with the Salt River. In 1912, the middle Gila River above Pima Butte contained a wide, shallow, braided, sandy channel. E.I. 4, ASLD Lower Gila Report, VII-5. Before Anglo settlement in the 1860's, the middle Gila River would periodically run dry near the Pima Villages during May and June (Rea, 1983). E.I. 4, ASLD Lower Gila Report, VII-4. Segment 6 is perennial, with reliable flow throughout the year. E.I. 4, ASLD Lower Gila Report, VII-5. Segment 6 has a braided and compound channel pattern, with few if any rapids or riffles. E.I. 4, ASLD Lower Gila Report, VII-5. Segment 6 is distinguished from Segment 7 based on its lower flow rate, greater seasonal variation in flow, and sparser record of historical and modern boating.

g. Segment 7: Salt River Confluence to Dome. This segment extends from the Salt-Gila River confluence to Dome, Arizona. Segment 7 of the Gila River was perennial reaching all the way to the Colorado River (Ross, 1923). E.I. 4, ASLD Lower Gila Report, VII-5. Spanish explorers during the 1700's described the native peoples living along the lower Gila River as fishermen, and large galleries of cottonwood trees lined the banks as recently as the late 1800's. E.I. 4, ASLD Lower Gila Report, VII-6. A rancher described the river near Powers Butte (between Buckeye and Gillespie Dam) in 1889 as having a well-defined channel with hard, sloping banks lined with cottonwood and bushes. The water was clear, was 5 or 6 feet deep, and contained many fish." (Ross, 1923:66) E.I. 4, ASLD Lower Gila Report, VII-6. The former description implies a braided, sandy stream, whereas the latter suggests a relatively, narrow, deep channel, however, the latter description may be of the main flow channel within an overall braided channel. E.I. 4, ASLD Lower Gila Report, VII-6. Segment 7 was perennial, with reliable flow throughout the year. E.I. 4, ASLD Lower Gila Report, VII-5. The median annual flow rate averaged about 1750 cfs throughout the segment. E.I. 23, Hjalmarson Presentation, 22. Segment 7 is distinguished from Segment 8 based on its record of historical boating.

h. Segment 8: Dome to Colorado River Backwater. This segment extends from Dome to the Colorado River confluence. Segment 8 is similar in character to Segment 7. Historical records suggest that commercial navigation in steamboats upstream from the Colorado River occurred within this segment. Tr., 329 (Schumm); Tr., 154 (Littlefield).

2. Hydrology.

Flow data for the Gila River were derived primarily from the records and publications of United States Geological Survey (USGS). E.I. 2, ASLD Upper Gila Report, Chapter 5; E.I. 4,

ASLD Lower Gila Report, Chapter 6. The ASLD was the only party to compile and submit flow data, which included USGS records. USGS stream flow records are routinely relied on for stream flow and water adjudication studies throughout the United States, and are universally recognized as reliable and objective. E.I. 2, ASLD Upper Gila Report, 5-11

ASLD also submitted flow data based on: (1) direct measurement (E.I. 2, ASLD Upper Gila Report, 5-15); (2) direct observations by explorers, early residents (E.I. 2, ASLD Upper Gila Report, Chapter 3; E.I. 4, ASLD Lower Gila Report, Chapter 3); and (3) stream flow reconstructions based on tree-ring data. E.I. 4, ASLD Lower Gila Report, VII-3. All flow data indicate a consistent picture of perennial and reliable stream runoff in the Gila River. E.I. 2, ASLD Upper Gila Report, 5-32; E.I. 4, ASLD Lower Gila Report, VII-6.

USGS scientists and hydrologists reconstructed average flow conditions in the Gila River study reach using stream gauge records from stations located over the entire length of the River. Table 2. In no case was the natural annual flow rate zero, and all monthly flow rates were above zero except in Segment 6 above the Salt River confluence. E.I. 2, ASLD Upper Gila Report, 5-32; E.I. 2, ASLD Lower Gila River Report, VII-6. All of the historical floods were rare occurrences with short durations. E.I. 2, ASLD Lower Gila Report, VI-3. Regardless, floods and droughts do not represent the ordinary and natural conditions of the River. The flow data, as summarized in Table 2, represent the best available estimates of typical, expected flow rates in the Gila River in its ordinary and natural condition. These data indicate that the Gila River reliably flowed between 21 cfs and 932 cfs.

Table 2
Duration Table of Daily Mean Flow for Period of Record[1]

Gauge	Segment	90%		50%		10%	
Gila River near Virden, NM	1	404		91		21	
Gila River near Clifton, AZ	1,2	455		80		18	
Gila River at Head of Safford Valley, Near Solomon, AZ	2,3	932		174		62	
Gila River at Safford, AZ	3	694		66		0.52	

Source: Garret & Gellenbeck, 1991)

See Figure 1; E.I. 2, ALSD Upper Gila Report, 5-33.

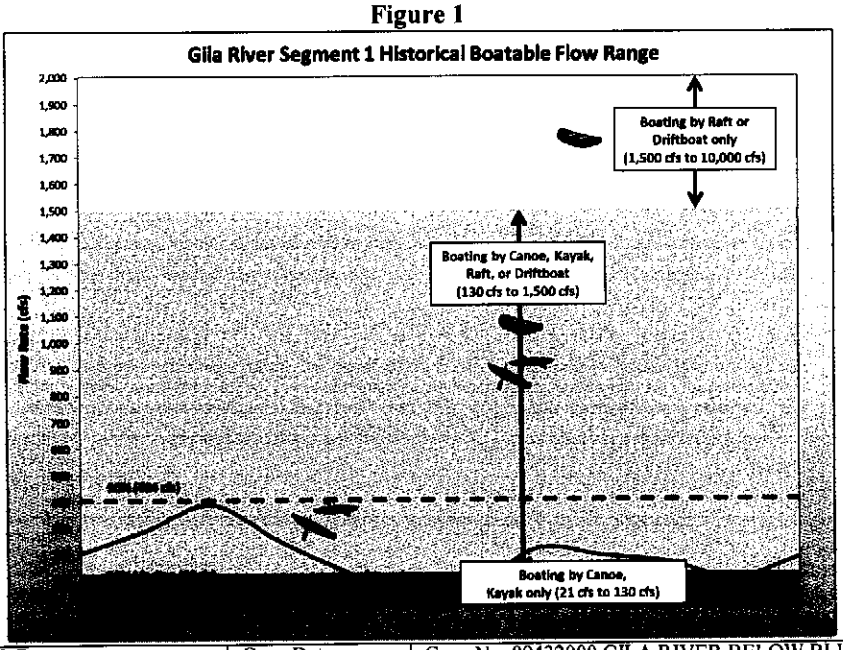
[1] In this table, the 90% flow rate indicates that 90% of the time the flow is less than the cfs number in the table, the 50% flow rate indicates that 50% of the time the flow is above the cfs number in the table, and the 10% flow rate indicates that 90 % of the time the flow is greater than the cfs number in the table.

Table 3. Additional Flow Data for the Gila River Below Safford, AZ			
Station	**Period**	**Average Monthly Flow**	**Source**
Colorado River Confluence	Pre-Development	1750 (median) (170 base flow)	E.I. 23, Hjalmarson Presentation, 22
Dome 09520500	Pre-Statehood Post-Statehood	1277 455	E.I. 4, ASLD Lower Gila Report, VI-4 - 7
Buttes Dam	Pre-Statehood	630	E.I. 4, ASLD Lower Gila Report, VI-5
D/S Salt Confluence	Pre-Development	1750 (median) (290 base flow)	E.I. 23, Hjalmarson Presentation, 21
Kelvin 09474000	Pre-Statehood Statehood	739 491	E.I. 4, ASLD Lower Gila Report, VI-5 - 7
San Carlos 09469500	Pre-Statehood Post-Statehood	272 379	E.I. 4, ASLD Lower Gila Report, VI-5 - 8
Winkleman	Statehood	332	E.I. 4, ASLD Lower Gila Report, VI-8

The key aspects of the ordinary and natural flow data in the existing record for the Gila River include the following indisputable facts: (1) as with all natural, there is seasonal fluctuation in the River's natural flow (E.I. 2, ASLD Upper Gila Report, 5-32); (2) the River's ordinary and natural seasonal fluctuation occurs within an expected and predictable range (E.I. 2, ASLD Upper Gila Report, 5-33, Table 21); (3) the River experiences periodic floods and droughts; (a) floods on the River are rare and of short duration (E.I. 2, ASLD Upper Gila Report, 4-9 – 4-12); flood conditions occur well less than 1% of the time (E.I. 2, ASLD Upper Gila Report, 5-33, Table 21), and do not constitute the ordinary and natural condition; and (b) the River never completely dried up, even in the most extreme drought (E.I. 4, ASLD Lower Gila Report, VII-7); and (4) boatable flow rates occurred more than 95% of the time in all segments except Segment 6, where the River was probably susceptible to shallow draft boating about half the time. E.I. 4, ASLD Lower Gila Report, VII-4.

Figures 1, 2, and 3 summarize the River ordinary and natural condition data (non-drought, non-flood) and show the ordinary seasonal fluctuation by month, as well as 10%, 50% (median), and 90% flow rates. Figures 1-3 also show the ranges of flow applicable to different types of boating on the Upper Gila River. The existing record for some segments of the River downstream of the San Carlos Reservoir are not as well documented as the segments for the Upper Gila River. For these segments, boatability provided is based on average monthly flow data as set forth in Table 3. These data indicate that the Gila River was ordinarily susceptible to boating throughout the year.

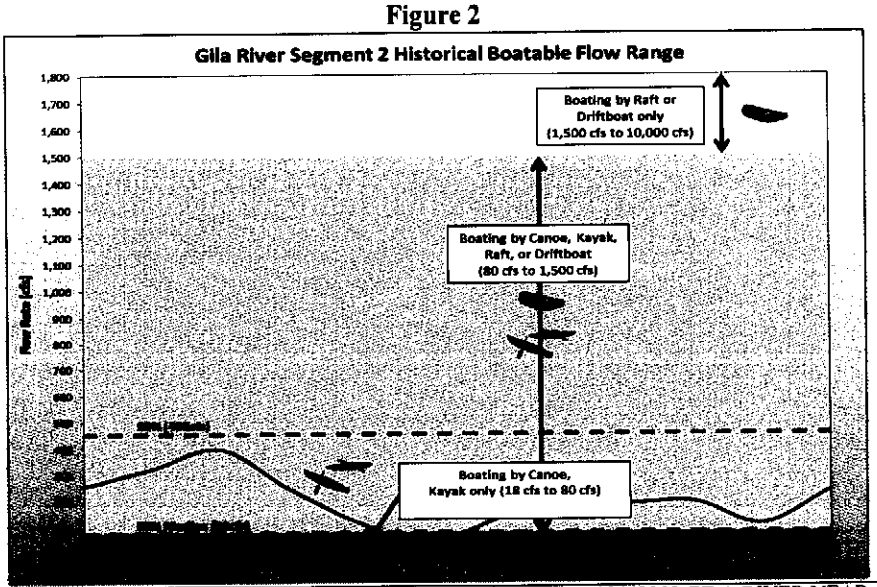
Figure 1



Key to Symbols & Data		Gage Data Source:	Gage No. 09432000 GILA RIVER BELOW BLUE CREEK, NEAR VIRDEN, NM
	No boating possible		
	Boating by canoes, kayaks	Source: Min. canoes (E.I. 2, ASLD Upper Gila Report, Section 5.)	
	Boating by all types	Source: Max canoes, Min Rafts (E.I. 2, ASLD Upper Gila Report, Section 6.)	
	Boating by rafts, drift boats	Source: Max rafts (E.I. 2, ASLD Upper Gila Report, Section 6.)	
	90% Flow	Per stream gage records, 90% of time flow is less than this discharge (404 cfs).	
	50% Flow	Median flow rate per stream gage, 50% of time flow is above this discharge (91 cfs).	
	10% Flow	Per stream gage records, 90% of time flow is greater than this discharge (21 cfs).	
	Average monthly discharge as recorded at long-term USGS stream gauging stations.		
Notes:			

E.I. 2, ASLD Upper Gila Report, Section 5, Section 6.

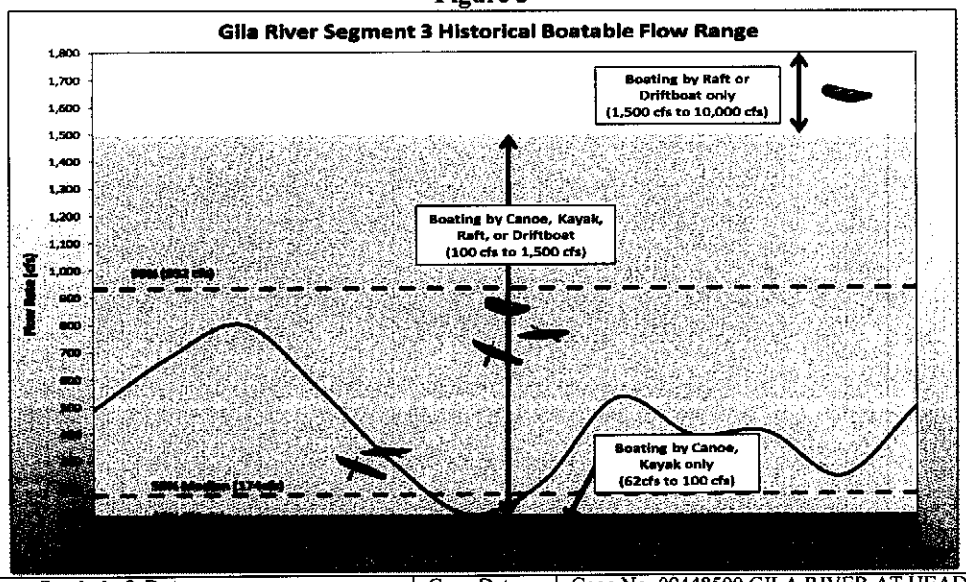
Figure 2



Key to Symbols & Data		Gage Data Source:	Gage No. 09442000 GILA RIVER NEAR CLIFTON, AZ.
	No boating possible		
	Boating by canoes, kayaks	Source: Min. canoes (E.I. 2, ASLD Upper Gila Report, Section 5.)	
	Boating by all types	Source: Max canoes, Min Rafts (E.I. 2, ASLD Upper Gila Report, Section 6.)	
	Boating by rafts, drift boats	Source: Max rafts (E.I. 2, ASLD Upper Gila Report, Section 6.)	
	90% Flow	Per stream gage records, 90% of time flow is less than this discharge (455 cfs).	
	50% Flow	Median flow rate per stream gage, 50% of time flow is above this discharge (80 cfs).	
	10% Flow	Per stream gage records, 90% of time flow is greater than this discharge (18 cfs).	
	Average monthly discharge as recorded at long-term USGS stream gauging stations.		
Notes:			

E.I. 2, ASLD Upper Gila Report, Section 5, Section 6.

Figure 3



Key to Symbols & Data			Gage Data Source:	Gage No. 09448500 GILA RIVER AT HEAD OF SAFFORD VALLEY, NR SOLOMON
	No boating possible			
	Boating by canoes, kayaks		Source: Min. canoes (E.I. 2, ASLD Upper Gila Report, Section 5.)	
	Boating by all types		Source: Max canoes, Min Rafts (E.I. 2, ASLD Upper Gila Report, Section 5.)	
	Boating by rafts, drift boats		Source: Max rafts (E.I. 2, ASLD Upper Gila Report, Section 6.)	
	90% Flow	Per stream gage records, 90% of time flow is less than this discharge (932 cfs).		
	50% Flow	Median flow rate per stream gage, 50% of time flow is above this discharge (174 cfs).		
	10% Flow	Per stream gage records, 90% of time flow is greater than this discharge (62 cfs).		
	Average monthly discharge as recorded at long-term USGS stream gauging stations.			
Notes:				

E.I. 2, ASLD Upper Gila Report, Section 5, Section 6.

3. Hydraulics.

Rating curves data from USGS stream gauge stations are shown in Table 4. E.I. 4, ASLD Lower Gila Report, Appendix F; E.I. 2, ALSD Upper Gila Report, 5-34. The average flow velocities are generally less than three feet per second (E.I. 2, ASLD Upper Gila Report, 5-17), and typical minimum flow depths range from 0.5 to 3 feet. These values are further corroborated with depths and widths reported by early explorers and cited by contemporary investigators. E.I. 4, ASLD Lower Gila Report, Chapter 3; E.I. 2, ASLD Upper Gila Report, Chapter 3.

Table 4. Upper Gila River Flow Characteristics				
Recurrence Interval	**Discharge (cfs)**	**Hydraulic Depth (ft)**	**Average Velocity (ft/sec)**	**Top Width (ft)**
Gila River Near Virden, NM (Source data: Cross Section, USGS, 1931)				
10 % Flow	21	0.6	1.3	27
Median (50%) Flow	91	0.9	2.2	45
Mean Annual Flow	190	1.2	1.6	100
Gila River Nr. Clifton/Guthrie, AZ (Source data: USGS Discharge Measurements, 1930, 1939, 1940, 1950)				
10 % Flow	18	0.7	1.0	26
Median (50%) Flow	80	1	1.7	47
Mean Annual Flow	206	1.3	2.5	64
Gila River at Head of Safford Valley, Near Solomon, AZ (Source Data: Cross Section, USGS, 1941)				
10 % Flow	62	0.8	0.5	144
Median (50%) Flow	174	1.3	0.9	146
Mean Annual Flow	433	1.9	1.5	150
Gila River at Safford, AZ (Source Data: Cross Section, USGS, 1942)				
10 % Flow	.52	0.1	0.4	12
Median (50%) Flow	66	1.3	0.9	55
Mean Annual Flow	284	2.6	1.5	75
Source: E.I. 2, ASLD Upper Gila Report, 5-43.				
Gila River Downstream of the Salt Confluence (Hjalmarson Presentation)				
50%	1750	2.9	2.2	270
Mean	2330	3.1	2.5	300

The computed average hydraulic characteristics shown in Table 4 can be compared with federal boating criteria, as shown in Table 5, and stream characteristics for canoes at statehood as depicted in Table 6. Modern boats are similar in draft requirements to historical low-draft boats. These data lead to only one possible conclusion: The Gila River in its ordinary and natural condition normally exceeded the minimum conditions for boating. Therefore, the Gila River was susceptible to navigation.

Table 5. Minimum and Maximum Conditions for Recreational Water Boating						
Type of Boat	**Minimum Condition**			**Maximum Condition**		
	Width	**Depth**		**Width**	**Depth**	**Velocity**
Canoe, Kayak	25 ft.	3-6 in.		-	-	15 fps
Raft, Drift Boat	50 ft.	1 ft.		-	-	15 fps
Low Power Boating	25 ft.	1 ft.		-	-	10 fps
Source: Cortell and Associates, 1977						

E.I. 2, ASLD Upper Gila Report, 6-2.

Table 6 Flow Requirements for Pre-1940 Canoeing	
Boat Type	**Depth**
Flat Bottomed (Wood or Canvas)	4 in.
Round Bottomed (Wood or Canvas)	6 in.
Source: Slingluff, J., 1987	

E.I. 2, ASLD Upper Gila Report, 6-4.

B. The Gila River's Ordinary and Natural Physical Characteristics Met Historical Boating Requirements.

Early settlers floated boats, canoes, logs, rafts and ferries on the River, and although use was largely dependent on higher seasonal flows, boats were used at all times of the year. E.I. 4, E.I. 4, ASLD Lower Gila Report, X-1. Although boat-making technology has improved since statehood, these improvements have only made boats more durable; the depth and width of water needed for boating has not substantially changed. For example, a pre-1940 flat bottom canoe made of wood or canvass required a depth of four inches, and a pre-1940 round bottomed canoe made from the same material required a depth of six inches. This is similar to modern-day canoes and kayaks. E.I. 2, ASLD Upper Gila Report, 6-4.

It is not necessary that a river actually have been used for commerce so long as the river was capable of commercial use. *United States v. Utah*, 283 U.S. at 82. Incidents of modern boating can demonstrate historic navigability. *See Alaska v. Ahtna, Inc.*, 891 F.2d 1401, 1405 (9th Cir. 1989) (finding that present recreational guided fishing and sightseeing trips are "commercial activity" under the *Daniel Ball* test and can prove a river's susceptibility for commercial use at the time of statehood); *Adirondack League Club, Inc. v. Sierra Club*, 706 N.E.2d 1192, 1194 (1998) (holding that evidence of a river's capacity for recreative use is in line with the traditional test of navigability). As noted in *PPL Montana*, 132 S.Ct. at 1233, "[e]vidence of recreational use, depending on its nature, may bear upon susceptibility of commercial use at the time of statehood."

III. The Gila River's Ordinary and Natural Physical Characteristics Were Not Only Sufficient to Support Historic Navigation, The River Was Actually Navigated.

Historic use of the Gila River proves that the River was used for trade and travel. *See Winkleman*, 224 Ariz. at 255, 229 P.3d at 243 ("[e]ven if evidence of the River's condition after man-made diversions is not dispositive, it may nonetheless be informative and relevant").

A. The Gila River Was Navigated Historically.

1. Native Americans, principally the Apache, historically used the River. E.I. 2, ASLD Upper Gila Report, 3-3. The Chiricahua Apaches were known to construct boats made of bull hides stretched over wooden frames for crossing streams. E.I. 2, ASLD Upper Gila Report, 3-5. The Spanish named the River "Rio de Las Balsas" (River of Rafts), either because the explorers were forced to cross the River on rafts or because the Indians used wicker baskets to cross the River. E.I. 2, ASLD Upper Gila Report, 3-6.

2. In 1825, American beaver trappers, including the Patties, came to the area and trapped the entire length of the River. E.I. 16, *Arizona's Changing Rivers* submitted with Tellman testimony, 98-99. Below the Salt-Gila confluence, the party had to build a canoe to finish a trip because the River was too deep to cross by horseback. *Id.* at 99. The trappers made rafts for their equipment at one point to escape an Indian attack. *Id.* In 1828, the same trapping party made eight canoes and comfortably descended the River at about four miles an hour. *Id.* According to Goode P. Davis's ASU master's thesis, James Ohio Pattie canoed the River from around Safford, trying to get skins to Yuma. Gila Transcript of the hearing held Nov. 16, 2005 ("Tr."), 211, 216 (Weedman). Pattie made the trip from Safford to Yuma on several occasions. Tr., 216 (Weedman).

3. When the Mormon Battalion wagon train, which originated in Iowa and headed west, reached the Gila in January 1847, its Colonel Cooke attempted to lighten his wagons' loads by fashioning a boat out of two wagons and floating them down the River.[2] E.I. 1, Corle, 152-54. The party began about seventy miles upstream of Yuma. Tr., 38-39 (Gilpin). The Battalion reached Yuma within several days after lightening the wagon-boats because they had been overloaded and the River was shallow in places. Tr., 81 (Gilpin), Tr., 208 (Jackson); E.I. 4, ASLD Lower Gila Report, IV -2. The River at that time was reported to be four or five feet deep and 150 yards wide. E.I. 1, Corle, 152.

4. William H. Emory noted in 1848 that at certain stages, the River could be navigated up to the Pima Villages and possibly with small boats at all stages of the water.[3] Jackson Depo, 52-53. (Emory later surveyed the Gila as the U.S. Commissioner for the U.S./Mexico Boundary Commission Survey in 1855. Jackson Depo, 53.)

5. In the fall of 1849, Mr. and Mrs. Howard, their newborn baby (named "Gila"), a doctor and a clergyman, floated down the River from the Indian villages. E.I. 4, ASLD Lower Gila Report, IV-2. The party reached Yuma six days ahead of the rest of their wagon train. Tr., 208-09 (Jackson).

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[2] *The Gila: River of the Southwest*, by Edwin Corle, Bison Book and Holt, Rinehart & Winston, Inc., 1964 as cited by Clyde L. Gould in his May 14, 1998 statement (E.I. 1) ("Corle").

[3] Deposition of Donald C. Jackson, Ph.D., January 15, 2003, taken in *Tumbling-T v. Paloma Investment*, No. CV 95-00253 (E.I. 22) ("Jackson Depo").

6. Forty-niners traveling the Gila Trail to California during the Gold Rush lightened their wagon loads by building small boats and floating them down the River to the Colorado. E.I. 4, ASLD Lower Gila Report, IV-3; Tr., 39 (Gilpin); Tr., 209-10 (Jackson).

7. By 1857, steamboats were being used on the River.[4] Littlefield, 4/24/98, 118-19, citing an article written by D.K. Allen entitled "The Colorado River," as published in the August 1, 1893 edition of *Arizona Magazine II.* The article relates that steamers were run on the Colorado and Gila rivers until 1864 when the stern wheel iron steamer Explorer "became unmanageable, as she came out of the Gila River, up which she had been after a load of wood."

8. A February 1881 river trip by Cotton and Bingham from Phoenix to Yuma was announced in the *Arizona Gazette* for the next day, the trip to be made in an 18-foot long skiff. Tr., 210-11 (Jackson).

9. In November-December 1881 the famous Bucky O'Neil "Yuma or Bust" party took a 20 feet long, 5 feet wide boat down the Gila starting in Phoenix. E.I. 4, ASLD Lower Gila Report, IV -7. At times, the boat had to be pushed by men wading in water up to their knees. It is unclear whether the journey ended in Gila Bend or if the party reached its intended destination at Yuma. Tr., 211 (Jackson).

10. Gustavus Streitz testified in a case before the General Land Office in 1911 that, in carrying out his duties as county surveyor in 1893, he used "Dougherty's skiff" to cross the river near present-day Gillespie Dam. Dougherty was a local rancher/farmer, who apparently kept the skiff as part of his ranching equipment. Tr., 216-20 (Jackson).

11. In 1895, Amos Adams' and J.W. Evans' trip down the Gila in a boat "of the flat bottomed type" measuring 3 1/2 feet by 18 feet was described in the *Arizona Sentinel* and the *Phoenix Herald* in February and March 1895. The *Graham County Bulletin* of 2/22/1895 also carried the story, relating that Evans and Adams left Clifton in a boat, had some adventures in the canyon, needed to haul the boat overland to Phoenix, but then successfully boated from Phoenix to Yuma. *See* E.I. 2, ASLD Upper Gila Report, 3-28, for text of Bulletin article; E.I. 4, ASLD Lower Gila Report, IV-8 – IV-9; Tr., 212-15 (Jackson).

12. The Arizona Republican reported in April 1905 that Jack Shibley boated from Phoenix to Gila Bend, capsizing once but successfully completing the journey. E.I. 4, ASLD Lower Gila Report, IV-13.

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[4] *Assessment of the Navigability of the Gila River Between the Mouth of the Salt River and the Confluence with the Colorado River Prior to and on the Date of Arizona's Statehood,* February 14, 1912, by Douglas R. Littlefield, Ph.D., April 24, 1998 (E.I. 1) ("Littlefield 4/24/98").

13. In 1905, Jack Henness of Florence rigged up a suspended cable and cage to transport passengers and cargo over the River. The *Arizona Blade Tribune* of March 4, 1905 reported that the cage passed over the Gila Queen ferry. E.I. 4, ASLD Lower Gila Report, IV-12. The Blade reported on March 11, 1905, that Henness transported burros and prospecting equipment in addition to passengers. E.I. 4, ASLD Lower Gila Report, IV-12.

14. Stanley Sykes of Flagstaff reportedly canoed the entire Gila River in Arizona in 1909. E.I. 2, ASLD Upper Gila Report, 3-29, 6-3. His small canvas boat could hold only one person at a time, and Sykes concluded that he and his friend should have waited until after the snowmelt. Tr., 106 (Tellman).

15. Ferry boats operated on the River for many years in at least four locations: Dome, Gila Bend, Lawrence, Maricopa Wells. Tr., 40 (Gilpin). The ferry boats' sizes varied drastically. Tr., 107 (Tellman). Beginning in 1867, Henry Morgan began a 25-year-long ferry operation near Maricopa Wells. E.I. 4, ASLD Lower Gila Report, IV-5. Other ferries also operated on the River. In 1884, the *Phoenix Herald* of April 8 reported that A.J. McDonald was building a large ferry boat (16 by 18 feet) for the Gila and Salt River Ferry Company, which was to be used on the Salt and was of the same dimensions as one that had been sent to the Gila. E.I. 4, ASLD Lower Gila Report, IV -7. The *Arizona Sentinel* reported on March 28, 1891, that Straus, Dallman & Co. had put a large new ferryboat in service. E.I. 4, ASLD Lower Gila Report, IV-8. By 1905, two new ferry boats - the Mayflower and the Rey del Gila (20 feet long, 6 feet wide, and capable of carrying a 3000 pound load) – were introduced into service, but a hand-driven side propeller boat proved unable to negotiate the River. E.I. 4, ASLD Lower Gila Report, IV -13. The 1905 flood disrupted railroad service, creating an unprecedented demand for ferry service at the Maricopa and Kelvin Crossings, and a brisk competition developed for freight and passenger transportation until the Riverls waters abated. E.I. 4, ASLD Lower Gila Report, 16-17. Apparently, ferries also operated on the River after statehood: the *Arizona Blade Tribune* of February 9, 1916, reported that an automobile had slipped off a ferry boat into five feet of water. E.I. 4, ASLD Lower Gila Report, IV-19. Mrs. Hazel Shepard, Mr. Juan Gutierrez, and Ms. Violet White, all of Florence, remembered small ferry boats being used to transport passengers, lumber, and other supplies. E.I. 4, ASLD Lower Gila Report, V -4.

Other general comments imply that boats were in common use on the River during the nineteenth and early twentieth centuries. For example, a federal surveyor in 1871 indicated in his notes that at times of high water, the River "becomes almost impassable for boats." Littlefield Report, 11/3/05, 44. The comment implies that boats were otherwise regularly used.

In fact, there was a great variety of homemade boats in use in Arizona around the time of statehood. Tr., 106 (Tellman). Boats were common and not newsworthy. Tr., 114, 116-17 (Tellman). Except for the steamboats, which were used at the River's lower end, the historical accounts are limited to low-draft boats, canoes, and skiffs. Tr., 79, 85 (Fuller). Generally, the described trips occurred during most of the year, with a waning toward wintertime. Tr., 44 (Fuller). Although boat use declined as diversions diminished the River's natural flow, the mere presence of so many boats in an arid region like Arizona during the early settlement period suggests that they were commonly used on the river.

B. Modern Boating.

Modern boating occurs in some segments of the Gila River. E.I. 2, ASLD Upper Gila Report, 6-4 to 6-6; Tr., 64 (Fuller). Although some boating occurs downstream of Phoenix between 91st Avenue and Granite Reef Dam, most modern boating takes place above Safford in canoes, rafts, and kayaks, which are similar in draft to the boats used at statehood. Tr., 64 (Fuller). The upper River's natural flow and channel conditions at statehood were not significantly different from current natural flow and channel conditions. E.I. 2, ASLD Upper Gila Report, 6-4 – 6-10. According to *PPL Montana*, in order for present-day use to have a bearing on navigability at statehood, (1) the watercraft must be meaningfully similar to those in customary use for trade and travel at statehood; and (2) the River's post-statehood condition may not be materially different from its physical condition at statehood. 132 S.Ct. at 1233.

Members of the Central Arizona Paddlers Club have boated the Upper River; Arizona State Parks features the Upper River in its outdoor recreation and boating guide; a boating guide to the Southwest lists the Upper Gila as a boatable stream; several books and magazines describe boating trips on the Upper River; and numerous websites describe recommended boating conditions for raft, canoe, and kayak use in the Gila Box reach. At least one claims that the reach can be floated all year long, by different types of boats according to the flow rate and season, and states that the Gila Box can be canoed between flow rates of 150 cfs and 1,500 cfs. E.I. 2, ASLD Upper Gila Report, 6-4 – 6-7.

The Bureau of Reclamation permits boating in the Gila Box National Riparian Conservation area located upstream of Safford. E.I. 2, ASLD Upper Gila Report, 6-5; Tr., 64 (Fuller). Jon Colby, a co-owner and managing partner of Cimarron Adventures & River Co., has conducted commercial tours on the Gila (and Salt and Verde) for 17 years in flows ranging from about 170-180 cubic feet per second ("cfs") to about 3,000 cfs. Tr., 331-33 (Colby). The company's tours run from the Gila Box National Riparian Conservation Area downstream of

Duncan to just outside Safford. Tr., 331-33 (Colby). The boats range from 18-foot rafts to inflatable kayaks and canoes. Tr., 338 (Colby). Boats used in the Gila Box include canoes (150 to 1,500 cfs), kayaks (150 to 6,000 cfs), and rafts (500 to 10,000 cfs). E.I. 2, ASLD Upper Gila Report, 6-6; A-1 to A-2. Other companies have conducted commercial floats below Coolidge Dam. Tr., 332-334 (Colby). A second modern boating reach is located between Coolidge Dam and the Town of Winkleman, and is boated by canoes, kayaks, and rafts at flows exceeding 70 cfs. Tr., 64 (Weedman); Tr., 332 (Colby). Some commercial recreational boating and boating by environmental regulatory agencies (Tr., 219-20 (Weedman)) occurs in the Gila Box and Winkleman reaches at flows exceeding 170 cfs (Tr., 332 (Colby)). Mr. Weedman of the Arizona Game & Fish Department has boated below the San Carlos reservoir to Winkleman when performing his fishery surveys and knows of others who recently boated from below Painted Rock Dam all the way to the Colorado River. Tr., 211 (Weedman). In a narrow channel, 70 to 80 cfs are enough. Tr., 220 (Weedman). Private boating takes place downstream of Coolidge Dam near Winkleman, Kearney, and Riverside. Tr., 332 (Colby). *See* E.I. 1, Four Volumes, I, II, III, IV, and the Criteria for Assessing Small & Minor Watercourses, 9/98 and the 3 County Pilot Study, 9/99.

Thus there is substantial evidence that when the River was in its ordinary and natural condition, it was actually used as a highway for commerce within the meaning of the *Daniel Ball* test. By the time of the Spanish explorations, if not before, rafts were in use; trappers used the River commercially from Safford to Yuma; and steamboats plied the Gila upstream and downstream for several years on a commercial basis, only one meeting with misfortune on the tumultuous Colorado, not due to any problem on the Gila.[5] Nineteenth century travelers used the River to transport their belongings, thereby lightening their wagons, on their way to California; ranchers along the River routinely owned boats; several boating trips were made down the River; and ferries operated commercially for decades at various points. Some of the historical boating trips were more successful than others, but navigability is not destroyed because a watercourse is interrupted by occasional natural obstructions or portages, or because navigation is not possible during all seasons of the year or at all stages of the river's flow. *Econ. Light & Power*, 256 U.S. at 122; *United States v. Utah*, 283 U.S. at 84-86; *United States v. Holt Bank*, 270 U.S. at 56-57. Moreover, "[e]ven absence of use over long periods of years, because of changed conditions, the coming of the railroad or improved highways does not affect the navigability of rivers in the

[5] Although the Colorado River was known to be tumultuous, the United States Supreme Court nevertheless found it navigable. *Arizona v. California*, 283 U.S. 423, 526 (1931).

constitutional sense." *Appalachian*, 311 U.S. at 409-10; *see also United States v. Utah*, 283 U.S. at 82 (stating that actual use may be most persuasive, but where conditions of exploration and settlement explain the infrequency or limited nature of use, susceptibility may be proven). The River was a highway for commerce. *See Alaska v. United States*, 754 F.2d at 854; *Utah v. United States*, 403 U.S. at 11; *United States v. Utah*, 283 U.S. at 82-83. The upper River is currently boated commercially, demonstrating susceptibility to navigation for title purposes. *See Ahtna*, 891 F.2d at 1405.

IV. Conclusion.

The Gila River evidence demonstrates that the Gila River's ordinary and natural physical characteristics clearly supported navigation and commerce: there was reliable, permanent stream flow at all times, and a median flow rate around 1,200 cfs that corresponds to an average flow depth of approximately three feet, resulting in the River being susceptible to navigation more than 95% of the time. Moreover, actual commercial use and historical boating occurred despite increasingly diminished flows thus proving that the River afforded a useful highway for commerce. The State urges ANSAC to find the Gila River navigable.

DATED: September 7, 2012.

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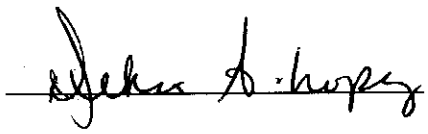

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BEFORE THE
ARIZONA NAVIGABLE STREAM ADJUDICATION COMMISSION

IN THE MATTER OF THE NAVIGABILITY OF THE GILA RIVER FROM THE NEW MEXICO BORDER TO THE CONFLUENCE WITH THE COLORADO RIVER, GREENLEE, GRAHAM, GILA, PINAL, MARICOPA AND YUMA COUNTIES, ARIZONA	No. 03-007-NAV **ARIZONA STATE LAND DEPARTMENT'S MEMORANDUM**

On April 27, 2010, the Court of Appeals found that the Arizona Navigable Stream Adjudication Commission ("ANSAC" or the "Commission") misapplied the pertinent test for determining navigability of the Lower Salt River. The Court vacated the superior court's decision and remanded the matter back to ANSAC for further proceedings. *State ex rel. Winkleman v. Arizona Navigable Stream Adjudication Com'n*, 224 Ariz. 230, 229 P.3d 242 (App. 2010) ("*Winkleman*"). On October 24, 2011, the superior court remanded the Gila River matter to ANSAC for all further proceedings consistent with the *Winkleman* decision. At ANSAC's December 14, 2011, meeting, the Commission requested that interested parties submit memoranda with their recommendations on how ANSAC should comply with the *Winkleman*

decision. The Arizona State Land Department (the "ASLD" or the "State") submits the following Memorandum in response to ANSAC's request.[1]

The Commission's navigability determination is governed by the federal test of navigability, known as the "*Daniel Ball*" test that provides as follows:

> [t]hose rivers must be regarded as public navigable rivers in law which are navigable in fact. And they are navigable in fact when they are used, or are susceptible of being used, in their ordinary condition, as highways for commerce, over which trade and travel are or may be conducted in the customary modes of trade and travel on water.

The Daniel Ball, 77 U.S. (10 Wall.) 557, 563 (1870); *see Defenders of Wildlife v. Hull*, 199 Ariz. 411, 420, 18 P.3d 722, 731 (App. 2001) (*Daniel Ball* test correctly paraphrased in A.R.S. § 37-1101(5)). The *Daniel Ball* test requires ANSAC to determine the characteristics of the Gila River in its ordinary and natural condition and whether, at statehood, the River was used or would have been susceptible to use as a highway-for-commerce in that condition. *Winkleman*, 224 Ariz. at 239, 229 P.3d at 251.

In the *Winkleman* decision, the Court of Appeals found that ANSAC failed to evaluate the Lower Salt River's ordinary and natural condition in light of the numerous dams, canals, and other diversions other than Roosevelt Dam. *Winkleman*, 224 Ariz. at 240, 229 P.3d at 252. The Court of Appeals directed ANSAC to determine "what the River would have looked like on February 14, 1912, in its ordinary (i.e., usual, absent major flooding or drought) and natural (i.e., without man-made dams, canals, or other diversions) condition." *Winkleman*, 224 Ariz. at 241, 229 P.3d at 253. The Court found that the Lower Salt River was "in its natural condition after many of the Hohokam's diversions had ceased to affect the River, but before the commencement

[1] The State requests that the Commission delay any action on contested rivers until the U.S. Supreme Court issues its decision in *PPL Montana, LLC v. Montana*, 355 Mont. 402, 229 P.3d 421 (2010), *cert. granted in part & denied in part*, 79 U.S.L.W. 3102* (U.S. June 20, 2011) (No. 10-218). The *PPL* decision could potentially affect application of the federal test in the contested rivers before ANSAC.

of modern-era settlement and farming in the Salt River Valley, when some of the Hohokam's diversions were returned to use and other man-made diversions and obstructions began to affect the River." *Winkleman,* 224 Ariz. at 242, 229 P.3d at 254. In applying the *Winkleman* Court's instruction to the Gila River, the Gila River's natural condition is before the 1860s when settlers arrived and diverted water from the River to irrigate their crops.[2] Donald C. Jackson, Ph.D. ("Jackson"), Tr. 11/17/05, 206-207[3]; *see* Hjalmar Hjalmarson, P.E., *Navigability Along the Natural Channel of the Gila River (from the confluence with the Salt River to the mouth at the Colorado River near Yuma, Arizona*), E.I. 23 (2002) ("Hjalmarson Report"), 15. By 1899, on the Upper Gila River, there were 17 diversions in the Duncan Valley and 28 diversions in the Safford Valley. *Arizona State Land Department Rep., Arizona Stream Navigability Study for the Upper Gila River: Safford to the State Boundary* (rev. June 2003 by JE Fuller/Hydrology & Geomorphology, Inc.) ("ASLD Upper Gila Report") E.I. 02, 2, 5-8. By 1899, on the Lower Gila River, the United States Geological Survey ("USGS") recorded that local farmers were diverting water from the Lower Gila through 450 miles of ditches, delivering water for 220,000 acres along the River. ASLD Lower Gila Report, IV-62. Although ANSAC is not limited to considering evidence of the Gila River's natural condition solely from before the 1860s, "that early period should be considered by ANSAC as the best evidence of the River's natural condition." *See Winkleman,* 224 Ariz. at 242, 229 P.3d at 254.

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[2] Indian peoples had been irrigating with river water, but Euro-American diversions created a water shortage starting around 1886 with the construction of the Ashurst-Hayden Dam and Florence Canal. *Arizona State Land Department Rep., Arizona Stream Navigability Study for the Gila River: Colorado River Confluence to the Town of Safford* (rev. June 2003 by JE Fuller/Hydrology & Geomorphology, Inc.), (Evidence Item ["E.I."] 04) ("ASLD Lower Gila Report"), VI-1.

[3] ANSAC held its public hearing on the Gila River on November 16 and 17, 2005. References to testimony elicited at the hearings are designated by witness, "Tr.," date, and page number.

Thus, to determine whether the Gila River could have been used as a highway-for-commerce, ANSAC must assess the River's pre-statehood ordinary and natural condition, disregarding all man-made obstructions and diversions.

Ample historical evidence exists in the well-developed record describing the River's ordinary and natural condition in this time frame. For example, trappers in 1825 found plenty of beaver on the River. *See* ASLD Upper Gila Report, 3-1. The trappers used canoes on the River. Dave Weedman, fishery biologist for Arizona Game & Fish Department ("Weedman"), Tr. 11/16/05, 211; *Arizona's Changing Rivers: How People Have Affected the Rivers,* Barbara Tellman, Richard Yarde, Mary G. Wallace, University of Arizona (March 1997), E.I. 1 ("Arizona's Changing Rivers"), 99. During the Mexican War in 1846, Stephen Watts Kearney led a battalion of men to survey the area, and they mapped the entire River. Lieutenant Emory of that party estimated the River's flow at about one-half of the Colorado's flow, and he saw large fish–weighing between 25 and 30 pounds–in the River. Arizona's Changing Rivers, 99. Historically, a large body of native fish species, weighing between five and ten pounds, occupied the River. Weedman, Tr. 11/16/05, 210-18. Pikeminnows, which are usually found in more than three feet of water, could reach 100 pounds in the Lower Gila. Weedman, Tr. 11/16/05, 211, 218-19.

In 1846, Henry Smith Turner noted in his journal that the River about eighty miles west of Gila Bend had attained the width from 100-150 yards and was in average depth about 4 feet - "quite deep enough to float a steamboat." *Assessment of the Navigability of the Gila River Between the Mouth of the Salt River and the Confluence with the Colorado River Prior to and on the Date of Arizona's Statehood, February 14, 1912,* Douglas R. Littlefield, Ph.D. (November 3, 2005), E.I. 12 ("Littlefield Report"), 107. Consistent with that description, the River was then

reportedly 60-80 yards wide and three feet deep at Gila Bend, and in 1846-48 it measured 150 yards wide and three to four feet deep. *Confidential Notes, The Ability to Navigate the Gila River Under Natural Conditions, Below the Confluence with the Salt River to the Mouth at Yuma, Arizona,* Hjalmar W. Hjalmarson, P.E., E.I. 25 ("Hjalmarson Confidential Notes"), 47, citing a U.S. Corps of Engineers 1995 study of the River from Gillespie Dam to Yuma (Reconnaissance Report, FCD 0000028); *The Gila: River of the Southwest,* Edwin Corle, New York; Rinehart (1951) E.I. 1 ("Corle"), 152. A mid-1850s illustration shows that the River was about 300 feet wide with tree-lined banks and contained enough water for swimmers. *See* Hjalmarson Confidential Notes, 7. However, by the end of second half of the nineteenth century, white settlement and diversions had radically changed the River. By 1899, it was not unusual for irrigation diversions to completely drain the Upper Gila during some months of low flow. ASLD Upper Gila Report, 5-8. By statehood, the River's waters were over appropriated. Jack L. August, Jr., Ph.D. ("August"), Tr. 11/16/05, 194-95.

Moreover, probative evidence exists that the River's ordinary and natural physical characteristics could support navigation. Before Anglo settlement of Arizona, the River was perennial, with reliable flows sufficient for shallow draft boating throughout the year. ASLD Upper Gila Report, 5-43, Table 23; Hjalmarson Report, 6. However, the River's naturally perennial flow has been adversely impacted by irrigation diversions (ASLD Lower Gila Report, IV-52 – IV-59; ASLD Upper Gila Report, 5-8), water supply impoundments behind dams (ASLD Lower Gila Report, IV-61) and groundwater withdrawal (ASLD Upper Gila Report, 5-14). Throughout the River's length in Arizona, the existing hydrologic condition, as well as the River's condition in 1912, is substantively different from the River's natural, predevelopment condition. ASLD Lower Gila Report, VI-9; Hjalmarson Report, 8.

Hjalmar Hjalmarson determined that the River's predevelopment, perennial mean annual flow was 2,330 cubic feet per second ("cfs"), and its median annual flow was 1,750 cfs. Hjalmarson Report, 6, 14-15; Hjalmarson, Tr. 11/17/05, 236-39. The corresponding width, depth, and velocity of flow were between 396 feet to 250 feet, 3.1 feet to 4.8 feet, and 2.34 feet per second ("fps") to 1.84 fps, respectively. Hjalmarson Report, 6; Hjalmarson, Tr. 11/17/05 244, 247-48. These flow rates are further supported by Thomas A.J. Gookin's, a professional hydrologist, estimates of the Lower Gila's predevelopment natural flow. Gookin estimates that the Lower Gila's predevelopment natural flow upstream of the Salt-Gila confluence was about 500,000 acre feet ("af") (690 cfs) a year, and the River's natural flow below the location of Gillespie Dam was 1,792,800 af (2,474 cfs). *Hydrologic History of the Gila River Indian Reservation,* prepared for the Gila River Indian Community Office of Water Rights, Gookin Engineers, Ltd. (November 1, 2000), E.I. 15, 1, 2-23. Collectively, these hydrologic data show that in the River's ordinary and natural condition, it regularly had enough water and was deep enough to support navigation by a variety of boats.

Moreover, floods are not the ordinary condition of the River. Long-term flow records demonstrate that while large flash floods can occur on the River, flood conditions occur less than one percent of the time. ASLD Upper Gila Report, 5-33, Table 21. The dominant low flow channel at ordinary flow rates is a single channel with a pool and riffle pattern. ASLD Upper Gila Report, 4-7 – 4-8. The low flow channel on which boating could occur is inset within a wider, more braided flood channel. Gary Huckleberry, Ph.D. ("Huckleberry"), Tr. 11/16/05, 58-61; deposition of Hjalmarson, January 16, 2003, in *Tumbling-T v. Paloma Investment,* E.I. 24 ("Hjalmarson Depo"), 80; *see* ASLD Lower Gila Report, VII-7 (before 1890, the River had a distinct low-flow channel within a larger, braided flood-flow channel). Federal surveys of the

area reported the presence along the banks of cottonwood, brush, and mesquite, indicating a normally stable river. Hjalmarson, Tr. 11/17/05, 251. Thus, the River's ordinary and natural flow conditions and its natural geomorphology–that is before large-scale irrigation diversions depleted the River's waters–establish that the River was susceptible for use as a highway-for-commerce.

The Court of Appeals declined to consider whether ANSAC misconstrued the "highway-for-commerce" component of the *Daniel Ball* test. *See Winkleman*, 224 Ariz. at 242 n.16, 229 P.3d at 254 n.16. There is substantial evidence that when the River was in its ordinary and natural condition, it was actually used as a highway-for-commerce, or was at least capable of use as a highway-for-commerce within the meaning of the *Daniel Ball* test.[4] By the time of the Spanish explorations, if not before, rafts were in use (ASLD Upper Gila Report, 3-6); trappers used the River commercially from Safford to Yuma (Arizona's Changing Rivers, 98-99; Weedman, Tr. 11/6/05, 211, 216); and steamboats plied the Gila upstream and downstream for several years on a commercial basis, only one meeting with misfortune on the Colorado, not the Gila (*Assessment of the Navigability of the Gila River Between the Mouth of the Salt River and the Confluence with the Colorado River Prior to and on the Date of Arizona's Statehood, February 14, 1912,* by Douglas R. Littlefield, Ph.D., April 24, 1998, E.I. 1 (Littlefield 4/24/98) 118-19). Nineteenth century travelers used the River to transport their belongings, thereby lightening their wagons, on their way to California (Corle, 152-154; ASLD Lower Gila Report, IV-2 – 3; Dennis Gilpin, Archeologist, SWCA Environmental Consultants ("Gilpin"), Tr. 11/16/05, 38-39; Jackson, 11/17/05, 209-10); ranchers along the River routinely owned boats

[4] The Arizona State Legislature has broadly defined the highway-for-commerce requirement as "a corridor or conduit within which the exchange of goods, commodities or property or transportation of persons may be conducted." A.R.S. § 37-1101(3).

(Jackson, Tr. 11/17/05, 216-20); several boating trips were made down the River (Jackson, Tr. 11/17/05, 210-11); and ferries operated commercially for decades at various points (Gilpin, Tr. 11/16/05, 40; ASLD Lower Gila Report, IV-5, 7).

In addition, evidence of modern, recreational boating may demonstrate that a river was susceptible to use as a highway-for-commerce.[5] *See Alaska v. Ahtna, Inc.*, 891 F.2d 1401, 1405 (9th Cir. 1989) (finding that present recreational guided fishing and sightseeing trips are "commercial activity" under the *Daniel Ball* test and can prove a river's susceptibility for commercial use at the time of statehood); *Adirondack League Club, Inc. v. Sierra Club,* 706 N.E.2d 1192, 1194 (1998) (holding that evidence of a river's capacity for recreative use is in line with the traditional test of navigability). Currently, the Upper Gila River is used for recreational boating, primarily during the winter and spring, with limited commercial recreational operations in the Gila Box Reach. *See* Fuller, Tr. 11/16/05, 64; ASLD Upper Gila Report, 6-4 – 6-6; Jon Colby, of Cimarron Adventures & River Co., ("Colby"), Tr. 11/17/05, 331-33. Recreational boating consists primarily of downstream floating in rubber rafts, canoes, kayaks, and other inflatable boats during seasonal periods of above-average flow. Fuller, Tr. 11/16/05, 64.

The Commission should reconsider its prior findings that the Gila River was neither actually navigable nor susceptible to navigation to ensure that its new findings comply with the applicable legal standard.

The Court directed ANSAC to properly apply the ordinary and natural component of the *Daniel Ball* test. Equally important is the Court's insistence that ANSAC "may not begin its

[5] *See Northwest Steelheaders Ass'n, Inc. v. Simantel*, 112 P.3d 383, 391-393 (Or. Ct. App. 2005) (post-statehood use, by comparable vessels, probative because post-statehood conditions were *less* favorable to navigation than conditions at statehood), *review denied*, 122 P.3d 65 (Or. 2005), *cert. denied*, 547 U.S. 1003 (2006); *Winkleman*, 224 Ariz. at 244, 229 P.3d at 243 ("Even if evidence of the River's condition after man-made diversions is not dispositive, it may nonetheless be informative and relevant.")

determination with any presumption *against* navigability." *Winkleman,* 224 Ariz. at 239, 229 P.3d at 251 (emphasis in original). In reaching its determination, "ANSAC's approach and analysis must be wholly impartial and objective, while utilizing the proper legal test." *Winkleman,* 224 Ariz. at 239, 229 P.3d at 251.

Substantial evidence exists clearly demonstrating that the Gila River in its ordinary and natural condition before 1860, was used or was capable of being used as a highway-for-commerce. The Commission should consider the significance of post-1860 use of the River–despite decreasing flows due to significant diversions, groundwater pumping, and the building of the Roosevelt Dam on the Salt–in reaching its determination. The Commission also should consider diversions as merely one special factor in the Gila River Valley's development rather than as a condition that precludes a navigability finding, and the River's subsequent limited use as merely a unique circumstance in its overall objective review of the evidence under the *Daniel Ball* test. The ASLD informs the Commission that due to uncertain resources, the ASLD may be restricted in responding, participating or producing additional evidence in the adjudication proceedings.

DATED: January 27, 2012.

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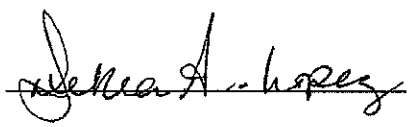

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BEFORE THE
ARIZONA NAVIGABLE STREAM ADJUDICATION COMMISSION

IN RE DETERMINATION OF NAVIGABILITY OF THE LOWER SALT RIVER; UPPER SALT RIVER; GILA RIVER; VERDE RIVER; SAN PEDRO RIVER; AND SANTA CRUZ RIVER	No. 03-005-NAV (Lower Salt) No. 04-008-NAV (Upper Salt) No. 03-007-NAV (Gila) No. 04-009-NAV (Verde) No. 03-004-NAV (San Pedro) No. 03-002-NAV (Santa Cruz) **ARIZONA STATE LAND DEPARTMENT'S MEMORANDUM REGARDING EFFECT OF UNITED STATES SUPREME COURT'S PPL MONTANA DECISION AND SEGMENTATION OF REMANDED CASES**

The Arizona State Land Department ("ASLD" or the "Department") submits the following memorandum in response to the Arizona Navigable Stream Adjudication Commission's ("ANSAC" or "Commission") request for memoranda addressing how the United States Supreme Court's decision in *PPL Montana, LLC v. Montana*, 565 U.S. ___ , 132 S.Ct. 1215 (2012) ("*PPL Montana*") impacts ANSAC's proceedings and determinations. This Memorandum identifies the main issues addressed in *PPL Montana*, and the applicability of that

decision to the Commission's proceedings and determinations. Further, the ASLD addresses ANSAC's request for an analysis of the segmentation issue presented in *PPL Montana*.

On February 22, 2012, the U.S. Supreme Court issued a decision in *PPL Montana*, reversing the Montana Supreme Court's ruling that required PPL Montana to pay rent for the use of Montana's riverbeds covered by its hydroelectric dams. The Court's decision addressed discrete segments of otherwise navigable rivers in Montana. The Court ultimately found that the reach of the Missouri River on which the Great Falls and five privately owned hydroelectric dams are located was not navigable for title purposes at Montana's statehood. *PPL Montana*, 132 S.Ct. at 1232. However, the Court did not decide the navigability of the remainder of the Missouri River, or the Madison and Clark Fork Rivers, but left that determination to the Montana Supreme Court. 132 S.Ct. at 1233.

I. NAVIGABILITY MUST BE DETERMINED SEGMENT-BY-SEGMENT

The main holding of the U.S. Supreme Court's *PPL Montana* decision is that a river's navigability must be determined on a segment-by-segment basis.[1] *PPL Montana,* 132 S.Ct. at 1229. The *PPL Montana* Court noted that "practical considerations" supported segmentation of watercourses, and that "[p]hysical conditions that affect navigability often vary significantly over the length of a river." *PPL Montana,* 132 S.Ct. at 1230. The Court noted that "[t]his is particularly true with longer rivers" – like the ones found in Arizona – that traverse through different terrain and climates. *Id.* Changes in a river's physical conditions assist in determining start and end points for segmentation. *Id.* The Court also noted that topographical and geographical features also may assist in identifying appropriate start and end points for

[1] ANSAC's statutes allow ANSAC to examine watercourses in reaches or portions. A.R.S. § 37-1101(11) (definition of "watercourse" is the "main body or a portion or reach" of a river). However, ANSAC's determinations thus far have addressed the rivers as a whole with the exception of the Salt River that was divided into upper and lower reaches.

segmentation. *Id.* The segments at issue in *PPL Montana* were both discrete, as defined by physical features, and substantial. *Id.* at 1231. The Court focused on the Great Falls reach which is not only 17 miles long, but contains distinct drops that include five waterfalls and continuous rapids. *Id.*

The *PPL Montana* Court further acknowledged that there could be a "de minimis exception" to the segmentation approach. *Id.* at 1230. The Court stated that some nonnavigable segments may be "so minimal that they merit treatment as part of a longer, navigable reach for purposes of title under the equal footing doctrine . . . ." *Id.* at 1230. The Court identified considerations related to ownership and title of property "such as inadministrability of parcels of exceedingly small size, or worthlessness of the parcels due to overdivision" as de minimis exceptions. *Id.* at 1231.

There are a number of differences between the rivers in *PPL Montana* and the rivers currently under consideration by ANSAC. For example, the Montana and Arizona rivers have differences in seasonality, e.g., the Montana rivers may freeze in the winter while the Arizona rivers do not. More importantly, there are no waterfalls on any of the Arizona rivers that are of the size found along the Great Falls reach of the Missouri River. Finally, the Supreme Court noted that PPL Montana's expert claimed that man-made dams had made the Montana rivers more navigable compared to their ordinary and natural condition, because the dams tend to reduce flood peaks and moderate seasonal low flows. *PPL Montana*, 132 S.Ct. at 1234. In Arizona, the presence of dams has made the rivers less navigable because the dams tend to remove all or most of the natural river flow.

The Department's reports previously provided to ANSAC for each of these rivers included discussions that divided the rivers into separate reaches. These reach divisions were based on a variety of physiographic, hydrologic, geologic, and geographic factors. Each report

was divided into reaches with similar characteristics. The reach designations in the previous ALSD reports were defined based on criteria related to, but somewhat different from, the issues raised in the Montana case. The *PPL Montana* Court's decision outlined several specific navigability criteria that may not have been directly addressed in the previous ASLD reports.

Based on the *PPL Montana* Court's decision and the existing record, ANSAC should consider the following factors in determining segmentation: whether the river is located in a canyon or runs through flats or wide river valleys; the river's flow rate (including tributary inflow and watershed size); the classification of rapids by degree of difficulty; whether the river is a gaining or losing stream; and the river's slope or steepness. Based on those factors, ASLD recommends that ANSAC consider the following river segments.

Table 1. Recommended Stream Segmentation

River	Segment Boundaries (Approximate)	Segment Description
Gila	1 – New Mexico to Gila Box	Extends from New Mexico border through a broad alluvial valley with irrigated farm land. Includes the Town of Duncan and the communities of Sheldon, Apache Grove, York and Guthrie.
	2 – Gila Box	Deep canyon reach that includes the BLM National Conservation Area and is a popular recreational boating route. Significant tributaries (San Francisco, Eagle, Bonita) add flow.
	3 – Gila Box to San Carlos Reservoir	River flows through broad alluvial valley with irrigated farm land. Includes the Towns of Safford, Thatcher, Pima and Fort Thomas, and portions of the San Carlos Indian Reservation. Includes San Carlos Lake.
	4 – San Carlos Canyon	Narrow bedrock canyon located downstream of Coolidge Dam in the Needles Eye Wilderness on the San Carlos Indian Reservation. Extends downstream to near SR77.
	5 – San Carlos Canyon to Ashurst-Hayden Dam	River flows in shallow, moderately wide bedrock canyon past the communities of Winkelman, Hayden, Kearny, and Kelvin, and through the Tortilla Mountains. Significant tributary is the San Pedro River. Segment is used for seasonal recreational boating.

Table 1. Recommended Stream Segmentation		
River	**Segment Boundaries (Approximate)**	**Segment Description**
	6 – Ashurst-Hayden Dam to Salt River Confluence	Extends from the Ashurst-Hayden Dam through the extensively irrigated alluvial valley that includes the Cities of Florence and Coolidge, as well as the Gila River Indian Community. Significant tributary includes the Santa Cruz River (dry).
	7 – Salt River Confluence to Dome	River flows through the western portion of the Salt River Valley and the Phoenix metropolitan area, and is similar in character to the lower Salt River (Segment 5). Some modern recreational boating between Salt River confluence and Gillespie Dam. Significant tributary includes the Hassayampa River. Historical accounts of boating.
	8 – Dome to Colorado	River passes through broad gap in Gila Mountains into Colorado River Valley. Some early records of historical boating upstream to Dome from Colorado River.
Salt	1 – White/Black River Confluence to Apache Falls	Narrow, deep bedrock canyon with remote access, and located within the Fort Apache Indian Reservation. Modern boating is not permitted by the tribe upstream of Apache Falls, but would likely include numerous rapids. Significant tributaries include Carrizo Creek.
	2 – Apache Falls to Sleeper Rapid - Gleason Flat	Segment includes the one of the most frequently boated river segments in Arizona, and is home to several seasonal commercial boating operations. River is located in deep bedrock canyon and includes many named and unnamed rapids. Gleason is largest of "flats" reaches with wide canyon, few rapids and easier access. Significant tributaries include Cibecue and Canyon Creek. Located within the Tonto National Forest, Salt River Canyon Wilderness, and the Fort Apache and San Carlos Indian Communities.
	3 – Sleeper Rapid to Roosevelt Dam - Roosevelt Flat	River continues in deep bedrock canyon, but with fewer and smaller rapids. Located primarily within the Salt River Canyon Wilderness. Includes the large flats area now inundated by Roosevelt Lake. Significant tributaries include Pinal and Cherry Creeks.
	4 – Roosevelt Dam to Stewart Mountain Dam	River in deep bedrock canyon now inundated by backwater from SRP dams. Modern recreational boating on man-made lakes. Records of historical boating pre-date reservoirs.

Table 1. Recommended Stream Segmentation		
River	**Segment Boundaries (Approximate)**	**Segment Description**
	5 – Stewart Mountain Dam to Verde River Confluence	River in moderately deep and wide canyon with few small rapids. Includes the most well used recreational boating reach in Arizona. Located within the Tonto National Forest. Records of historical boating.
	6 – Verde River Confluence to Gila River Confluence	River flows through wide alluvial valley with no natural rapids or obstructions. Includes many of the communities in metropolitan Phoenix, as well as portions of the Salt River Pima-Maricopa, Fort McDowell, and Gila River Indian Communities. Records of historical boating and modern boating upstream of Granite Reef Dam and on effluent dominated reaches west of downtown Phoenix.
Verde	1 – Headwaters to Sycamore Creek	Extends from Paulden Dam through steep, rugged canyons with limited but reliable flow. Few instances of modern boating.
	2 – Sycamore Creek to Beasley Flat	River flows through shallow canyons and wide alluvial valleys through Verde Valley, including communities of Perkinsville, Clarkdale, Cottonwood, and Camp Verde. Major tributaries include Oak, Beaver, and West Clear Creeks. Records of historical boating. Extensive modern recreational boating, including annual canoe and kayak race. Some minor rapids.
	3 – Beasley Flat to Verde Hot Springs	River enters deep, narrow bedrock canyon with Wild and Scenic designation. Known as the whitewater reach of the Verde River and is popular modern recreational boating reach, with limited commercial boating. Records of historical boating.
	4 – Verde Hot Springs to Horseshoe Reservoir	River located within several US National Forests and two Wilderness areas. Major tributaries include Fossil Creek and East Verde River. River flows through shallow canyons and narrow alluvial valleys, with small rapids. Popular, but very remote, modern recreational boating reach. Records of historical boating.
	5 – Horseshoe Reservoir to Salt River Confluence	River flows through broader alluvial valleys with some short canyon reaches and few small rapids. Major tributary is Sycamore Creek. Modern recreational boating and historical boating records.

Table 1. Recommended Stream Segmentation		
River	**Segment Boundaries (Approximate)**	**Segment Description**
San Pedro	1 – Mexican Border to Gila River Confluence	River flows in alluvial valley. Flows intermittent or interrupted perennial with very low flow rates. No historical boating record. Modern recreational boating only during floods.
Santa Cruz	1 – Headwaters to Mexican Border	The river is a relatively small stream flowing in broad alluvial valleys, and flows into Mexico. Very low flow rates. No record of historical or modern boating.
	2 – Mexican Border to Marana	Normally dry river in broad alluvial river. Some possibility that some segments had very shallow perennial or intermittent flow. No record of historical or modern boating, except during floods or on effluent discharges from wastewater treatment plants.
	3 – Marana to Gila River Confluence	Historically dry river in broad alluvial valley with no historical or modern boating record.

ASLD recommends that ANSAC reopen the record to allow interested parties to submit evidence on the appropriate segmentation of the Salt, Verde, Gila, San Pedro and Santa Cruz Rivers.

A. Sufficiently Obstructed River Segments That Require Travelers To Portage May Be Nonnavigable

The need to portage may defeat navigability for purposes of establishing state title to a particular segment because it requires transportation over land, not water. *PPL Montana,* 132 S.Ct. at 1231. Portages generally demonstrate "the need to bypass the river segment." *Id.* The Great Falls reach in *PPL Montana* was an undisputed interruption to navigability in that it required overland portage, and the falls had never been navigated. *Id.* at 1232. In *PPL Montana,* Lewis and Clark transported supplies and small canoes approximately 18 miles over land for 11 days or more. *Id.* at 1231. Although there are no portages of similar scale recorded on Arizona rivers, ANSAC must evaluate whether there are stretches of the remanded rivers that consistently

required portages, and whether those portages were so minimal that they did not interrupt an otherwise navigable segment of that river.

II. POST-STATEHOOD NAVIGATION EVIDENCE CAN DEMONSTRATE SUSCEPTIBILITY

The U.S. Supreme Court stated that evidence of present-day, primarily recreational boating must be "confined to that which shows the river could sustain the kinds of commercial use that, as a realistic matter, might have occurred at the time of statehood." *PPL Montana,* 132 S.Ct. at 1233. Navigability at statehood concerns "the river's usefulness for 'trade and travel,' not for other purposes." *Id.* Evidence of present-day, primarily recreational use can be valid evidence of susceptibility for navigation at statehood. *Id.* The Court acknowledged that "'[E]xtensive and continued [historical] use for commercial purposes' may be the 'most persuasive' form of evidence, but the 'crucial question' is the potential for such use at the time of statehood, rather than 'the mere manner or extent of actual use.'" *Id.* at 1234 quoting *United States v. Utah,* 283 U.S. 64, 82-83 (1931). To demonstrate susceptibility to navigation, a party seeking to use present-day boating evidence must show whether the watercraft are "meaningfully similar" to those customarily used for trade and travel at statehood; and that the post-statehood condition of the river is not materially different from its physical condition at statehood. *Id.* Thus, in order for evidence of present day use to be meaningful, a river's physical condition could not have changed in ways that "substantially improve its navigability." *Id.* at 1233-34. Dams and diversions on Arizona's rivers made the rivers less susceptible to navigation, not more. Therefore, evidence of modern recreational boating on Arizona rivers may be more relevant to determining susceptibility to navigation than for the Montana rivers.

Based on the *PPL Montana* Court's instruction, ASLD recommends that ANSAC reopen the record to allow interested parties to present evidence regarding the types of watercraft

customarily used at statehood and the types of watercraft in use today for recreational boating. ANSAC then must specifically determine the types of watercraft in use at statehood and how those watercraft vary from the watercraft in use today, if at all.

III. STATE TITLE TO RIVERBEDS MUST BE DETERMINED AT STATEHOOD IN THE RIVER'S ORDINARY AND NATURAL CONDITION

The *PPL Montana* Court confirmed that title navigability must be determined at statehood in a watercourse's "natural and ordinary condition." *PPL Montana,* 132 S.Ct. at 1228. The Court pointed out that the "inquiry depends only on navigation and not on interstate travel." *Id.* at 1229, 1233 (for susceptibility analysis, not only trade and travel must be determined, but also the watercourse's natural and ordinary condition). In *State ex rel. Winkleman v. Arizona Navigable Stream Adjudication Com'n,* 224 Ariz. 230, 240, 229 P.3d 242, 252 (App. 2010) (*"Winkleman"),* the court held that ANSAC failed to evaluate the Lower Salt River's ordinary and natural condition in light of the numerous dams, canals, and other diversions other than Roosevelt Dam. The Court of Appeals directed ANSAC to determine "what the River would have looked like on February 14, 1912 in its ordinary (i.e., usual, absent major flooding or drought) and natural (i.e., without man-made dams, canals, or other diversions) condition." *Winkleman,* 224 Ariz. at 241, 229 P.3d at 253. The *Winkleman* decision is still valid and controlling on ANSAC's determinations and proceedings. Thus, ANSAC must evaluate Arizona's rivers at statehood as if there had been no dams and diversions, and without flood or drought conditions.

The U.S. Supreme Court's note that Montana's long failure to assert title navigability is some evidence supporting the conclusion that the river segments were nonnavigable is not only dicta, but also not persuasive to these proceedings. *PPL Montana,* 132 S.Ct. at 1235. Arizona Courts have long recognized Arizona's valid right and valuable claim to the streambeds beneath

its navigable rivers. *Winkleman,* 224 Ariz. at 234, ¶ 2, 229 P.3d 246, ¶ 2 ("In 1985, the State claimed title to the beds of all Arizona watercourses that were navigable when Arizona became a state.").

In conclusion, the United States Supreme Court's *PPL Montana* decision is relevant to the proceedings now before the Commission. ANSAC should examine each watercourse to determine how the watercourse should be segmented, and then whether each of the identified segments is navigable. As stated by the Court, "[a]n analysis of segmentation must be sensibly applied." *PPL Montana,* 132 S.Ct. at 1231. Finally and most importantly, the navigability of each river must be determined based on its own facts. *See United States v. Appalachian Elec. Power Co.,* 311 U.S. 377, 404, 61 S.Ct. 291, 297 (1940) (there is no "formula which fits every type of stream under all circumstances and at all times."). Based on the *PPL Montana* decision, the Department recommends that ANSAC reopen the record for parties to provide evidence and testimony for segmentation purposes and for present-day recreational use for susceptibility purposes.

DATED: June 8, 2012.

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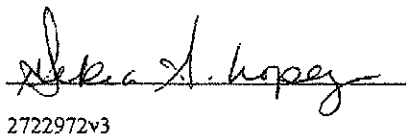

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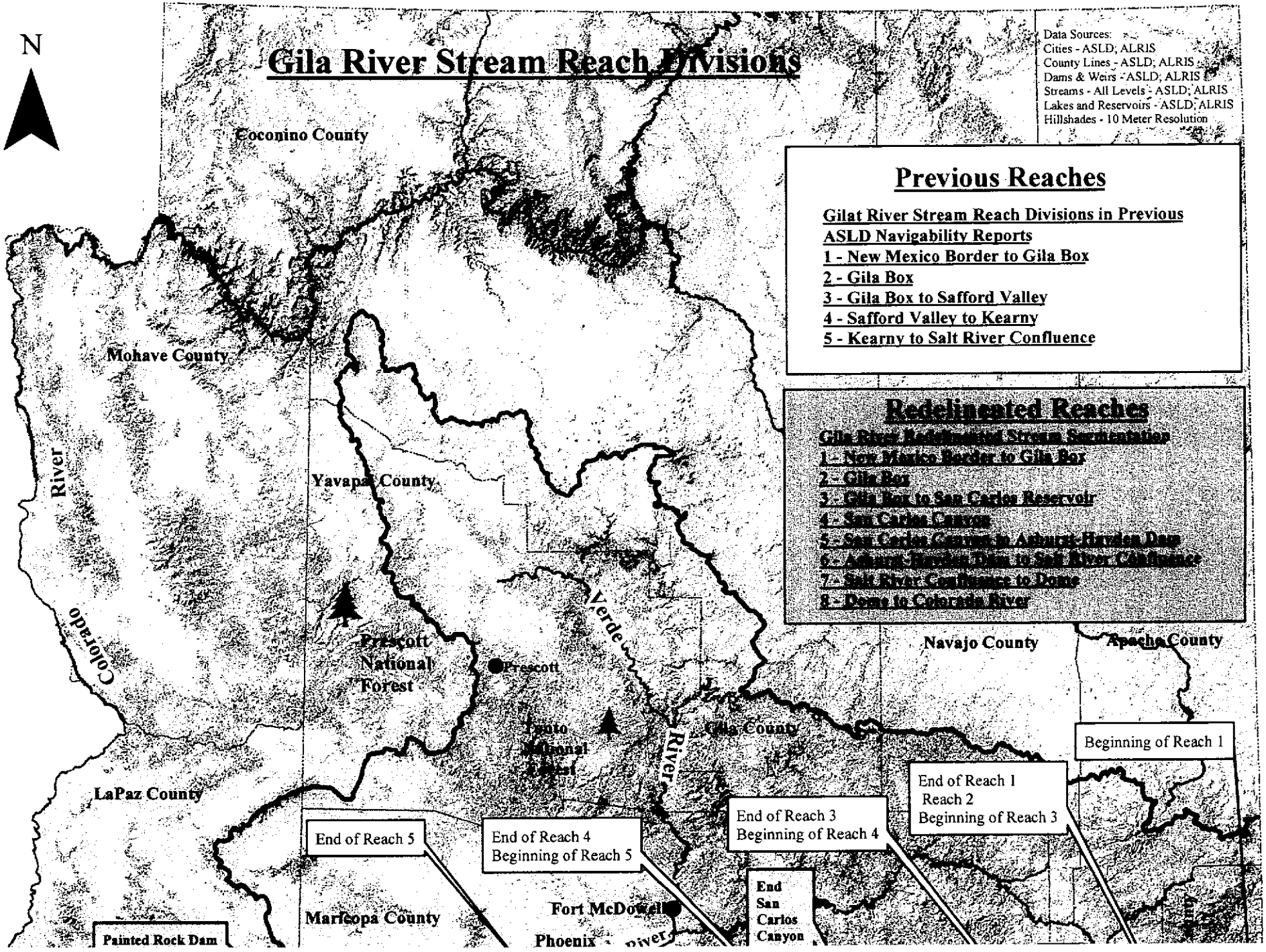
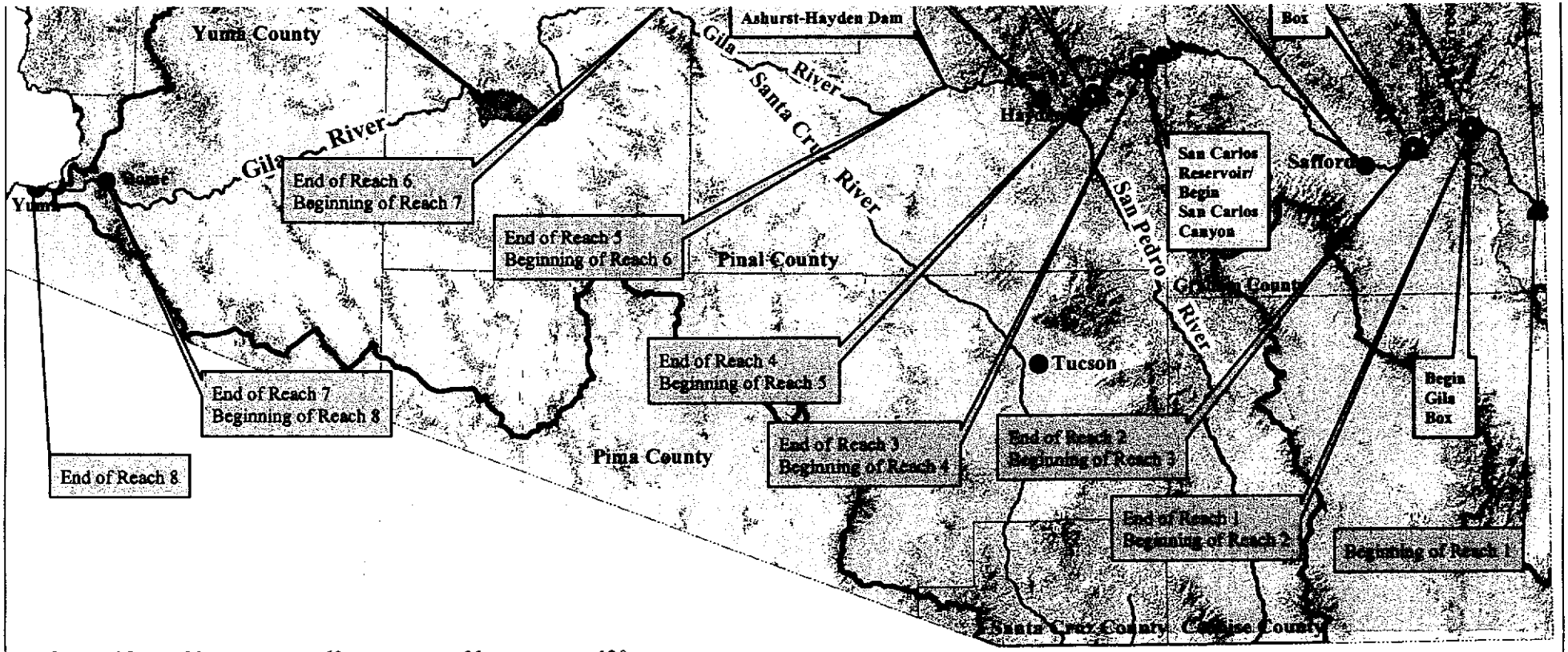
ATTACHMENT "C"


Gila River Stream Reach Divisions
N
Data Sources:
Cities - ASLD; ALRIS
County Lines - ASLD; ALRIS
Dams & Weirs - ASLD; ALRIS
Streams - All Levels - ASLD; ALRIS
Lakes and Reservoirs - ASLD; ALRIS
Hillshades - 10 Meter Resolution
Previous Reaches
Gilat River Stream Reach Divisions in Previous ASLD Navigability Reports
1 - New Mexico Border to Gila Box
2 - Gila Box
3 - Gila Box to Safford Valley
4 - Safford Valley to Kearny
5 - Kearny to Salt River Confluence
Redelineated Reaches
Gila River Redelineated Stream Segmentation
1 - New Mexico Border to Gila Box
2 - Gila Box
3 - Gila Box to San Carlos Reservoir
4 - San Carlos Canyon
5 - San Carlos Canyon to Ashurst-Hayden Dam
6 - Ashurst-Hayden Dam to Salt River Confluence
7 - Salt River Confluence to Dome
8 - Dome to Colorado River
Coconino County
Mohave County
Yavapai County
Navajo County
Apache County
Gila County
LaPaz County
Maricopa County
Prescott
Prescott National Forest
Tonto National Forest
Fort McDowell
Phoenix
Painted Rock Dam
Colorado River
Verde River
Gila River
End of Reach 5
End of Reach 4
Beginning of Reach 5
End of Reach 3
Beginning of Reach 4
End of Reach 1
Reach 2
Beginning of Reach 3
Beginning of Reach 1
End San Carlos Canyon



Legend

- Gila Watershed Boundary
- Counties
- Verde River
- Salt River
- Gila River
- Santa Cruz River
- San Pedro River
- Colorado River
- Ashurst-Hayden Dam
- San Carlos Reservoir
- Painted Rock Reservoir

ARIZONA STATE LAND DEPARTMENT 1915

The Arizona State Land Department makes no warranties, expressed or implied with respect to the information shown on this map.

O:\cdoyle\StreambedsNewStreamReachesUpperSalt\Streambeds NewStreamReachesLowerSalt.mxd
Cheryl Doyle, 8/29/2012