Hydrologic and Water Use Data For West Basins Strategic Planning Area

01/30/2016

Presented by

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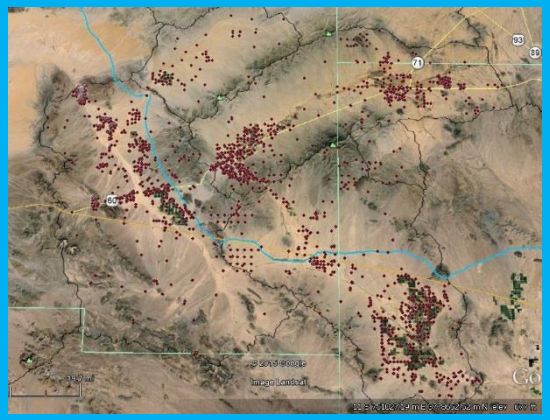
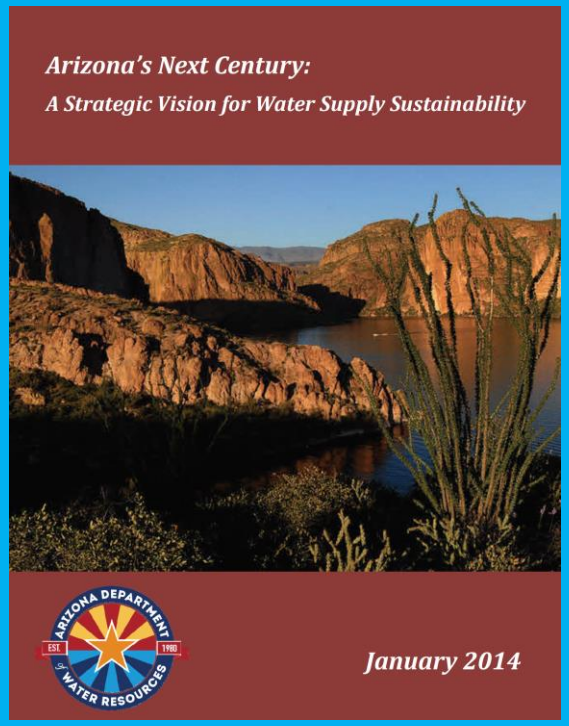
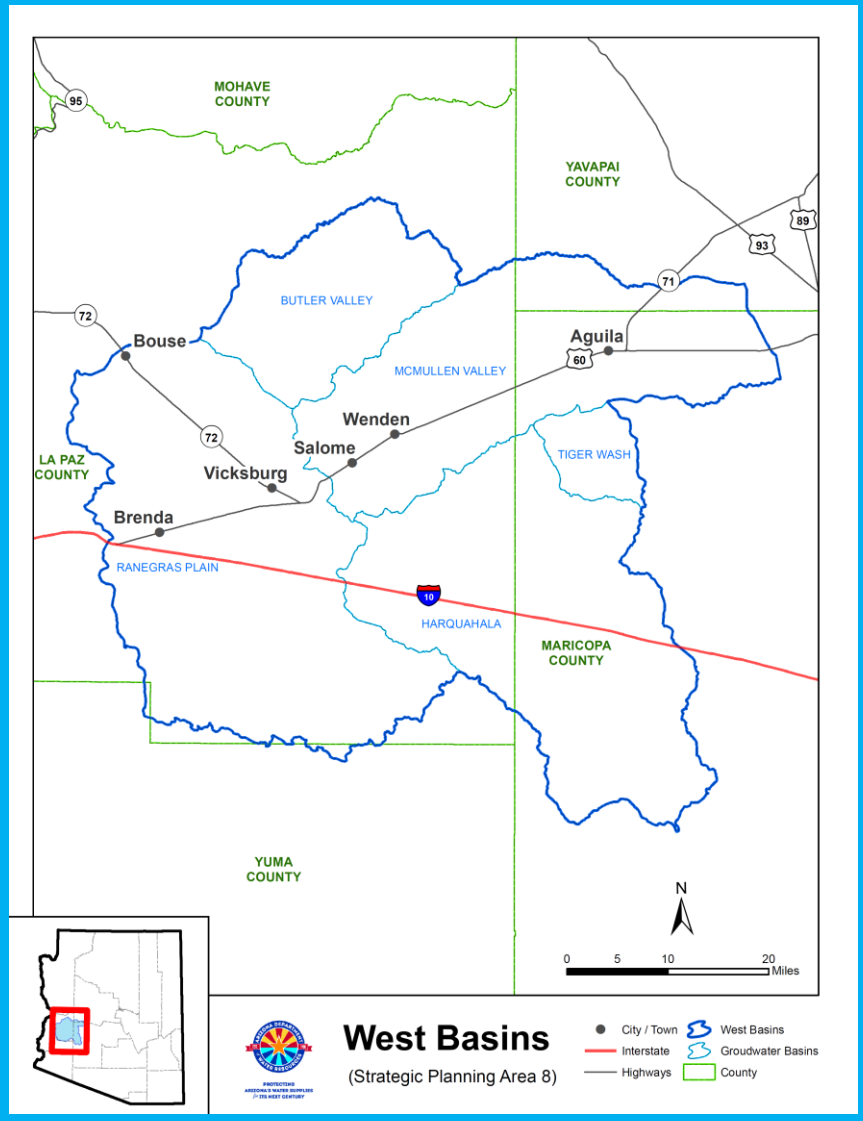
Hydrology Division

La Paz County Centennial Park Community Center
Wenden, Arizona




Arizona's Next Century:
A Strategic Vision for Water Supply Sustainability
ARIZONA DEPARTMENT of WATER RESOURCES
EST. 1980
January 2014


MOHAVE COUNTY
YAVAPAI COUNTY
LA PAZ COUNTY
MARICOPA COUNTY
YUMA COUNTY
BUTLER VALLEY
MCMULLEN VALLEY
TIGER WASH
RANEGRAS PLAIN
HARQUAHALA
Bouse
Aguila
Wenden
Salome
Vicksburg
Brenda
95
72
71
89
93
60
10
N
0 5 10 20 Miles
West Basins
(Strategic Planning Area 8)
City / Town
Interstate
Highways
West Basins
Groudwater Basins
County

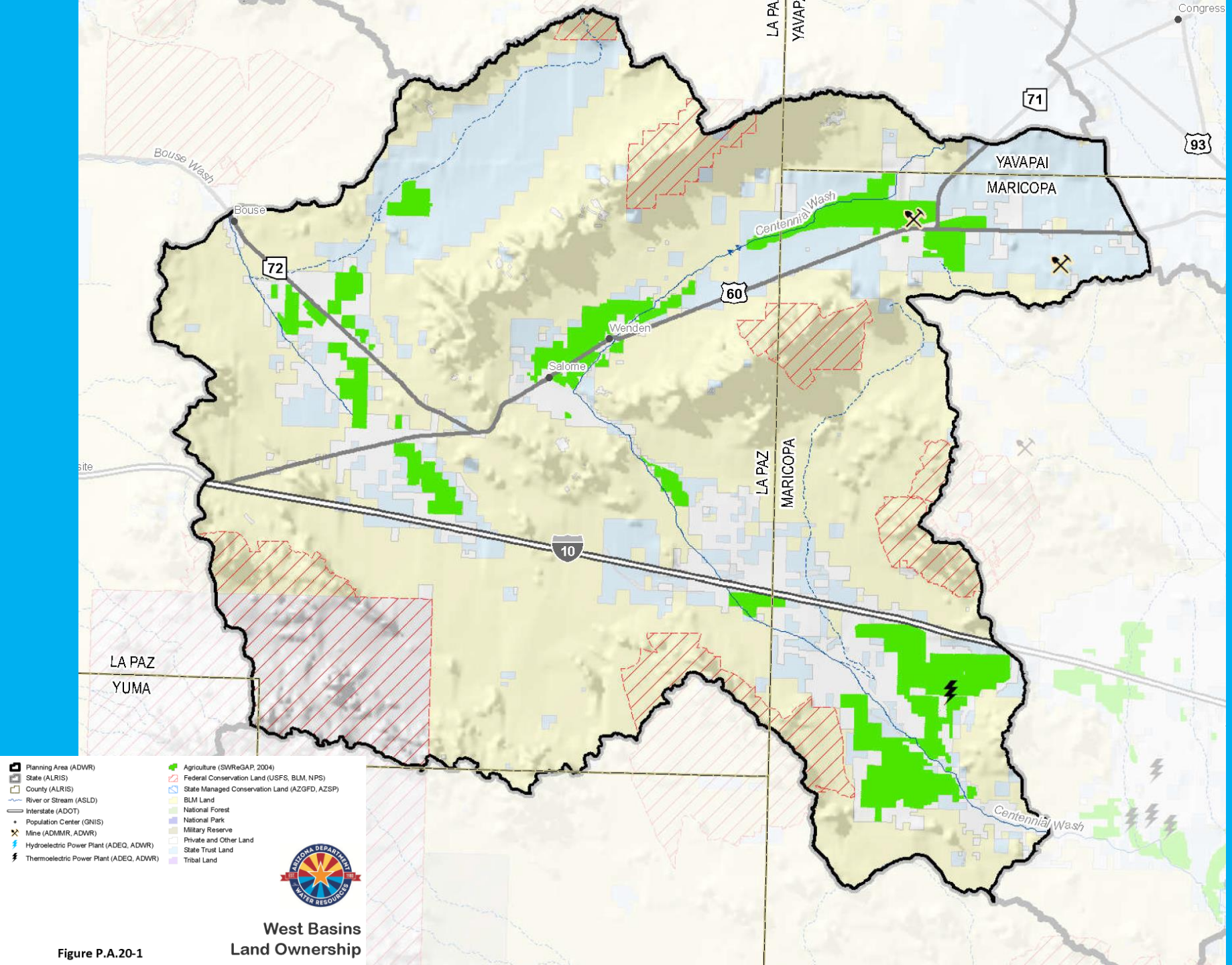


Figure P.A.20-1

Physical and Hydrologic Characteristics of Groundwater Basins in the West Basins Planning Area

Basin Characteristic	Unit	Butler Valley	Harquahala INA	McMullen Valley	Ranegras Plain	Tiger Wash
Basin Area	Square Miles	288	766	649	912	74
Estimated GW Storage*	Million Acre-Feet	6.4	15.5	15	9	0.7
Estimated Natural Recharge**	Acre-Feet/Year	<1,000	1,000	1,000	<1,000	<1,000
Estimated 2014 Irrigation Pumping ***	Acre-Feet	11,500	93,500	47,500	23,500	0
Estimated 2014 CAP Surface Water for Irrigation***	Acre-Feet	0	35,000	0	0	0

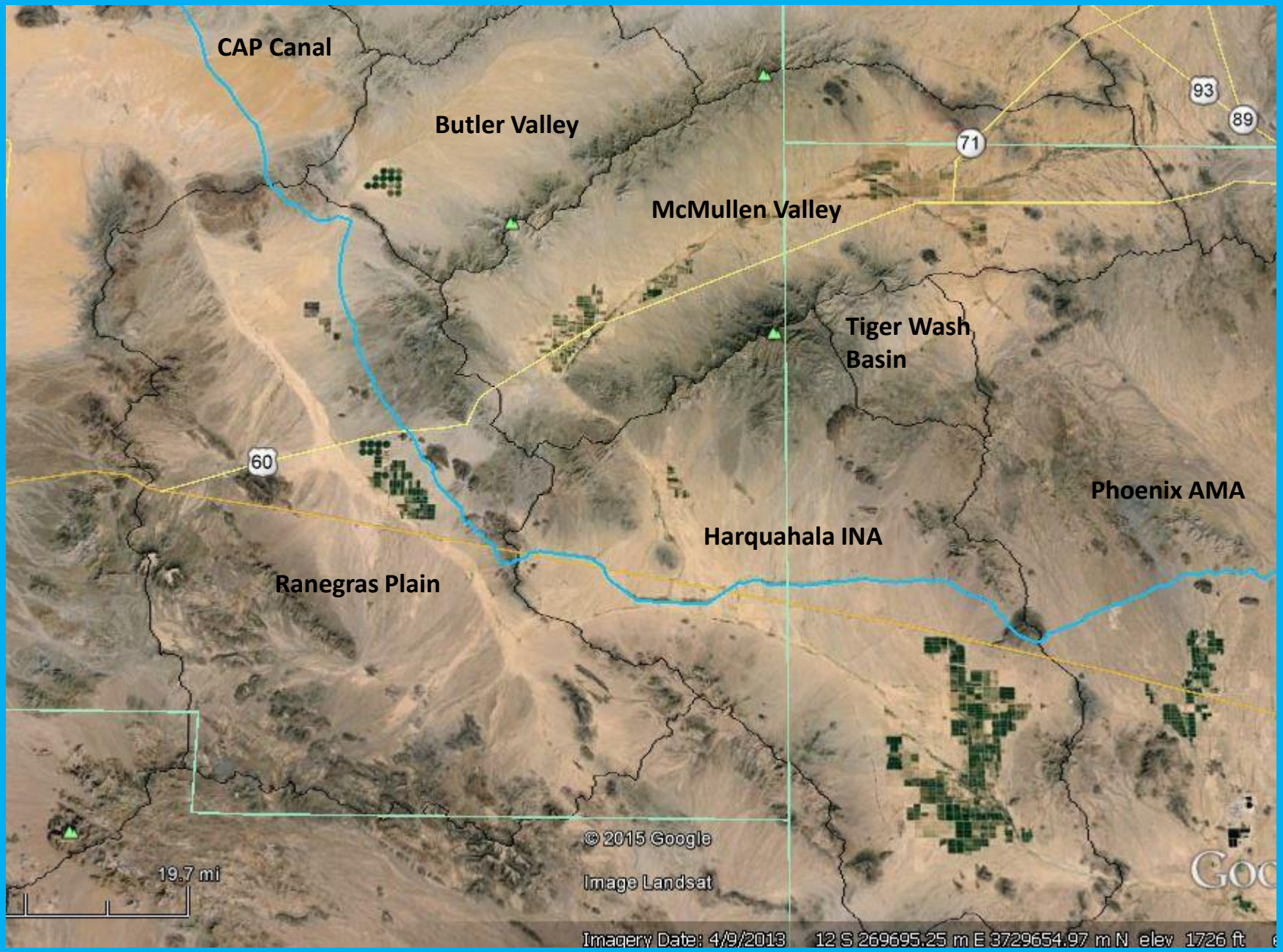
Sources of Data:

* Estimated Groundwater Storage: ADWR – Arizona's Next Century: A Strategic Vision for Water Supply Sustainability (2014)

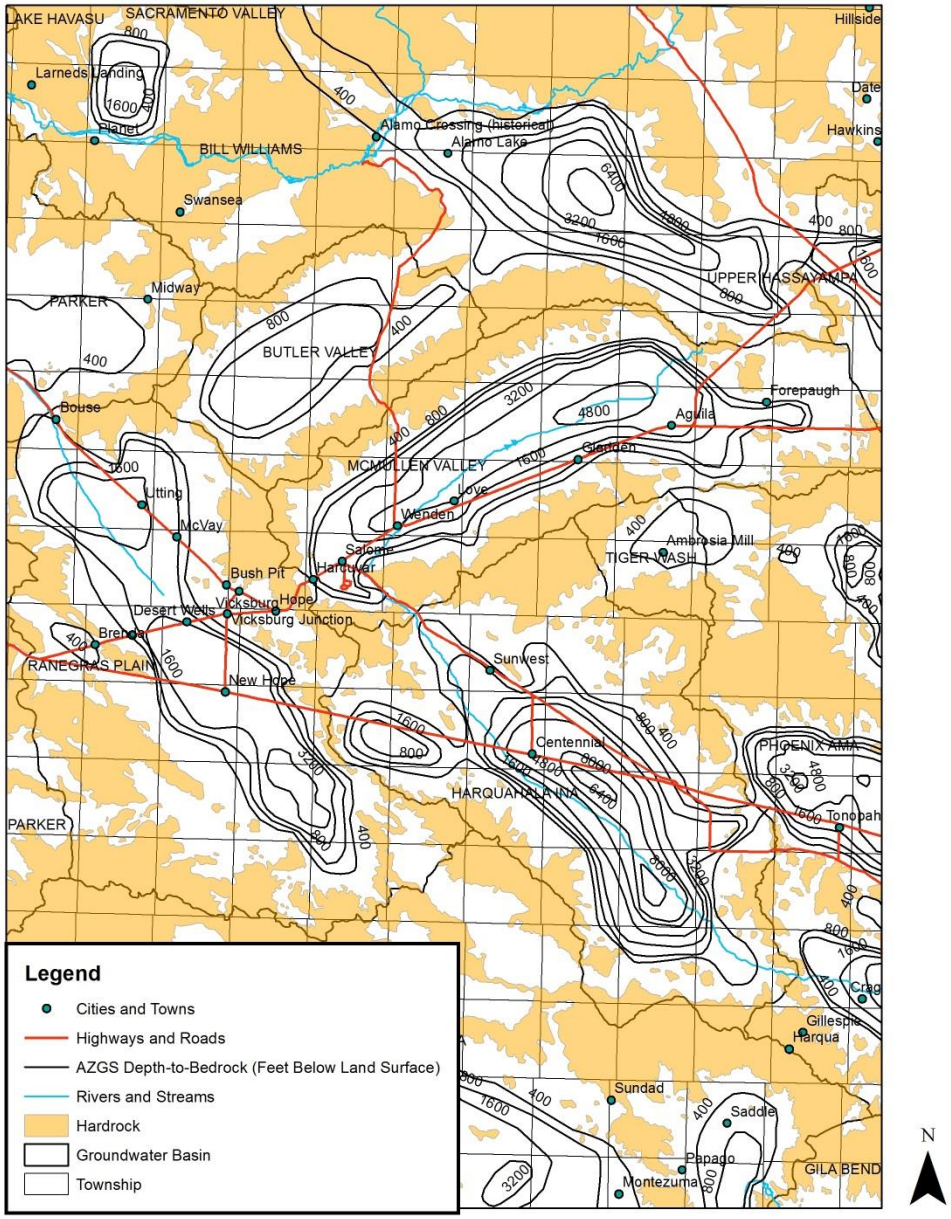
** Estimated Natural Recharge: USGS Hydrologic Investigations Atlas – 664 (1986)

*** Estimated 2014 Irrigation Pumping and CAP Water Use: USGS Arizona Basin Water Supply Spreadsheet (2015)

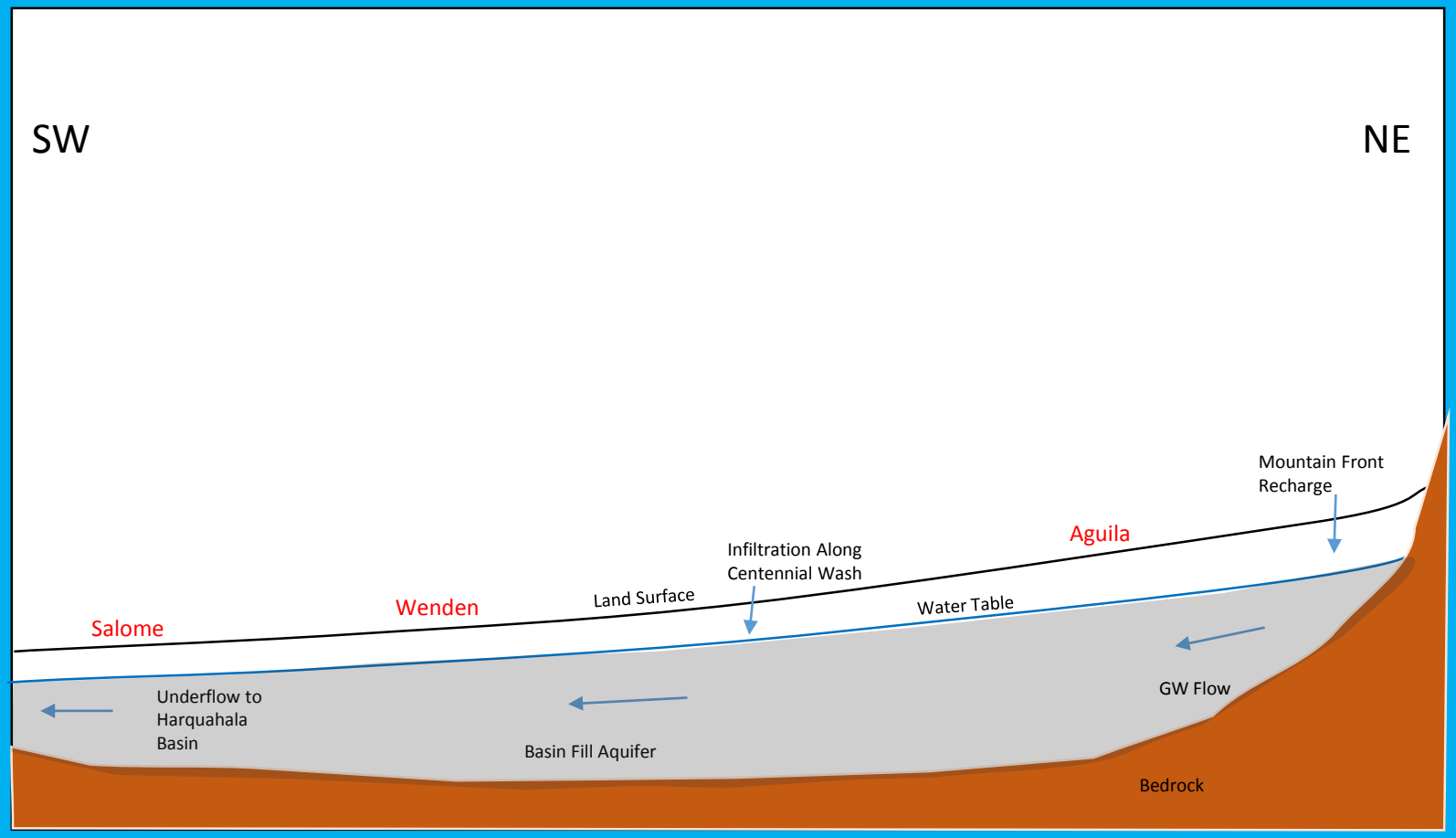
Satellite Image of West Basins Strategic Planning Area



Depth-to Bedrock in Western Arizona Groundwater Basins

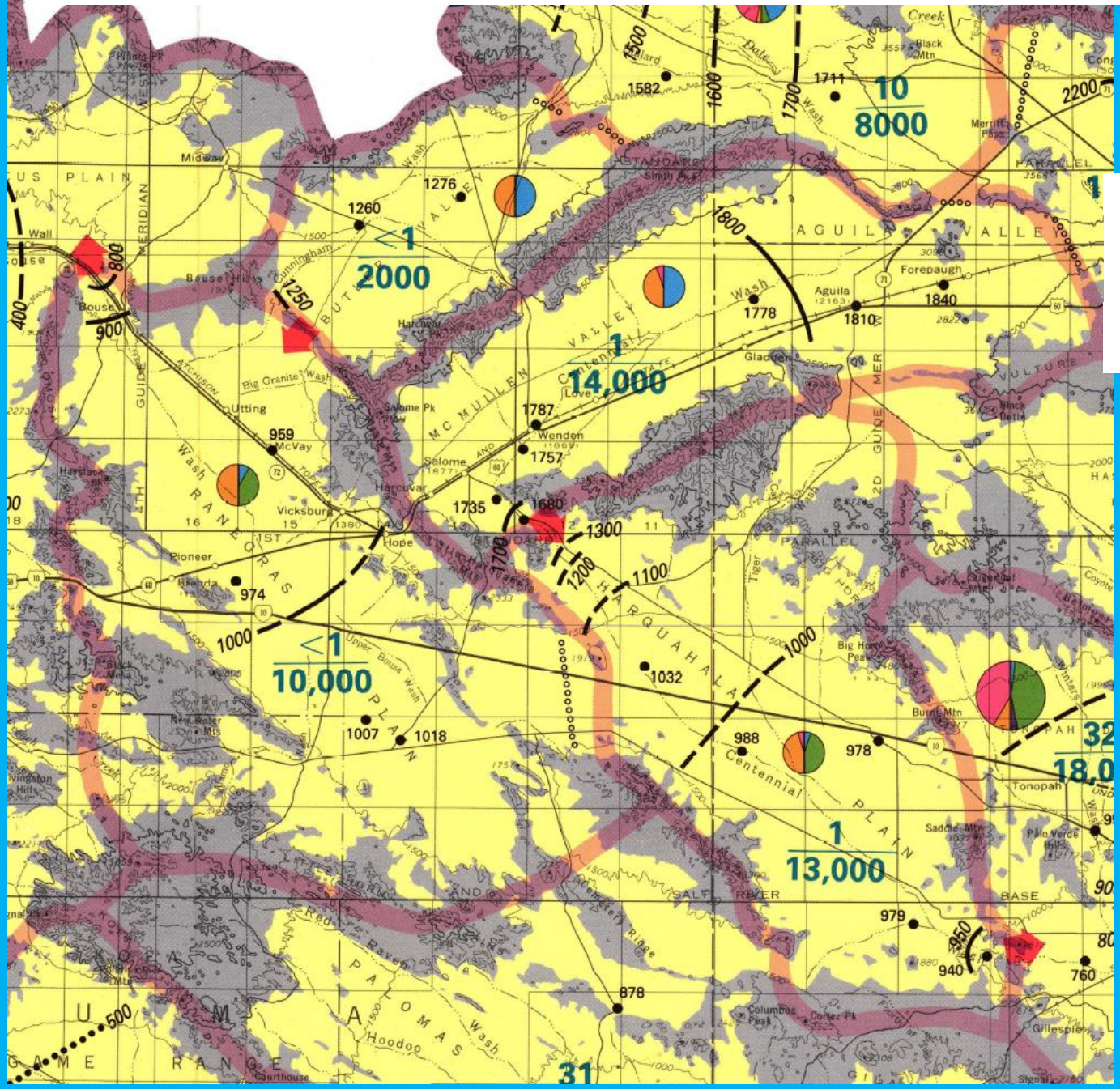


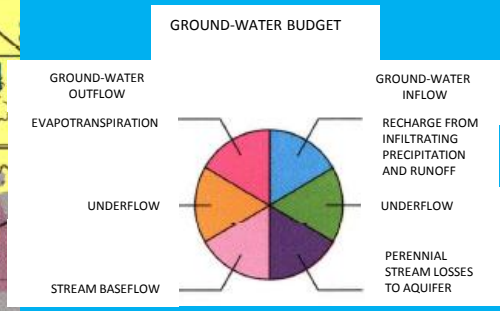
Conceptual Model Of Pre-Development Groundwater Flow Conditions In The McMullen Valley Groundwater Basin*



* During The Predevelopment Period Groundwater Recharge and Basin Outflow Were In a Long-Term Balance (Steady-State)

Predevelopment Groundwater Flow Patterns In the West Basins Strategic Planning Area



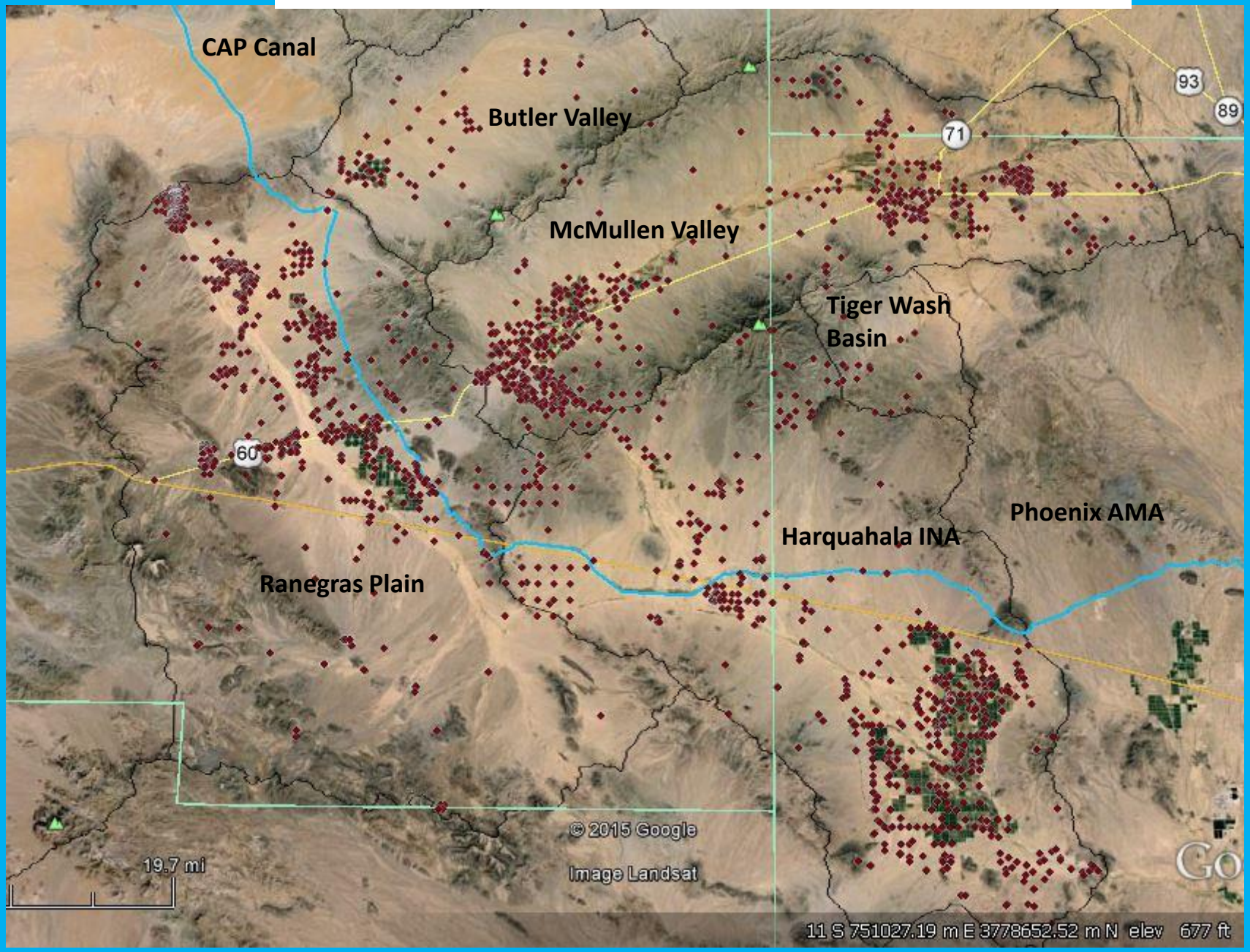


4 / 11,000

Ratio of Basin Inflow (AF/Yr) To Total Groundwater Storage (To 1,200 FT BLS)

Source: USGS Hydrologic Investigations Atlas HA-664 (1986)

Registered Wells In West Basins Strategic Planning Area



Well Applications Filed Per Year In West Basins Strategic Planning Area

	Harquahala INA			Butler Valley			McMullen Valley			Ranegras Plain			Tiger Wash		
	EXEMPT	NON-EXEMPT	OTHER	EXEMPT	NON-EXEMPT	OTHER	EXEMPT	NON-EXEMPT	OTHER	EXEMPT	NON-EXEMPT	OTHER	EXEMPT	NON-EXEMPT	OTHER
1940	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
1979	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	5	5	0	1	0	0	0	1	0	2	1	0	0	0	0
1981	13	12	0	0	0	0	6	14	0	36	32	0	0	0	0
1982	60	181	0	14	29	0	65	211	0	129	72	0	6	1	0
1983	1	1	0	0	2	0	4	4	0	19	3	1	1	0	0
1984	2	3	8	1	0	2	8	6	1	11	17	3	1	0	0
1985	1	2	35	0	0	0	3	2	5	7	11	5	0	0	1
1986	7	2	8	0	0	0	14	6	6	5	9	5	0	0	2
1987	6	3	3	1	0	23	14	4	1	19	2	10	0	0	0
1988	2	1	4	3	0	1	4	1	5	17	1	0	0	0	2
1989	1	1	1	0	0	2	10	3	5	17	3	1	0	0	0
1990	2	1	14	0	0	0	4	0	8	7	1	2	0	0	0
1991	2	1	1	0	0	0	5	0	6	6	1	4	0	0	1
1992	0	0	4	1	0	0	6	0	0	7	0	8	0	0	3
1993	1	1	4	0	0	1	12	0	10	14	0	0	0	0	0
1994	5	7	2	1	0	0	18	3	3	21	0	2	0	0	0
1995	7	0	16	0	0	0	8	2	9	23	2	0	0	0	0
1996	6	0	5	0	2	0	19	1	9	30	1	3	0	0	0
1997	6	4	27	0	0	0	11	3	1	21	6	8	0	0	0
1998	9	1	5	0	0	0	21	0	5	27	0	1	0	0	0
1999	10	0	6	0	0	0	21	0	5	21	1	0	0	1	0
2000	5	2	7	1	0	0	13	2	7	16	0	1	0	0	0
2001	27	2	37	0	0	0	26	2	1	15	0	20	0	0	0
2002	5	2	5	0	0	0	22	1	4	19	1	0	0	0	0
2003	5	1	3	0	0	0	24	2	0	21	2	6	0	0	0
2004	3	2	0	0	0	0	22	1	0	22	3	0	0	0	0
2005	6	2	2	0	0	0	27	1	1	35	6	1	0	0	0
2006	6	1	0	0	0	0	28	2	2	35	0	3	0	0	0
2007	2	0	4	0	0	0	13	0	0	26	5	15	0	0	0
2008	2	0	8	0	0	0	9	0	0	11	2	0	0	0	0
2009	1	0	1	0	1	0	5	0	0	15	1	1	0	0	0
2010	0	0	1	1	0	0	10	0	5	13	0	2	0	0	0
2011	2	6	1	0	0	0	7	2	2	19	0	2	0	0	0
2012	0	0	0	0	0	0	3	0	0	6	1	0	0	0	0
2013	0	0	1	0	0	0	10	2	1	8	0	0	0	0	1
2014	0	0	0	0	0	1	9	2	0	3	4	0	0	0	0
2015	0	3	5	0	0	0	10	5	0	6	2	4	0	0	0
Sub-Total	210	248	218	24	34	30	491	283	102	711	190	108	8	2	10
Total	676			88			876			1009			20		

Most Well Applications Filed Prior to 1983 Were For Existing Wells

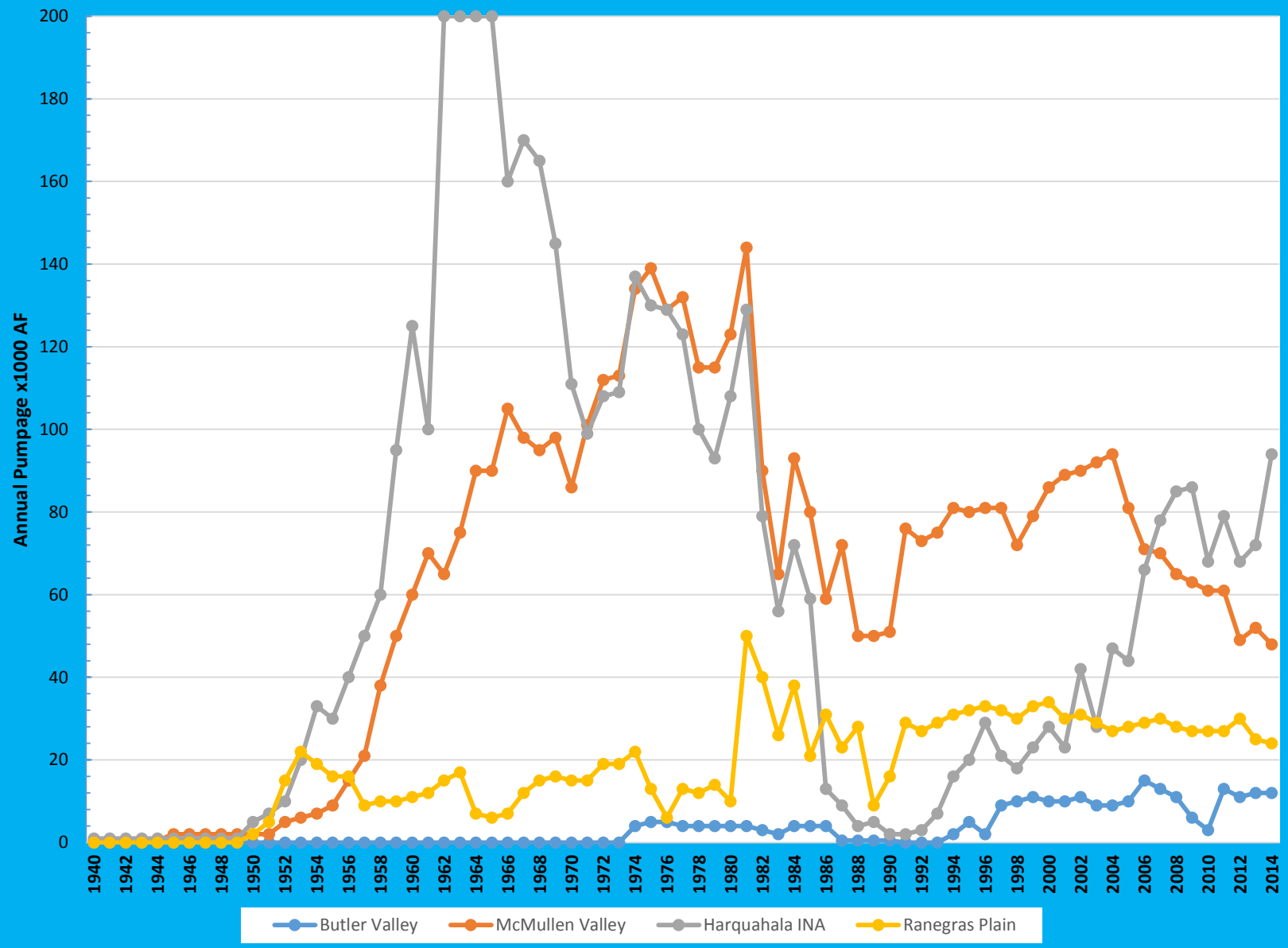
EXEMPT* wells in Arizona are typically used for domestic purposes and may pump up to 35 gallons per minute.

NON-EXEMPT wells in this part of Arizona are typically used for irrigation and may pump at >35 gallons per minute.**

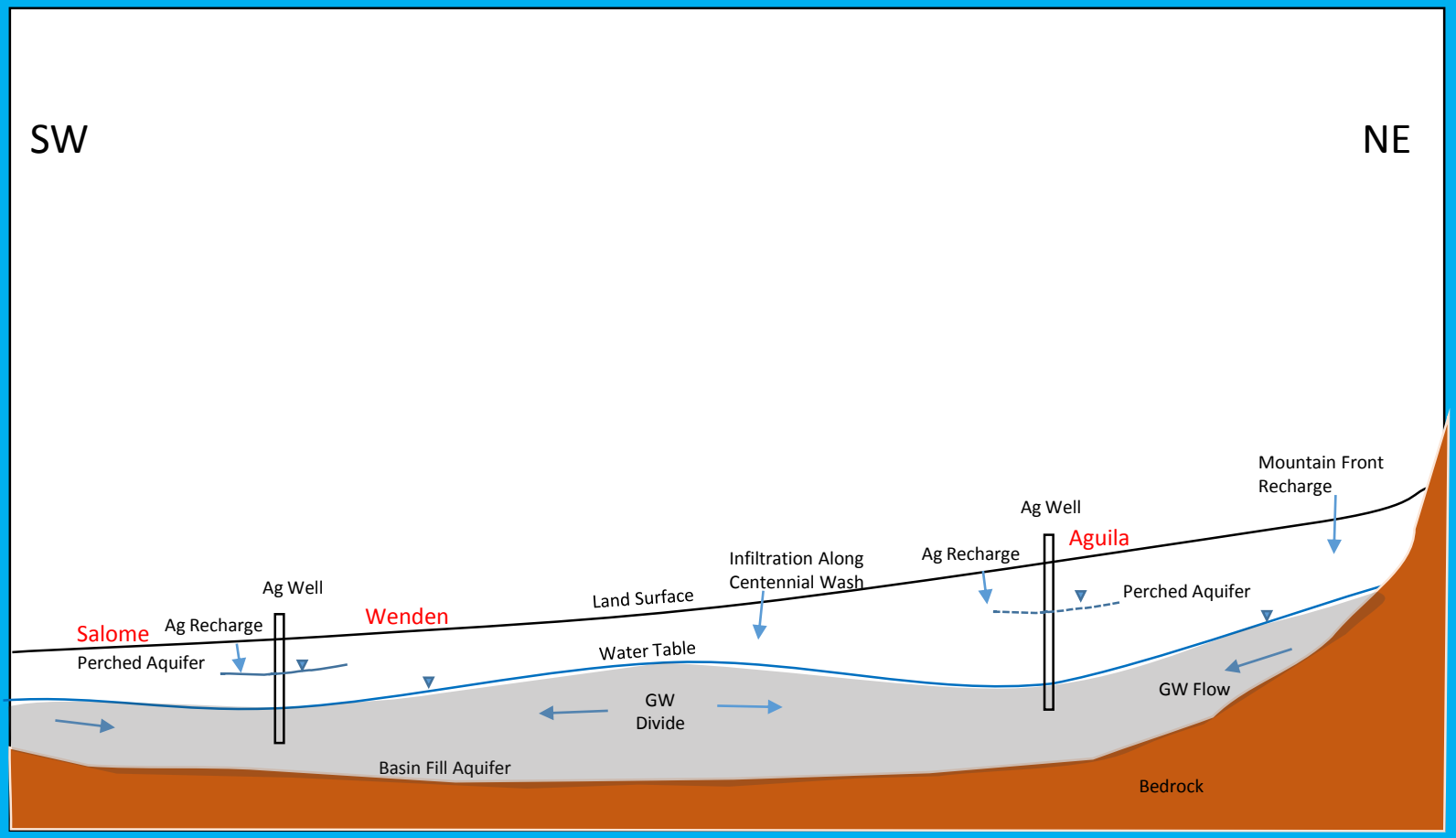
2012 USGS Cropped Acreage Verification In The West Basins Strategic Planning Area

2012 USGS Field Verification of Crops in Butler Valley, McMullen Valley, and Ranegras Plain Basins; and Harquahala INA (Acres)							
Basin	County	Abandoned	Fallow	Single Cropped	Doubled Cropped	Other	Irrigation systems
Butler Valley	La Paz	-	250	1,718	-	-	Center pivot
Basin	County	Abandoned	Fallow	Single Cropped	Doubled Cropped	Other (converted to solar)	Irrigation systems
Harquahala	La Paz	-	1,078	1,152	-	-	Drip
	Maricopa	3,348	2,879	20,797	3,742	161	Drip and flooded
	Basin total	3,348	3,957	21,948	3,742	161	Drip and flooded
Basin	County	Abandoned	Fallow	Single Cropped	Doubled Cropped	Other	Irrigation systems
McMullen Valley	La Paz	706	2,477	6,237	690	-	Drip and flooded
	Maricopa	1,557	5,309	10,793	843	-	Drip and flooded
	Basin total	2,263	7,786	17,030	1,533	-	Drip and flooded
Basin	County	Abandoned	Fallow	Single Cropped	Doubled Cropped	Other	Irrigation systems
Ranegras Plain	La Paz	1,098	583	5,136	102	-	Drip, center pivot, and flooded

USGS Estimated Groundwater Withdrawals For Agricultural Irrigation In The West Basins Strategic Planning Area 1940 – 2014

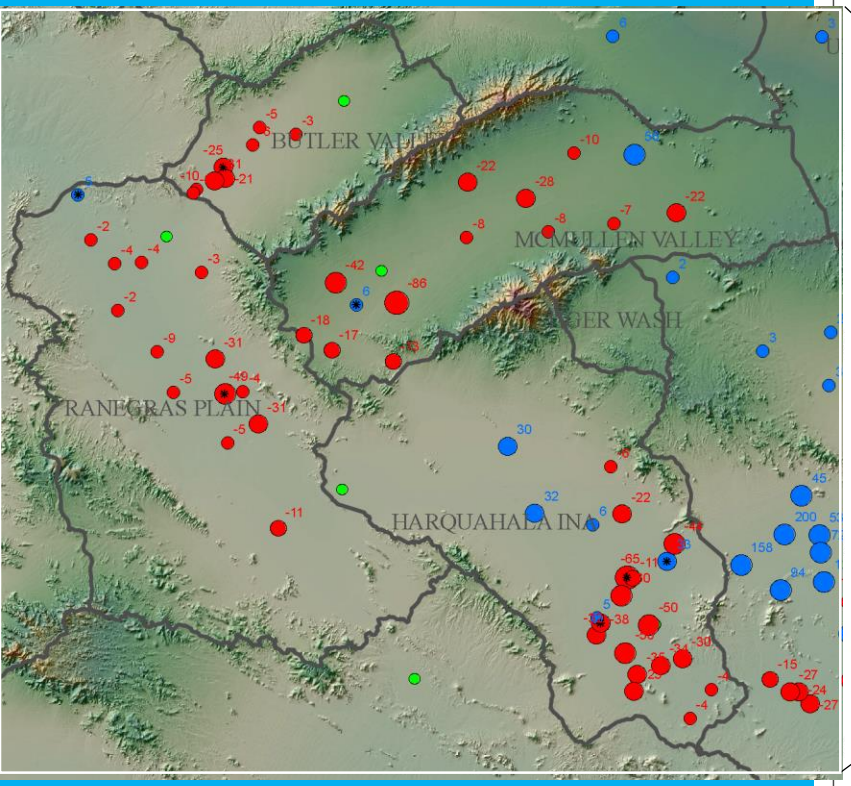


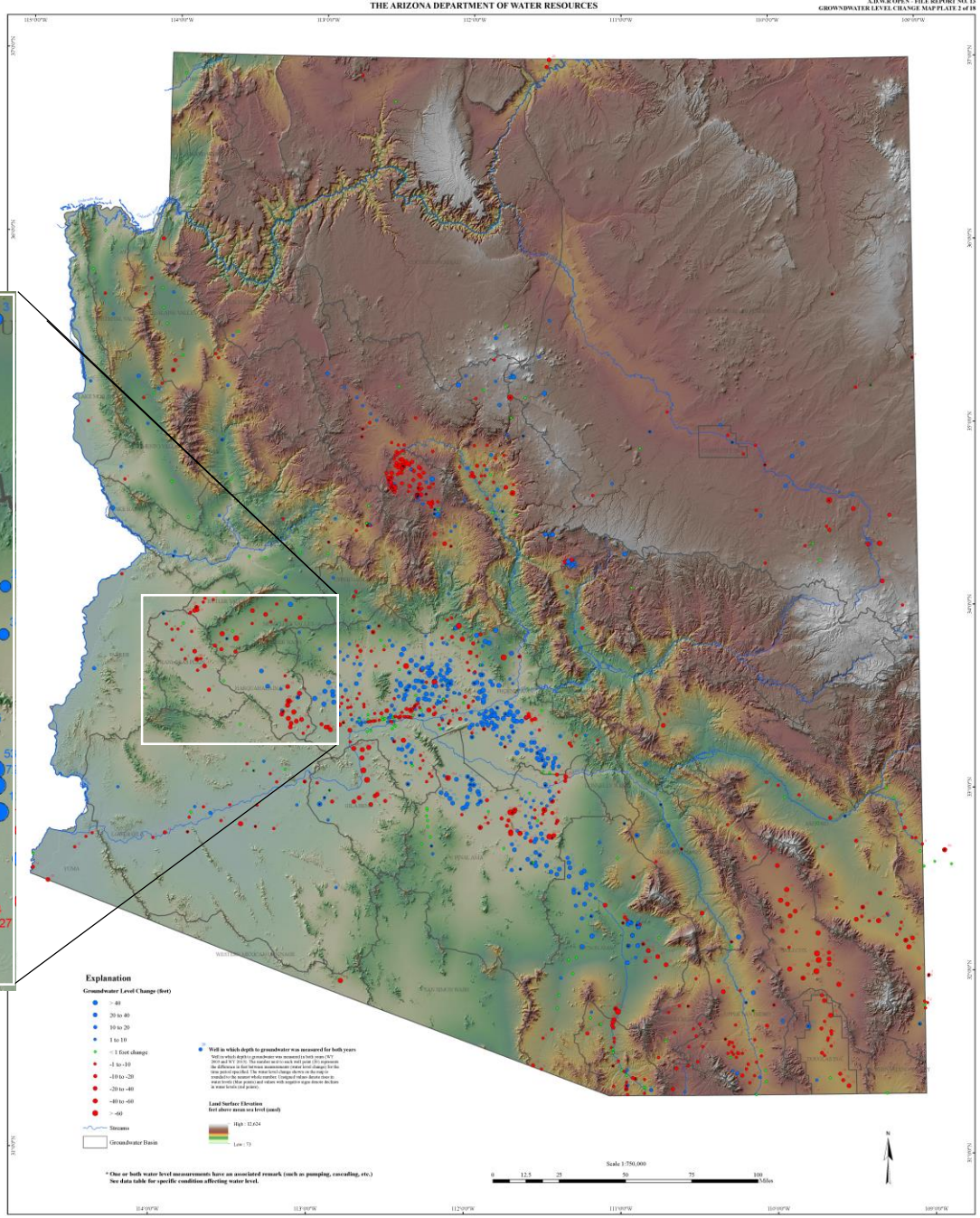
Conceptual Model Of Transient Groundwater Flow Conditions In The McMullen Valley Groundwater Basin*



- During The Period of Groundwater Development Basin Outflow From Pumping Exceeds Basin Recharge and Basin GW Storage Decreases Over Time
- Perched Aquifers Have Developed In Ag Areas
- Land Subsidence Has Occurred

Water Level Changes In Arizona 2003 - 2013





Created on March 28th, 2014
Created By: Scott Stuk
North American Datum 1983
N:\WRB\Statewide\Monitoring\
Water Level Change Report WY03 - WY13\ WY12-WY13\Maps

GROUNDWATER LEVEL CHANGES IN ARIZONA WATER YEARS 2003 - 2013

By

Tori Davis, James Discakoff & Scott Stuk

For data go to:
https://gisweb.azwater.gov/waterresourcedata/

For more information or copies contact:
ADWR Information Services
3550 North Central Avenue
Phoenix, AZ 85012
(602) 771-8627
www.azwater.gov

Water Level Changes For Selected Areas of Arizona (2003 – 2013)

Area	Water Level Changes 2003 - 2013 In Selected Areas of Arizona Units = + /- Feet of WL Change			
	Statistic	Water Level Change For All Wells In Area	Water Level Change For Wells With WL Declines Only	Water Level Change For Wells With WL Rises Only
West Basins	Count	62	51	11
	Average	-14	-21	16
	Median	-9	-13	6
	Minimun	-86	-86	0
	Maximum	56	0	56
Cochise	Count	63	58	5
	Average	-19	-23	25
	Median	-15	-15	4
	Minimum	-84	-84	1
	Maximum	104	0	104
AMAs	Count	712	310	402
	Average	7	-17	26
	Median	2	-9	18
	Minimum	-517	-517	0
	Maximum	225	0	225
Statewide	Count	1197	651	546
	Average	2	-16	22
	Median	-1	-7	12
	Minimum	-517	-517	0
	Maximum	283	0	283

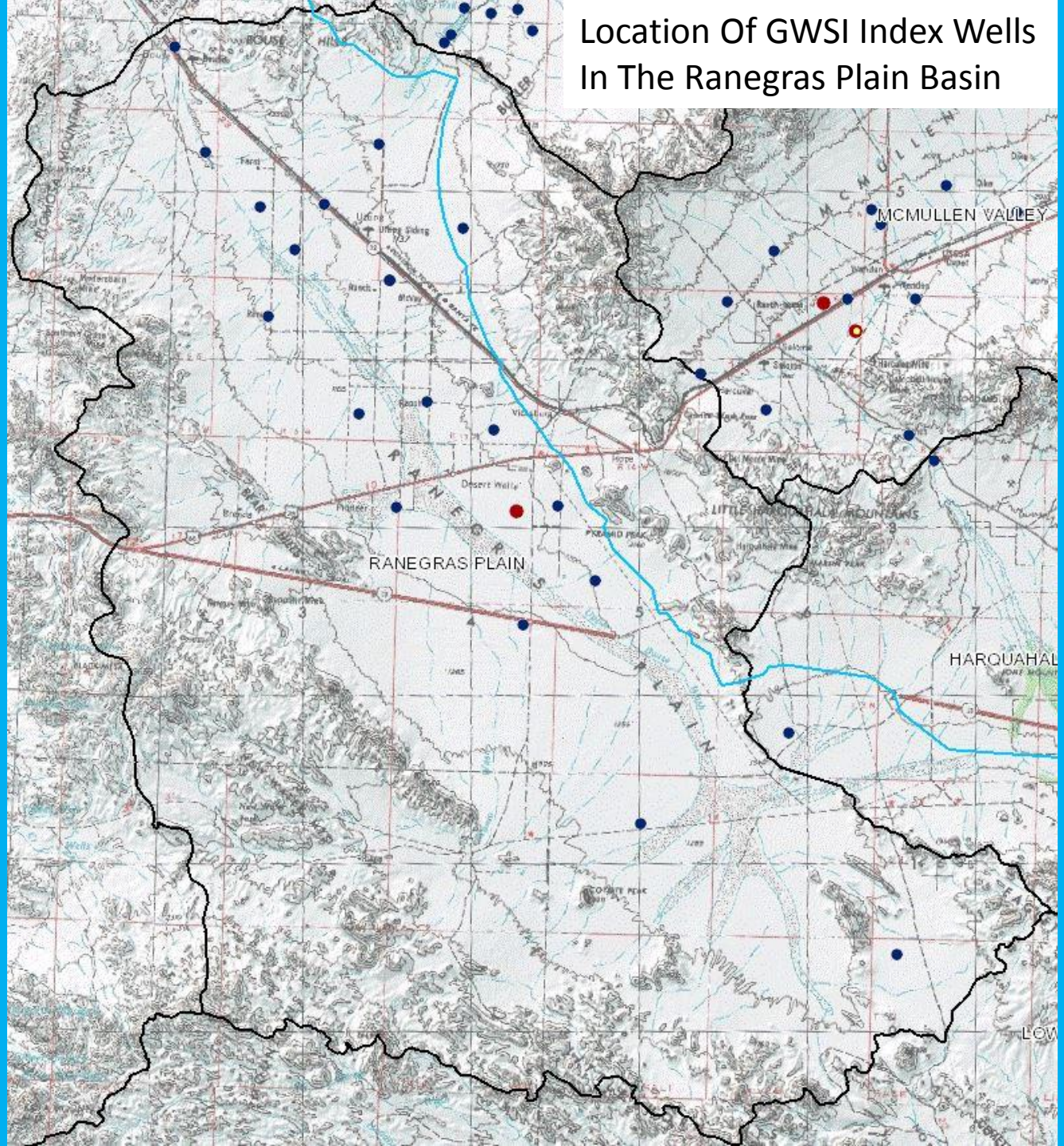
GWSI Water Level Measurements In West Basins Planning Area

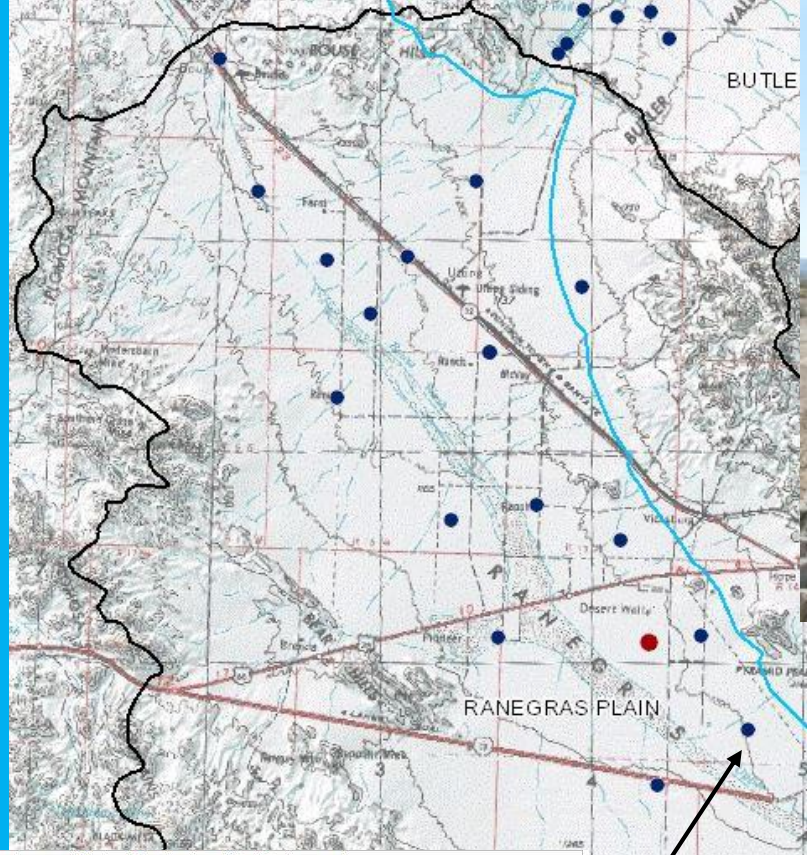
Year	Butler Valley	Harquahala INA	McMullen Valley	Ranegras Plain	Tiger Wash	Year	Butler Valley	Harquahala INA	McMullen Valley	Ranegras Plain	Tiger Wash
1917		2				1979	2	147	8	6	1
1929			1			1980	2	20	130	5	2
1942			1			1981	3	40	6	6	
1943			2			1982	3		19	8	
1945			9	18		1983	3	21	31	18	2
1946		4	11	16		1984	25	132	21	26	
1947		2		6		1985	33	22	139	12	
1948	1	5	3	44		1986	51	56	35	12	
1949		4	5	13		1987	65	54	24	13	
1950		1	3	8		1988	35	197	26	194	3
1951		4	23	18		1989	36	117	195	36	2
1952		10	5	10		1990		8	15	5	
1953		5	11	18		1991	40	83	53	39	1
1954		12	4	10		1992	15	45	41	23	2
1955		17	7	9		1993	16	220	36	167	3
1956		3	17	11		1994	14	64	195	22	2
1957		30	99	14		1995	25	40	31	21	2
1958		24	113	12		1996	16	40	50	22	1
1959		17	24	8		1997	18	51	31	22	3
1960		11	10	9		1998	18	185	47	164	4
1961		17	10	6		1999	17	41	30	23	2
1962		17	13	9		2000	17	36	27	22	1
1963		148	34	21		2001	16	41	27	16	1
1964	1	4	3	1		2002	20	39	25	26	1
1965	1	18	133	10		2003	16	37	30	22	1
1966	1	115	3	10		2004	36	207	138	169	6
1967	5	32	22	47		2005	14	38	34	25	4
1968	3	23	30	18		2006	12	36	27	22	2
1969	2	21	22	14		2007	26	34	37	22	5
1970	2	18	17	12		2008	10	21	26	11	1
1971	3	111	28	12		2009	12	34	29	16	1
1972	4	5	11	12		2010	12	34	24	19	1
1973	3	24	65	8		2011	12	37	28	19	1
1974	16	100		32		2012	10	36	26	19	2
1975	14	51	10	42		2013	17	36	39	19	2
1976	3	12	38	6		2014	13	38	29	21	2
1977	2	15	36	5		2015	12	36	33	22	1
1978	2	102	9	3		Total	755	3,307	2,574	1,806	62

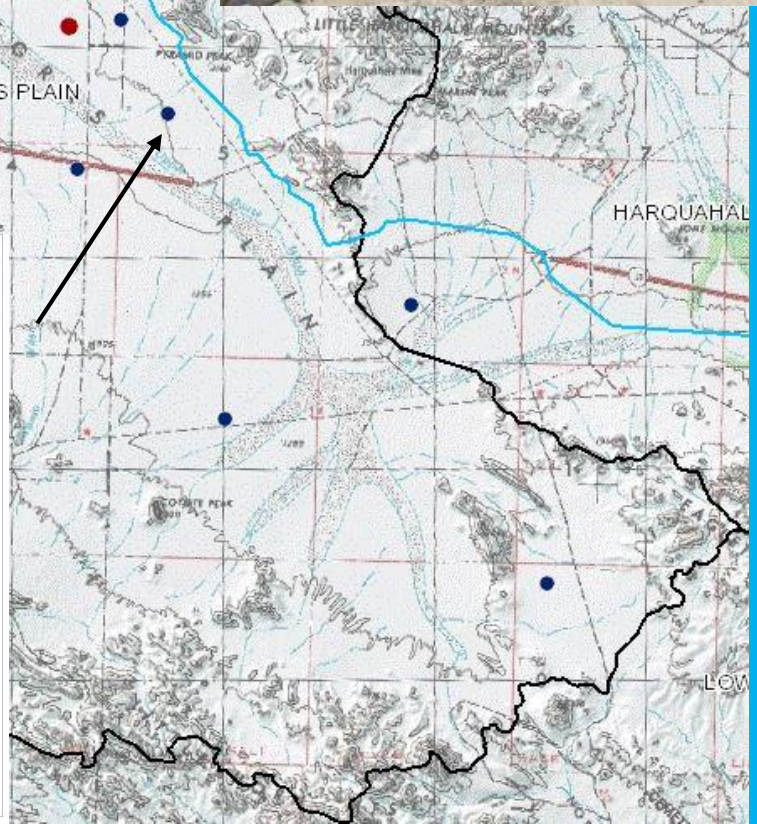
Water Level Change Statistics For GWSI Wells In Ranegras Plain

Water Level Change Data For GWSI Wells In The Ranegras Plain Basin (1948 - 2015) (Units of Water Level Change = Feet)									
	1948 -1988 WL Change	1948-1988 Positive WL Change	1948-1988 Negative WL Change	1988 - 2004 WL Change	1988-2004 Positive WL Change	1988 - 2004 Negative WL Change	2004 - 2015 WL Change	2004-2015 Positive WL Change	2004-2015 Negative WL Change
Well Count	13	3	10	94	22	72	13	4	9
Average	-5.5	28.9	-15.8	-9.9	9.3	-15.7	-10.9	7.4	-19.1
Median	-11.3	20.0	-13.9	-6.1	4.1	-8.9	-3.9	2.1	-5.8
Min	-41.3	13.4	-41.3	-49.4	0.3	-49.4	-58.6	0.2	-58.6
Max	53.2	53.2	-2.2	102.3	102.3	-0.1	25.4	25.4	-3.1

Location Of GWSI Index Wells In The Ranegras Plain Basin

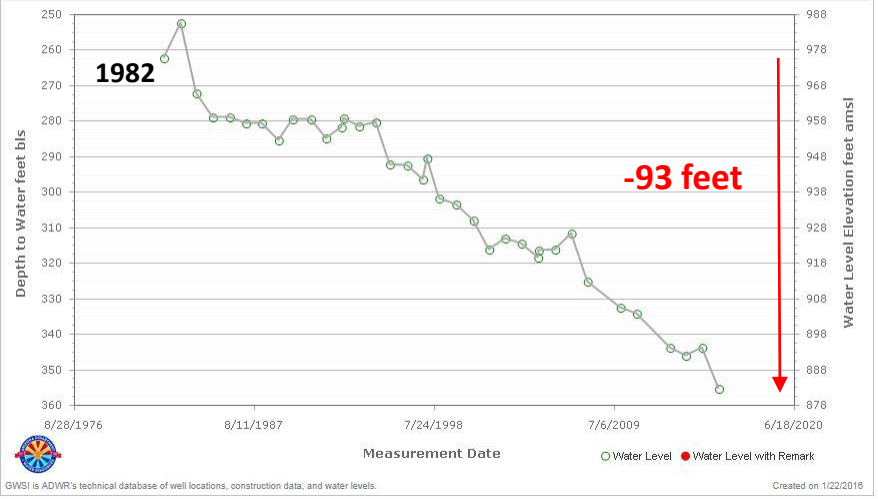


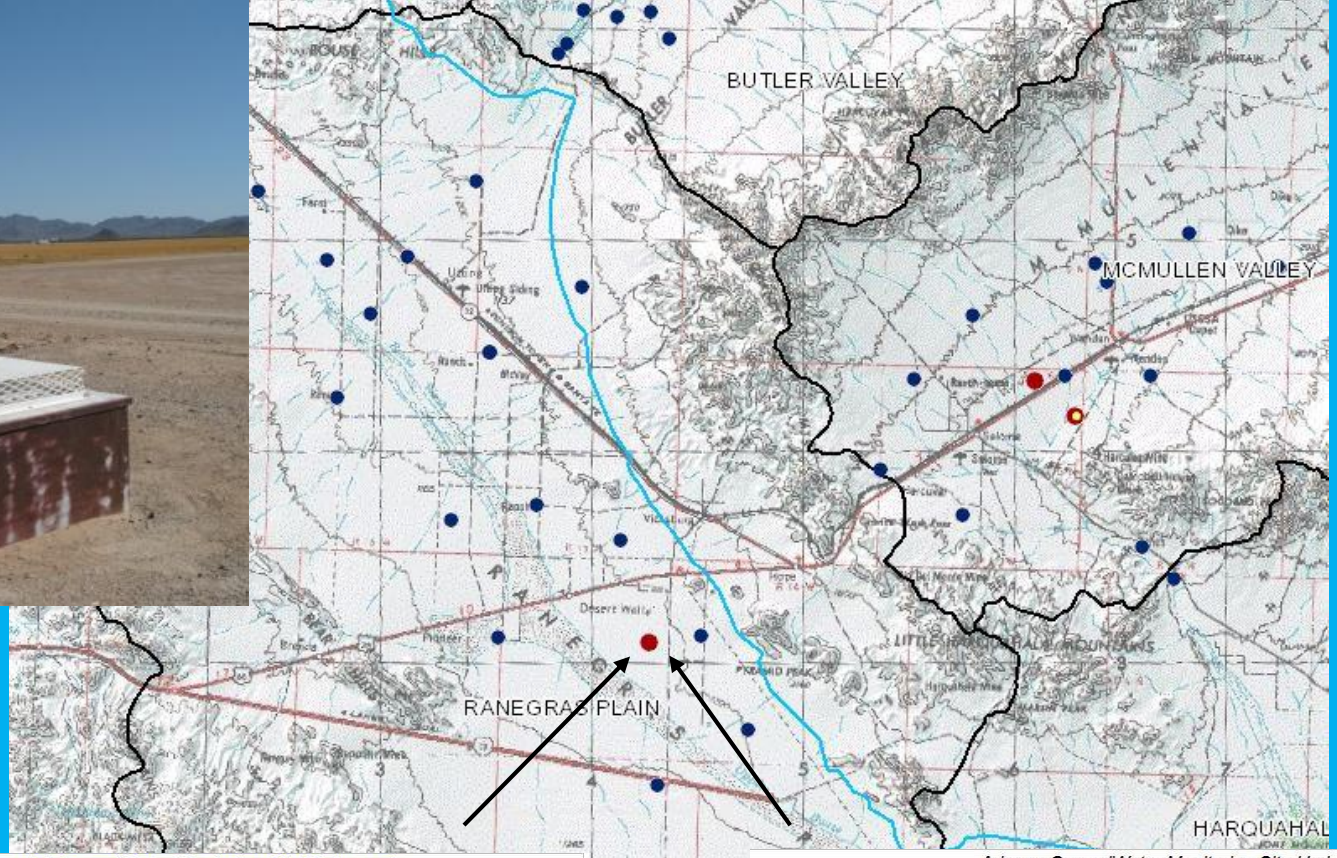


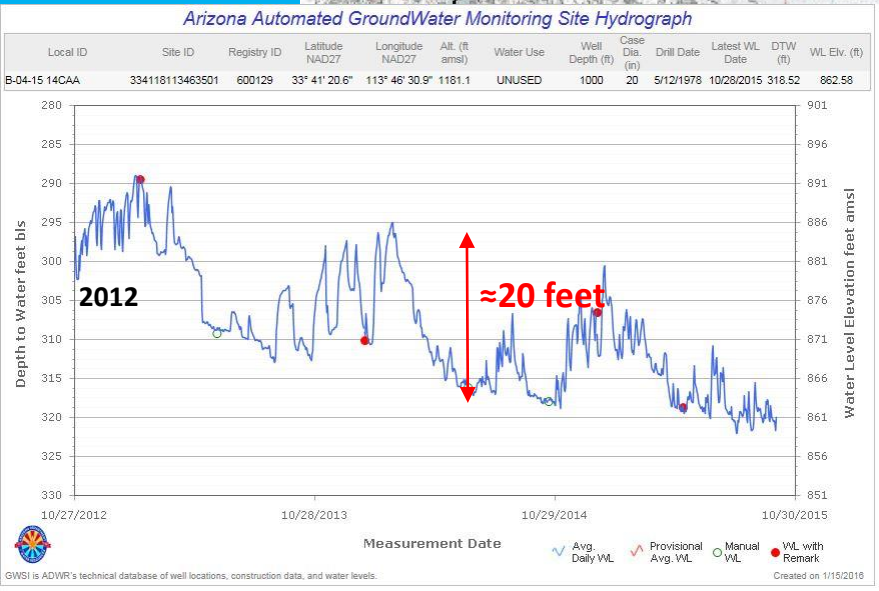


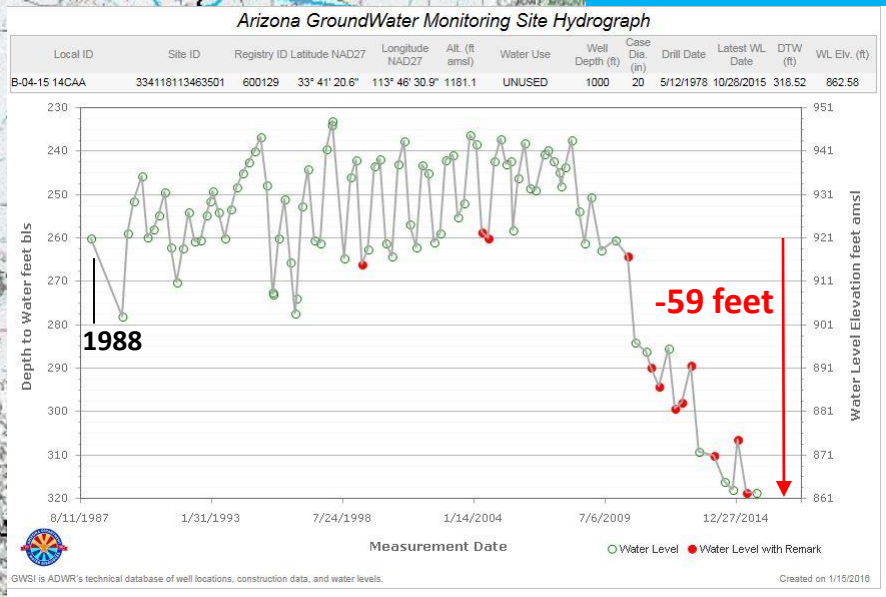
Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elev. (ft)
B-04-14 32BAA	333910113432801	600131	33° 39' 10.4"	113° 43' 27.6"	1238	IRRIGATION	905	20	9/22/1978	11/2/2015	355.3	882.7




BUTLER VALLEY
MCMULLEN VALLEY
RANEGRASS PLAIN
HARQUAHAL


Arizona Automated GroundWater Monitoring Site Hydrograph
Local ID | Site ID | Registry ID | Latitude NAD27 | Longitude NAD27 | Alt. (ft amsl) | Water Use | Well Depth (ft) | Case Dia. (in) | Drill Date | Latest WL Date | DTW (ft) | WL Elv. (ft)
B-04-15 14CAA | 334118113463501 | 600129 | 33° 41' 20.6" | 113° 46' 30.9" | 1181.1 | UNUSED | 1000 | 20 | 5/12/1978 | 10/28/2015 | 318.52 | 862.58
Depth to Water feet bls
Water Level Elevation feet amsl
2012
≈20 feet
10/27/2012
10/28/2013
10/29/2014
10/30/2015
Measurement Date
Avg. Daily WL
Provisional Avg. WL
Manual WL
WL with Remark
GWSI is ADWR's technical database of well locations, construction data, and water levels.
Created on 1/15/2016


Arizona GroundWater Monitoring Site Hydrograph
Local ID | Site ID | Registry ID | Latitude NAD27 | Longitude NAD27 | Alt. (ft amsl) | Water Use | Well Depth (ft) | Case Dia. (in) | Drill Date | Latest WL Date | DTW (ft) | WL Elv. (ft)
B-04-15 14CAA | 334118113463501 | 600129 | 33° 41' 20.6" | 113° 46' 30.9" | 1181.1 | UNUSED | 1000 | 20 | 5/12/1978 | 10/28/2015 | 318.52 | 862.58
Depth to Water feet bls
Water Level Elevation feet amsl
1988
-59 feet
8/11/1987
1/31/1993
7/24/1998
1/14/2004
7/6/2009
12/27/2014
Measurement Date
Water Level
Water Level with Remark
GWSI is ADWR's technical database of well locations, construction data, and water levels.
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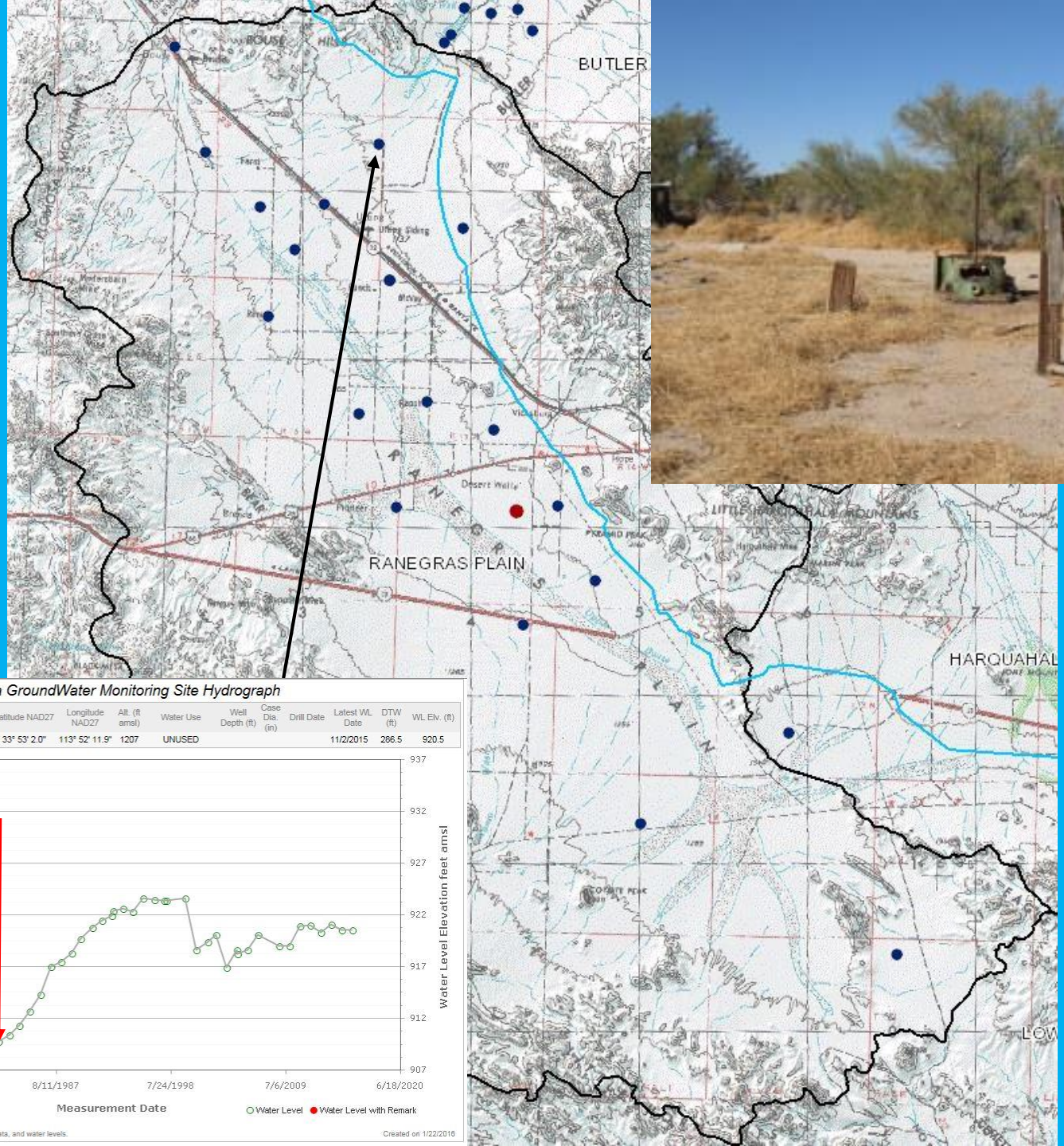
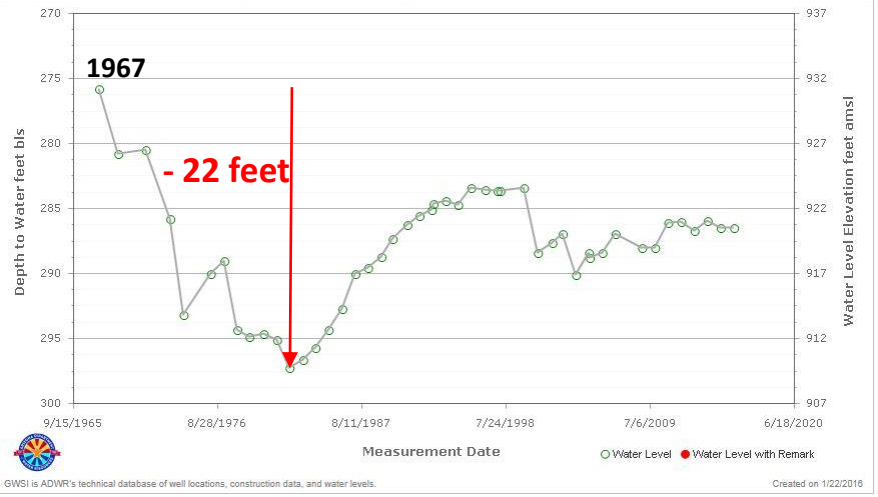
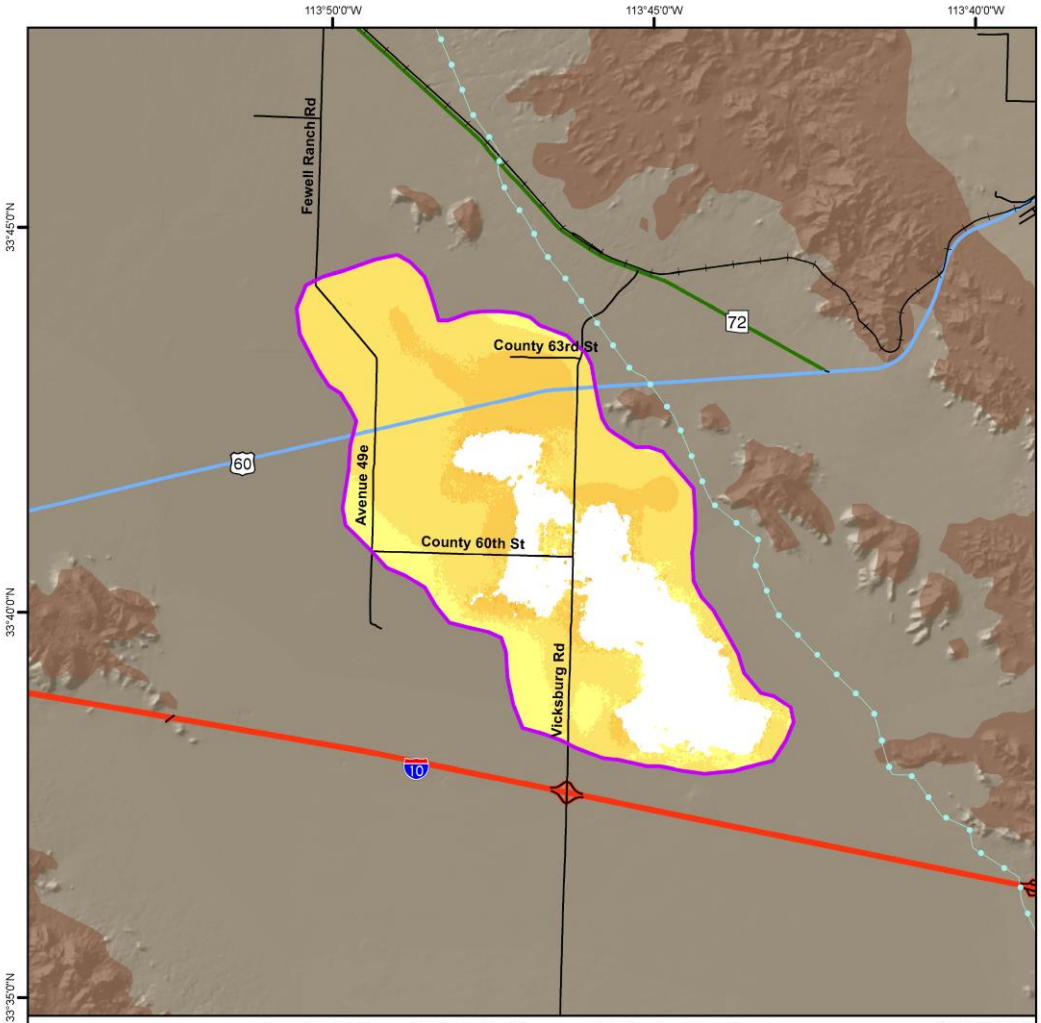


Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elev. (ft)
B-06-16 12AAA	335257113520601	613120	33° 53' 2.0"	113° 52' 11.9"	1207	UNUSED				11/2/2015	286.5	920.5





Land Subsidence Rate in the Ranegras Valley, La Paz County
Based on Radarsat-2 Satellite Interferometric Synthetic Aperture Radar (InSAR) Data
Time Period of Analysis: 1.0 Years 03/17/2014 To 04/05/2015

© MDA 2014 - 2015

Explanation

03/17/2014 To 04/05/2015

Land Subsidence Rate

- Decorrelation/No Data
- Greater 7 cm/yr (2.8 in/yr)
- 5 - 7 cm/yr (2.0 - 2.8 in/yr)
- 3 - 5 cm/yr (1.2 - 2.0 in/yr)
- 2 - 3 cm/yr (0.8 - 1.2 in/yr)
- 1 - 2 cm/yr (0.4 - 0.8 in/yr)
- 0.5 - 1 cm/yr (0.2 - 0.4 in/yr)
- 0 - 0.5 cm/yr (0 - 0.2 in/yr)

- Subsidence Feature
- Hardrock
- CAP Canal

Highways and Interstates

- Interstate
- US
- State
- Roads
- Railway

1:125,000

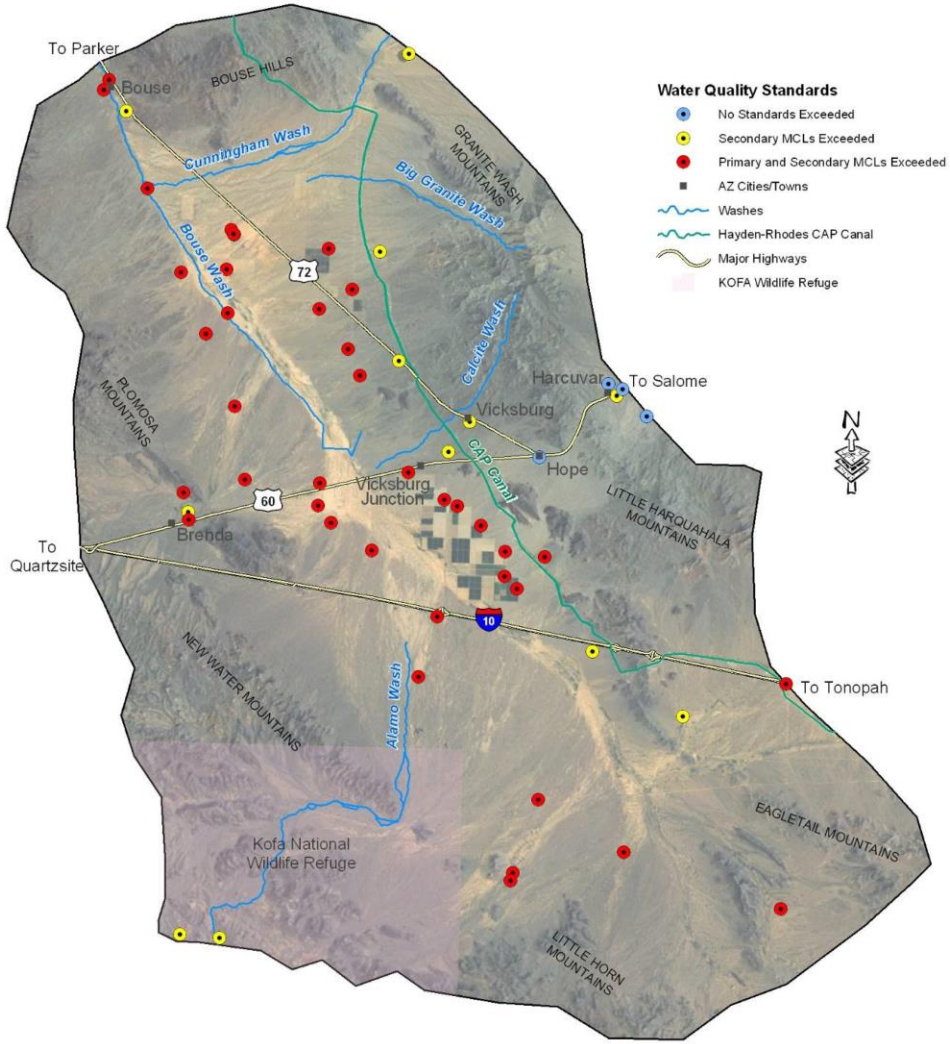
0 0.5 1 2 3 4 Miles

Arizona

Decorrelation (white areas) are areas where the phase of the received satellite signal changed between satellite passes, causing the data to be unusable. This occurs in areas where the land surface has been disturbed (i.e. bodies of water, snow, agriculture areas, areas of development, etc).

Coordinate System: NAD 1983 UTM Zone 12N
Projection: Transverse Mercator
Datum: North American 1983
Units: Meter
Created: 4/8/2015

Map 3 - Water Quality Standards

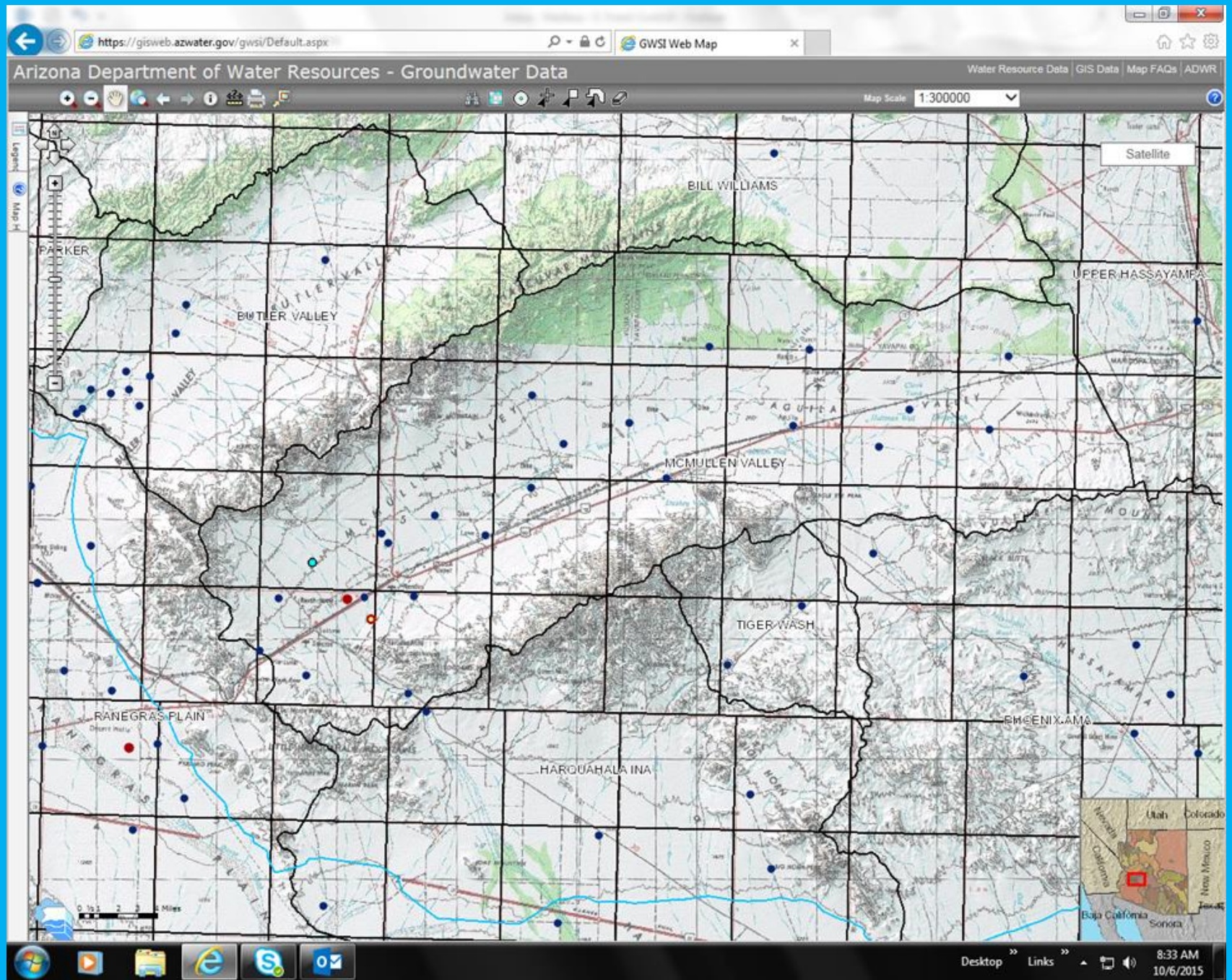


ADEQ Arizona Department of Environmental Quality

This map is for general reference only and may not be all inclusive. ADEQ program's data collection efforts are ongoing. More detailed information and specific locations can be obtained by contacting the Arizona Department of Environmental Quality.

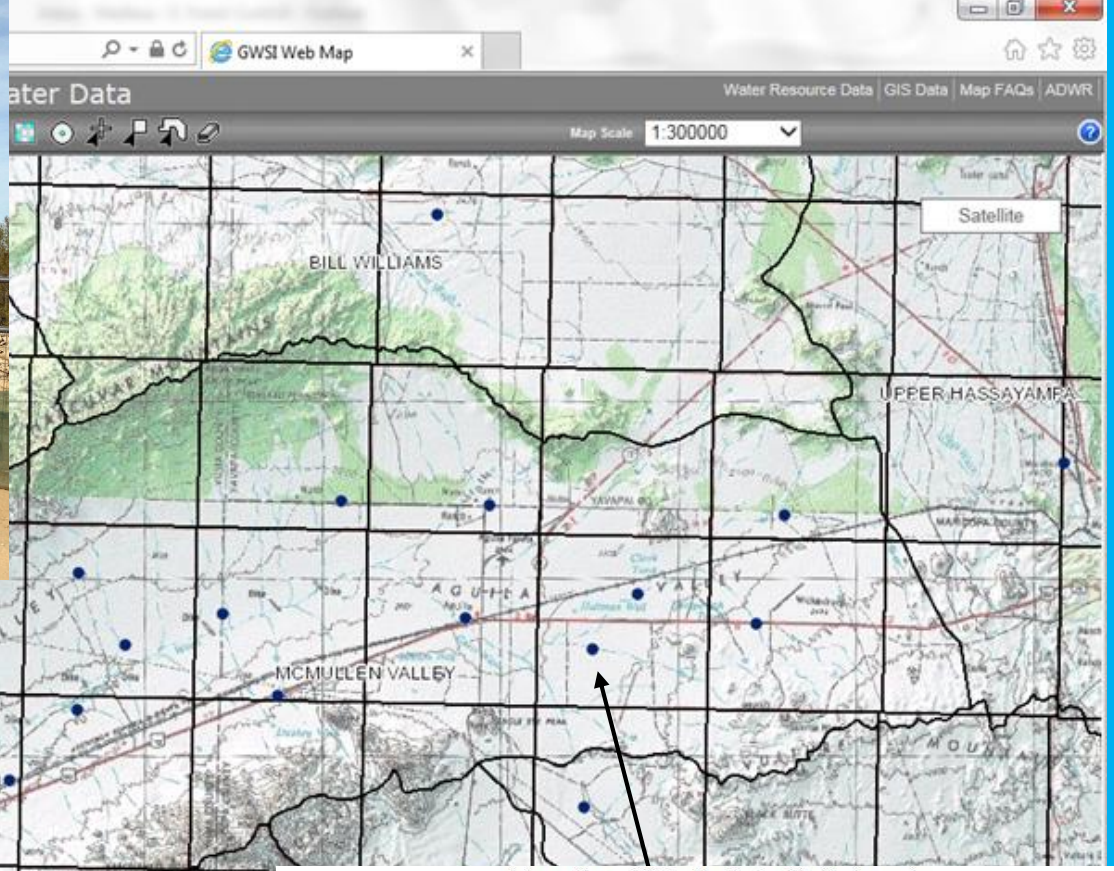
Name: Ranegras_WQ_map3

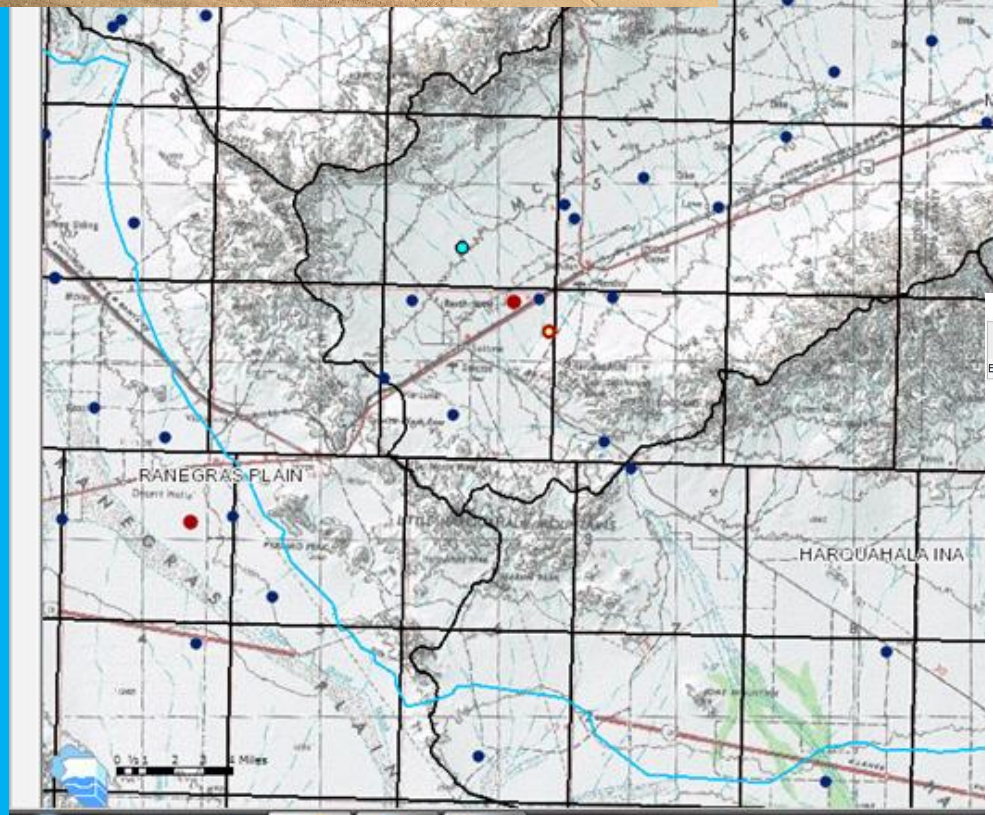
Locations of Groundwater Site Inventory (GWSI) Index wells in the McMullen Valley Basin



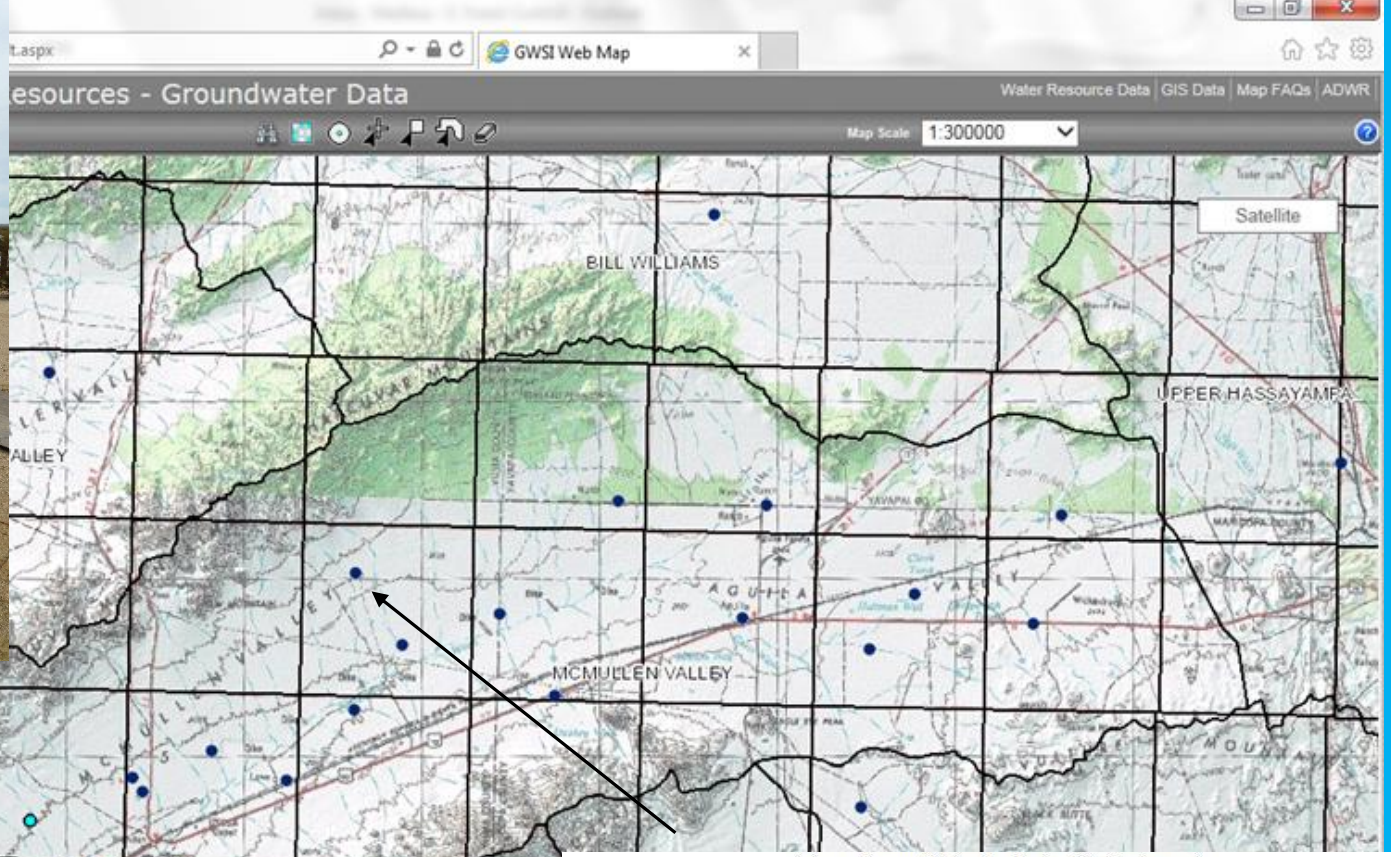
Water Level Change Statistics For GWSI Wells In McMullen Valley Basin

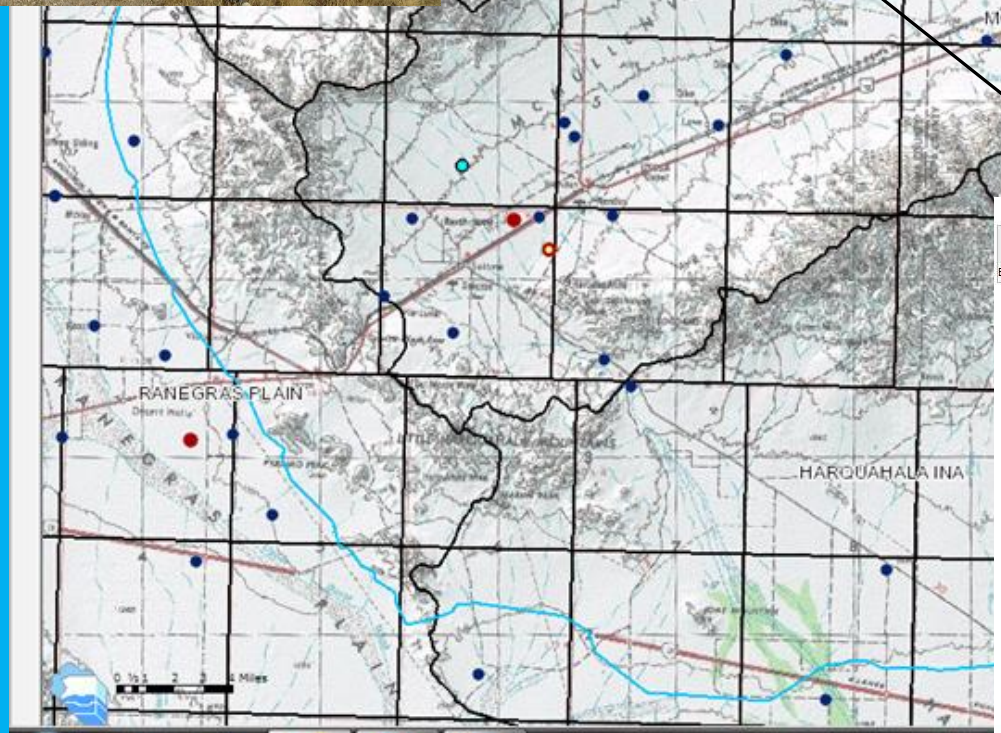
GWSI Water Level Change Data For The McMullen Valley Basin (1958 - 2015) (Units of WL Change = Feet)									
	1958 - 1989 WL Change	1958-1989 Positive WL Change	1958-1989 Negative WL Change	1989 - 2004 WL Change	1989-2004 Positive WL Change	1989-2004 Negative WL Change	2004 - 2015 WL Change	2004-2015 Positive WL Change	2004-2015 Negative WL Change
Well Count	33	0	33	84	4	80	15	4	11
Average	-166.2		-166.2	-34.2	5.4	-36.2	-12.4	19.4	-23.9
Median	-184.0		-184.0	-32.6	5.1	-33.3	-11.9	3.3	-16.7
Min	-284.4		-284.4	-141.0	2.2	-141.0	-81.9	1.1	-81.9
Max	-2.3		-2.3	9.2	9.2	-0.2	69.8	69.8	-9.1

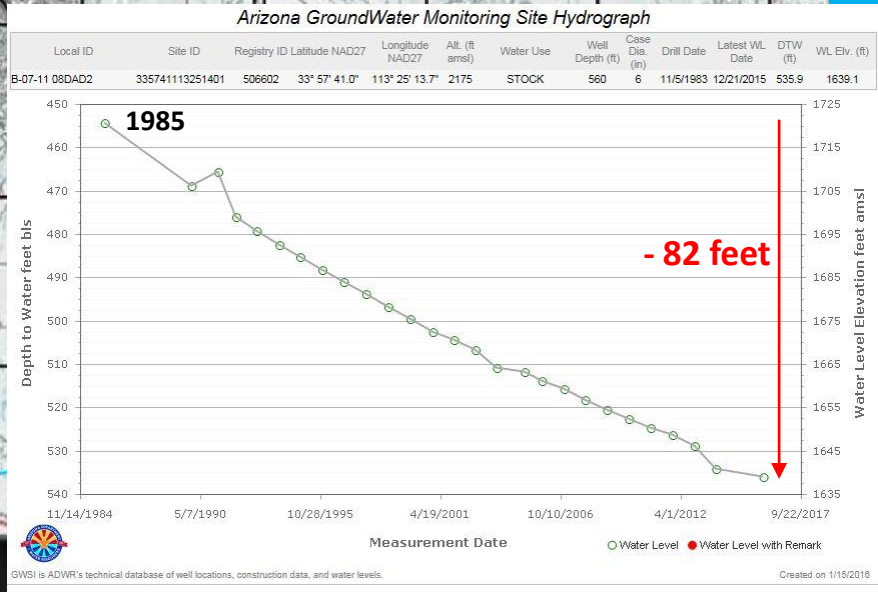

GWSI Web Map
ater Data
Water Resource Data
GIS Data
Map FAQs
ADWR
Map Scale
1:300000
Satellite
BILL WILLIAMS
UPPER HASSAYAMPA
MCMULLEN VALLEY


RANEGRAS PLAIN
HARQUAHALA INA

Arizona GroundWater Monitoring Site Hydrograph
Local ID | Site ID | Registry ID | Latitude NAD27 | Longitude NAD27 | Alt. (ft amsl) | Water Use | Well Depth (ft) | Case Dia. (in) | Drill Date | Latest WL Date | DTW (ft) | WL Elv. (ft)
B-07-08 20DDD | 335545113062501 | | 33° 55' 43.1" | 113° 6' 23.9" | 2224 | UNUSED | 1000 | 20 | 8/1/1958 | 12/3/2015 | 684.3 | 1539.7
1958
- 272 feet
Depth to Water feet bls
400
500
600
700
Water Level Elevation feet amsl
1824
1724
1624
1524
10/3/1954
2/18/1982
7/6/2009
Measurement Date
Water Level
Water Level with Remark


GWSI Web Map
esources - Groundwater Data
Water Resource Data
GIS Data
Map FAQs
ADWR
Map Scale
1:300000
Satellite
BILL WILLIAMS
UPPER HASSAYAMPA
MCMULLEN VALLEY


RANEGRAS PLAIN
HARQUAHALA INA


Arizona GroundWater Monitoring Site Hydrograph
Local ID | Site ID | Registry ID | Latitude NAD27 | Longitude NAD27 | Alt. (ft amsl) | Water Use | Well Depth (ft) | Case Dia. (in) | Drill Date | Latest WL Date | DTW (ft) | WL Elv. (ft)
B-07-11 08DAD2 | 335741113251401 | 506602 | 33° 57' 41.0" | 113° 25' 13.7" | 2175 | STOCK | 560 | 6 | 11/5/1983 | 12/21/2015 | 535.9 | 1639.1
1985
- 82 feet
Depth to Water feet bls
Water Level Elevation feet amsl
450
460
470
480
490
500
510
520
530
540
1725
1715
1705
1695
1685
1675
1665
1655
1645
1635
11/14/1984
5/7/1990
10/28/1995
4/19/2001
10/10/2006
4/1/2012
9/22/2017
Measurement Date
Water Level
Water Level with Remark
GWSI is ADWR's technical database of well locations, construction data, and water levels.
Created on 1/15/2016

https://gisweb.azwater.gov/gwsi/Default.aspx

GWSI Web Map

Arizona Department of Water Resources - Groundwater Data

Water Resource Data | GIS Data | Map FAQs | ADWR

Map Scale 1:300000

Satellite

BILL WILLIAMS

PARKER

BUTLER VALLEY

UPPER HASSAYAMPA

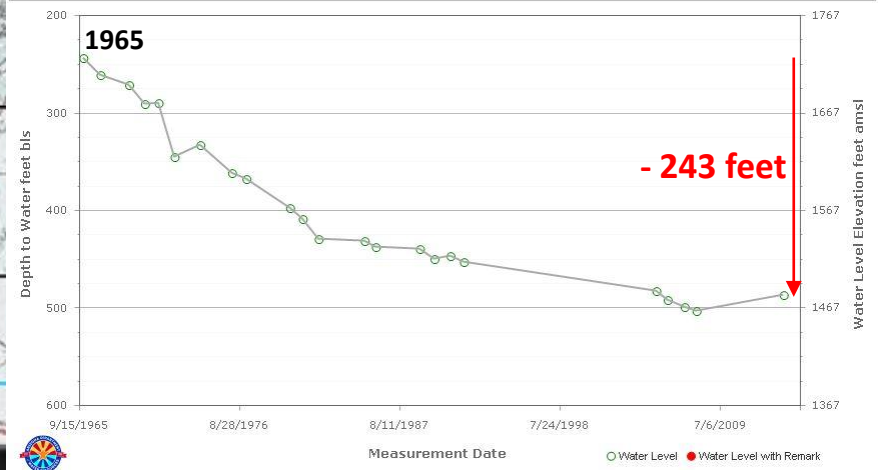
MCMULLEN VALLEY

RANEGRAS PLAIN

HARQUAHALA INA

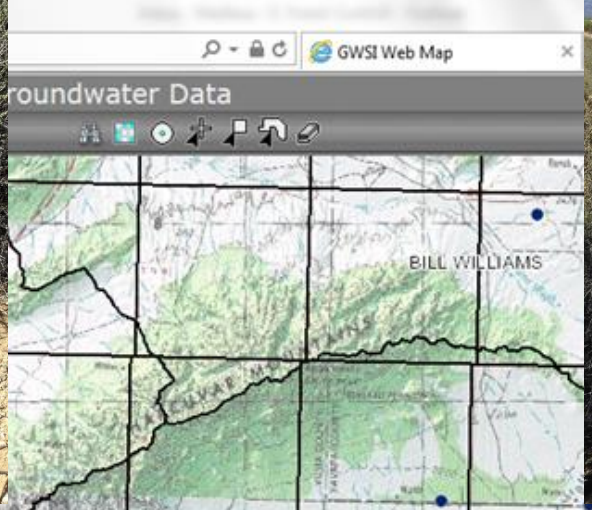
Arizona GroundWater Monitoring Site Hydrograph

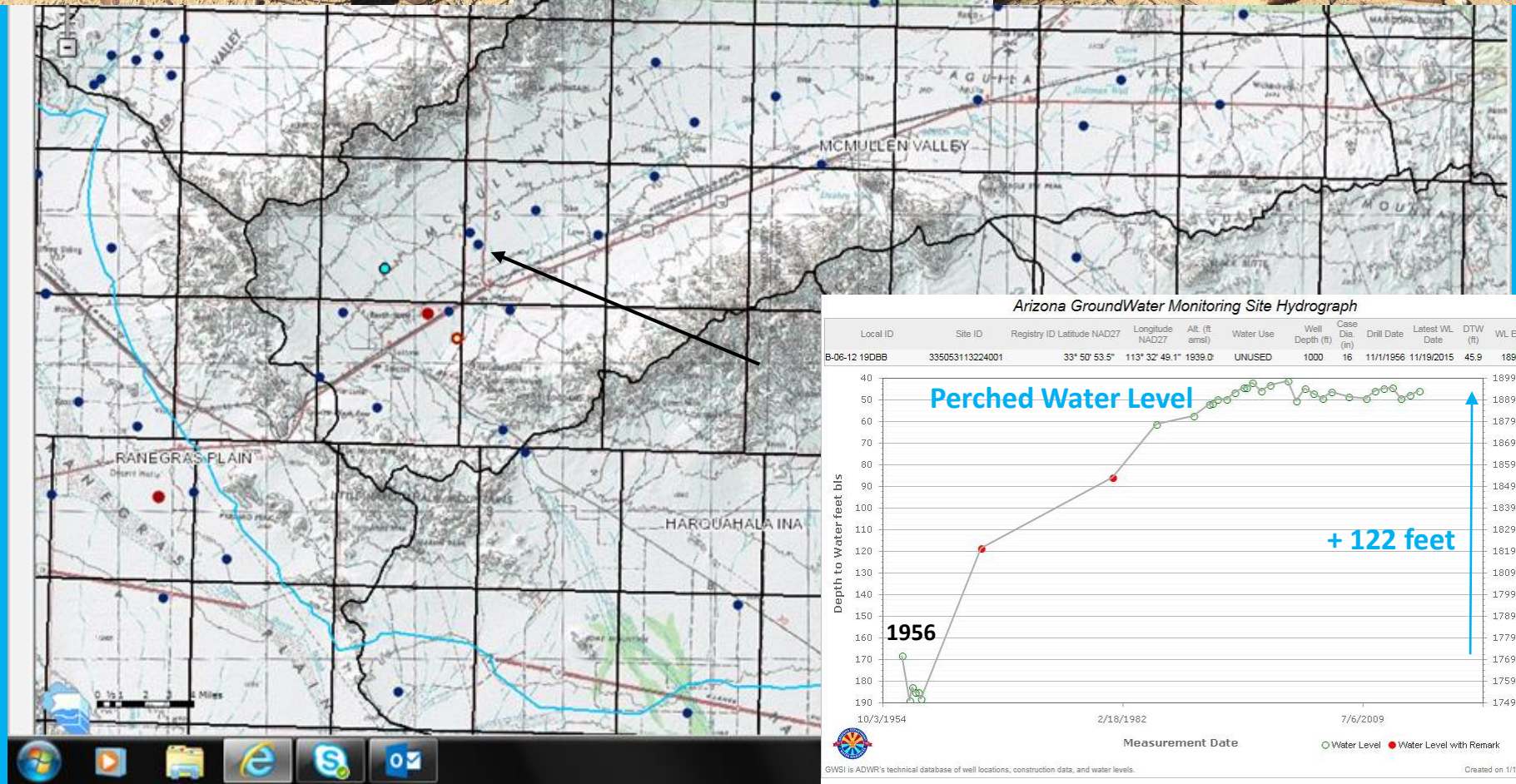
Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-06-12 19BBA	335119113331201		33° 51' 20.1"	113° 33' 11.0"	1967	UNUSED	970	16	6/27/1954	10/21/2013	485.7	1481.3



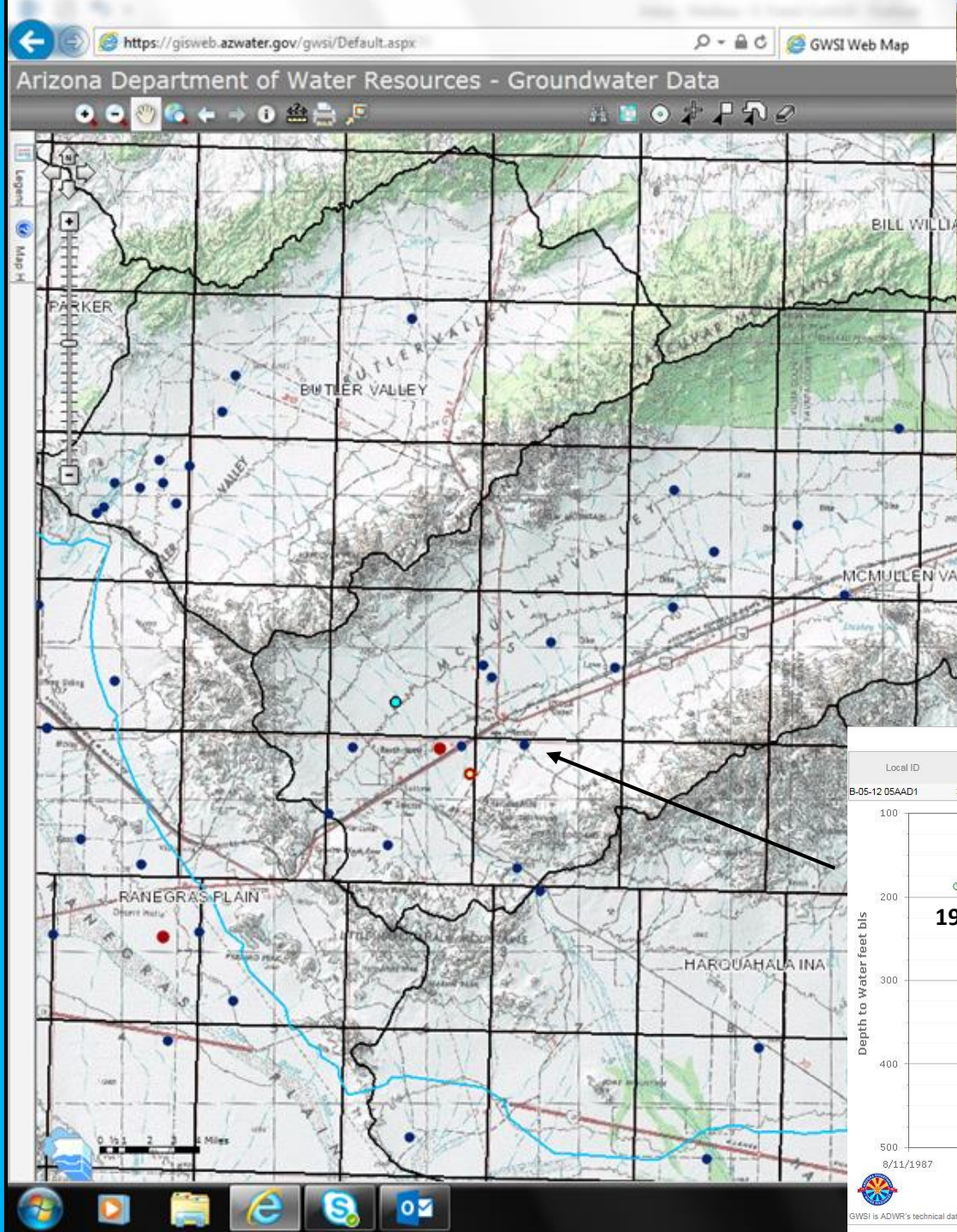
GWSI is ADWR's technical database of well locations, construction data, and water levels.

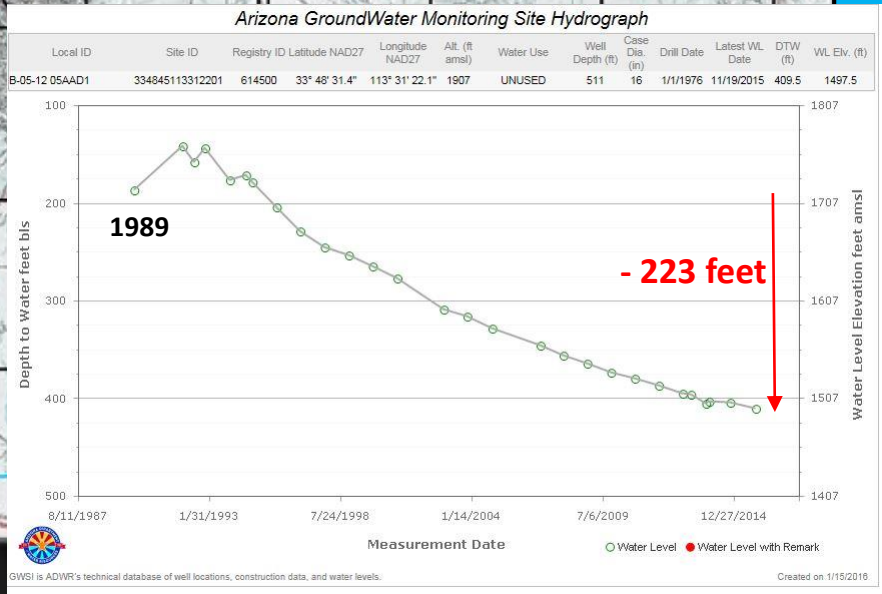
Created on 1/15/2016

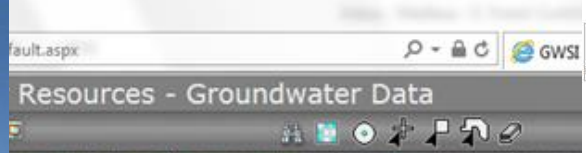

GWSI Web Map
roundwater Data
BILL WILLIAMS

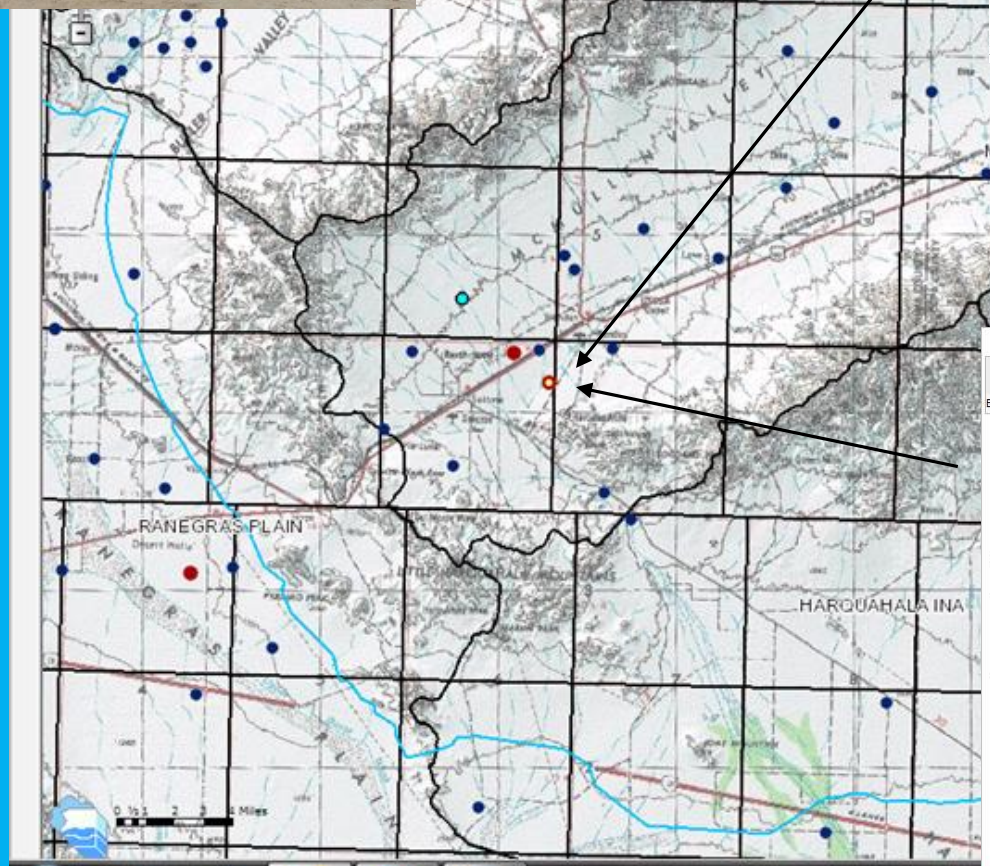

MCMULLEN VALLEY
RANEGRAS PLAIN
HARQUAHALA INA

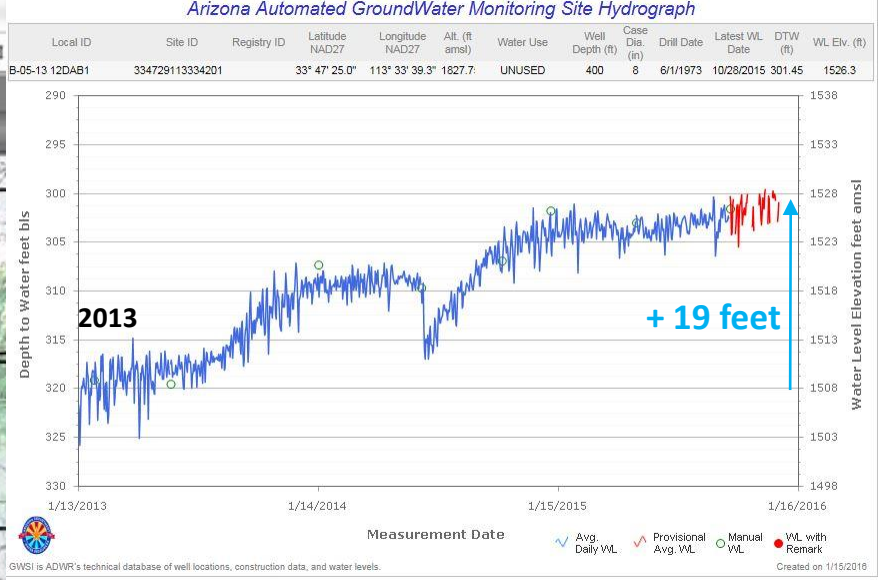
Arizona GroundWater Monitoring Site Hydrograph
Local ID | Site ID | Registry ID | Latitude NAD27 | Longitude NAD27 | Alt. (ft amsl) | Water Use | Well Depth (ft) | Case Dia. (in) | Drill Date | Latest WL Date | DTW (ft) | WL Elev. (ft)
B-06-12 19DBB | 335053113224001 | | 33° 50' 53.5" | 113° 32' 49.1" | 1939.0' | UNUSED | 1000 | 16 | 11/1/1956 | 11/19/2015 | 45.9 | 1893.19
Perched Water Level
+ 122 feet
1956
Depth to Water feet bls
Water Level Elevation feet amsl
10/3/1954
2/18/1982
7/6/2009
Measurement Date
Water Level
Water Level with Remark
GWSI is ADWR's technical database of well locations, construction data, and water levels.
Created on 1/15/2016

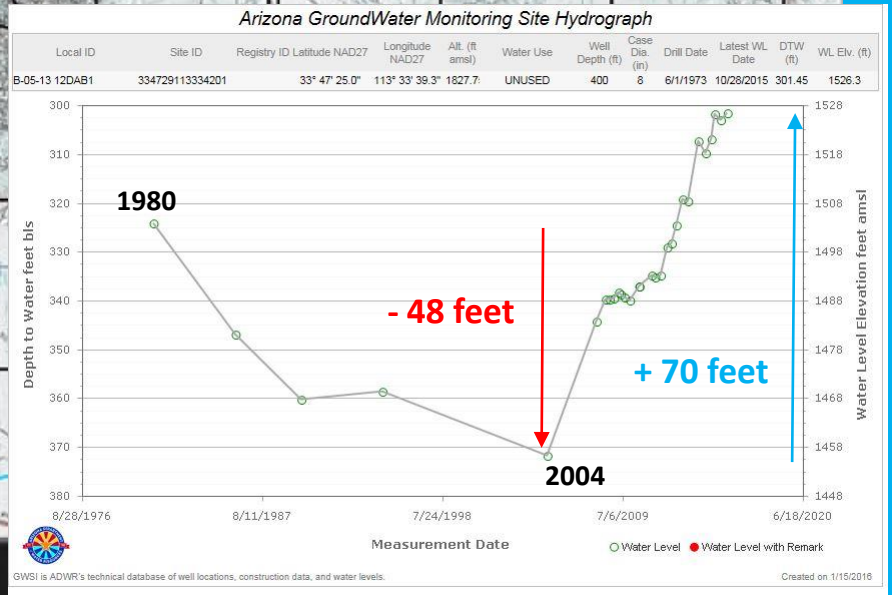

https://gisweb.azwater.gov/gwsi/Default.aspx
GWSI Web Map
Arizona Department of Water Resources - Groundwater Data
PARKER
BUTLER VALLEY
MCMULLEN VALLEY
RANEGRAS PLAIN
HARQUAHALA INA

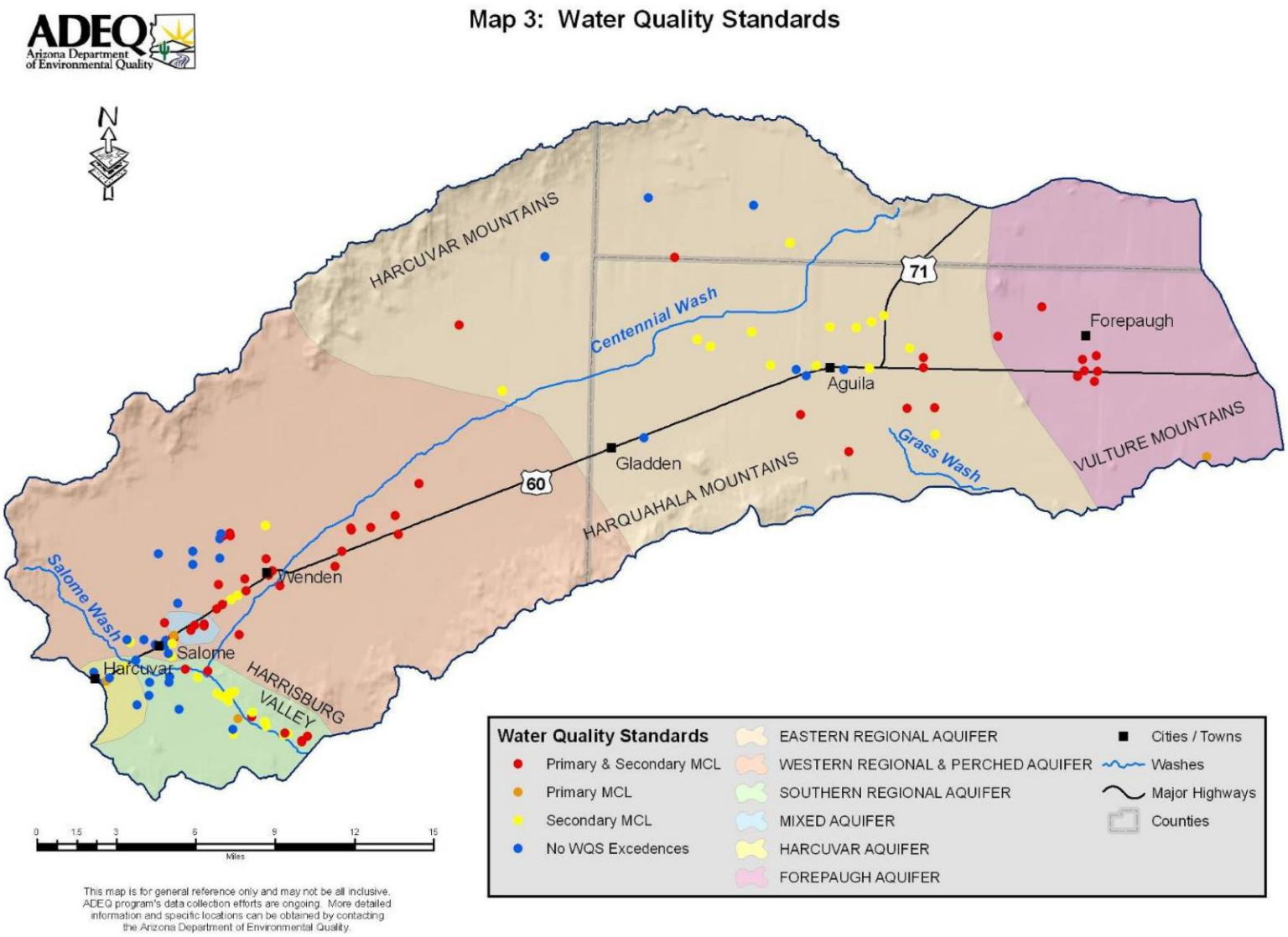

Arizona GroundWater Monitoring Site Hydrograph
Local ID | Site ID | Registry ID | Latitude NAD27 | Longitude NAD27 | Alt. (ft amsl) | Water Use | Well Depth (ft) | Case Dia. (in) | Drill Date | Latest WL Date | DTW (ft) | WL Elv. (ft)
B-05-12 05AAD1 | 334845113312201 | 614500 | 33° 48' 31.4" | 113° 31' 22.1" | 1907 | UNUSED | 511 | 16 | 1/1/1976 | 11/19/2015 | 409.5 | 1497.5
1989
- 223 feet
Depth to Water feet bls
Water Level Elevation feet amsl
100
200
300
400
500
1807
1707
1607
1507
1407
8/11/1987
1/31/1993
7/24/1998
1/14/2004
7/6/2009
12/27/2014
Measurement Date
Water Level
Water Level with Remark
GWSI is ADWR's technical database of well locations, construction data, and water levels.
Created on 1/15/2016

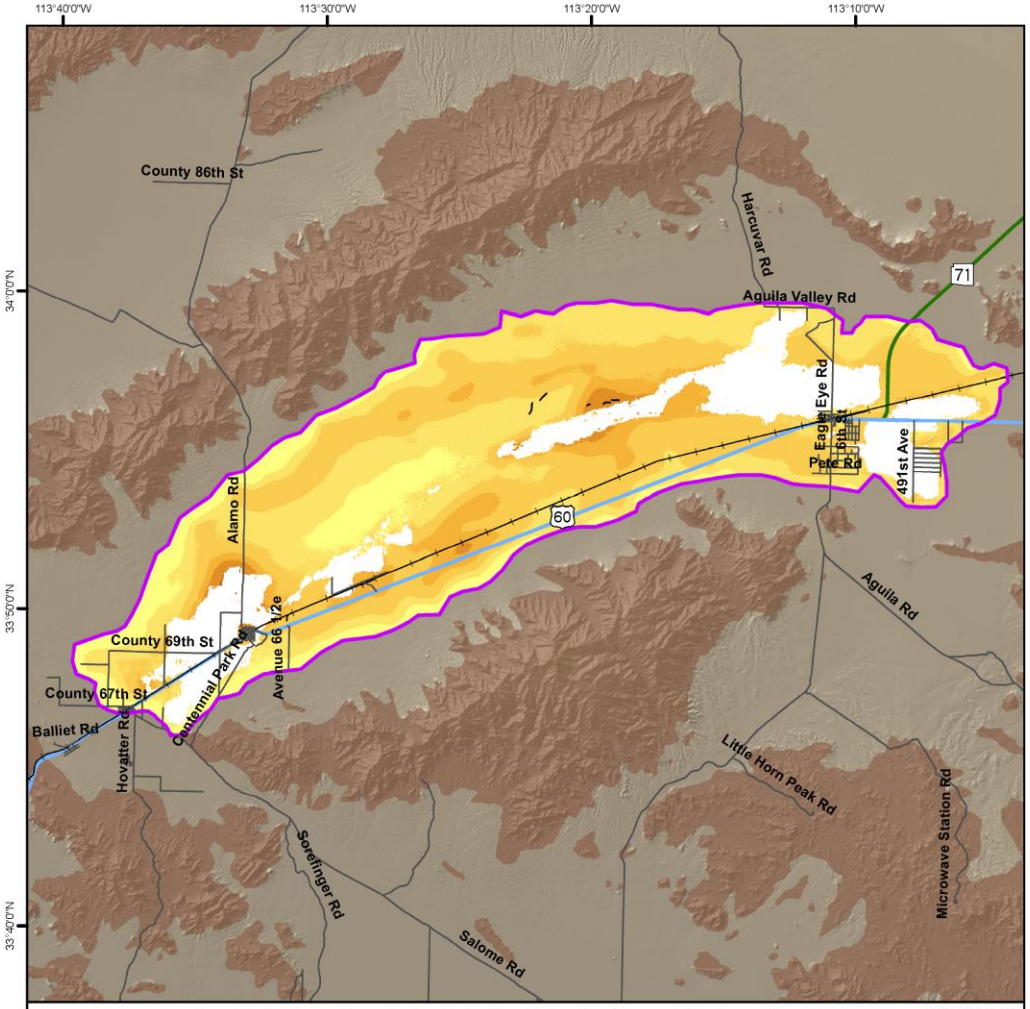

fault.aspx
GWSI
Resources - Groundwater Data


MCMULLEN VALLEY
RANEGRAS PLAIN
HARQUAHALA INA
Miles


Arizona Automated GroundWater Monitoring Site Hydrograph
Local ID | Site ID | Registry ID | Latitude NAD27 | Longitude NAD27 | Alt. (ft amsl) | Water Use | Well Depth (ft) | Case Dia. (in) | Drill Date | Latest WL Date | DTW (ft) | WL Elv. (ft)
B-05-13 12DAB1 | 334729113334201 | | 33° 47' 25.0" | 113° 33' 39.3" | 1827.7 | UNUSED | 400 | 8 | 6/1/1973 | 10/28/2015 | 301.45 | 1526.3
Depth to Water feet bls
Water Level Elevation feet amsl
2013
+ 19 feet
1/13/2013
1/14/2014
1/15/2015
1/16/2016
Measurement Date
Avg. Daily WL
Provisional Avg. WL
Manual WL
WL with Remark
GWSI is ADWR's technical database of well locations, construction data, and water levels.
Created on 1/15/2016


Arizona GroundWater Monitoring Site Hydrograph
Local ID | Site ID | Registry ID | Latitude NAD27 | Longitude NAD27 | Alt. (ft amsl) | Water Use | Well Depth (ft) | Case Dia. (in) | Drill Date | Latest WL Date | DTW (ft) | WL Elv. (ft)
B-05-13 12DAB1 | 334729113334201 | | 33° 47' 25.0" | 113° 33' 39.3" | 1827.7 | UNUSED | 400 | 8 | 6/1/1973 | 10/28/2015 | 301.45 | 1526.3
Depth to Water feet bls
Water Level Elevation feet amsl
1980
- 48 feet
+ 70 feet
2004
8/28/1976
8/11/1987
7/24/1998
7/6/2009
6/18/2020
Measurement Date
Water Level
Water Level with Remark
GWSI is ADWR's technical database of well locations, construction data, and water levels.
Created on 1/15/2016


ADEQ
Arizona Department of Environmental Quality
Map 3: Water Quality Standards
N
HARCUVAR MOUNTAINS
Centennial Wash
71
Forepaugh
Aguila
Gladden
60
HARQUAHALA MOUNTAINS
Grass Wash
VULTURE MOUNTAINS
Wenden
Salome Wash
Salome
Harcuvar
HARRISBURG VALLEY
0 1.5 3 6 9 12 15
Miles
Water Quality Standards
Primary & Secondary MCL
Primary MCL
Secondary MCL
No WQS Excedences
EASTERN REGIONAL AQUIFER
WESTERN REGIONAL & PERCHED AQUIFER
SOUTHERN REGIONAL AQUIFER
MIXED AQUIFER
HARCUVAR AQUIFER
FOREPAUGH AQUIFER
Cities / Towns
Washes
Major Highways
Counties
This map is for general reference only and may not be all inclusive. ADEQ program's data collection efforts are ongoing. More detailed information and specific locations can be obtained by contacting the Arizona Department of Environmental Quality.



Land Subsidence Rate in the McMullen Valley, La Paz and Maricopa Counties
Based on Radarsat-2 Satellite Interferometric Synthetic Aperture Radar (InSAR) Data
Time Period of Analysis: 1.0 Years 03/17/2014 To 04/05/2015

© MDA 2014 - 2015

Explanation

03/17/2014 To 04/05/2015

Land Subsidence Rate

- Decorrelation/No Data
- Greater 7 cm/yr (2.8 in/yr)
- 5 - 7 cm/yr (2.0 - 2.8 in/yr)
- 3 - 5 cm/yr (1.2 - 2.0 in/yr)
- 2 - 3 cm/yr (0.8 - 1.2 in/yr)
- 1 - 2 cm/yr (0.4 - 0.8 in/yr)
- 0.5 - 1 cm/yr (0.2 - 0.4 in/yr)
- 0 - 0.5 cm/yr (0 - 0.2 in/yr)

- Subsidence Feature
- Hardrock
- Earth Fissures

Highways and Interstates

- Interstate
- US
- State
- Roads
- Railway

1:299,524

0 1.5 3 6 9 12 Miles

Decorrelation (white areas) are areas where the phase of the received satellite signal changed between satellite passes, causing the data to be unusable. This occurs in areas where the land surface has been disturbed (i.e. bodies of water, snow, agriculture areas, areas of development, etc).

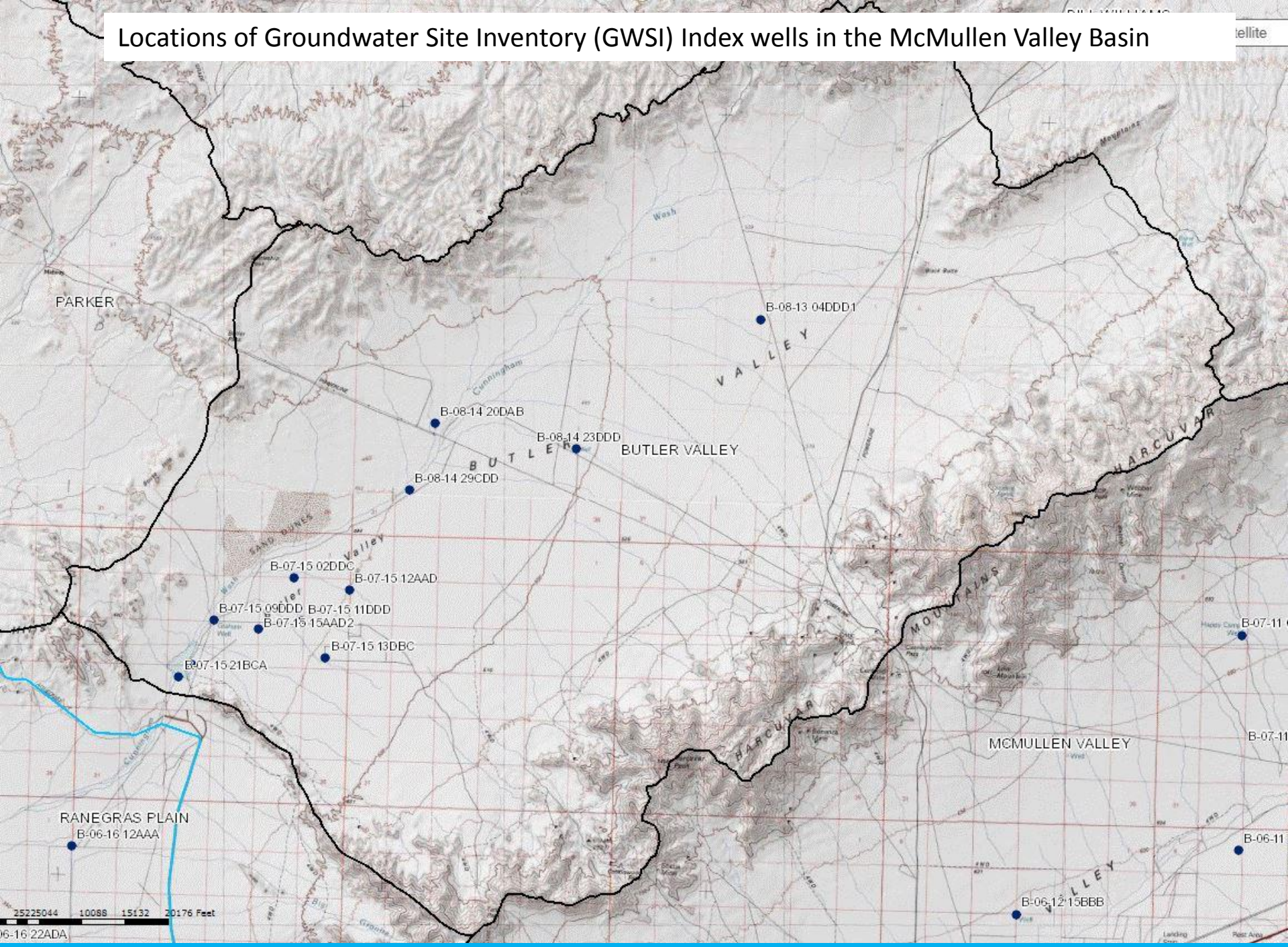
Earth fissures were mapped by the Arizona Geological Survey. For information on earth fissures visit: www.azgs.az.gov/EFC

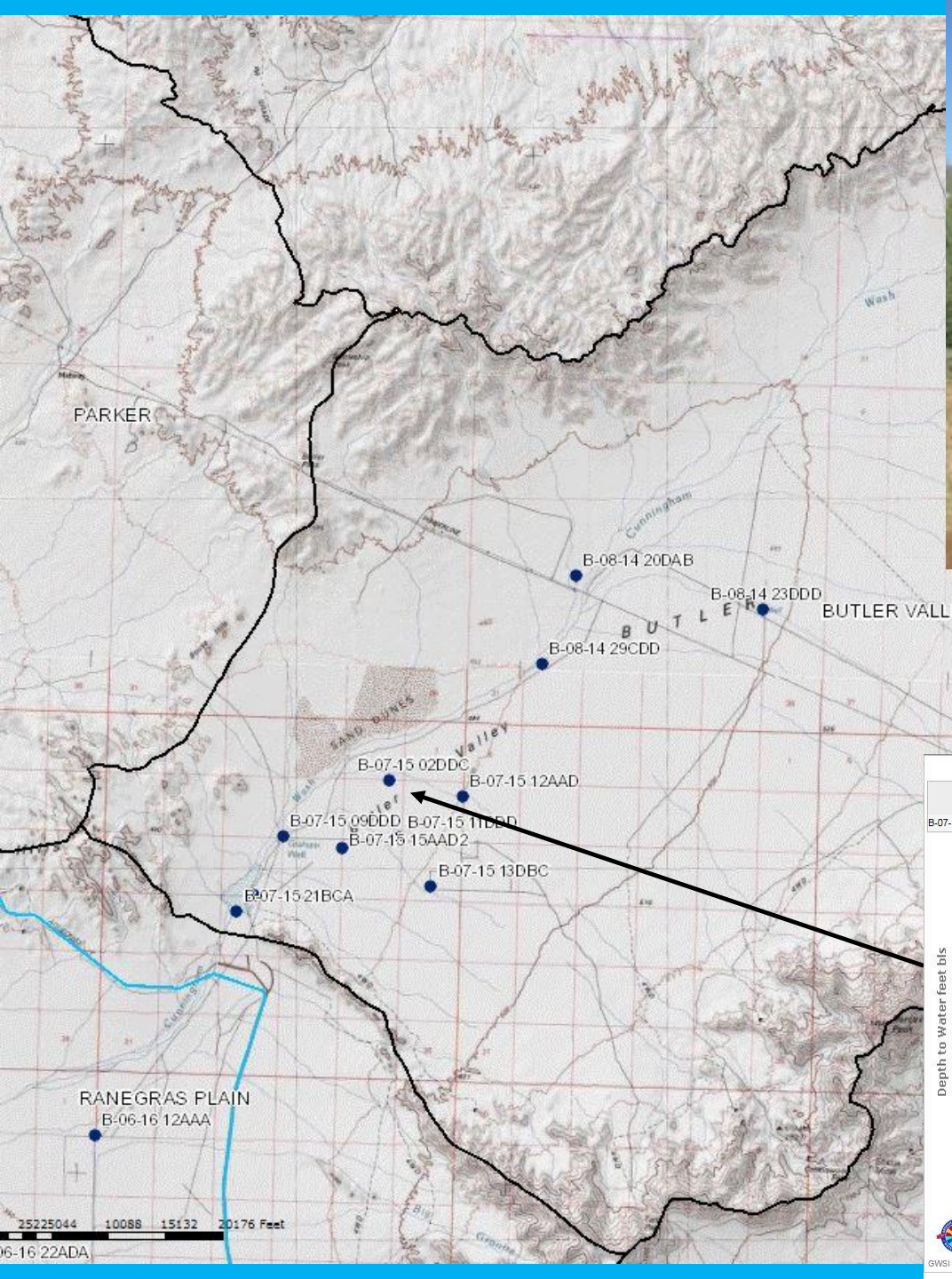
Coordinate System: NAD 1983 UTM Zone 12N
Projection: Transverse Mercator
Datum: North American 1983
Units: Meter
Created: 4/8/2015

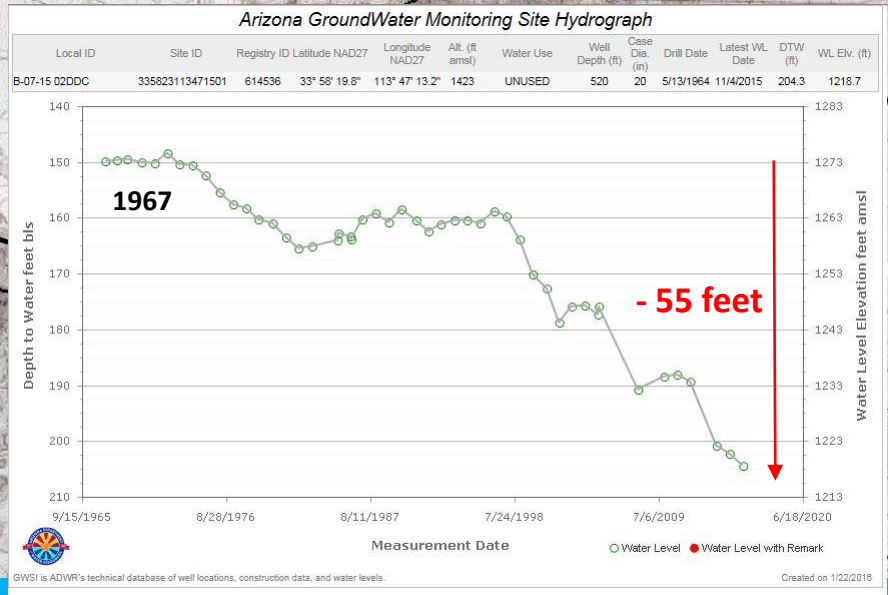
Water Level Change Statistics For GWSI Wells In Butler Valley Basin

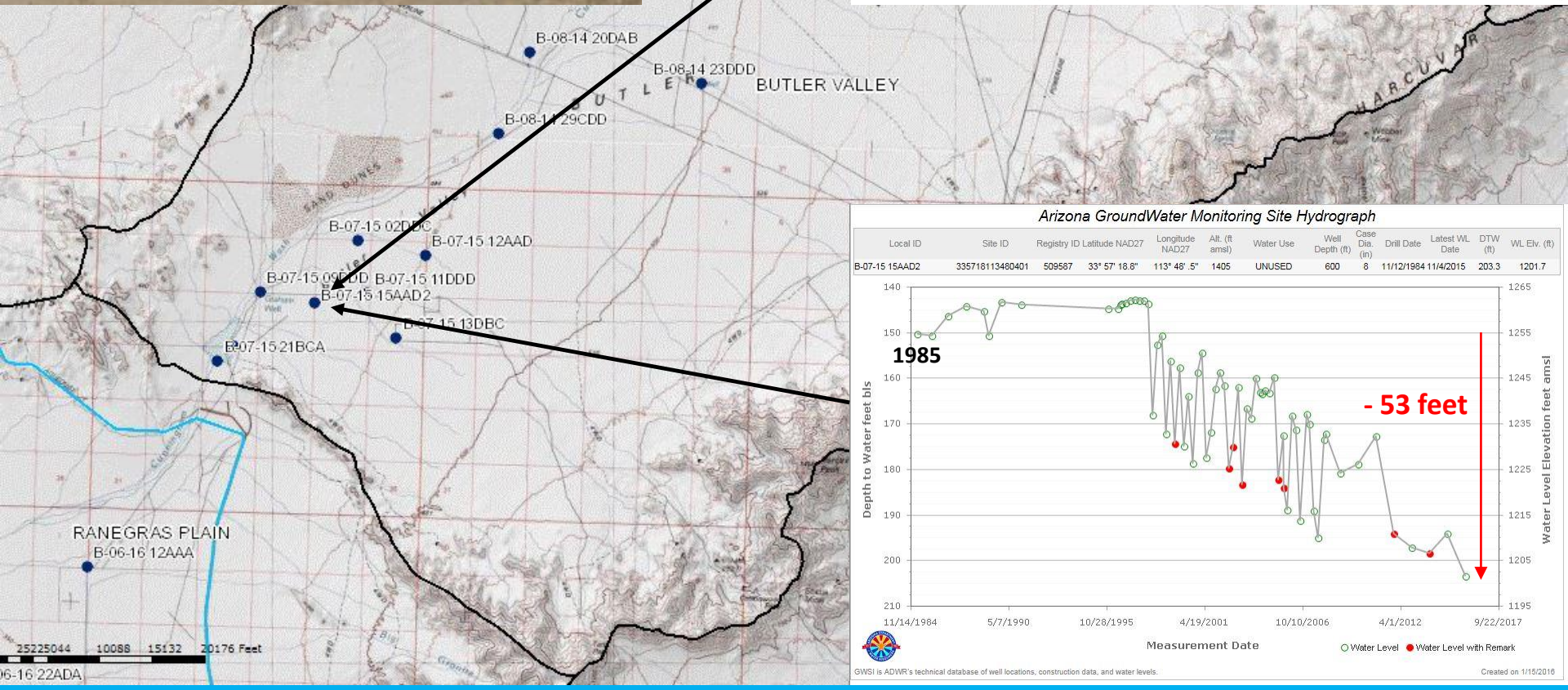
GWSI Water Level Change Data For The Butler Valley Basin (1974 - 2015) (Units of WL Change = Feet)									
	1974 - 1987 WL Change	1974-1987 Positive WL Change	1974-1987 Negative WL Change	1987 - 2004 WL Change	1987-2004 Positive WL Change	1987-2004 Negative WL Change	2004 - 2015 WL Change	2004 - 2015 Positive WL Change	2004 - 2015 Negative WL Change
Well Count	6	1	5	23	0	23	6	0	6
Average	-6.0	0.7	-7.3	-13.1		-13.1	-14.4		-14.4
Median	-6.1	0.7	-8.6	-16.9		-16.9	-6.2		-6.2
Min	-11.6	0.7	-11.6	-23.4		-23.4	-40.1		-40.1
Max	0.7	0.7	-2.6	-0.1		-0.1	-0.8		-0.8

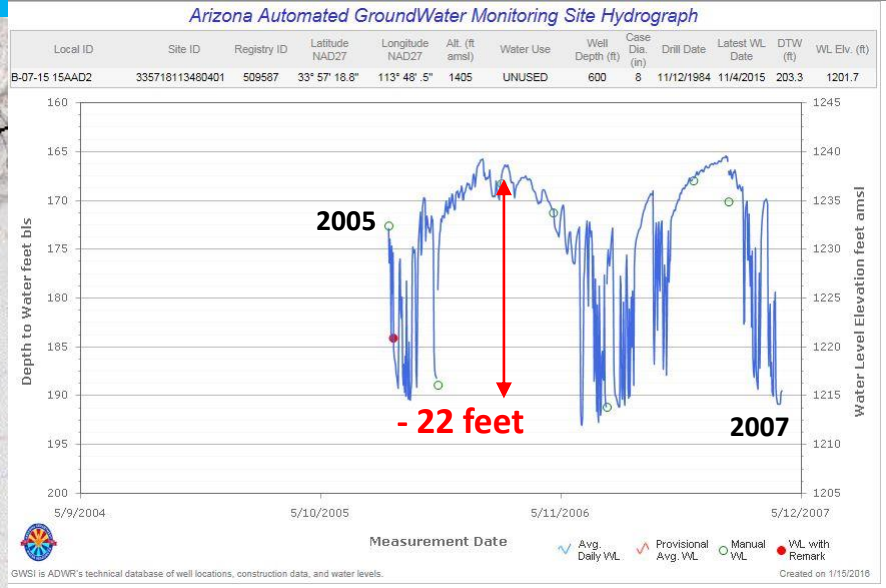
Locations of Groundwater Site Inventory (GWSI) Index wells in the McMullen Valley Basin



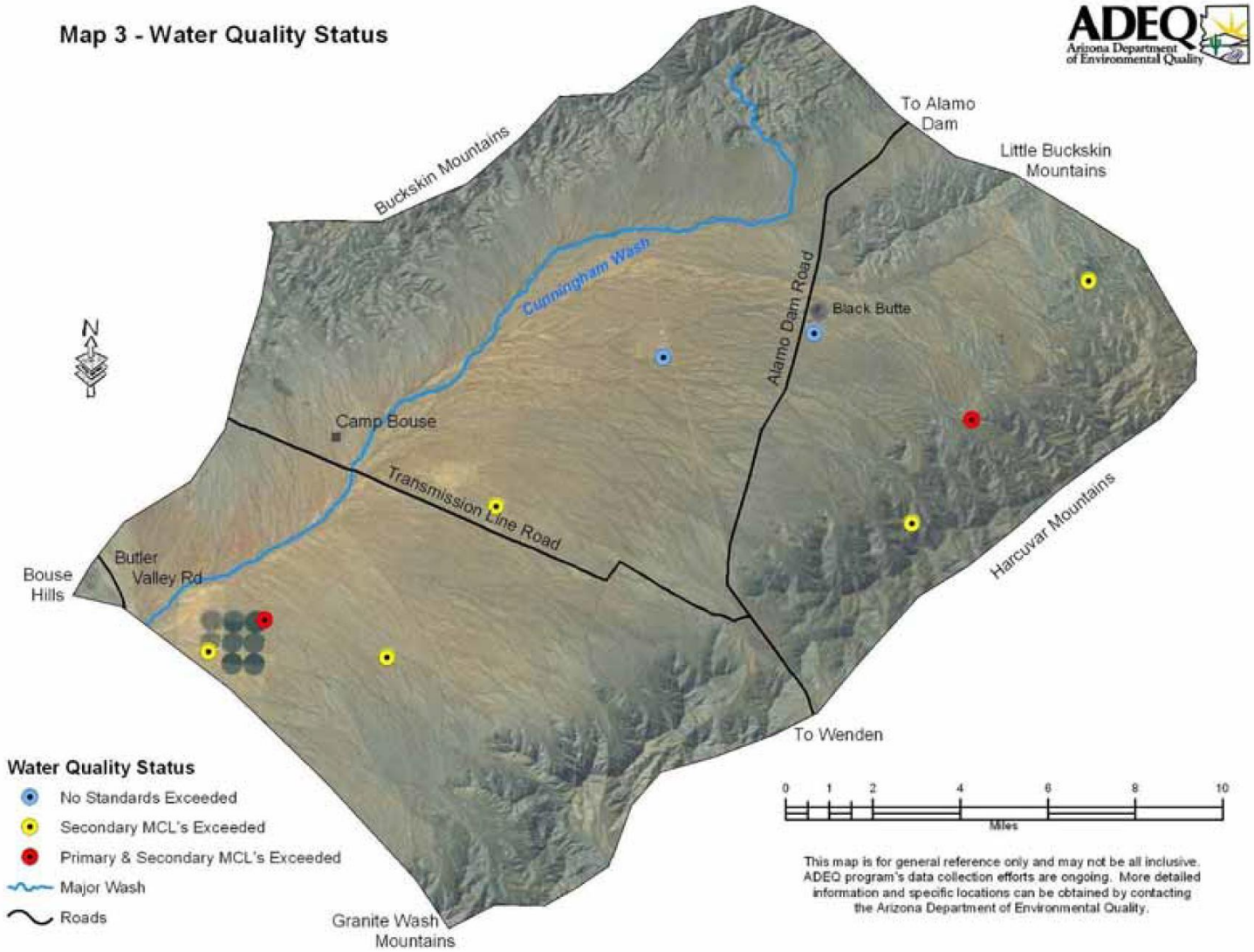

PARKER
B-08-14 20DAB
B-08-14 23DDD
BUTLER VALLEY
B-08-14 29CDD
B-07-15 02DDC
B-07-15 12AAD
B-07-15 09DDD
B-07-15 11DDD
B-07-15 15AAD2
B-07-15 13DBC
B-07-15 21BCA
RANEGRAS PLAIN
B-06-16 12AAA
25225044 10088 15132 20176 Feet


Arizona GroundWater Monitoring Site Hydrograph
Local ID | Site ID | Registry ID | Latitude NAD27 | Longitude NAD27 | Alt. (ft amsl) | Water Use | Well Depth (ft) | Case Dia. (in) | Drill Date | Latest WL Date | DTW (ft) | WL Elv. (ft)
B-07-15 02DDC | 335823113471501 | 614536 | 33° 58' 19.8" | 113° 47' 13.2" | 1423 | UNUSED | 520 | 20 | 5/13/1964 | 11/4/2015 | 204.3 | 1218.7
1967
- 55 feet
Depth to Water feet bls
Water Level Elevation feet amsl
140 150 160 170 180 190 200 210
1283 1273 1263 1253 1243 1233 1223 1213
9/15/1965 8/28/1976 8/11/1987 7/24/1998 7/6/2009 6/18/2020
Measurement Date
Water Level
Water Level with Remark
GWSI is ADWR's technical database of well locations, construction data, and water levels.
Created on 1/22/2016


B-08-14 20DAB
B-08-14 23DDD
BUTLER VALLEY
B-08-14 29CDD
B-07-15 02DDC
B-07-15 12AAD
B-07-15 09DDD
B-07-15 11DDD
B-07-15 15AAD2
B-07-15 13DBC
B-07-15 21BCA
RANEGRAS PLAIN
B-06-16 12AAA
25225044 10088 15132 20176 Feet
06-16 22ADA

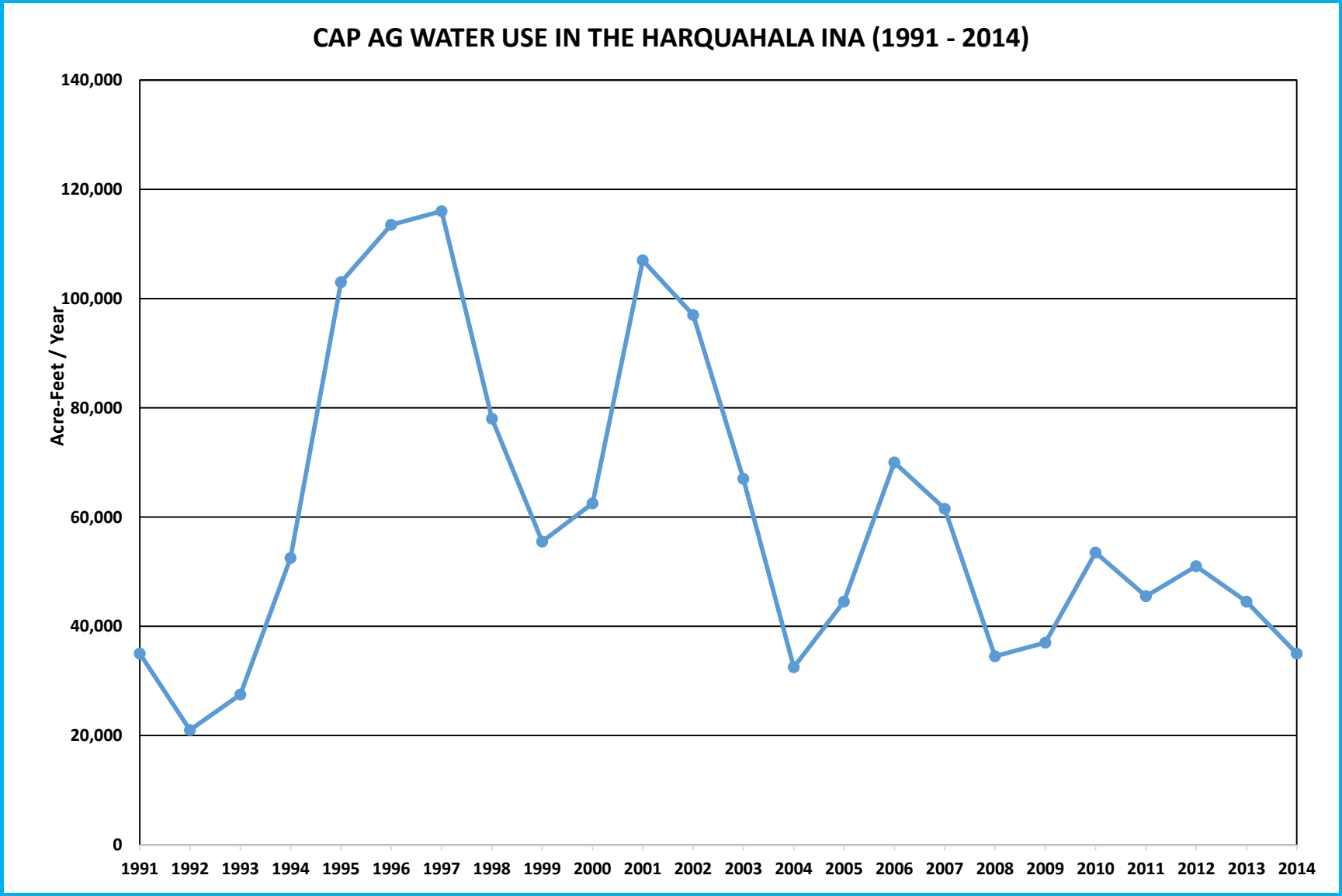

Arizona Automated GroundWater Monitoring Site Hydrograph
Local ID | Site ID | Registry ID | Latitude NAD27 | Longitude NAD27 | Alt. (ft amsl) | Water Use | Well Depth (ft) | Case Dia. (in) | Drill Date | Latest WL Date | DTW (ft) | WL Elv. (ft)
B-07-15 15AAD2 | 335718113480401 | 509587 | 33° 57' 18.6" | 113° 48' .5" | 1405 | UNUSED | 600 | 8 | 11/12/1984 | 11/4/2015 | 203.3 | 1201.7
Depth to Water feet bls
Water Level Elevation feet amsl
2005
2007
- 22 feet
5/9/2004
5/10/2005
5/11/2006
5/12/2007
Measurement Date
Avg. Daily WL
Provisional Avg. WL
Manual WL
WL with Remark
GWSI is ADWR's technical database of well locations, construction data, and water levels.
Created on 1/15/2018

Arizona GroundWater Monitoring Site Hydrograph
Local ID | Site ID | Registry ID | Latitude NAD27 | Longitude NAD27 | Alt. (ft amsl) | Water Use | Well Depth (ft) | Case Dia. (in) | Drill Date | Latest WL Date | DTW (ft) | WL Elv. (ft)
B-07-15 15AAD2 | 335718113480401 | 509587 | 33° 57' 18.6" | 113° 48' .5" | 1405 | UNUSED | 600 | 8 | 11/12/1984 | 11/4/2015 | 203.3 | 1201.7
Depth to Water feet bls
Water Level Elevation feet amsl
1985
- 53 feet
11/14/1984
5/7/1990
10/28/1995
4/19/2001
10/10/2006
4/1/2012
9/22/2017
Measurement Date
Water Level
Water Level with Remark
GWSI is ADWR's technical database of well locations, construction data, and water levels.
Created on 1/15/2018

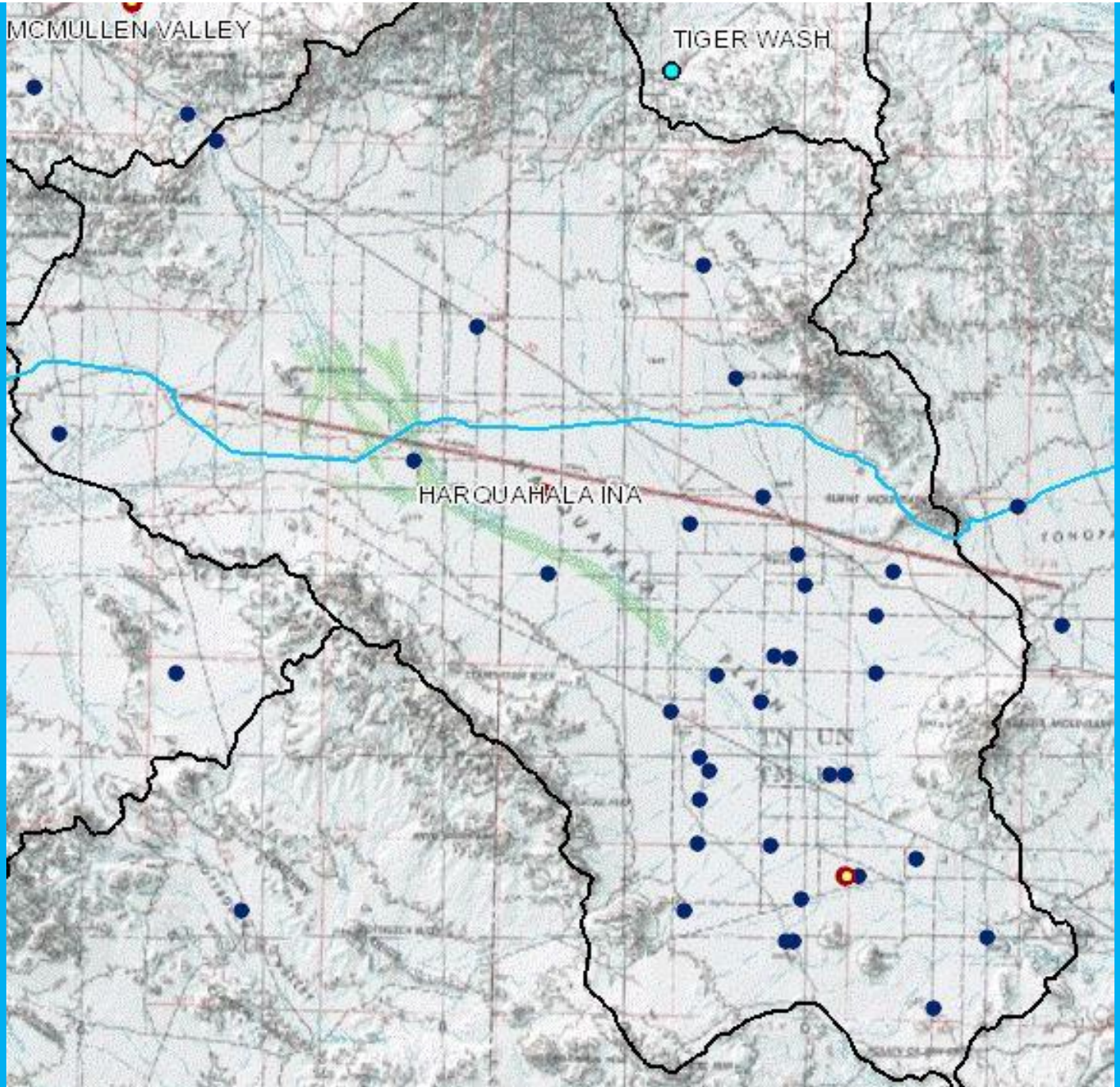

Map 3 - Water Quality Status
ADEQ
Arizona Department of Environmental Quality
To Alamo Dam
Little Buckskin Mountains
Buckskin Mountains
Cunningham Wash
Alamo Dam Road
Black Butte
N
Camp Bouse
Transmission Line Road
Harcuvar Mountains
Bouse Hills
Butler Valley Rd
To Wenden
Water Quality Status
No Standards Exceeded
Secondary MCL's Exceeded
Primary & Secondary MCL's Exceeded
Major Wash
Roads
Granite Wash Mountains
0 1 2 4 6 8 10
Miles
This map is for general reference only and may not be all inclusive. ADEQ program's data collection efforts are ongoing. More detailed information and specific locations can be obtained by contacting the Arizona Department of Environmental Quality.

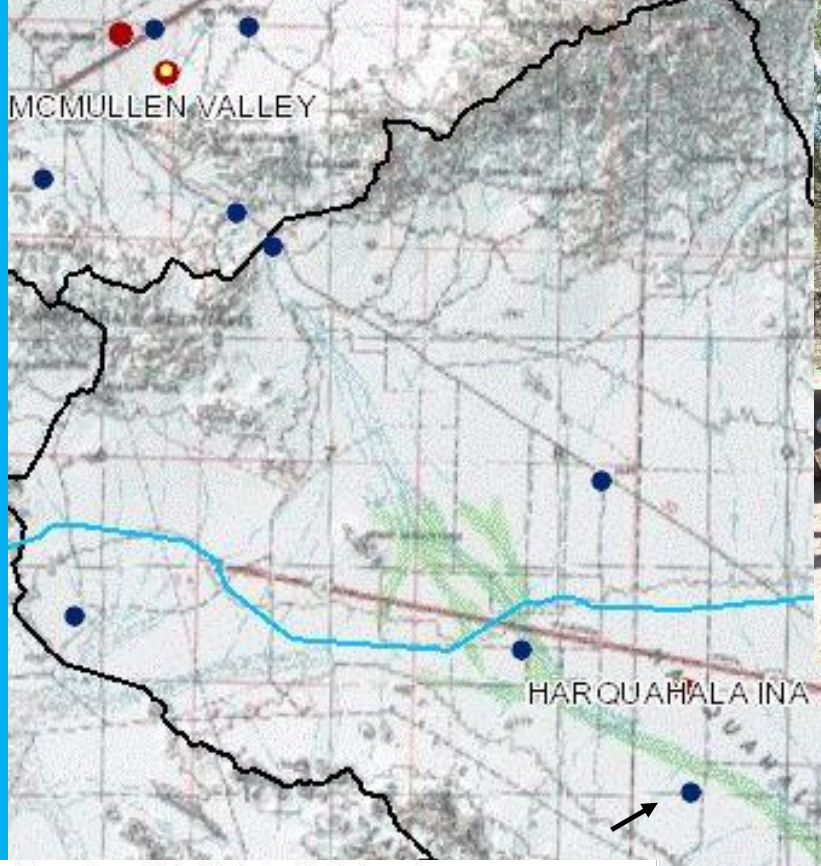
Water Level Change Statistics For GWSI Wells In The Harquahala INA

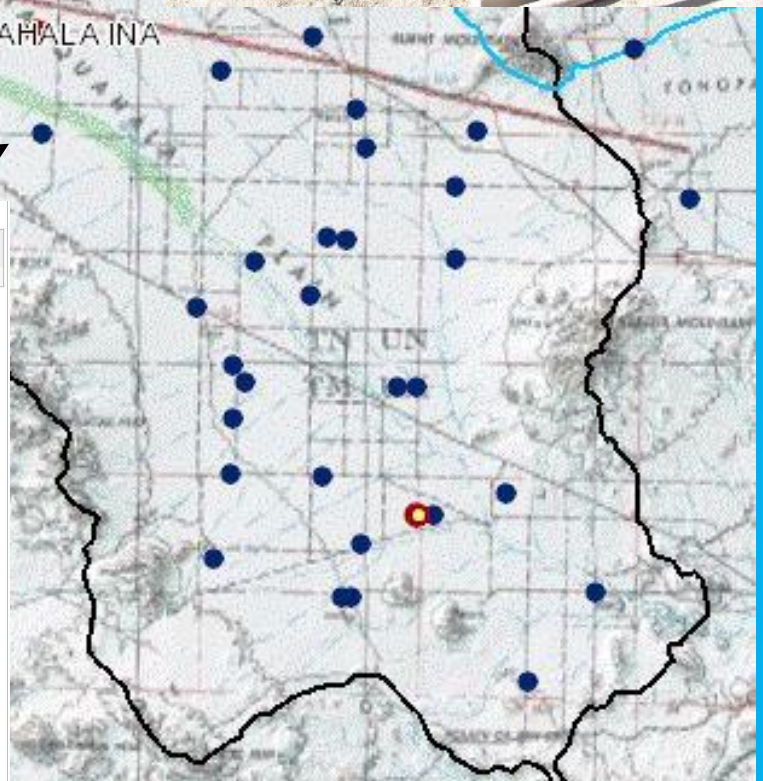
Water Level Change Data For GWSI Wells In The Harquahala INA (1963-2015) (Units of Water Level Change = Feet)									
	1963 - 1988 WL Change	1963-1988 Positive WL Change	1963-1988 Negative WL Change	1988 -2004 WL Change	1988-2004 Positive WL Change	1988-2004 Negative WL change	2004 - 2015 WL Change	2004-2015 Positive WL Change	2004-2015 Negative WL Change
Well Count	55	4	51	129	110	19	24	8	16
Average	-105.6	146.8	-125.4	54.1	66.5	-17.6	-23.5	16.8	-43.6
Median	-101.3	159.8	-118.0	62.8	69.9	-9.1	-17.6	17.7	-54.0
Min	-210.2	57.0	-210.2	-93.5	0.7	-93.5	-78.9	1.7	-78.9
Max	210.7	210.7	-9.4	349.1	349.1	-0.2	33.7	33.7	-4.2


CAP AG WATER USE IN THE HARQUAHALA INA (1991 - 2014)
Acre-Feet / Year
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014

Locations of Groundwater Site Inventory (GWSI) Index wells in the Harquahala INA

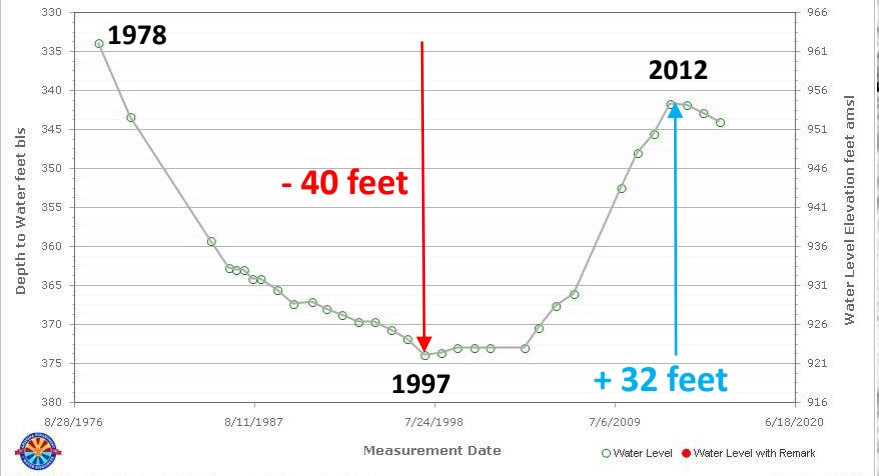






Arizona GroundWater Monitoring Site Hydrograph

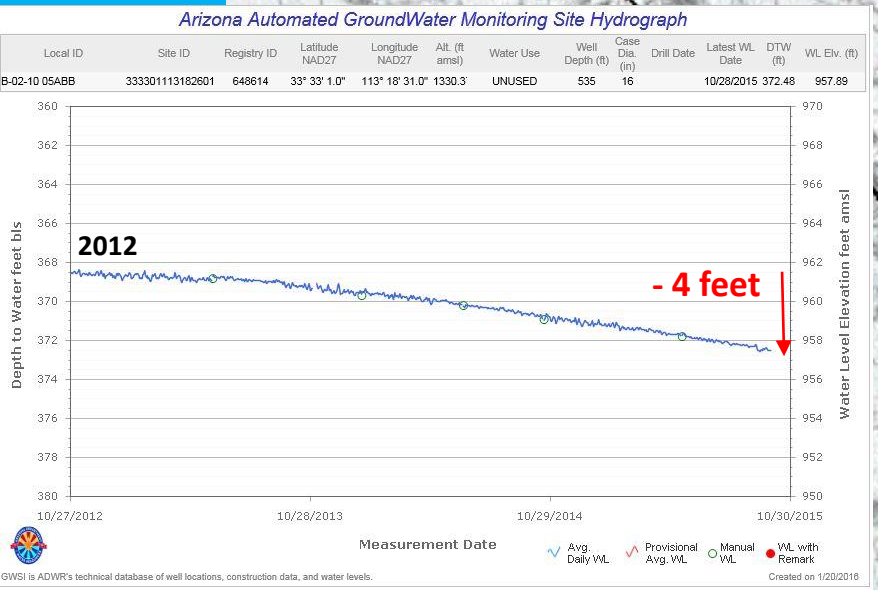
Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-02-10 17DCA	333035113181701	621523	33° 30' 38.2"	113° 18' 19.5"	1296	DOMESTIC	400			11/3/2015	344	952

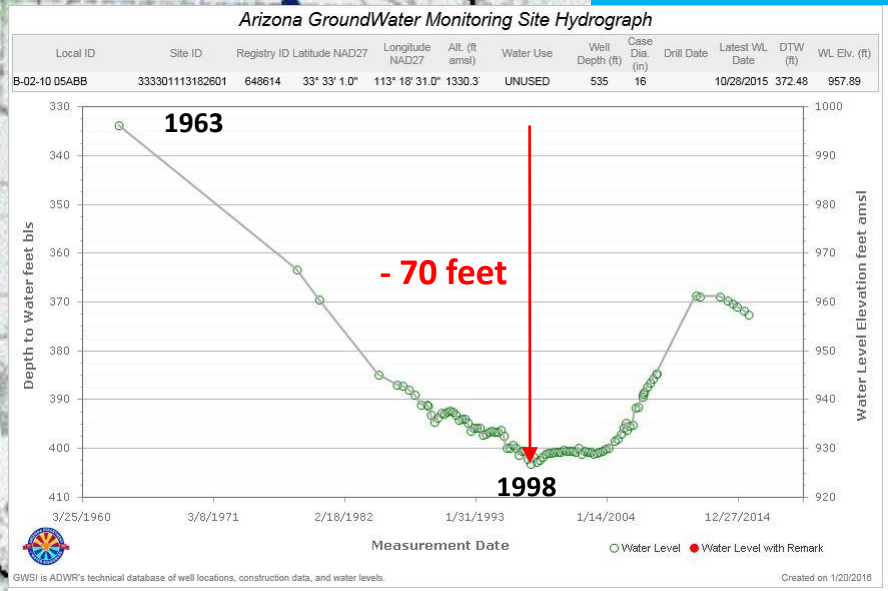


06/05/2013

06/05/2013

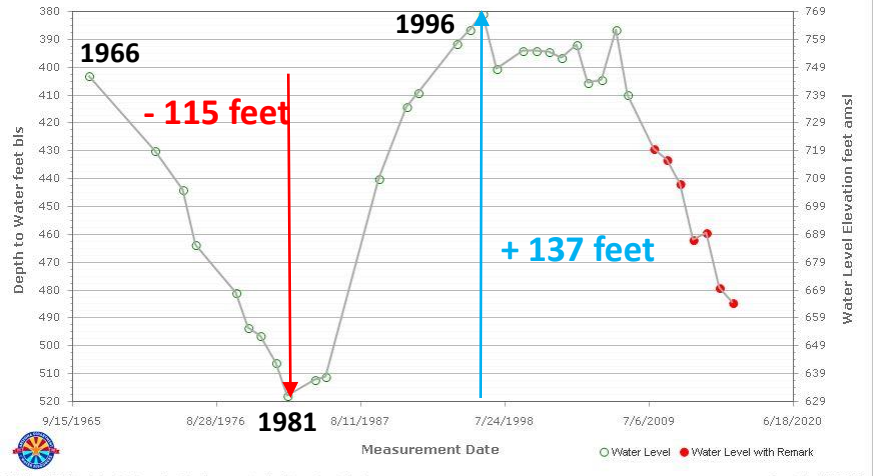
HARQUAHALA INA


Arizona Automated GroundWater Monitoring Site Hydrograph
Local ID | Site ID | Registry ID | Latitude NAD27 | Longitude NAD27 | Alt. (ft amsl) | Water Use | Well Depth (ft) | Case Dia. (in) | Drill Date | Latest WL Date | DTW (ft) | WL Elv. (ft)
B-02-10 05ABB | 333301113182601 | 648614 | 33° 33' 1.0" | 113° 18' 31.0" | 1330.3 | UNUSED | 535 | 16 | | 10/28/2015 | 372.48 | 957.89
2012
- 4 feet
Depth to Water feet bls
Water Level Elevation feet amsl
10/27/2012
10/28/2013
10/29/2014
10/30/2015
Measurement Date
Avg. Daily WL
Provisional Avg. WL
Manual WL
WL with Remark
GWSI is ADWR's technical database of well locations, construction data, and water levels.
Created on 1/20/2016


Arizona GroundWater Monitoring Site Hydrograph
Local ID | Site ID | Registry ID | Latitude NAD27 | Longitude NAD27 | Alt. (ft amsl) | Water Use | Well Depth (ft) | Case Dia. (in) | Drill Date | Latest WL Date | DTW (ft) | WL Elv. (ft)
B-02-10 05ABB | 333301113182601 | 648614 | 33° 33' 1.0" | 113° 18' 31.0" | 1330.3 | UNUSED | 535 | 16 | | 10/28/2015 | 372.48 | 957.89
1963
- 70 feet
1998
Depth to Water feet bls
Water Level Elevation feet amsl
3/25/1960
3/8/1971
2/18/1982
1/31/1993
1/14/2004
12/27/2014
Measurement Date
Water Level
Water Level with Remark
GWSI is ADWR's technical database of well locations, construction data, and water levels.
Created on 1/20/2016

Arizona GroundWater Monitoring Site Hydrograph

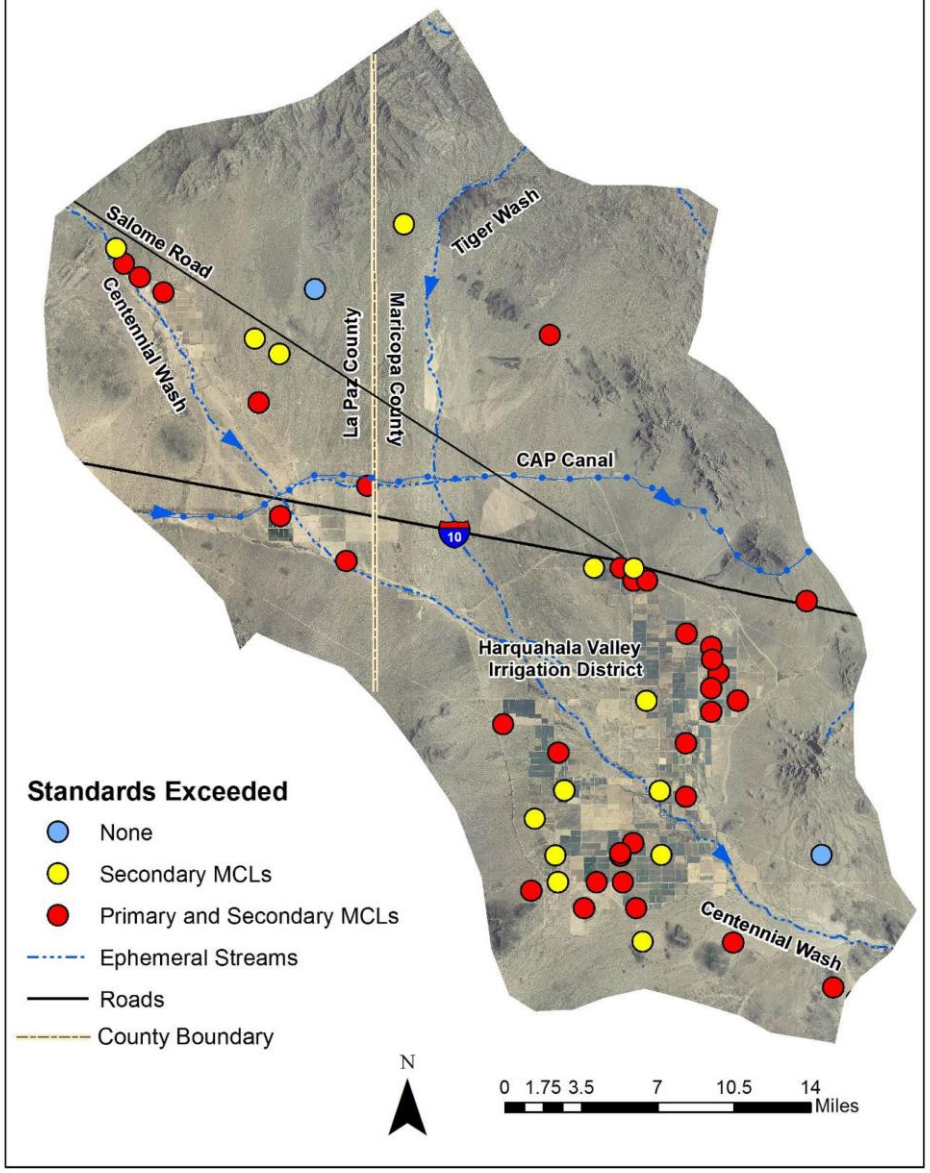
Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-02-09 34DBB	332820113101201		33° 28' 18.0"	113° 10' 10.7"	1149	UNUSED	1900	20	1/1/1960	11/5/2007	409.9	739.1

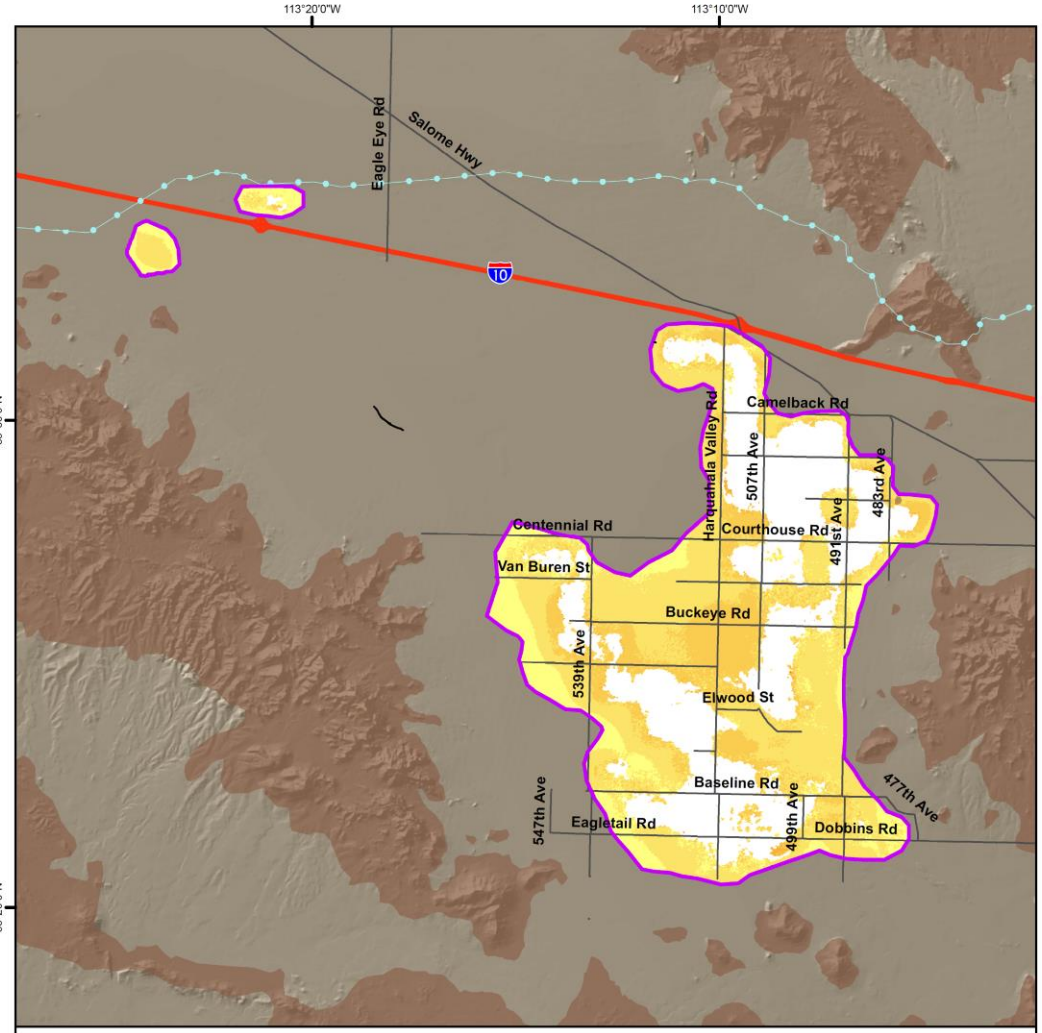


GWSI is ADWR's technical database of well locations, construction data, and water levels.

Created on 1/20/2016

Map 3 - Water Quality Standards





Land Subsidence Rate in the Harquahala Valley, Maricopa County
Based on Radarsat-2 Satellite Interferometric Synthetic Aperture Radar (InSAR) Data
Time Period of Analysis: 1.0 Years 03/17/2014 To 04/05/2015

© MDA 2014 - 2015

Explanation

03/17/2014 To 04/05/2015

Land Subsidence Rate

- Decorrelation/No Data
- Greater 7 cm/yr (2.8 in/yr)
- 5 - 7 cm/yr (2.0 - 2.8 in/yr)
- 3 - 5 cm/yr (1.2 - 2.0 in/yr)
- 2 - 3 cm/yr (0.8 - 1.2 in/yr)
- 1 - 2 cm/yr (0.4 - 0.8 in/yr)
- 0.5 - 1 cm/yr (0.2 - 0.4 in/yr)
- 0 - 0.5 cm/yr (0 - 0.2 in/yr)

- Subsidence Feature
- Earth Fissures
- Hardrock
- CAP Canal

Highways and Interstates

- Interstate
- US
- State
- Roads
- Railway

1:200,000

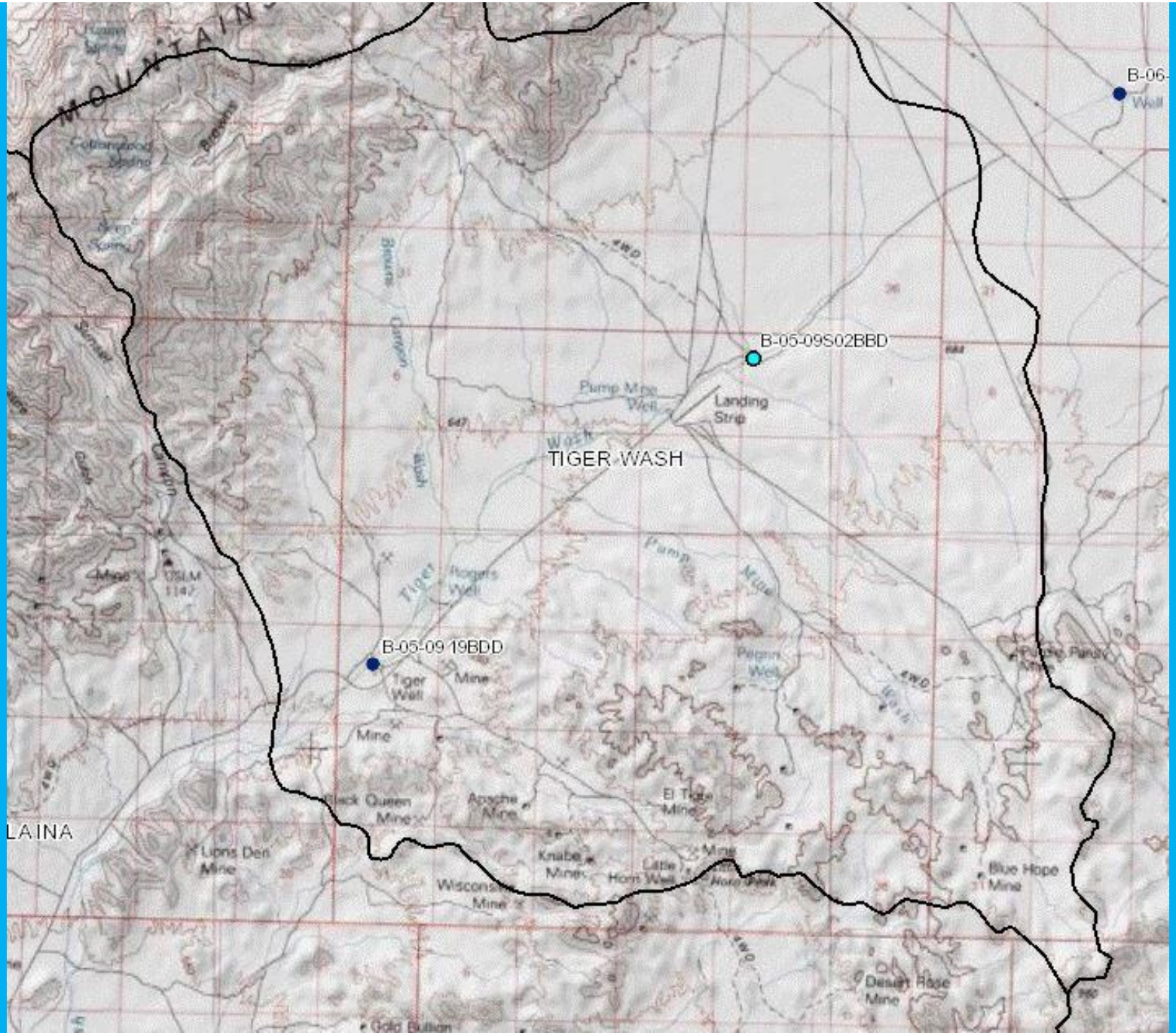
0 1 2 4 6 8 Miles

Decorrelation (white areas) are areas where the phase of the received satellite signal changed between satellite passes, causing the data to be unusable. This occurs in areas where the land surface has been disturbed (i.e. bodies of water, snow, agriculture areas, areas of development, etc).

Earth fissures were mapped by the Arizona Geological Survey.
For information on earth fissures visit: www.azgs.az.gov/EFC

Coordinate System: NAD 1983 UTM Zone 12N
Projection: Transverse Mercator
Datum: North American 1983
Units: Meter
Created: 4/8/2015

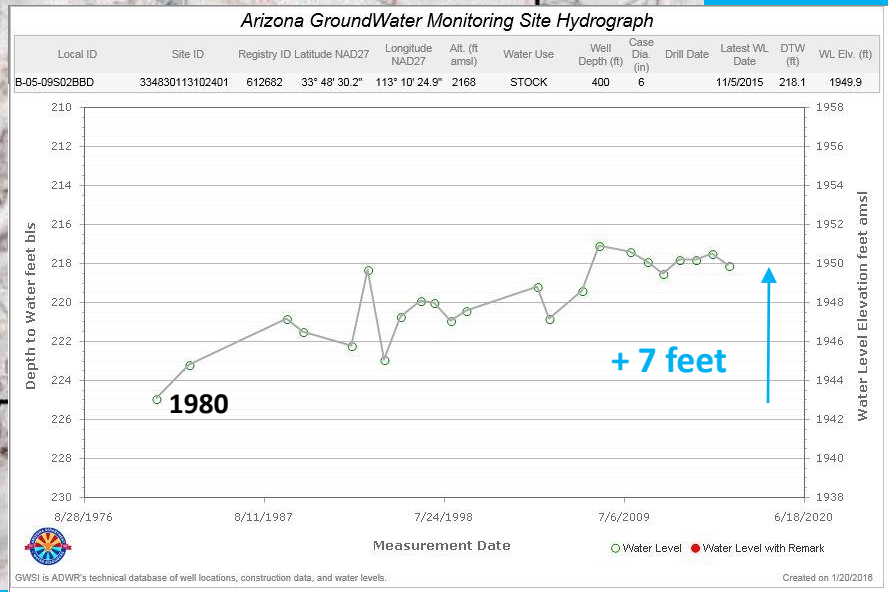
Locations of Groundwater Site Inventory (GWSI) Index wells in the Tiger Wash Basin



11/03/2009 11:09

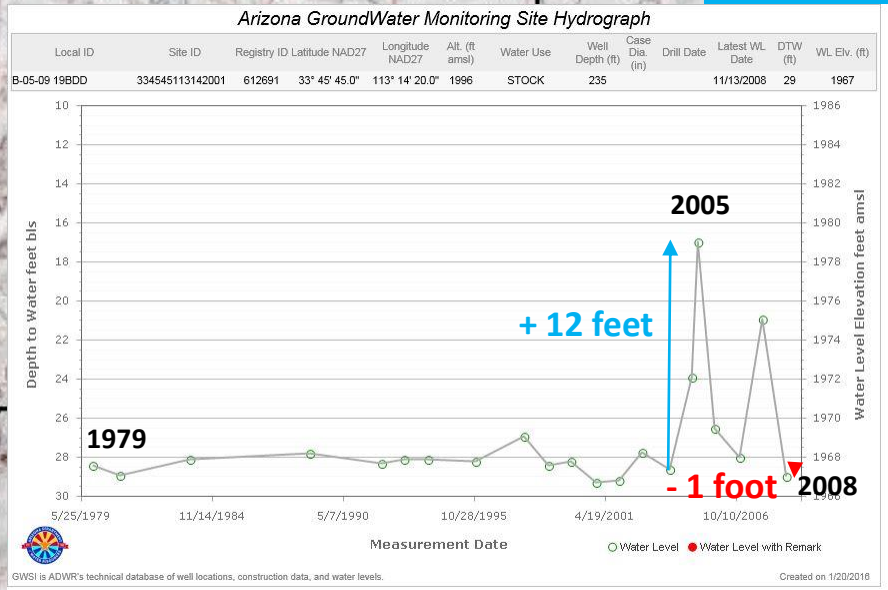
B-06-
Well
B-05-09S02BBD
Pump Mine
Well
Landing
Strip
TIGER WASH

B-05-09 19BDD
Tiger
Well
Mine
Mine
Black Queen
Mine
Apache
Mine
LA INA
Lions Den
Mine
Knabe
Mines
Wisconsin
Mine
Gold Button

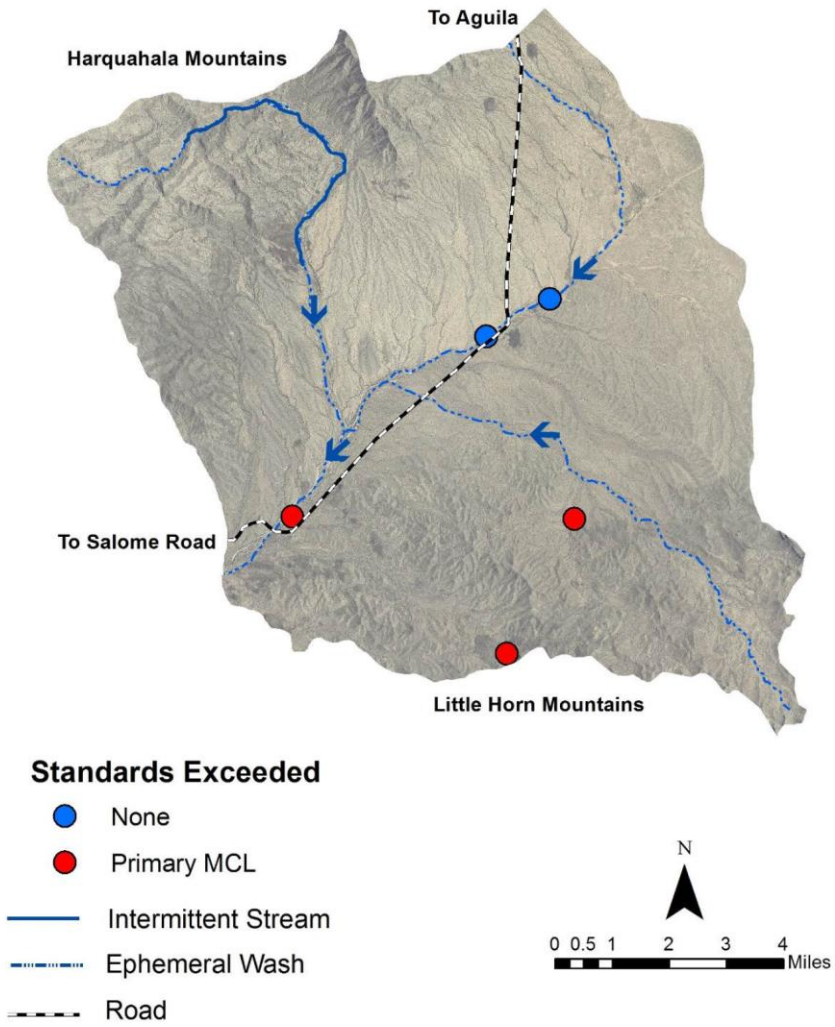

Arizona GroundWater Monitoring Site Hydrograph
Local ID | Site ID | Registry ID | Latitude NAD27 | Longitude NAD27 | Alt. (ft amsl) | Water Use | Well Depth (ft) | Case Dia. (in) | Drill Date | Latest WL Date | DTW (ft) | WL Elv. (ft)
B-05-09S02BBD | 334830113102401 | 612682 | 33° 48' 30.2" | 113° 10' 24.9" | 2168 | STOCK | 400 | 6 | | 11/5/2015 | 218.1 | 1949.9
Depth to Water feet bls
Water Level Elevation feet amsl
210 212 214 216 218 220 222 224 226 228 230
1958 1956 1954 1952 1950 1948 1946 1944 1942 1940 1938
1980
+ 7 feet
8/28/1976
8/11/1987
7/24/1998
7/6/2009
6/18/2020
Measurement Date
Water Level
Water Level with Remark
GWSI is ADWR's technical database of well locations, construction data, and water levels.
Created on 1/20/2018

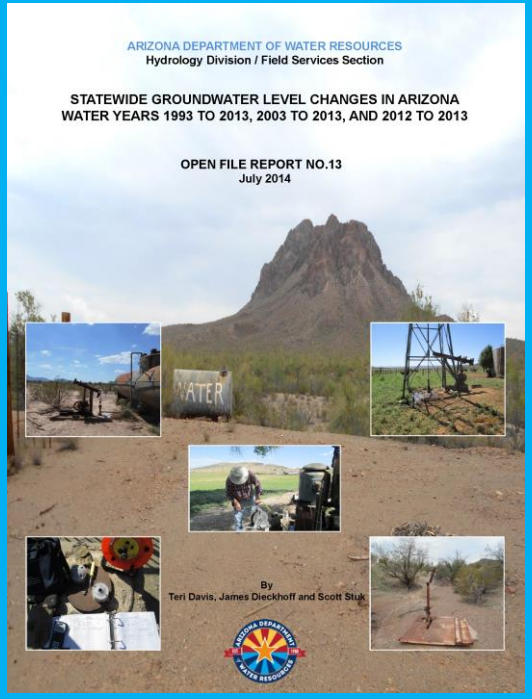
B-06-
Well
B-05-09S02BBD
Pump Mine
Well
Landing
Strip
TIGER WASH

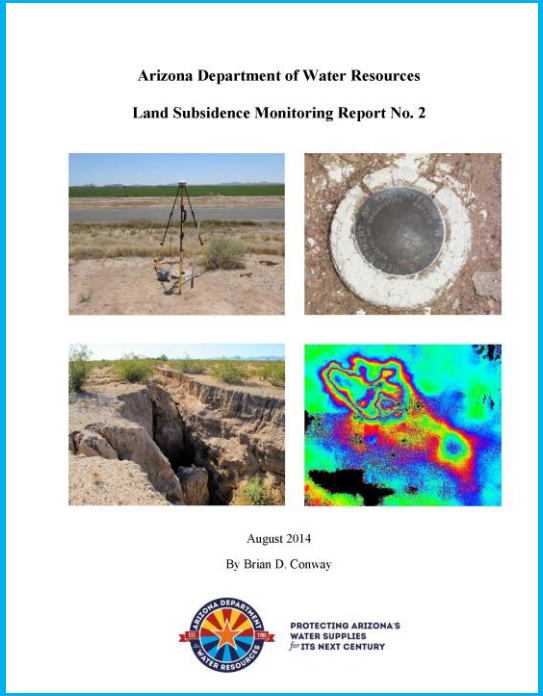
B-05-09 19BDD
Mine
Well
Mine
Black Queen
Mine
Apache
Mine
LA INA
Lions Den
Mine
Knabe
Mines
Wisconsin
Mine
Horn
Gold Bullion

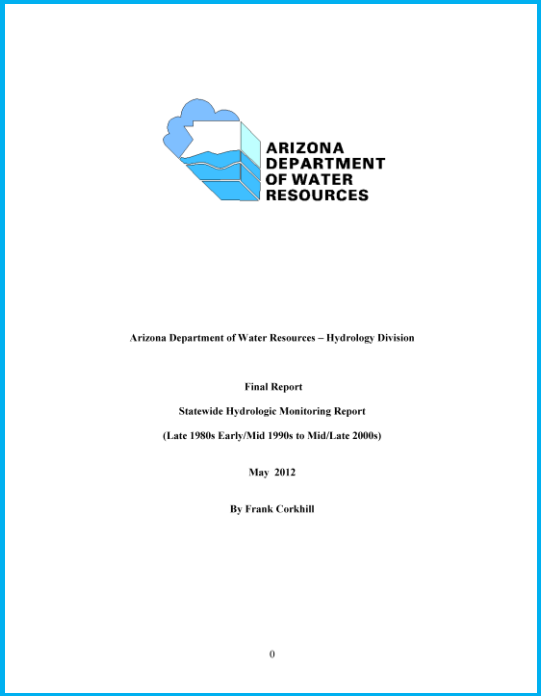

Arizona GroundWater Monitoring Site Hydrograph
Local ID | Site ID | Registry ID | Latitude NAD27 | Longitude NAD27 | Alt. (ft amsl) | Water Use | Well Depth (ft) | Case Dia. (in) | Drill Date | Latest WL Date | DTW (ft) | WL Elv. (ft)
B-05-09 19BDD | 334545113142001 | 612691 | 33° 45' 45.0" | 113° 14' 20.0" | 1996 | STOCK | 235 | | | 11/13/2008 | 29 | 1967
Depth to Water feet bls
Water Level Elevation feet amsl
2005
+ 12 feet
1979
- 1 foot
2008
5/25/1979
11/14/1984
5/7/1990
10/28/1995
4/19/2001
10/10/2006
Measurement Date
Water Level
Water Level with Remark
GWSI is ADWR's technical database of well locations, construction data, and water levels.
Created on 1/20/2016

Map 3 - Water Quality Standards



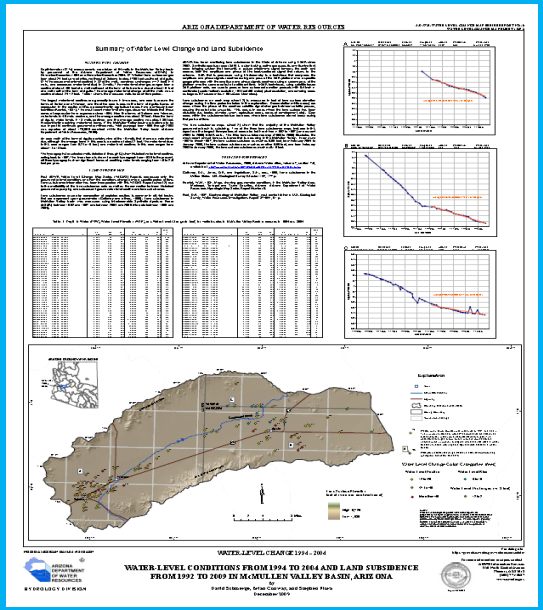






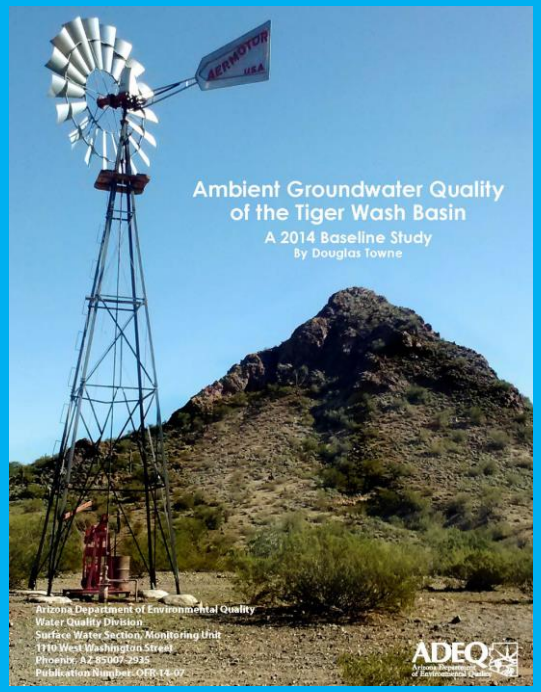
ADWR Hydrologic Map Series Reports

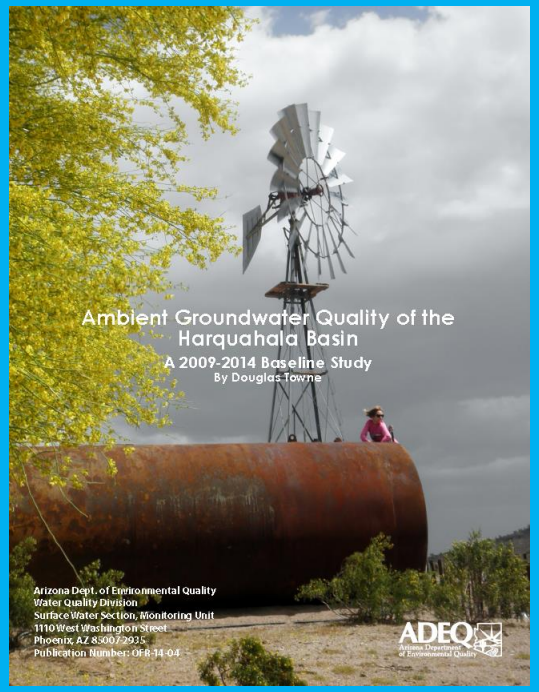
#1
#6
#13
#17
#18

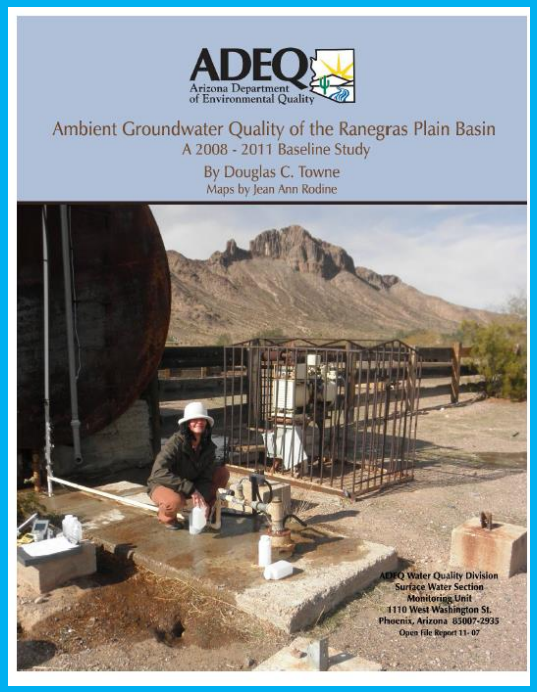


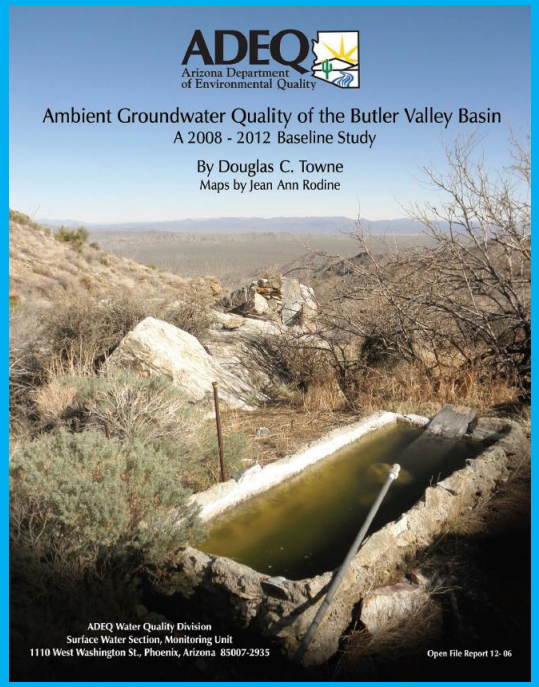
For More Information and Hydrologic Data for the West Basin Aquifers, Please Visit:

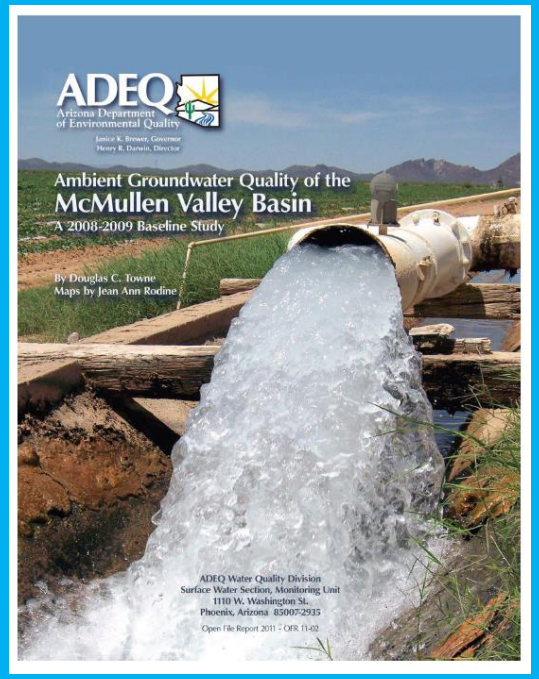
http://www.azwater.gov/AzDWR/Hydrology/Library/Library.htm











For More Information on the Water Quality of West Basin Aquifers, Please Visit:

http://www.azdeq.gov/environ/water/assessment/ambient.html

QUESTIONS?

For Further Information Please Visit The ADWR Website at: www.azwater.gov

Or Contact:

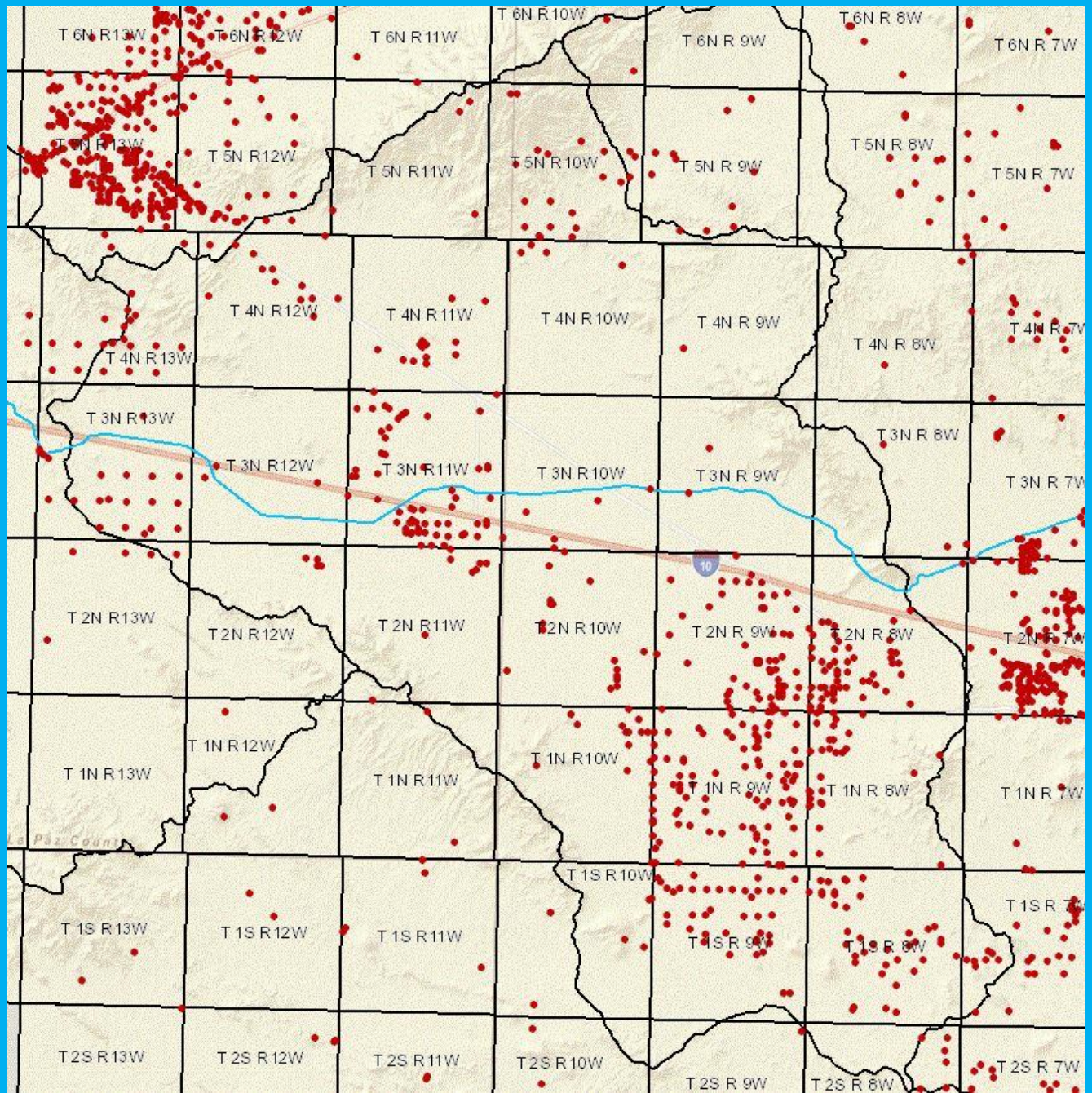
Frank Corkhill (Hydrology Division) efcorkhill@azwater.gov

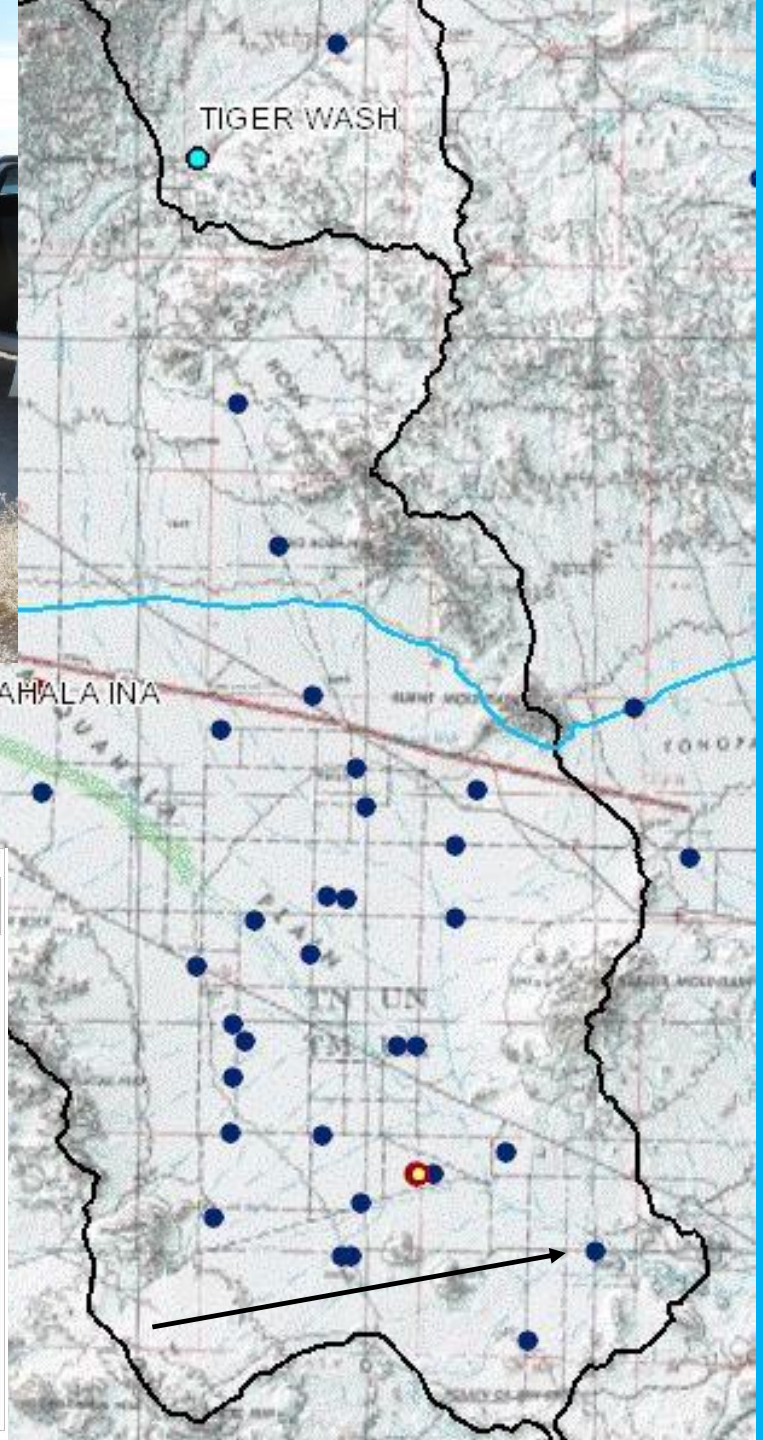
or

Michelle Moreno (Public Information Office) mamoreno@azwater.gov

Harquahala INA
Additional
Hydrographs

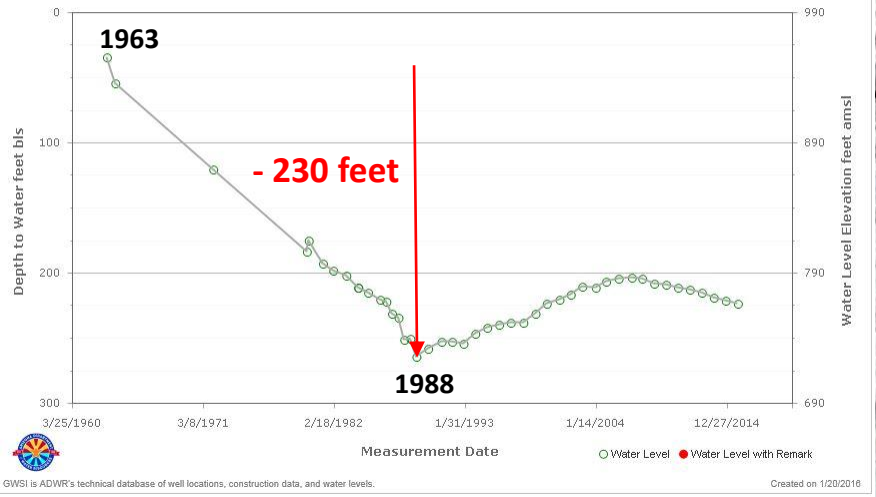
Map of Registered Wells In The Harquahala INA (1/13/2016)

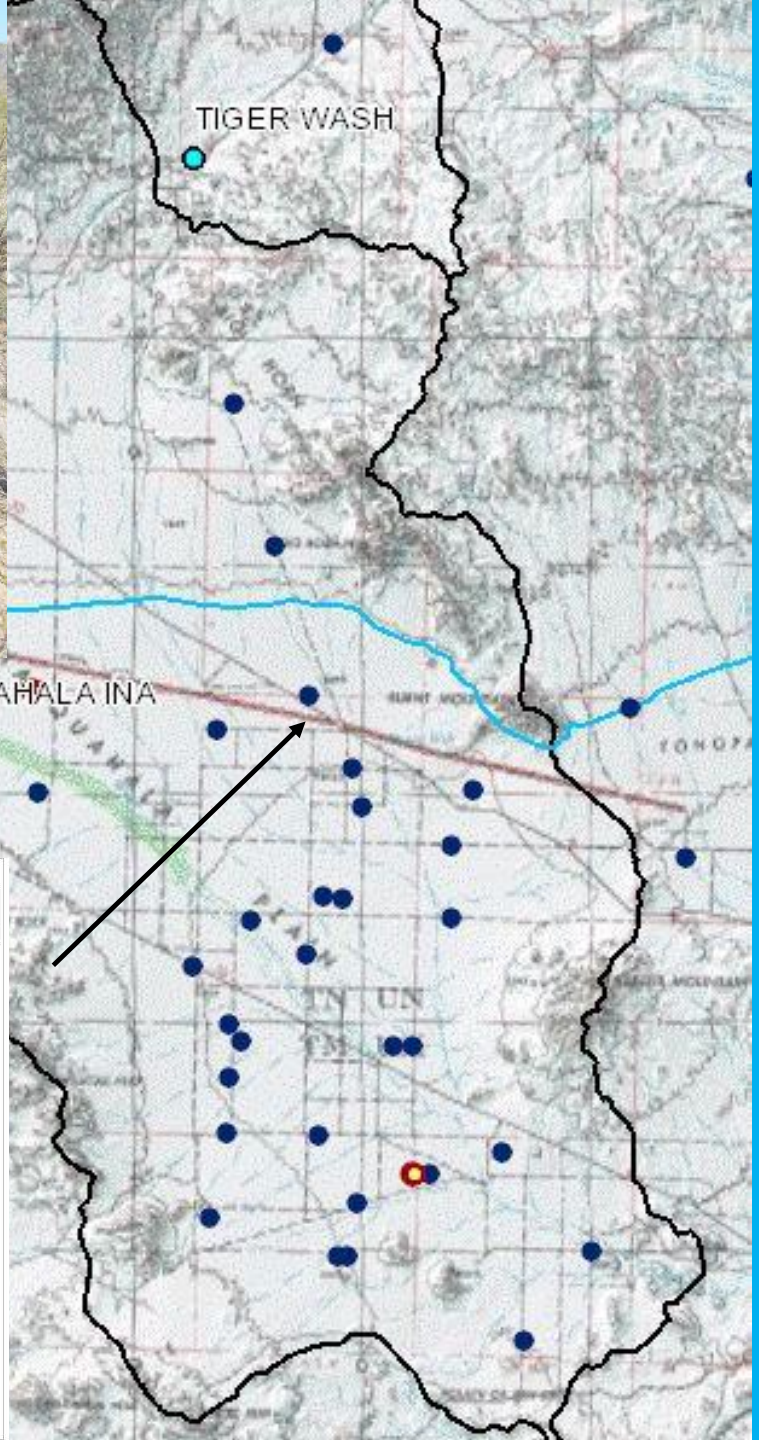




Arizona GroundWater Monitoring Site Hydrograph

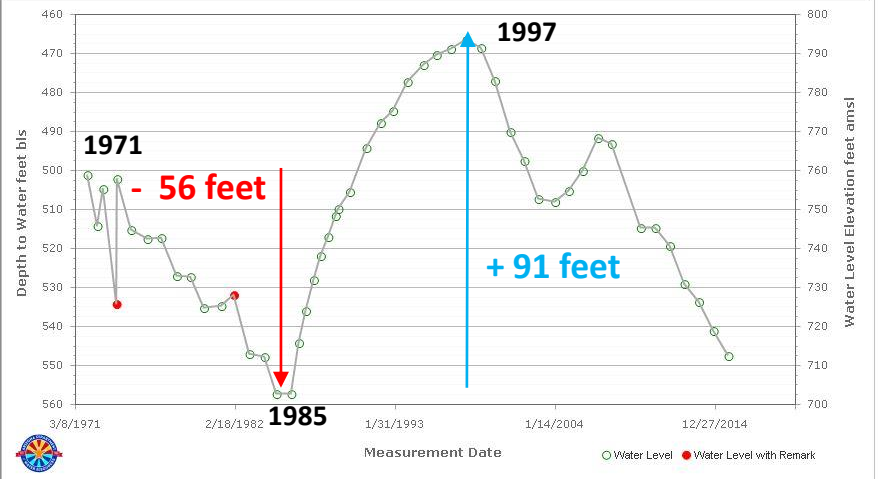
Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
C-01-08 14DDD	332005113022801		33° 20' 3.2"	113° 2' 23.4"	990	UNUSED	551	20	4/28/1960	11/4/2015	223.3	766.7





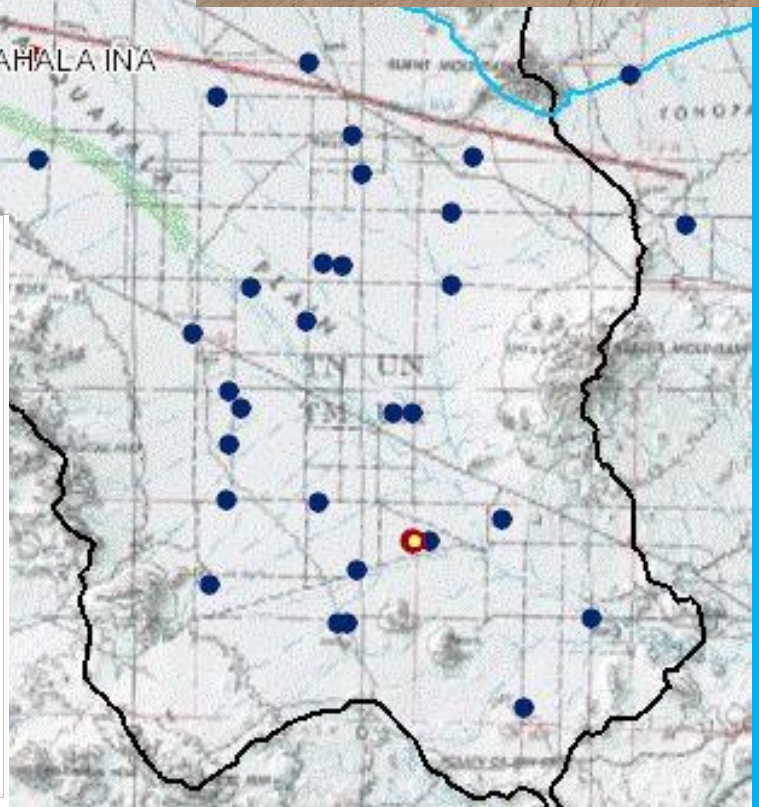
Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-02-09 03BBB	333305113104301		33° 33' 5.5"	113° 10' 41.9"	1260	UNUSED		18		11/2/2015	547.4	712.6



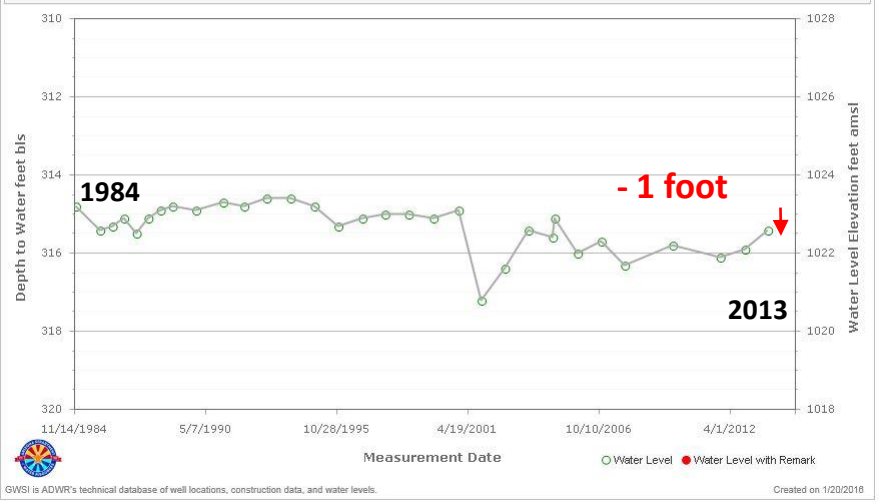
GWSI is ADWR's technical database of well locations, construction data, and water levels.

Created on 1/20/2016



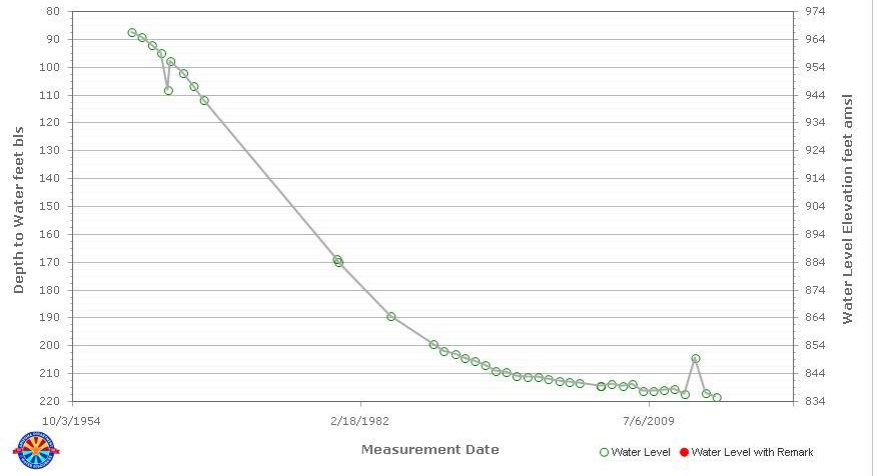
Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-03-13 28ADC	333425113454901	603145	33° 34' 27.4"	113° 35' 49.8"	1338	STOCK	420	8		10/29/2013	315.4	1022.6



Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
C-01-08 34BCD	331753113041001	634099	33° 17' 51.8"	113° 4' 16.7"	1054	UNUSED	535	16		11/4/2015	218.3	835.7



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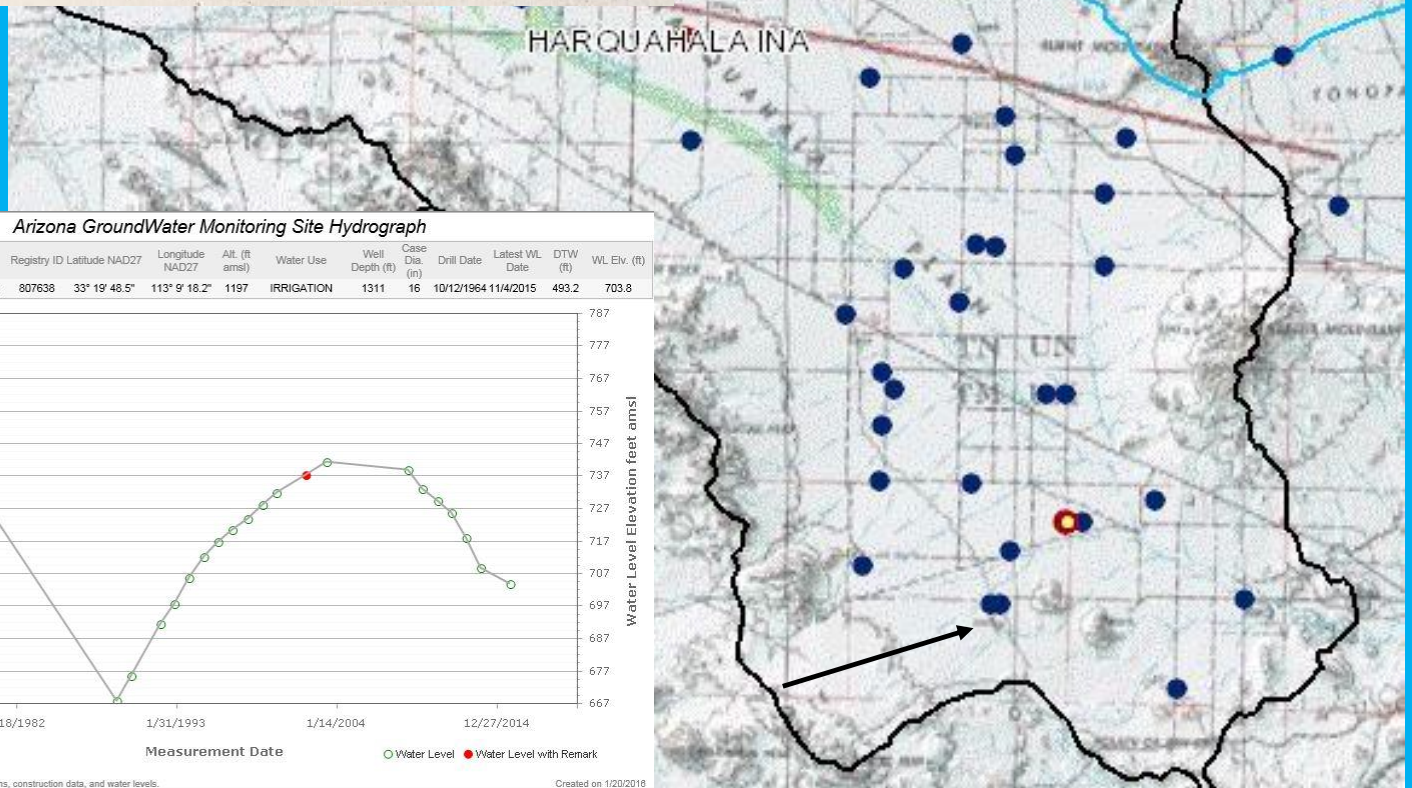
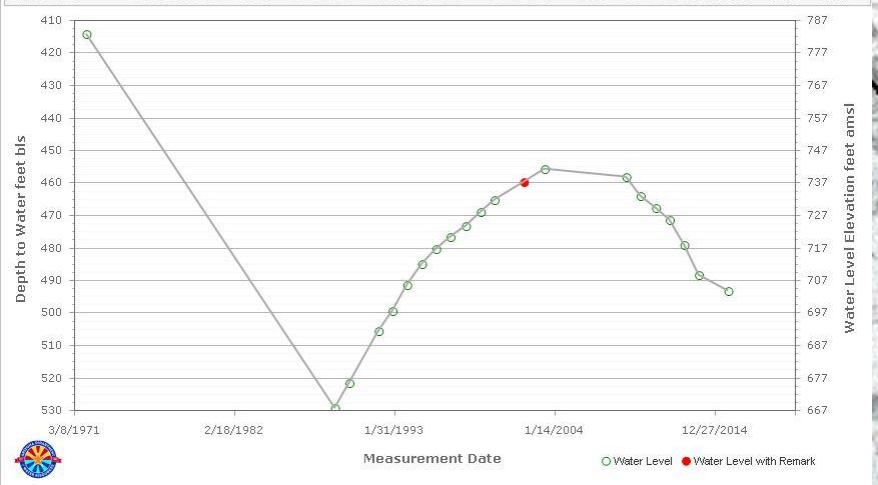


Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
C-01-09 23BDB	331940113092001	807638	33° 19' 48.5"	113° 9' 18.2"	1197	IRRIGATION	1311	16	10/12/1964	11/4/2015	493.2	703.8



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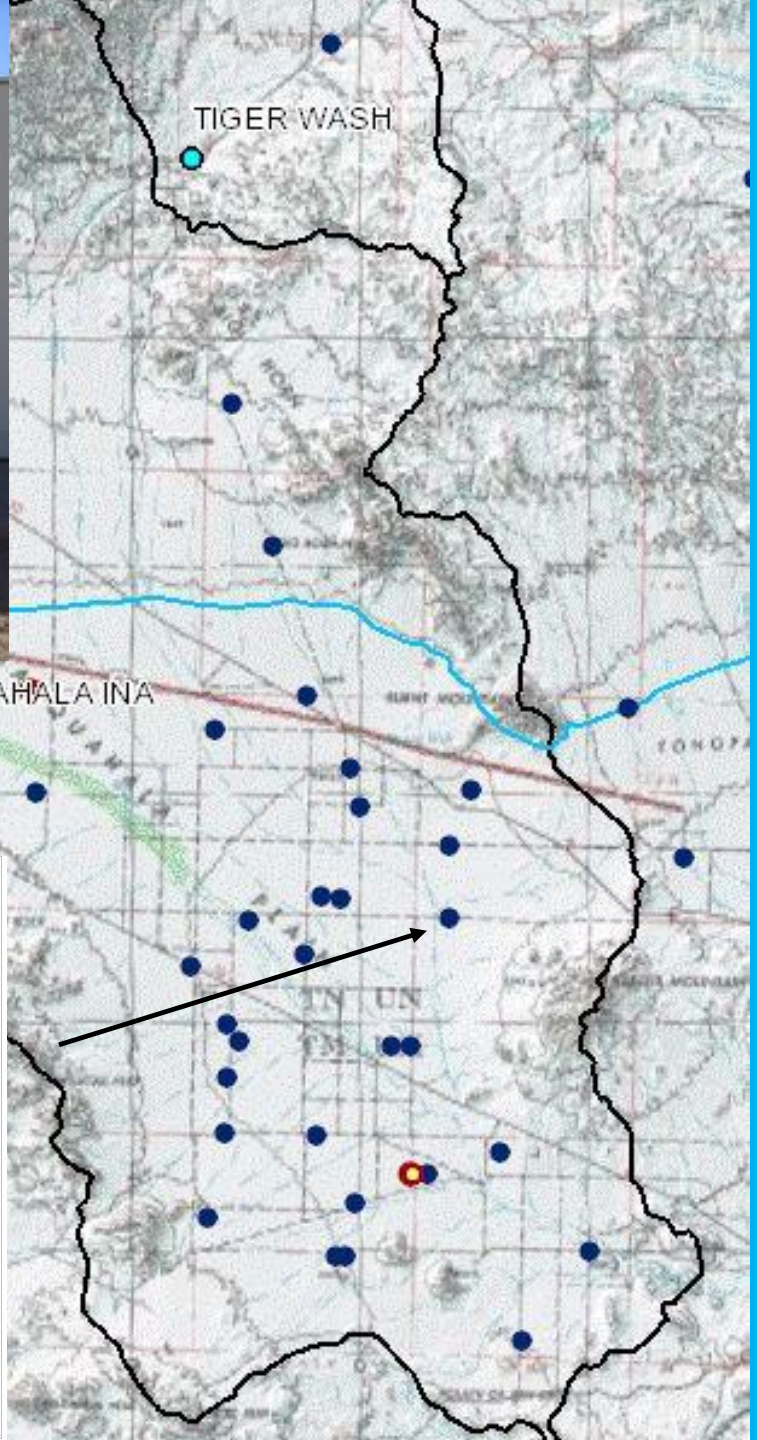
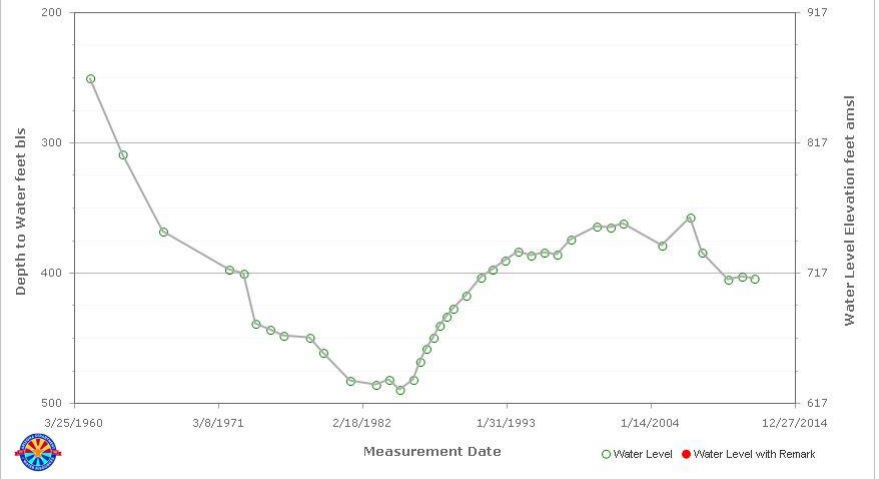


Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-01-08 06AAA	332749113063901	612565	33° 27' 51.8"	113° 6' 34.3"	1117	IRRIGATION	759	20	6/23/1958	11/1/2011	404.2	712.8



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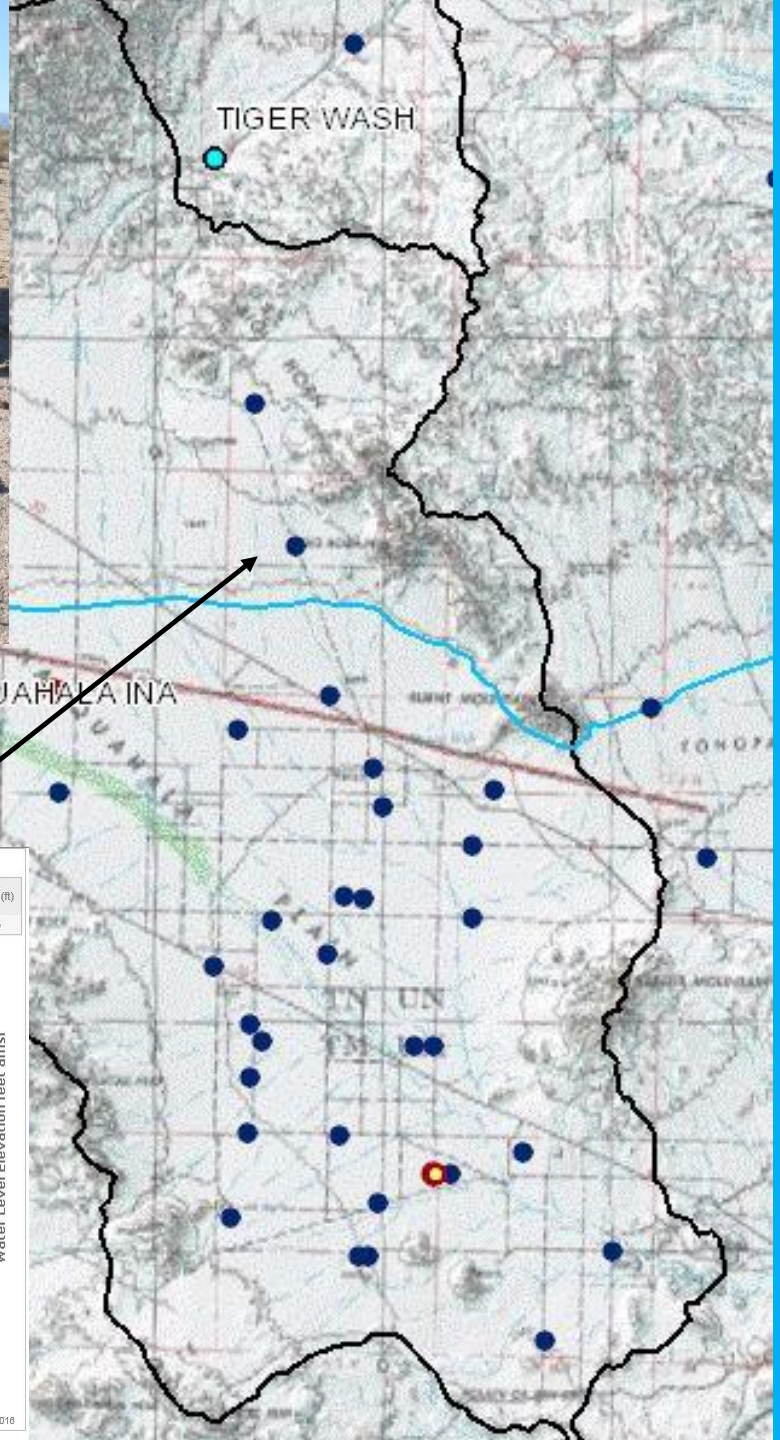
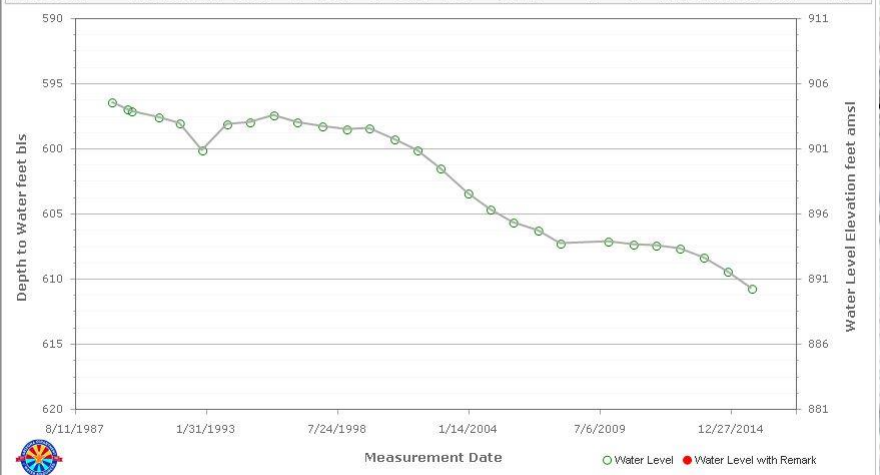


Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-03-09 08DDD2	333637113114701	520439	33° 36' 35.9"	113° 11' 45.7"	1501	UNUSED	765	5	4/11/1988	11/5/2015	610.7	890.3



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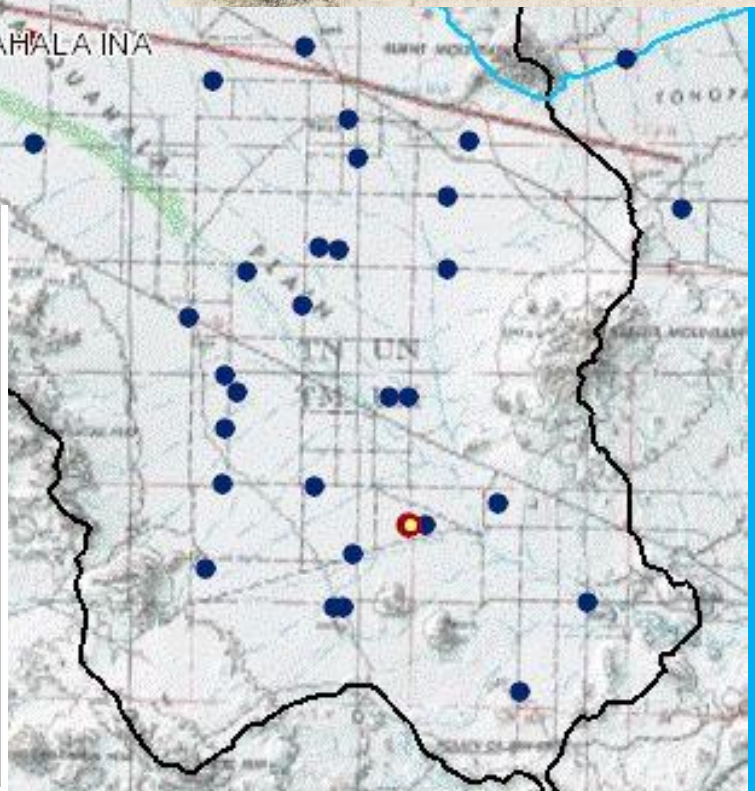
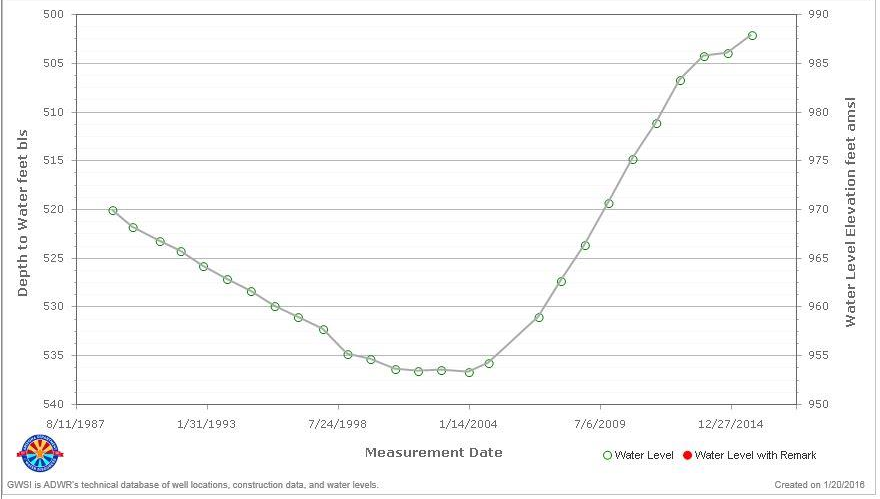
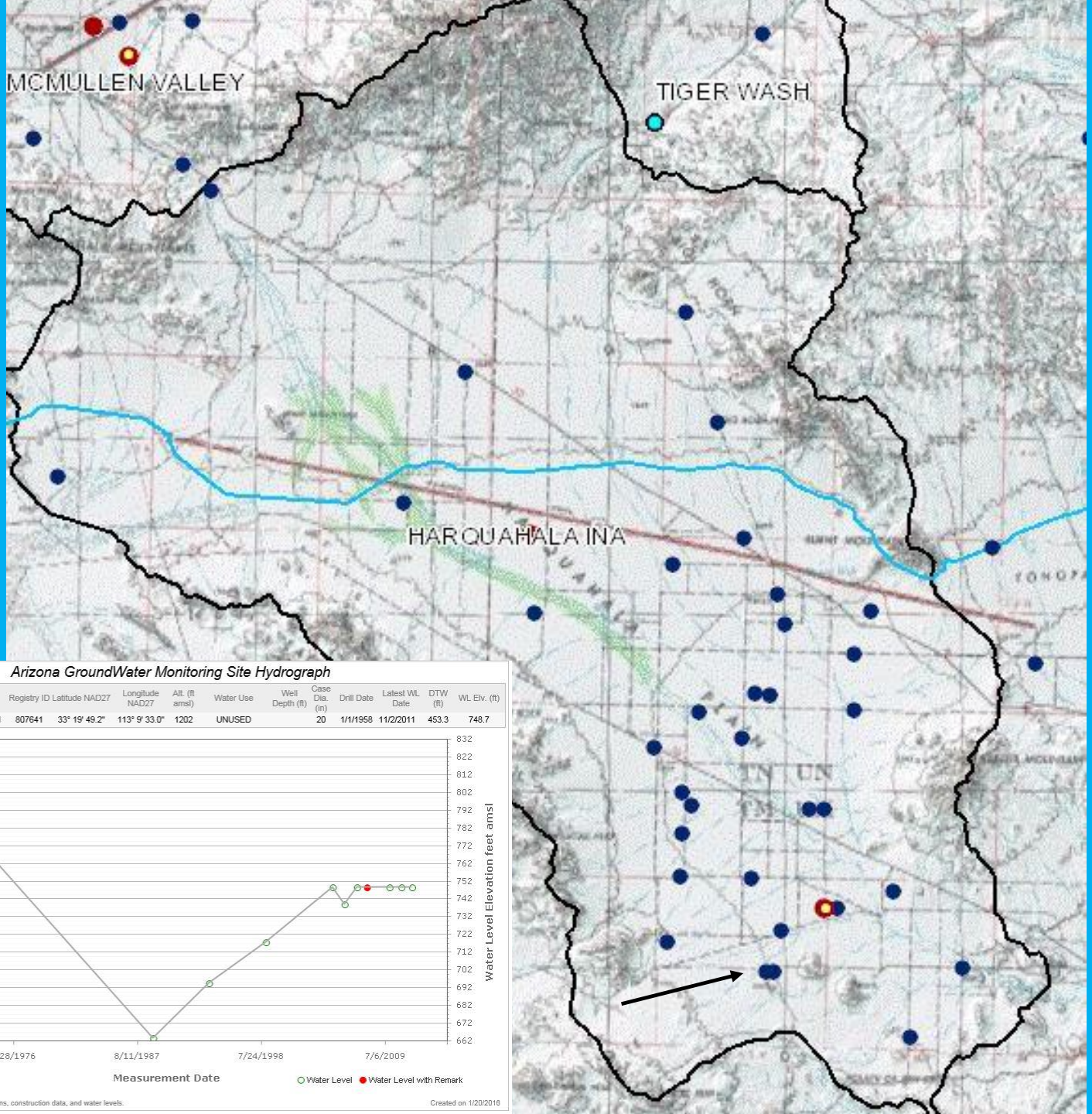


Arizona GroundWater Monitoring Site Hydrograph

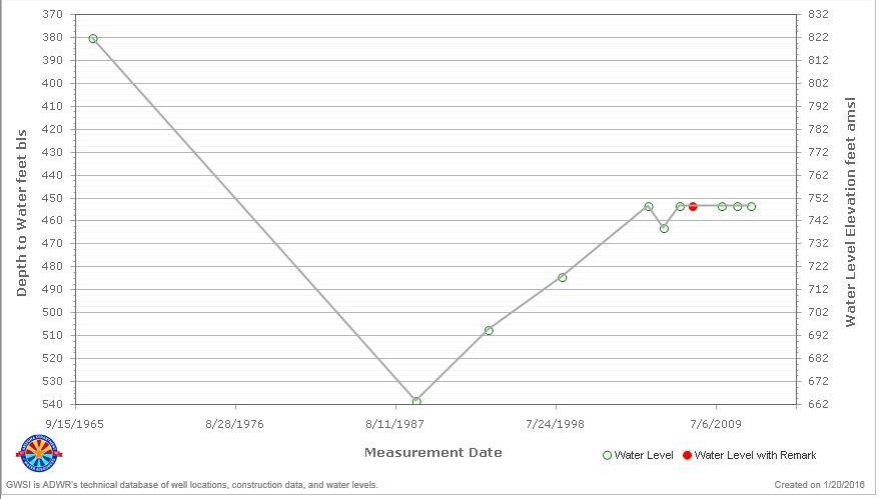
Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-03-11 01BCB	333802113210301	520474	33° 37' 57.8"	113° 21' 4.4"	1490	UNUSED	980	14	6/9/1988	11/2/2015	502	988

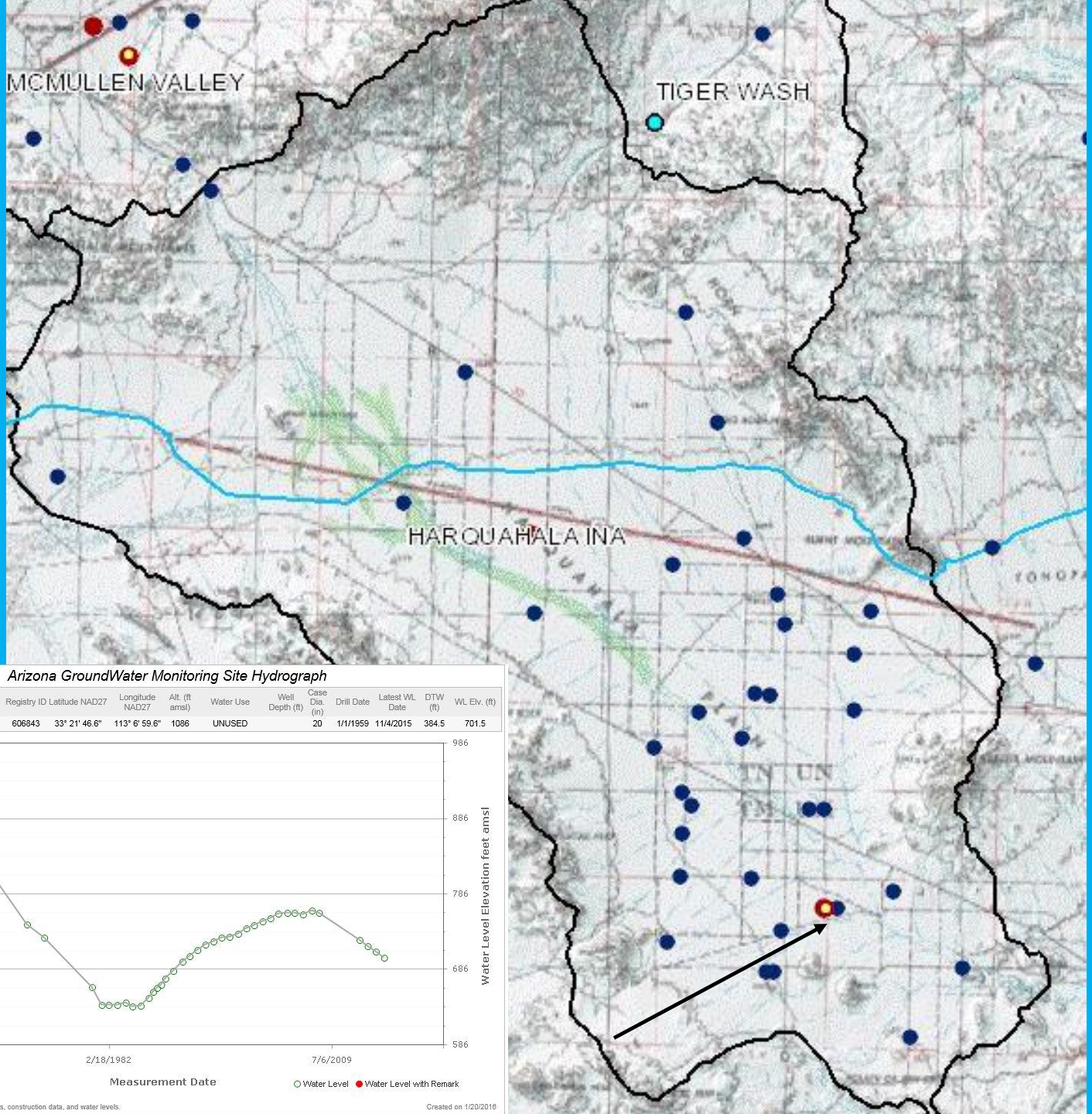




Arizona GroundWater Monitoring Site Hydrograph

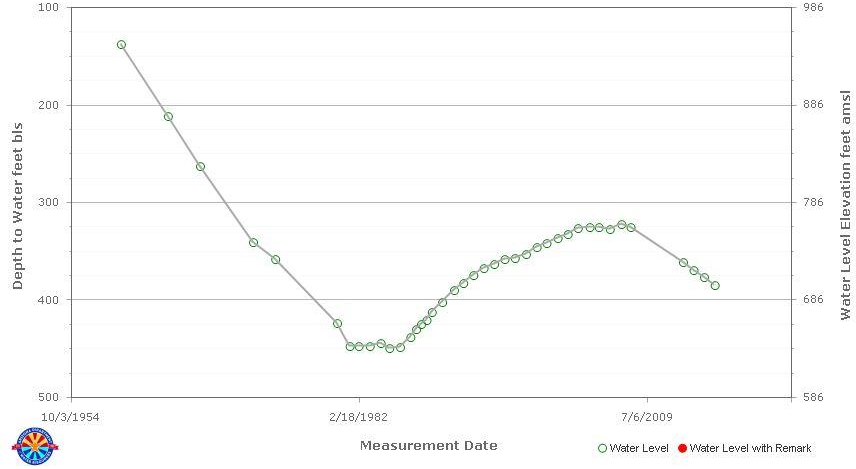
Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
C-01-09 23BBC	331950113032401	807641	33° 19' 49.2"	113° 9' 33.0"	1202	UNUSED		20	1/1/1958	11/2/2011	453.3	748.7





Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
C-01-08 06DCC	332149113070301	606843	33° 21' 46.6"	113° 6' 59.6"	1086	UNUSED		20	1/1/1959	11/4/2015	384.5	701.5



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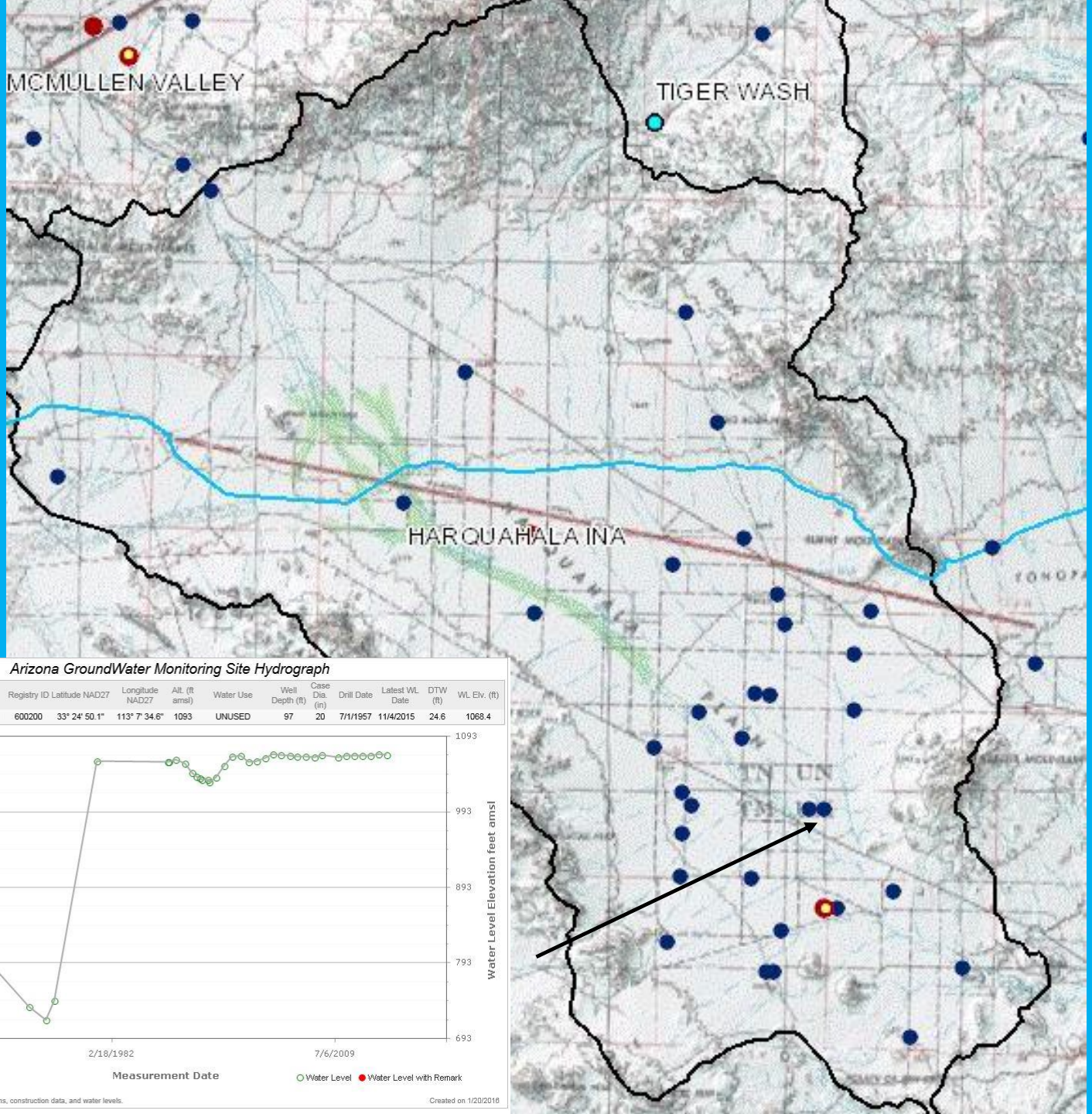
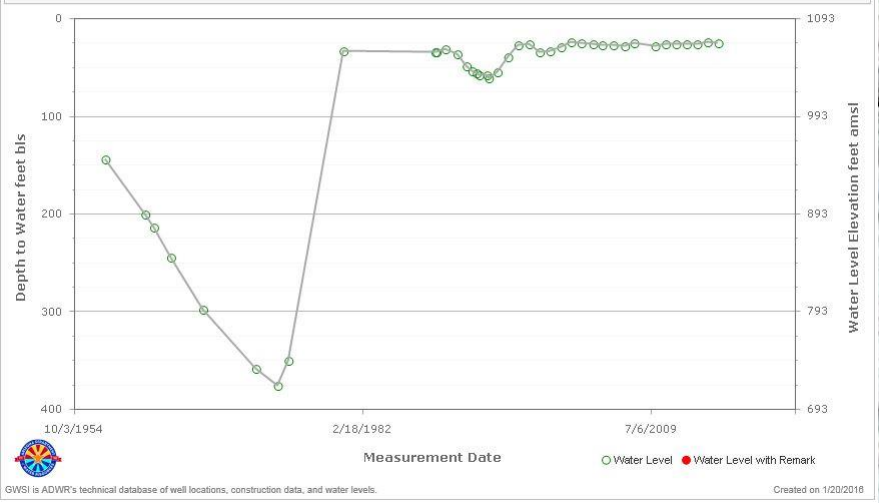
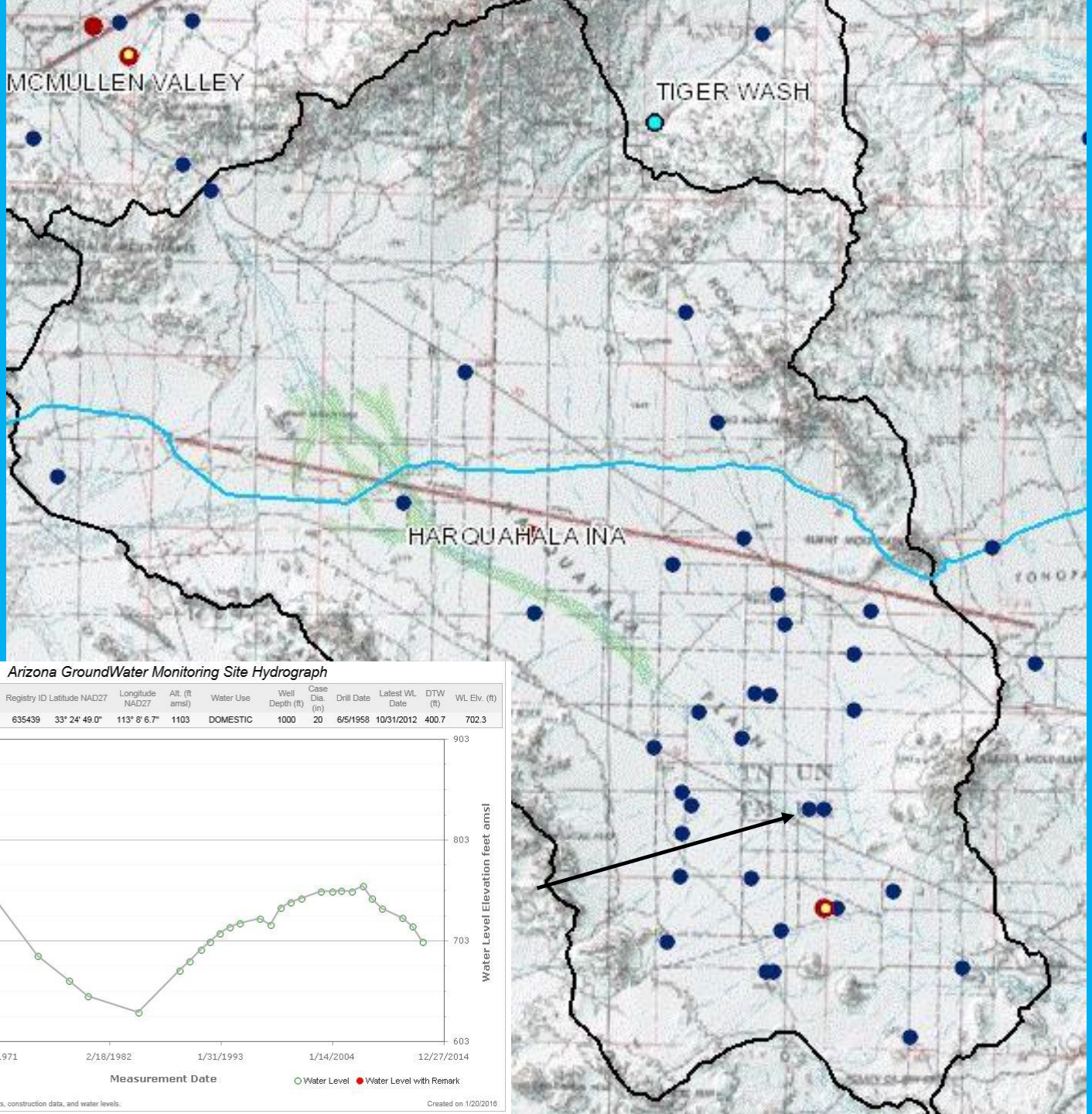


Arizona GroundWater Monitoring Site Hydrograph

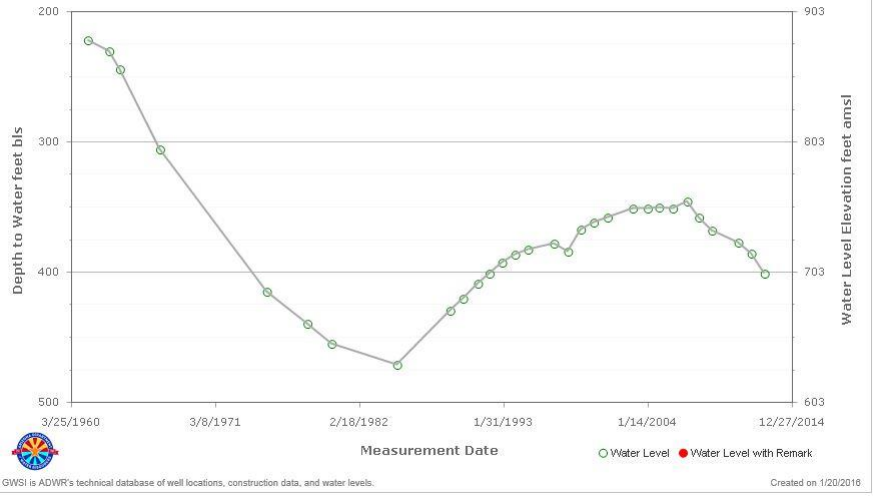
Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-01-08 19BCC	332450113073501	600200	33° 24' 50.1"	113° 7' 34.6"	1093	UNUSED	97	20	7/1/1957	11/4/2015	24.6	1068.4

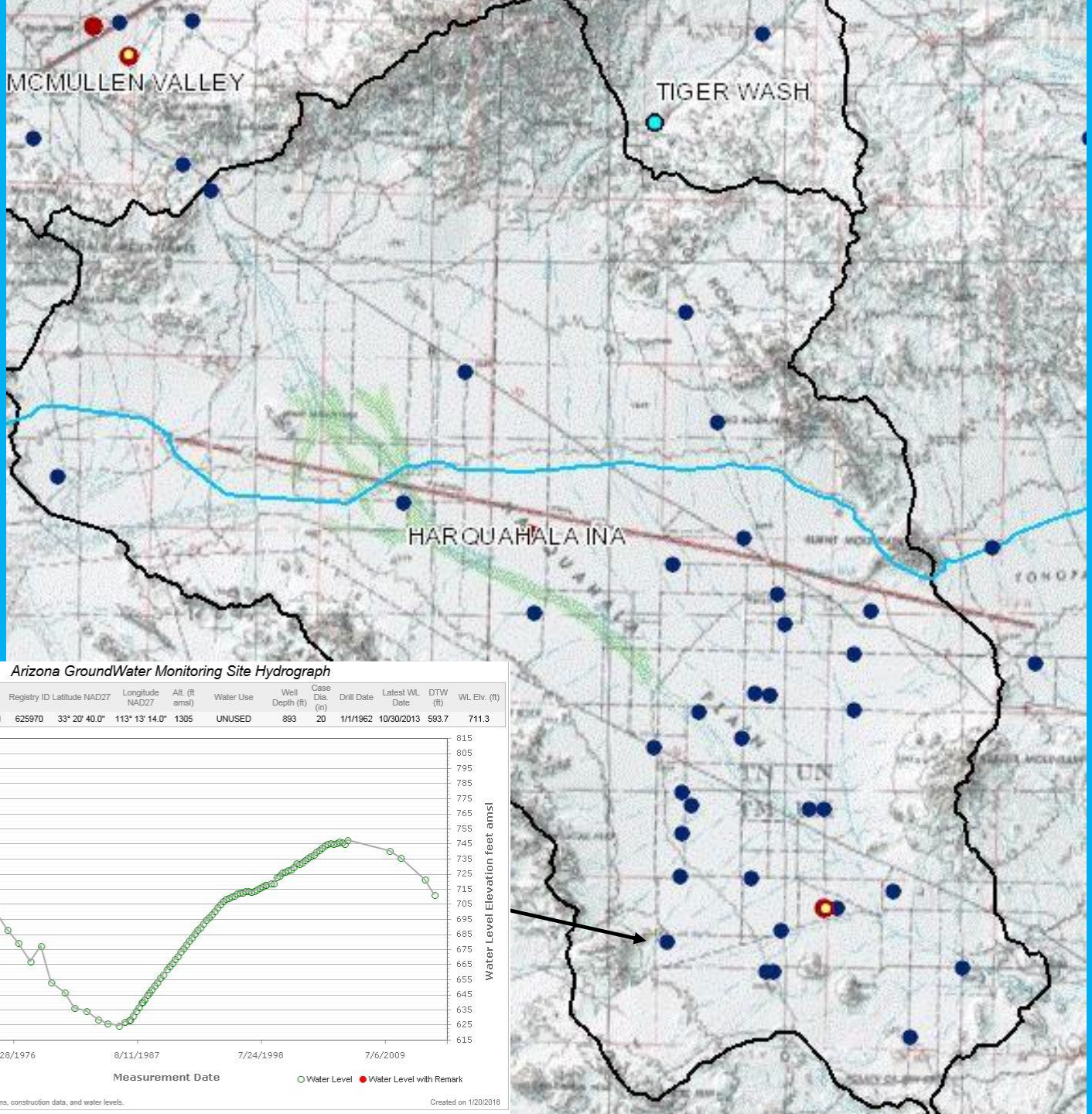




Arizona GroundWater Monitoring Site Hydrograph

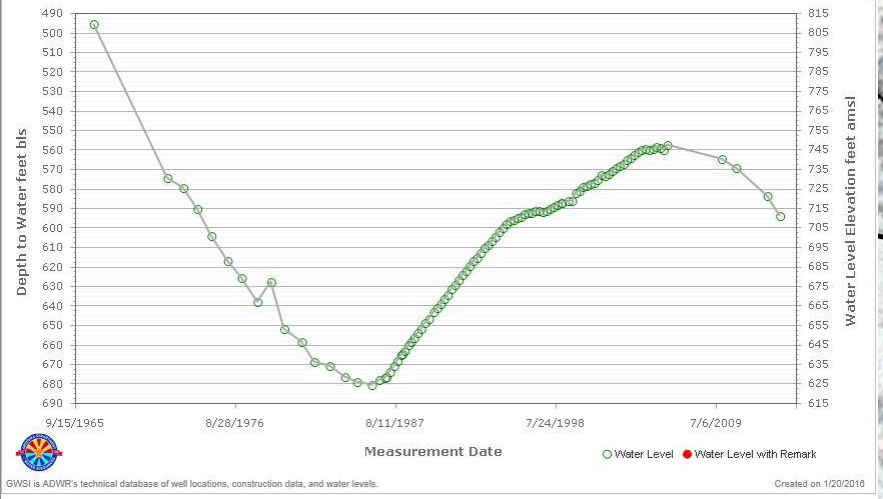
Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-01-09 24CAA	332449113080901	635439	33° 24' 49.0"	113° 8' 6.7"	1103	DOMESTIC	1000	20	6/5/1958	10/31/2012	400.7	702.3

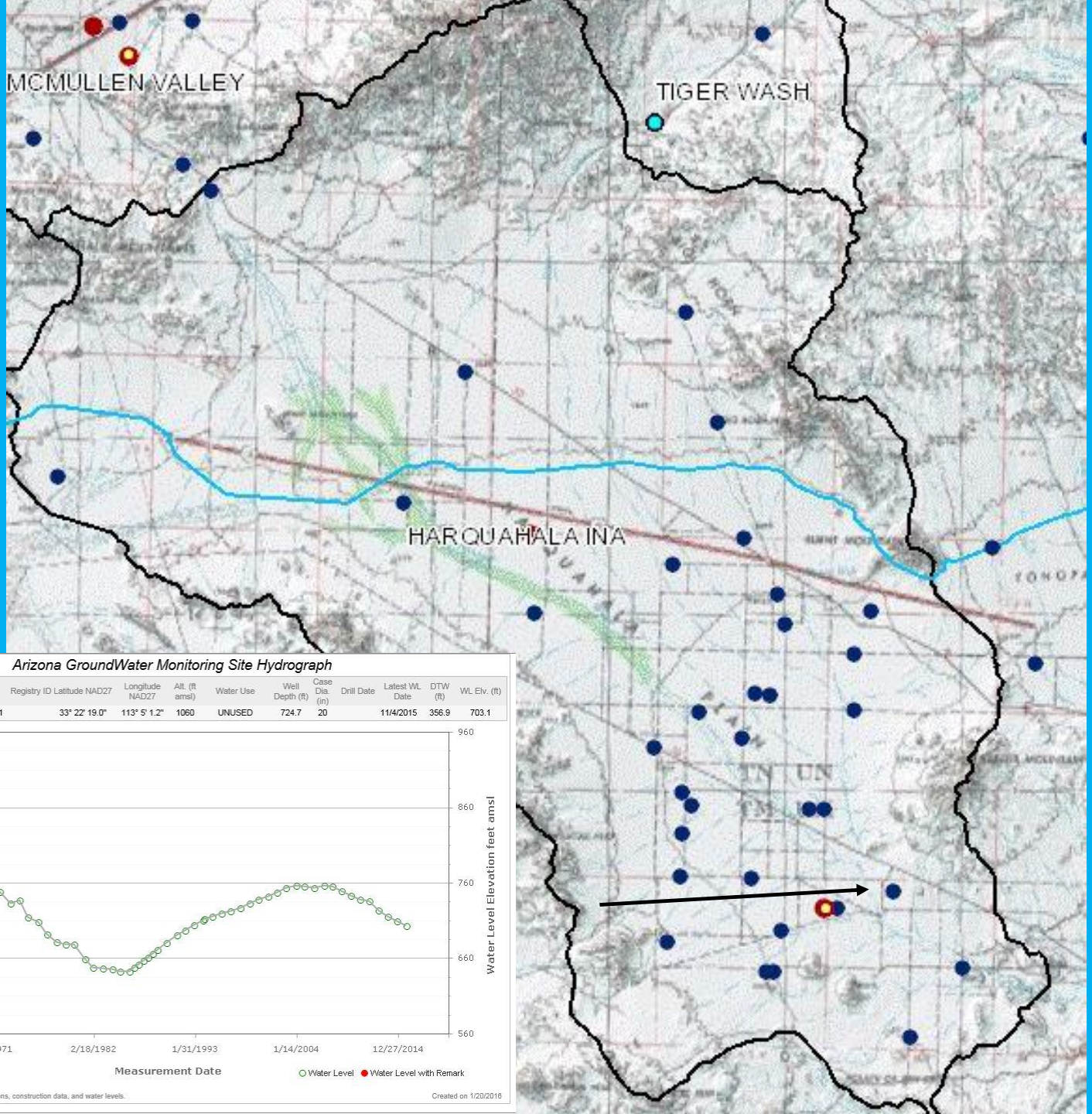




Arizona GroundWater Monitoring Site Hydrograph

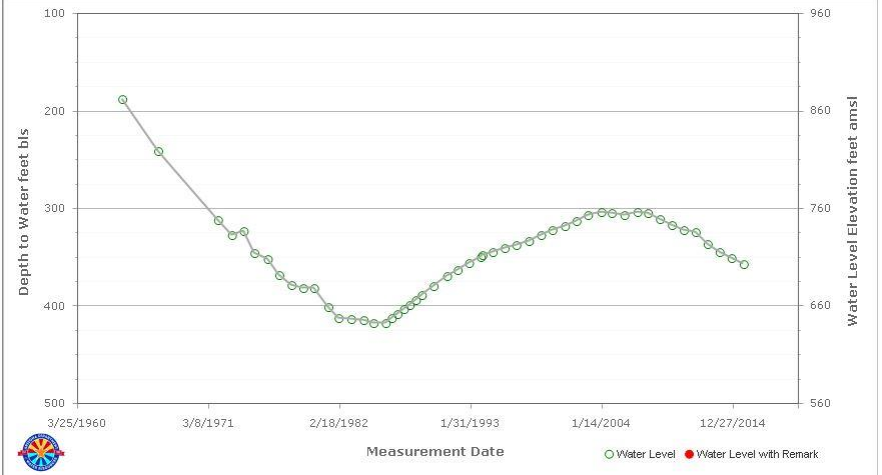
Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
C-01-09 18ACB	332040113131401	625970	33° 20' 40.0"	113° 13' 14.0"	1305	UNUSED	893	20	1/1/1962	10/30/2013	593.7	711.3





Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elev. (ft)
C-01-08 04BDA1	332216113050501		33° 22' 19.0"	113° 5' 1.2"	1060	UNUSED	724.7	20		11/4/2015	356.9	703.1



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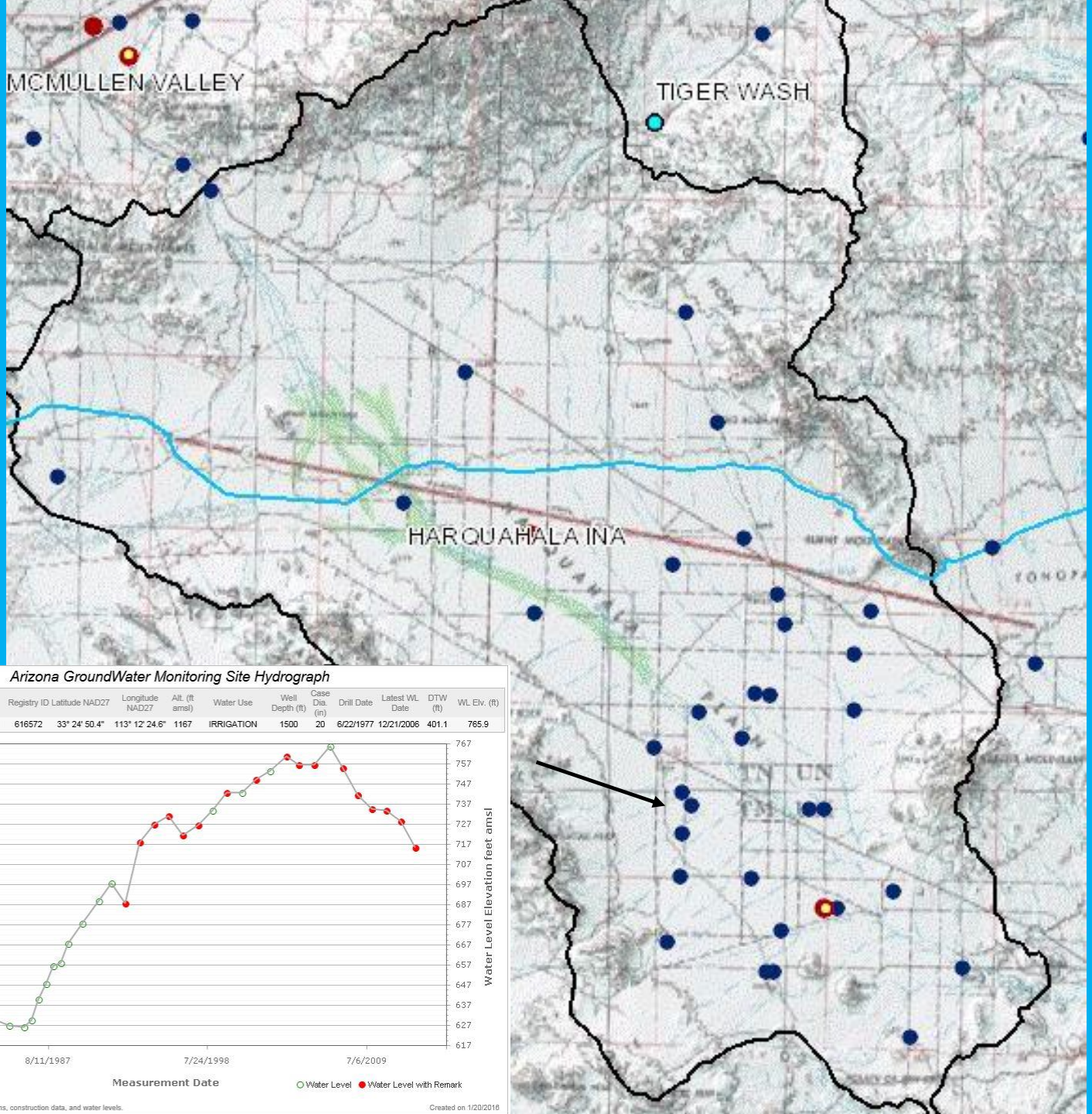
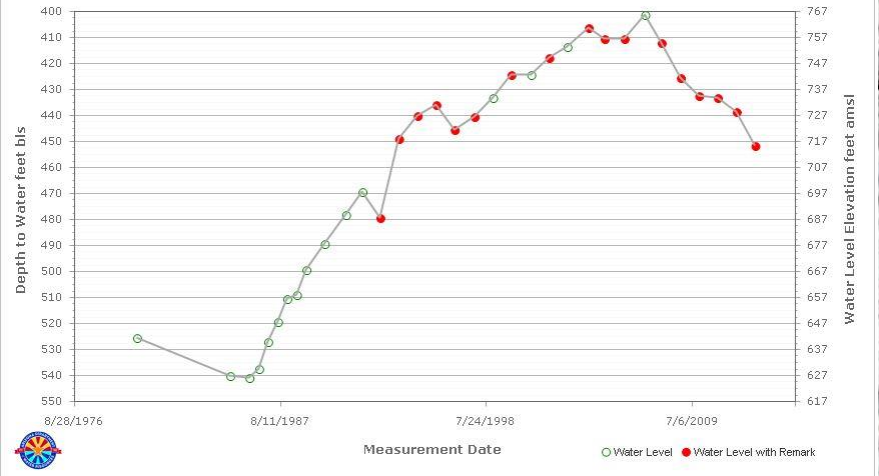


Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-01-09 20BDC	332449113123001	616572	33° 24' 50.4"	113° 12' 24.6"	1167	IRRIGATION	1500	20	6/22/1977	12/21/2006	401.1	765.9



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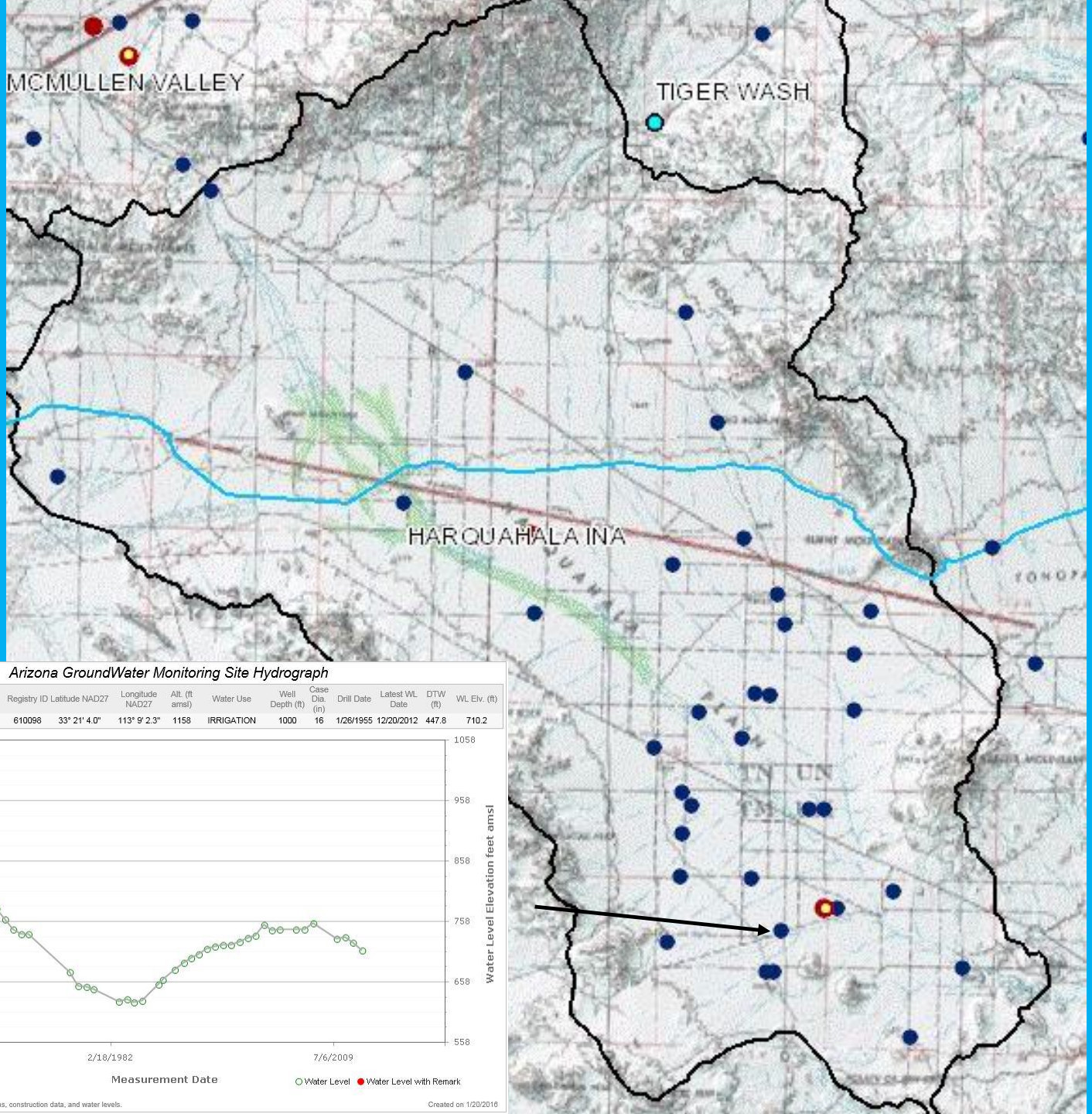
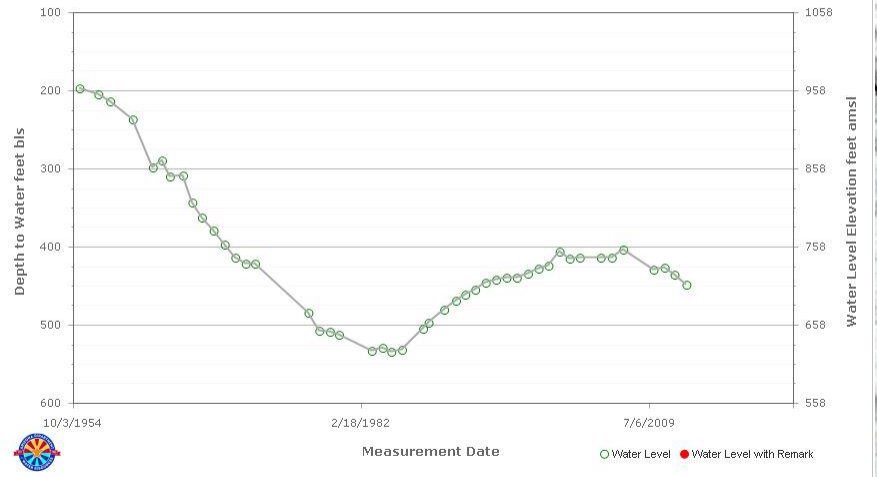


Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
C-01-09 11DCB	332103113090401	610098	33° 21' 4.0"	113° 9' 2.3"	1158	IRRIGATION	1000	16	1/26/1955	12/20/2012	447.8	710.2



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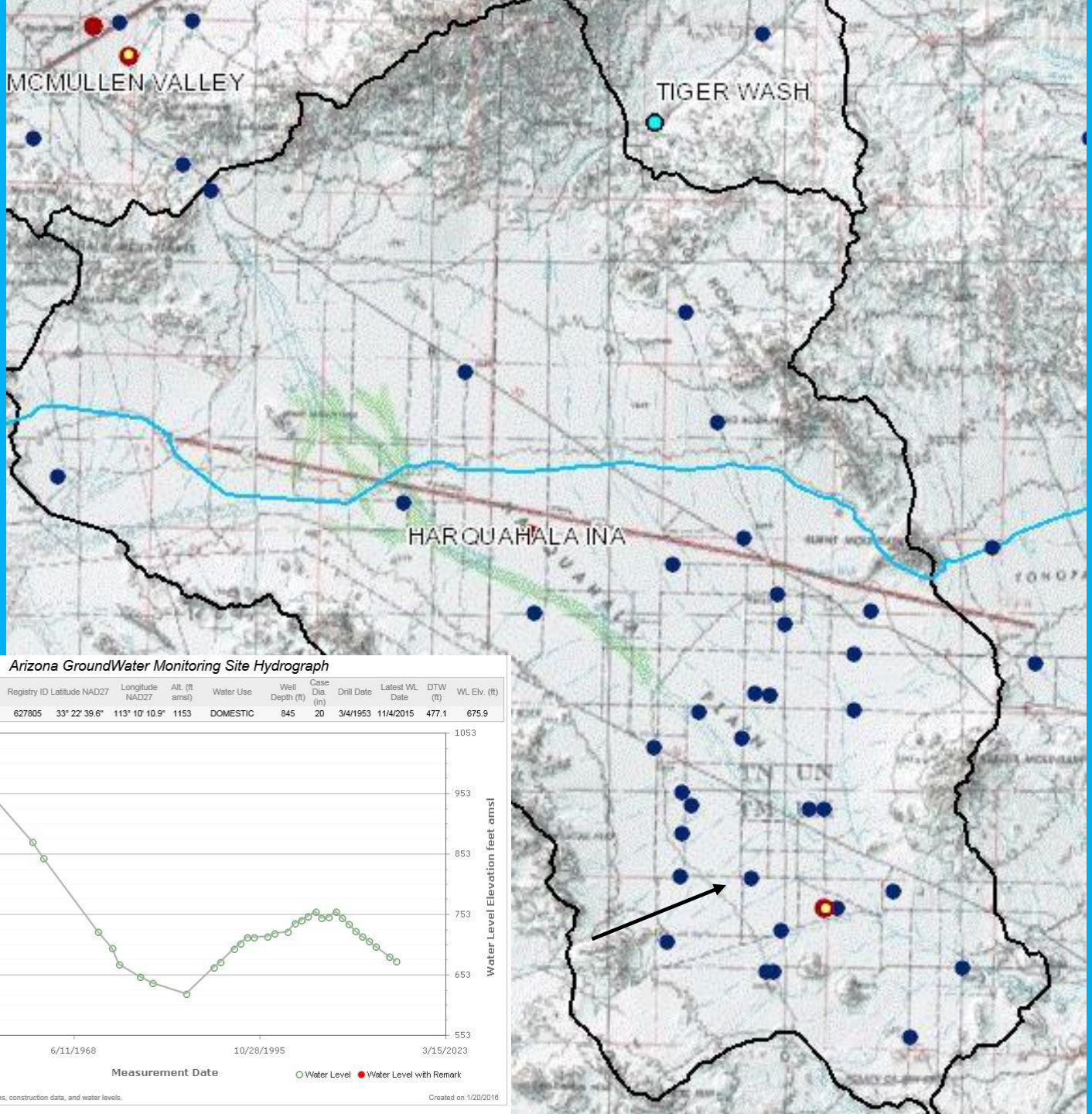
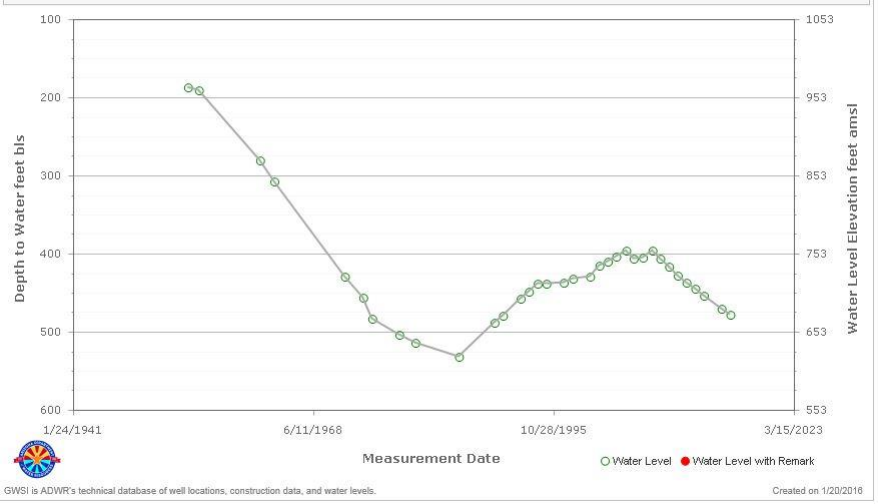
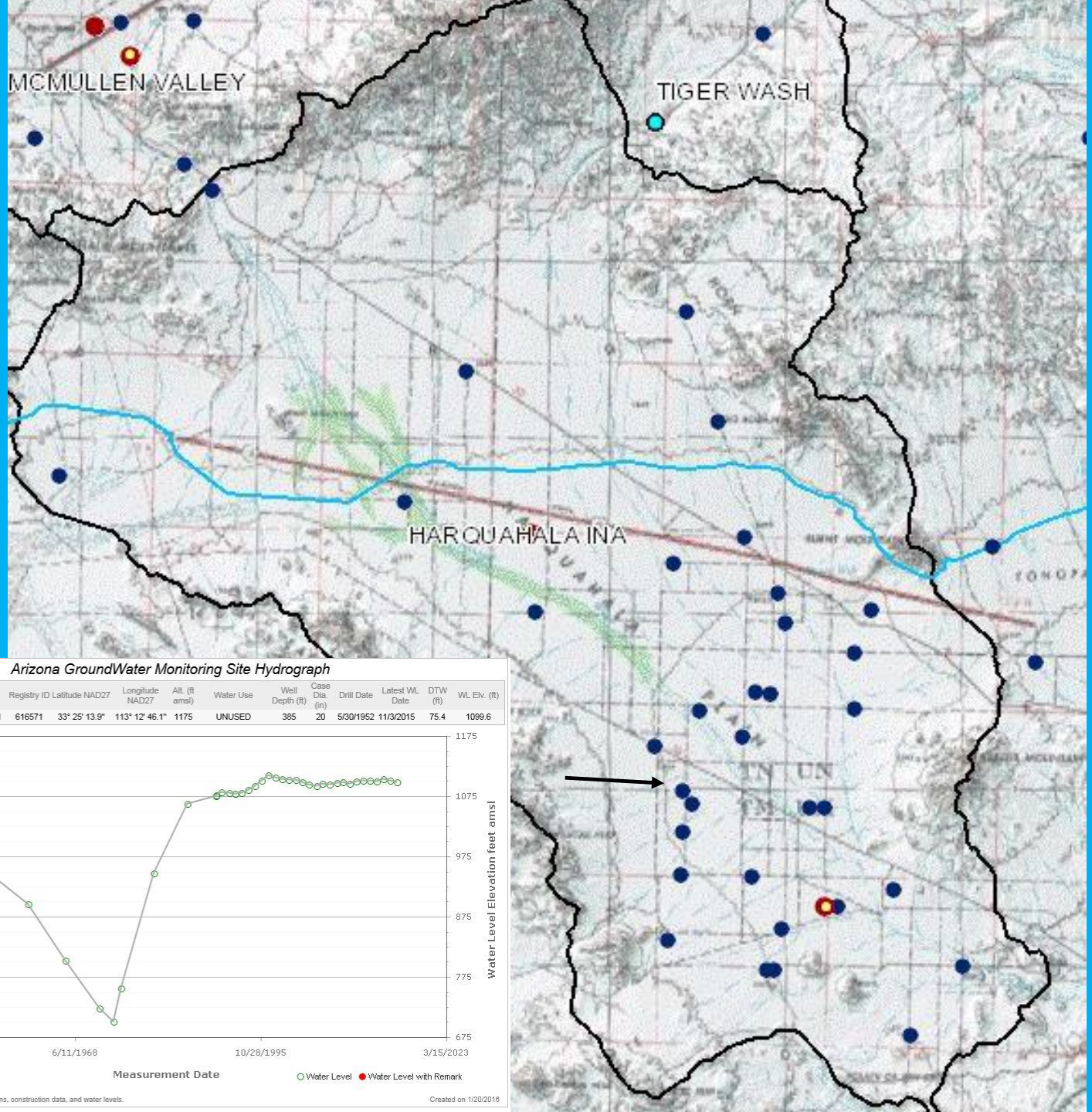


Arizona GroundWater Monitoring Site Hydrograph

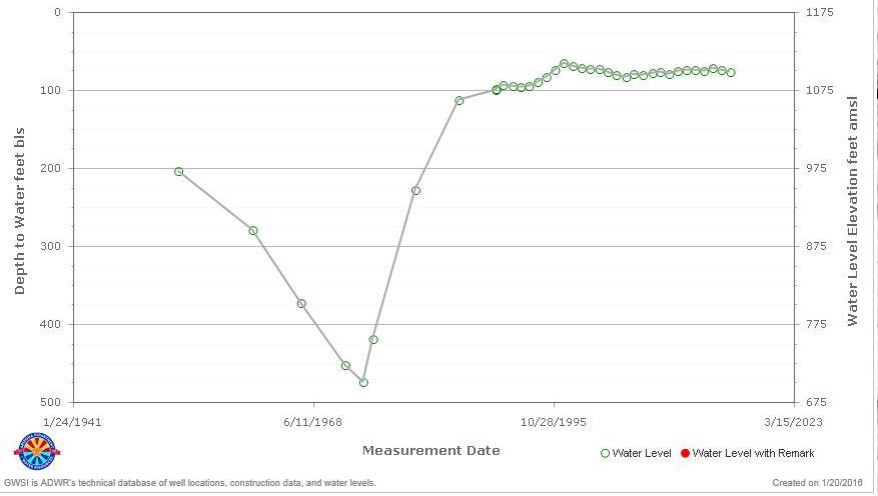
Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-01-09 34DCC1	332242113101601	627805	33° 22' 39.6"	113° 10' 10.9"	1153	DOMESTIC	845	20	3/4/1953	11/4/2015	477.1	675.9

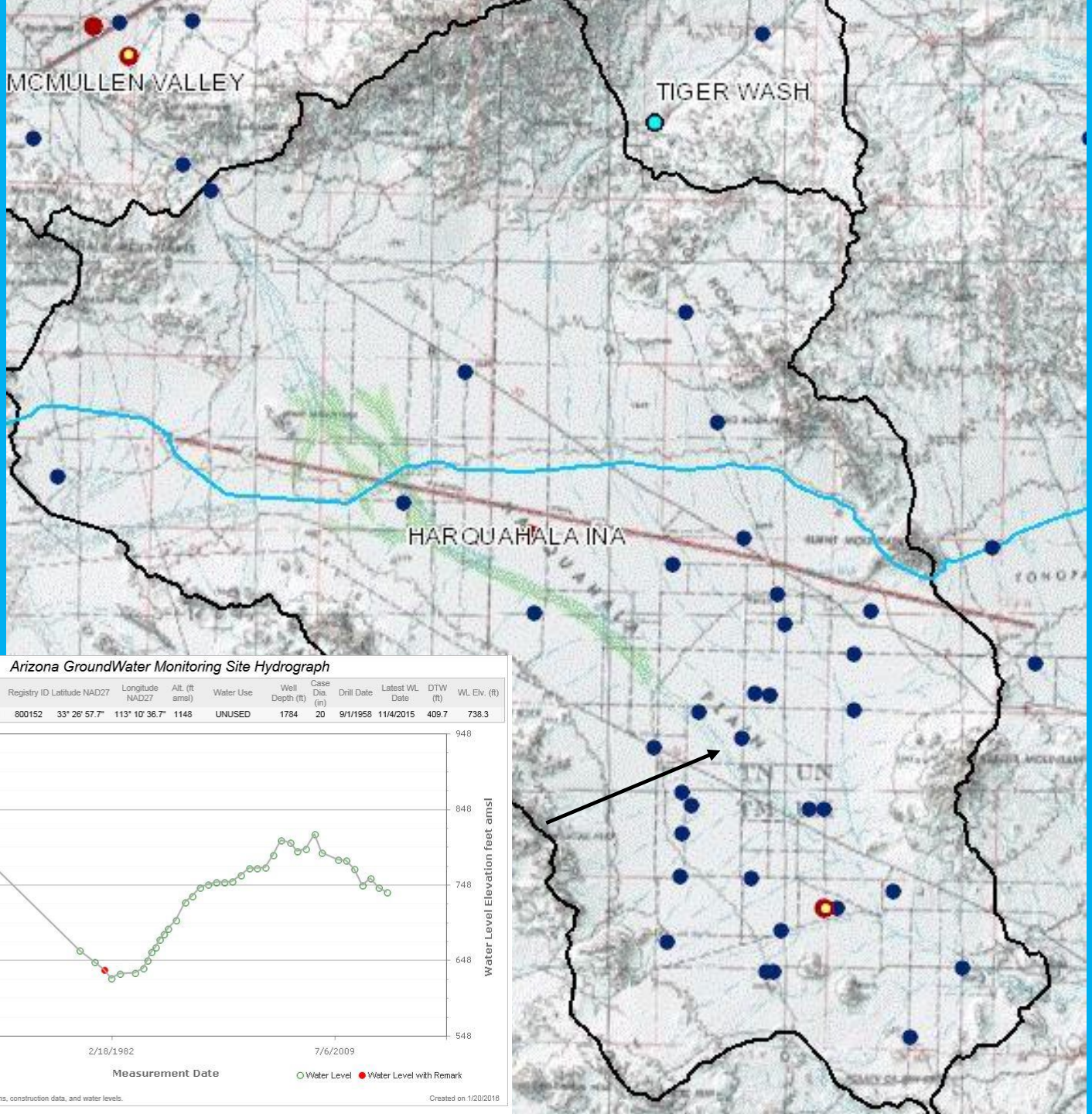




Arizona GroundWater Monitoring Site Hydrograph

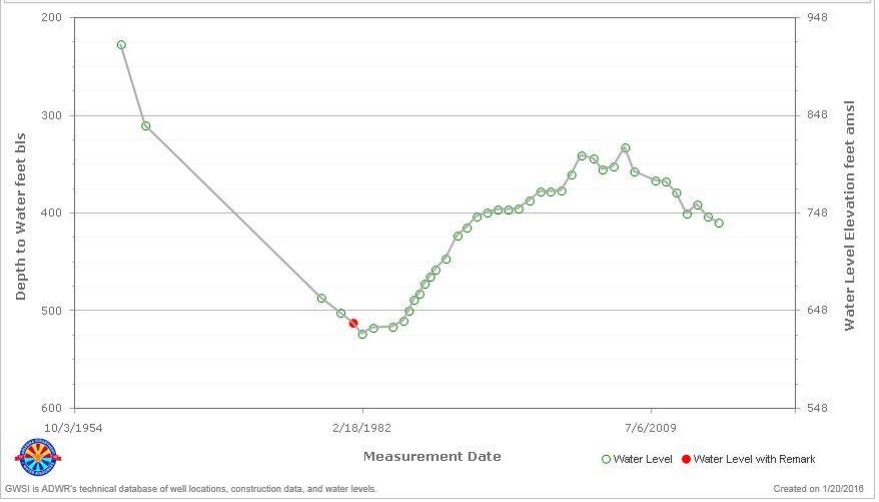
Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-01-09 20BBB	332513113124701	616571	33° 25' 13.9"	113° 12' 46.1"	1175	UNUSED	385	20	5/30/1952	11/3/2015	75.4	1099.6

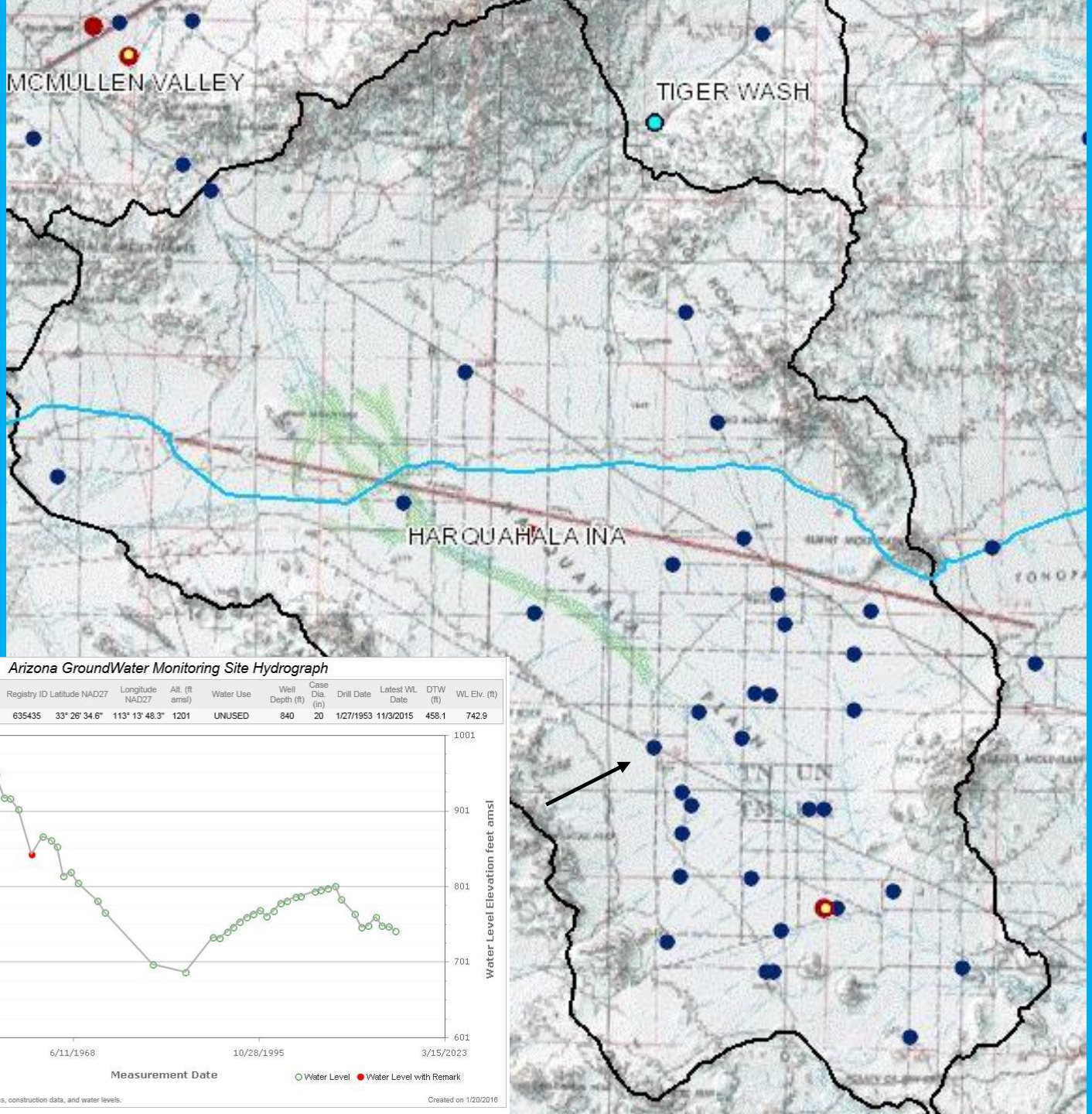




Arizona GroundWater Monitoring Site Hydrograph

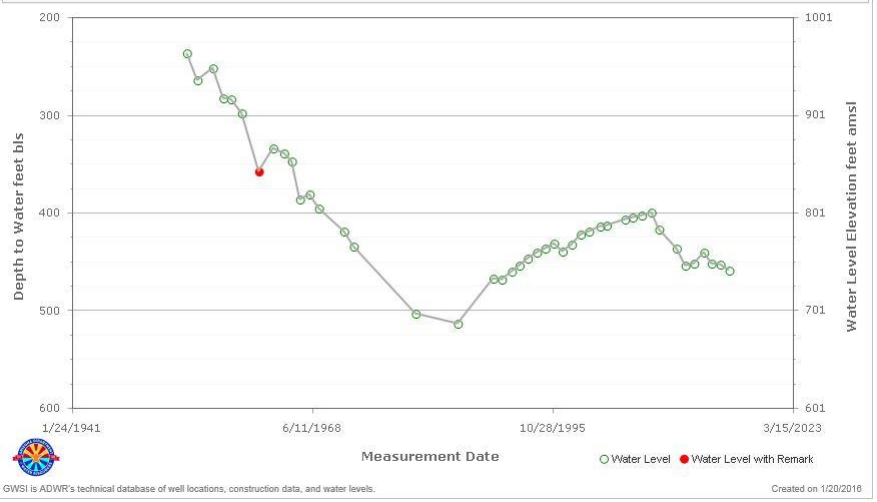
Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-01-09 10BBB	332658113104001	800152	33° 26' 57.7"	113° 10' 36.7"	1148	UNUSED	1784	20	9/1/1958	11/4/2015	409.7	738.3





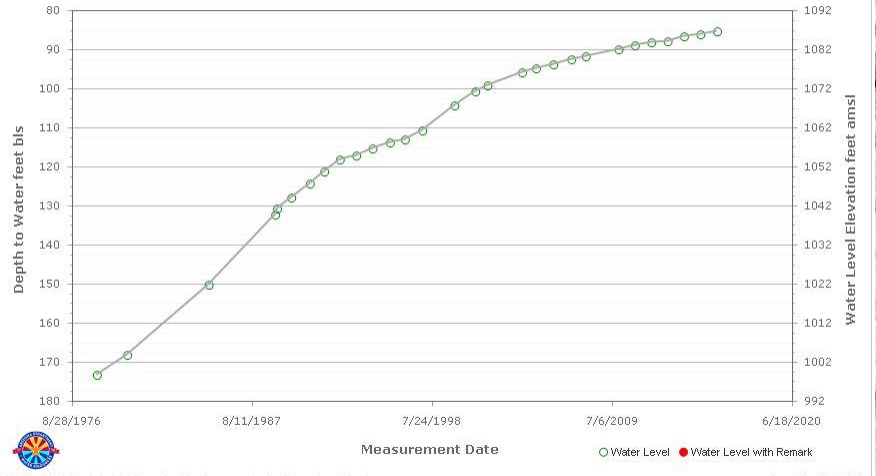
Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-01-09 07BCC	332637113134801	635435	33° 26' 34.6"	113° 13' 48.3"	1201	UNUSED	840	20	1/27/1953	11/3/2015	458.1	742.9



Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-01-09 05ABC	332743113121801	805455	33° 27' 42.4"	113° 12' 14.9"	1172	UNUSED	493	12.75	2/1/1956	11/3/2015	85.1	1086.9



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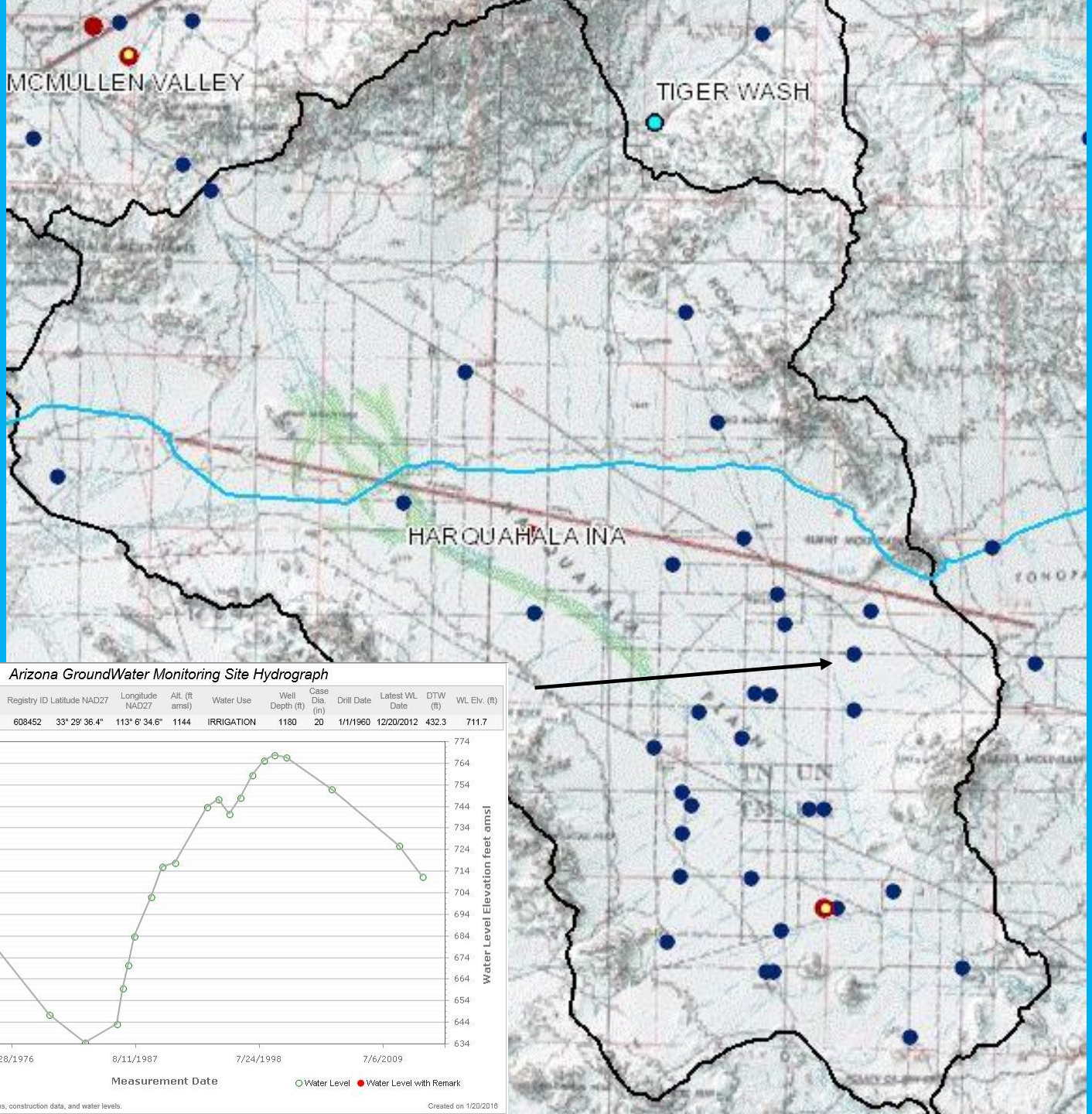
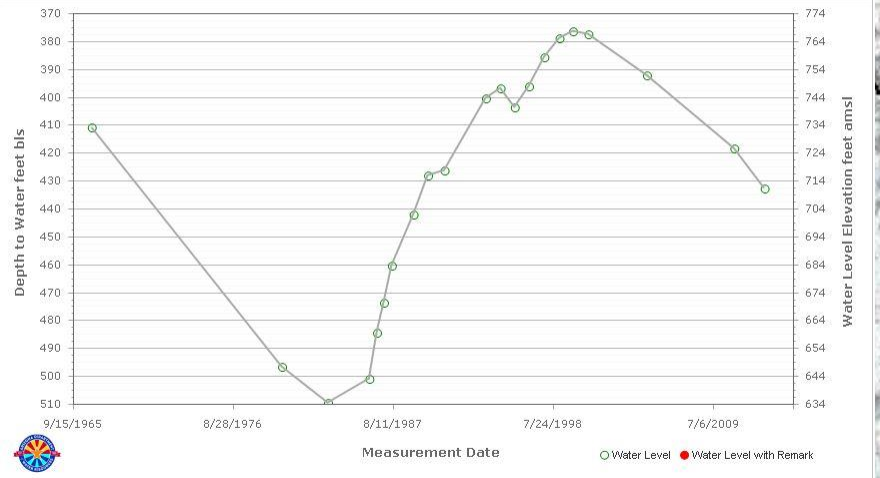


Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-02-08 30AAA2	332938113063901	608452	33° 29' 36.4"	113° 6' 34.6"	1144	IRRIGATION	1180	20	1/1/1960	12/20/2012	432.3	711.7



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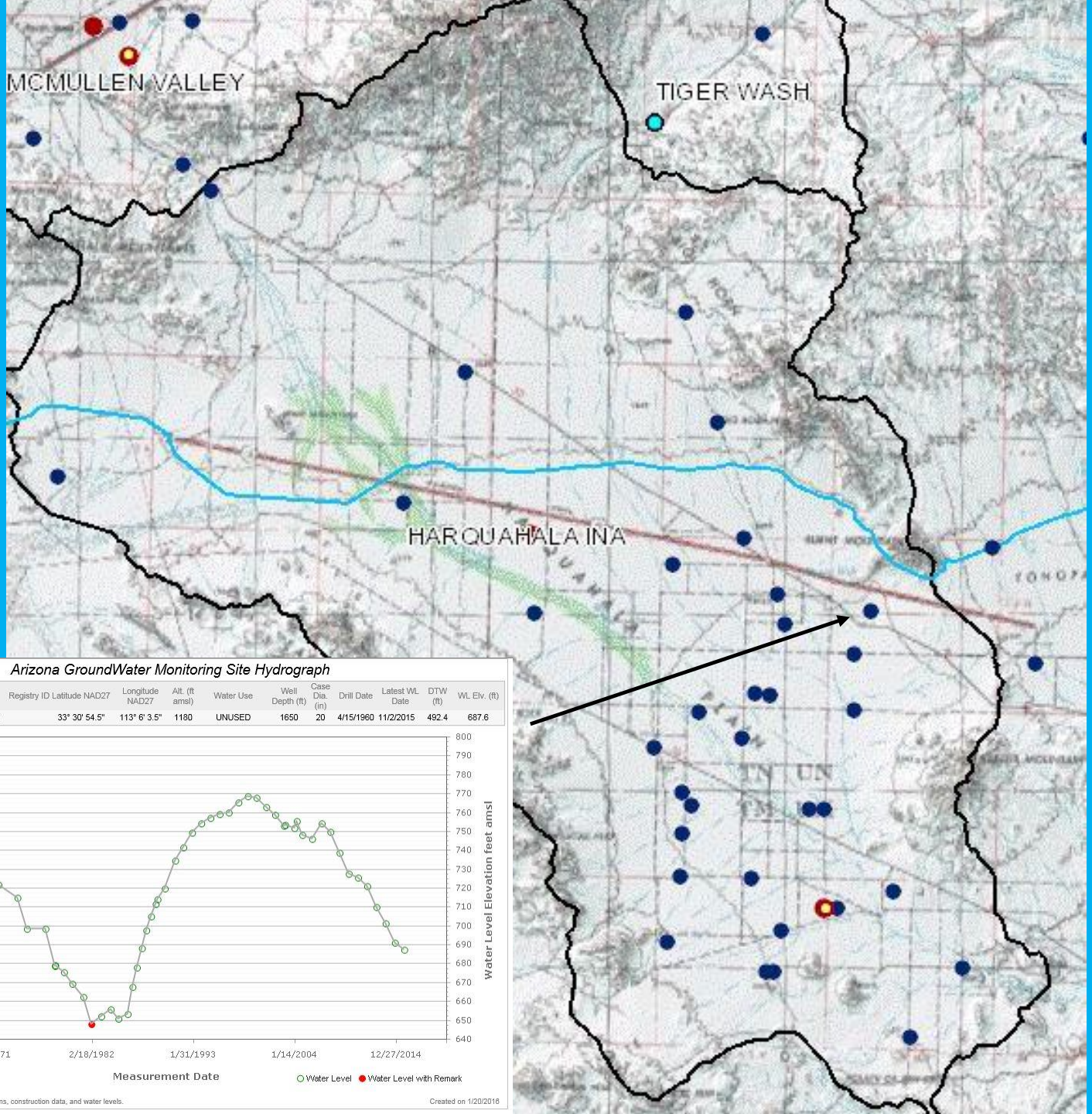
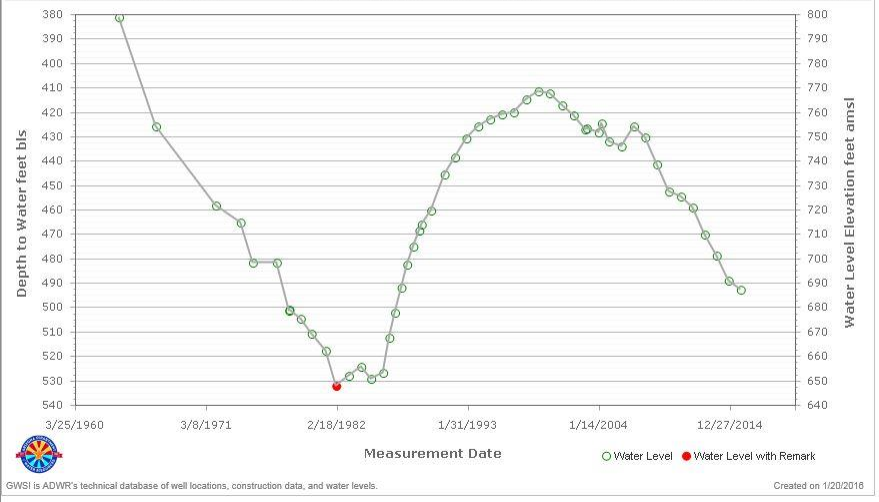
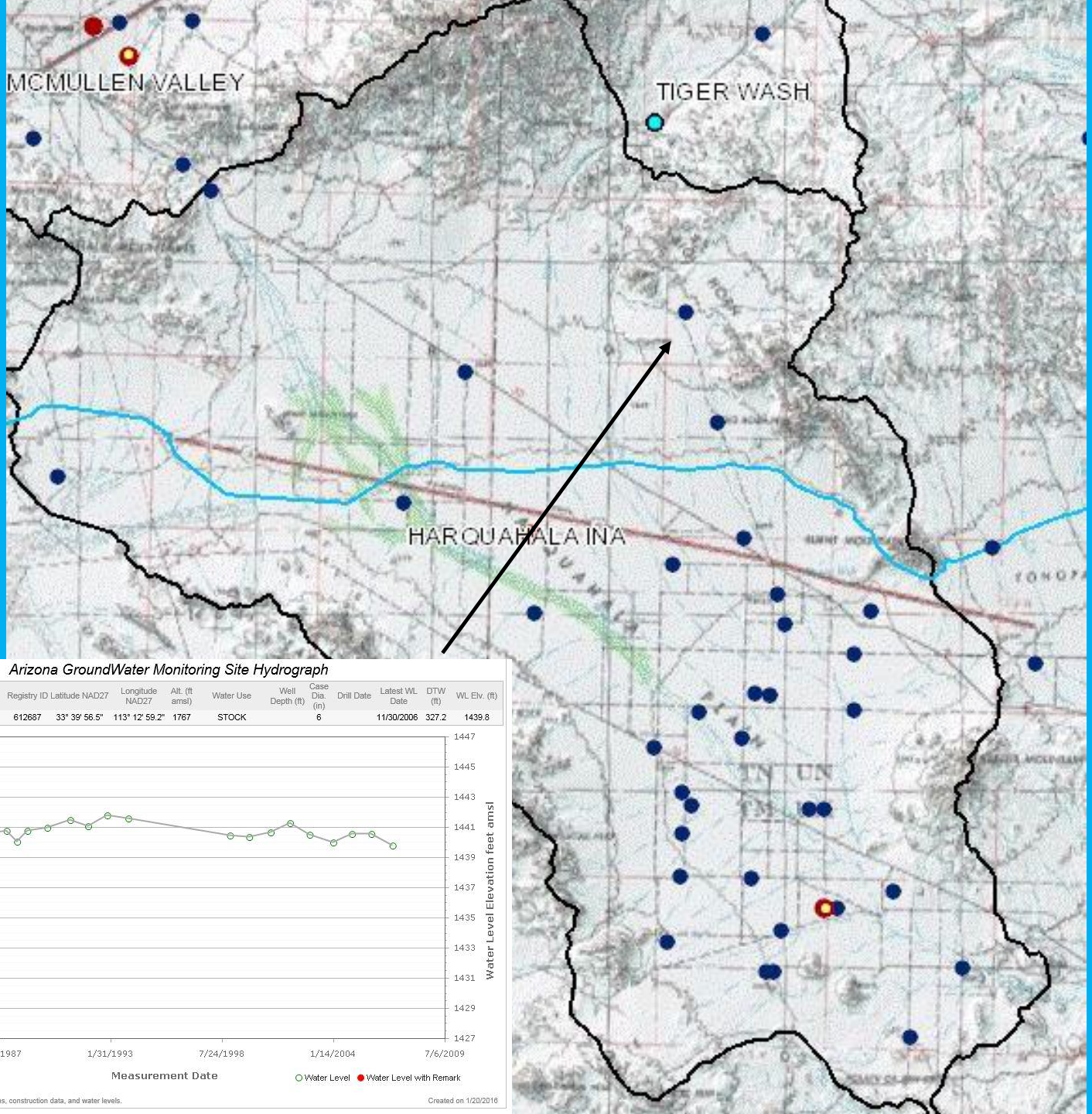


Arizona GroundWater Monitoring Site Hydrograph

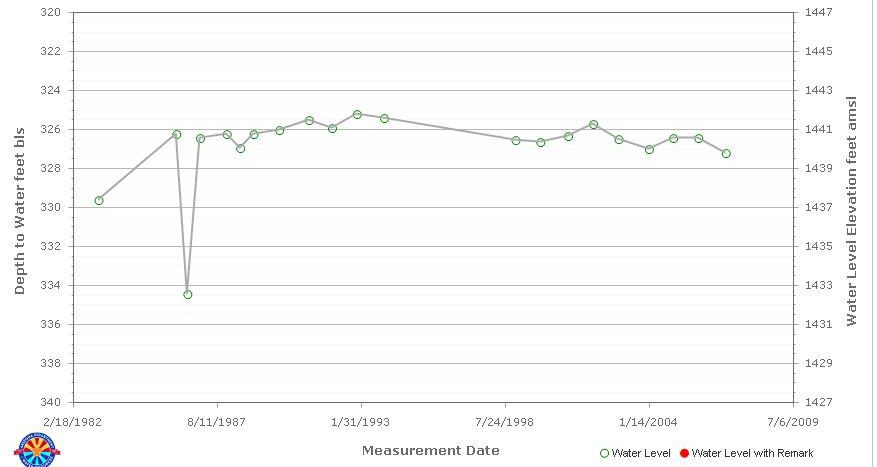
Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-02-08 17CAA	333057113060701		33° 30' 54.5"	113° 6' 3.5"	1180	UNUSED	1650	20	4/15/1960	11/2/2015	492.4	687.6





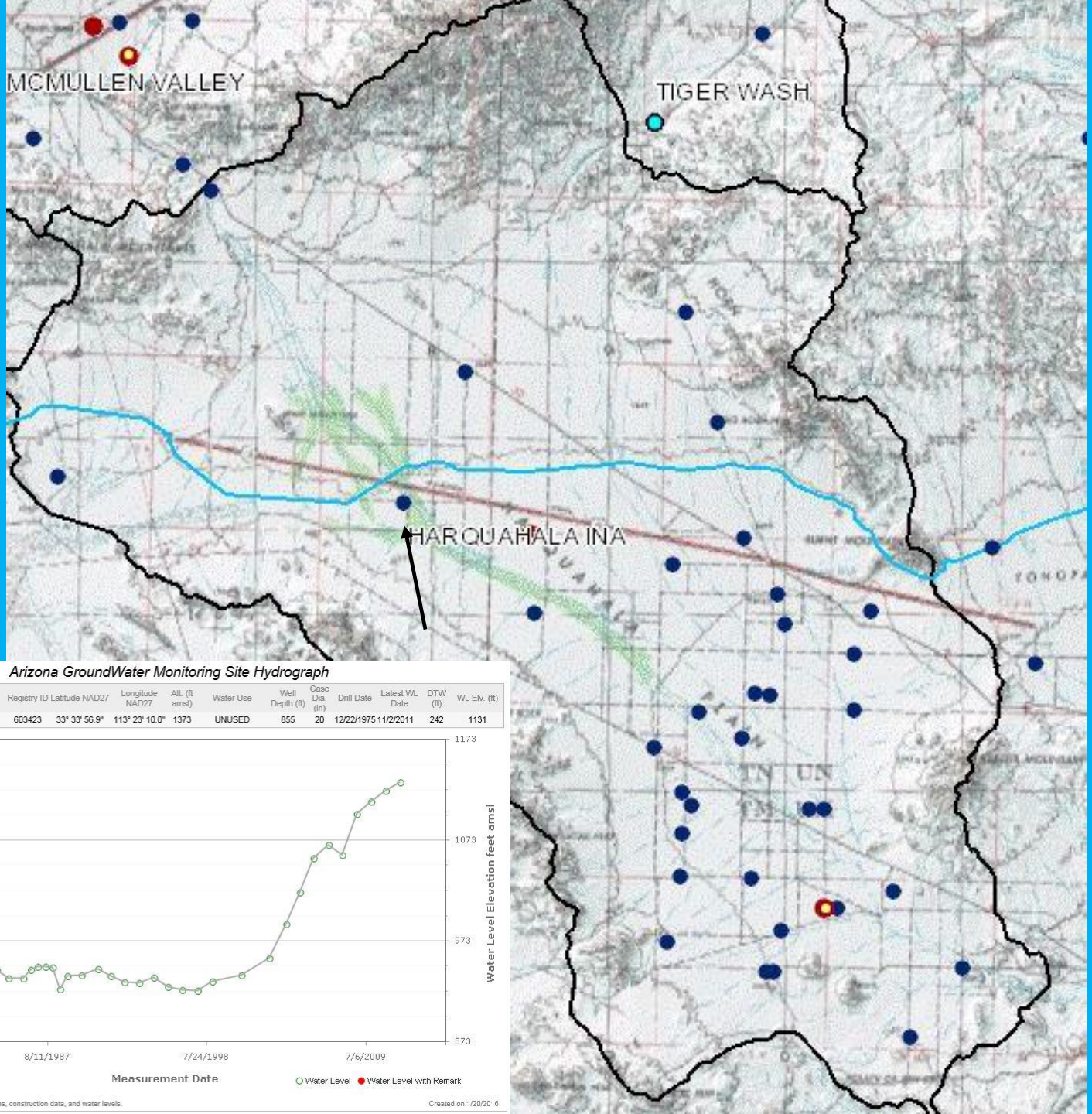
Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-04-09 30AAC	334000113130301	612687	33° 39' 56.5"	113° 12' 59.2"	1767	STOCK		6		11/30/2006	327.2	1439.8



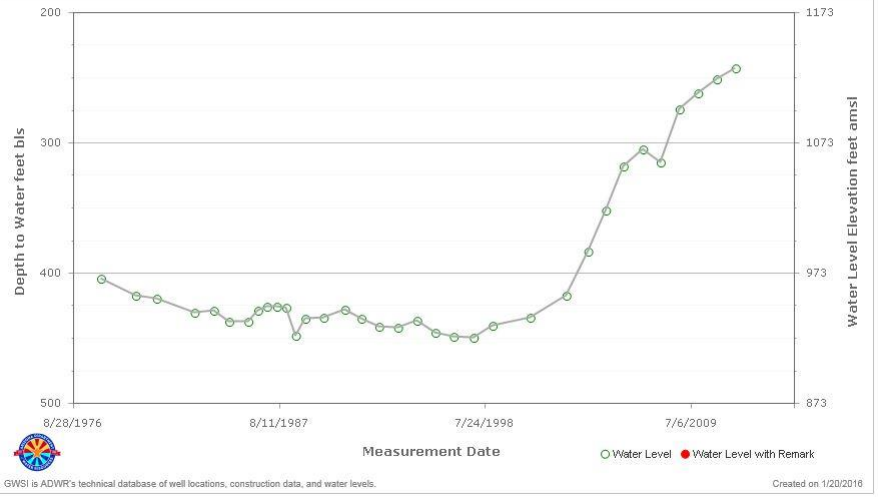
GWSI is ADWR's technical database of well locations, construction data, and water levels.

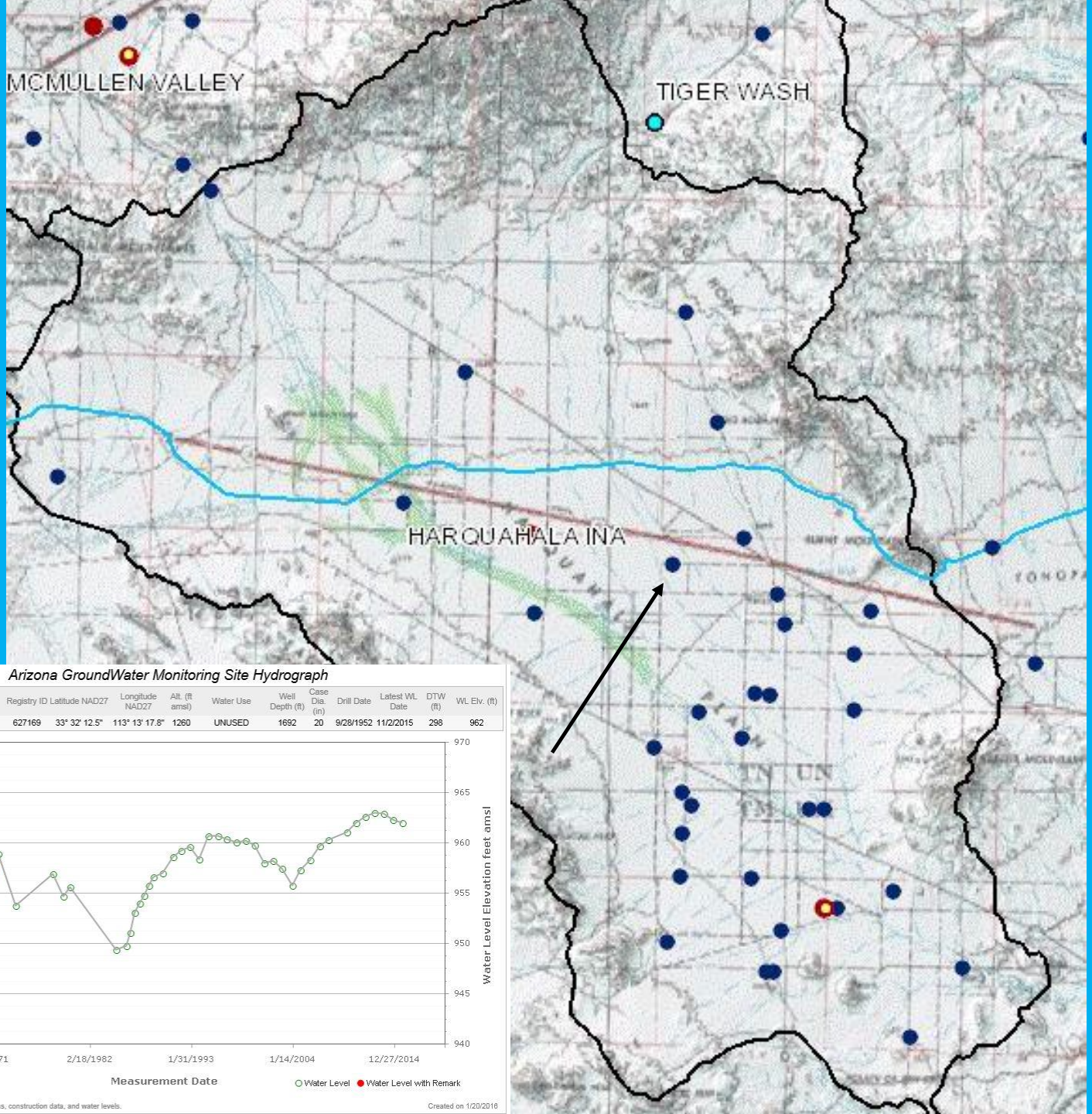
Created on 1/20/2016



Arizona GroundWater Monitoring Site Hydrograph

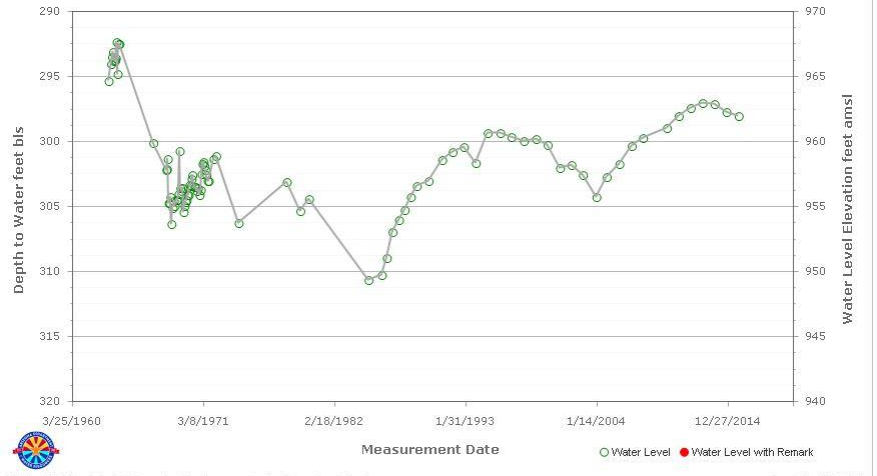
Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-03-11 34BBB	333358113231001	603423	33° 33' 56.9"	113° 23' 10.0"	1373	UNUSED	855	20	12/22/1975	11/2/2011	242	1131





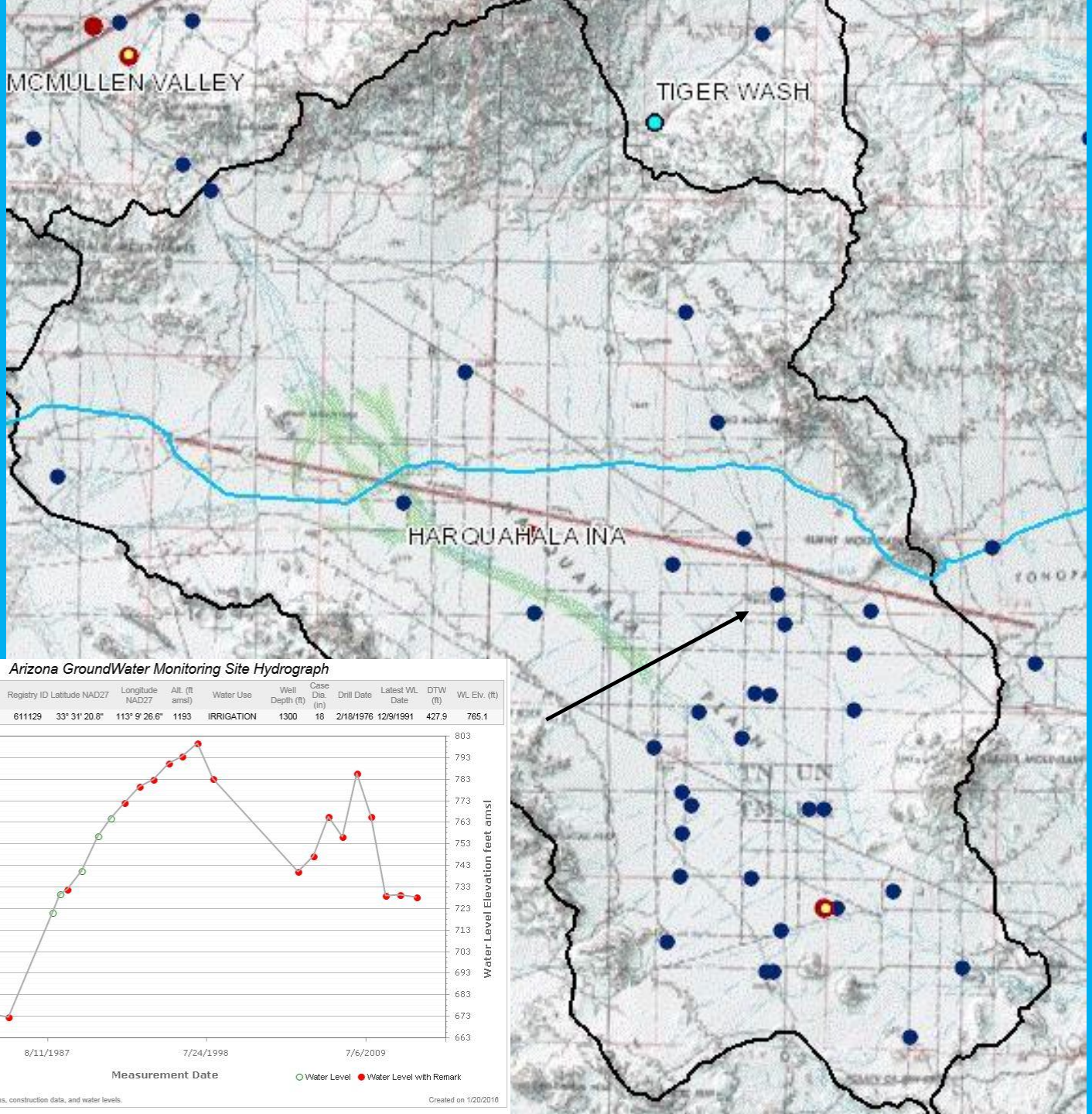
Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-02-09 07ABB	333212113131801	627169	33° 32' 12.5"	113° 13' 17.8"	1260	UNUSED	1692	20	9/28/1952	11/2/2015	298	962



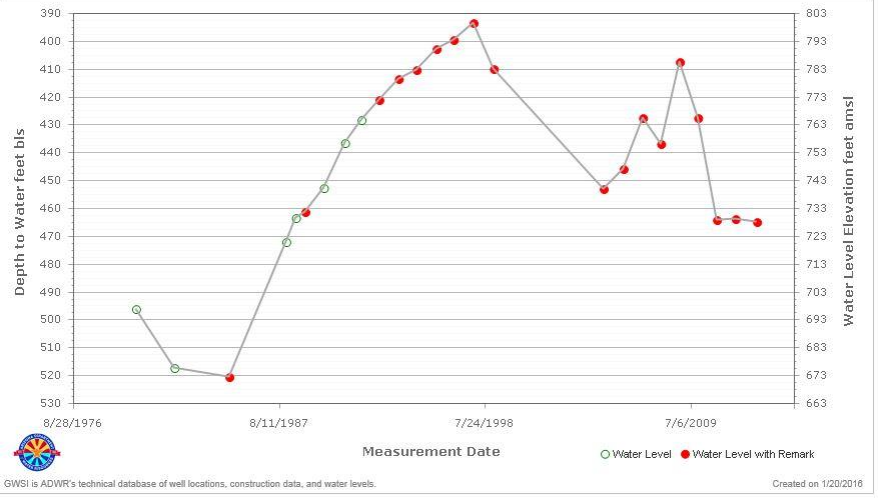
GWSI is ADWR's technical database of well locations, construction data, and water levels.

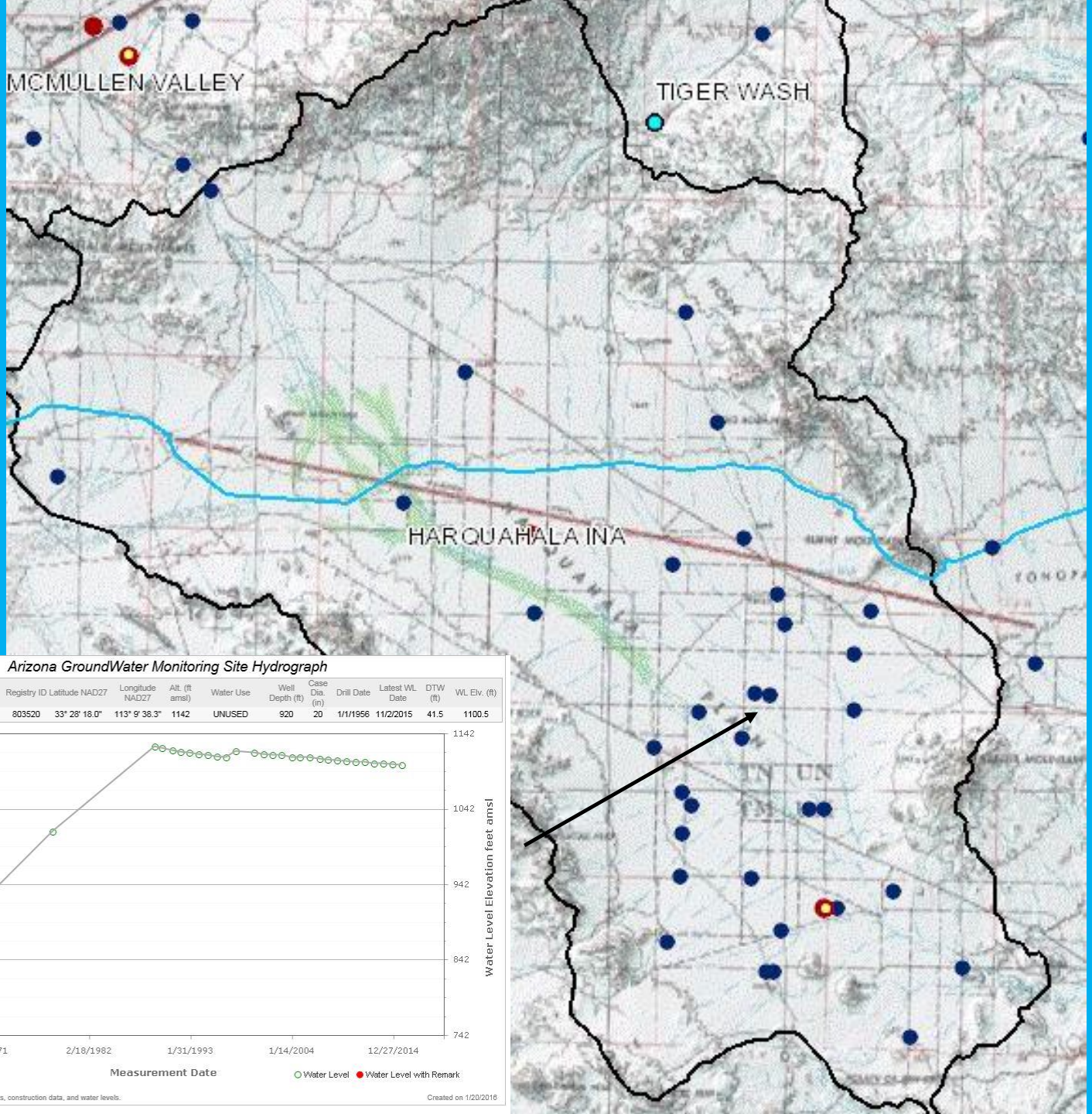
Created on 1/20/2016



Arizona GroundWater Monitoring Site Hydrograph

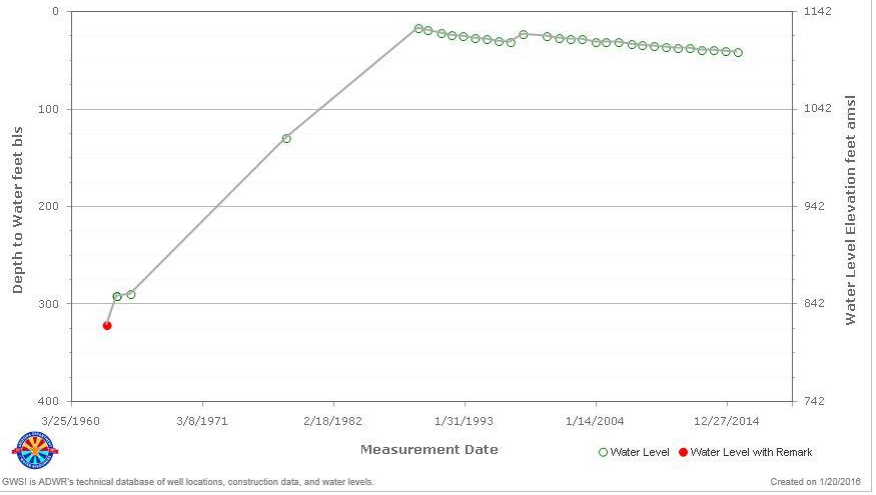
Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-02-09 14BAB	333120113092501	611129	33° 31' 20.8"	113° 9' 26.6"	1193	IRRIGATION	1300	18	2/18/1976	12/9/1991	427.9	765.1

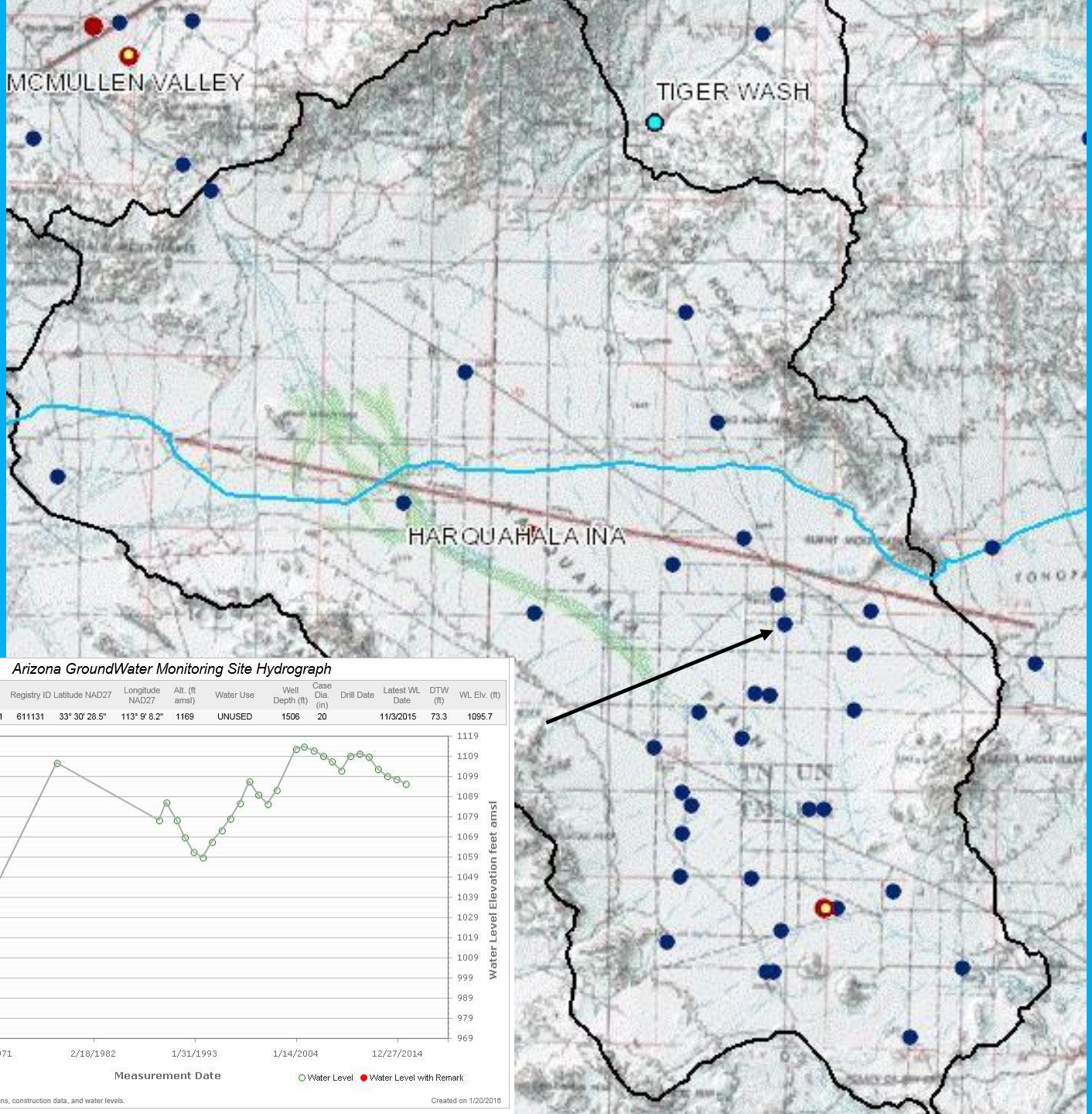




Arizona GroundWater Monitoring Site Hydrograph

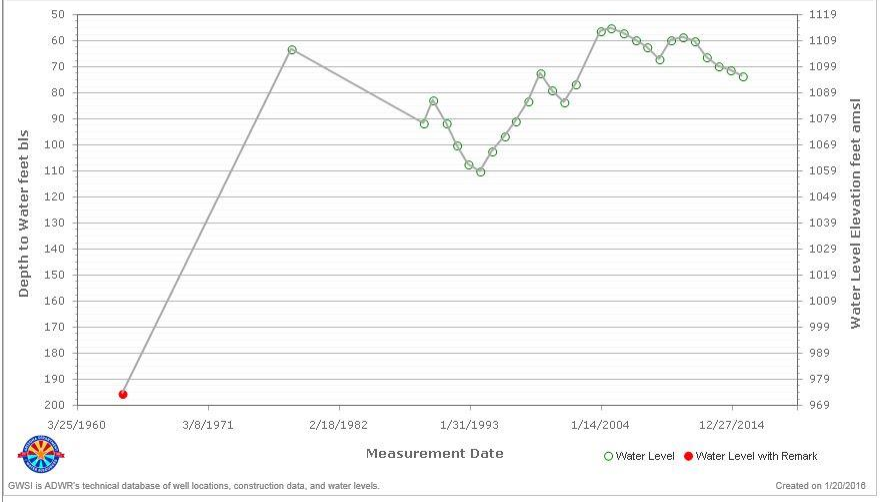
Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-02-09 35CBB	332819113094101	803520	33° 28' 18.0"	113° 9' 38.3"	1142	UNUSED	920	20	1/1/1956	11/2/2015	41.5	1100.5

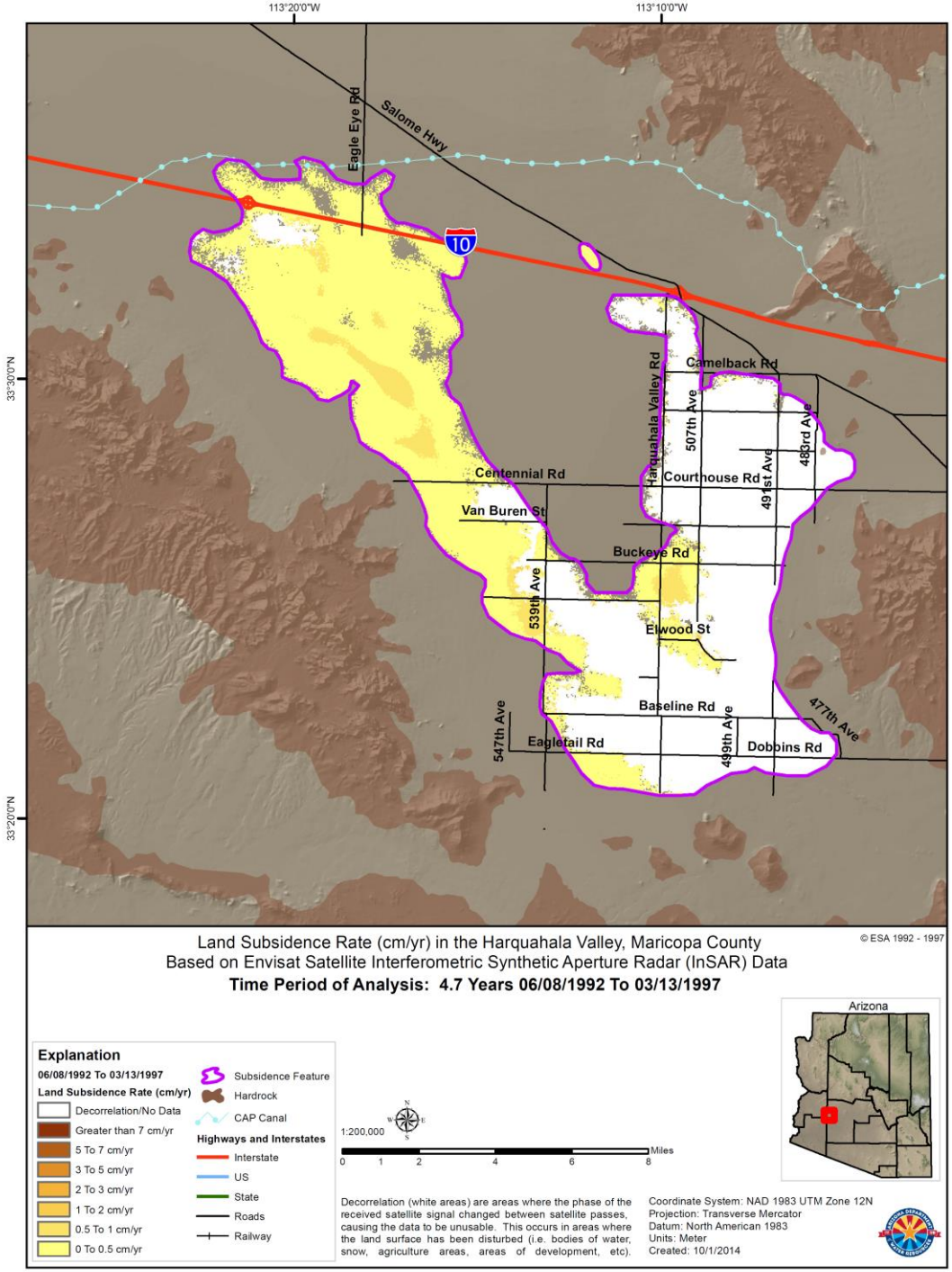


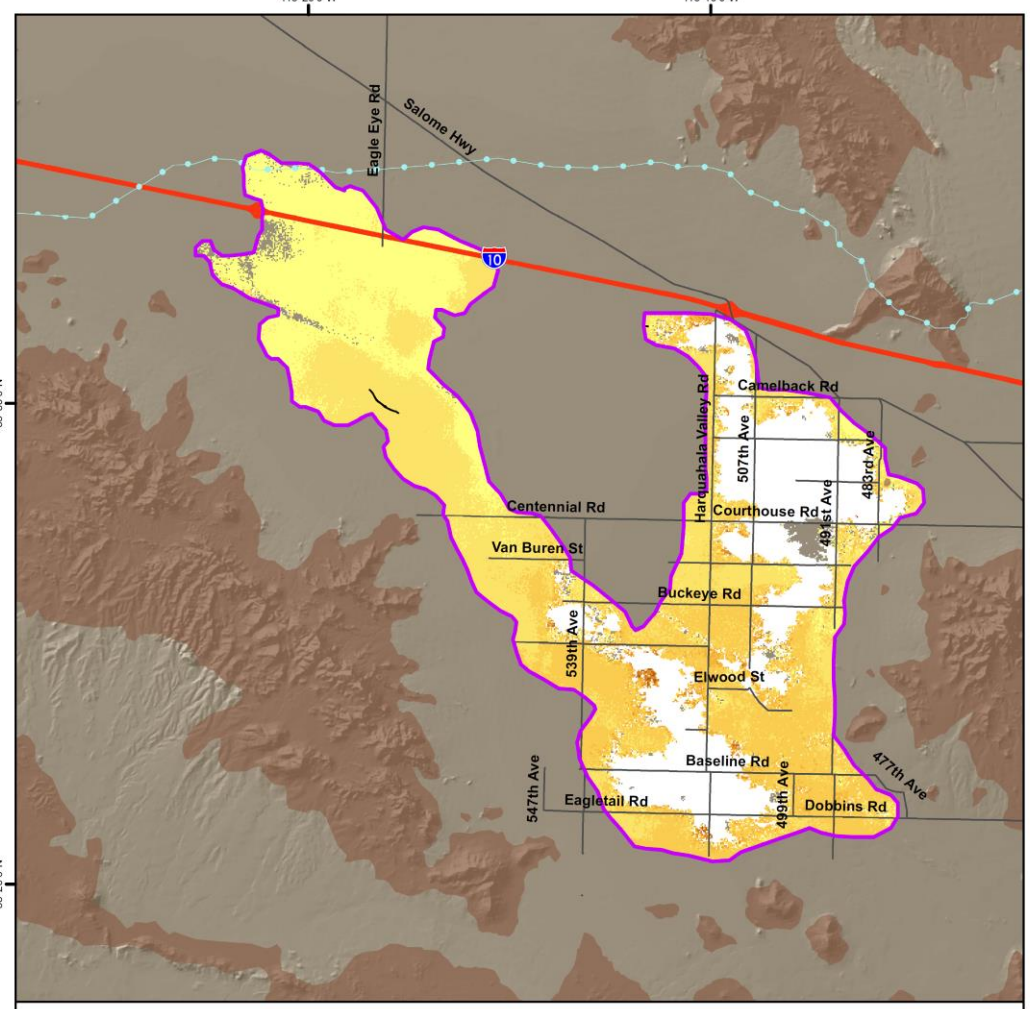


Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-02-09 23ABB	333027113091001	611131	33° 30' 28.5"	113° 9' 8.2"	1169	UNUSED	1506	20		11/3/2015	73.3	1095.7




113°20'0"W
113°10'0"W
33°30'0"N
33°20'0"N
Eagle Eye Rd
Salome Hwy
10
Camelback Rd
Harquahala Valley Rd
507th Ave
483rd Ave
491st Ave
Centennial Rd
Courthouse Rd
Van Buren St
Buckeye Rd
539th Ave
Elwood St
Baseline Rd
477th Ave
547th Ave
Eagletail Rd
499th Ave
Dobbins Rd
© ESA 1992 - 1997
Land Subsidence Rate (cm/yr) in the Harquahala Valley, Maricopa County
Based on Envisat Satellite Interferometric Synthetic Aperture Radar (InSAR) Data
Time Period of Analysis: 4.7 Years 06/08/1992 To 03/13/1997
Arizona
Explanation
06/08/1992 To 03/13/1997
Land Subsidence Rate (cm/yr)
Decorrelation/No Data
Greater than 7 cm/yr
5 To 7 cm/yr
3 To 5 cm/yr
2 To 3 cm/yr
1 To 2 cm/yr
0.5 To 1 cm/yr
0 To 0.5 cm/yr
Subsidence Feature
Hardrock
CAP Canal
Highways and Interstates
Interstate
US
State
Roads
Railway
1:200,000
Miles
0 1 2 4 6 8
Decorrelation (white areas) are areas where the phase of the received satellite signal changed between satellite passes, causing the data to be unusable. This occurs in areas where the land surface has been disturbed (i.e. bodies of water, snow, agriculture areas, areas of development, etc).
Coordinate System: NAD 1983 UTM Zone 12N
Projection: Transverse Mercator
Datum: North American 1983
Units: Meter
Created: 10/1/2014



Land Subsidence Rate in the Harquahala Valley, Maricopa County
Based on Envisat Satellite Interferometric Synthetic Aperture Radar (InSAR) Data
Time Period of Analysis: 1.0 Years 01/29/2009 To 02/18/2010

© ESA 2009 - 2010

Explanation

01/29/2009 To 02/18/2010

Land Subsidence Rate

- Decorrelation/No Data
- Greater 7 cm/yr (2.8 in/yr)
- 5 - 7 cm/yr (2.0 - 2.8 in/yr)
- 3 - 5 cm/yr (1.2 - 2.0 in/yr)
- 2 - 3 cm/yr (0.8 - 1.2 in/yr)
- 1 - 2 cm/yr (0.4 - 0.8 in/yr)
- 0.5 - 1 cm/yr (0.2 - 0.4 in/yr)
- 0 - 0.5 cm/yr (0 - 0.2 in/yr)

- Subsidence Feature
- Hardrock
- Earth Fissures
- CAP Canal

Highways and Interstates

- Interstate
- US
- State
- Roads
- Railway

1:200,000

0 1 2 4 6 8 Miles

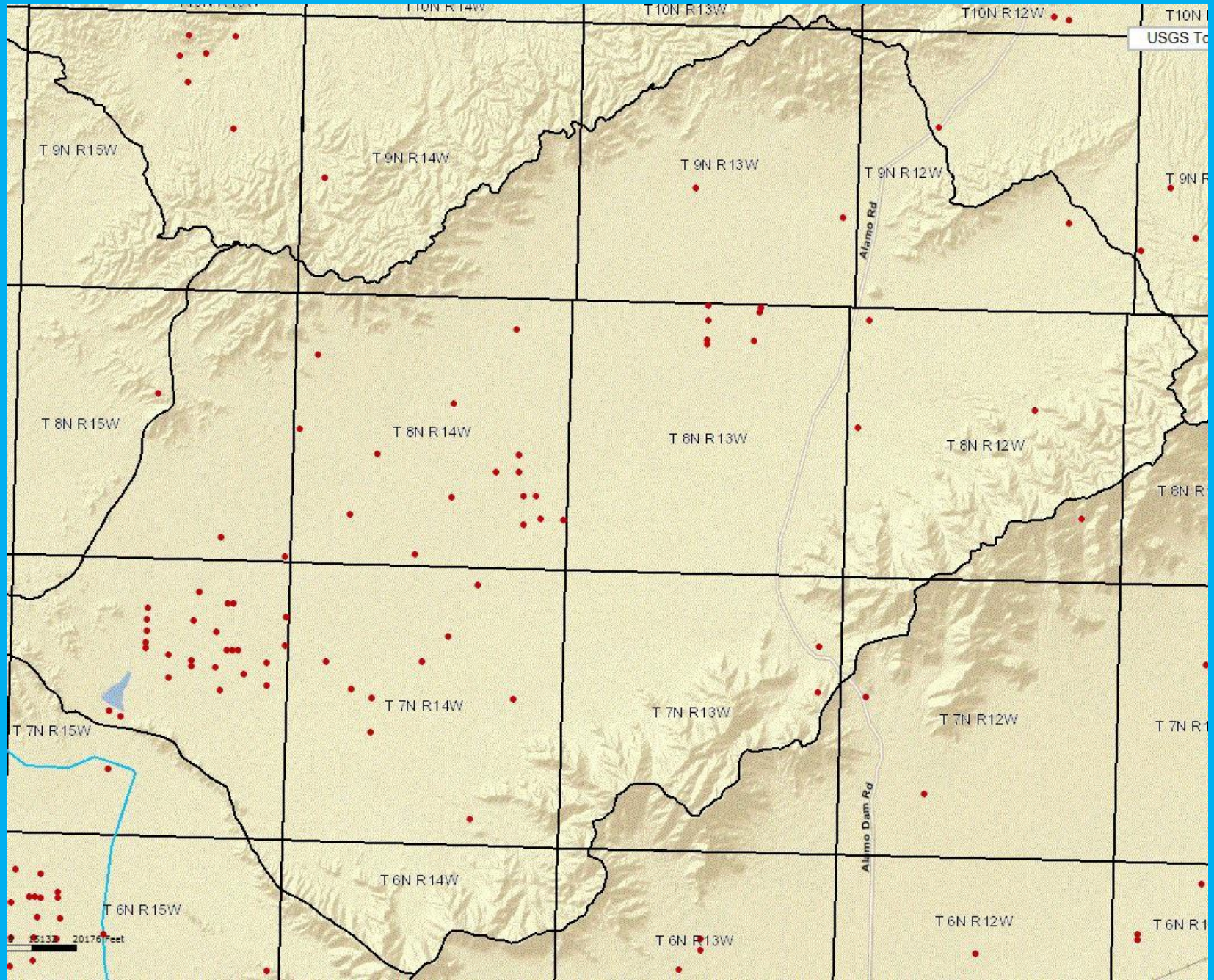
Decorrelation (white areas) are areas where the phase of the received satellite signal changed between satellite passes, causing the data to be unusable. This occurs in areas where the land surface has been disturbed (i.e. bodies of water, snow, agriculture areas, areas of development, etc).

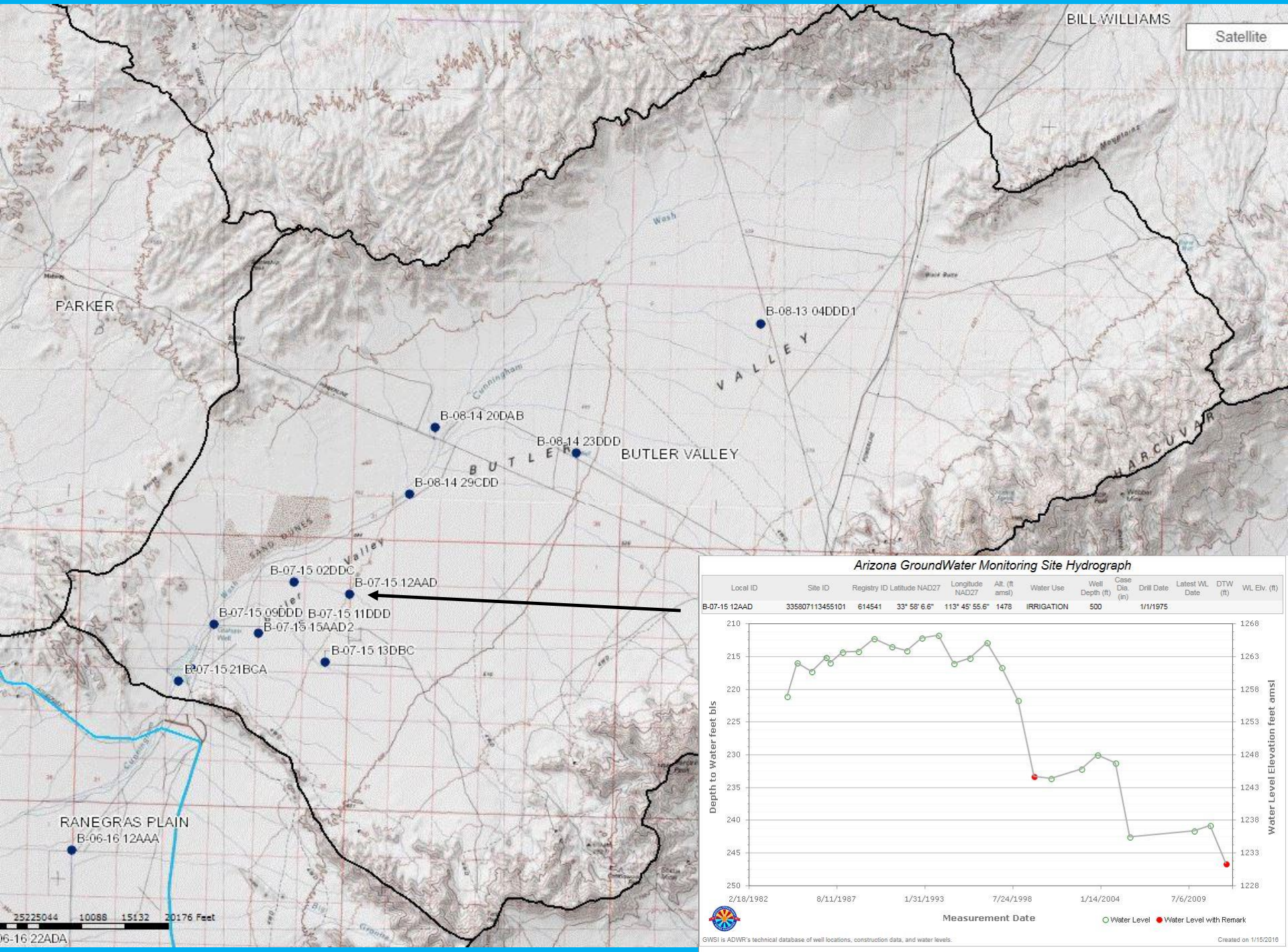
Earth fissures were mapped by the Arizona Geological Survey. For information on earth fissures visit: www.azgs.az.gov/EFC

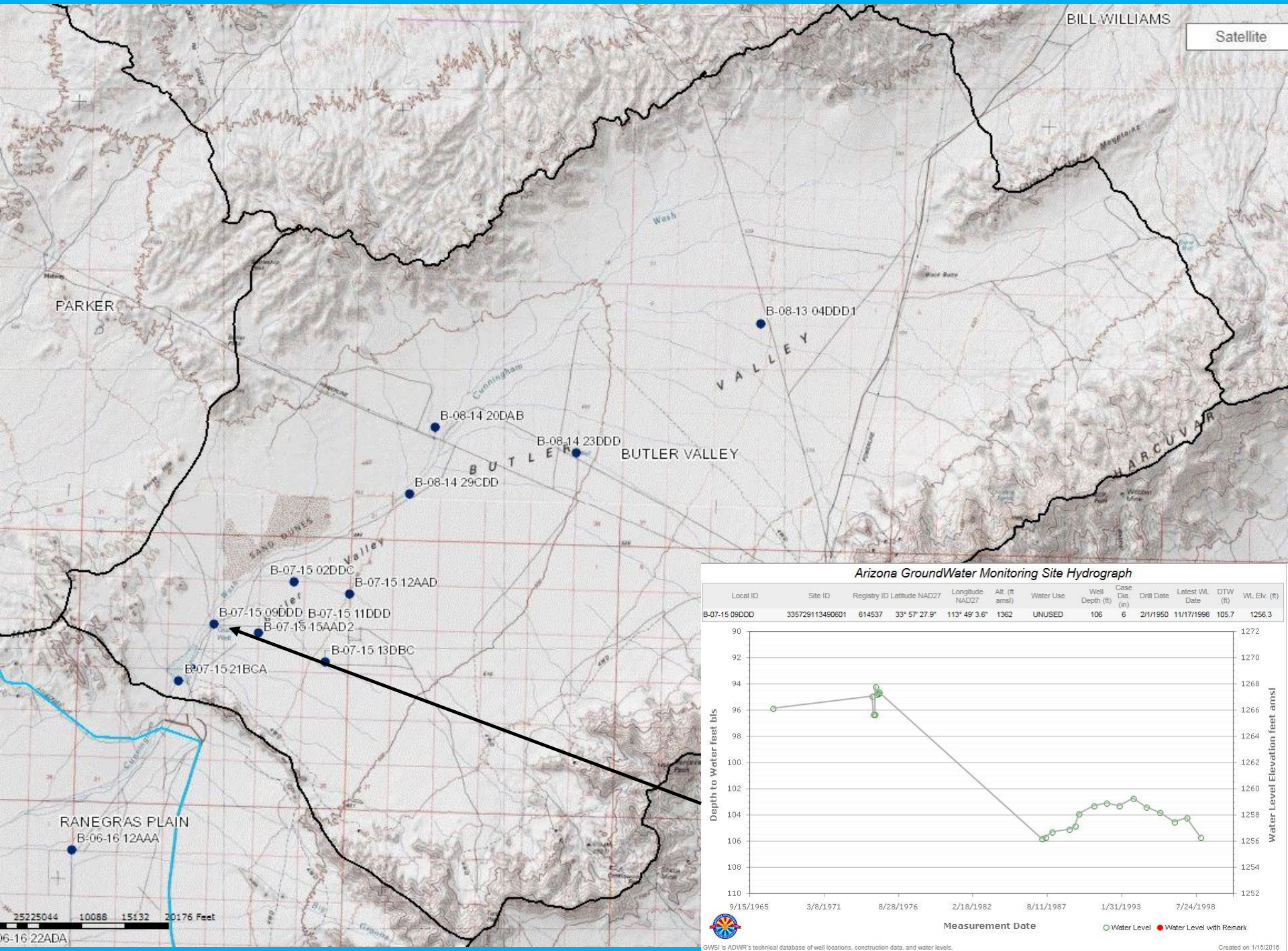
Coordinate System: NAD 1983 UTM Zone 12N
Projection: Transverse Mercator
Datum: North American 1983
Units: Meter
Created: 1/5/2015

Butler Valley Additional Hydrographs

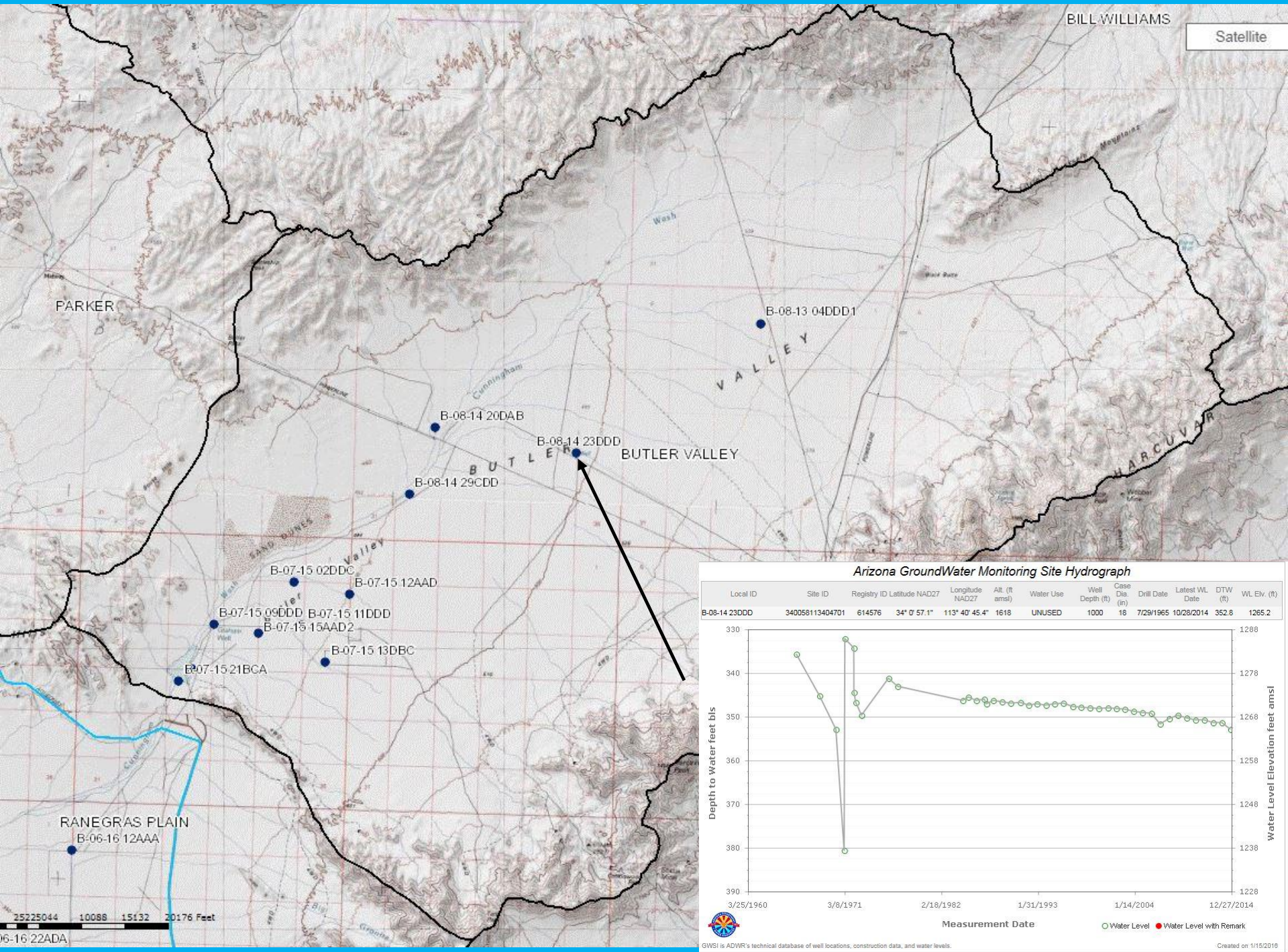
Map of Registered Wells In The Butler Valley Basin (1/13/2016)



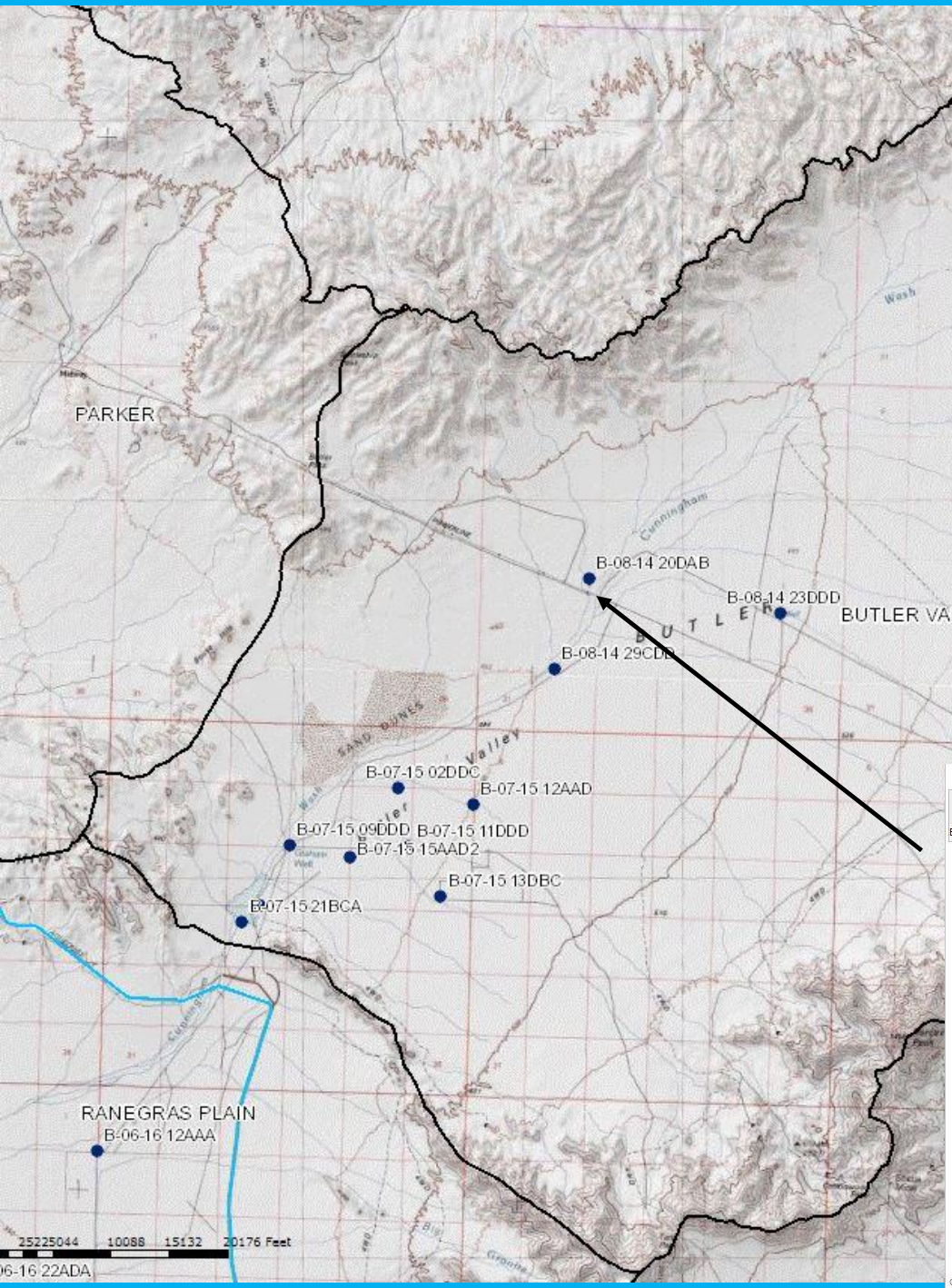

BILL WILLIAMS
Satellite
PARKER
B-08-13 04DDD1
VALLEY
B-08-14 20DAB
B-08-14 23DDD
BUTLER VALLEY
BUTLER
B-08-14 29CDD
HARCUVAR
B-07-15 02DDC
B-07-15 12AAD
B-07-15 09DDD
B-07-15 11DDD
B-07-15 15AAD2
B-07-15 13DBC
B-07-15 21BCA
RANEGRAS PLAIN
B-06-16 12AAA
25225044 10088 15132 20176 Feet
06-16 22ADA
Arizona GroundWater Monitoring Site Hydrograph
Local ID | Site ID | Registry ID | Latitude NAD27 | Longitude NAD27 | Alt. (ft amsl) | Water Use | Well Depth (ft) | Case Dia. (in) | Drill Date | Latest WL Date | DTW (ft) | WL Elv. (ft)
B-07-15 12AAD | 335807113455101 | 614541 | 33° 58' 6.6" | 113° 45' 55.6" | 1478 | IRRIGATION | 500 | | 1/1/1975
Depth to Water feet bls
Water Level Elevation feet amsl
210 215 220 225 230 235 240 245 250
1268 1263 1258 1253 1248 1243 1238 1233 1228
2/18/1982 8/11/1987 1/31/1993 7/24/1998 1/14/2004 7/6/2009
Measurement Date
Water Level
Water Level with Remark
GWSI is ADWR's technical database of well locations, construction data, and water levels.
Created on 1/15/2016



Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elev. (ft)
B-07-15 09DDD	335729113490601	614537	33° 57' 27.9"	113° 49' 3.6"	1362	UNUSED	106	6	2/1/1950	11/17/1998	105.7	1256.3

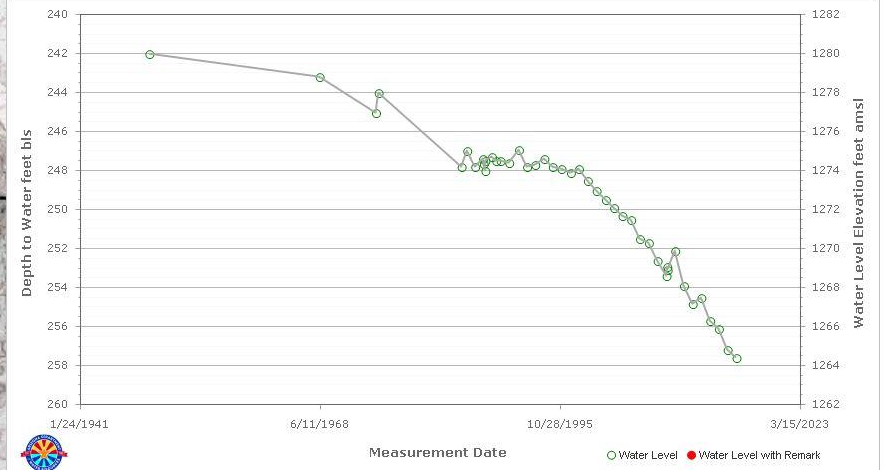


Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-08-14 23DDD	340058113404701	614576	34° 0' 57.1"	113° 40' 45.4"	1618	UNUSED	1000	18	7/29/1965	10/28/2014	352.8	1265.2



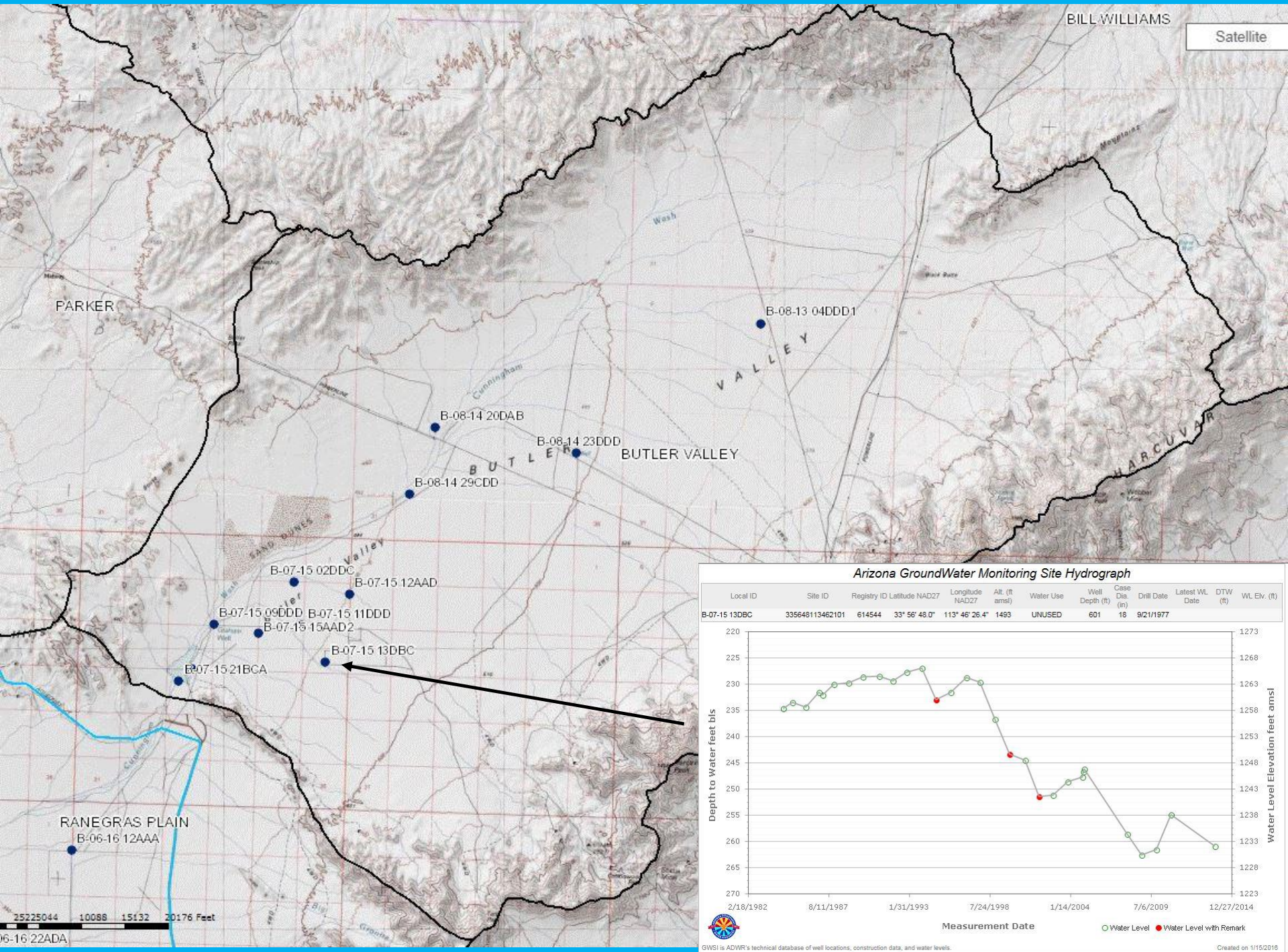
Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-08-14 20DAB	340122113440301	633680	34° 1' 22.3"	113° 44' 3.1"	1522	STOCK	545	16	8/1/1943	11/4/2015	257.6	1264.4

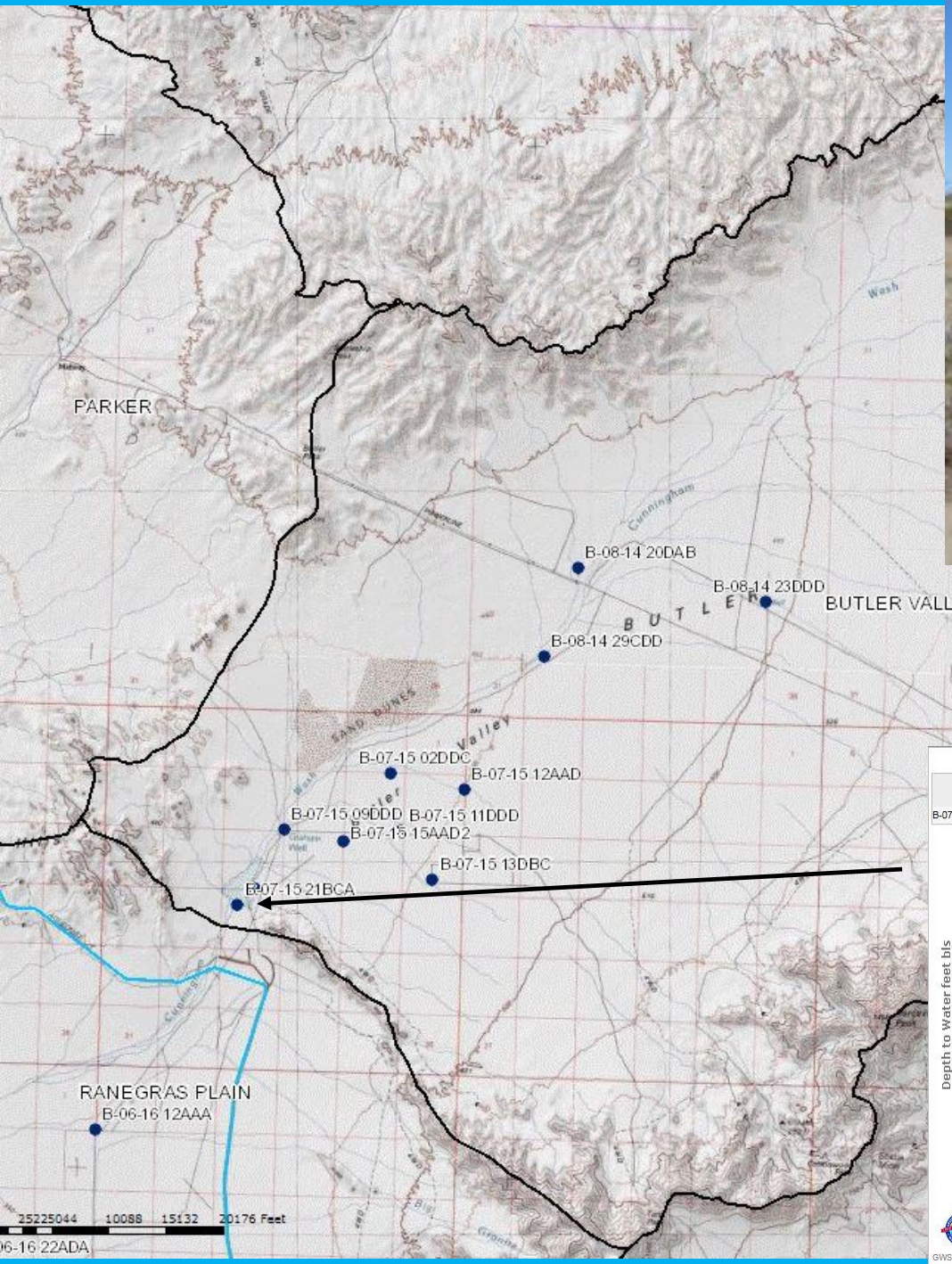


GWSI is ADWR's technical database of well locations, construction data, and water levels.

Created on 1/15/2016

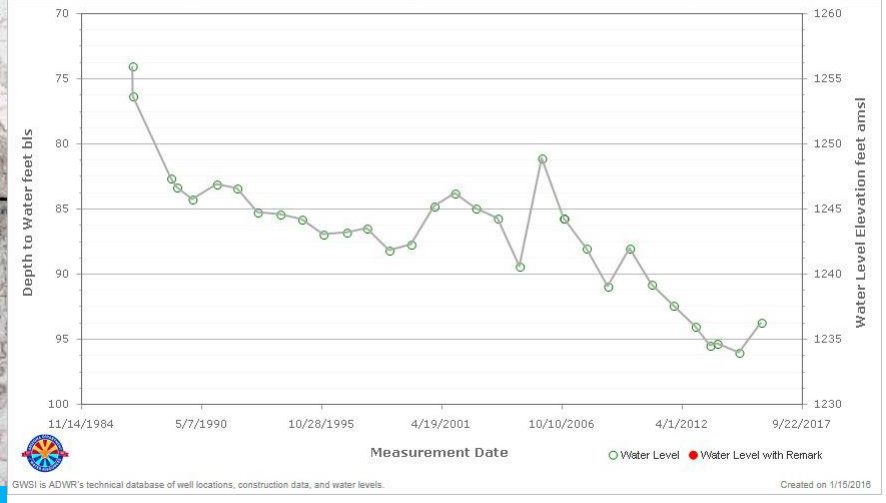


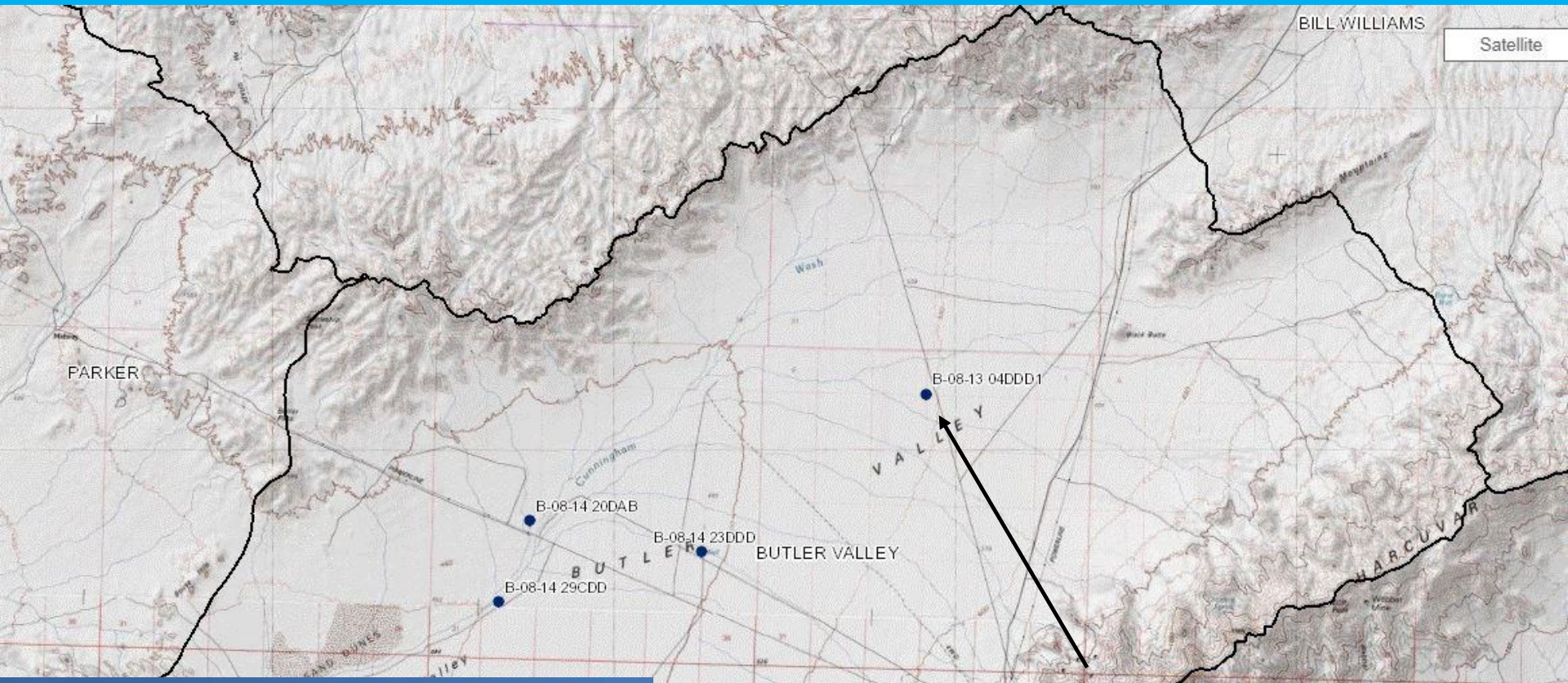
Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-07-15 13DBC	335648113462101	614544	33° 56' 48.0"	113° 46' 26.4"	1493	UNUSED	601	18	9/21/1977			

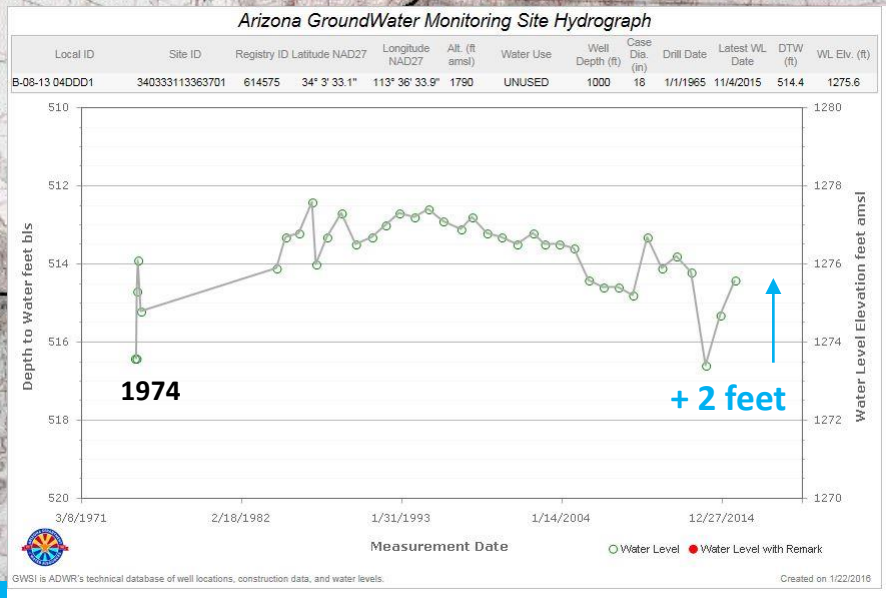


Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-07-15 21BCA	335620113494501	516935	33° 56' 20.8"	113° 49' 49.6"	1330	UNUSED	120	6.62	3/3/1987	11/3/2015	93.7	1236.3

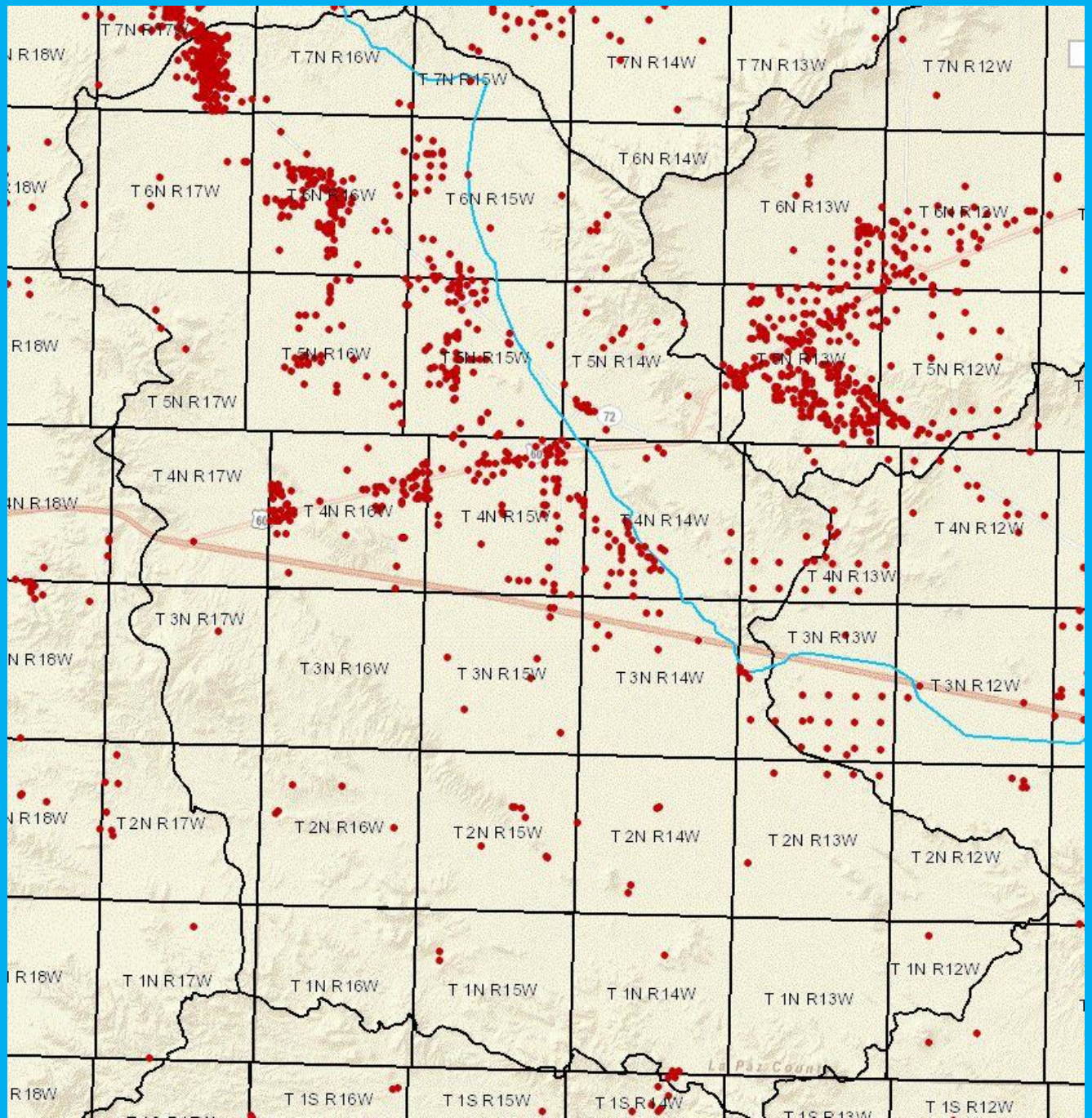


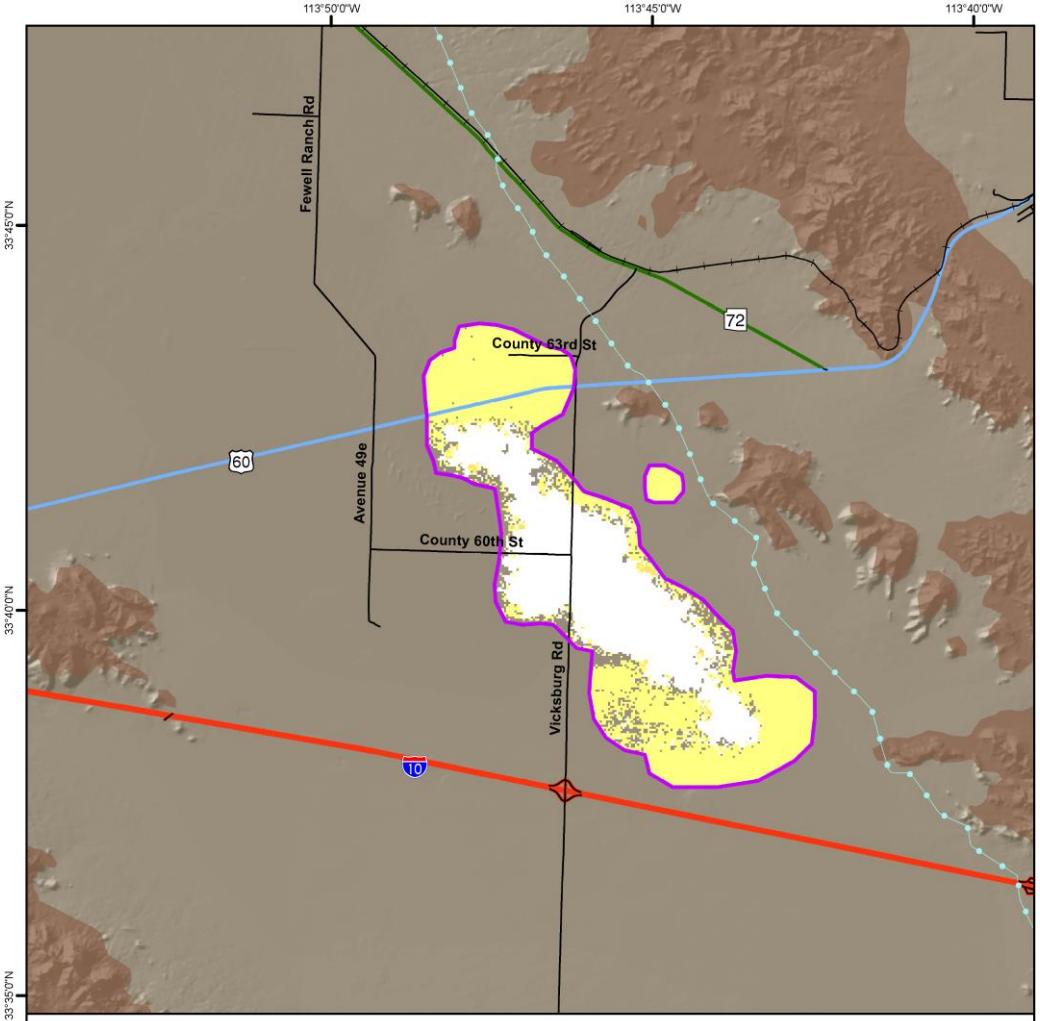

BILL WILLIAMS
Satellite
PARKER
B-08-13 04DDD1
B-08-14 20DAB
B-08-14 23DDD
BUTLER VALLEY
B-08-14 29CDD
BUTLER
VALLEY
HARCUVAR


Arizona GroundWater Monitoring Site Hydrograph
Local ID | Site ID | Registry ID | Latitude NAD27 | Longitude NAD27 | Alt. (ft amsl) | Water Use | Well Depth (ft) | Case Dia. (in) | Drill Date | Latest WL Date | DTW (ft) | WL Elv. (ft)
B-08-13 04DDD1 | 340333113363701 | 614575 | 34° 3' 33.1" | 113° 36' 33.9" | 1790 | UNUSED | 1000 | 18 | 1/1/1965 | 11/4/2015 | 514.4 | 1275.6
Depth to Water feet bls
Water Level Elevation feet amsl
510
512
514
516
518
520
1280
1278
1276
1274
1272
1270
1974
+ 2 feet
3/8/1971
2/18/1982
1/31/1993
1/14/2004
12/27/2014
Measurement Date
Water Level
Water Level with Remark
GWSI is ADWR's technical database of well locations, construction data, and water levels.
Created on 1/22/2016

Ranegras Plain
Additional
Hydrographs

Map of Registered Wells In The Ranegras Plain Basin (1/13/2016)





Land Subsidence Rate in the Ranegras Valley, La Paz County
Based on ERS-1 and 2 Satellite Interferometric Synthetic Aperture Radar (InSAR) Data
Time Period of Analysis: 4.7 Years 06/08/1992 To 03/13/1997

© ESA 1992 - 1997

Explanation

06/08/1992 To 03/13/1997

Land Subsidence Rate

- Decorrelation/No Data
- Greater 7 cm/yr (2.8 in/yr)
- 5 - 7 cm/yr (2.0 - 2.8 in/yr)
- 3 - 5 cm/yr (1.2 - 2.0 in/yr)
- 2 - 3 cm/yr (0.8 - 1.2 in/yr)
- 1 - 2 cm/yr (0.4 - 0.8 in/yr)
- 0.5 - 1 cm/yr (0.2 - 0.4 in/yr)
- 0 - 0.5 cm/yr (0 - 0.2 in/yr)

- Subsidence Feature
- Hardrock
- CAP Canal

Highways and Interstates

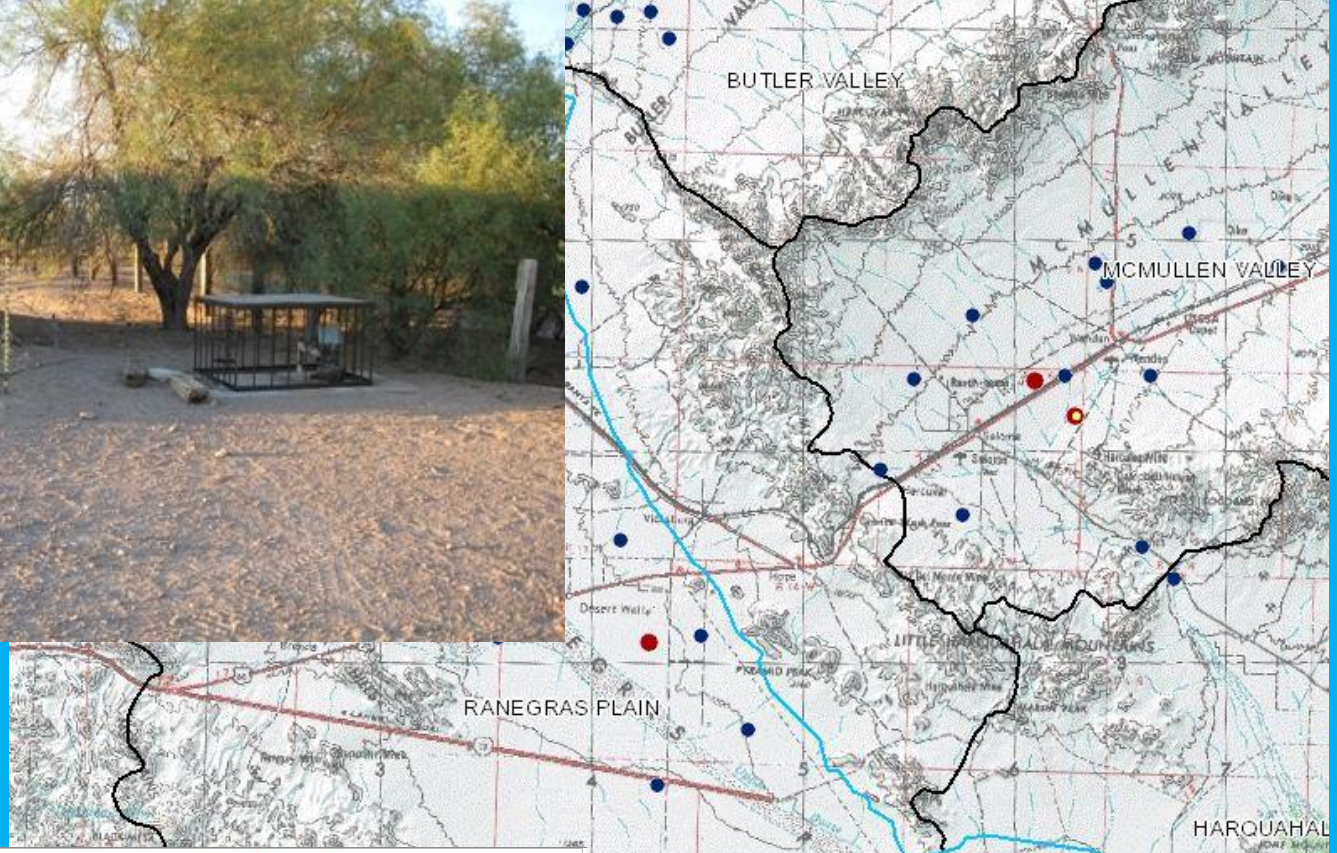
- Interstate
- US
- State
- Roads
- Railway

1:125,000

0 0.5 1 2 3 4 Miles

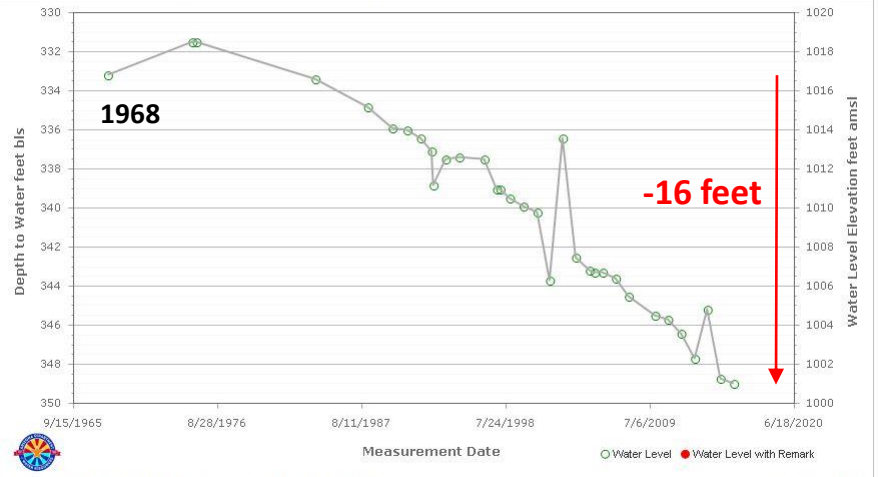
Decorrelation (white areas) are areas where the phase of the received satellite signal changed between satellite passes, causing the data to be unusable. This occurs in areas where the land surface has been disturbed (i.e. bodies of water, snow, agriculture areas, areas of development, etc).

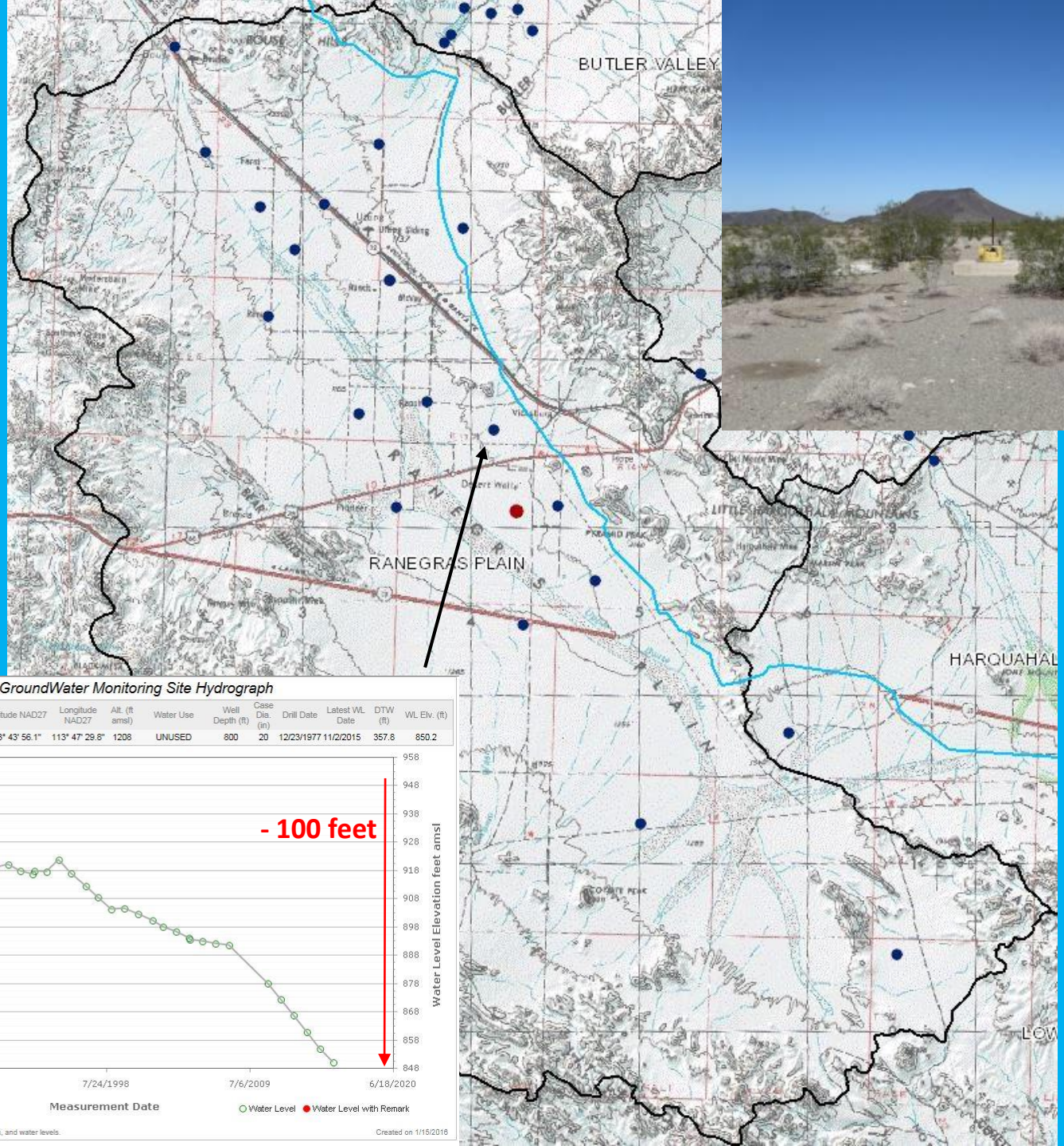
Coordinate System: NAD 1983 UTM Zone 12N
Projection: Transverse Mercator
Datum: North American 1983
Units: Meter
Created: 1/6/2015



Arizona GroundWater Monitoring Site Hydrograph

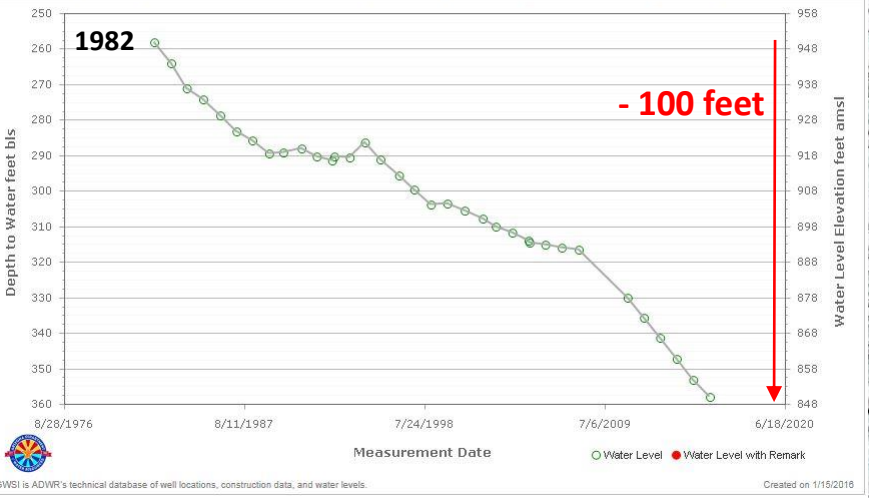
Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-02-14 10CDC	333121113413001	600171	33° 31' 25.4"	113° 41' 28.4"	1350	STOCK	455	10	1/1/1964	11/2/2015	349	1001

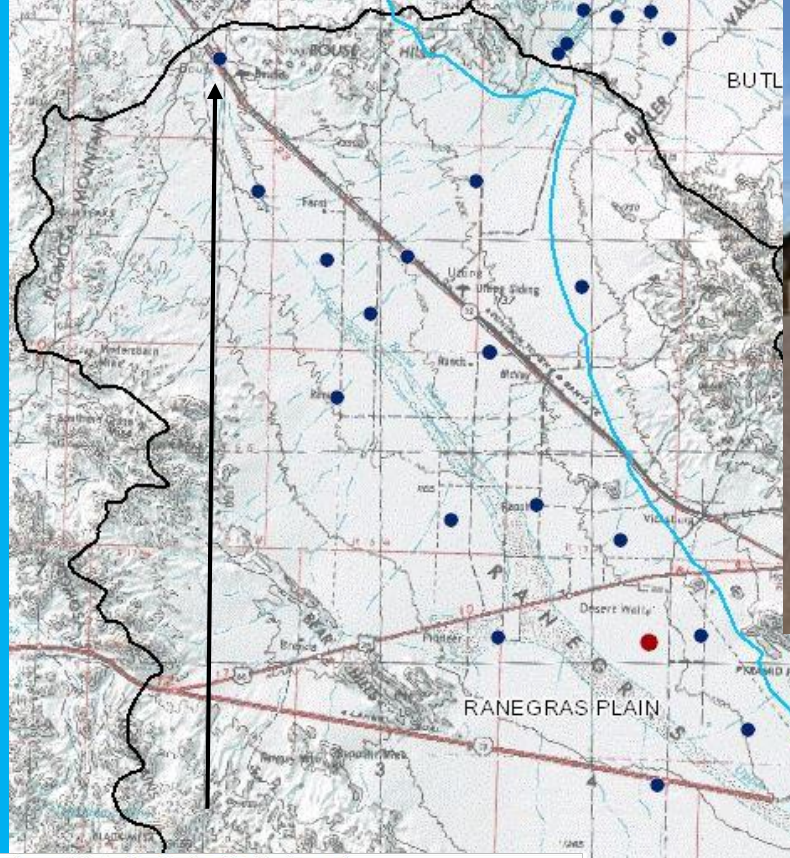


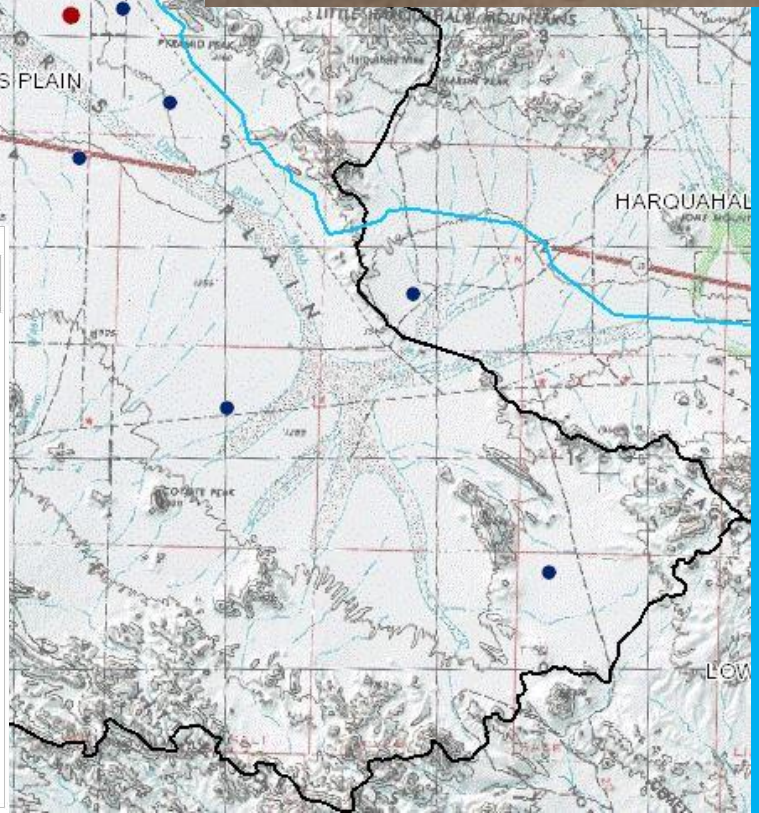


Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
-05-15 35BDD2	334357113473201	801955	33° 43' 56.1"	113° 47' 29.8"	1208	UNUSED	800	20	12/23/1977	11/2/2015	357.8	850.2

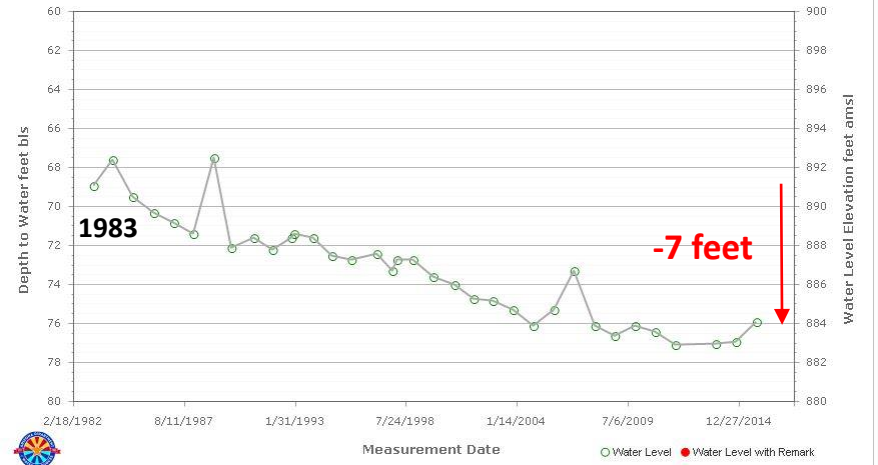






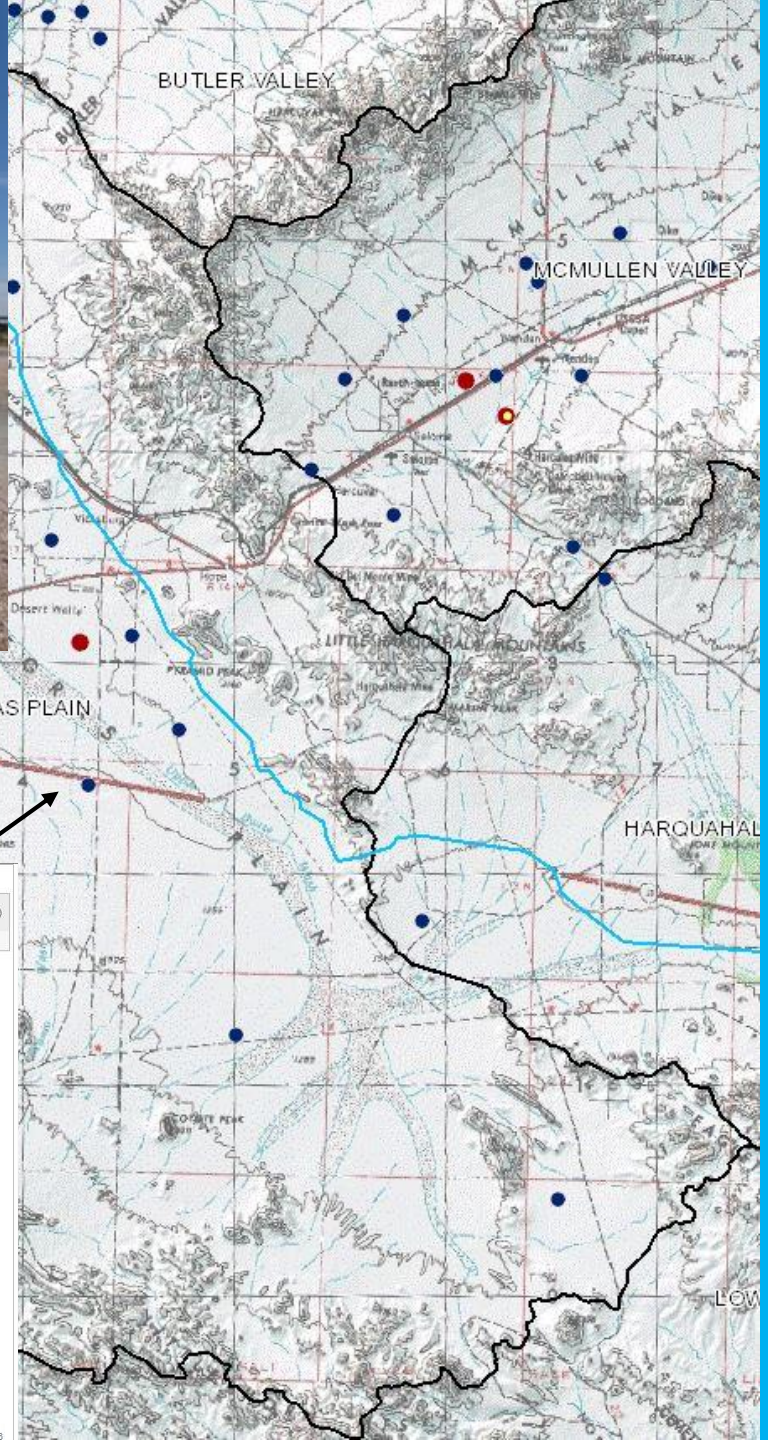
Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-07-17 23CAC2	335556114000101	645951	33° 55' 58.4"	114° 0' 10.3"	960	PUBLIC SUPPLY	120	8	2/20/1973	11/3/2015	75.9	884.1



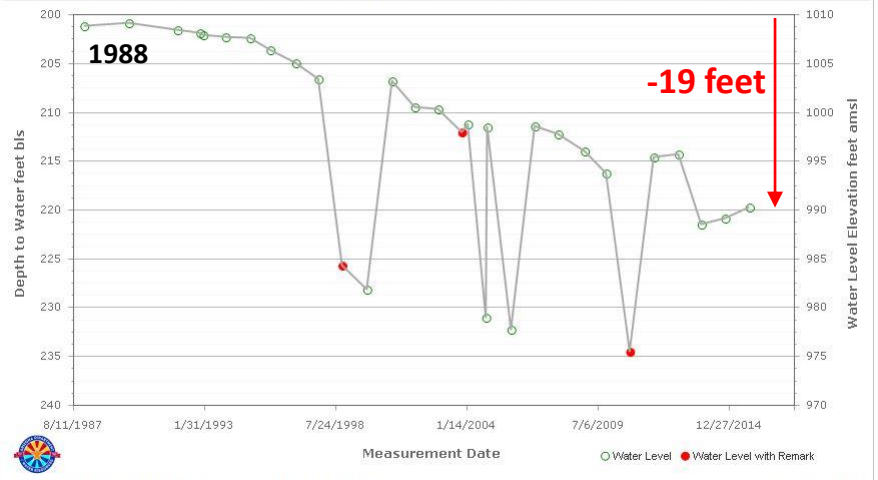
GWSI is ADWR's technical database of well locations, construction data, and water levels.

Created on 1/22/2016



Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-03-15 02DAC	333737113460801	601120	33° 37' 41.8"	113° 46' 10.0"	1210	COMMERCIAL	500	6		11/2/2015	219.7	990.3



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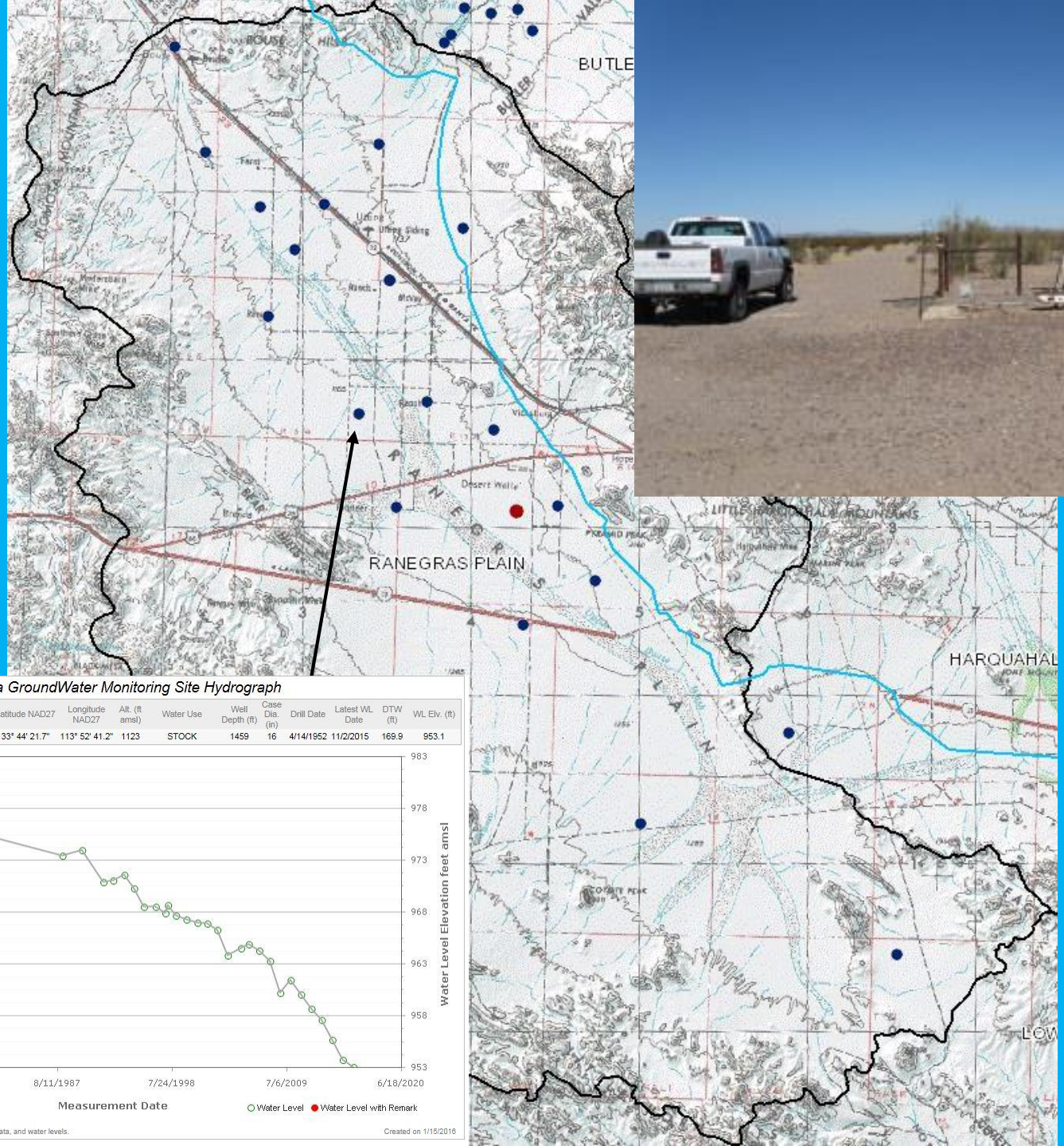
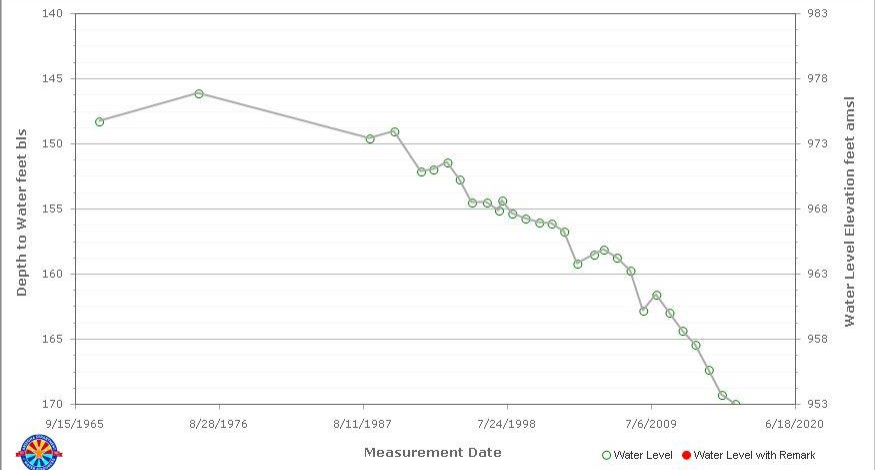
Created on 1/15/2016



Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-05-16 25DCC	334422113524001	614479	33° 44' 21.7"	113° 52' 41.2"	1123	STOCK	1459	16	4/14/1952	11/2/2015	169.9	953.1



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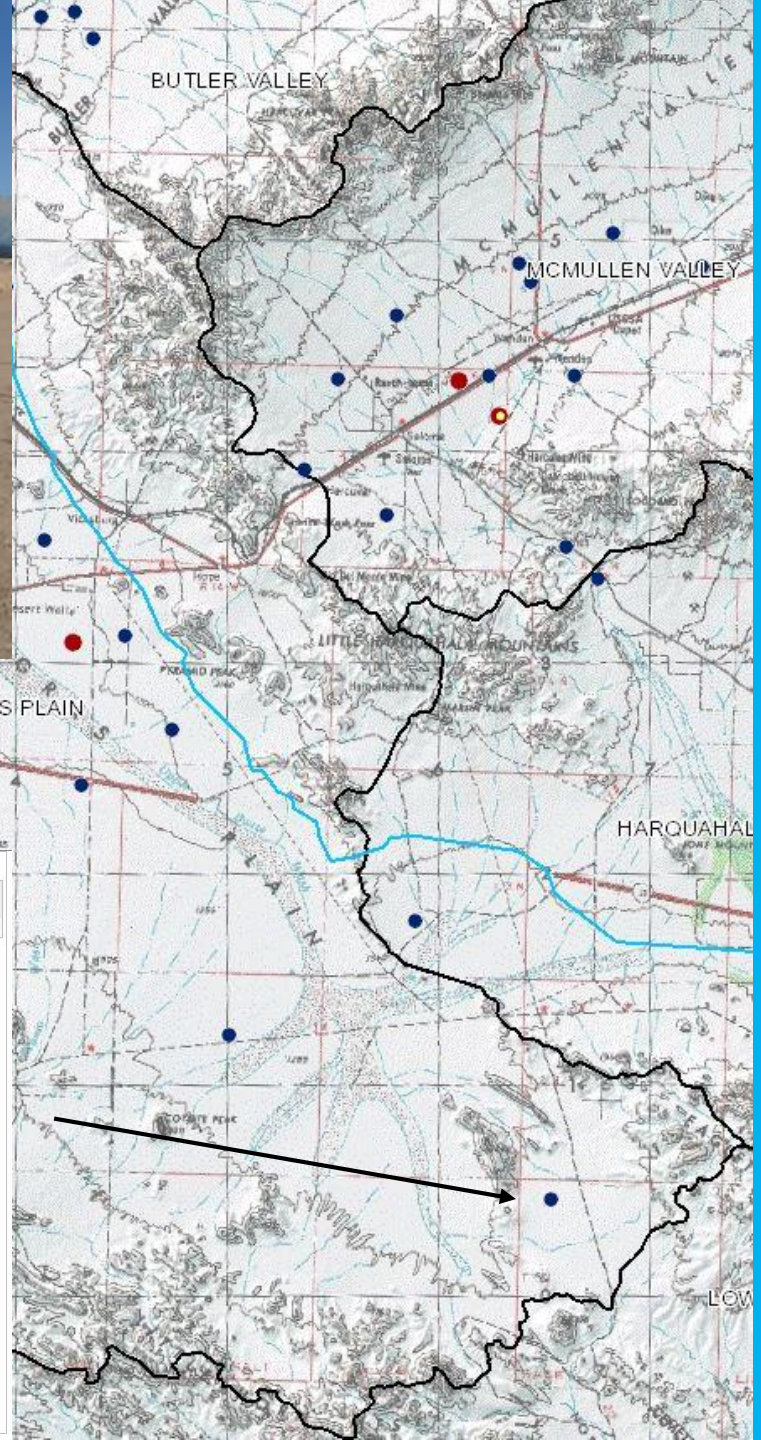
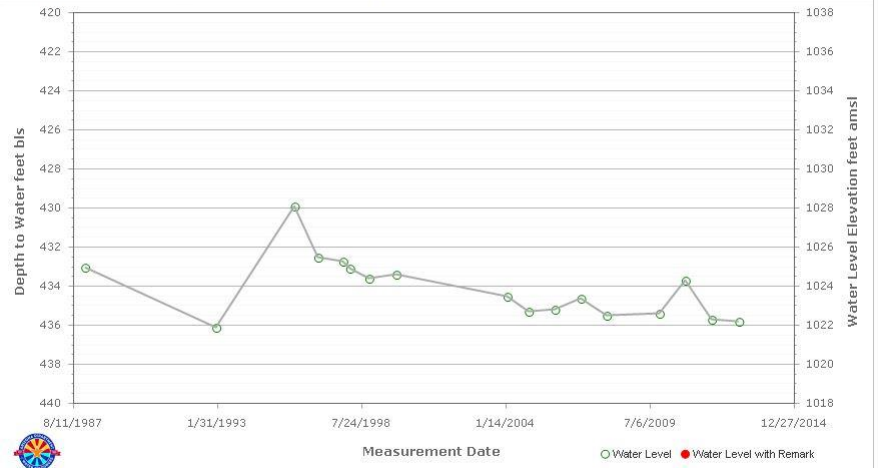
Created on 1/15/2016



Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-01-12 05BCC	332750113313001	603147	33° 27' 25.3"	113° 31' 29.7"	1458	STOCK	750	12		11/13/2012	435.8	1022.2



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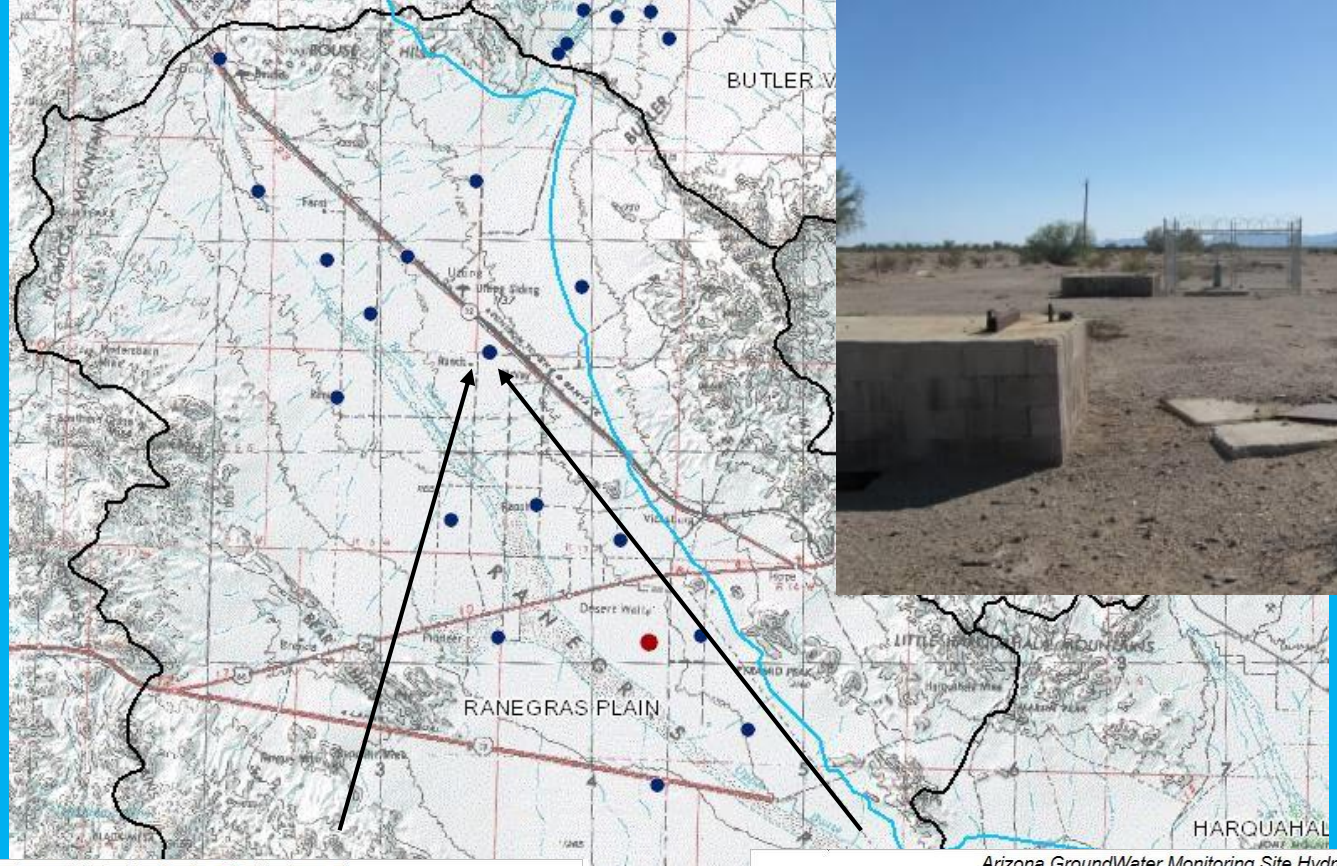
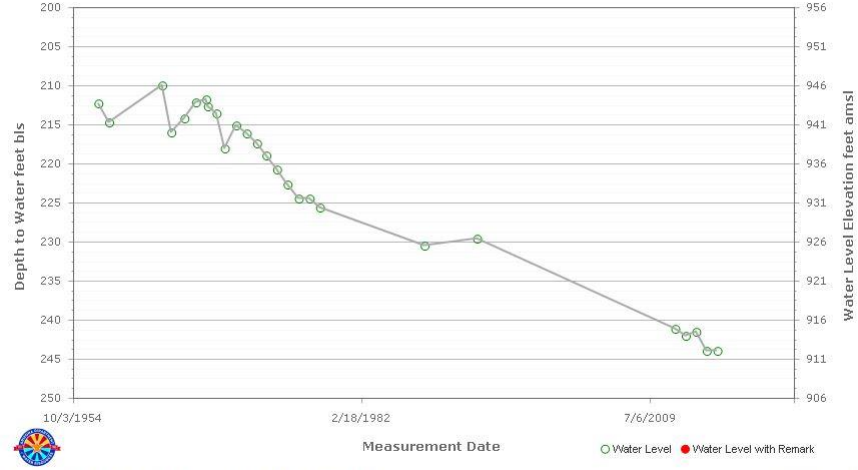
Created on 1/15/2016



Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-05-15 06BAA1	334840113514101	618772	33° 48' 40.8"	113° 51' 40.4"	1156	UNUSED	910	20	3/21/1951	11/2/2015	243.9	912.1

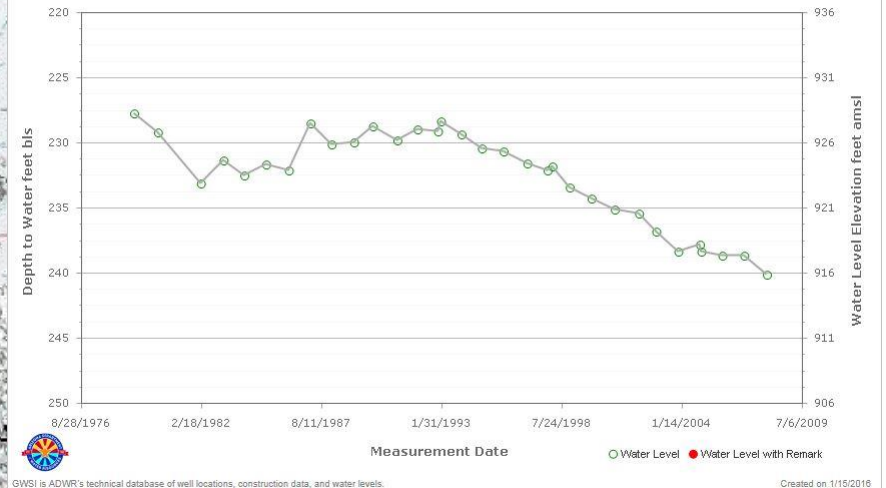


GWSI is ADWR's technical database of well locations, construction data, and water levels.

Created on 1/22/2016

Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-05-15 06BAA2	334839113514101		33° 48' 40.2"	113° 51' 40.5"	1156	IRRIGATION				11/14/2007	240.1	915.9



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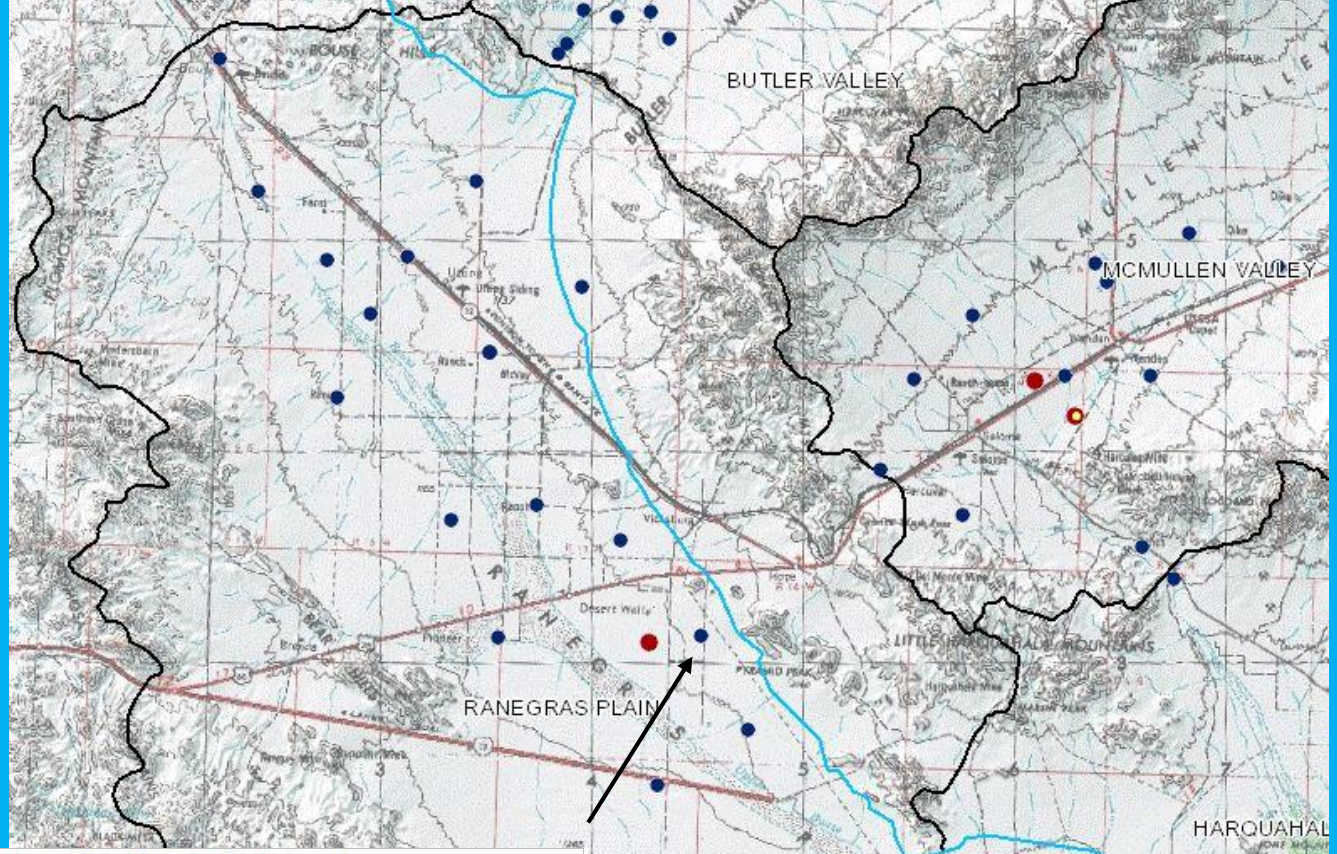
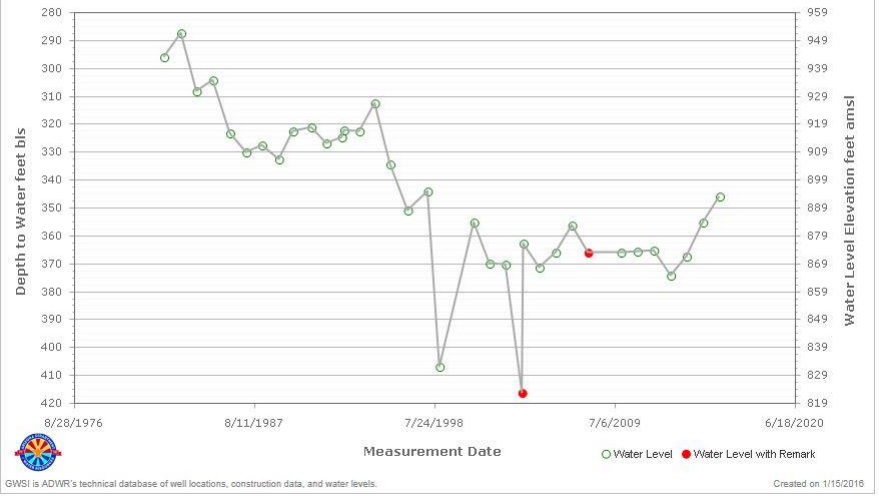
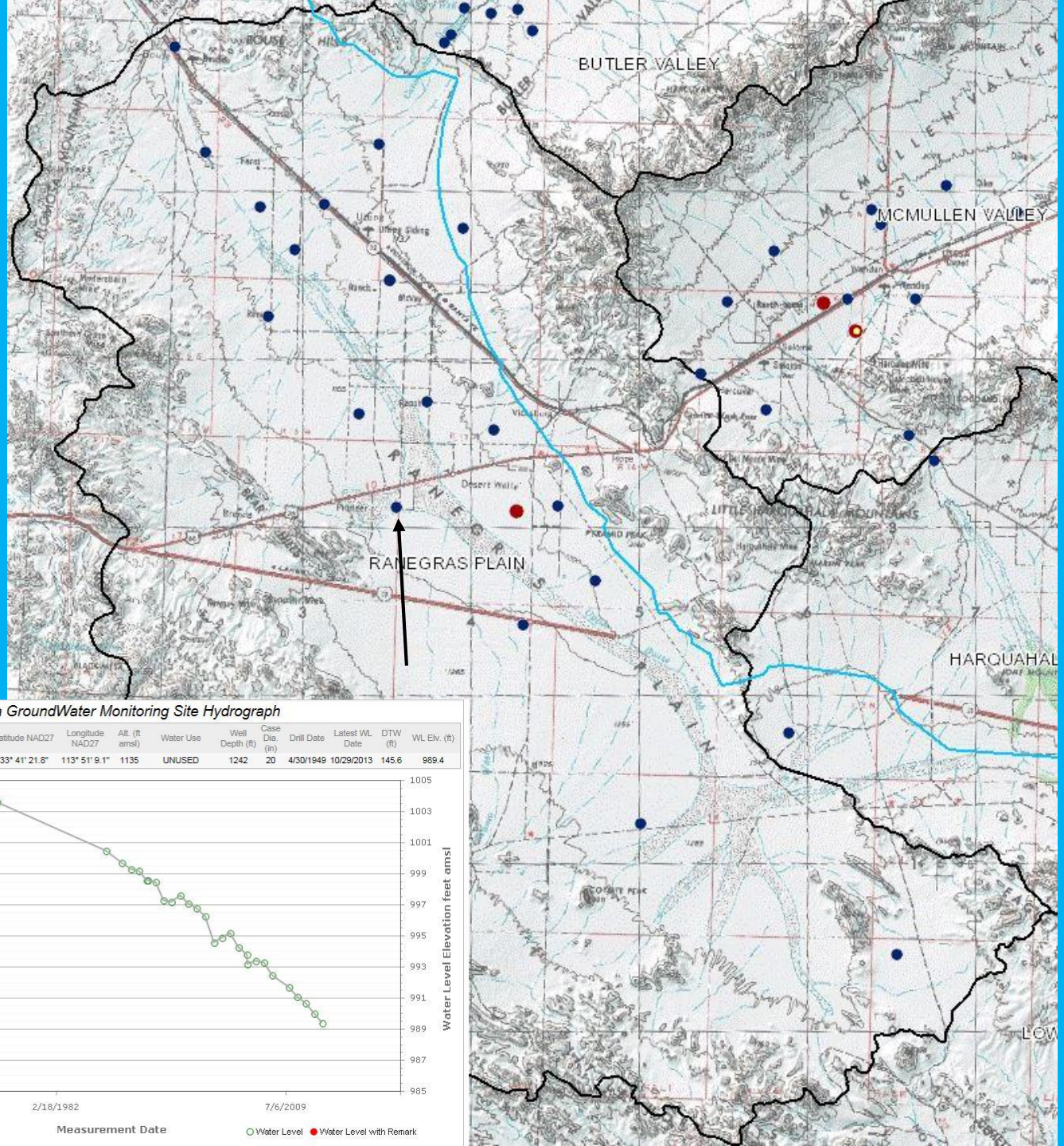
Created on 1/15/2016



Arizona GroundWater Monitoring Site Hydrograph

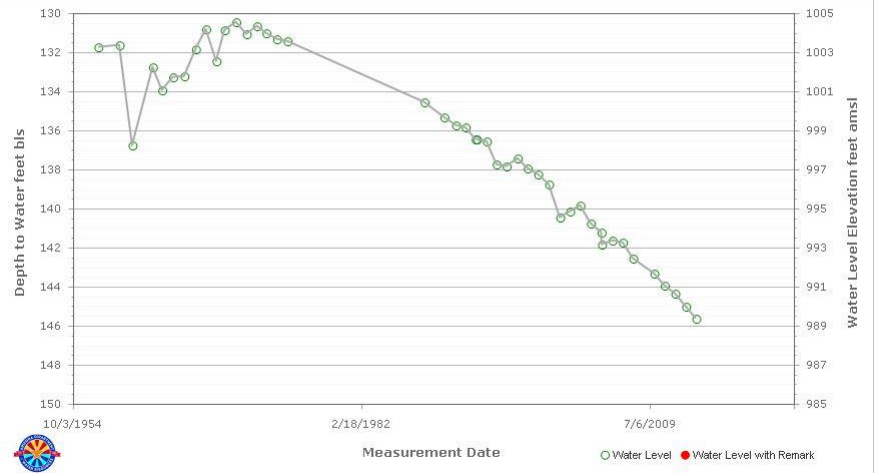
Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-04-15 13ADA	334121113450101	600133	33° 41' 33.6"	113° 44' 57.2"	1239	IRRIGATION	952	20	11/18/1978	11/2/2015	345.8	893.2

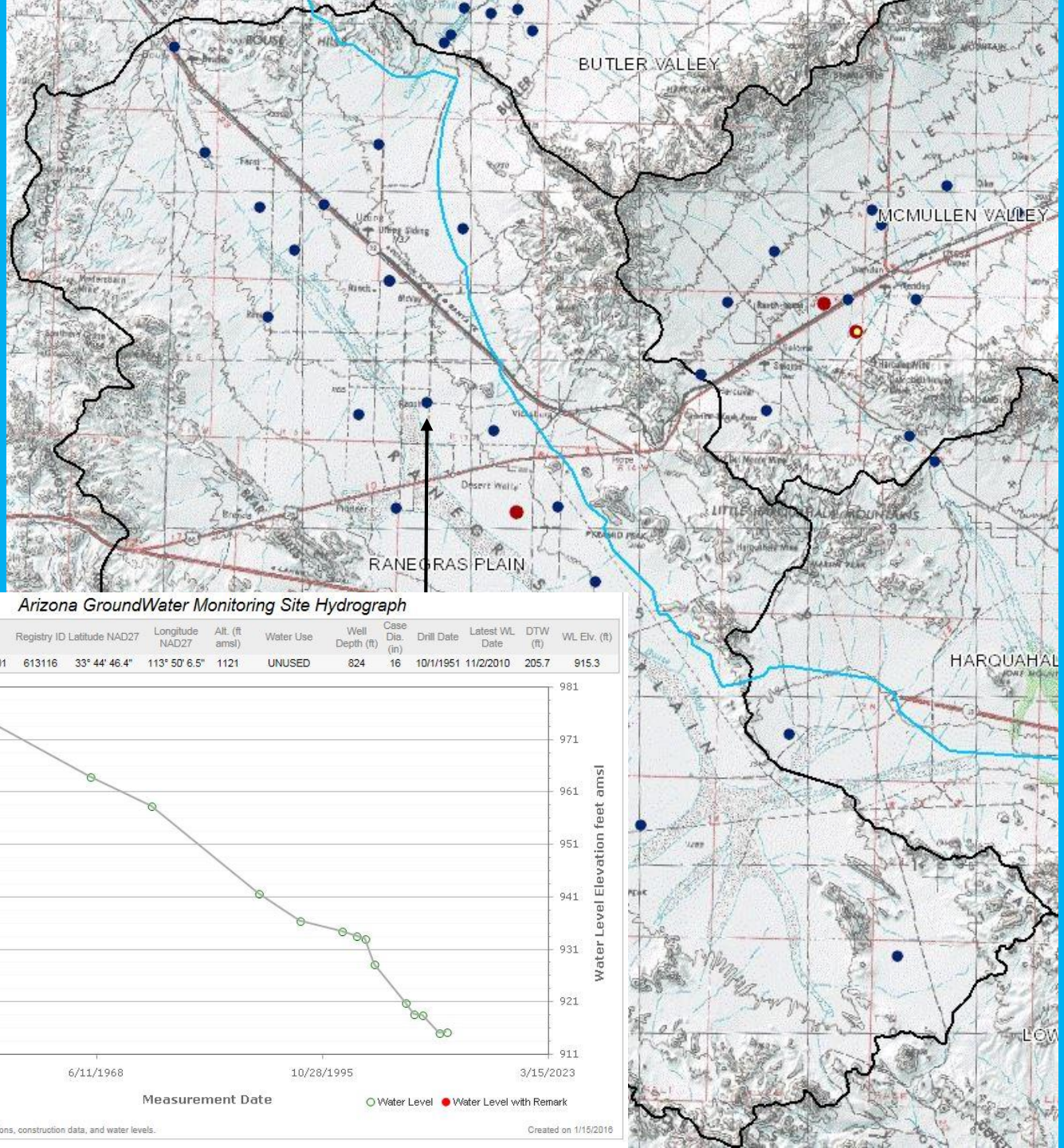




Arizona GroundWater Monitoring Site Hydrograph

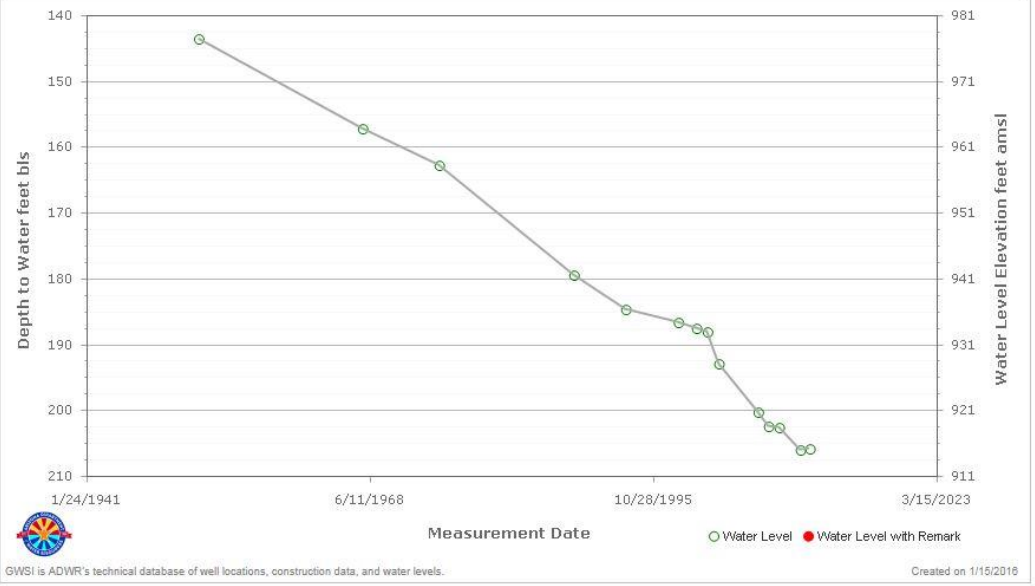
Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-04-15 18BCC	334122113510901	620833	33° 41' 21.8"	113° 51' 9.1"	1135	UNUSED	1242	20	4/30/1949	10/29/2013	145.6	989.4

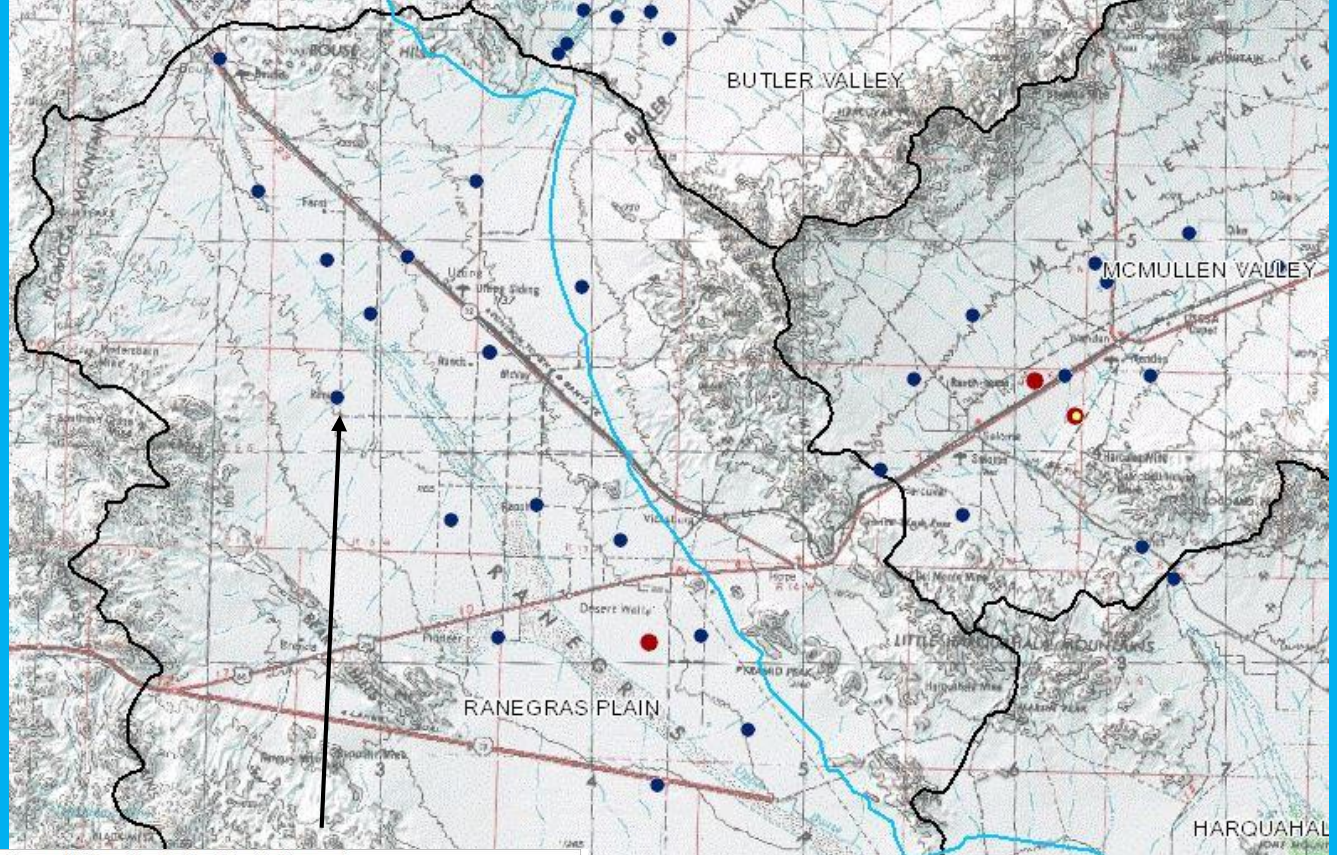




Arizona GroundWater Monitoring Site Hydrograph

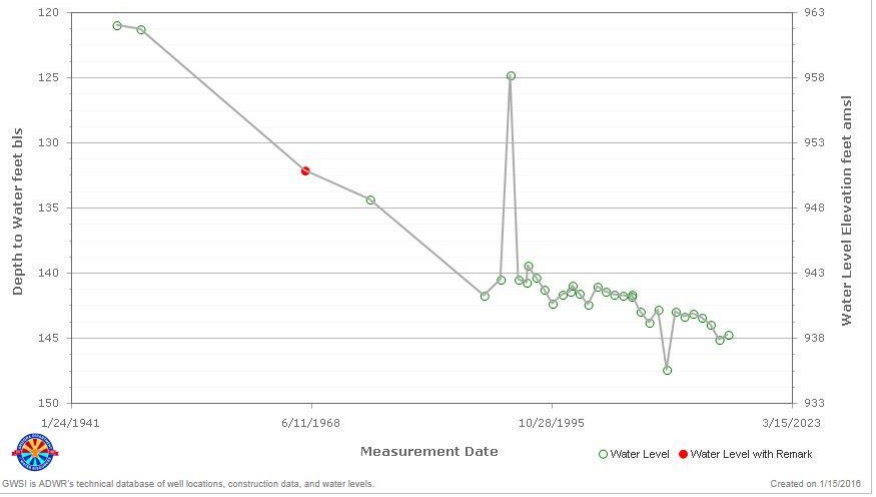
Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-05-15 29DAA	334446113500601	613116	33° 44' 46.4"	113° 50' 6.5"	1121	UNUSED	824	16	10/1/1951	11/2/2010	205.7	915.3

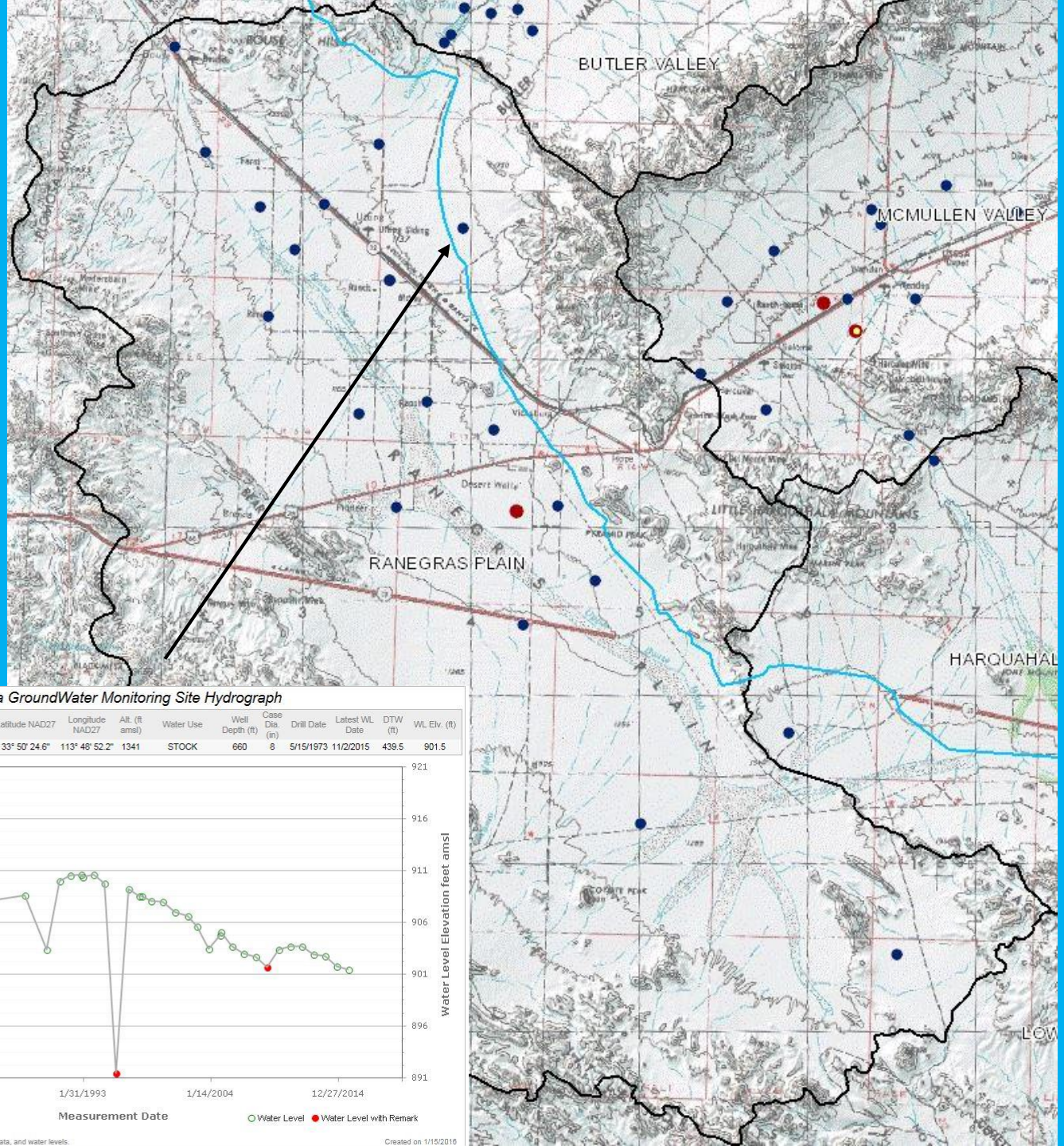




Arizona GroundWater Monitoring Site Hydrograph

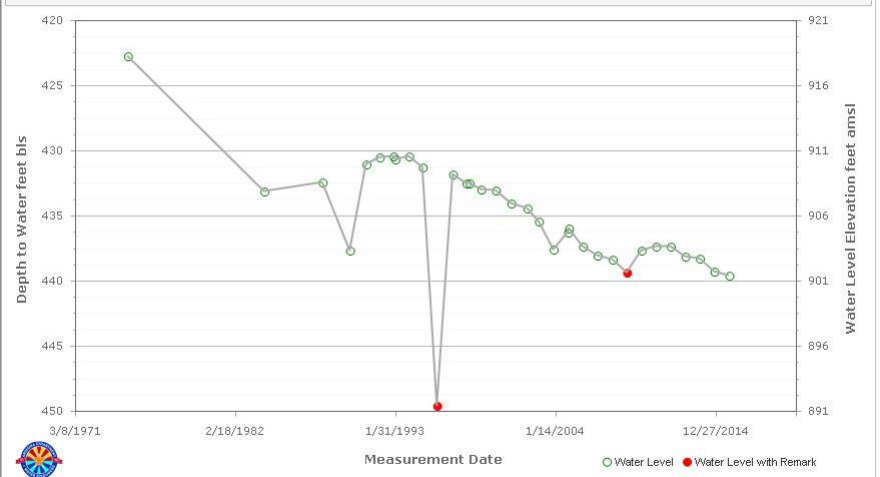
Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-05-16 09BCC	334722113562001	600166	33° 47' 23.5"	113° 56' 19.0"	1083	STOCK	145	6		11/2/2015	144.7	938.3





Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-06-15 27BBA	335024113485701	614505	33° 50' 24.6"	113° 48' 52.2"	1341	STOCK	660	8	5/15/1973	11/2/2015	439.5	901.5



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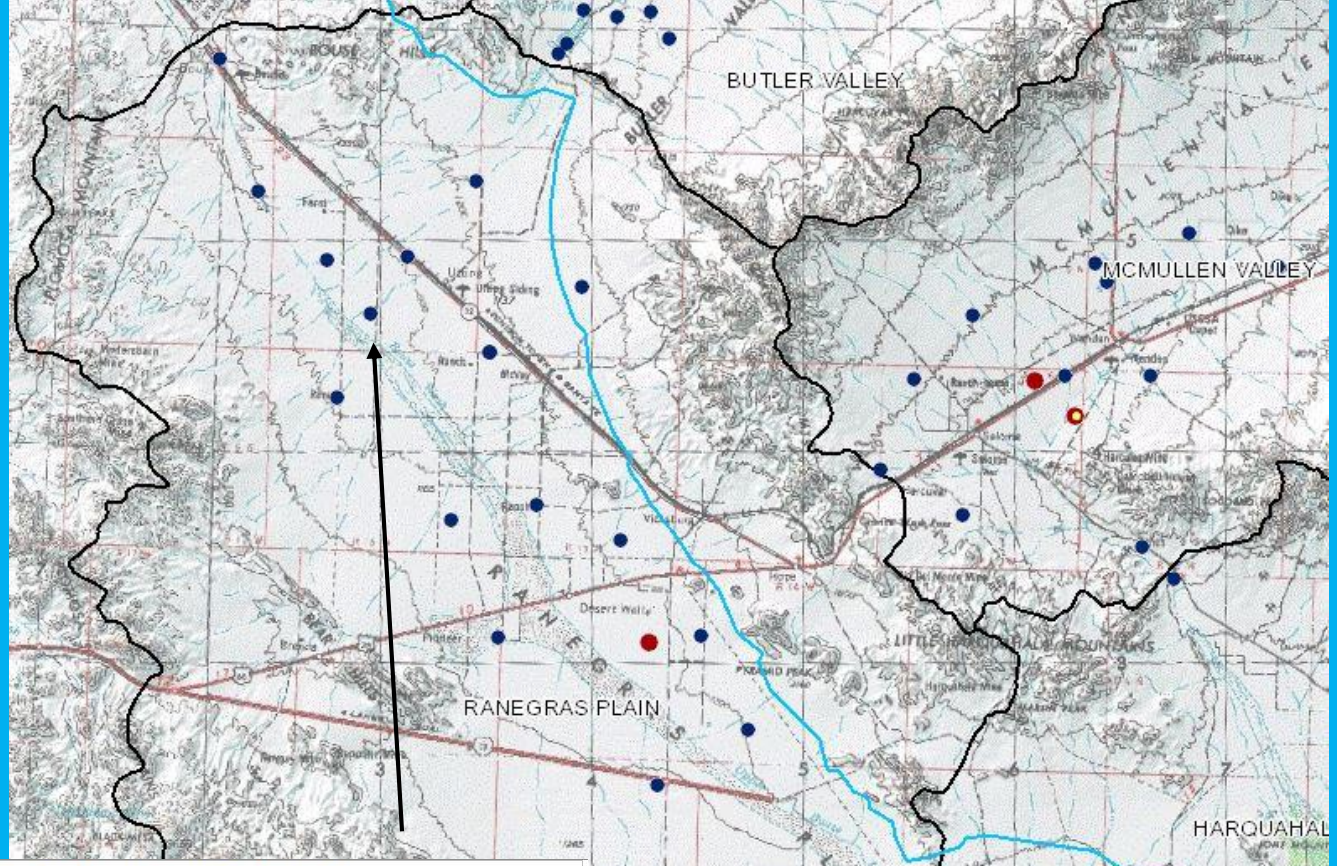
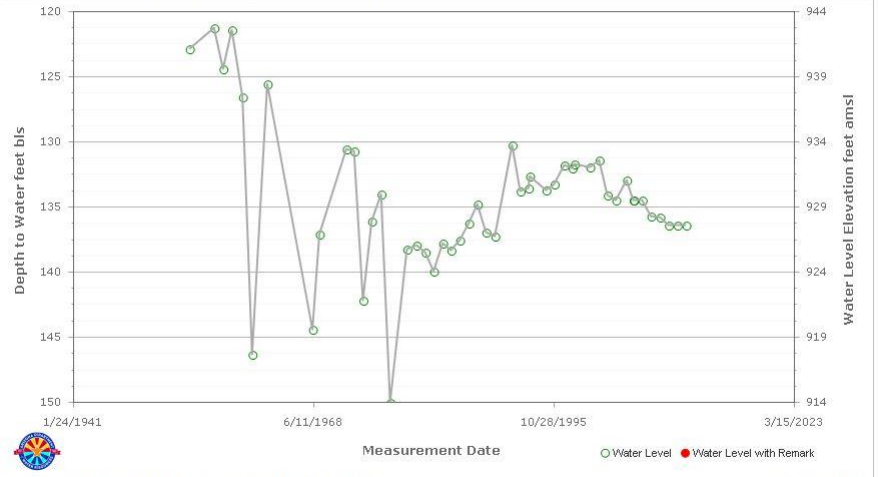
Created on 1/15/2016



Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-06-16 33AAA	334931113551901	614503	33° 49' 35.0"	113° 55' 20.2"	1064	UNUSED	700	20	5/24/1953	11/2/2010	136.4	927.6



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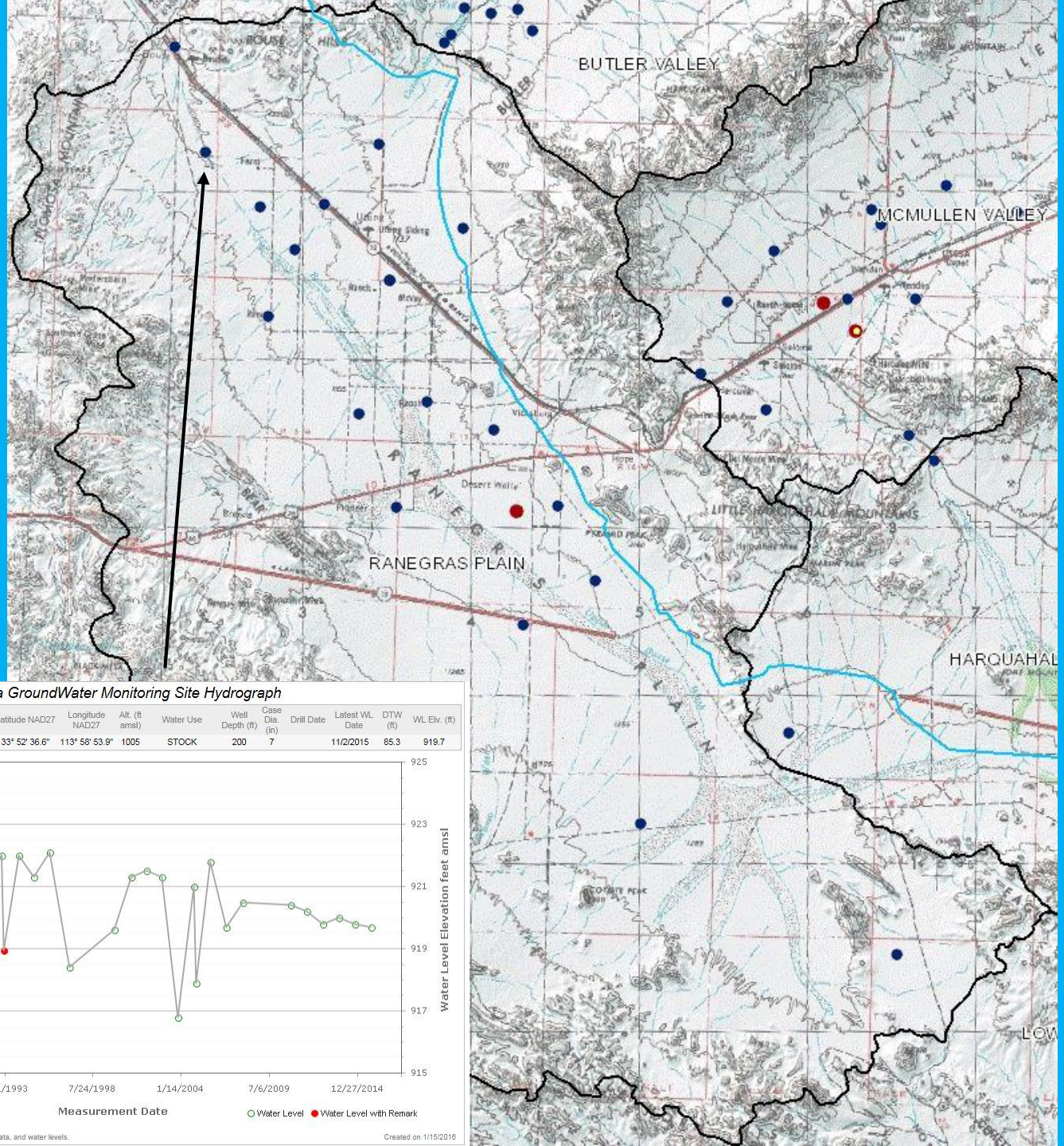

Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-06-17 12DBB3	335235113585701	502760	33° 52' 36.6"	113° 58' 53.9"	1005	STOCK	200	7		11/2/2015	85.3	919.7

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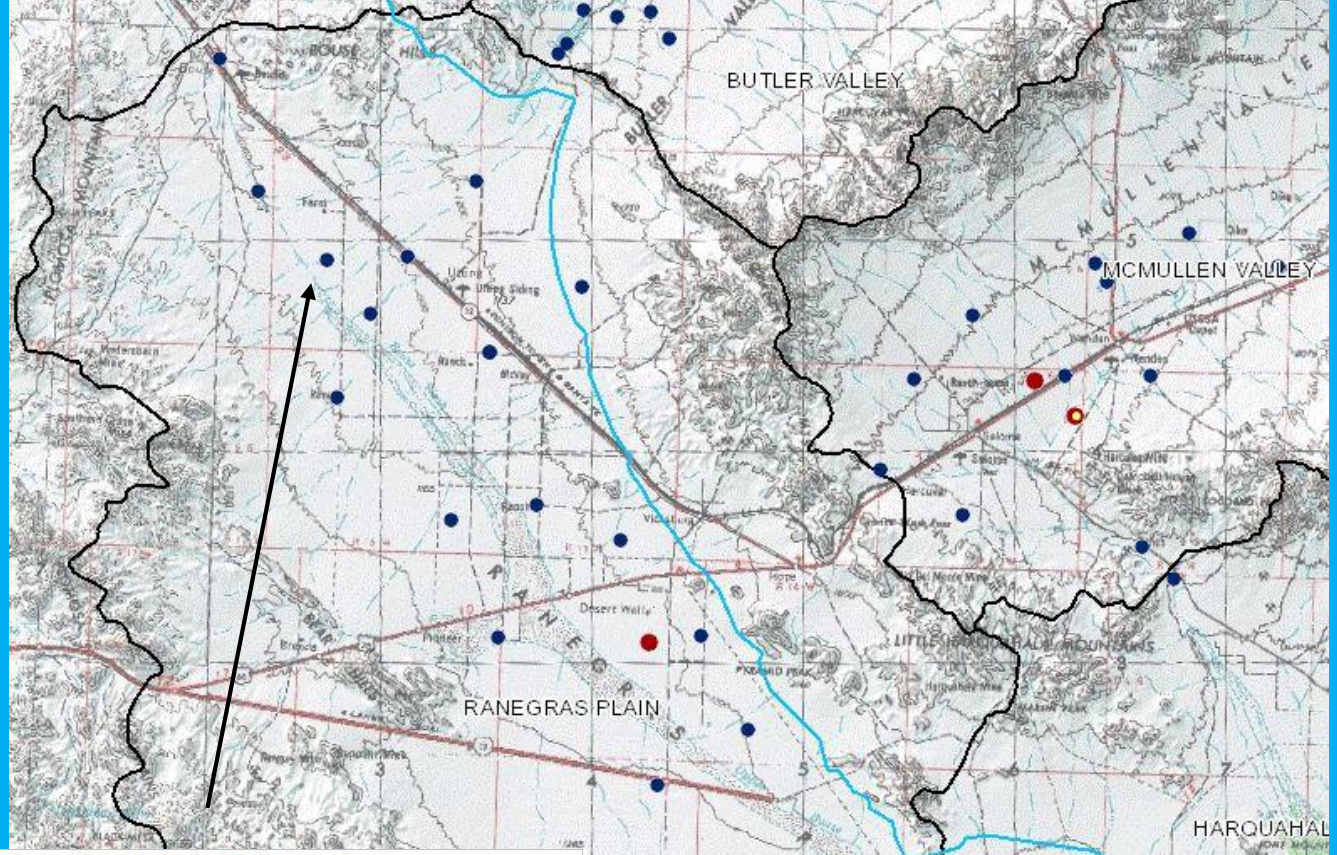
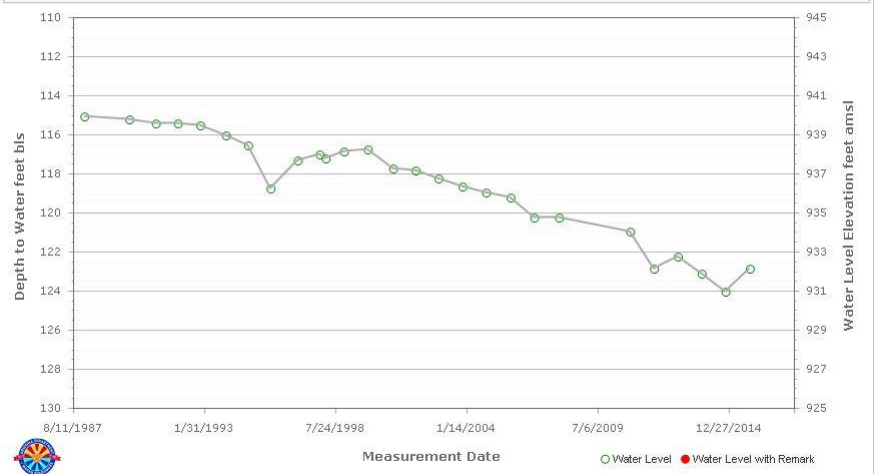
Created on 1/15/2016



Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-06-16 20ACD	335054113564301	505096	33° 50' 55.3"	113° 56' 43.6"	1055	UNUSED	200	8	5/17/1983	11/2/2015	122.8	932.2



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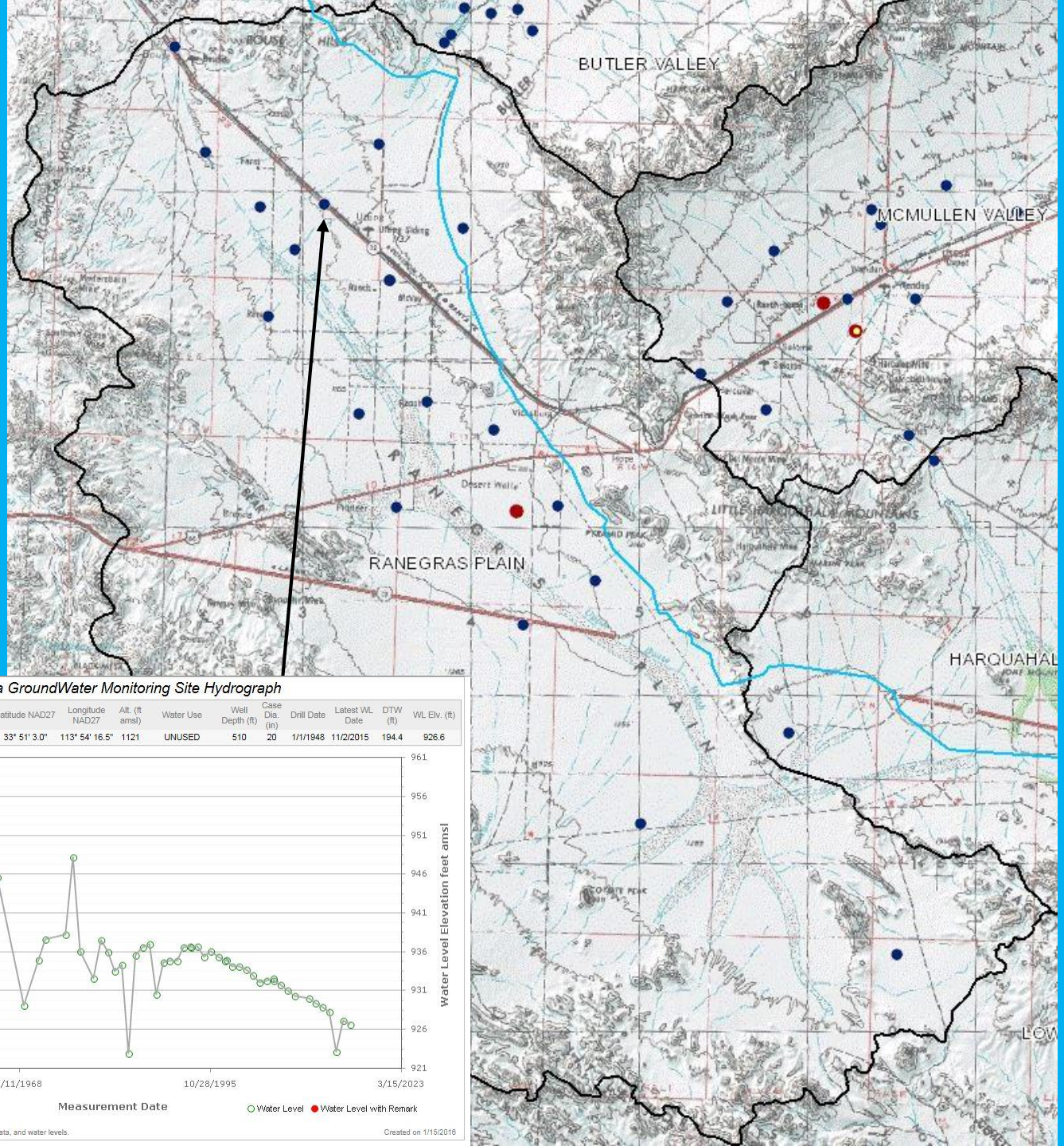
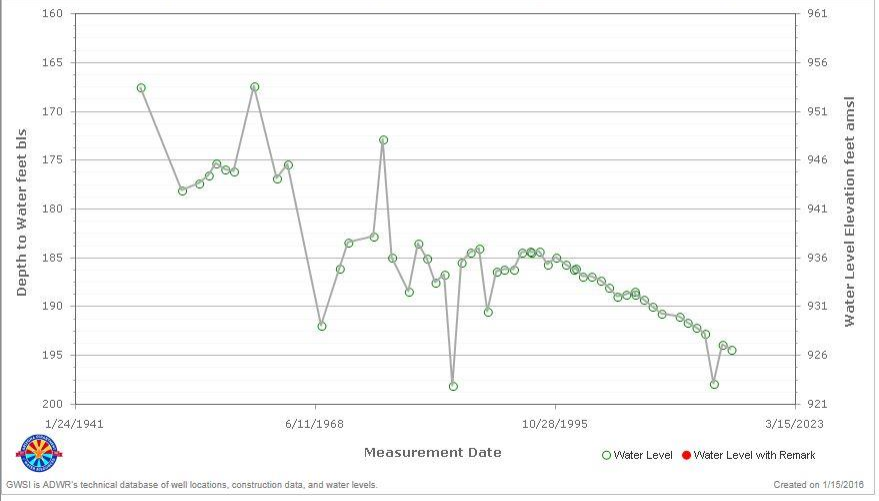
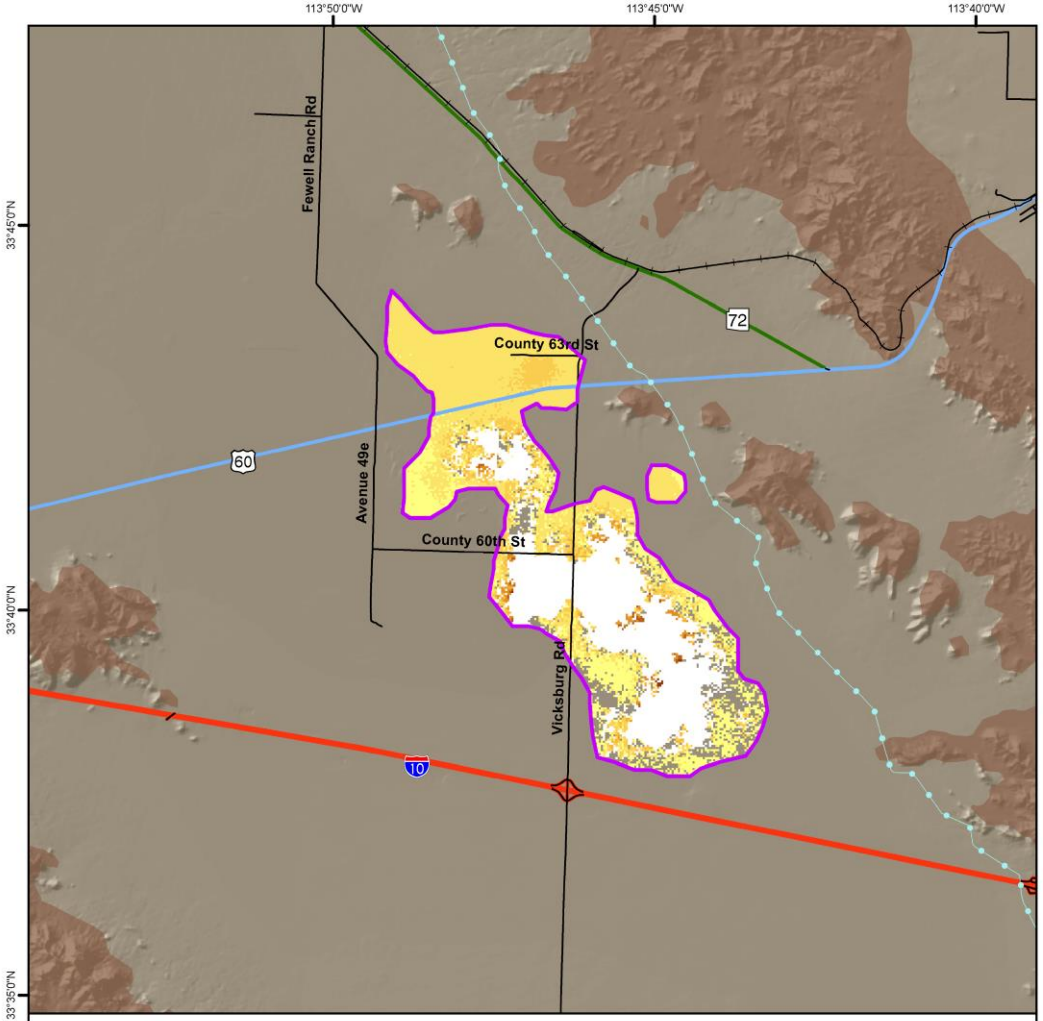


Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-06-16 22ADA	335102113541301	613119	33° 51' 3.0"	113° 54' 16.5"	1121	UNUSED	510	20	1/1/1948	11/2/2015	194.4	926.6





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Land Subsidence Rate in the Ranegras Valley, La Paz County
Based on Envisat Satellite Interferometric Synthetic Aperture Radar (InSAR) Data
Time Period of Analysis: 1.0 Years 01/29/2009 To 02/18/2010

Explanation

01/29/2009 To 02/18/2010

Land Subsidence Rate

- Decorrelation/No Data
- Greater 7 cm/yr (2.8 in/yr)
- 5 - 7 cm/yr (2.0 - 2.8 in/yr)
- 3 - 5 cm/yr (1.2 - 2.0 in/yr)
- 2 - 3 cm/yr (0.8 - 1.2 in/yr)
- 1 - 2 cm/yr (0.4 - 0.8 in/yr)
- 0.5 - 1 cm/yr (0.2 - 0.4 in/yr)
- 0 - 0.5 cm/yr (0 - 0.2 in/yr)

- Subsidence Feature
- Hardrock
- CAP Canal

Highways and Interstates

- Interstate
- US
- State
- Roads
- Railway

1:125,000

0 0.5 1 2 3 4 Miles

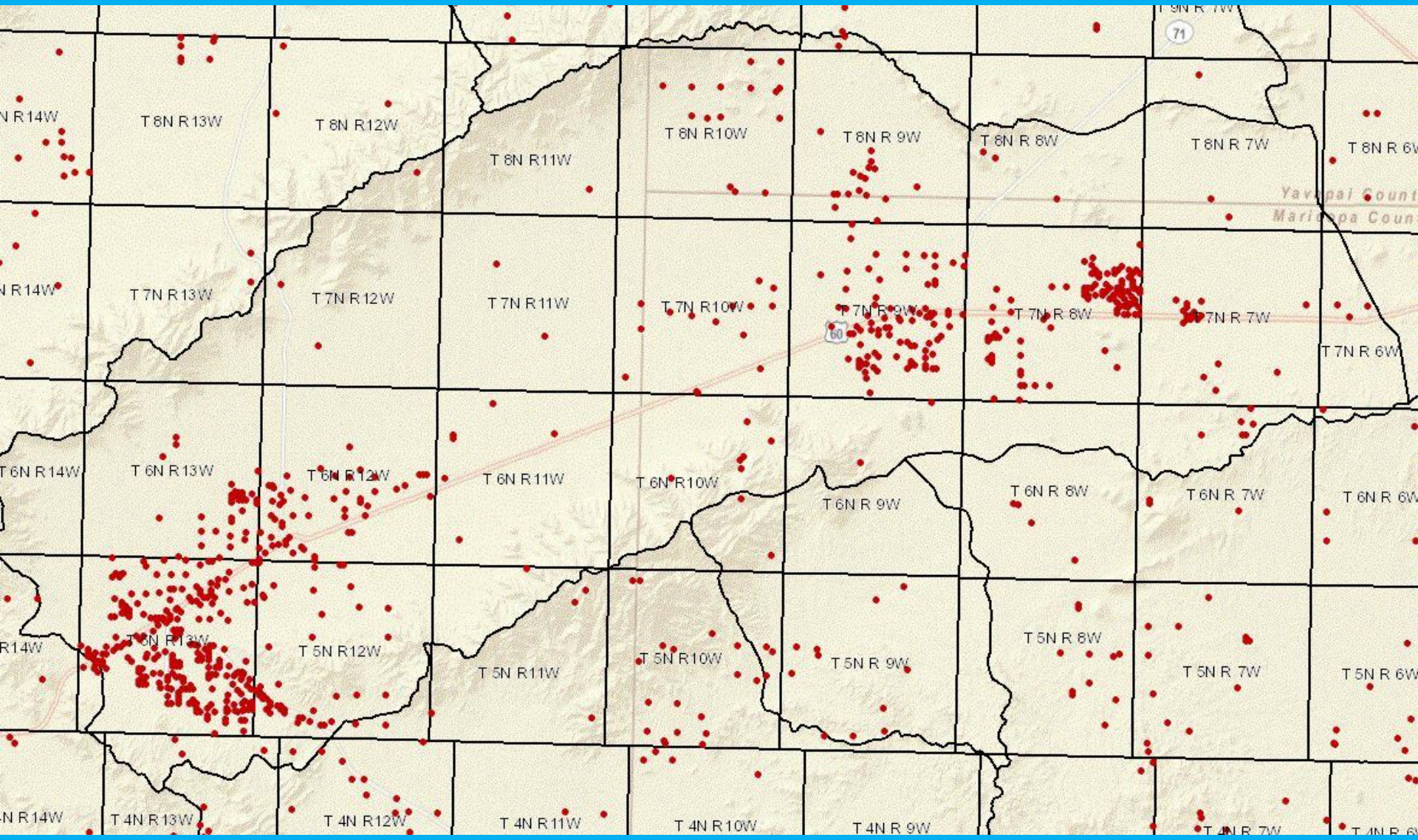
Decorrelation (white areas) are areas where the phase of the received satellite signal changed between satellite passes, causing the data to be unusable. This occurs in areas where the land surface has been disturbed (i.e. bodies of water, snow, agriculture areas, areas of development, etc).

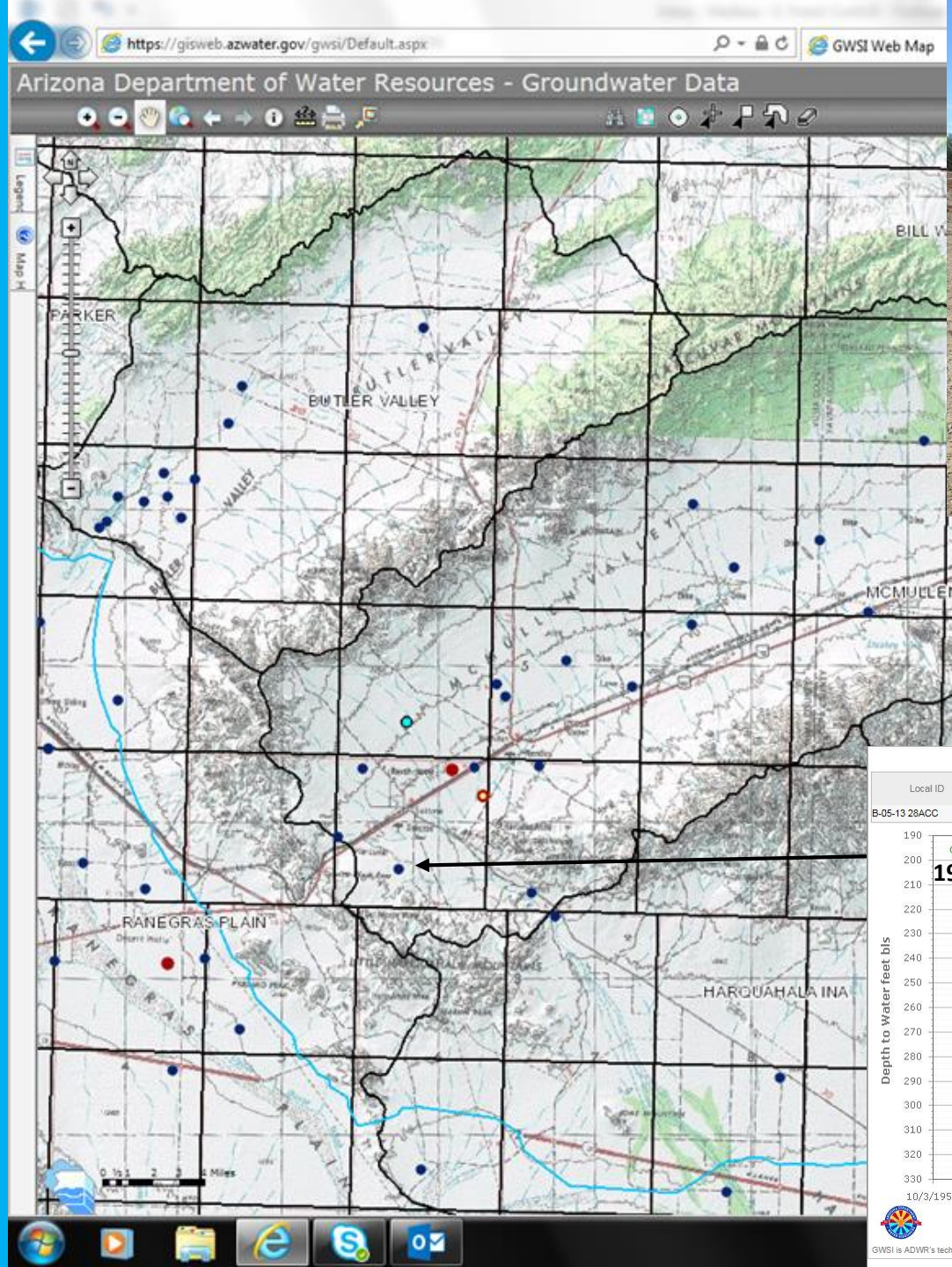
Arizona

Coordinate System: NAD 1983 UTM Zone 12N
Projection: Transverse Mercator
Datum: North American 1983
Units: Meter
Created: 1/6/2015

McMullen Valley
Additional
Hydrographs

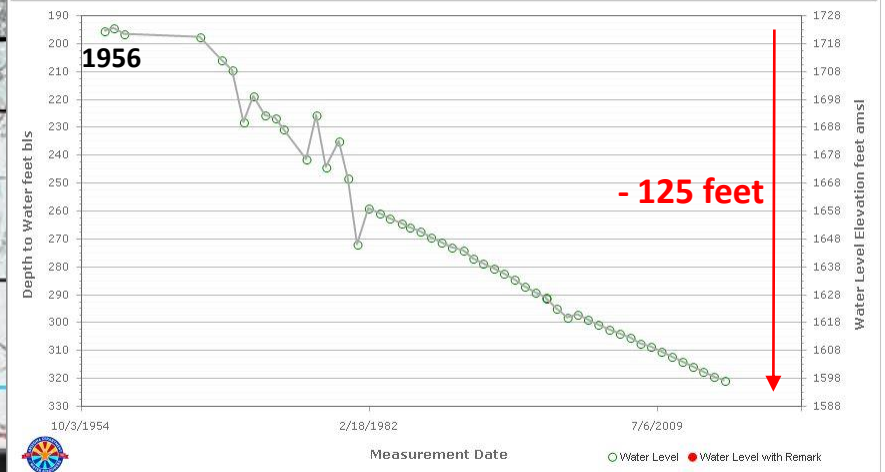
Map of Registered Wells In The McMullen Valley Basin (1/13/2016)





Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-05-13 28ACC	334452113370401	607056	33° 44' 50.1"	113° 37' 2.4"	1918.3	UNUSED	723	16	1/1/1953	11/17/2015	320.7	1597.6



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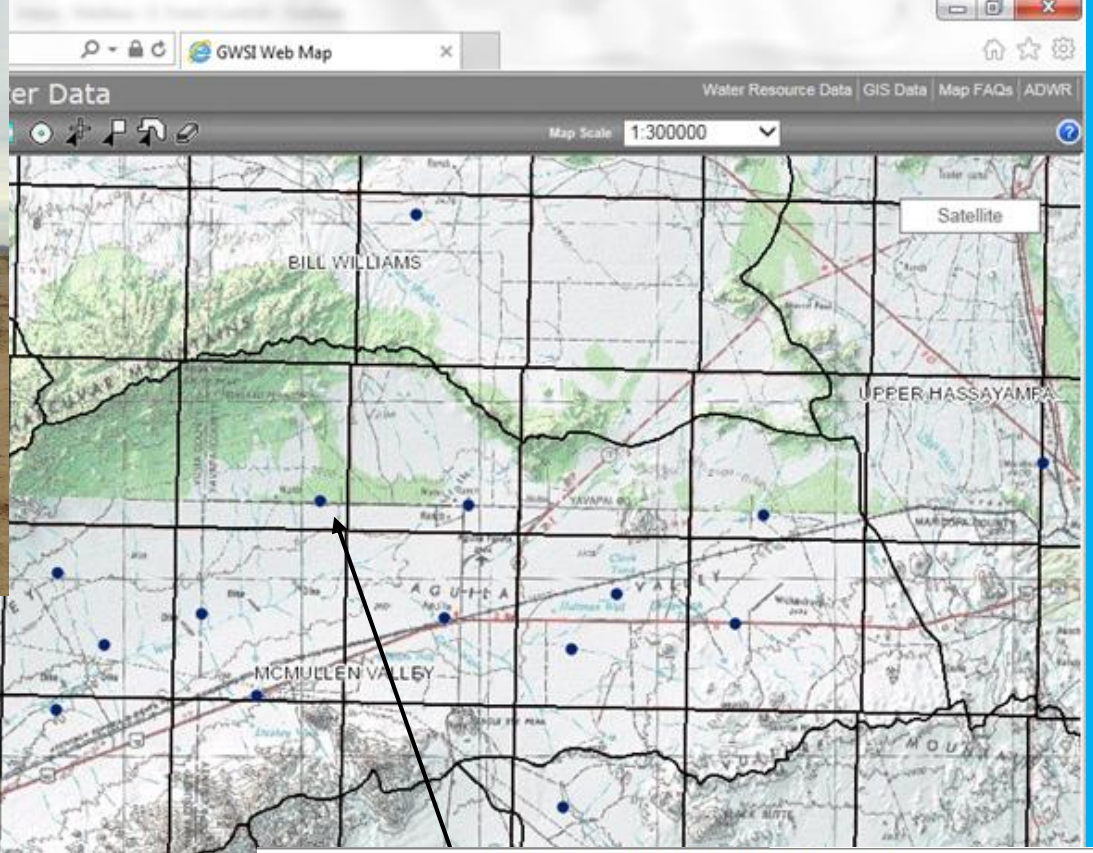
GWSI Web Map
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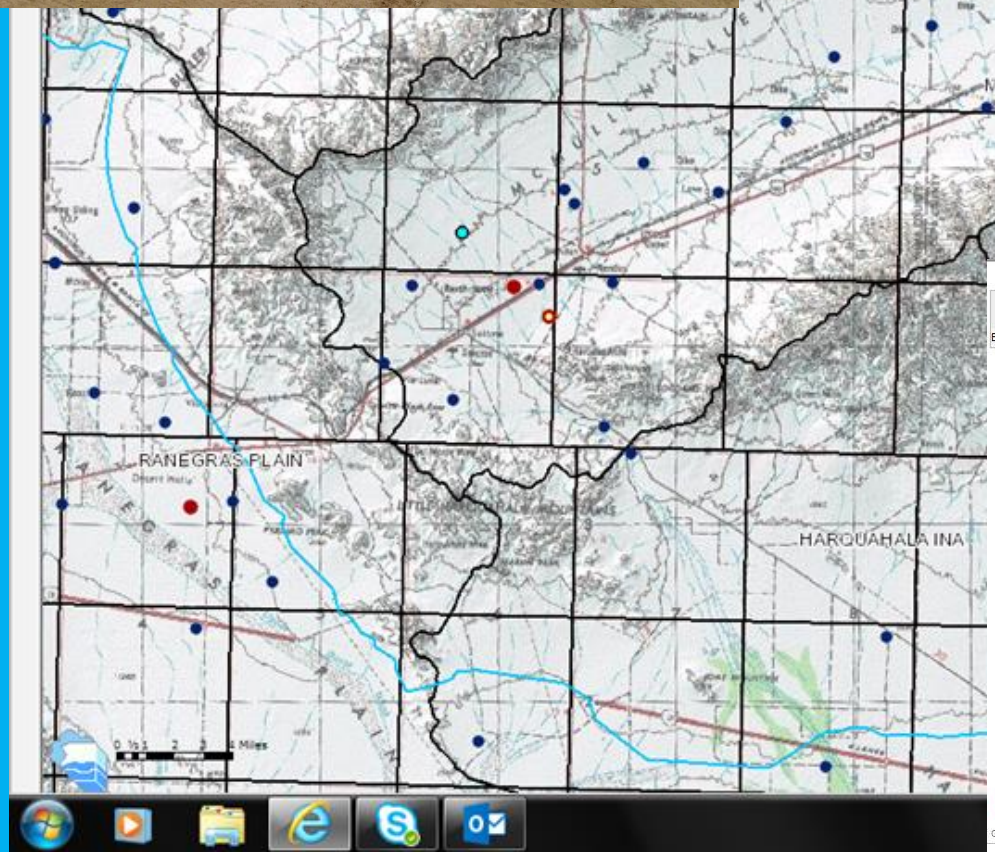
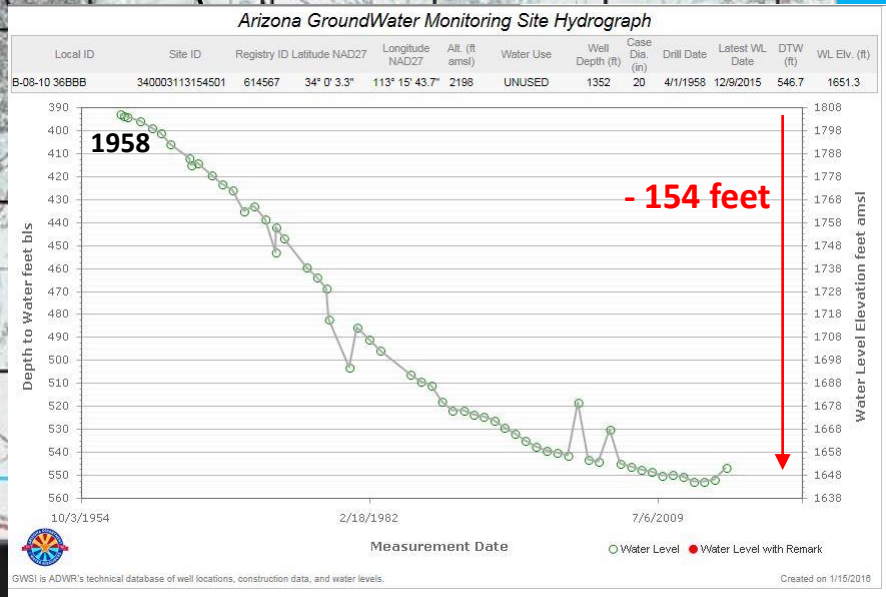
Water Resource Data
GIS Data
Map FAQs
ADWR
Map Scale
1:300000
Satellite
BILL WILLIAMS
UPPER HASSAYAMPA
AGUILA VALLEY
MCMULLEN VALLEY


RANEGRAS PLAIN
HARQUAHALA INA


Arizona GroundWater Monitoring Site Hydrograph
Local ID | Site ID | Registry ID | Latitude NAD27 | Longitude NAD27 | Alt. (ft amsl) | Water Use | Well Depth (ft) | Case Dia. (in) | Drill Date | Latest WL Date | DTW (ft) | WL Elv. (ft)
B-08-10 36BBB | 340003113154501 | 614567 | 34° 0' 3.3" | 113° 15' 43.7" | 2198 | UNUSED | 1352 | 20 | 4/1/1958 | 12/9/2015 | 546.7 | 1651.3
1958
- 154 feet
Depth to Water feet bls
Water Level Elevation feet amsl
10/3/1954
2/18/1982
7/6/2009
Measurement Date
Water Level
Water Level with Remark
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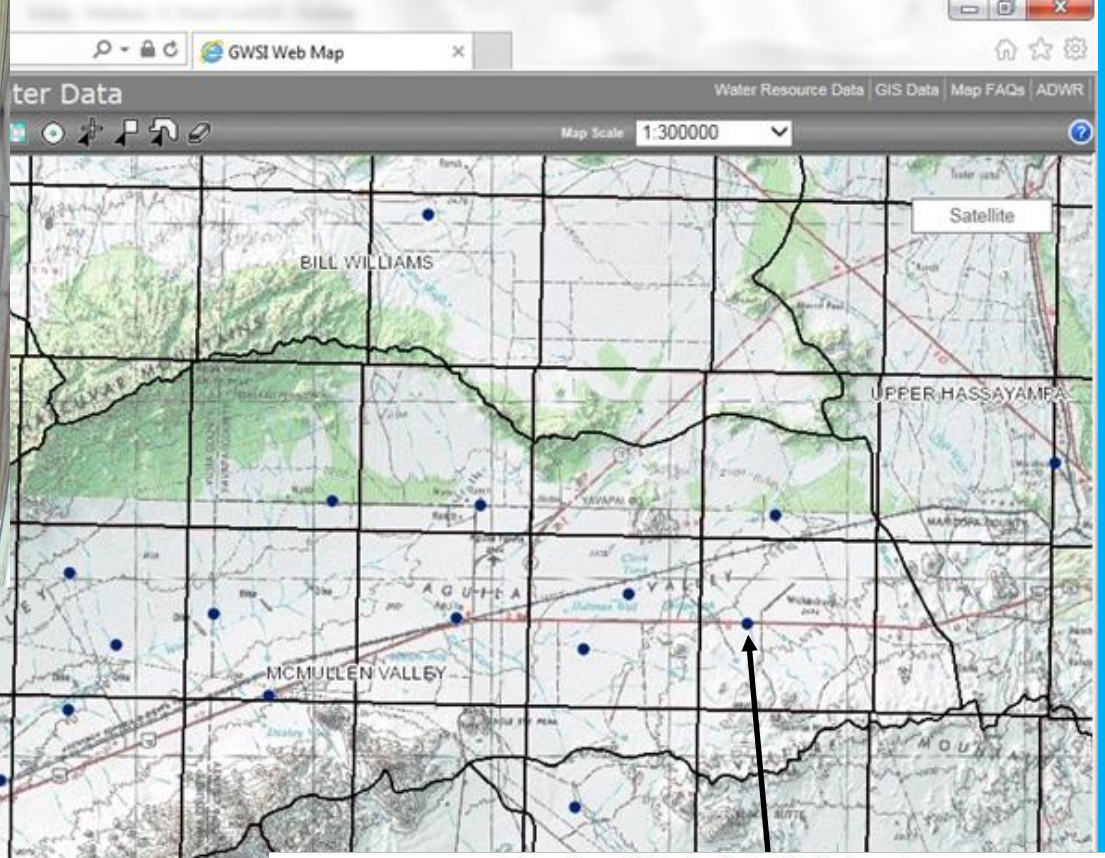
GWSI Web Map
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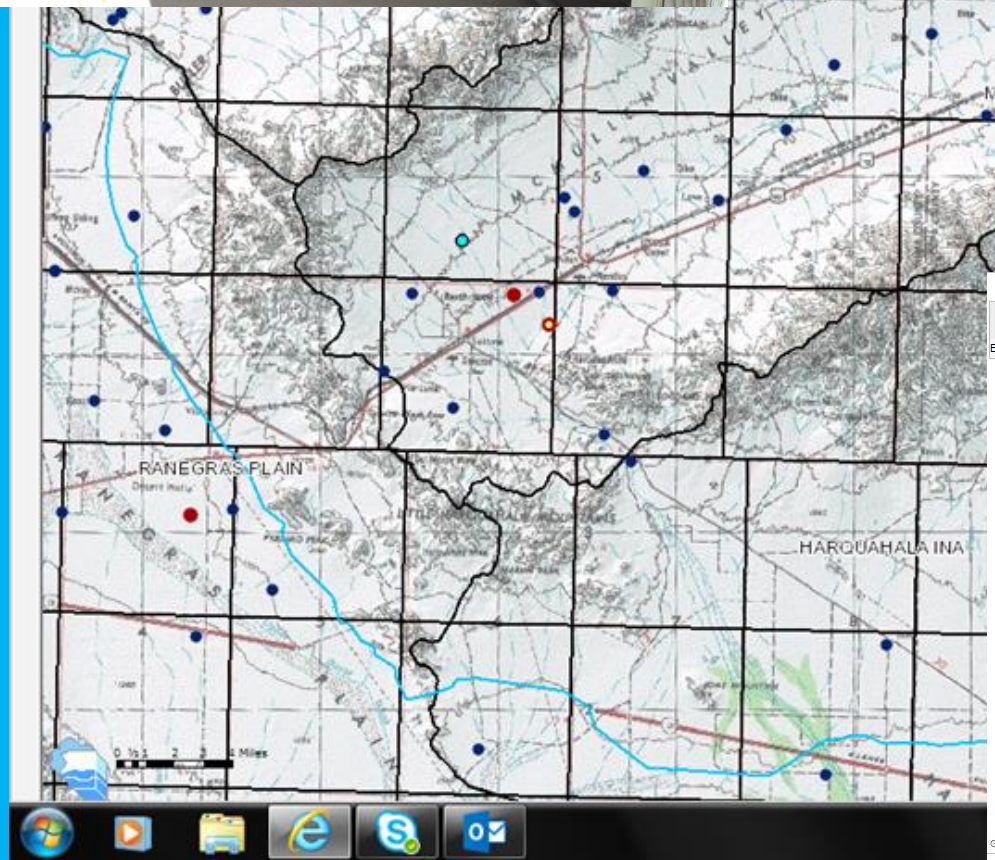
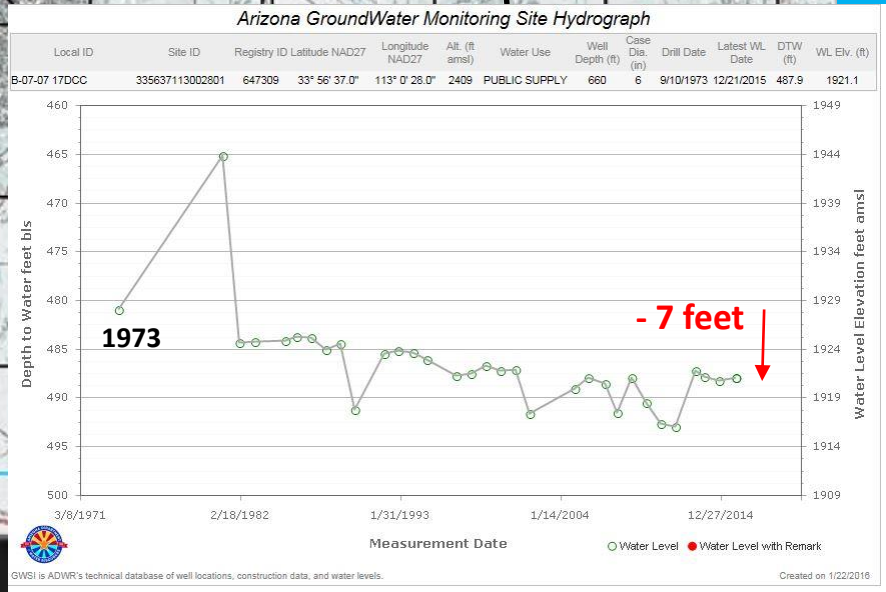
Water Resource Data
GIS Data
Map FAQs
ADWR
Map Scale
1:300000
Satellite
BILL WILLIAMS
UPPER HASSAYAMPA
MCMULLEN VALLEY


RANEGRAS PLAIN
HARQUAHALA INA


Arizona GroundWater Monitoring Site Hydrograph
Local ID | Site ID | Registry ID | Latitude NAD27 | Longitude NAD27 | Alt. (ft amsl) | Water Use | Well Depth (ft) | Case Dia. (in) | Drill Date | Latest WL Date | DTW (ft) | WL Elv. (ft)
B-07-07 17DCC | 335637113002801 | 647309 | 33° 56' 37.0" | 113° 0' 26.0" | 2409 | PUBLIC SUPPLY | 660 | 6 | 9/10/1973 | 12/21/2015 | 487.9 | 1921.1
Depth to Water feet bls
Water Level Elevation feet amsl
1973
- 7 feet
3/8/1971
2/18/1982
1/31/1993
1/14/2004
12/27/2014
Measurement Date
Water Level
Water Level with Remark
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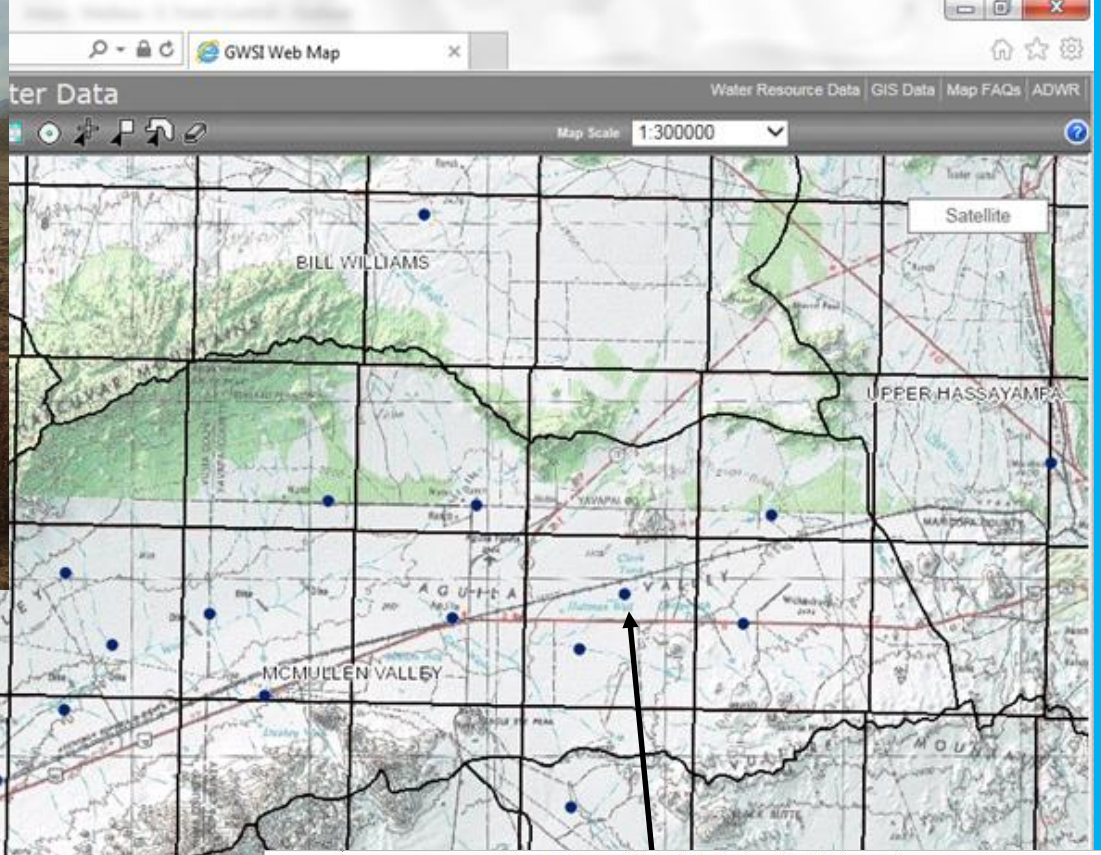
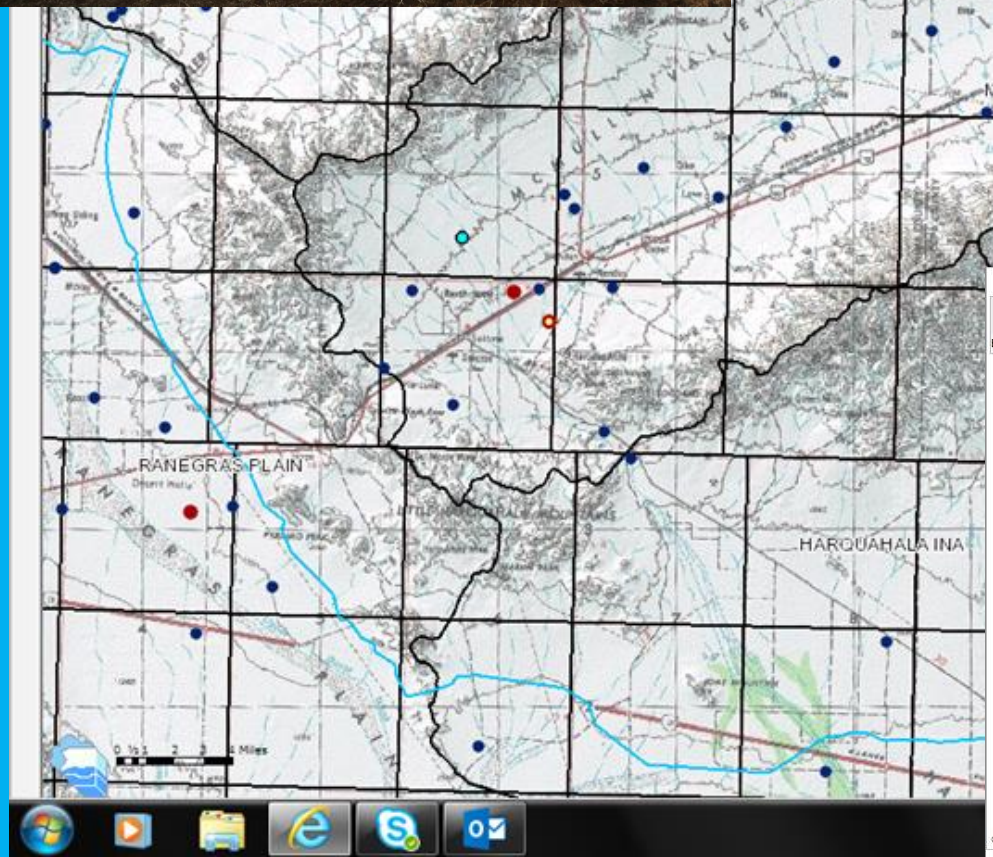
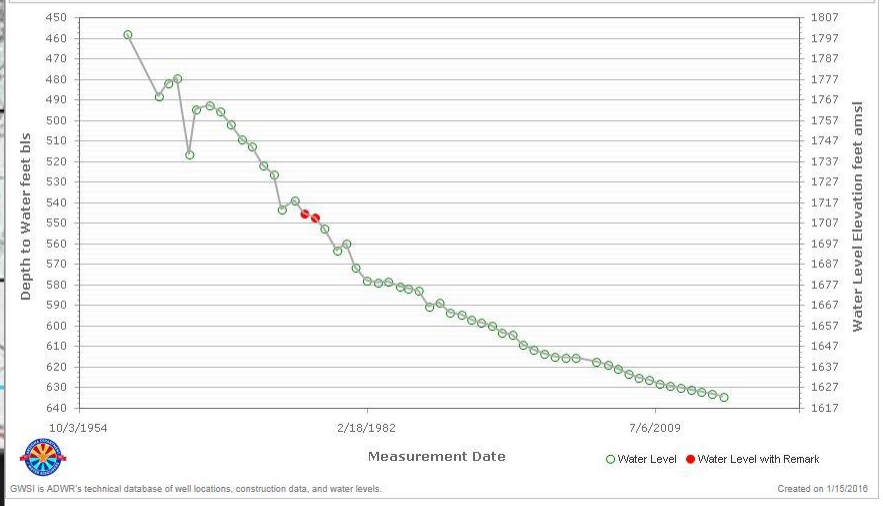
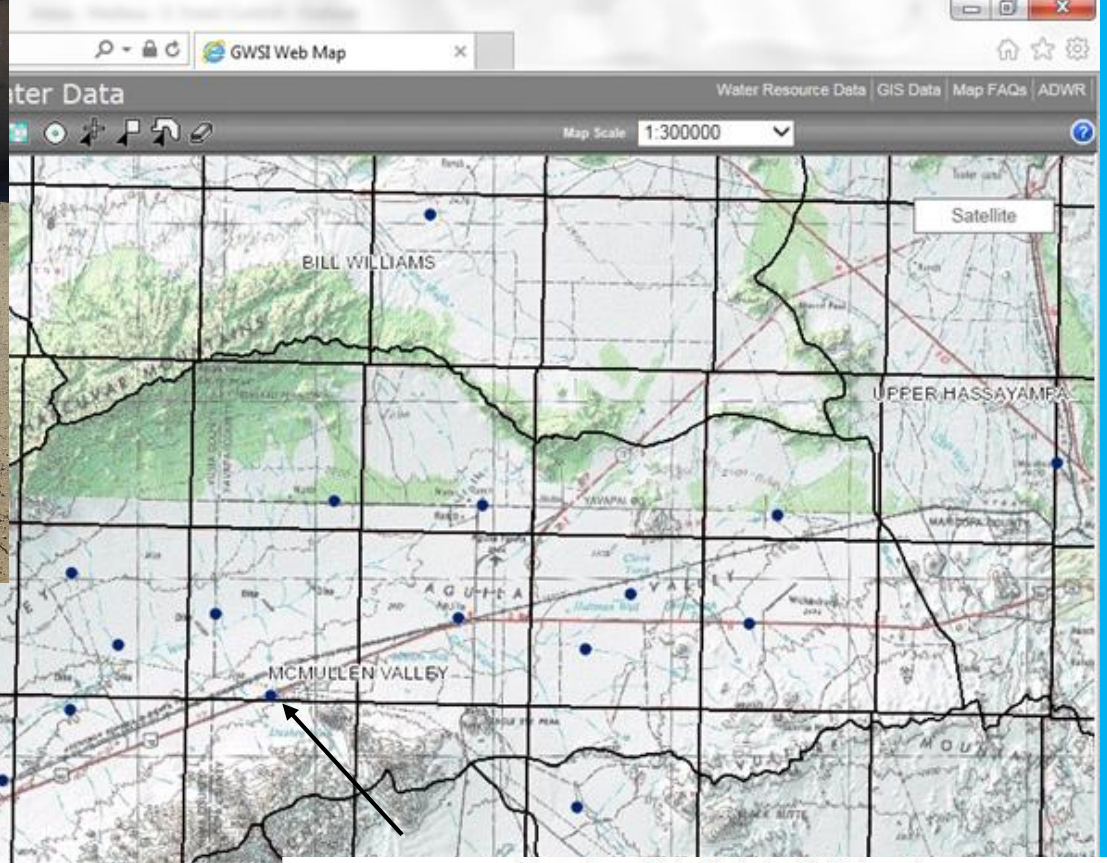


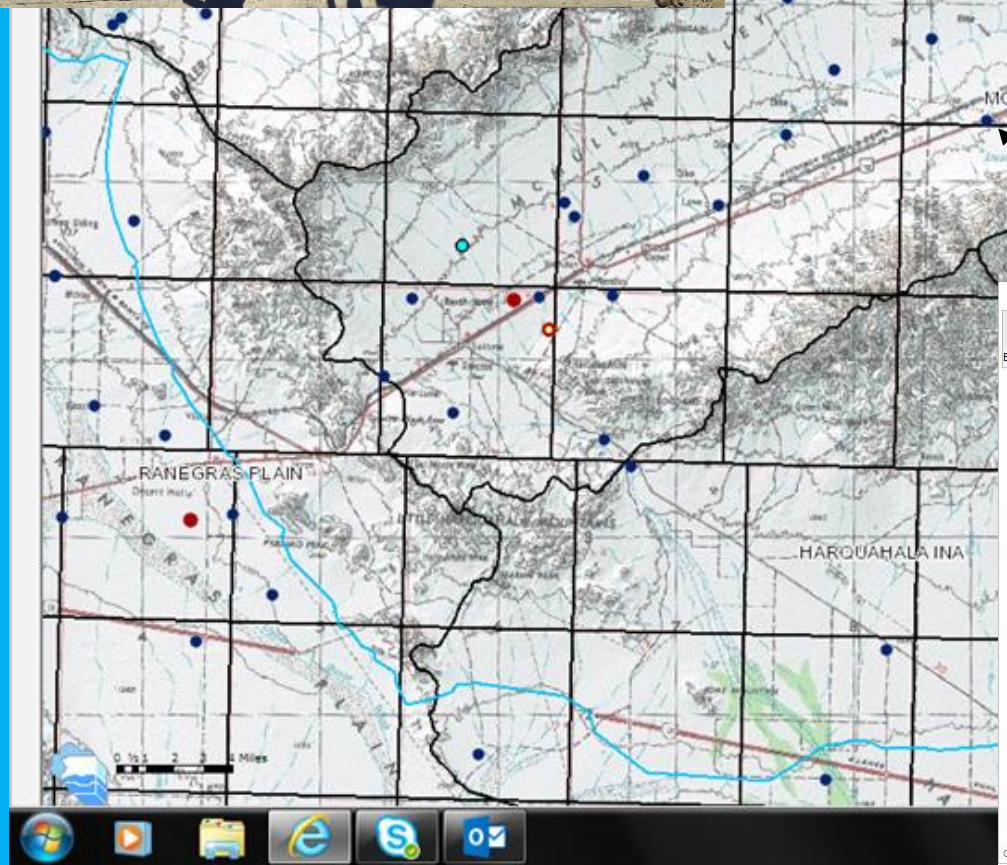


Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-07-08 15BAA	335727113045101	807721	33° 57' 26.2"	113° 4' 49.5"	2257	UNUSED	1812	20	3/8/1959	12/3/2015	634.2	1622.8

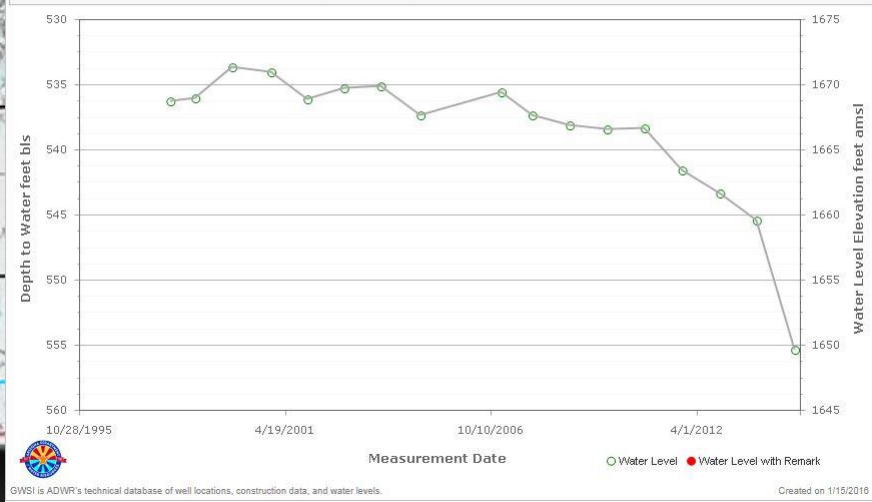


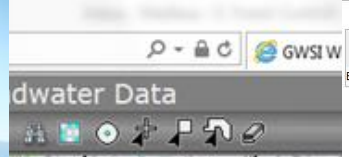




Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-07-10 33DDA2	335407113175201	546173	33° 54' 5.8"	113° 17' 50.7"	2205	PUBLIC SUPPLY	648	12	12/10/1994	10/30/2014	555.3	1649.7




GWSI W
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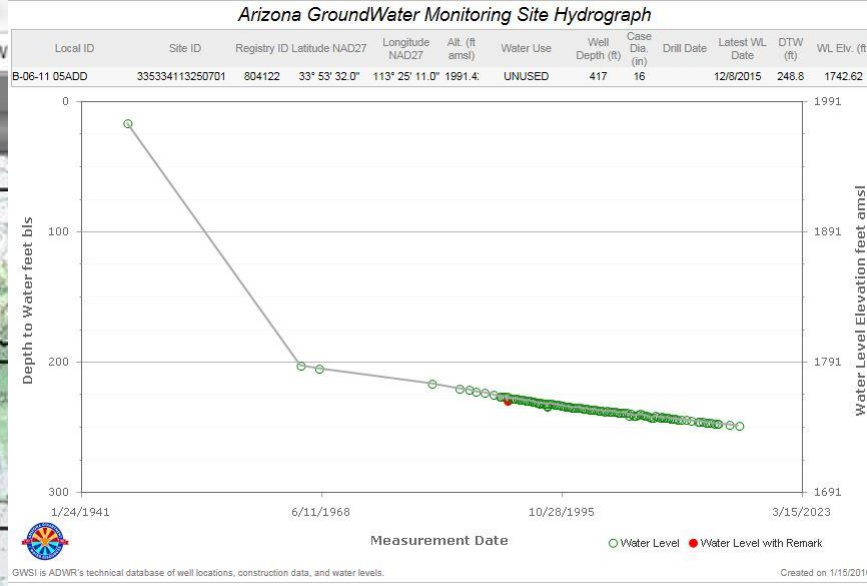
Arizona GroundWater Monitoring Site Hydrograph
Local ID | Site ID | Registry ID | Latitude NAD27 | Longitude NAD27 | Alt. (ft amsl) | Water Use | Well Depth (ft) | Case Dia. (in) | Drill Date | Latest WL Date | DTW (ft) | WL Elv. (ft
B-06-11 05ADD | 335334113250701 | 804122 | 33° 53' 32.0" | 113° 25' 11.0" | 1991.4 | UNUSED | 417 | 16 | | 12/8/2015 | 248.8 | 1742.62
Depth to Water feet bls
0
100
200
300
Water Level Elevation feet amsl
1991
1891
1791
1691
1/24/1941
6/11/1968
10/28/1995
3/15/2023
Measurement Date
Water Level
Water Level with Remark
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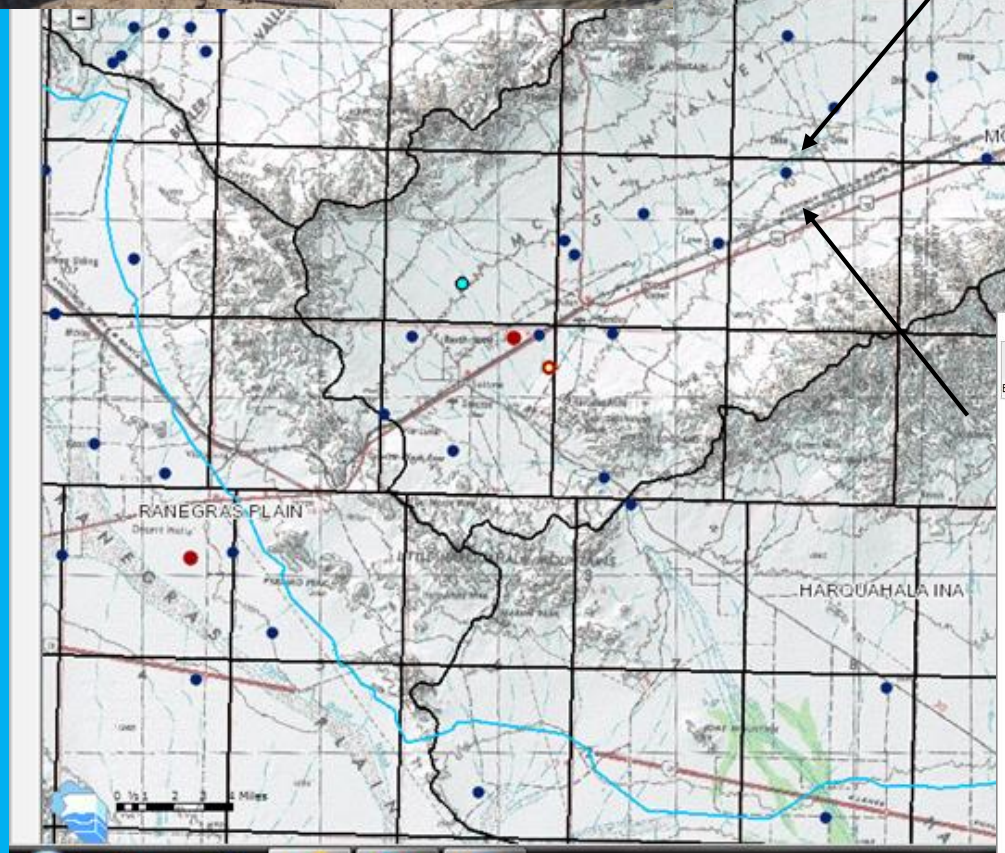
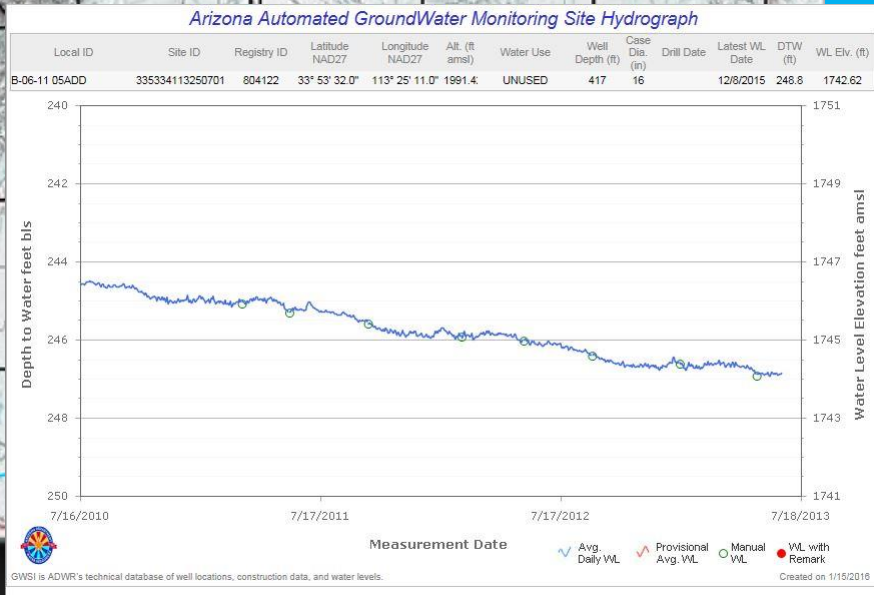

MCMULLEN VALLEY
RANEGRAS PLAIN
HARQUAHALA INA
Miles


Arizona Automated GroundWater Monitoring Site Hydrograph
Local ID | Site ID | Registry ID | Latitude NAD27 | Longitude NAD27 | Alt. (ft amsl) | Water Use | Well Depth (ft) | Case Dia. (in) | Drill Date | Latest WL Date | DTW (ft) | WL Elv. (ft)
B-06-11 05ADD | 335334113250701 | 804122 | 33° 53' 32.0" | 113° 25' 11.0" | 1991.4 | UNUSED | 417 | 16 | | 12/8/2015 | 248.8 | 1742.62
Depth to Water feet bls
240
242
244
246
248
250
Water Level Elevation feet amsl
1751
1749
1747
1745
1743
1741
7/16/2010
7/17/2011
7/17/2012
7/18/2013
Measurement Date
Avg. Daily WL
Provisional Avg. WL
Manual WL
WL with Remark
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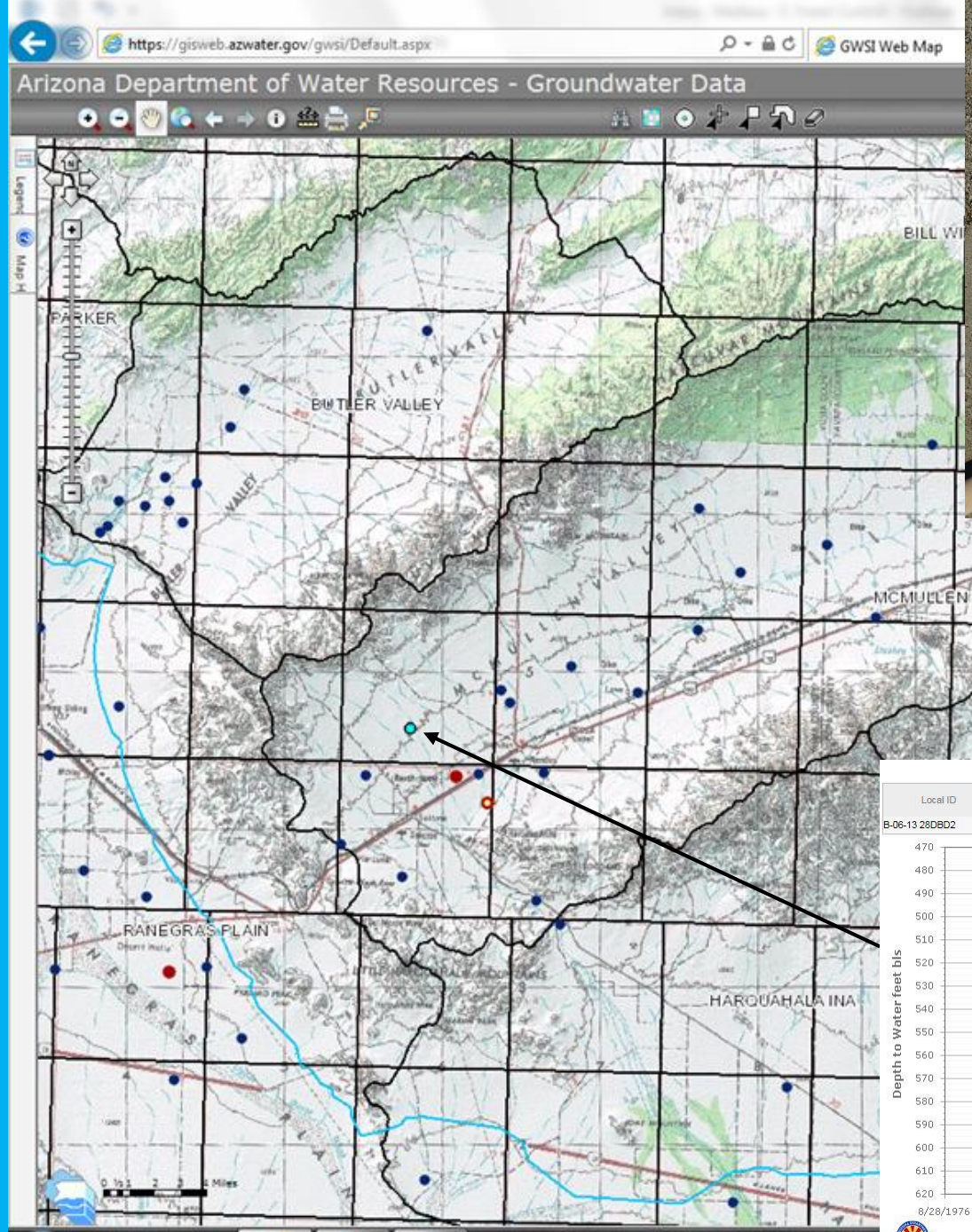
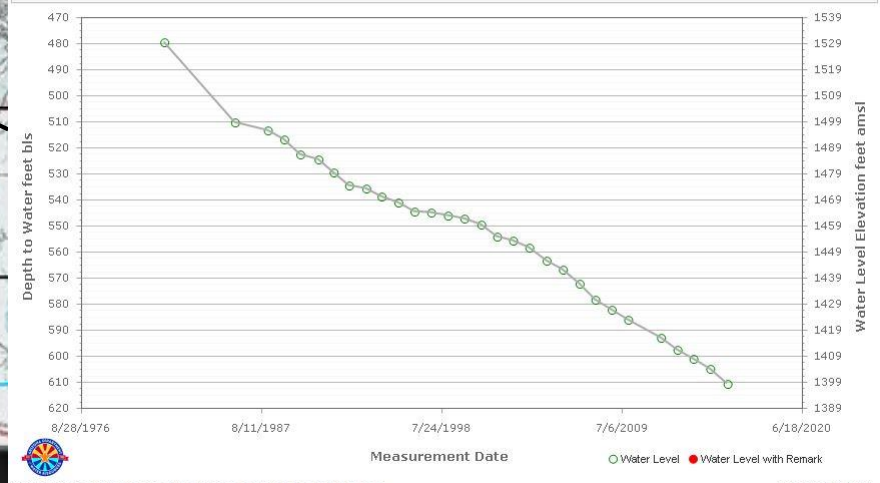


Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-06-13 28DBD2	334955113365201	634103	33° 49' 55.1"	113° 36' 52.8"	2009	UNUSED	580	8	6/24/1980	11/17/2015	610.3	1398.7



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Map Scale 1:300000

Satellite

BILL WILLIAMS

PARKER

BUTLER VALLEY

UPPER HASSAYAMPA

AGUILA VALLEY

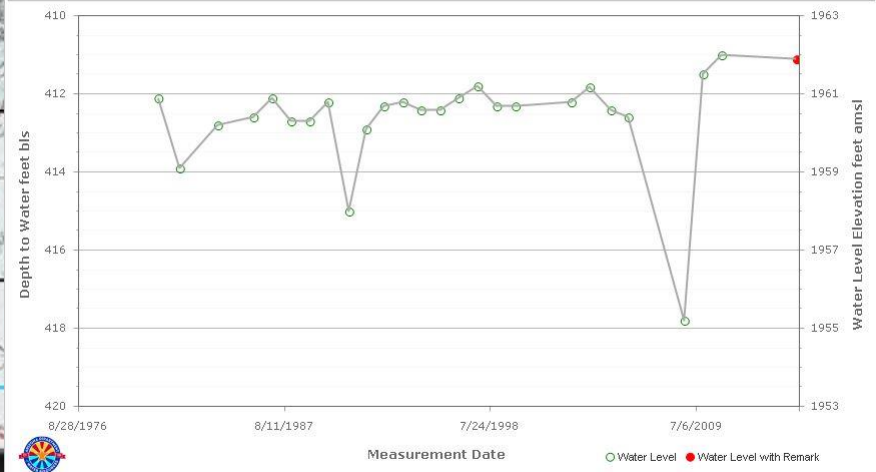
MCMULLEN VALLEY

RANEGRAS PLAIN

HARQUAHALA INA

Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-08-07 33BAD	335952112592801	614563	33° 59' 55.0"	112° 59' 31.0"	2373	UNUSED				11/2/2010	411	1962



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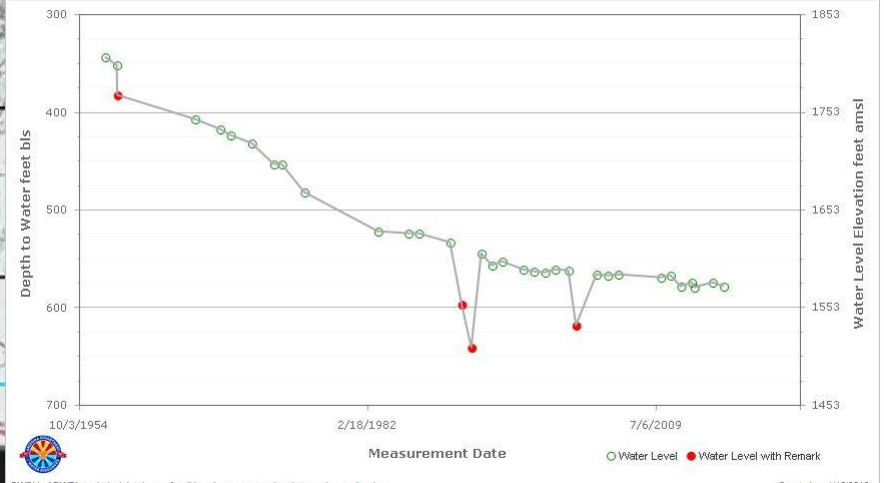
Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-07-09 15CDD	335635113110601	604129	33° 56' 35.4"	113° 11' 5.8"	2153	IRRIGATION	1430	20	2/21/1957	11/20/2015	578.1	1574.9



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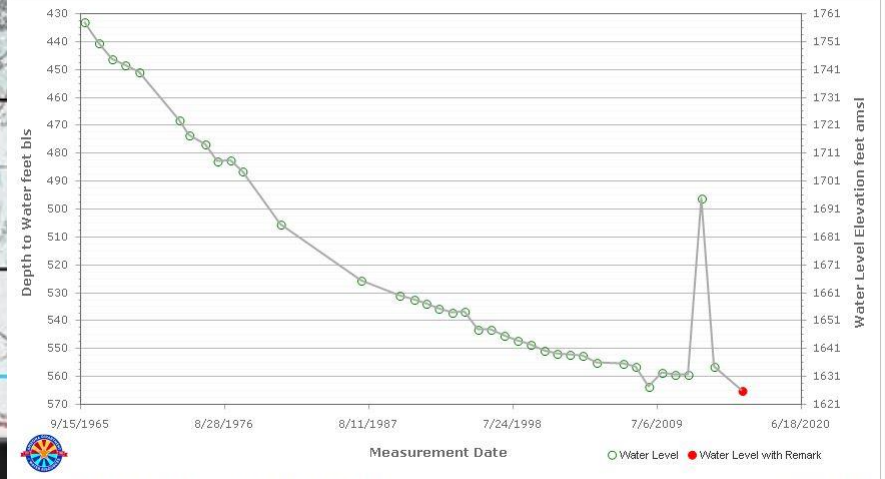
Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-08-09 26CCD	340005113101801	640729	34° 0' 3.4"	113° 10' 17.6"	2191	STOCK	800	8		10/24/2013	556.2	1634.8



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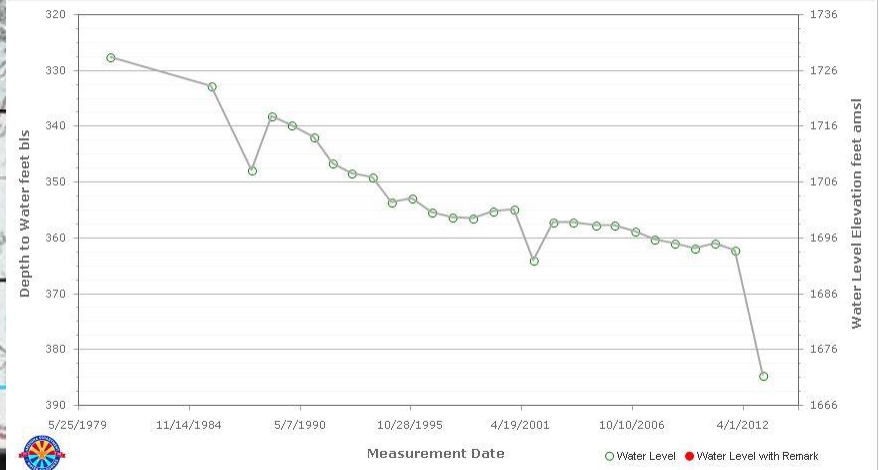
Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-07-10 19AAA	335633113195701	604150	33° 56' 34.3"	113° 19' 56.8"	2056	IRRIGATION	1500	18	3/25/1974	3/20/2013	384.6	1671.4



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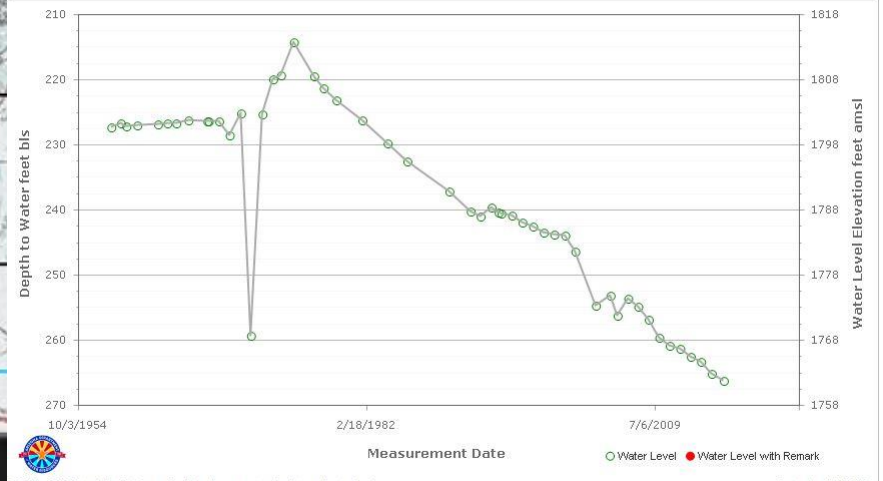
Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-07-11 27ABC	335535113232701	801549	33° 55' 32.7"	113° 23' 28.0"	2028	UNUSED	340	6	5/1/1956	12/21/2015	266.1	1761.9



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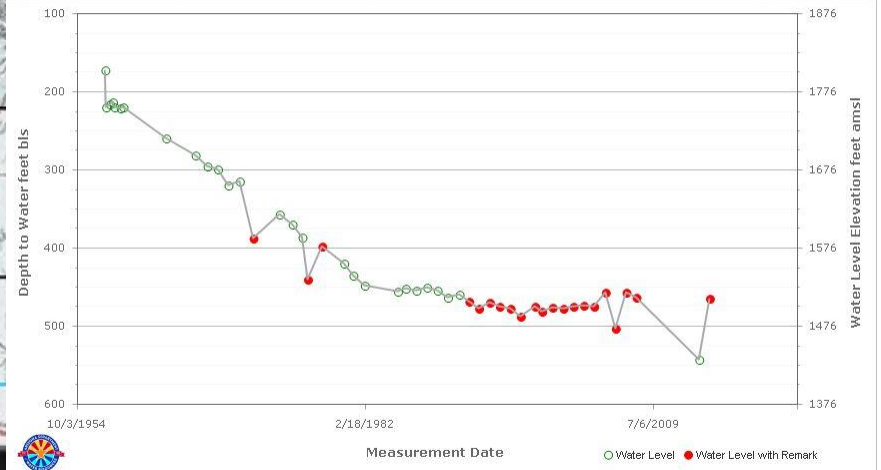
B-06-12 13DCD	335122113273301	608098	33° 51' 21.2"	113° 27' 34.4"	1976	IRRIGATION	1200	20	4/1/1957	10/23/2013	542.6	1433.4



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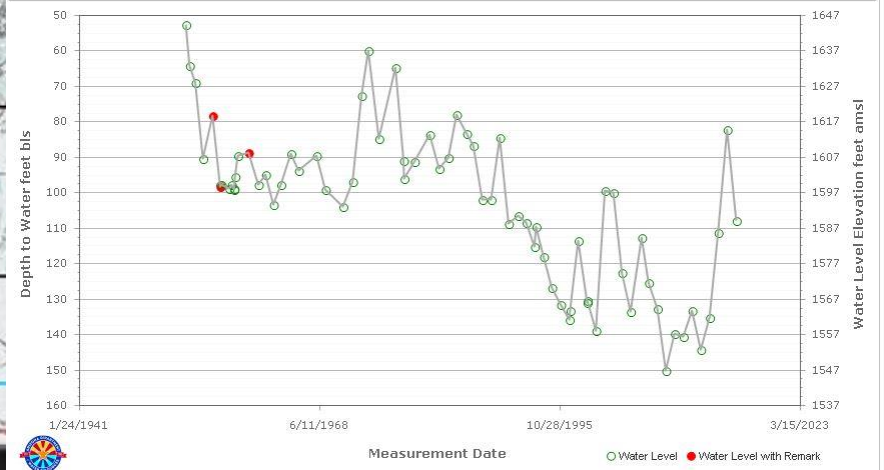
Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-05-12 32ADB	334408113313401		33° 44' 7.3"	113° 31' 32.4"	1697	UNUSED	136	16		11/17/2015	107.8	1589.2



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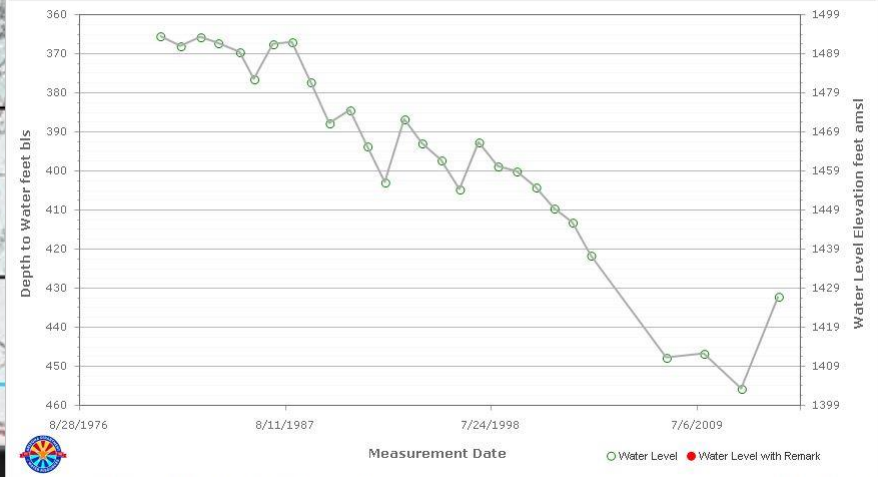
B-05-13 01BDA	334827113335701	625292	33° 48' 26.5"	113° 33' 59.8"	1859	IRRIGATION	702	20	2/21/1974	10/21/2013	432.1	1426.9



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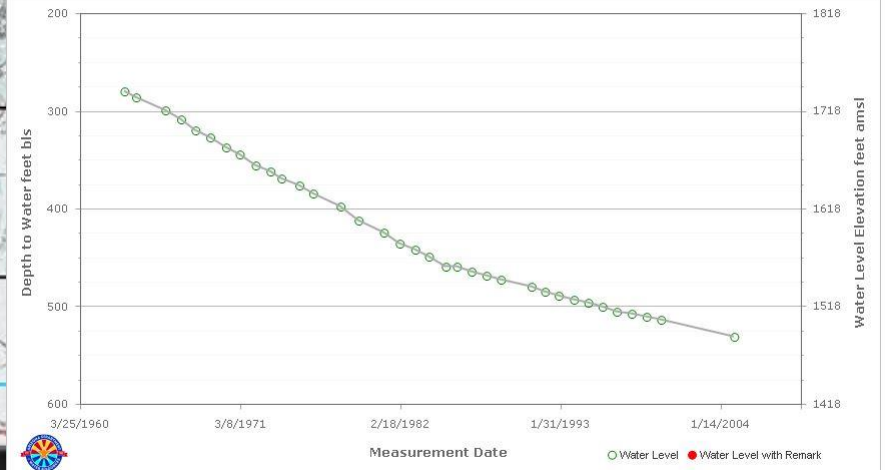
B-05-13 05CBB	334817113363901		33° 48' 16.7"	113° 38' 37.3"	2018	UNUSED	755	16	6/1/1958	11/16/2004	529.9	1488.1



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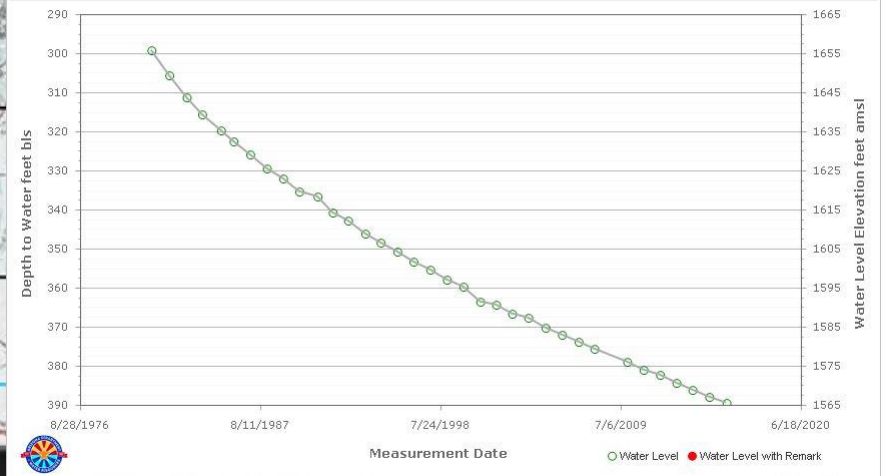
B-05-13 19BBD2	334557113393201		33° 45' 54.5"	113° 39' 36.8"	1955	UNUSED	430	4	6/6/1979	11/17/2015	389.2	1565.8



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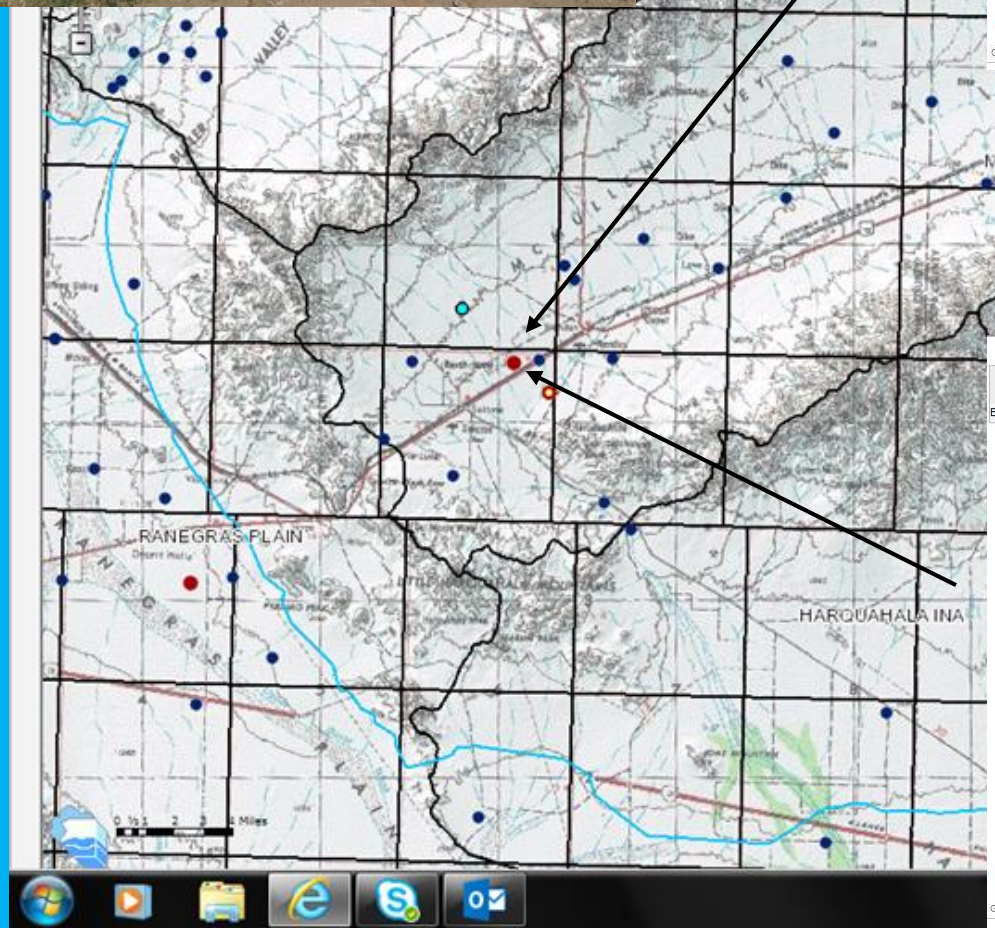
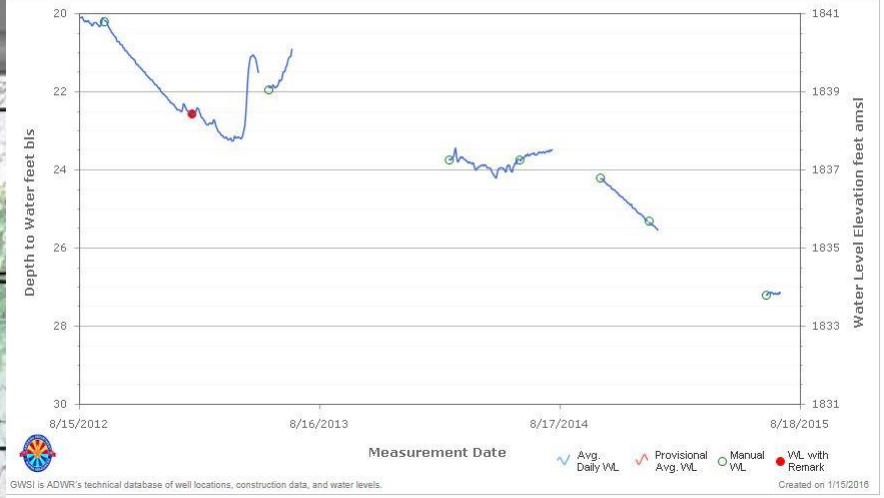
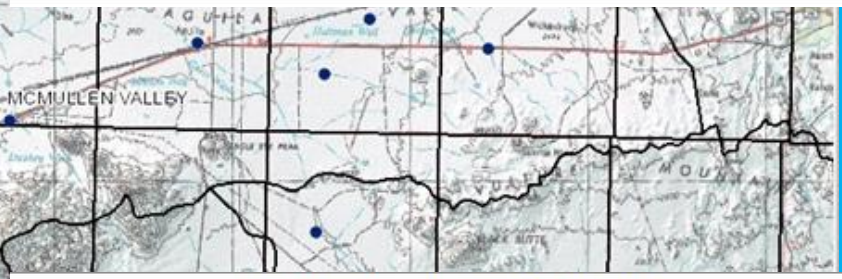


Arizona Automated GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
B-05-13 02DBB	334818113350001		33° 48' 17.7"	113° 34' 56.6"	1861.4	UNUSED	249.5	18	1/1/1954			





Arizona GroundWater Monitoring Site Hydrograph

Local ID	Site ID	Registry ID	Latitude NAD27	Longitude NAD27	Alt. (ft amsl)	Water Use	Well Depth (ft)	Case Dia. (in)	Drill Date	Latest WL Date	DTW (ft)	WL Elv. (ft)
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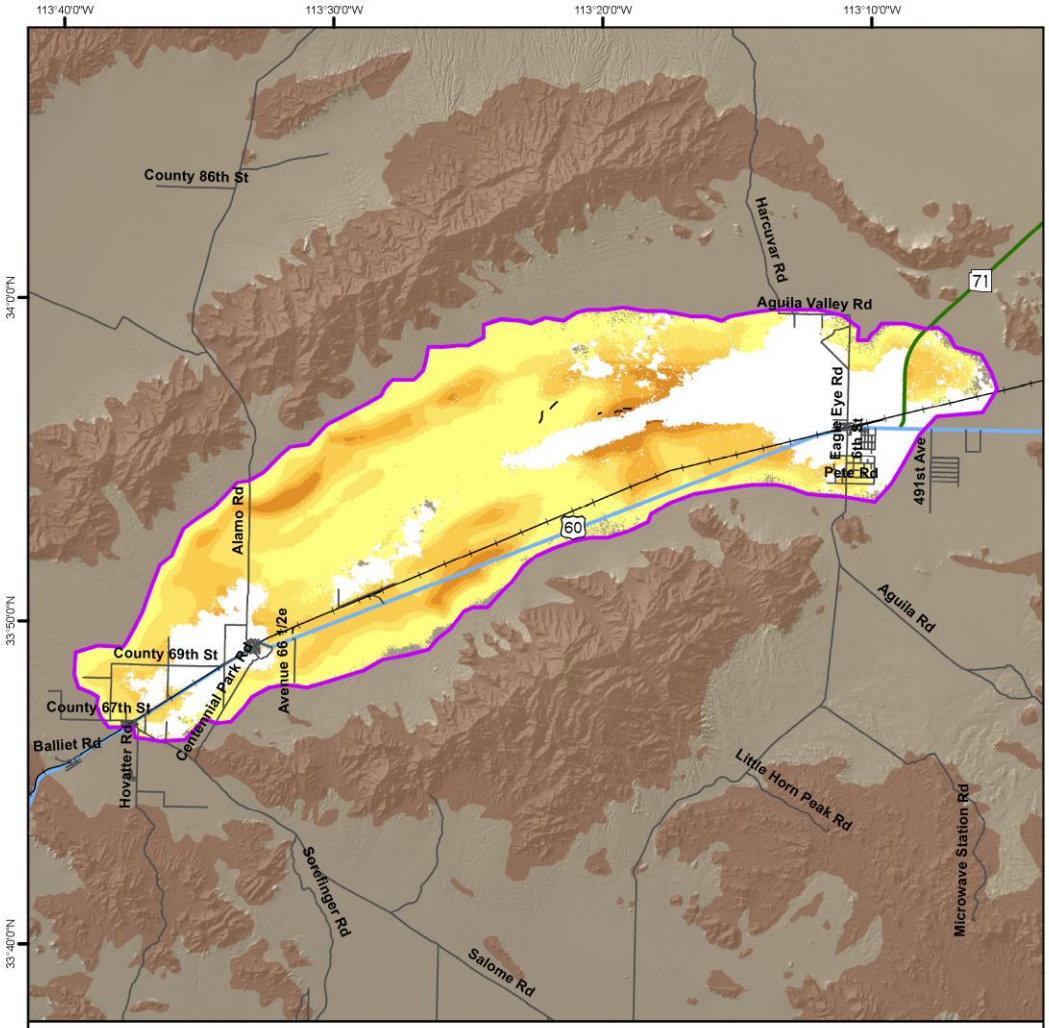


Land Subsidence Rate in the McMullen Valley, La Paz and Maricopa Counties
Based on ERS-1 and 2 Satellite Interferometric Synthetic Aperture Radar (InSAR) Data
Time Period of Analysis: 4.7 Years 06/08/1992 To 03/13/1997

© ESA 1992 - 1997

Explanation

06/08/1992 To 03/13/1997

Land Subsidence Rate

- Decorrelation/No Data
- Greater 7 cm/yr (2.8 in/yr)
- 5 - 7 cm/yr (2.0 - 2.8 in/yr)
- 3 - 5 cm/yr (1.2 - 2.0 in/yr)
- 2 - 3 cm/yr (0.8 - 1.2 in/yr)
- 1 - 2 cm/yr (0.4 - 0.8 in/yr)
- 0.5 - 1 cm/yr (0.2 - 0.4 in/yr)
- 0 - 0.5 cm/yr (0 - 0.2 in/yr)

- Subsidence Feature
- Hardrock
- Earth Fissures

Highways and Interstates

- Interstate
- US
- State
- Roads
- Railway

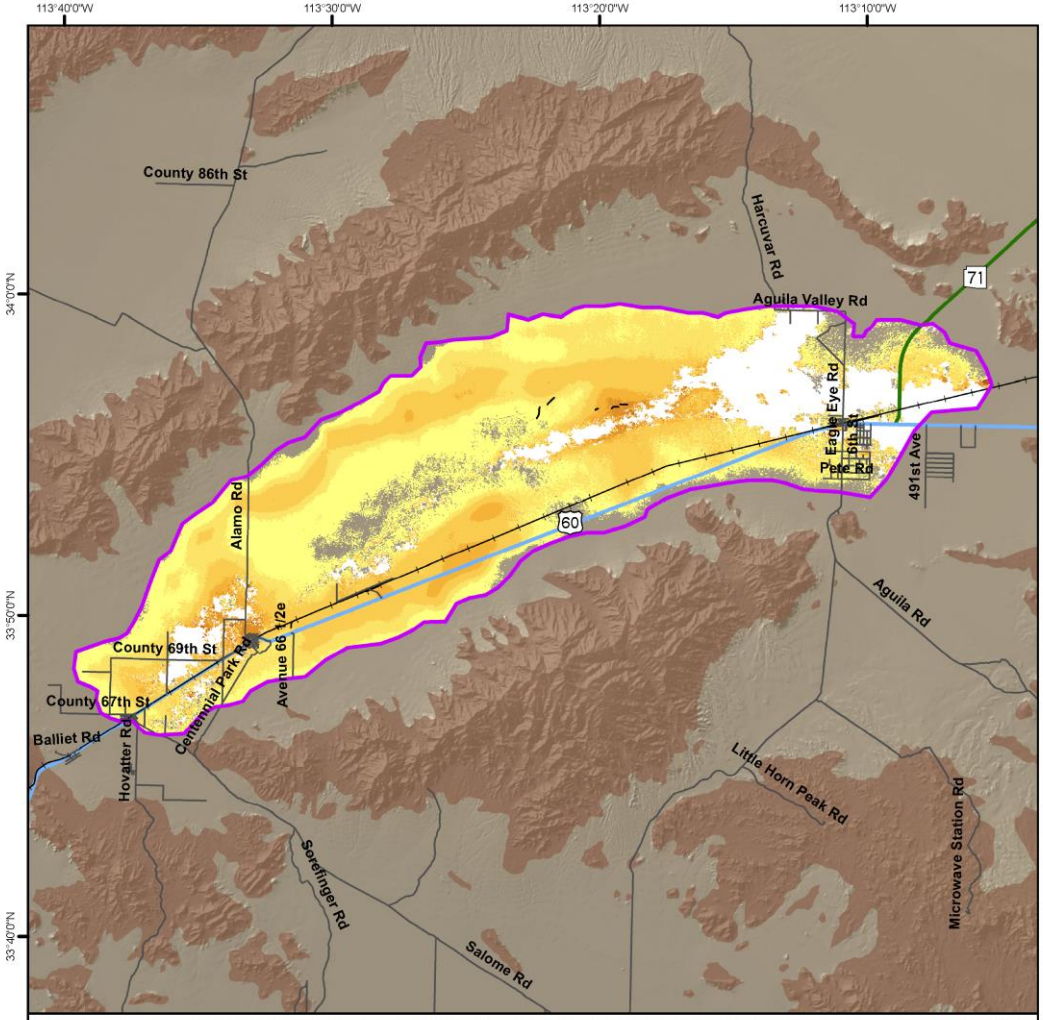
1:299,524

0 1.5 3 6 9 12 Miles

Decorrelation (white areas) are areas where the phase of the received satellite signal changed between satellite passes, causing the data to be unusable. This occurs in areas where the land surface has been disturbed (i.e. bodies of water, snow, agriculture areas, areas of development, etc).

Earth fissures were mapped by the Arizona Geological Survey. For information on earth fissures visit: www.azgs.az.gov/EFC

Coordinate System: NAD 1983 UTM Zone 12N
Projection: Transverse Mercator
Datum: North American 1983
Units: Meter
Created: 1/6/2015



Land Subsidence Rate in the McMullen Valley, La Paz and Maricopa Counties
Based on Envisat Satellite Interferometric Synthetic Aperture Radar (InSAR) Data
Time Period of Analysis: 1.0 Years 01/29/2009 To 02/18/2010

© ESA 2009 - 2010

Explanation

01/29/2009 To 02/18/2010

Total Land Subsidence

- Decorrelation/No Data
- Greater 7 cm/yr (2.8 in/yr)
- 5 - 7 cm/yr (2.0 - 2.8 in/yr)
- 3 - 5 cm/yr (1.2 - 2.0 in/yr)
- 2 - 3 cm/yr (0.8 - 1.2 in/yr)
- 1 - 2 cm/yr (0.4 - 0.8 in/yr)
- 0.5 - 1 cm/yr (0.2 - 0.4 in/yr)
- 0 - 0.5 cm/yr (0 - 0.2 in/yr)

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Arizona

Coordinate System: NAD 1983 UTM Zone 12N
Projection: Transverse Mercator
Datum: North American 1983
Units: Meter
Created: 1/6/2015