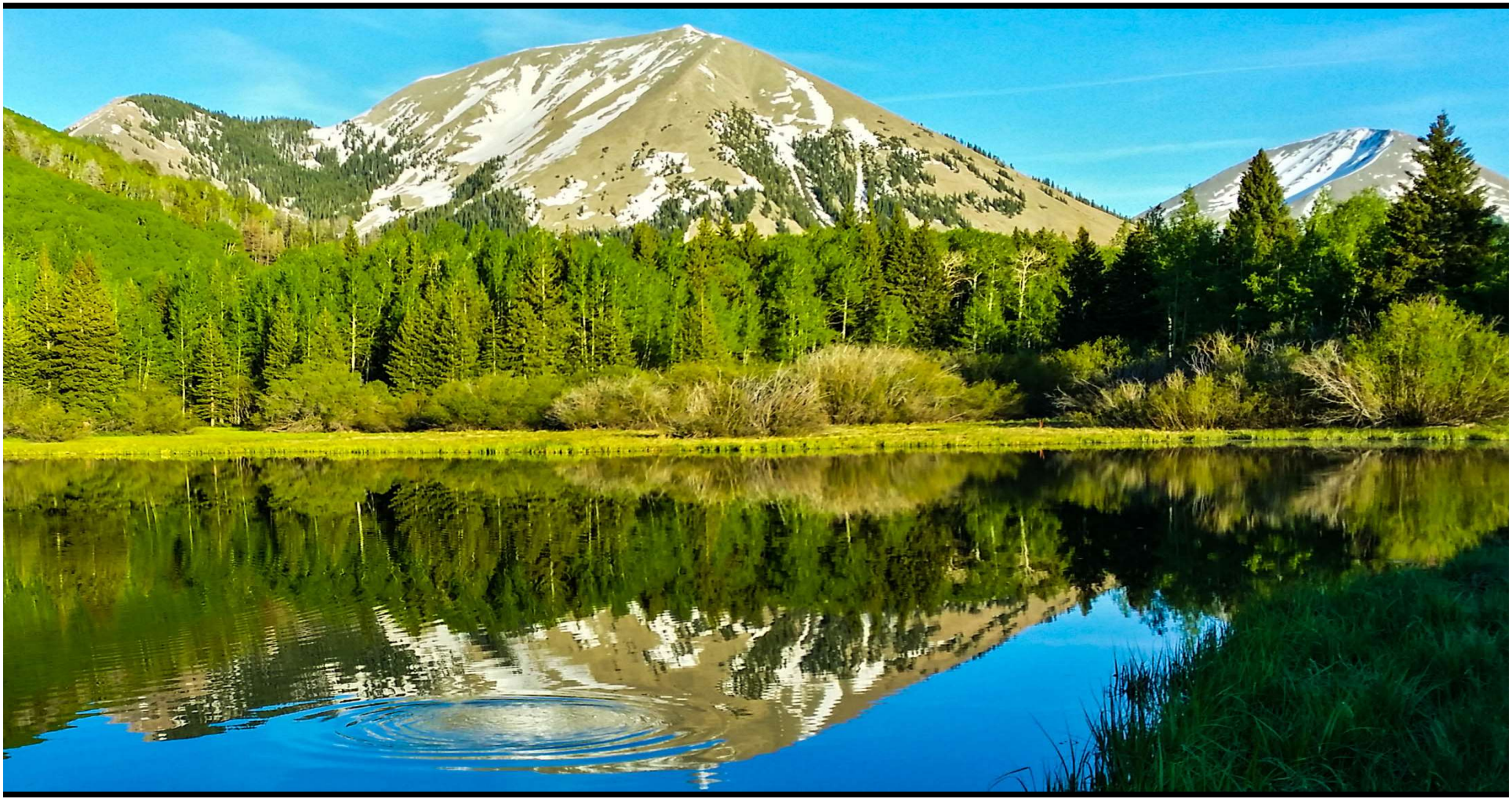
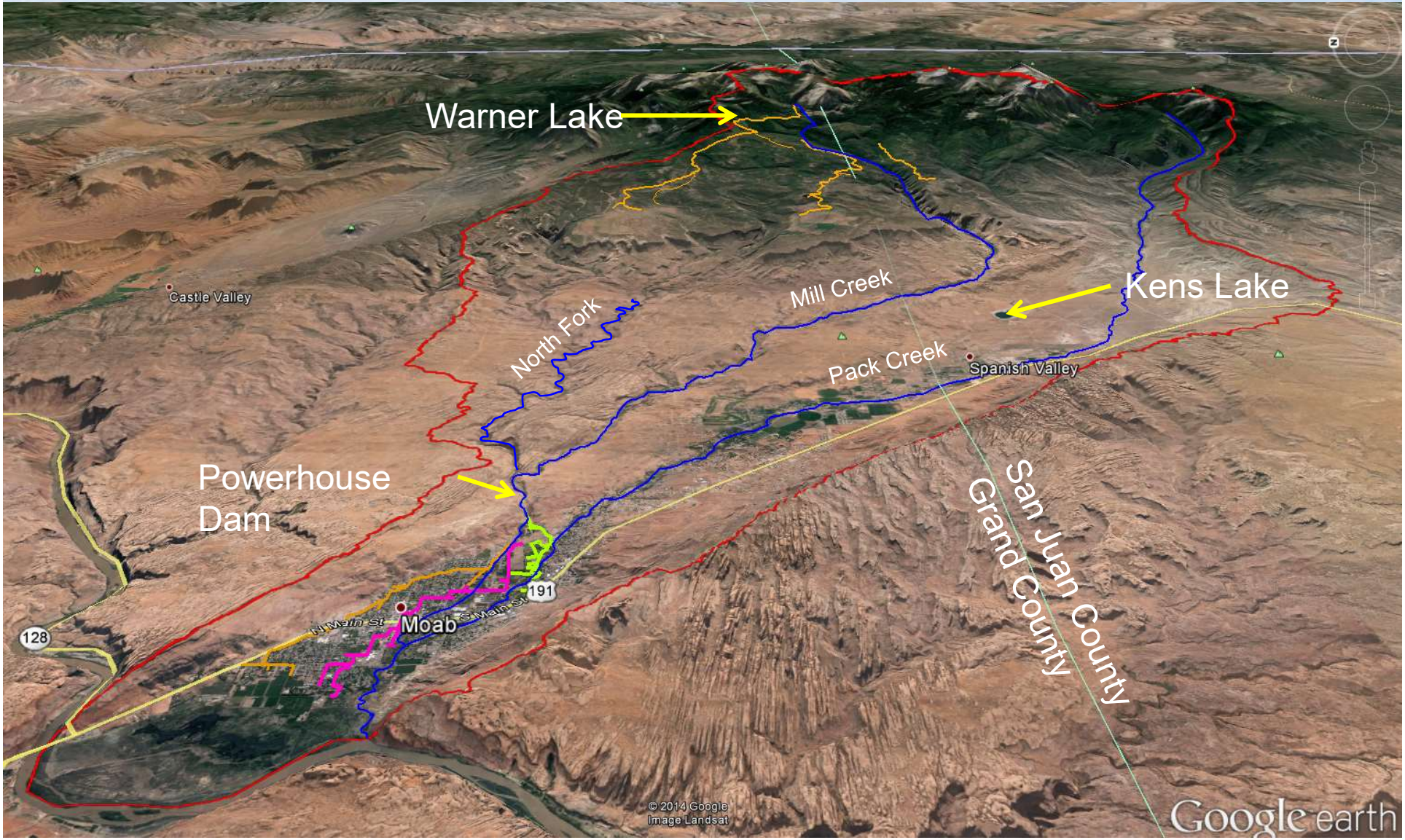
Utah Division of Water Rights



REVIEW OF GROUNDWATER MONITORING
MOAB / SPANISH VALLEY - CENTRAL

Moab / Spanish Valley Watershed



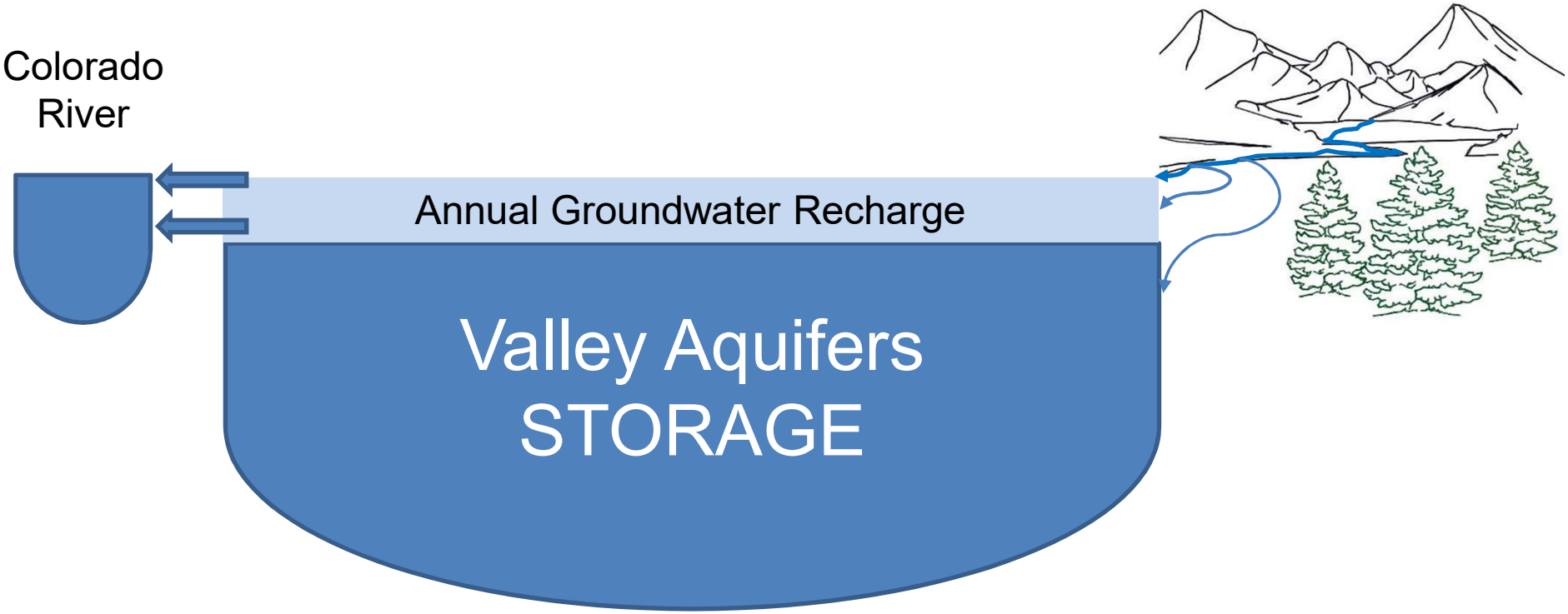
Groundwater Management Plans

- Est. in Section 73-5-15 Utah Code

Objectives:

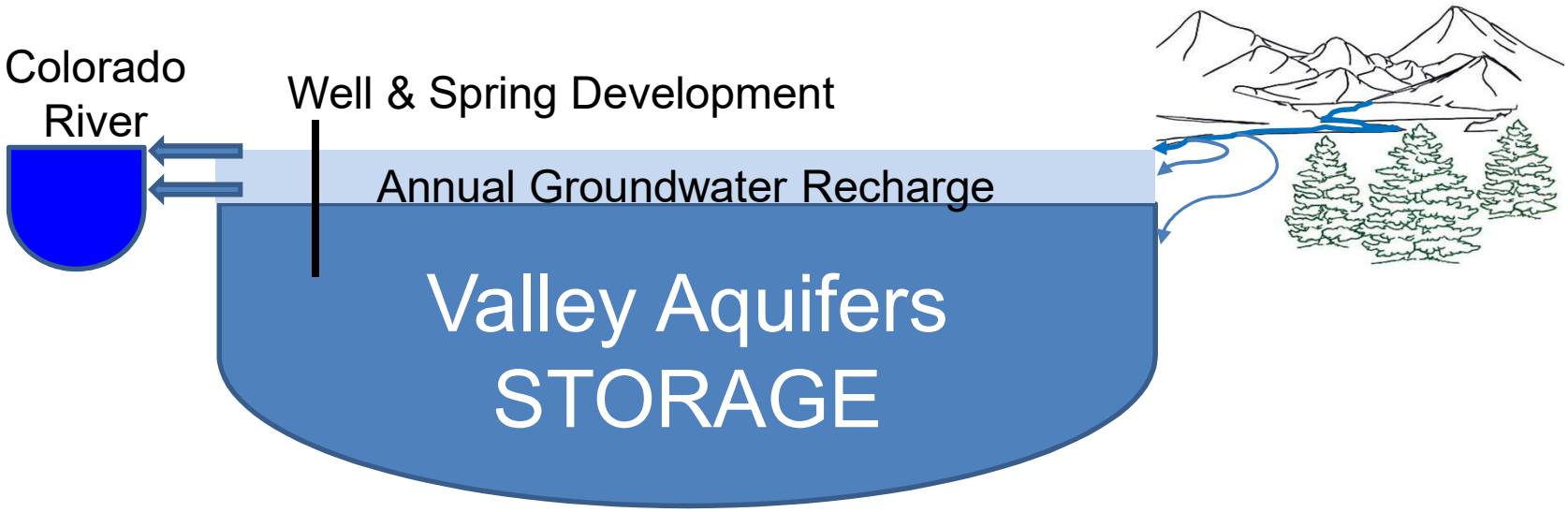
- Limit groundwater withdrawals to safe yield.
- Protect physical integrity of the aquifer.
- Protect water quality.

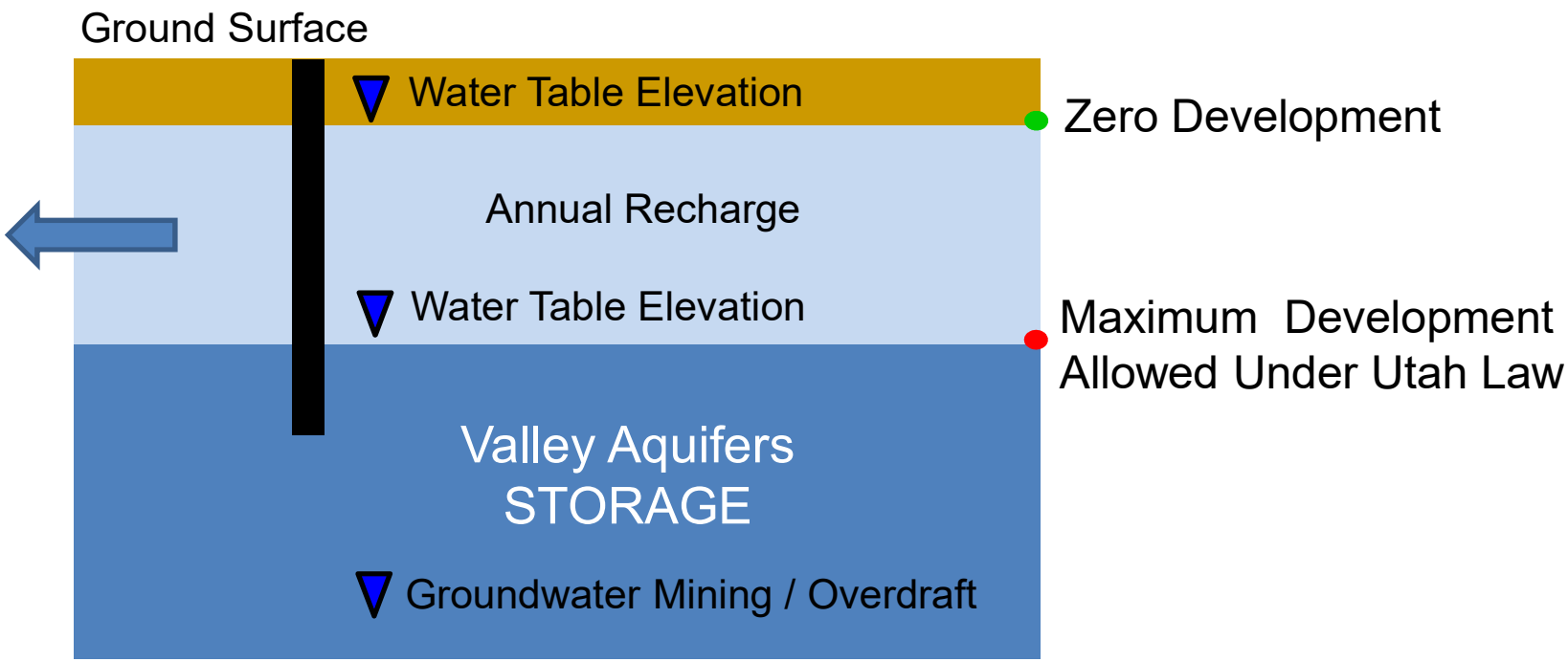
"Safe Yield" means the amount of groundwater that can be withdrawn from a groundwater basin over a period of time without exceeding the long-term recharge of the basin or unreasonably affecting the basin's physical and chemical integrity.



USGS "Evaluation of Groundwater Resources in the Spanish Valley Watershed, Grand and San Juan Counties, Utah"
Scientific Investigations Report 2019-5062, pg. 55

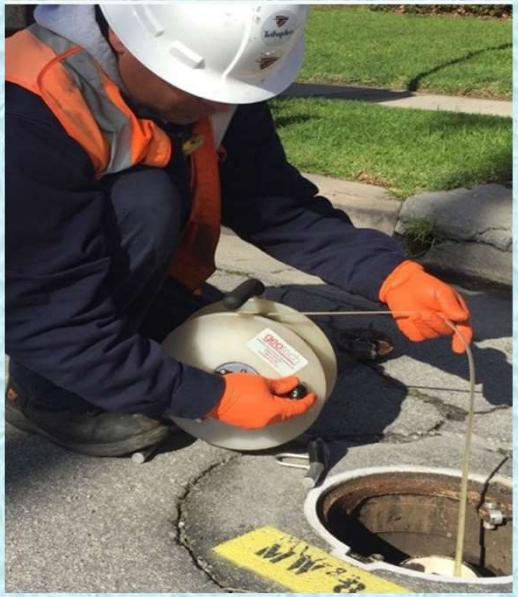
- Recharge: 9,550 – 30,000 acre-feet
- Discharge: 14,000 – 16,000 acre-feet


Colorado River
Well & Spring Development
Annual Groundwater Recharge
Valley Aquifers STORAGE


Ground Surface
Water Table Elevation
Zero Development
Annual Recharge
Water Table Elevation
Maximum Development Allowed Under Utah Law
Valley Aquifers STORAGE
Groundwater Mining / Overdraft

What Should Be Measured?

- Spring Flows
- Stream Flows
- Water Quality
- Water Table Elevations



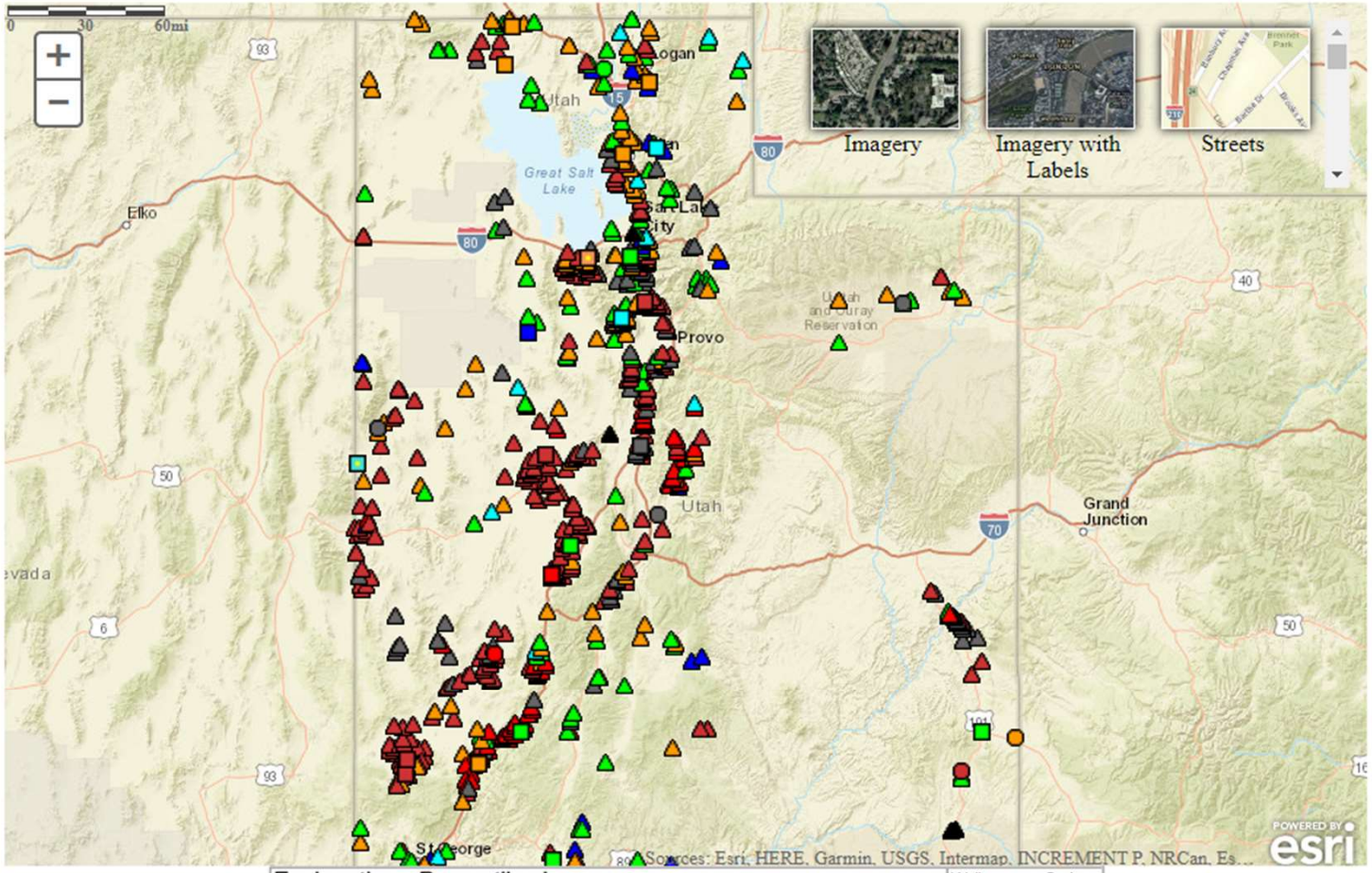
Who's collecting the Data?

- USGS
- Moab City
- Moab Irrigation Company
- Grand Water & Sewer SA
- San Juan Spanish Valley SSD
- Division of Water Quality
- Division of Water Rights

CENTRAL

Utah Active Water Level Network

Click site symbol to open information pop-up. Click Station ID in pop-up for county information and site selection.
Map loading slowly? Try a different browser. Web browser performance varies significantly.



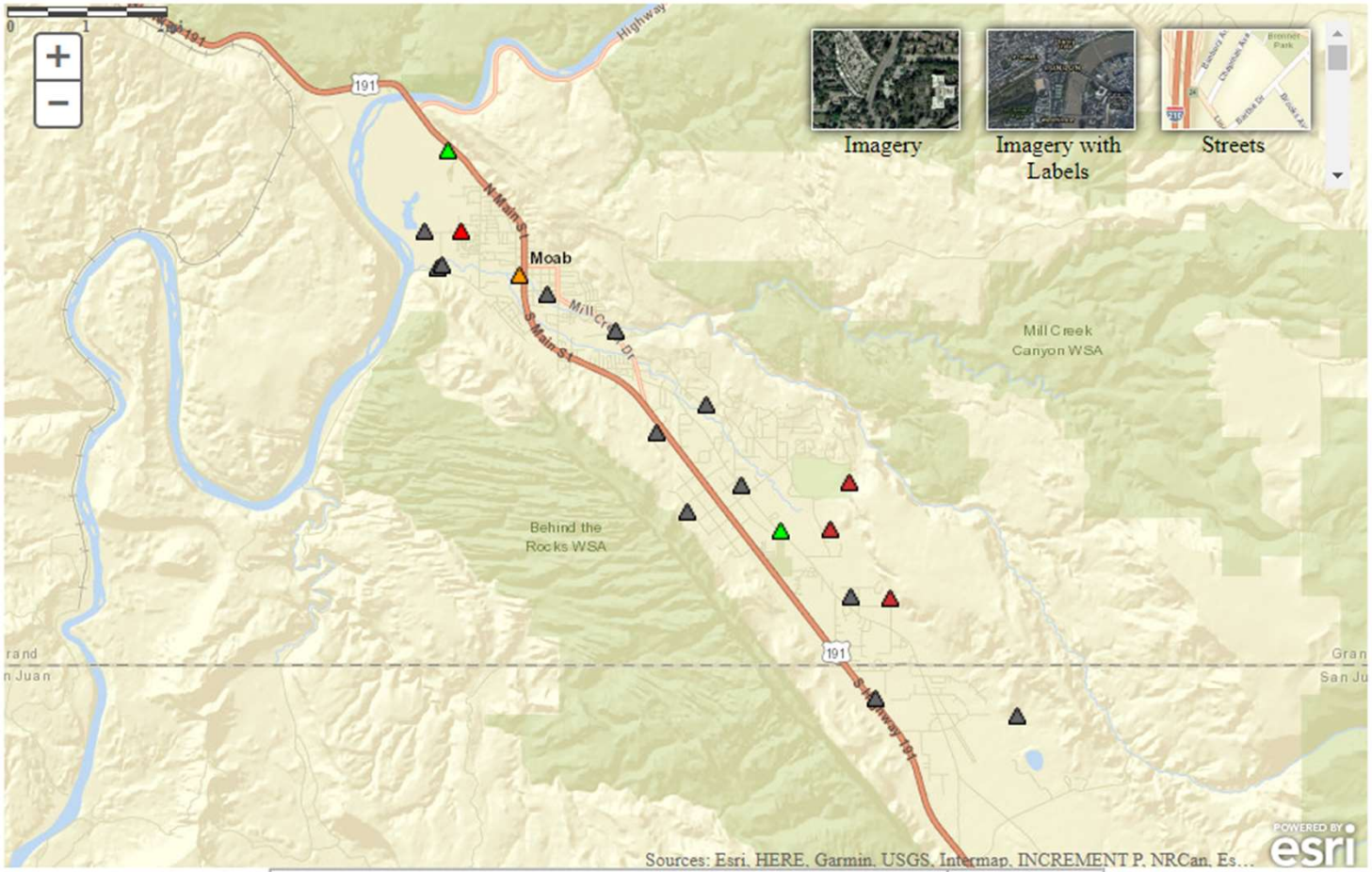
Explanation - Percentile classes (symbol color based on most recent measurement)							
Low	<10 Much Below Normal	10-24 Below Normal	25-75 Normal	76-90 Above Normal	>90 Much Above Normal	High	Not Ranked

Wells	Springs
Real-Time	
Continuous	
Periodic Measurements	

Map generated 11/7/2019 2:29:19 PM

Utah Active Water Level Network

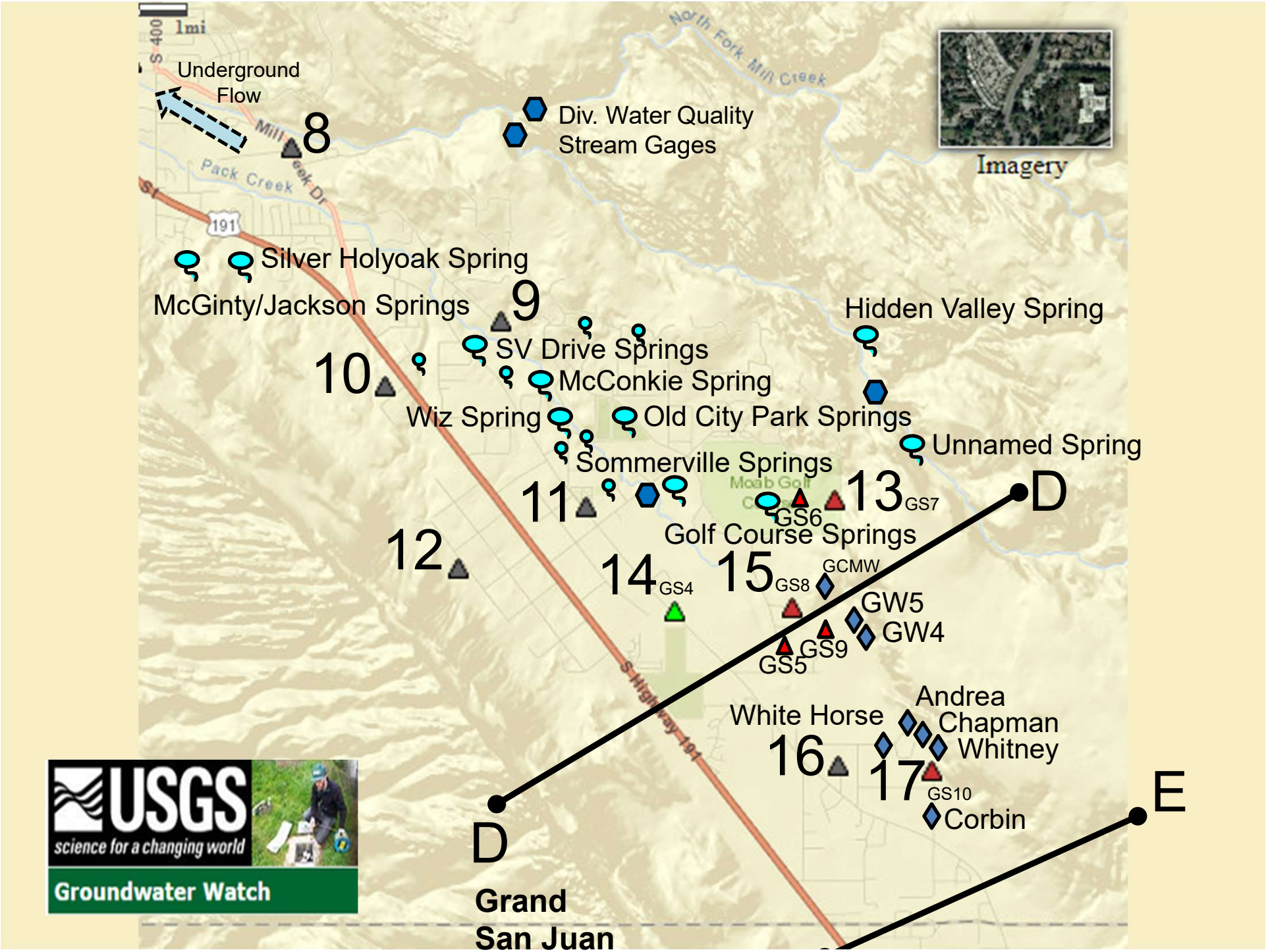
Click site symbol to open information pop-up. Click Station ID in pop-up for county information and site selection.
Map loading slowly? Try a different browser. Web browser performance varies significantly.

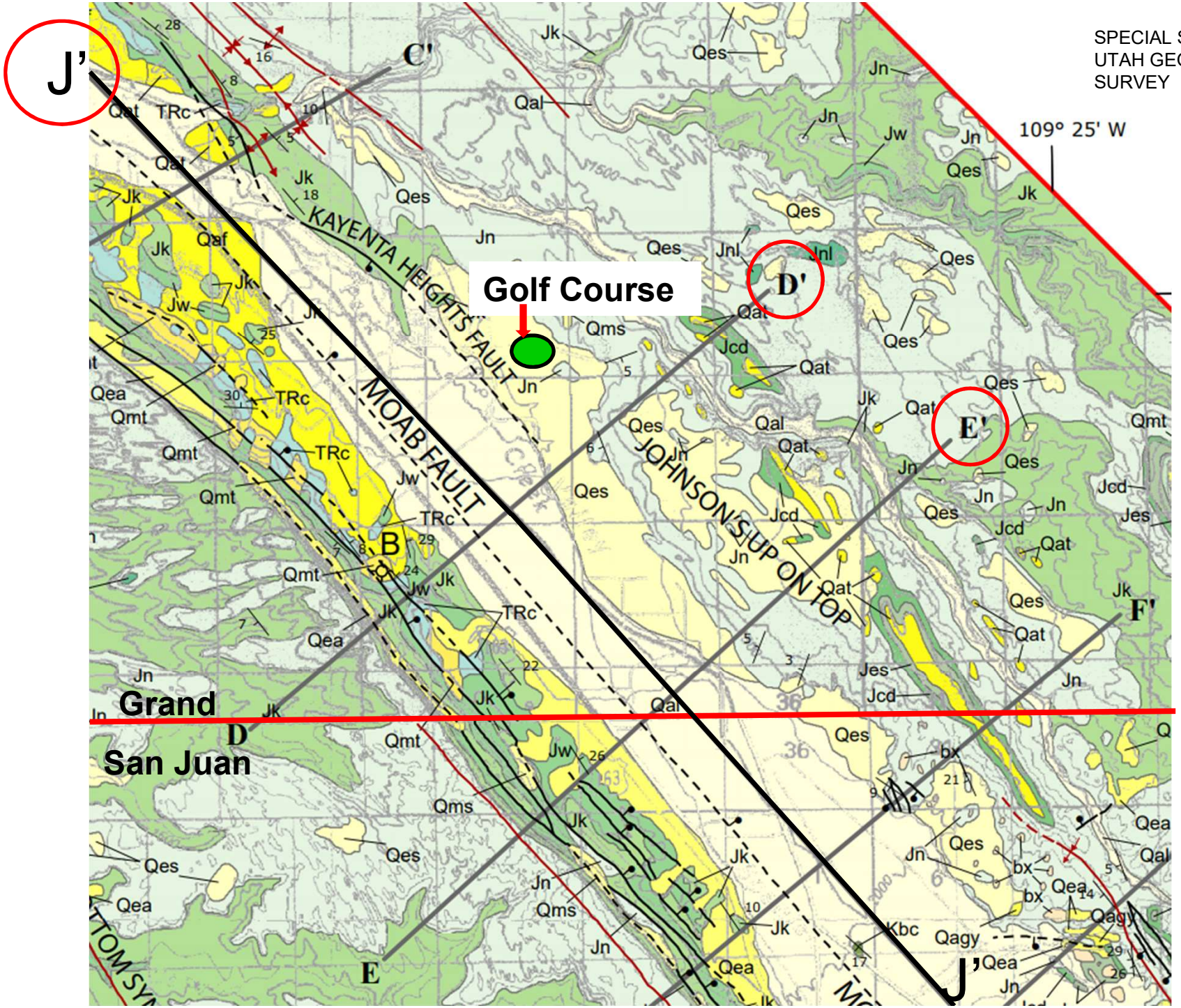


Explanation - Percentile classes (symbol color based on most recent measurement)							
Low	<10 Much Below Normal	10-24 Below Normal	25-75 Normal	76-90 Above Normal	>90 Much Above Normal	High	Not Ranked

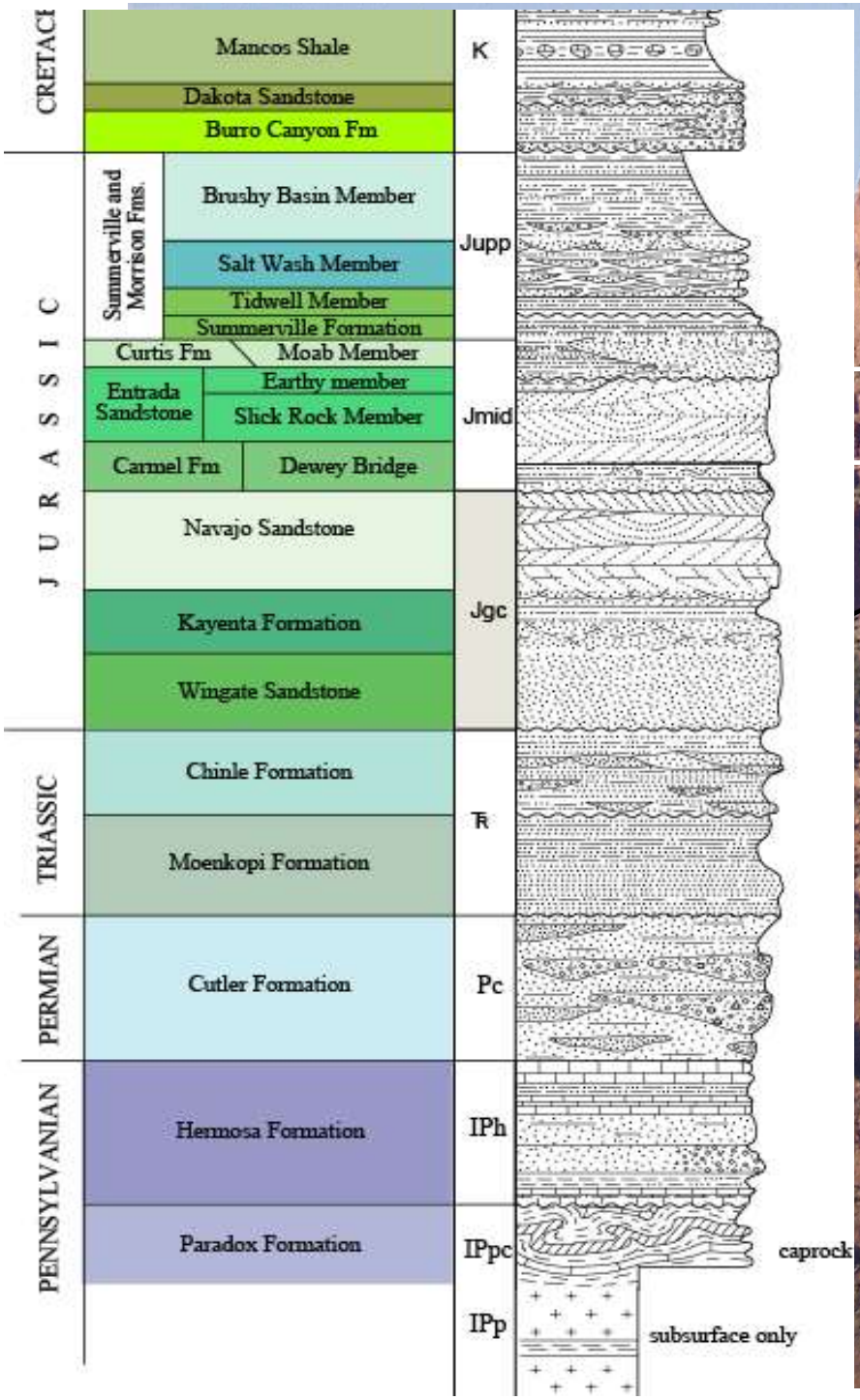
Wells	Springs
Real-Time	
Continuous	
Periodic Measurements	

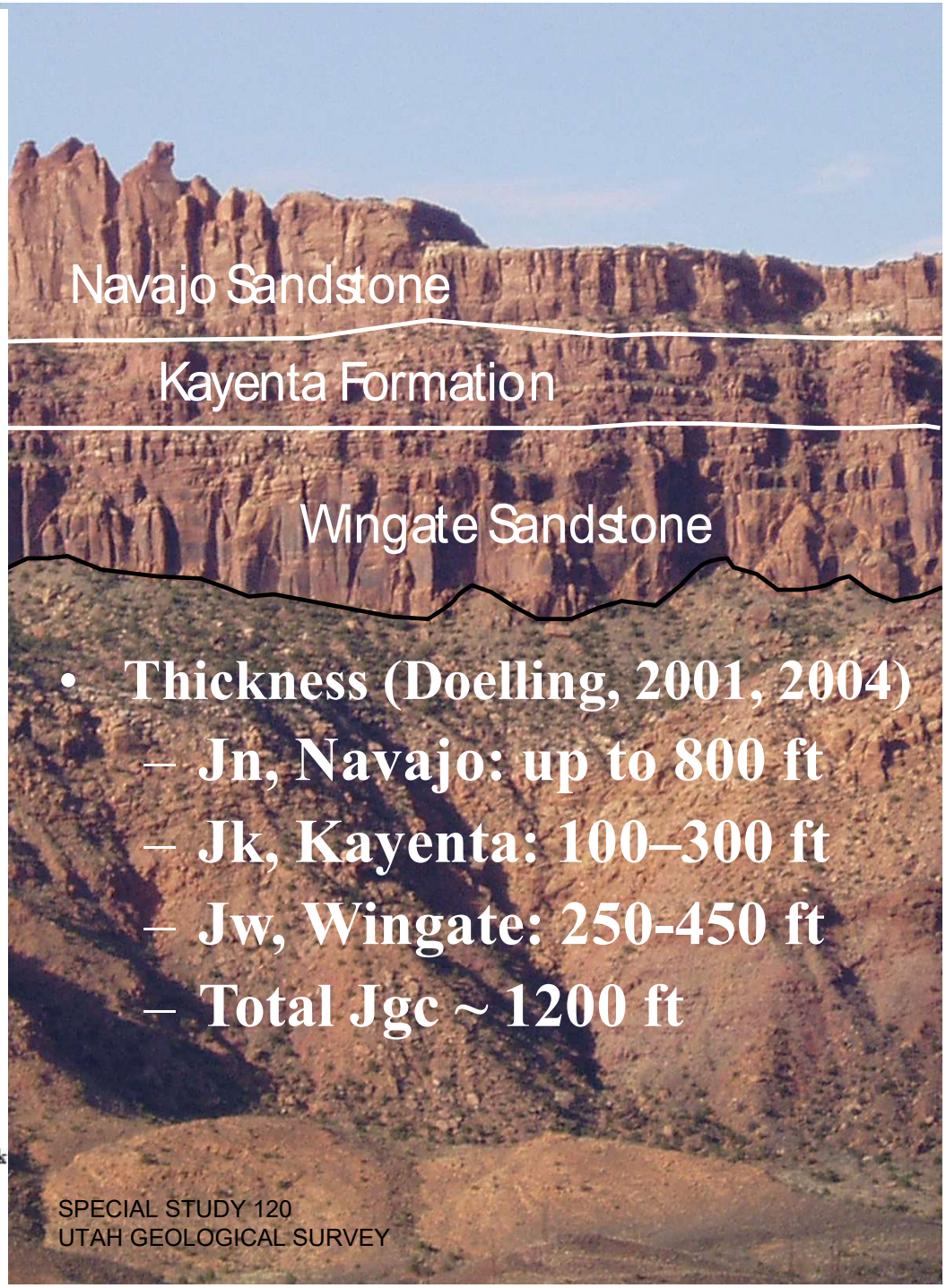
Map generated 11/7/2019 2:29:19 PM


1mi
Underground Flow
8
Div. Water Quality Stream Gages
North Fork Mill Creek
Imagery
Pack Creek
191
Silver Holyoak Spring
McGinty/Jackson Springs
9
Hidden Valley Spring
SV Drive Springs
10
McConkie Spring
Wiz Spring
Old City Park Springs
Unnamed Spring
Sommerville Springs
11
13
GS7
D
GS6
Golf Course Springs
12
14
GS4
15
GS8
GCMW
GW5
GW4
GS9
GS5
Andrea
White Horse
Chapman
Whitney
16
17
GS10
Corbin
E
D
Grand
San Juan
USGS
science for a changing world
Groundwater Watch



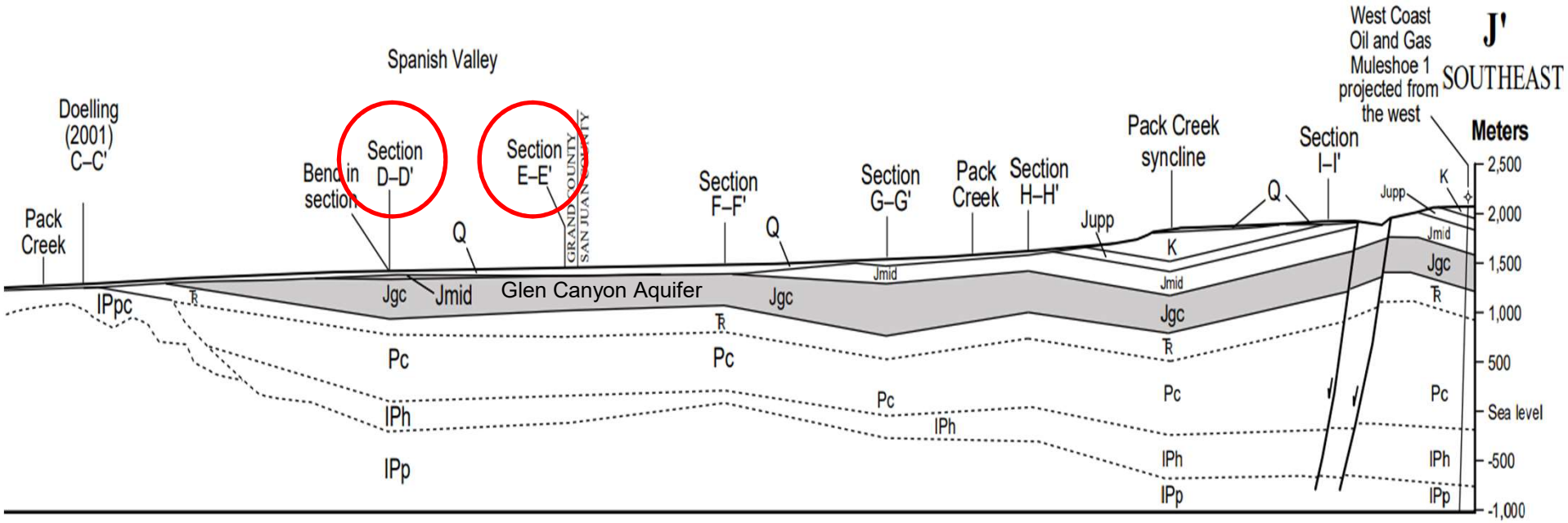
SPECIAL STUDY 120
UTAH GEOLOGICAL
SURVEY





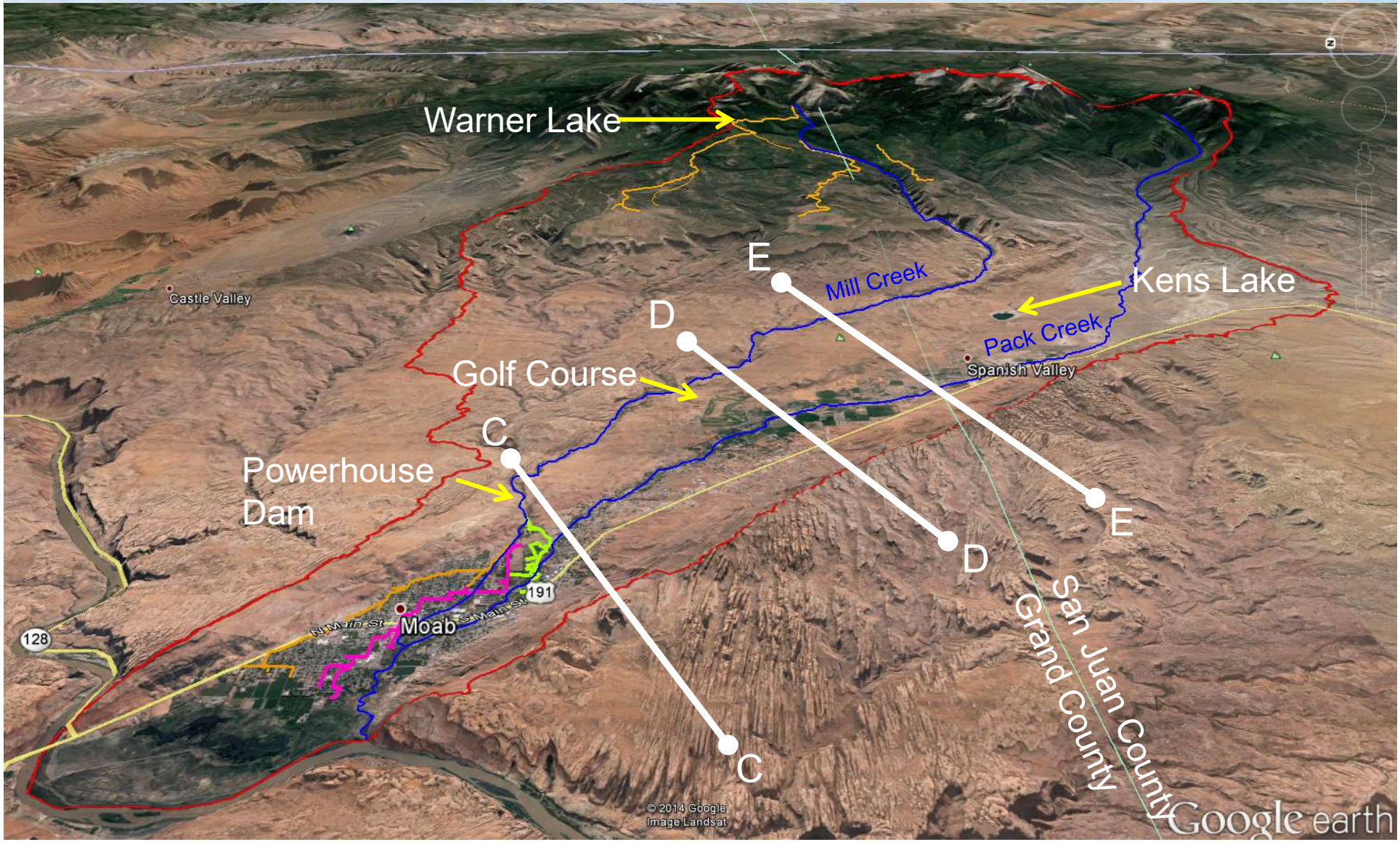
- **Thickness (Doelling, 2001, 2004)**
  - **Jn, Navajo: up to 800 ft**
  - **Jk, Kayenta: 100–300 ft**
  - **Jw, Wingate: 250-450 ft**
  - **Total Jgc ~ 1200 ft**

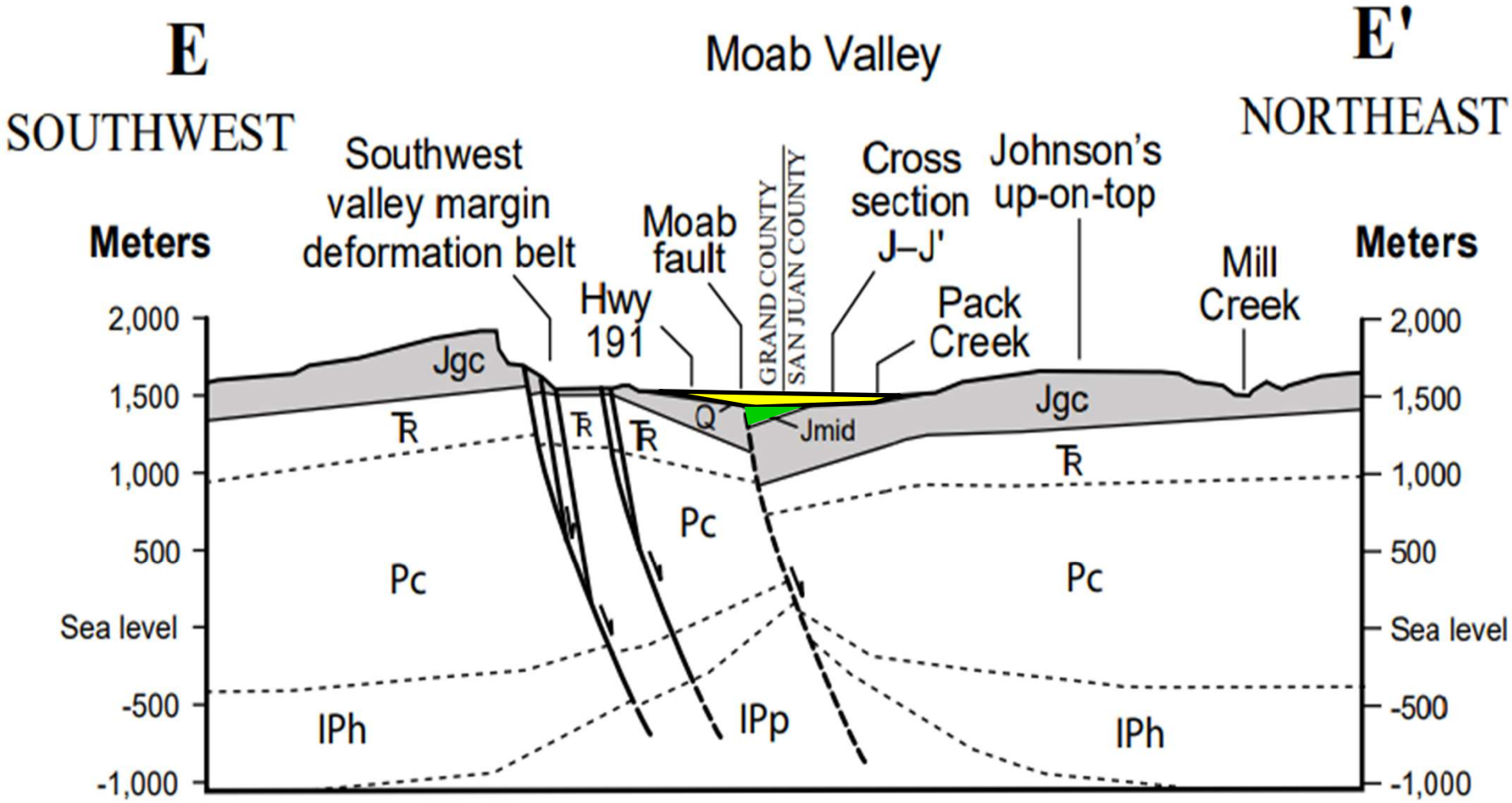
SPECIAL STUDY 120
UTAH GEOLOGICAL SURVEY



SPECIAL STUDY 120
UTAH GEOLOGICAL SURVEY

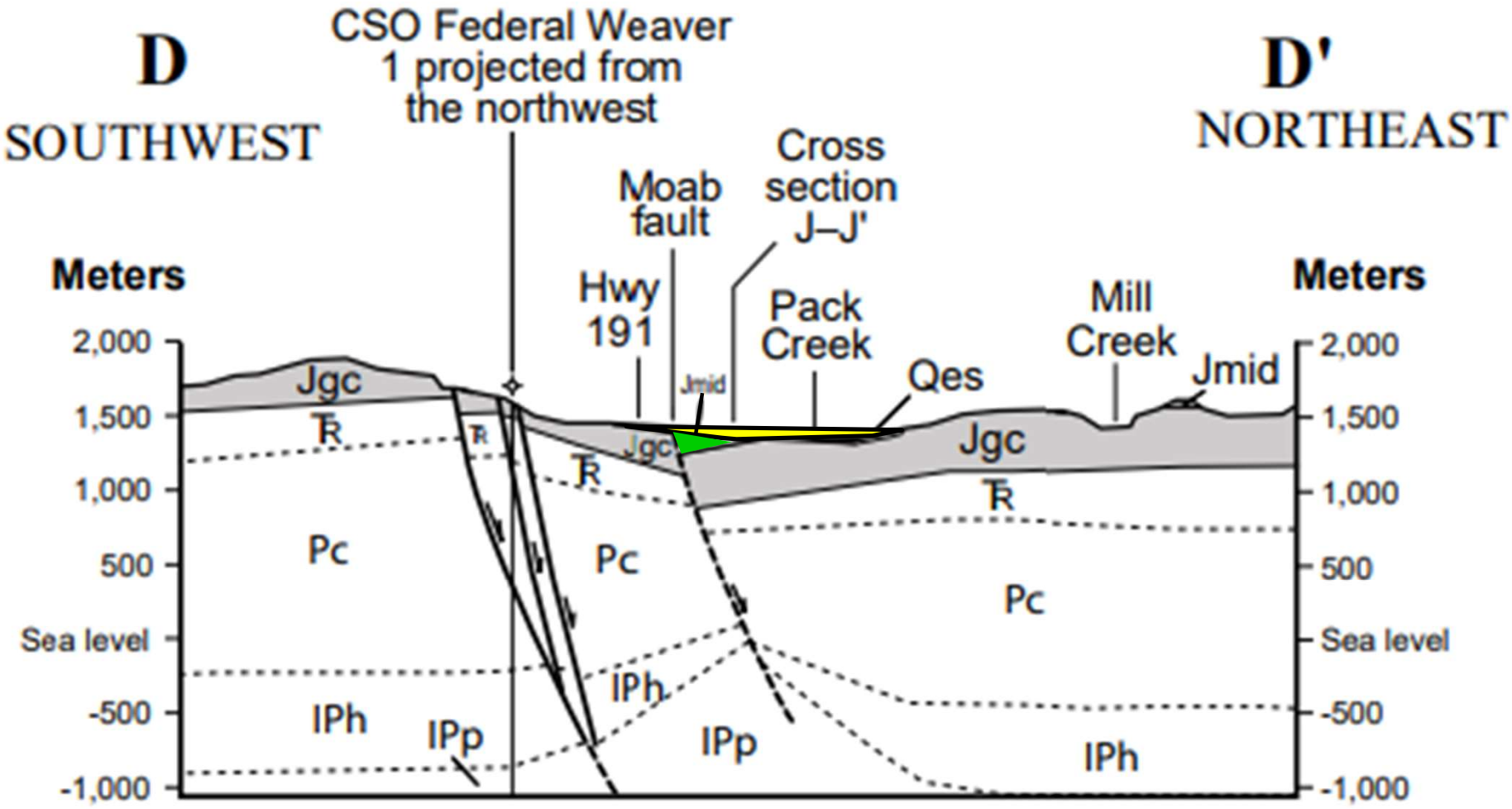
Moab / Spanish Valley Watershed





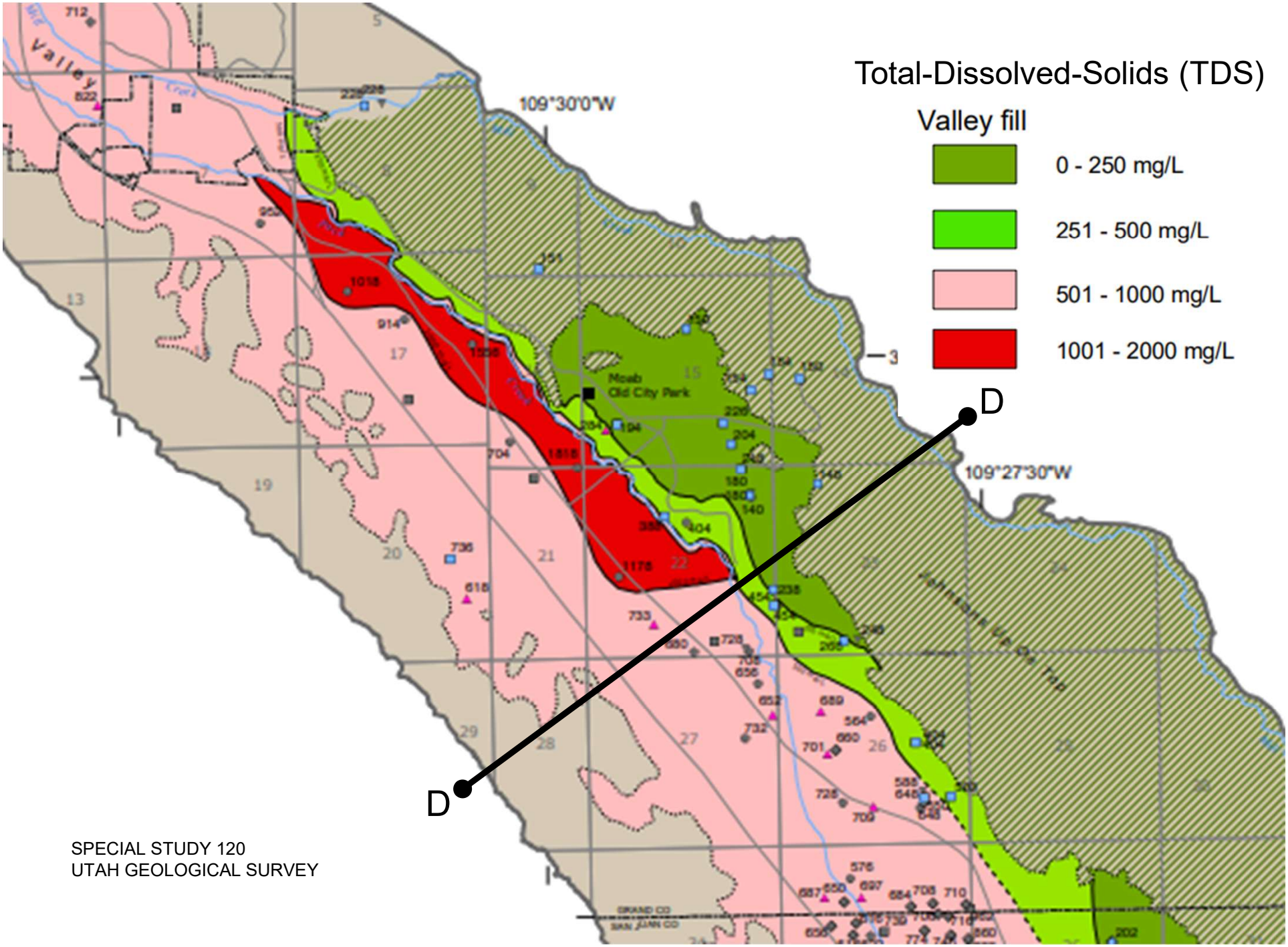
Valley Fill – Sand / Gravel

Carmel / Dewey Bridge



Valley Fill – Sand / Gravel

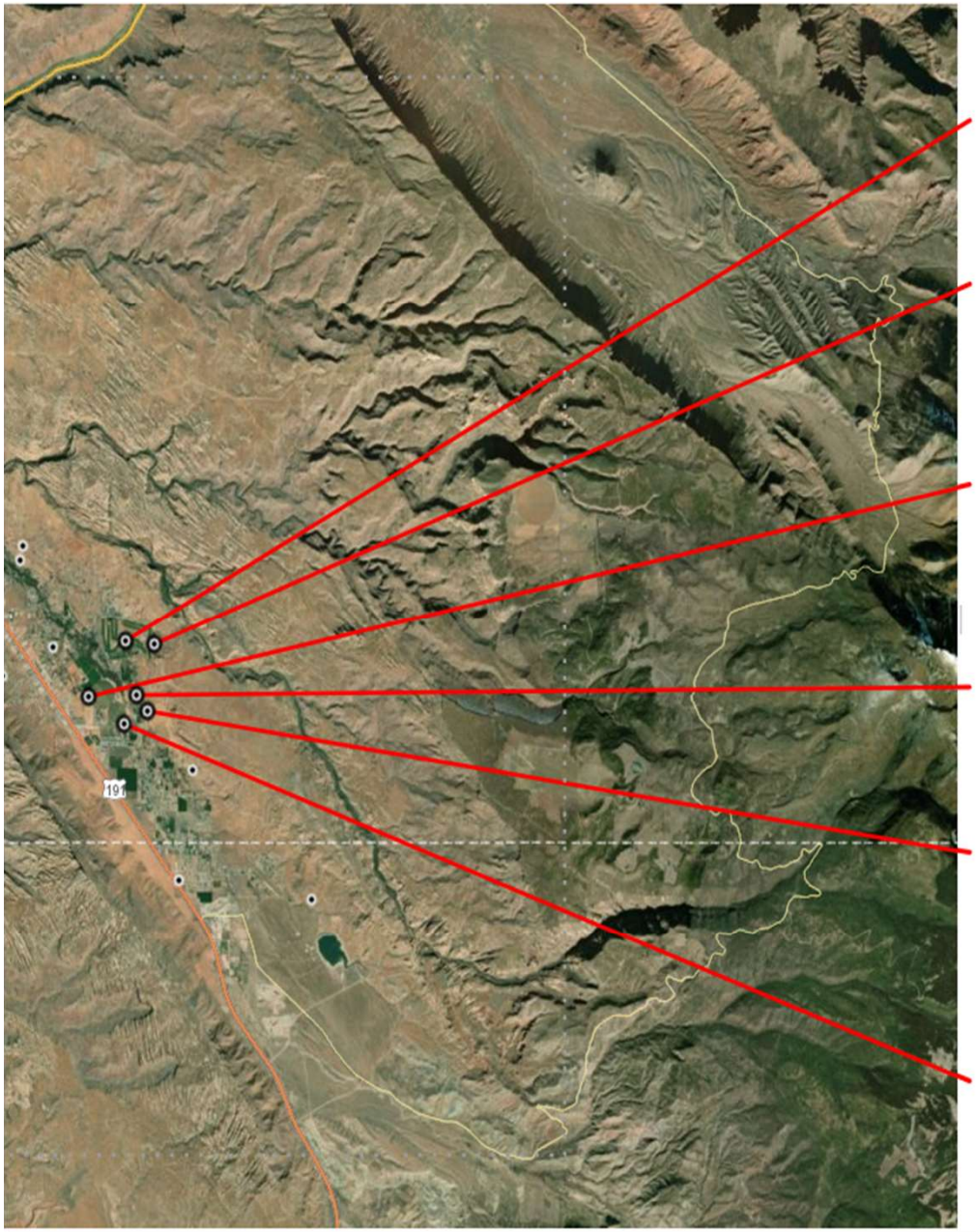
Carmel / Dewey Bridge

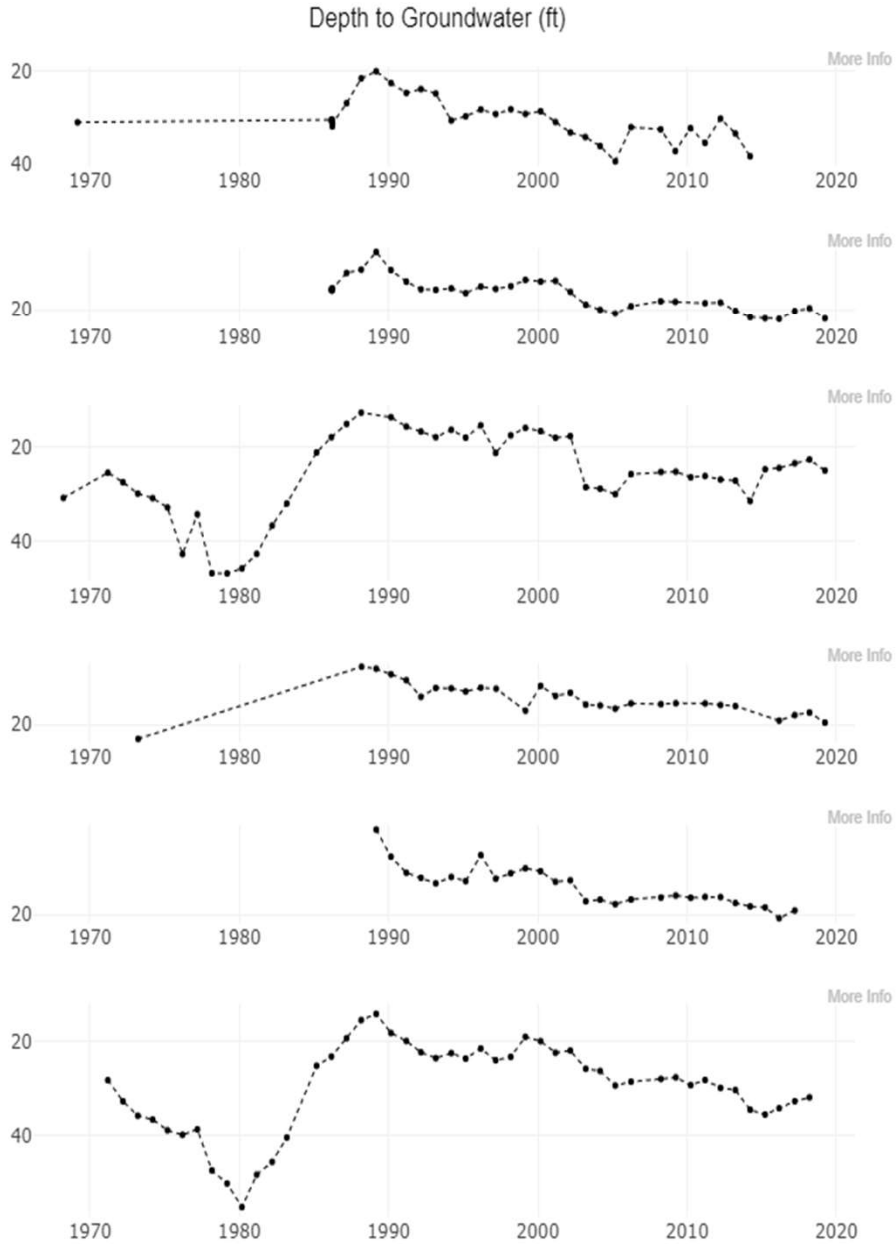


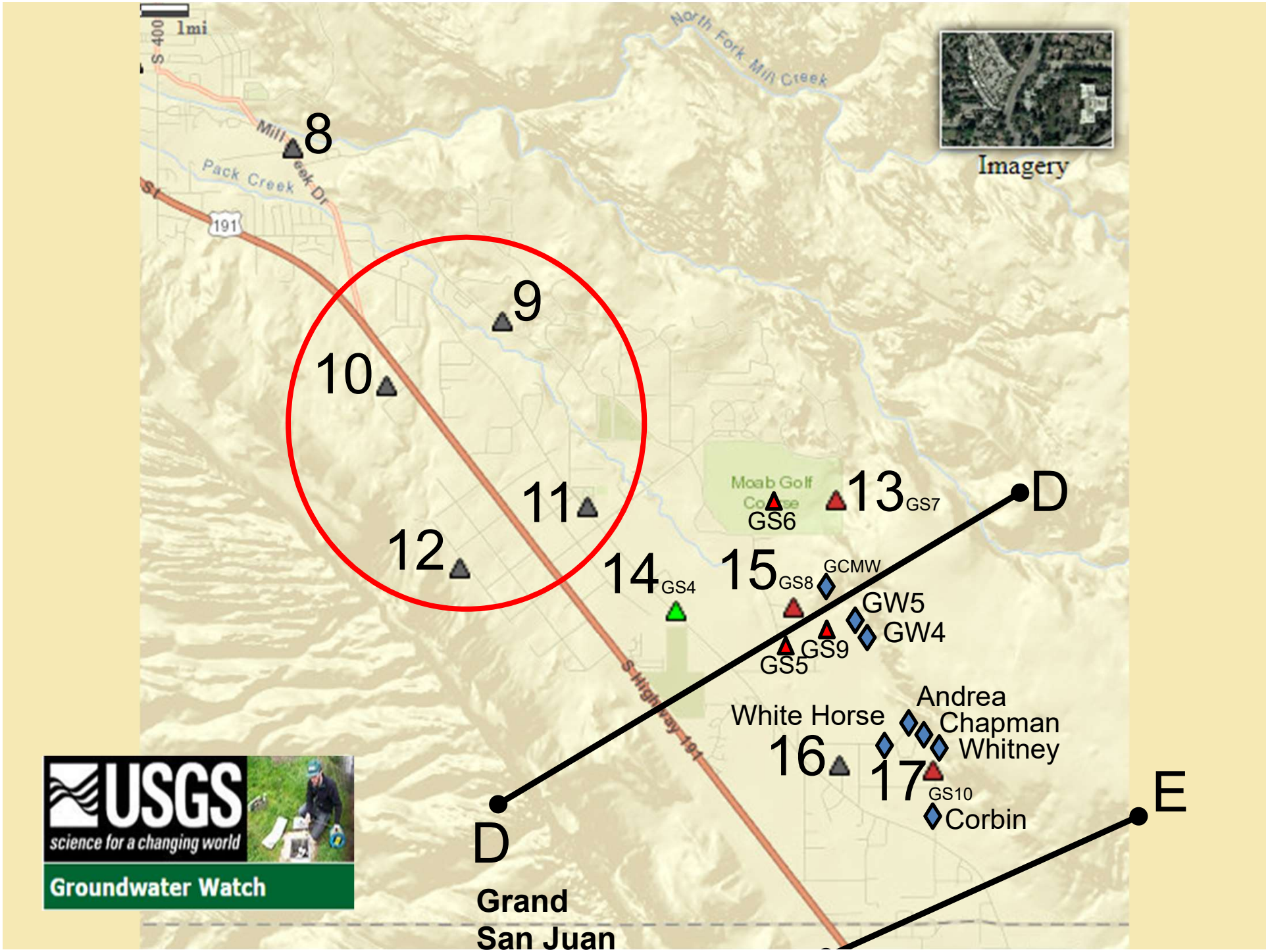
SPECIAL STUDY 120
UTAH GEOLOGICAL SURVEY

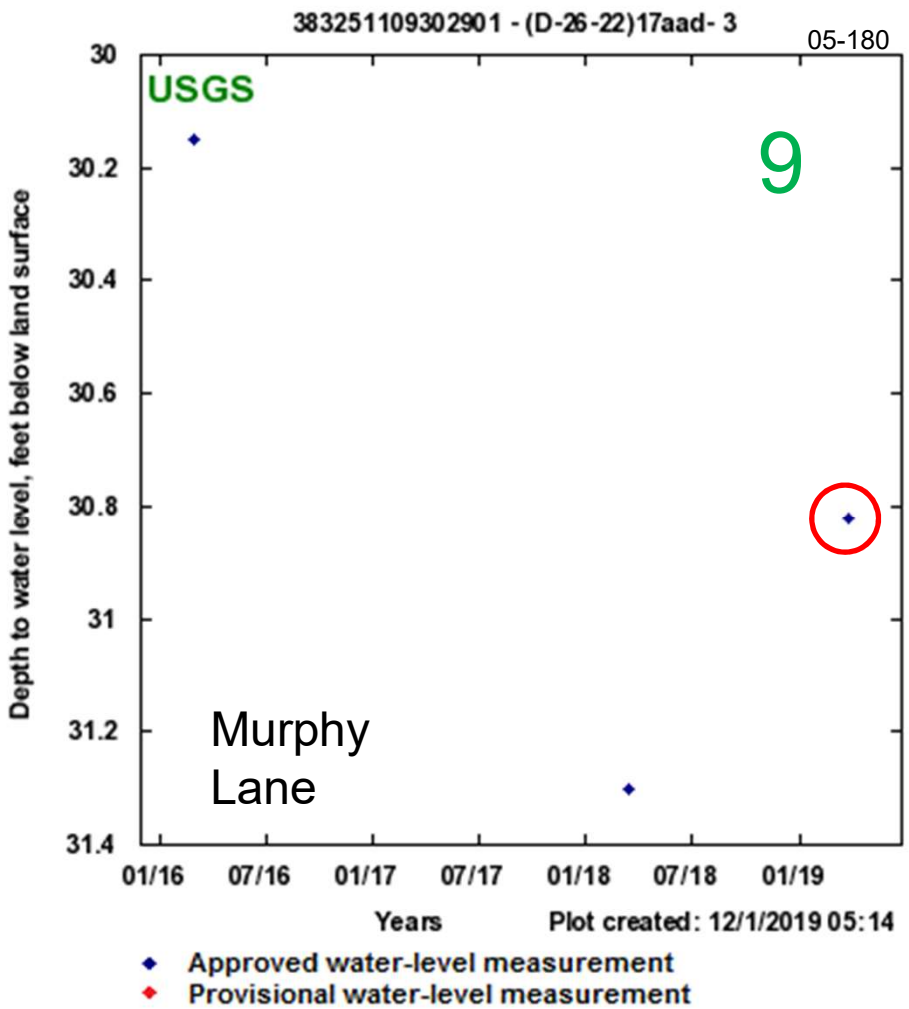
Utah Division of Water Rights

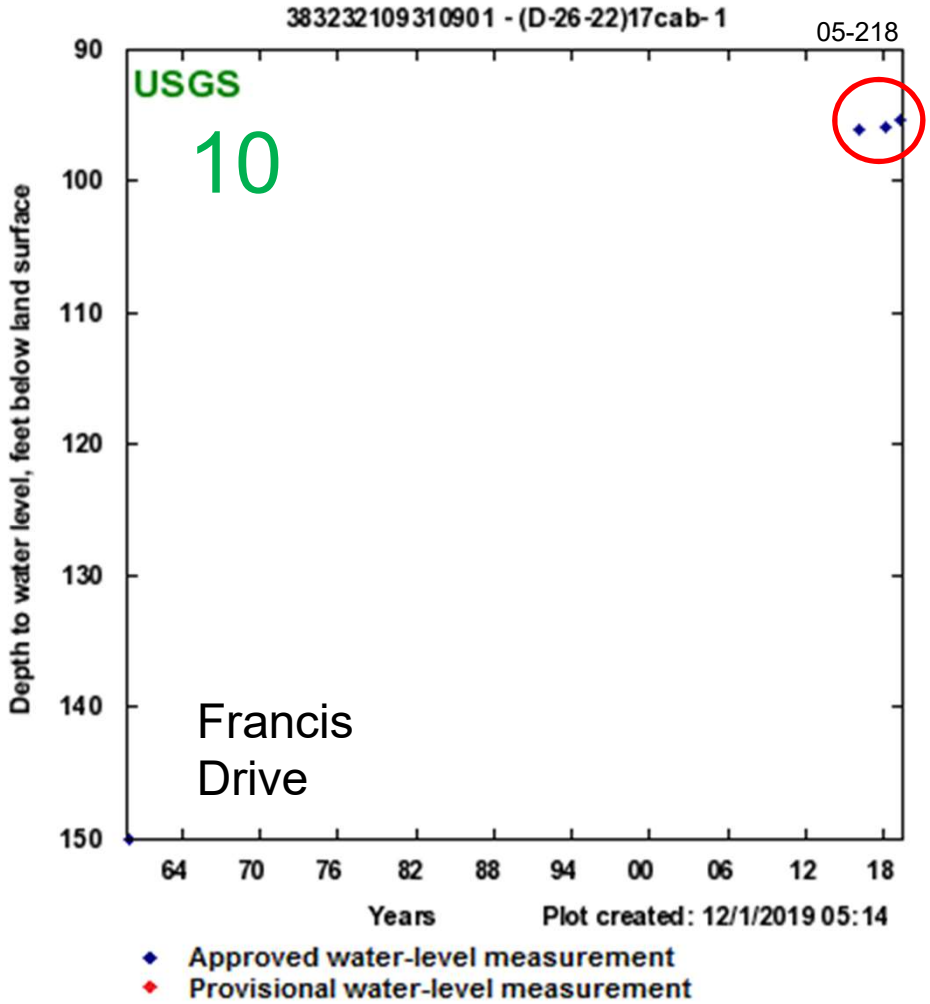
Groundwater Level Trend Viewer | Region: | Options | Map Options


19


Depth to Groundwater (ft)
More Info
20
40
1970
1980
1990
2000
2010
2020


1mi
S 400
North Fork Mill Creek
Imagery
Mill Creek Dr
Pack Creek
191
8
9
10
11
12
13 GS7
GS6
Moab Golf Course
14 GS4
15 GS8
GCMW
GW5
GW4
GS9
GS5
S Highway 191
White Horse
Andrea
Chapman
Whitney
16
17
GS10
Corbin
D
D
E
Grand
San Juan
USGS
science for a changing world
Groundwater Watch



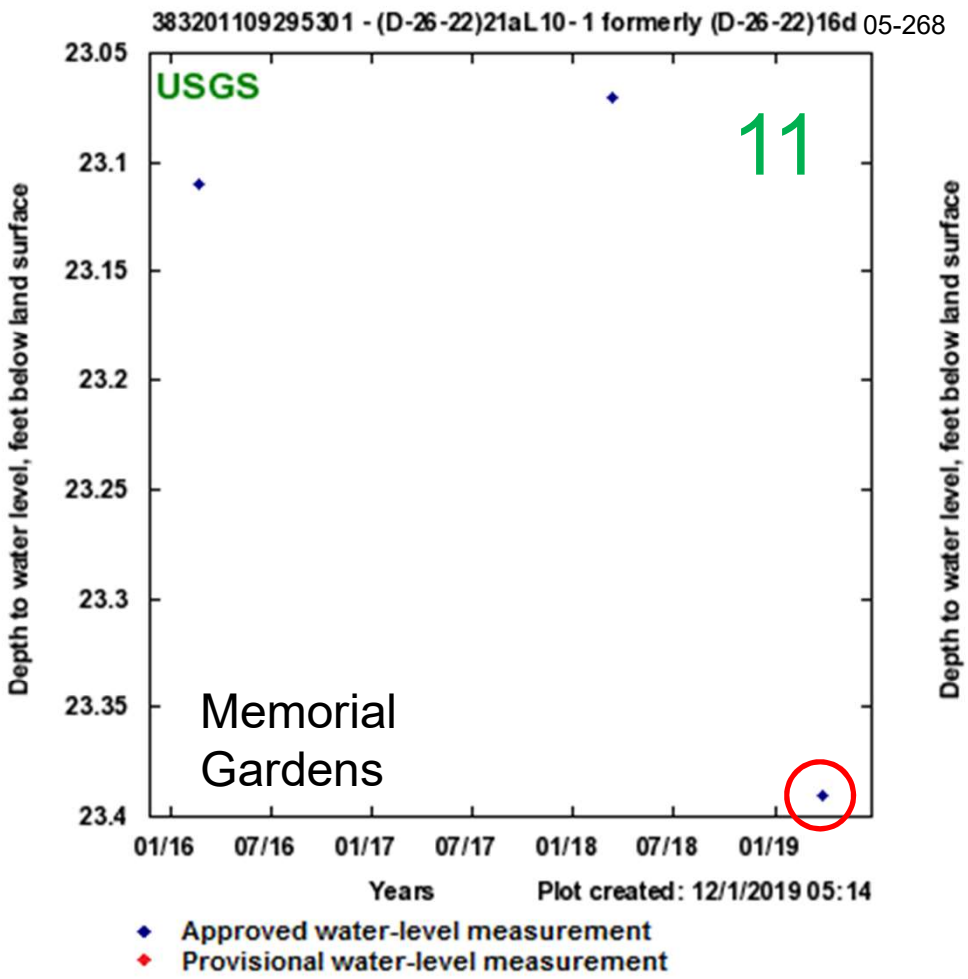


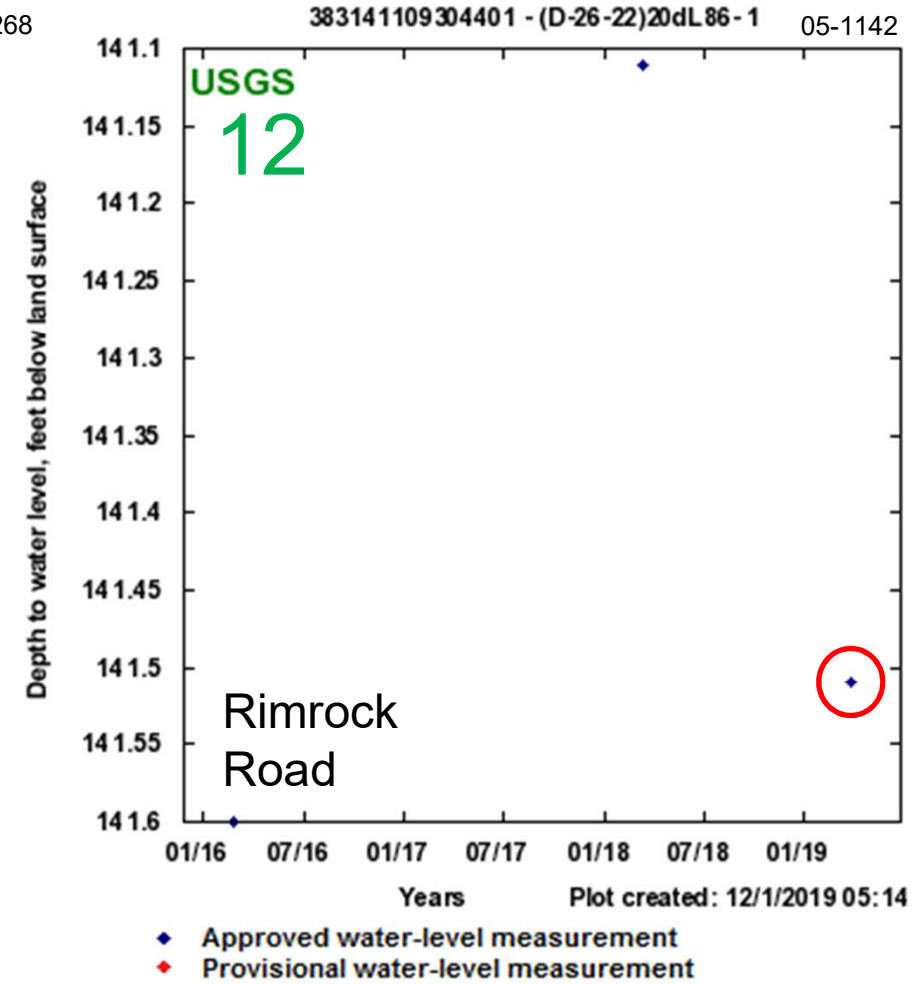
Valley Fill
0 - 2’ Sand

Glen Canyon Group
2’ - 80’ Sandstone

Valley Fill
0 - 30’ Sand / Gravel

Glen Canyon Group
30’ – 170’ Sandstone



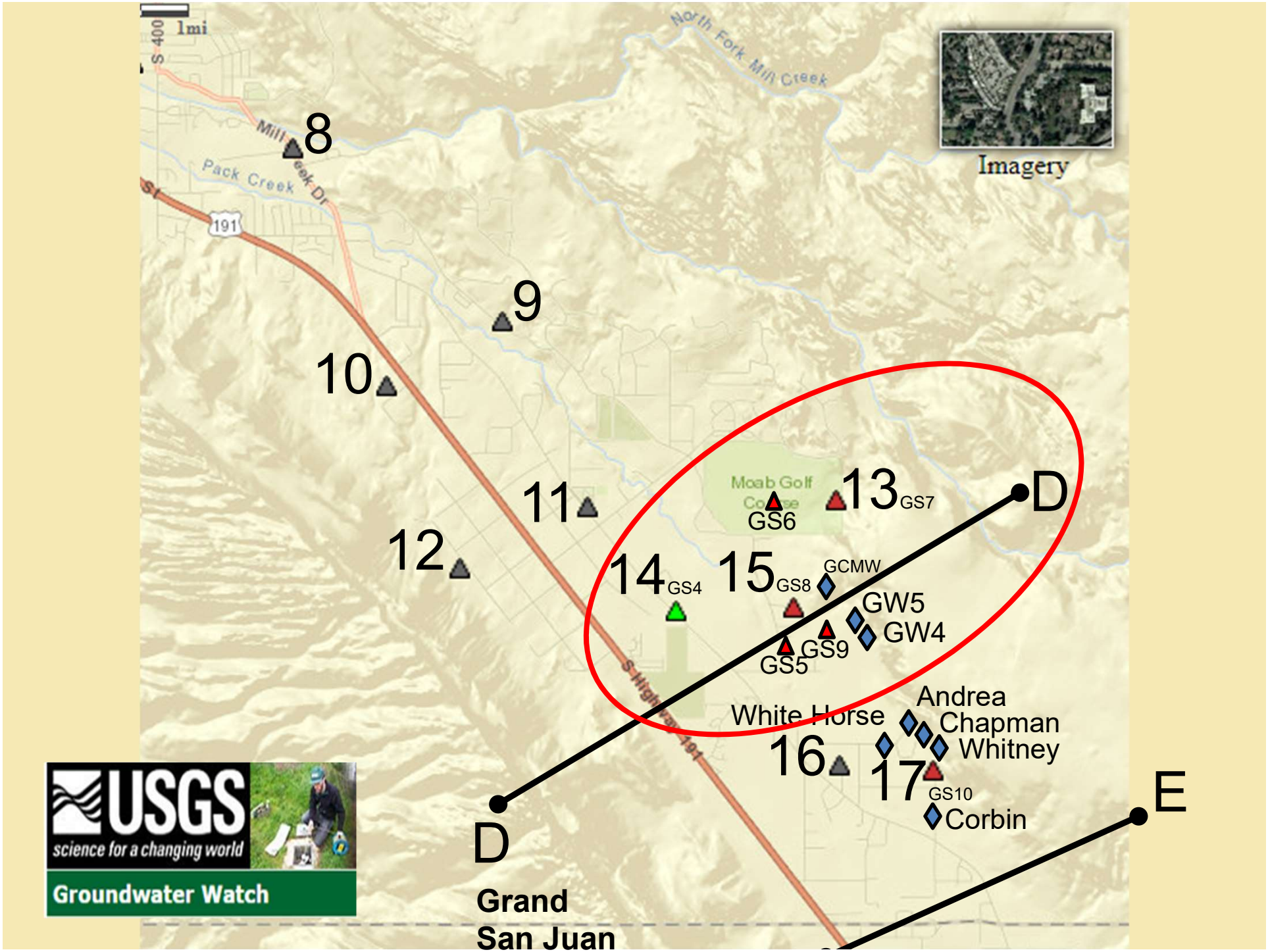


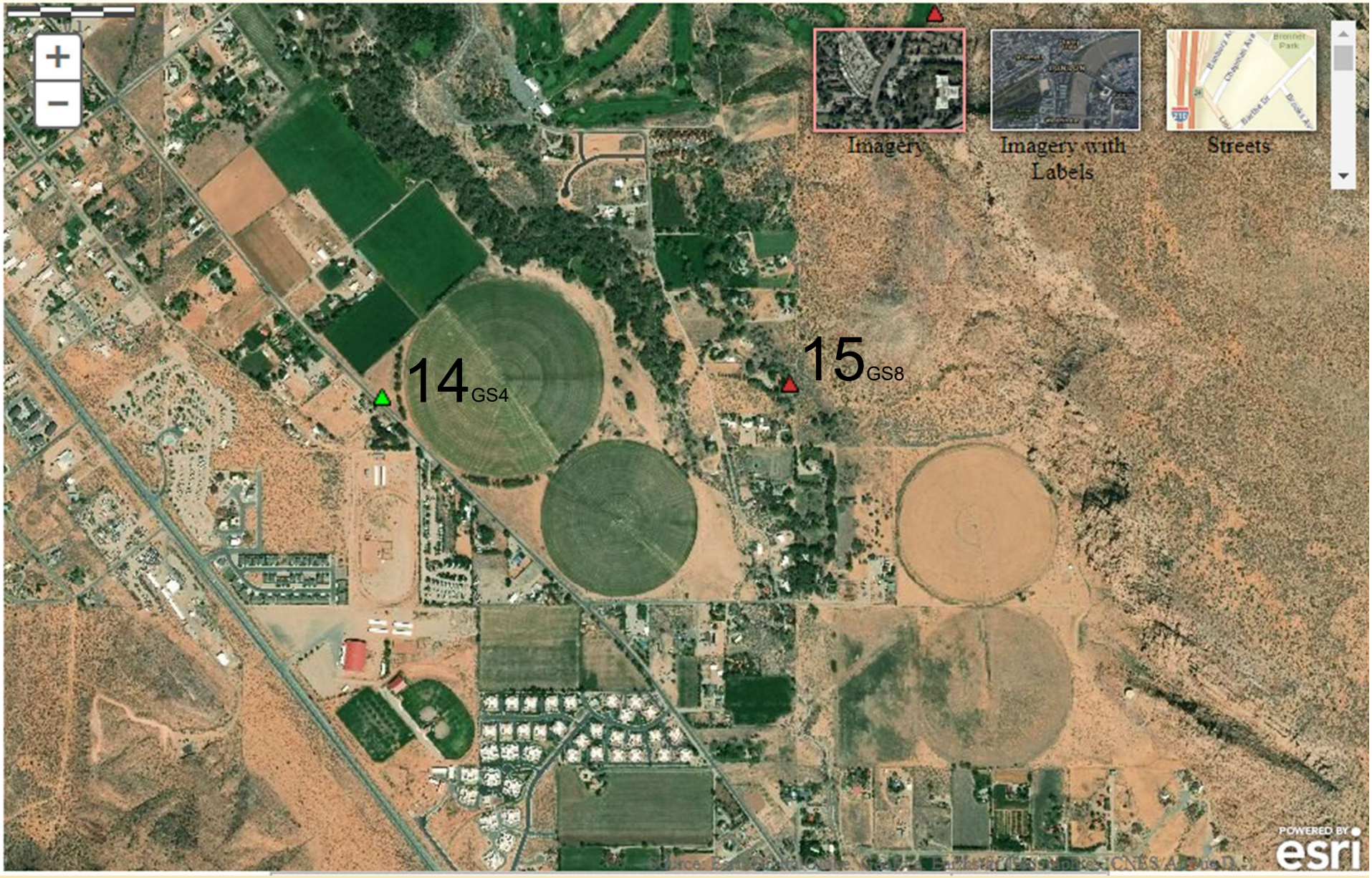
No Well Log

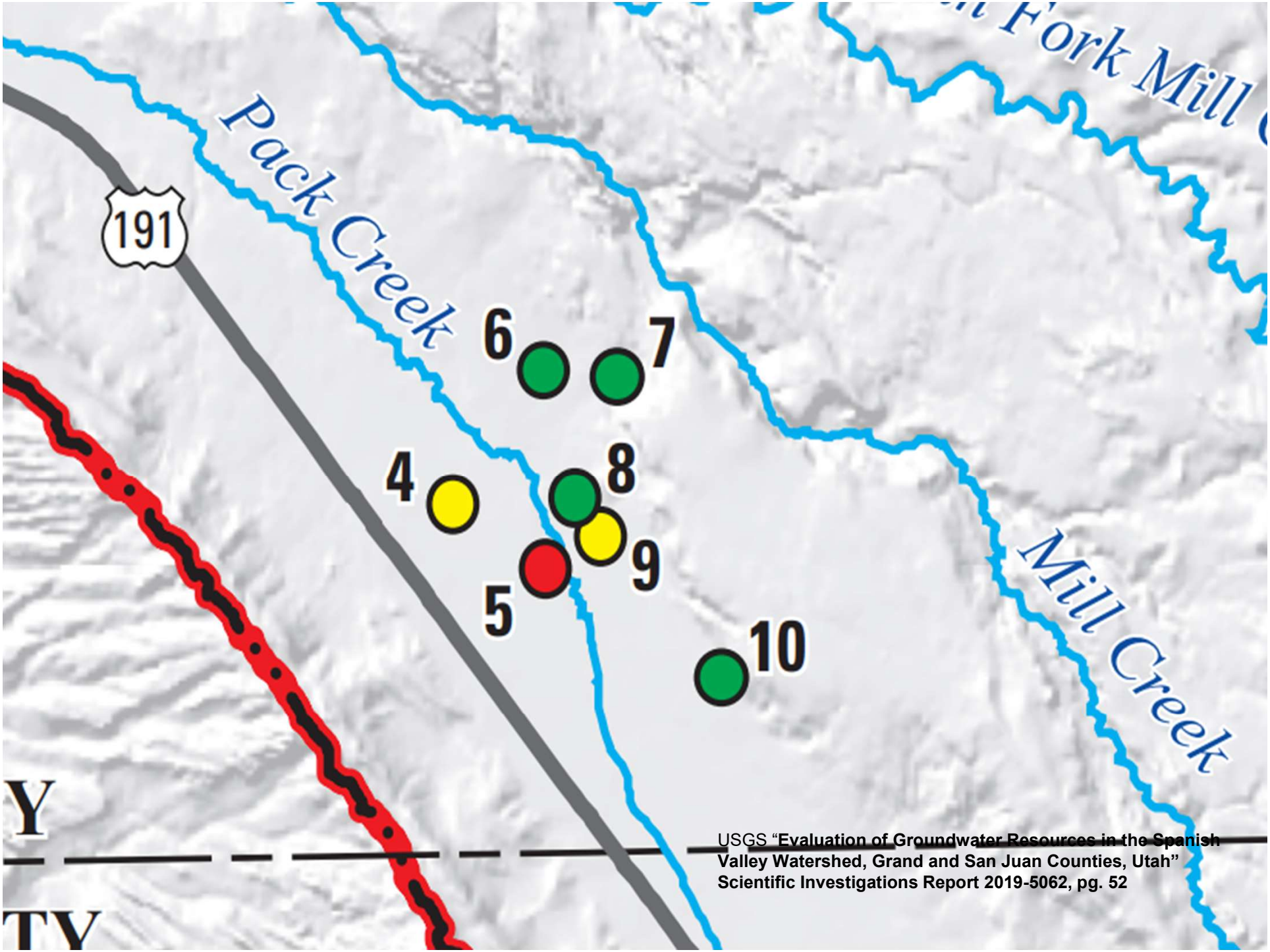
Nearest Well: 05-486
0 – 65’ Sand / Gravel

Valley Fill
0 - 70’ Sand / Gravel

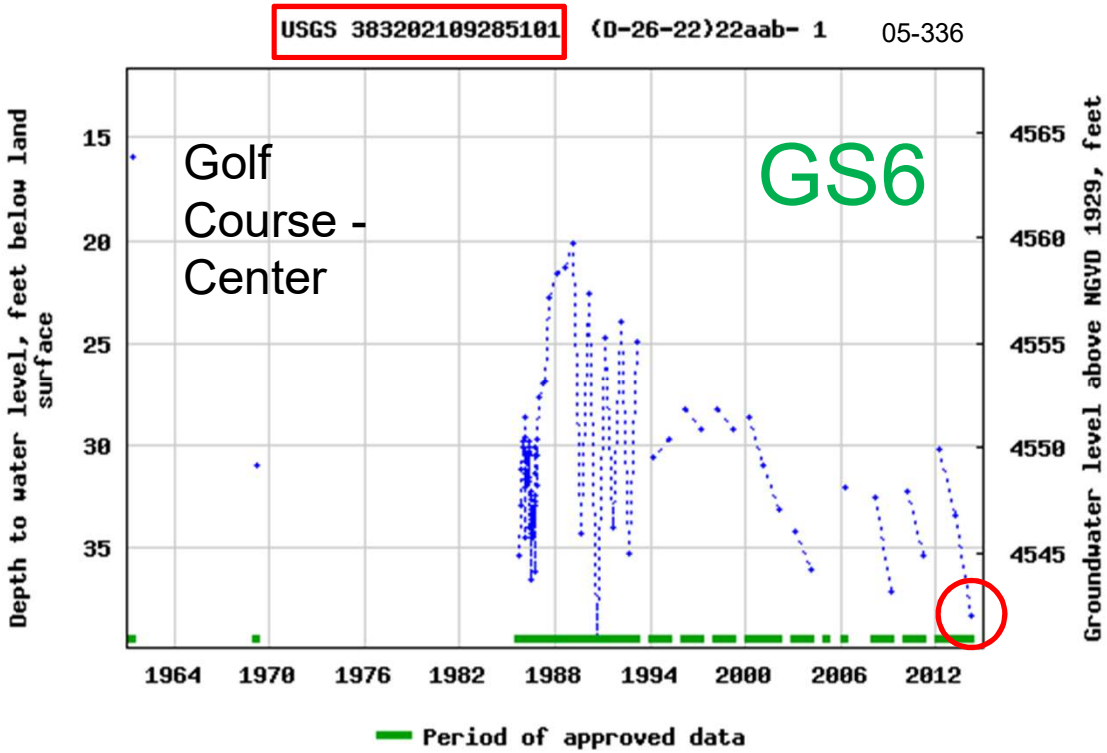
Glen Canyon Group
30’ – 145’ Sandstone
145’ – 185’ Red Mudstone
185’ – 193’ Red Sandstone
193’ – 235’ Red Shale
235’ – 240’ White Sandstone

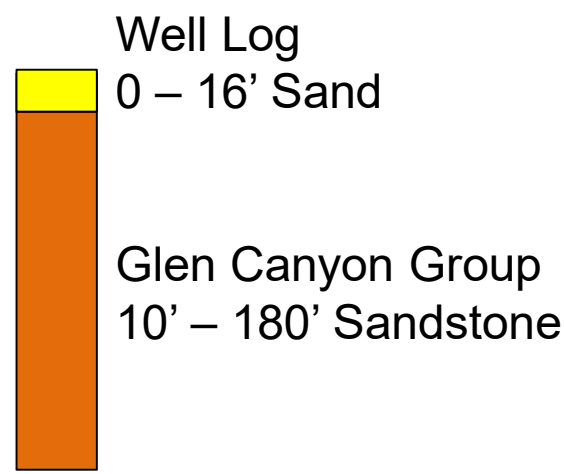

1mi
S 400
North Fork Mill Creek
Mill Creek Dr
Pack Creek
191
8
9
10
11
12
13 GS7
GS6
Moab Golf Course
D
14 GS4
15 GS8
GCMW
GW5
GW4
GS9
GS5
S Highway 191
White Horse
Andrea
Chapman
Whitney
16
17 GS10
Corbin
E
D
Grand
San Juan
Imagery
USGS
science for a changing world
Groundwater Watch


14GS4
15GS8
Imagery
Imagery with Labels
Streets
POWERED BY esri



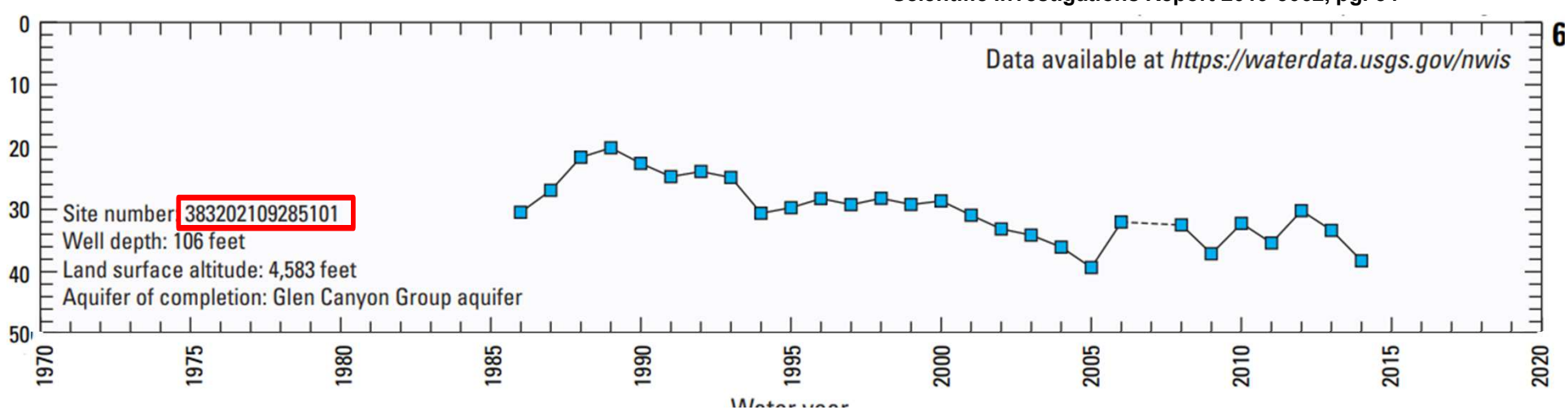
USGS "**Evaluation of Groundwater Resources in the Spanish Valley Watershed, Grand and San Juan Counties, Utah**"
Scientific Investigations Report 2019-5062, pg. 52

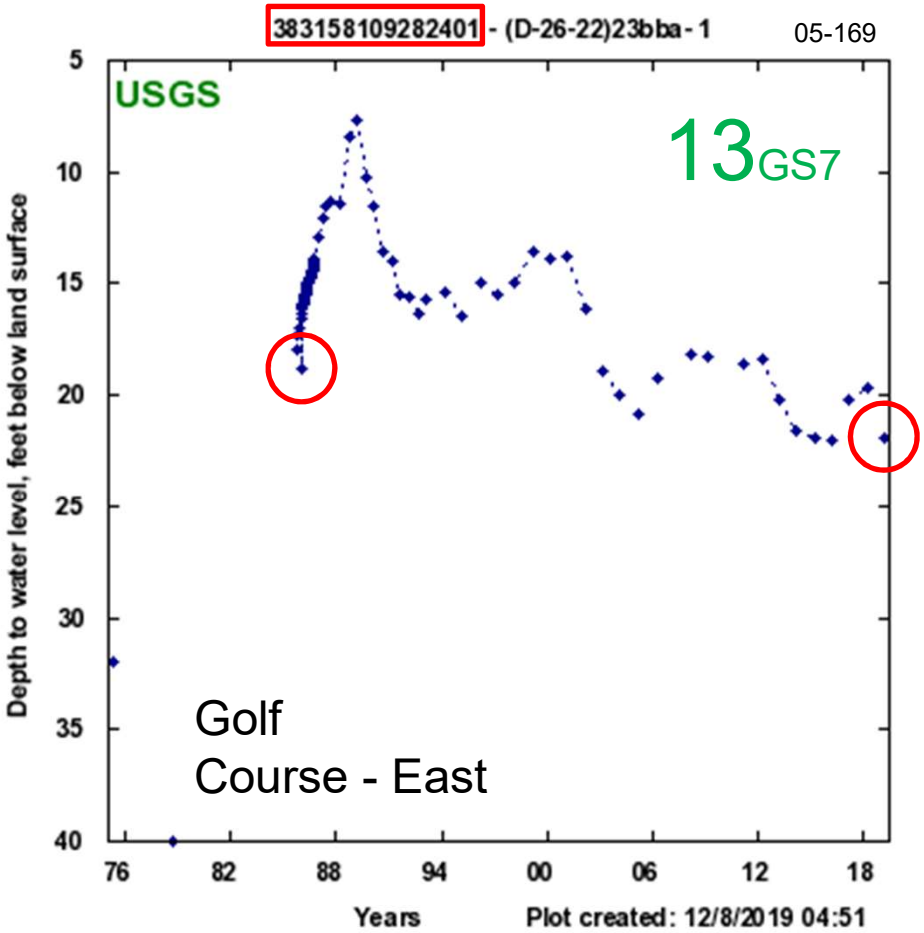


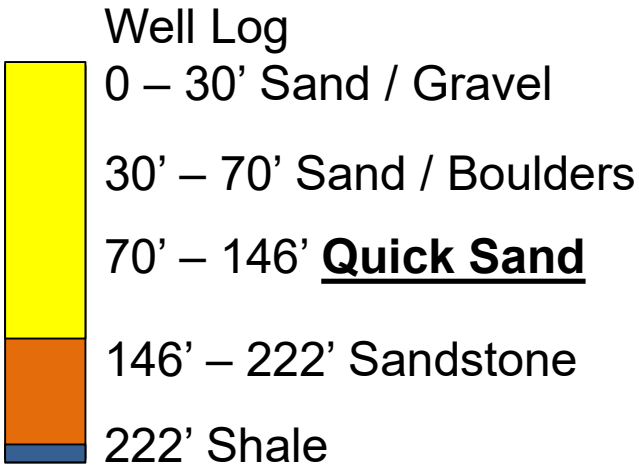


GS6 Not Currently in Active Network

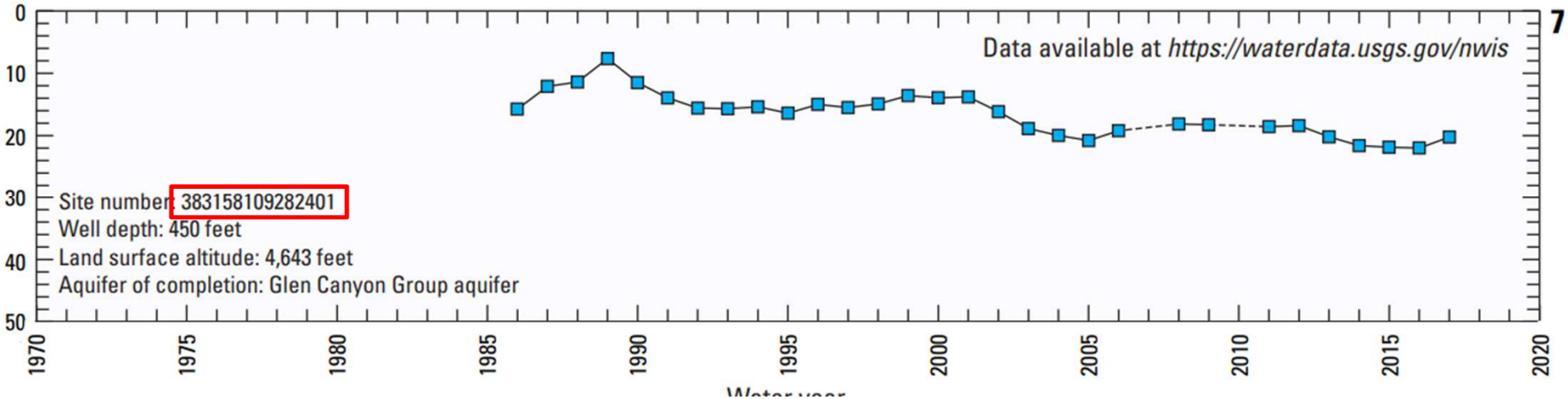
USGS "**Evaluation of Groundwater Resources in the Spanish Valley Watershed, Grand and San Juan Counties, Utah" Scientific Investigations Report 2019-5062, pg. 54**

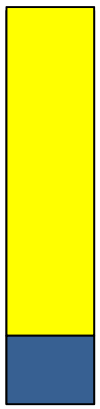






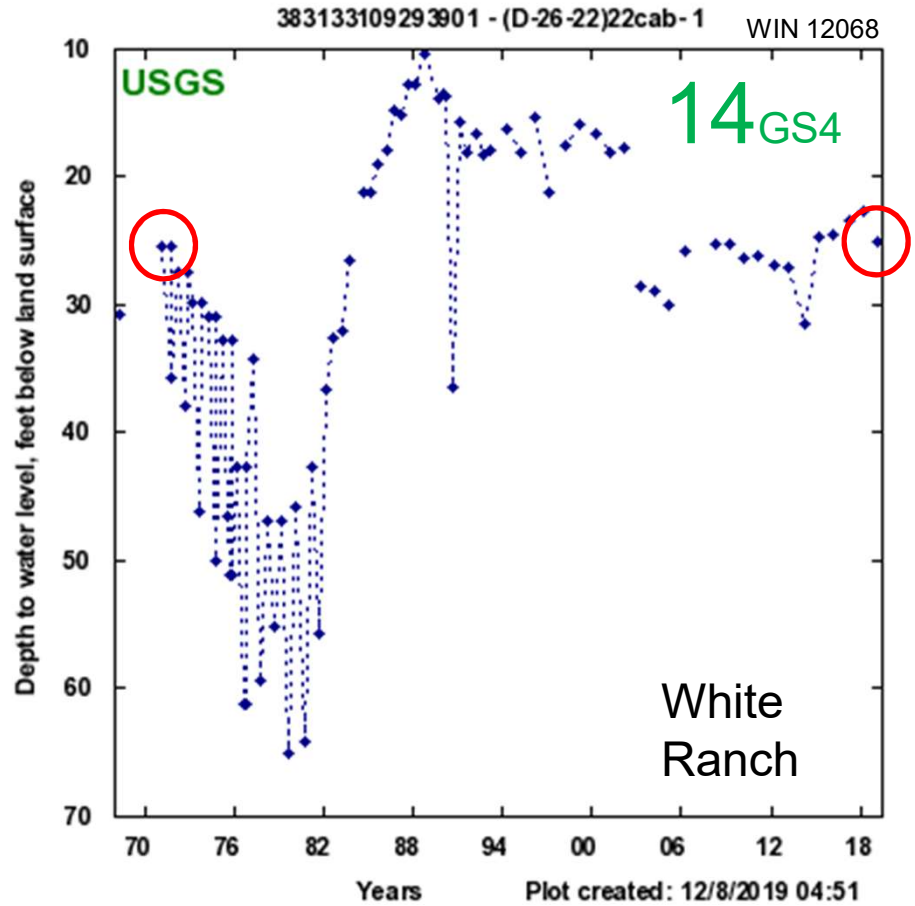
USGS "**Evaluation of Groundwater Resources in the Spanish Valley Watershed, Grand and San Juan Counties, Utah" Scientific Investigations Report 2019-5062, pg. 54**



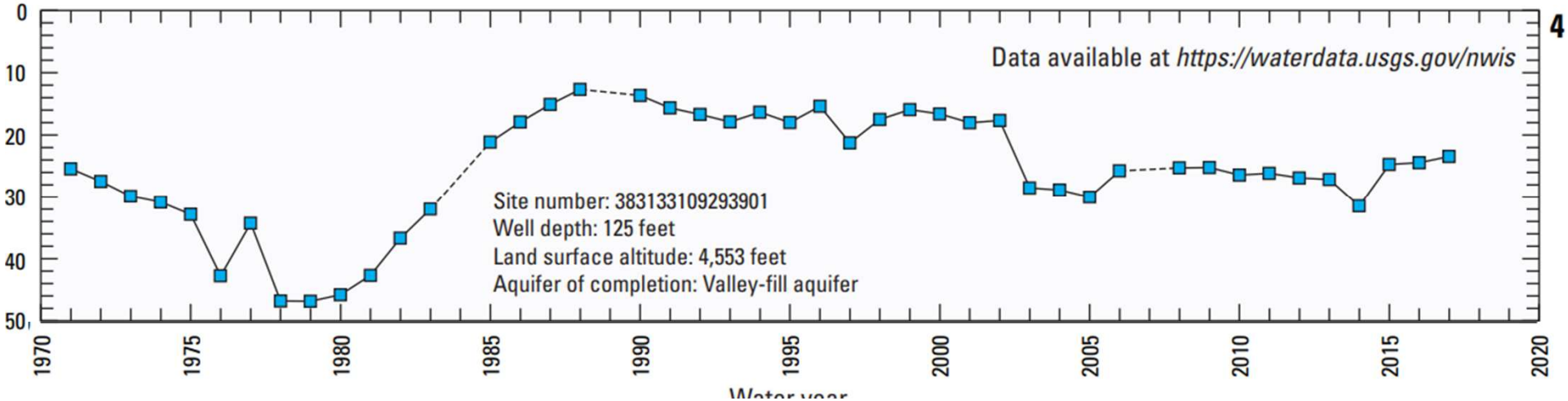


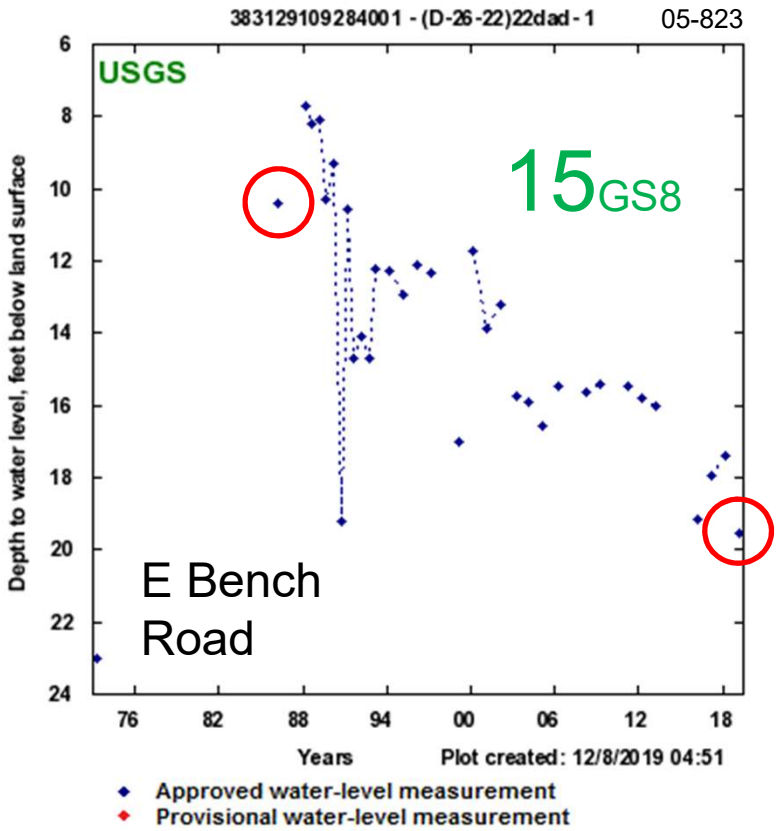
Well Log
Valley Fill
0 - 100’ Sand / Gravel

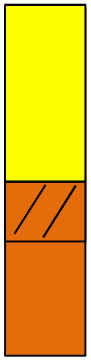
Bedrock
100’ – 120’ Morrison Shales



USGS “**Evaluation of Groundwater Resources in the Spanish Valley Watershed, Grand and San Juan Counties, Utah” Scientific Investigations Report 2019-5062, pg. 53**





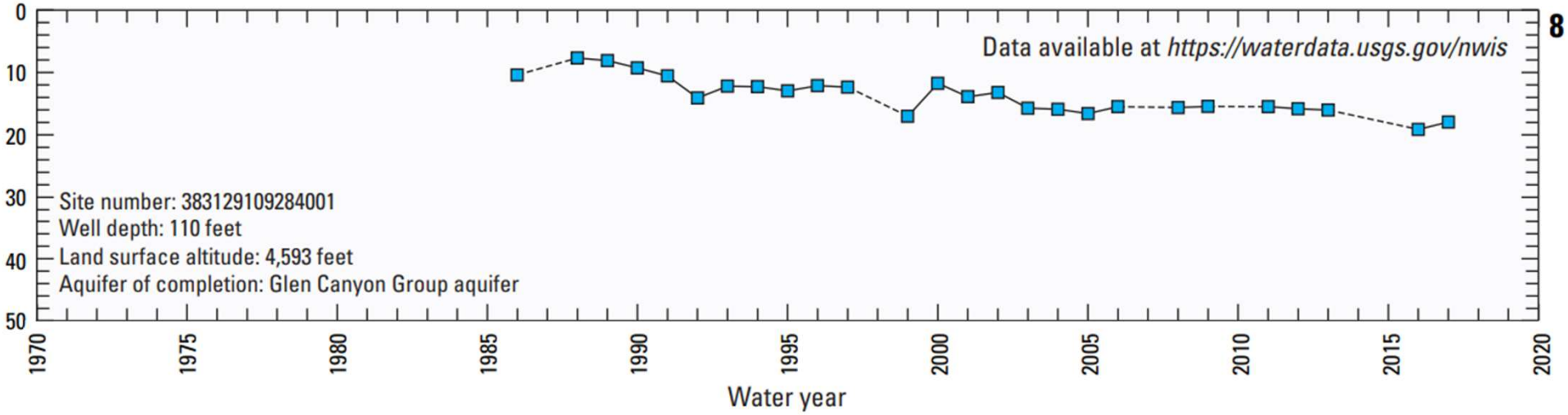


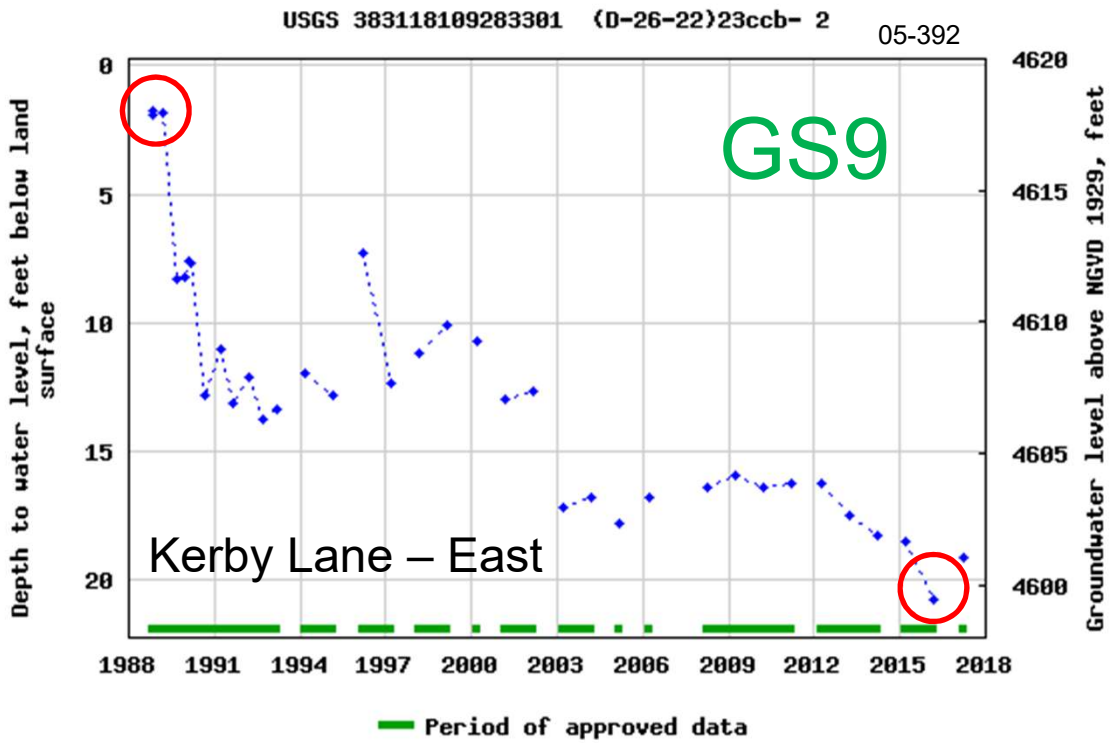
Well Log

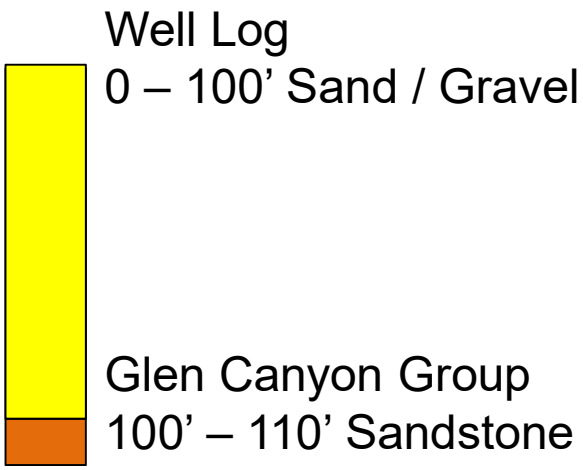
0 – 65’ Sand & Broken Up Sandstone (Boulders?)

65’ – 80’ Broken Up Sandstone (Faults/Joints?)

80’ – 110’ Solid Sandstone

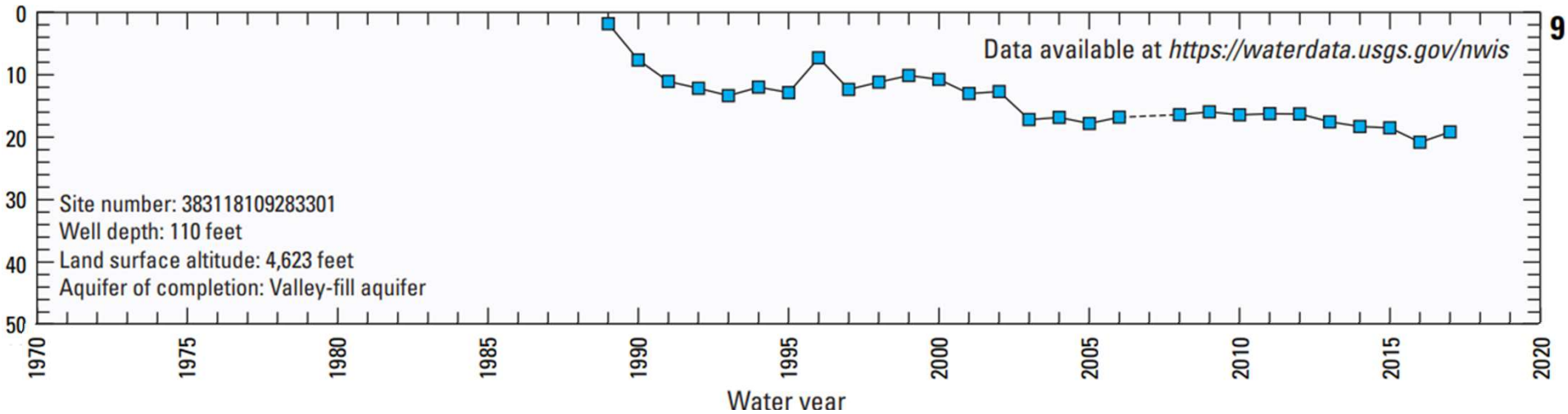


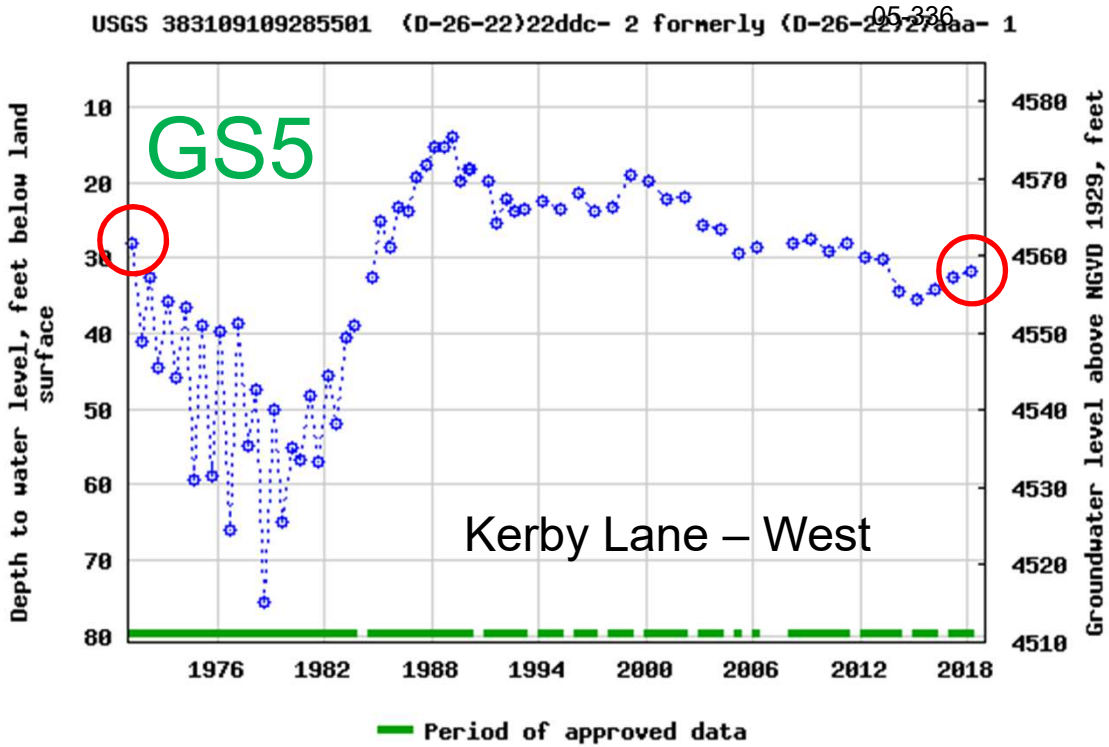




GS9 Not Currently in Active Network

USGS "**Evaluation of Groundwater Resources in the Spanish Valley Watershed, Grand and San Juan Counties, Utah" Scientific Investigations Report 2019-5062, pg. 54**

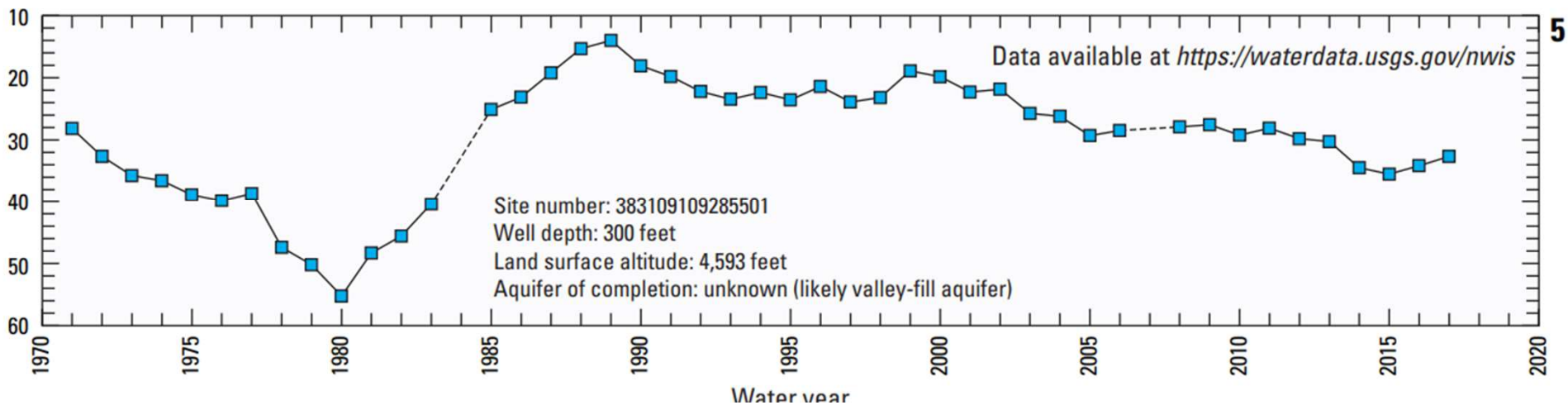


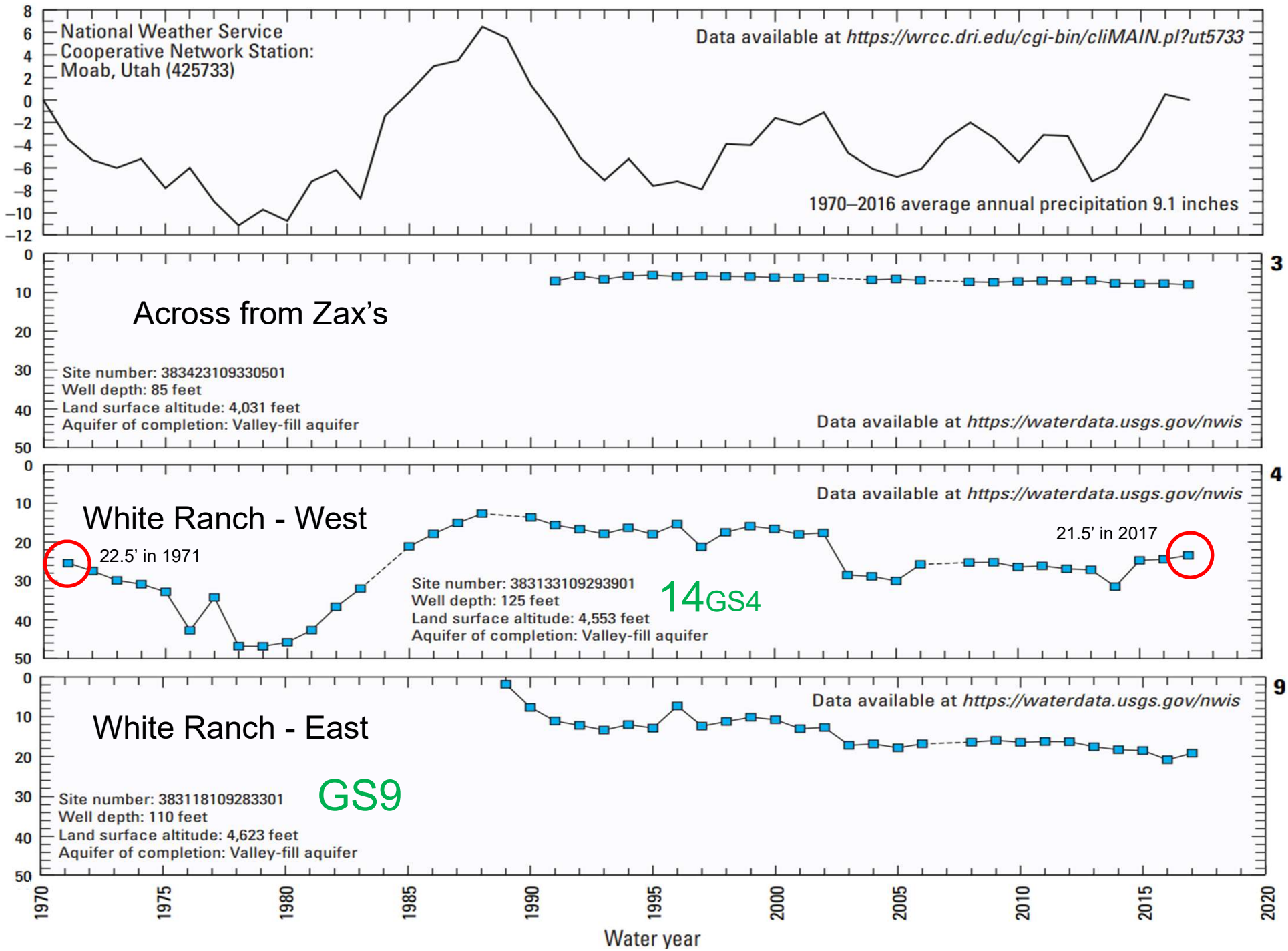


Well Log
0 – 130' Sand / Gravel

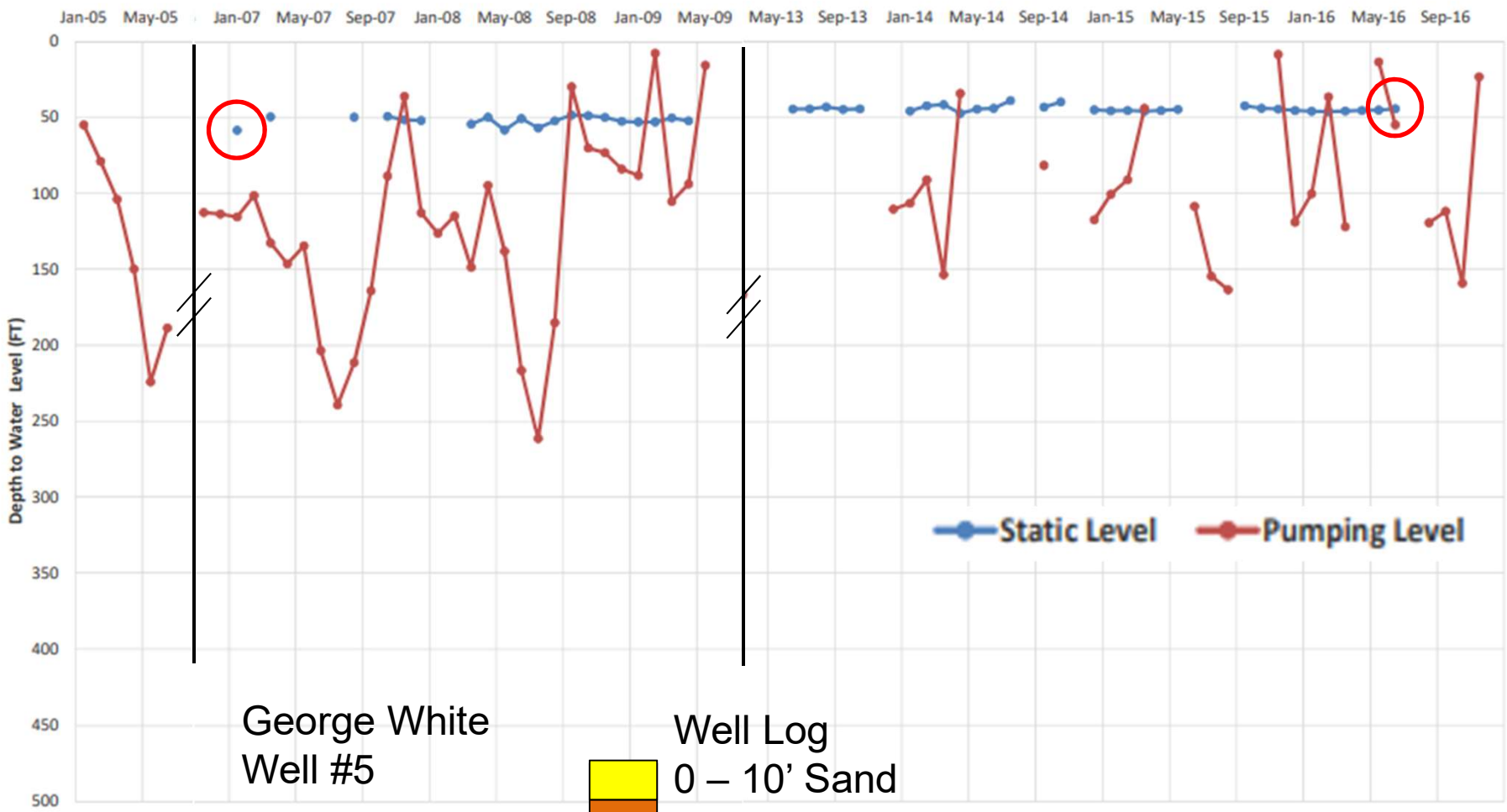
GS5 Not Currently in Active Network

USGS "**Evaluation of Groundwater Resources in the Spanish Valley Watershed, Grand and San Juan Counties, Utah" Scientific Investigations Report 2019-5062, pg. 53**




National Weather Service
Cooperative Network Station:
Moab, Utah (425733)
Data available at https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ut5733
1970–2016 average annual precipitation 9.1 inches
Across from Zax's
Site number: 383423109330501
Well depth: 85 feet
Land surface altitude: 4,031 feet
Aquifer of completion: Valley-fill aquifer
Data available at https://waterdata.usgs.gov/nwis
3
White Ranch - West
22.5' in 1971
21.5' in 2017
Site number: 383133109293901
Well depth: 125 feet
Land surface altitude: 4,553 feet
Aquifer of completion: Valley-fill aquifer
14GS4
Data available at https://waterdata.usgs.gov/nwis
4
White Ranch - East
GS9
Site number: 383118109283301
Well depth: 110 feet
Land surface altitude: 4,623 feet
Aquifer of completion: Valley-fill aquifer
Data available at https://waterdata.usgs.gov/nwis
9
Water year

GW5 WIN 3754



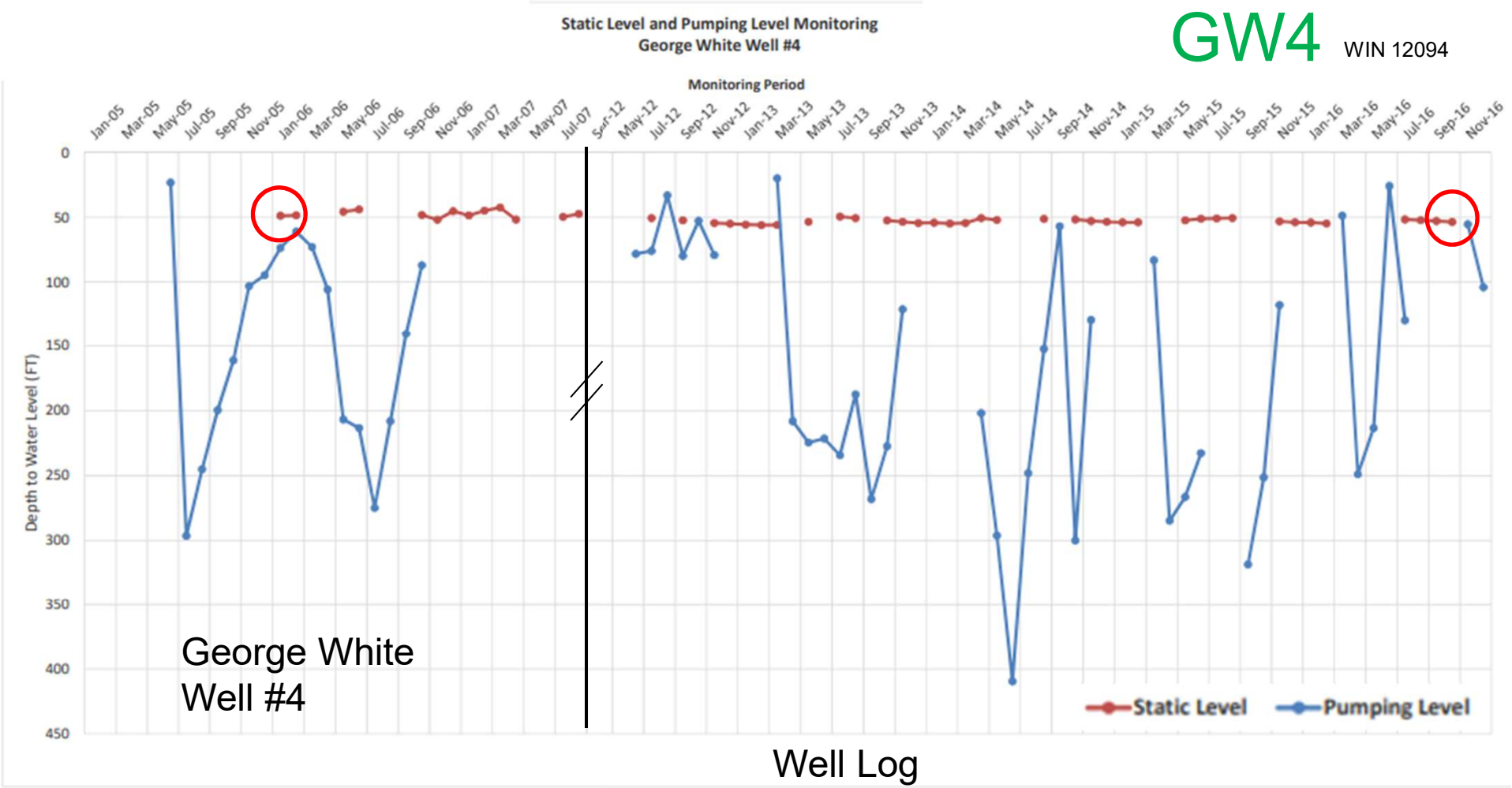
George White
Well #5

Well Log
0 – 10' Sand

Glen Canyon Group
10' – 180' Sandstone
(fractured)

GWSSA **"Groundwater Monitoring Report"**
Sunrise Engineering, 2017

GW4 WIN 12094

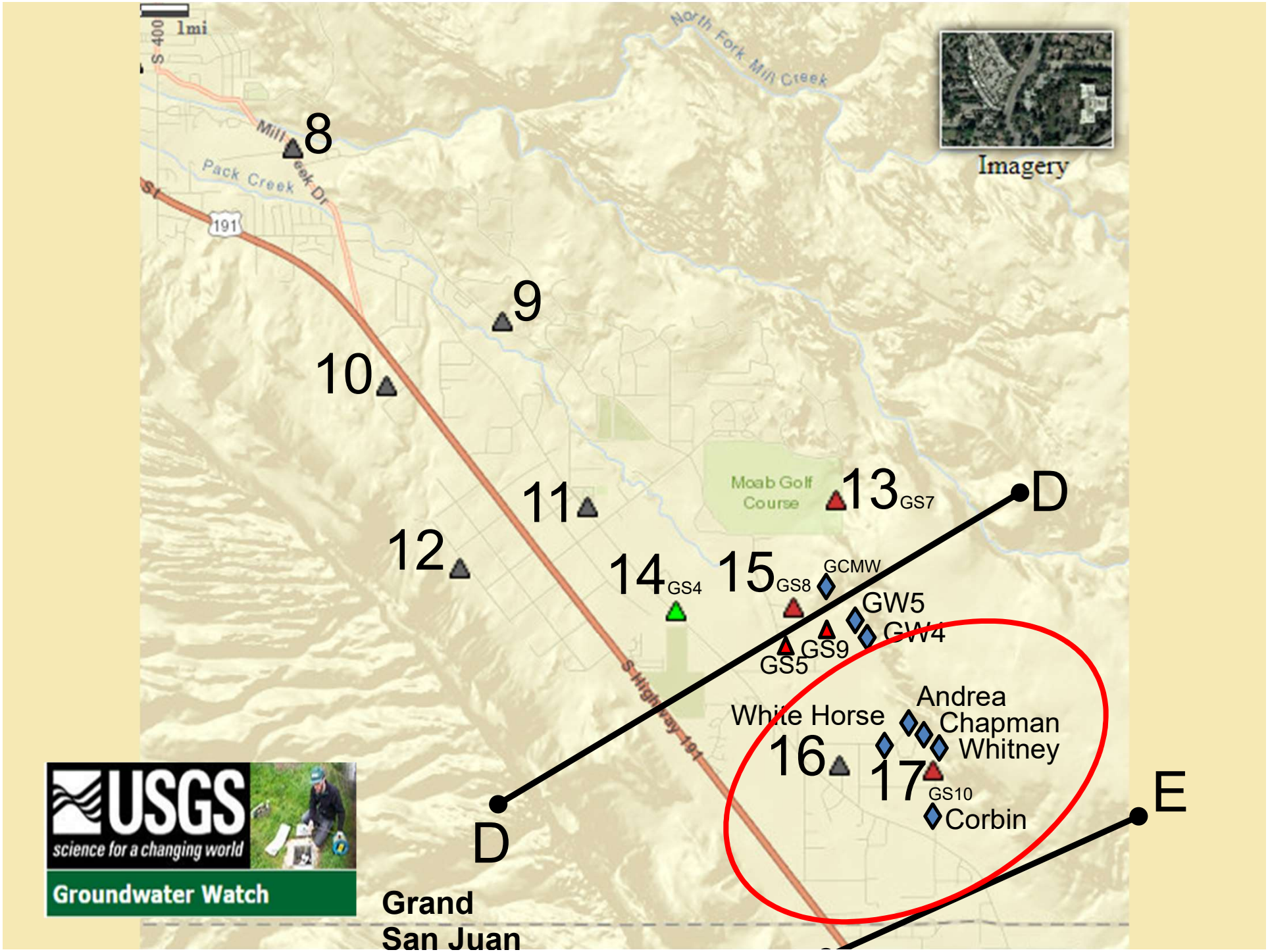


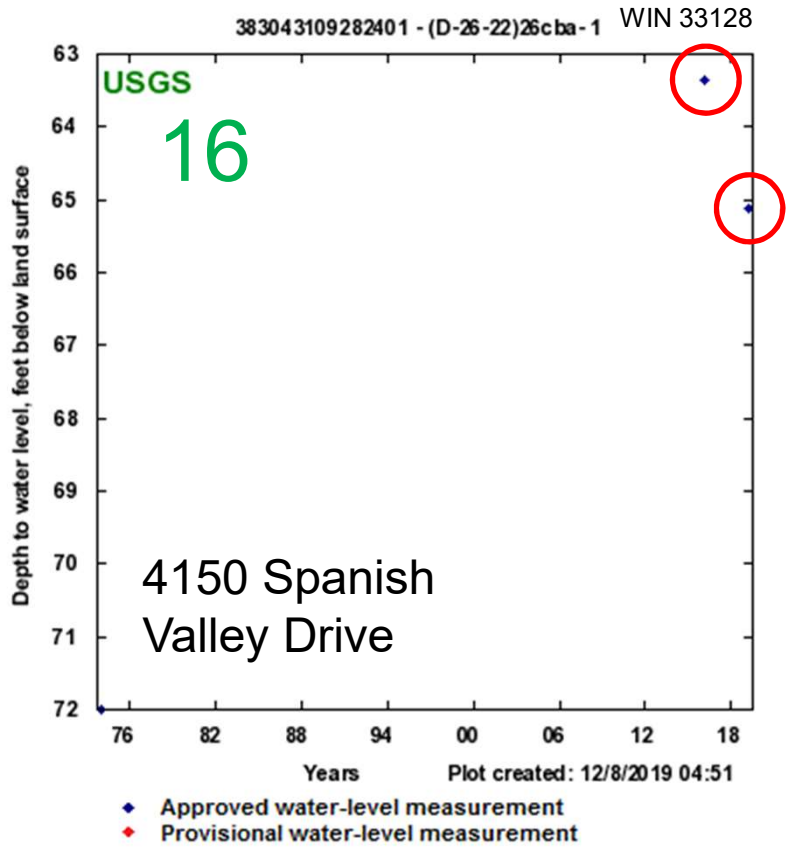
Well Log

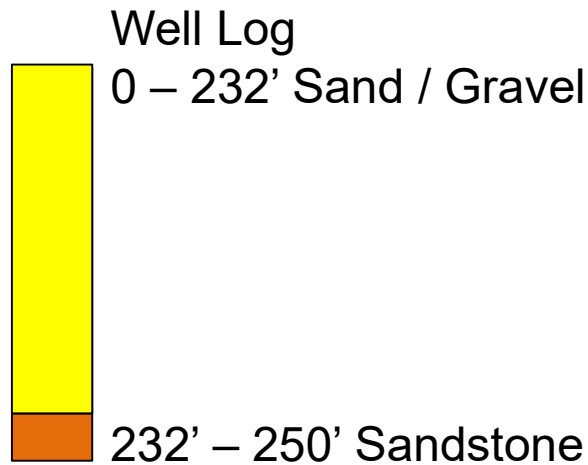
0 – 8’ Sand

Glen Canyon Group
8’ – 174’ Sandstone

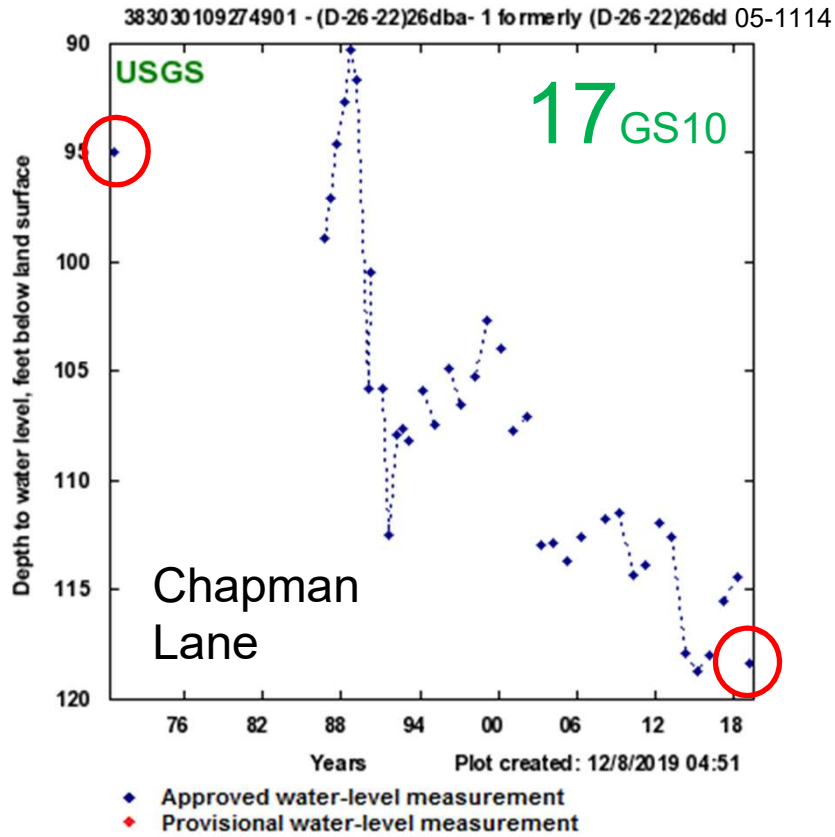
GWSSA **“Groundwater Monitoring Report”**
Sunrise Engineering, 2017


1mi
S 400
North Fork Mill Creek
Imagery
Mill Creek Dr
Pack Creek
191
8
9
10
11
12
13 GS7
Moab Golf Course
14 GS4
15 GS8
GCMW
GW5
GW4
GS9
GS5
S Highway 191
White Horse
Andrea
Chapman
Whitney
16
17 GS10
Corbin
D
D
E
Grand
San Juan
USGS
science for a changing world
Groundwater Watch

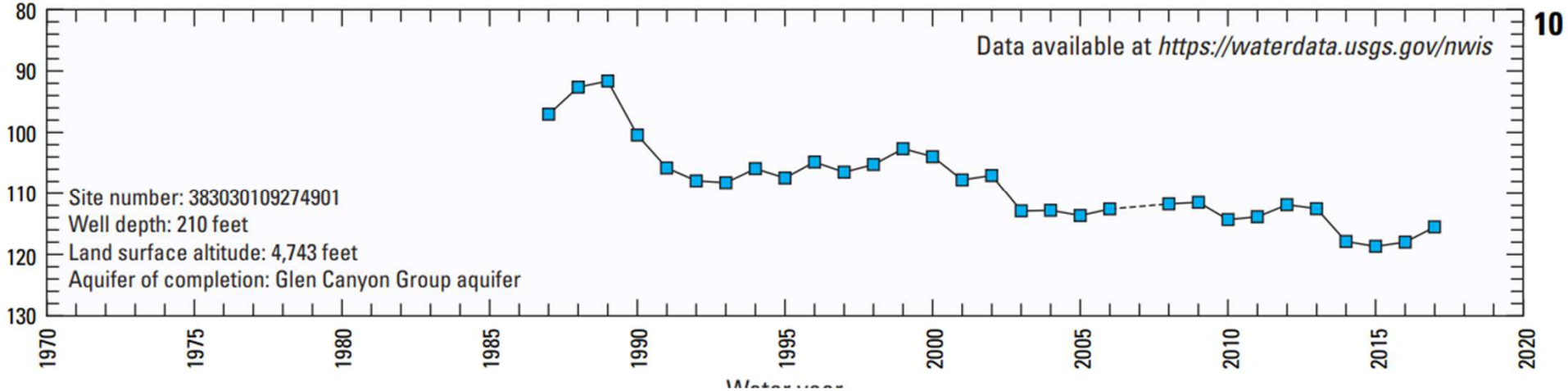

383043109282401 - (D-26-22)26cba-1
WIN 33128
USGS
16
4150 Spanish
Valley Drive
Depth to water level, feet below land surface
63
64
65
66
67
68
69
70
71
72
76
82
88
94
00
06
12
18
Years
Plot created: 12/8/2019 04:51
Approved water-level measurement
Provisional water-level measurement

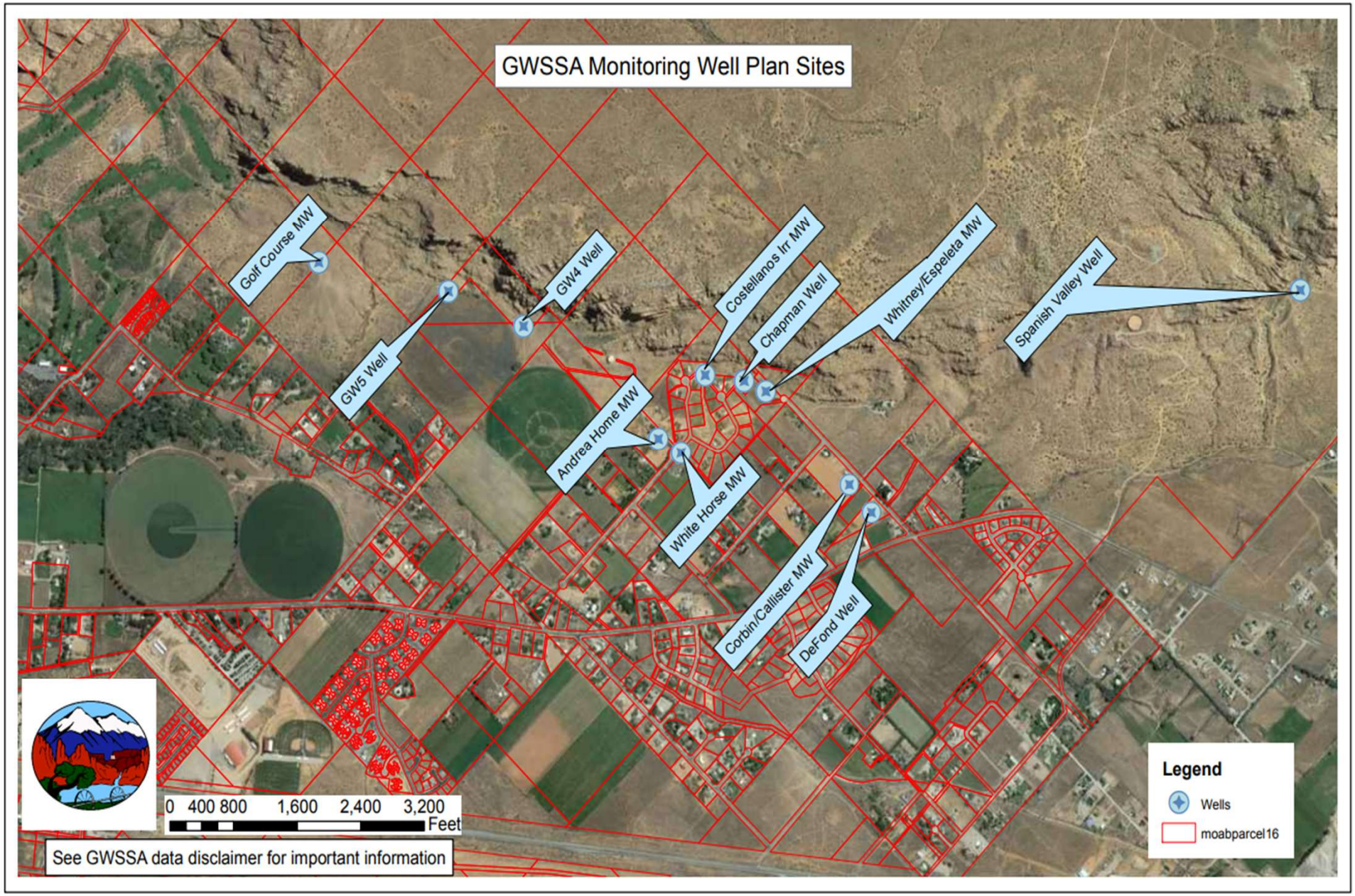

Well Log
0 – 232’ Sand / Gravel
232’ – 250’ Sandstone

No Well Log

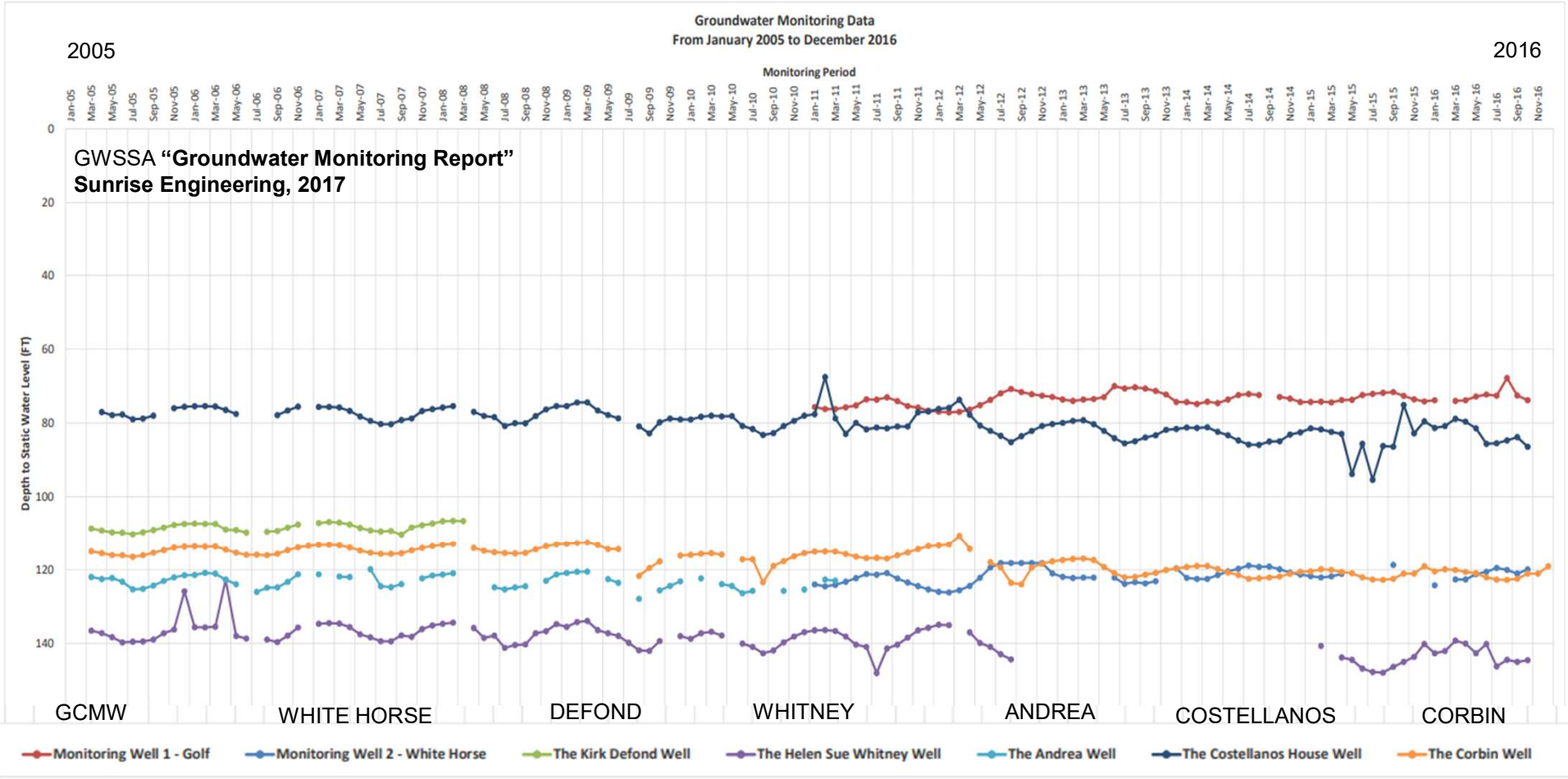


USGS "**Evaluation of Groundwater Resources in the Spanish Valley Watershed, Grand and San Juan Counties, Utah" Scientific Investigations Report 2019-5062, pg. 54**



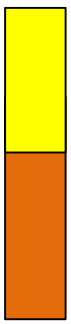


GWSSA **"Groundwater Monitoring Report"**
Sunrise Engineering, 2017



No Well Log

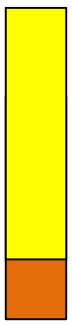
WIN 27616



0–70' Sand / Cobbles

70–180' Sandstone

WIN 31762



0–153' Sand Gravel & Cobbles

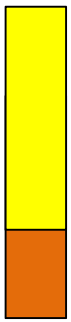
153–172' Sandstone

WIN 439917

0–8' Sand

8–240' Sandstone

WIN 12079



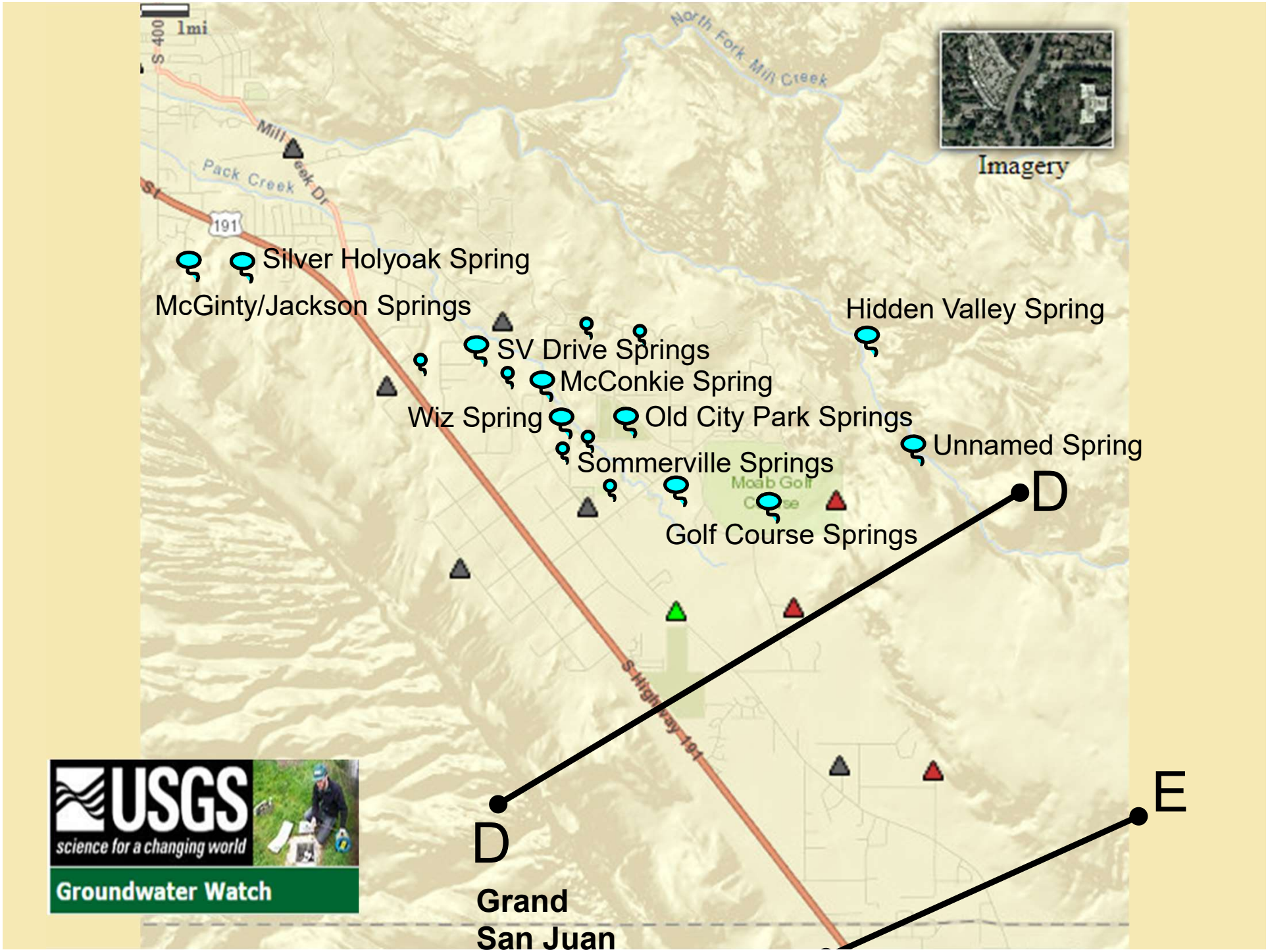
Well Log 0–139' Sand Gravel & Boulders

139–180' Sandstone

WIN 23360

Well Log 0–12' Sand

12–305' Sandstone


1mi
S 400
North Fork Mill Creek
Imagery
Mill Creek Dr
Pack Creek
191
Silver Holyoak Spring
McGinty/Jackson Springs
Hidden Valley Spring
SV Drive Springs
McConkie Spring
Wiz Spring
Old City Park Springs
Unnamed Spring
Sommerville Springs
Moab Golf Course
Golf Course Springs
D
D
E
S Highway 191
Grand
San Juan
USGS
science for a changing world
Groundwater Watch

Natural Spring Flows

- No Monitoring on any springs except for the following:
  - Moab - Sommerville Springs
  - Moab – Golf Course Springs

Thank You… Any Questions?

Utah Division of Water Rights