

**GROUNDWATER LEVELS
in the
SOUTH PARK BASIN**

2018



by
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COLORADO
Division of Water Resources
Department of Natural Resources

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SOUTH PARK BASIN WATER LEVEL MEASUREMENTS 2018

This report contains the basic groundwater level data collected from wells in the South Park basin associated with a new monitoring network started in 2018. Acquisition and publication of this information is a cooperative effort between the well owners and the Colorado Division of Water Resources (DWR). The project is part of a statewide groundwater level monitoring program funded by Senate Bill 200 (1987 legislative session). This legislation directed that a portion of the fees collected for water well permit applications be used for the establishment of a program to monitor water-level trends throughout the state.

This program was developed to build on the work done by the Coalition for the Upper South Platte (CUSP), the Colorado Geological Survey (CGS) and the United States Geological Survey (USGS) in South Park. Their efforts focused more on water quality and the geology and groundwater resources of Park County. This program will provide data to assess long-term trends in various aquifers throughout the basin. DWR would like to thank everyone who helped with the establishment of this program including; Jara Johnson (DWR), Carol Ekarius (CUSP), Wendie Warner (CUSP), Peter Barkmann (CGS), Lesley Sebol (CGS), Suzanne Paschke (USGS), Tom Eisenman (Park County), Sheila Cross (Park Co), Tim Zingler (Town of Alma), Dean Misantoni, Tom Wells, and each well owner who granted DWR access to their well.

The report contains water level measurements for 21 wells measured in June and July of 2018. One well was not accessible, but is included on the map and in the report as it will be measured in the future. The wells are listed by name in numerical order and the locations of those wells in the geographic context of the designated basin are shown on the following map (Figure 1a). Tabular and graphical data are presented for each well for the available period of record including measurements taken during well construction and pump installation.

Groundwater in Park County can be found in various geologic settings. The wells in this report are completed in unconsolidated Quaternary deposits, sedimentary bedrock units from the Cretaceous Interior Seaway, Pennsylvanian sedimentary units associated with the uplift of the Ancestral Rocky Mountains, and fractured Precambrian crystalline rock (Figure 1b). Figures 2a and 2b from the Colorado Geological Survey's Geology and Groundwater Resources of Park County are included to display the numerous hydrogeologic units found in South Park (Barkmann and others, 2015)¹.

The CGS Park County report can be viewed online,
<http://coloradogeologicalsurvey.org/water/groundwater/park-county-ground-water-study/>

In almost every well, the groundwater level measured in 2018 was shallower than when each well was drilled. Continued monitoring will be necessary to evaluate water level trends in the basin over time.

¹ Barkmann, P.E., Sebol, L., Fitzgerald, F.S., and Curtiss, W., 2015, Geology and Groundwater Resources of Park County, Colorado Geological Survey, Open File Report 15-11.

An electronic copy of this report is available on the Division of Water Resources website:

<http://water.state.co.us/groundwater/Levels/Pages/HydroGeo.aspx>

The direct link to the South Park Publication Area on the CDSS webpage:

<https://dnrweb.state.co.us/cdss/GroundWater/WaterLevels?submitButton=Submit&SelectedGeoValue=waterDivisionDiv&SelectedPublicationAreaName=SOUTH%20PARK&SelectedAquiferName=All>

Additionally, all groundwater level data may be accessed and exported using the tools available on the Colorado Decision Support System website:

<http://dnrweb.state.co.us/cdss/GroundWater/WaterLevels/Search>

and the Colorado Information Marketplace HydroBase Bulk Data Exporter:

<https://data.colorado.gov/Water/DWR-Well-Water-Level/hfwh-wsgi/data>

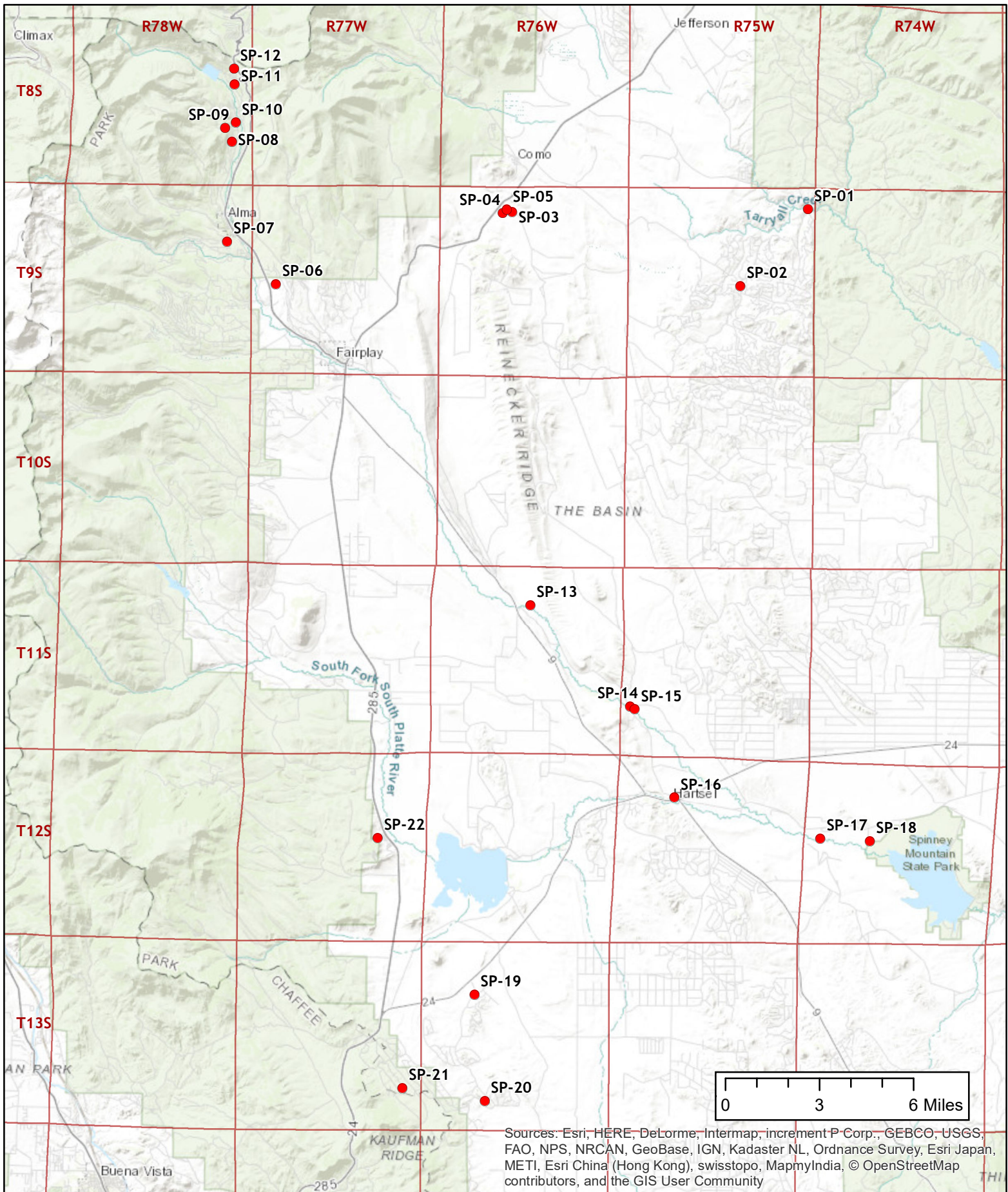
or the Colorado Decision Support System MapViewer:

<http://water.state.co.us/DataMaps/GISandMaps/MapView/MapViewer/Pages/FAQ.aspx>

If you have any questions regarding groundwater and the information in this report, please contact the Groundwater Information Desk at (303) 866-3587 or through AskDWR,

http://www.dwr.state.co.us/OnlineTools/AskDWR.aspx?topic_num=31&office_num=8





COLORADO
Division of Water Resources
Department of Natural Resources

Figure 1a
South Park Basin
Monitoring Well Network



PARK COUNTY STRATIGRAPHIC COLUMN, QUATERNARY THROUGH CRETACEOUS UNITS						
AGE	GEOLOGIC UNIT (THICKNESS IN FT)	LITHOLOGY	MAP IDENT.	EXTENT	ENERGY RESOURCE	HYDRO- UNIT
QUATERNARY	Holocene Alluvium (up to 20)			widespread in valleys and along rivers and tributaries	historic peat mining	
	Pleistocene Alluvium, Outwash, and Glacial Drift (up to 150)					
MIOCENE	Wagontongue Fm. Trump Sandstone (500–1,400)			limited to south and west of Hartsel		Wagontongue/ Trump Aquifer
OLIGOCENE	Antero Fm. (up to 2,000)			limited to southwest part of South Park	uranium potential	Antero Aquifer
	Thirtynine Mile and Guffey Mtn. Volcanics (up to 2,600)			limited to southwest part of South Park	uranium potential	local source in granular layers and fractures
EOCENE	Tallahassee Ck. Congl. (up to 800)			limited to south and west of Hartsel		Tallahassee Ck. Aquifer
	Wall Mtn. Tuff and Buffalo Peaks Volc. (up to 1,200)			limited to west side and south of Hartsel		peaks and buttes, areas of recharge
PALEOCENE	Echo Park Alluvium (50 to 1,000)			very limited south of Hartsel	uranium potential	Echo Park Aquifer
	Syntectonic Conglomerate (up to 300)			limited to Sevenmile and Link Spring areas		
	Fine-grained Arkose Member. (up to 3,000)			limited to a belt between Jefferson and Spinney Mountain Reservoir		Upper South Park Aquifer
	Link Spring Tuff Memb. (~200)			limited to Link Spring Ridge area		confining unit
	Conglomerate Memb. (1,200–5,100)			limited to a belt between Jefferson and Spinney Mountain Reservoir		Lower South Park Aquifer
	Reinecker Ridge Volcanic Member (300–900)			limited to Reinecker Ridge area		lower part a confining unit
	Laramie Formation (up to 375)			limited between Jefferson and Spinney Mountain Reservoir	coal, methane, and uranium potential	confining unit
UPPER CRETACEOUS	Fox Hills Sandstone (up to 350)					Laramie-Fox Hills Aquifer
	Pierre Shale (4,200–5,300)			limited to the central part of South Park		confining unit, but sand beds and fractures can be a local source
	Niobrara Formation (400–550)			limited to the central part of South Park	oil and gas potential	
	Benton Group (~250)			limited to the central part of South Park		
	Dakota Sandstone (250–300)			limited to the central part of South Park	oil and gas potential	Dakota Aquifer
LOWER CRET.						

**Figure 2a. Park County Stratigraphic Column,
Quaternary through Cretaceous Units**















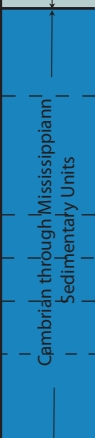
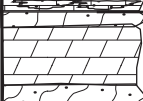

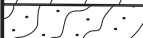
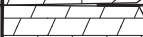
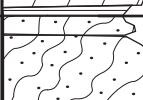


PARK COUNTY STRATIGRAPHIC COLUMN, JURASSIC THROUGH PRECAMBRIAN UNITS						
AGE	GEOLOGIC UNIT (THICKNESS IN FT)	LITHOLOGY	MAP IDENT.	EXTENT	ENERGY RESOURCE	HYDRO- UNIT
JURASSIC	Morrison Formation 180–360	 shale, sandstone, siltstone, basal limestone		limited to the central part of South Park from Boreas Pass to Hartsel	potential uranium	confining unit, can yield water in porous zones
	Garó Formation (60-230)	 sandstone and conglomerate		limited to the central part of South Park		Garó SS Aquifer
PERMIAN	Maroon Formation (up to 3,300)	 sandstone, siltstone, shale, conglomerate, and rare limestone		widespread over west-central part of South Park		Maroon Fm. Unit, variable, with porous zones interbedded with confining shales
PENNSYLVANIAN	Minturn Formation	 sandstone, siltstone, shale, conglomerate, and limestone	 Ancestral Rocky Mountain Sedimentary Units	widespread over west-central part of South Park		Minturn Fm. Unit, variable, with porous zones interbedded with confining shales
		 includes beds of gypsum and halite		widespread over west-central part of South Park		can be source of saline and sulfate-rich water
		 sandstone, siltstone, shale, conglomerate, and limestone		widespread over west-central part of South Park		porous zones interbedded with confining shales
		 shale with minor limestone and siltstone; sandstone and conglomerate		limited to west side of South Park		Belden Fm. Unit, variable
	Belden Formation (750-850) [Kerber/Sharpsdale Fms.]					
MISSISSIPPIAN	Leadville Limestone (100-400)	 limestone and dolomite with chert and beds of quartz sandstone	 Cambrian through Mississippian Sedimentary Units	limited to west side of South Park		Older Paleozoic Formations Unit, fractures and solution channels provide potential local groundwater
DEVONIAN	Chaffee Group (80-200)	 quartzite, dolomite, and limestone		limited to west side of South Park		
ORDOVICIAN	Fremont Dolomite	 dolomite		limited to west side of South Park		
	Harding Sandstone 80–200	 quartzite		limited to west side of South Park		
CAMBRIAN	Manitou Formation 65–230	 dolomite and shale		limited to west side of South Park		
	Dotsero Formation and Sawatch Quartzite 10–250	 quartzite and dolomitic sandstone		limited to west side of South Park		
PRECAMBRIAN	Precambrian Igneous and Metamorphic Rocks	 igneous plutons of varying composition and age with felsic gneiss and biotite gneiss	 Precambrian Rocks	widespread over the east side of South Park and limited exposures in southern and western regions	uranium potential	Precambrian crystalline bedrock aquifer

Figure 2b. Park County Stratigraphic Column,
Jurassic through Precambrian Units





GROUNDWATER DETAILS

Well Name: SP-01 STAGESTOP OWNERS P41807-F
Permit Number: 41807-F
WDID: 2306544
Data Source: DWR

Location Number: SC00907501DA
USGS Site ID:
Applicant/Contact:

Physical Location

Dist N/S	Dist E/W	Q10	Q40	Q160	Sec	Township	Range	PM	UTMx	UTMy	Location Accuracy
			NE	SE	1	9.0 S	75.0 W	S	437938.6	4349742.5	GPS

Division: 1 District: 23
County: PARK
Designated Basin:
Management District:

Ten Most Recent Published Readings

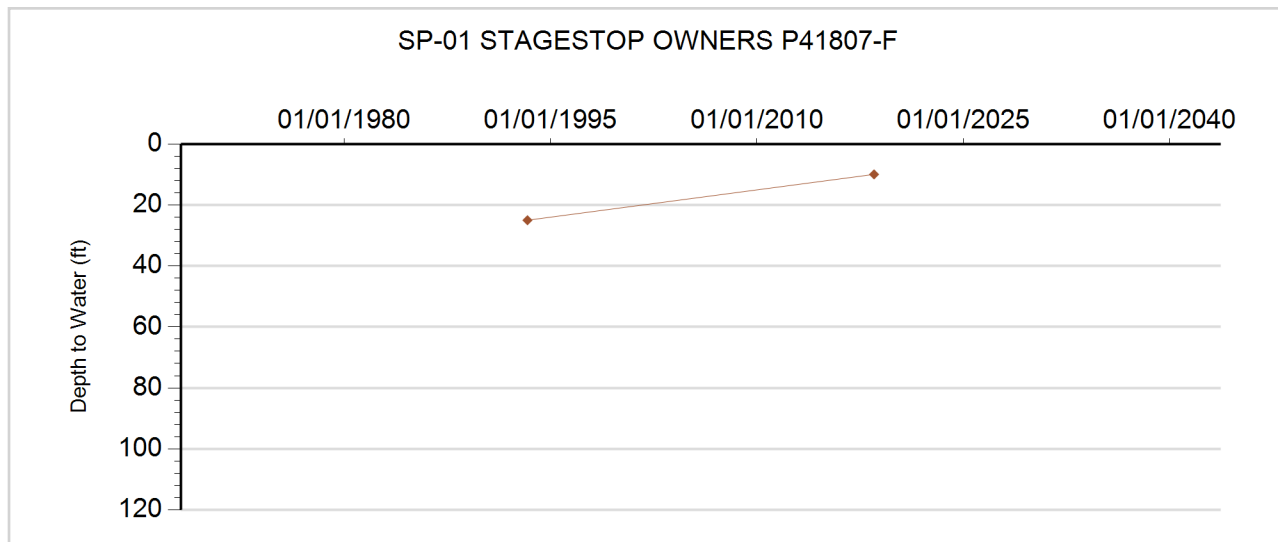
Date	Depth to Water Feet Below Land Surface	Elevation of Water (ft)	Change From Previous Measure (ft)
07/12/2018	9.96	9070.04	-15.04
04/27/1993	25.00	9055.00	

Construction Information

Surface Elevation (ft): 9080.00
Well Depth (ft): 120.00
Depth to Base of Grout (ft):
Depth to Top of Perforated Casing (ft): 80
Depth to Bottom of Perforated Casing (ft): 120
Source Aquifer(s): FRACTURED GRANITE

Well Measurement Summary

Start Date: 04/27/1993 End Date: 07/12/2018
Number of Measurements: 2





GROUNDWATER DETAILS

Well Name: SP-02 INDIAN MTN CENTER P69705-F

Permit Number: 69705-F

WDID: 2307030

Data Source: DWR

Location Number: SC00907522AB

USGS Site ID:

Applicant/Contact:

Physical Location

Dist N/S	Dist E/W	Q10	Q40	Q160	Sec	Township	Range	PM	UTMx	UTMy	Location Accuracy
			NW	NE	22	9.0 S	75.0 W	S	434468.0	4345811.0	GPS

Division: 1 District: 23

County: PARK

Designated Basin:

Management District:

Ten Most Recent Published Readings

Date	Depth to Water Feet Below Land Surface	Elevation of Water (ft)	Change From Previous Measure (ft)
06/21/2018	13.29	9366.71	-1.71
02/19/2011	15.00	9365.00	-25.00
07/20/2010	40.00	9340.00	

Construction Information

Surface Elevation (ft): 9380.00

Well Depth (ft): 280.00

Depth to Base of Grout (ft):

Depth to Top of Perforated Casing (ft): 200

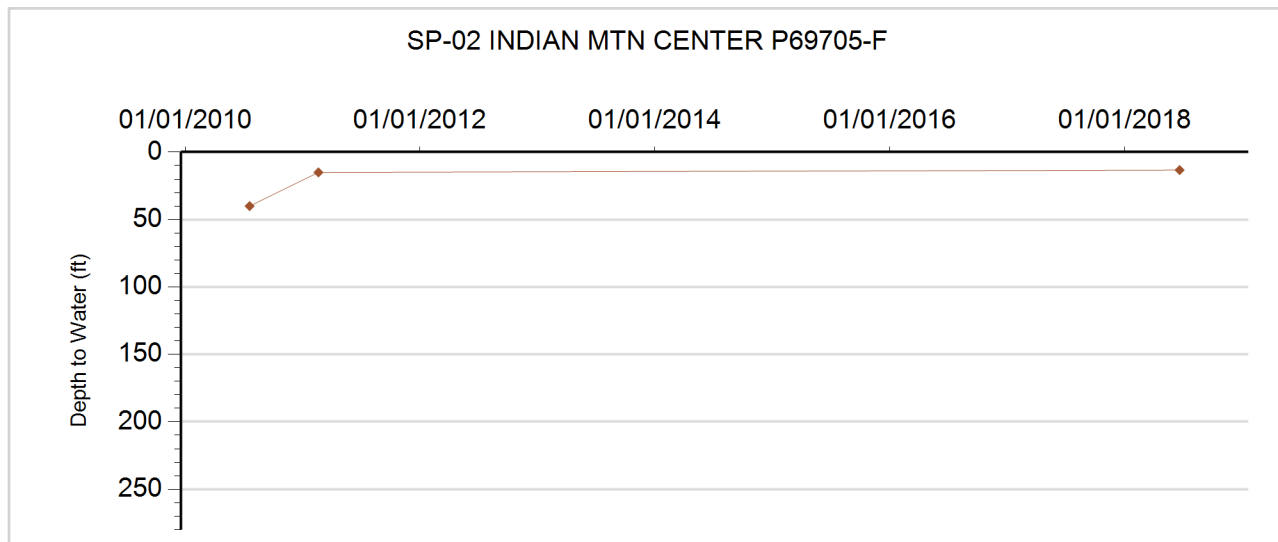
Depth to Bottom of Perforated Casing (ft): 280

Source Aquifer(s): FRACTURED GRANITE

Well Measurement Summary

Start Date: 07/20/2010 End Date: 06/21/2018

Number of Measurements: 3





GROUNDWATER DETAILS

Well Name: SP-03 CARTWRIGHT P33125-F

Permit Number: 33125-F

WDID:

Data Source: DWR

Location Number: SC00907604CD

USGS Site ID:

Applicant/Contact:

Physical Location

Dist N/S	Dist E/W	Q10	Q40	Q160	Sec	Township	Range	PM	UTMx	UTMy	Location Accuracy
			SE	SW	4	9.0 S	76.0 W	S	422758.0	4349603.0	GPS

Division: 1 District: 23

County: PARK

Designated Basin:

Management District:

Ten Most Recent Published Readings

Date	Depth to Water Feet Below Land Surface	Elevation of Water (ft)	Change From Previous Measure (ft)
06/20/2018	4.66	9620.34	-5.34
02/24/2008	10.00	9615.00	

Construction Information

Surface Elevation (ft): 9625.00

Well Depth (ft): 150.00

Depth to Base of Grout (ft):

Depth to Top of Perforated Casing (ft): 50

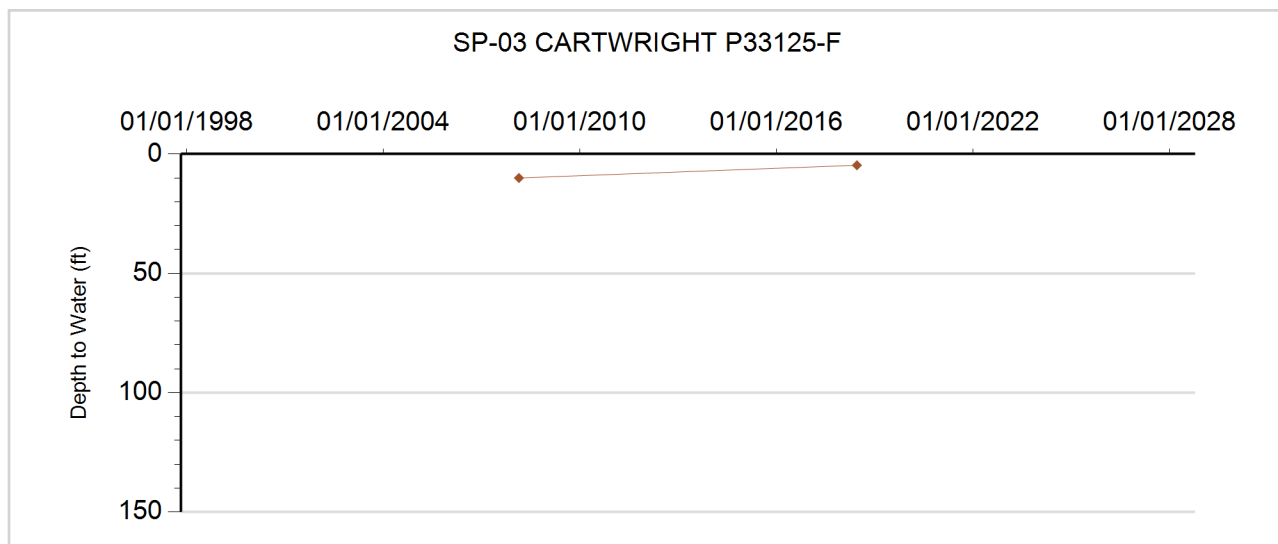
Depth to Bottom of Perforated Casing (ft): 130

Source Aquifer(s): PIERRE SHALE

Well Measurement Summary

Start Date: 02/24/2008 End Date: 06/20/2018

Number of Measurements: 2





GROUNDWATER DETAILS

Well Name: SP-04 CUSP SPMW4

Permit Number: 51563-MH

WDID:

Data Source: DWR

Location Number: SC00907604CC

USGS Site ID: 391731105540501

Applicant/Contact:

Physical Location

Dist N/S	Dist E/W	Q10	Q40	Q160	Sec	Township	Range	PM	UTMx	UTMy	Location Accuracy
			SW	SW	4	9.0 S	76.0 W	S	422276.5	4349559.7	GPS

Division: 1 District: 23

County: PARK

Designated Basin:

Management District:

Ten Most Recent Published Readings

Date	Depth to Water Feet Below Land Surface	Elevation of Water (ft)	Change From Previous Measure (ft)
06/20/2018	2.81	9632.19	0.00
06/03/2013	2.81	9632.19	

Construction Information

Surface Elevation (ft): 9635.00

Well Depth (ft): 17.00

Depth to Base of Grout (ft):

Depth to Top of Perforated Casing (ft): 11

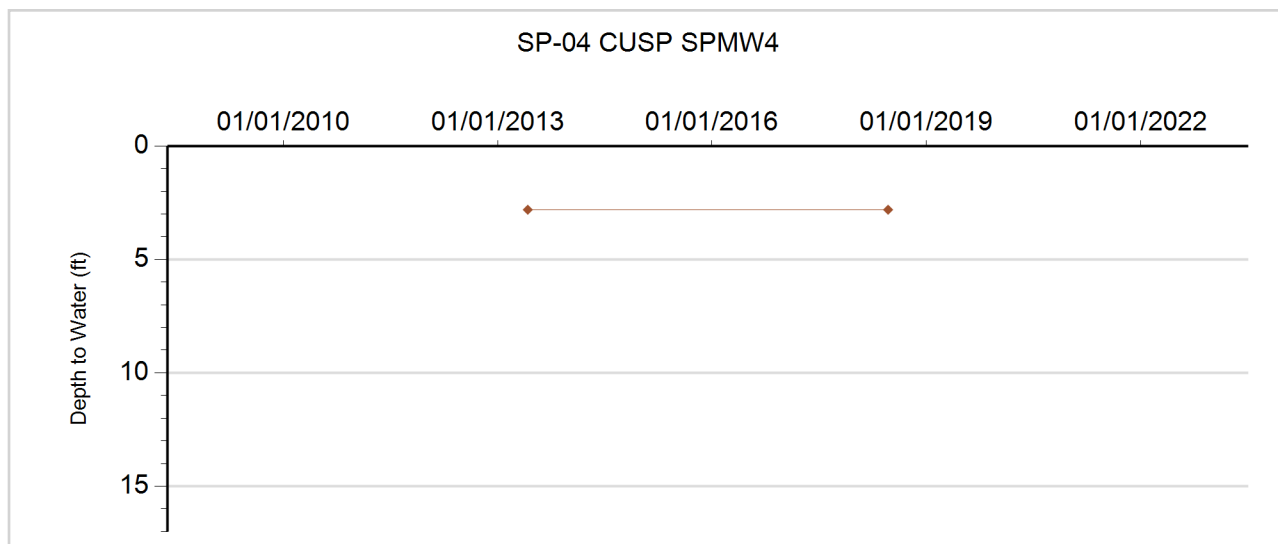
Depth to Bottom of Perforated Casing (ft): 16

Source Aquifer(s): QUATERNARY ALLUVIUM

Well Measurement Summary

Start Date: 06/03/2013 End Date: 06/20/2018

Number of Measurements: 2





GROUNDWATER DETAILS

Well Name: SP-05 CARTWRIGHT P257003

Permit Number: 257003-

WDID:

Data Source: DWR

Location Number: SC00907604CC

USGS Site ID:

Applicant/Contact:

Physical Location

Dist N/S	Dist E/W	Q10	Q40	Q160	Sec	Township	Range	PM	UTMx	UTMy	Location Accuracy
			SW	SW	4	9.0 S	76.0 W	S	422478.2	4349726.9	GPS

Division: 1 District: 23

County: PARK

Designated Basin:

Management District:

Ten Most Recent Published Readings

Date	Depth to Water Feet Below Land Surface	Elevation of Water (ft)	Change From Previous Measure (ft)
06/20/2018	10.04	9639.96	-69.96
06/14/2004	80.00	9570.00	

Construction Information

Surface Elevation (ft): 9650.00

Well Depth (ft): 420.00

Depth to Base of Grout (ft):

Depth to Top of Perforated Casing (ft): 360

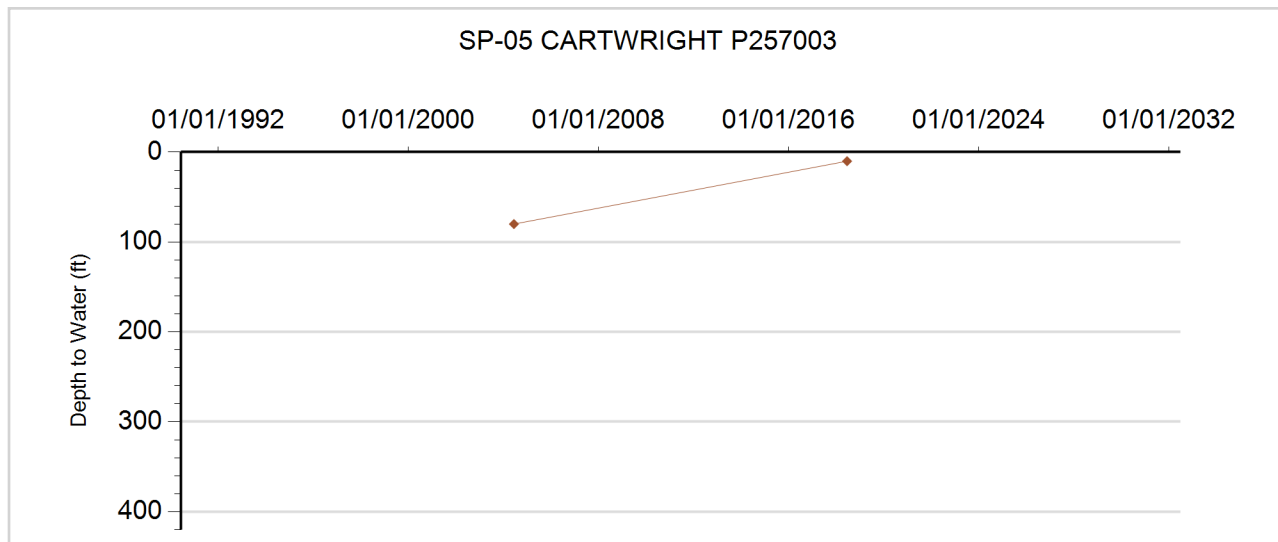
Depth to Bottom of Perforated Casing (ft): 420

Source Aquifer(s): PIERRE SHALE

Well Measurement Summary

Start Date: 06/14/2004 End Date: 06/20/2018

Number of Measurements: 2





GROUNDWATER DETAILS

Well Name: SP-06 KNUDSEN P65199

Permit Number: 65199-

WDID:

Data Source: DWR

Location Number: SC00907719AA

USGS Site ID:

Applicant/Contact:

Physical Location

Dist N/S	Dist E/W	Q10	Q40	Q160	Sec	Township	Range	PM	UTMx	UTMy	Location Accuracy
			NE	NE	19	9.0 S	77.0 W	S	410627.3	4345895.4	GPS

Division: 1 District: 23

County: PARK

Designated Basin:

Management District:

Ten Most Recent Published Readings

Date	Depth to Water Feet Below Land Surface	Elevation of Water (ft)	Change From Previous Measure (ft)
07/12/2018	20.15	10234.85	

Construction Information

Surface Elevation (ft): 10255.00

Well Depth (ft): 40.00

Depth to Base of Grout (ft):

Depth to Top of Perforated Casing (ft): 22

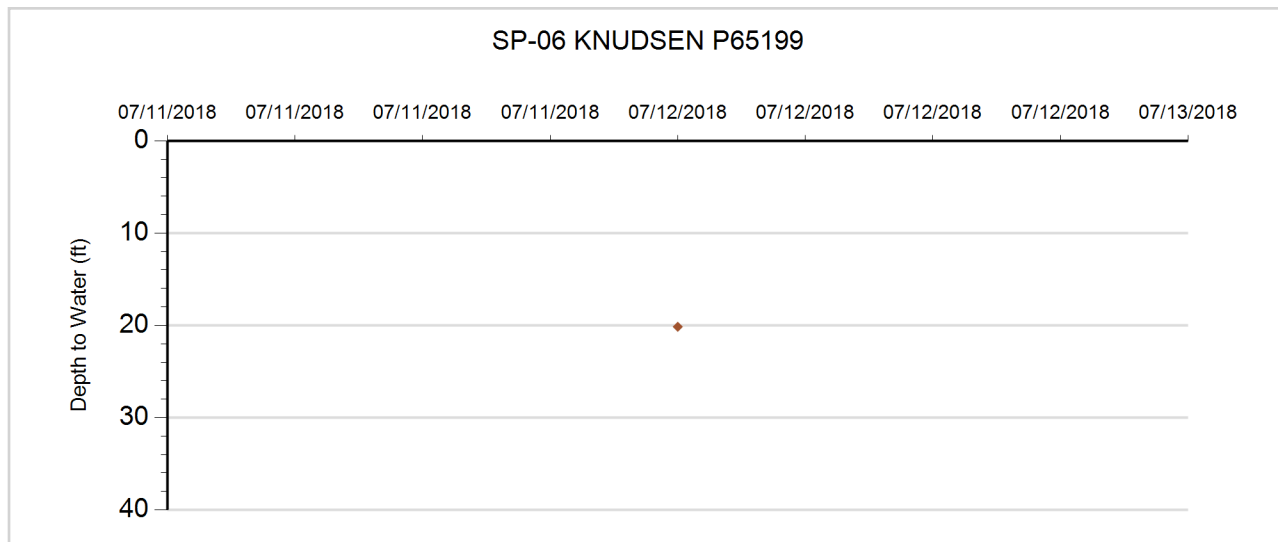
Depth to Bottom of Perforated Casing (ft): 40

Source Aquifer(s): QUATERNARY GLACIAL SEDIMENTS

Well Measurement Summary

Start Date: 07/12/2018 End Date: 07/12/2018

Number of Measurements: 1





GROUNDWATER DETAILS

Well Name: SP-07 PAFFENROTH P56503-F

Permit Number: 56503-F

WDID:

Data Source: DWR

Location Number: SC00907812CC

USGS Site ID:

Applicant/Contact:

Physical Location

Dist N/S	Dist E/W	Q10	Q40	Q160	Sec	Township	Range	PM	UTMx	UTMy	Location Accuracy
			SW	SW	12	9.0 S	78.0 W	S	408139.0	4348085.0	GPS

Division: 1 District: 23

County: PARK

Designated Basin:

Management District:

Ten Most Recent Published Readings

Date	Depth to Water Feet Below Land Surface	Elevation of Water (ft)	Change From Previous Measure (ft)
06/20/2018	67.75	10422.25	-2.25
08/25/2001	70.00	10420.00	

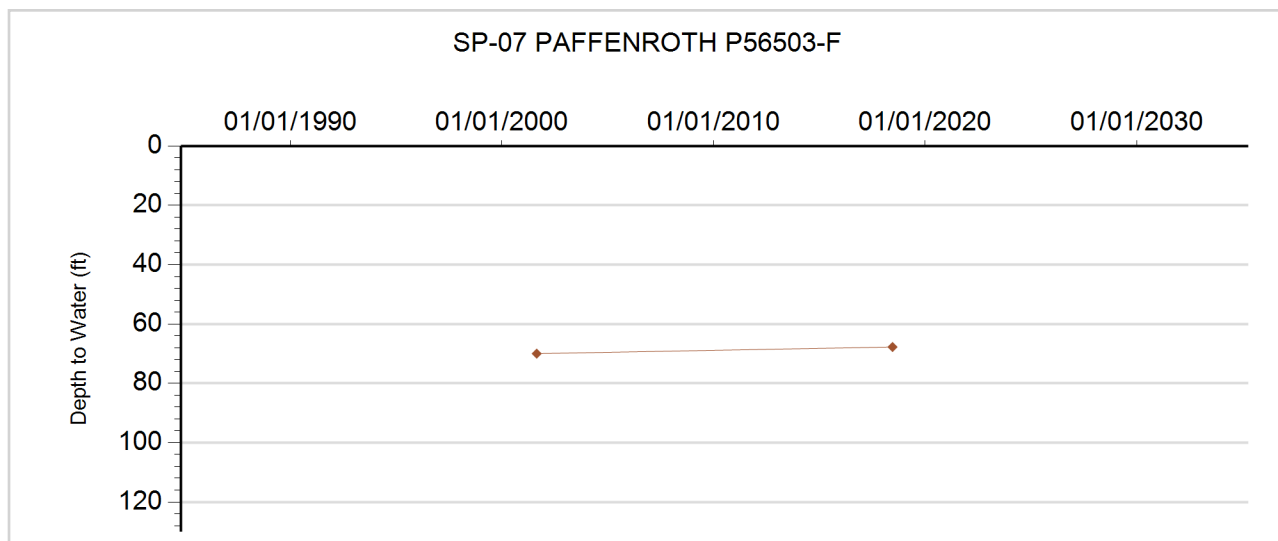
Construction Information

Surface Elevation (ft): 10490.00
Well Depth (ft): 130.00
Depth to Base of Grout (ft): 20
Depth to Top of Perforated Casing (ft): 90
Depth to Bottom of Perforated Casing (ft): 130
Source Aquifer(s): QUATERNARY GLACIAL SEDIMENTS

Well Measurement Summary

Start Date: 08/25/2001 End Date: 06/20/2018

Number of Measurements: 2





GROUNDWATER DETAILS

Well Name: SP-08 BASHLINE P143616-A

Permit Number: 143616--A

WDID:

Data Source: DWR

Location Number: SC00807825CA

USGS Site ID:

Applicant/Contact:

Physical Location

Dist N/S	Dist E/W	Q10	Q40	Q160	Sec	Township	Range	PM	UTMx	UTMy	Location Accuracy
			NE	SW	25	8.0 S	78.0 W	S	408381.0	4353201.0	GPS

Division: 1 District: 23

County: PARK

Designated Basin:

Management District:

Ten Most Recent Published Readings

Date	Depth to Water Feet Below Land Surface	Elevation of Water (ft)	Change From Previous Measure (ft)
07/12/2018	17.47	10652.53	-44.53
10/02/2002	62.00	10608.00	

Construction Information

Surface Elevation (ft): 10670.00

Well Depth (ft): 220.00

Depth to Base of Grout (ft):

Depth to Top of Perforated Casing (ft): 180

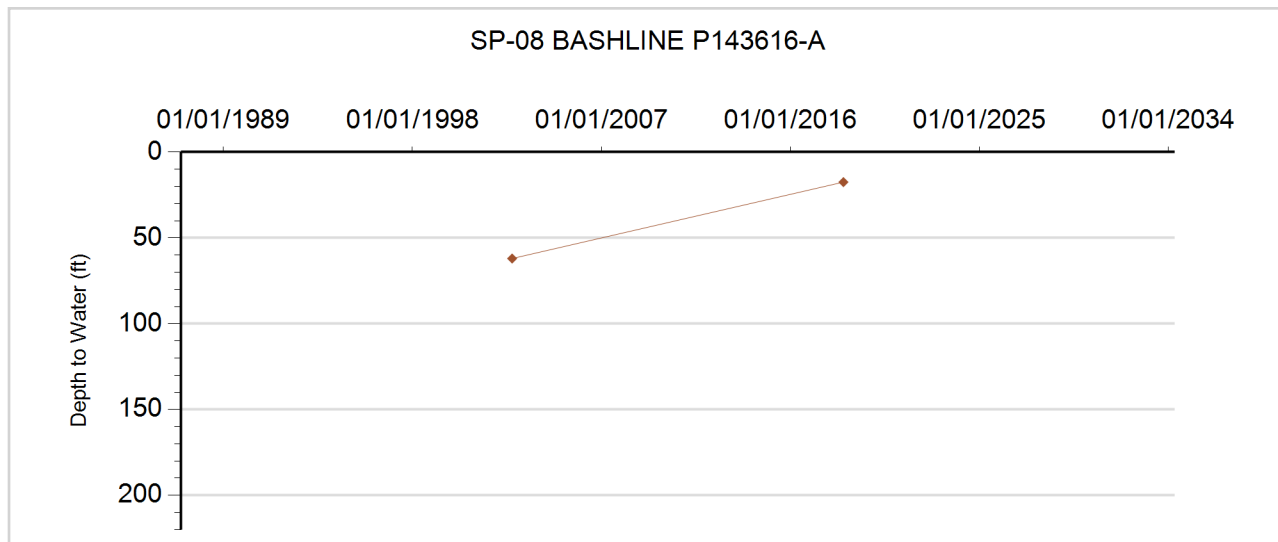
Depth to Bottom of Perforated Casing (ft): 220

Source Aquifer(s): MINTURN FM. UNIT

Well Measurement Summary

Start Date: 10/02/2002 End Date: 07/12/2018

Number of Measurements: 2





GROUNDWATER DETAILS

Well Name: SP-09 HINTZ P281132

Permit Number: 281132-

WDID:

Data Source: DWR

Location Number: SC00807825BB

USGS Site ID:

Applicant/Contact:

Physical Location

Dist N/S	Dist E/W	Q10	Q40	Q160	Sec	Township	Range	PM	UTMx	UTMy	Location Accuracy
			NW	NW	25	8.0 S	78.0 W	S	408014.9	4353907.7	GPS

Division: 1 District: 23

County: PARK

Designated Basin:

Management District:

Ten Most Recent Published Readings

Date	Depth to Water Feet Below Land Surface	Elevation of Water (ft)	Change From Previous Measure (ft)
07/12/2018	0.32	11059.68	-39.68
09/25/2009	40.00	11020.00	

Construction Information

Surface Elevation (ft): 11060.00

Well Depth (ft): 95.00

Depth to Base of Grout (ft):

Depth to Top of Perforated Casing (ft): 50

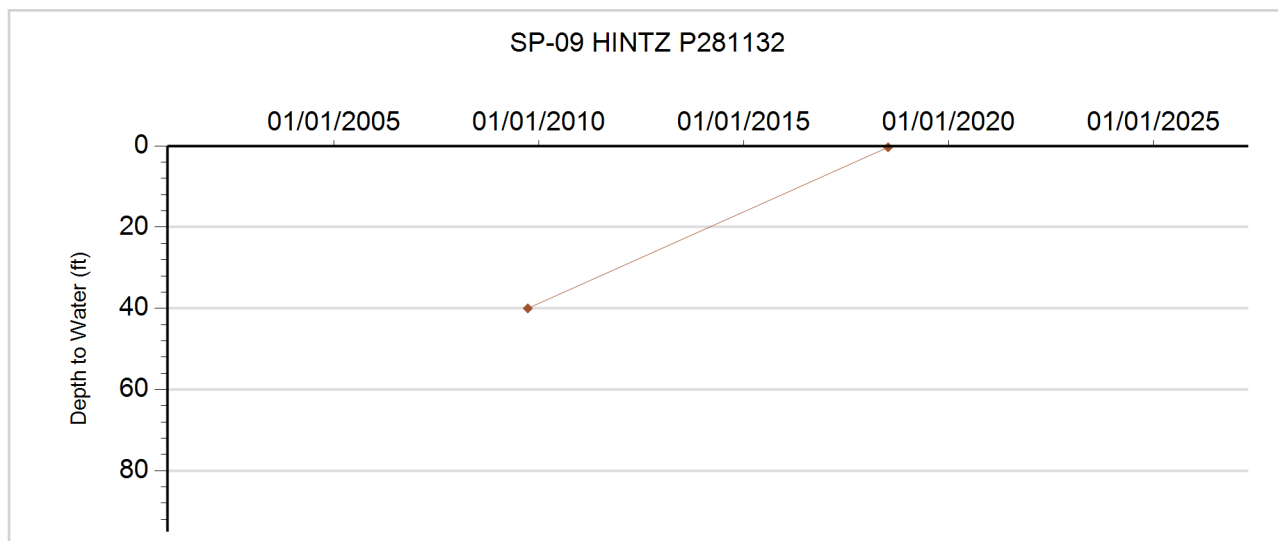
Depth to Bottom of Perforated Casing (ft): 95

Source Aquifer(s): QUATERNARY GLACIAL SEDIMENTS

Well Measurement Summary

Start Date: 09/25/2009 End Date: 07/12/2018

Number of Measurements: 2





GROUNDWATER DETAILS

Well Name: SP-10 COOPER/GREER P181571

Permit Number: 181571-

WDID:

Data Source: DWR

Location Number: SC00807825AB

USGS Site ID:

Applicant/Contact:

Physical Location

Dist N/S	Dist E/W	Q10	Q40	Q160	Sec	Township	Range	PM	UTMx	UTMy	Location Accuracy
			NW	NE	25	8.0 S	78.0 W	S	408569.9	4354194.7	GPS

Division: 1 District: 23

County: PARK

Designated Basin:

Management District:

Ten Most Recent Published Readings

Date	Depth to Water Feet Below Land Surface	Elevation of Water (ft)	Change From Previous Measure (ft)
07/12/2018	15.12	10589.88	1.12
06/28/1995	14.00	10591.00	-16.00
12/04/1994	30.00	10575.00	

Construction Information

Surface Elevation (ft): 10605.00

Well Depth (ft): 167.00

Depth to Base of Grout (ft):

Depth to Top of Perforated Casing (ft): 20

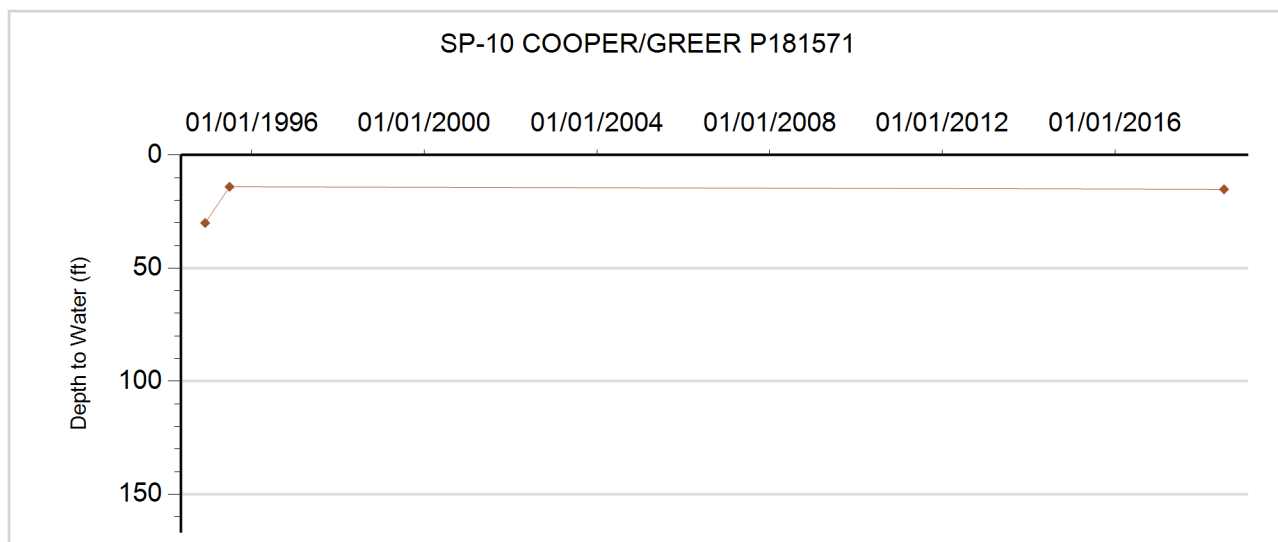
Depth to Bottom of Perforated Casing (ft): 167

Source Aquifer(s): QUATERNARY ALLUVIUM, AND
MINTURN FM. UNIT

Well Measurement Summary

Start Date: 12/04/1994 End Date: 07/12/2018

Number of Measurements: 3





GROUNDWATER DETAILS

Well Name: SP-11 HUNT P236522

Permit Number: 236522-

WDID:

Data Source: DWR

Location Number: SC00807813CD

USGS Site ID:

Applicant/Contact:

Physical Location

Dist N/S	Dist E/W	Q10	Q40	Q160	Sec	Township	Range	PM	UTMx	UTMy	Location Accuracy
			SE	SW	13	8.0 S	78.0 W	S	408515.5	4356168.5	GPS

Division: 1 District: 23

County: PARK

Designated Basin:

Management District:

Ten Most Recent Published Readings

Date	Depth to Water Feet Below Land Surface	Elevation of Water (ft)	Change From Previous Measure (ft)
07/12/2018	34.92	10915.08	4.92
11/25/2002	30.00	10920.00	0.00
10/18/2002	30.00	10920.00	

Construction Information

Surface Elevation (ft): 10950.00

Well Depth (ft): 75.00

Depth to Base of Grout (ft):

Depth to Top of Perforated Casing (ft): 45

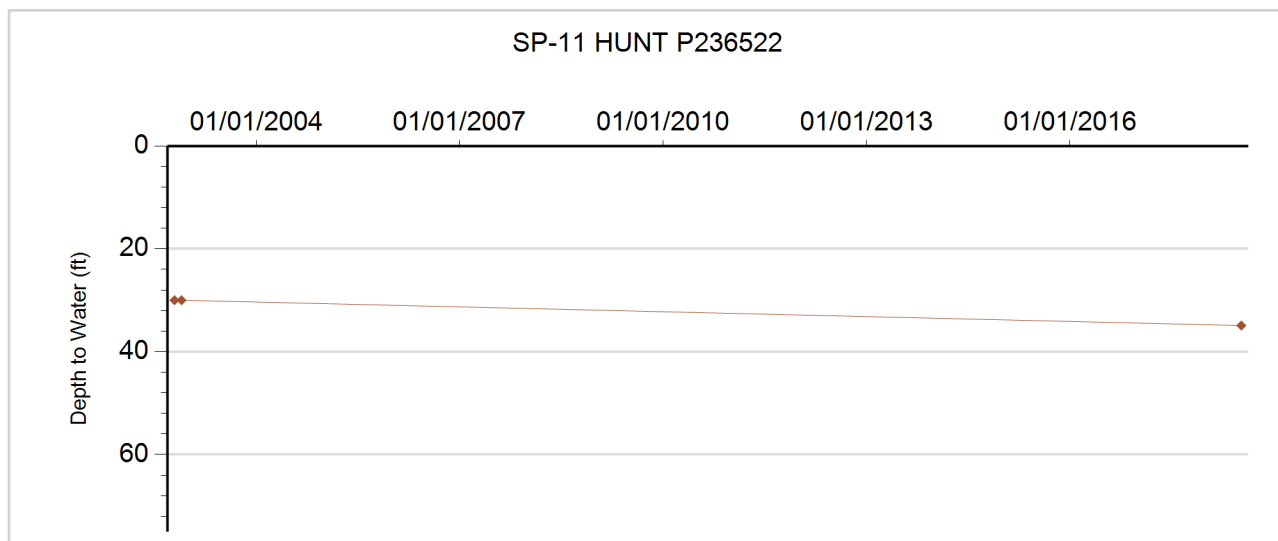
Depth to Bottom of Perforated Casing (ft): 75

Source Aquifer(s): MINTURN FM. UNIT

Well Measurement Summary

Start Date: 10/18/2002 End Date: 07/12/2018

Number of Measurements: 3





GROUNDWATER DETAILS

Well Name: SP-12 MCLAUGHLIN P141843

Permit Number: 141843-

WDID:

Data Source: DWR

Location Number: SC00807813BD

USGS Site ID:

Applicant/Contact:

Physical Location

Dist N/S	Dist E/W	Q10	Q40	Q160	Sec	Township	Range	PM	UTMx	UTMy	Location Accuracy
			SE	NW	13	8.0 S	78.0 W	S	408483.8	4356958.4	GPS

Division: 1 District: 23

County: PARK

Designated Basin:

Management District:

Ten Most Recent Published Readings

Date	Depth to Water Feet Below Land Surface	Elevation of Water (ft)	Change From Previous Measure (ft)
07/12/2018	4.34	11295.66	-13.66
06/06/1986	18.00	11282.00	

Construction Information

Surface Elevation (ft): 11300.00

Well Depth (ft): 82.00

Depth to Base of Grout (ft):

Depth to Top of Perforated Casing (ft): 44

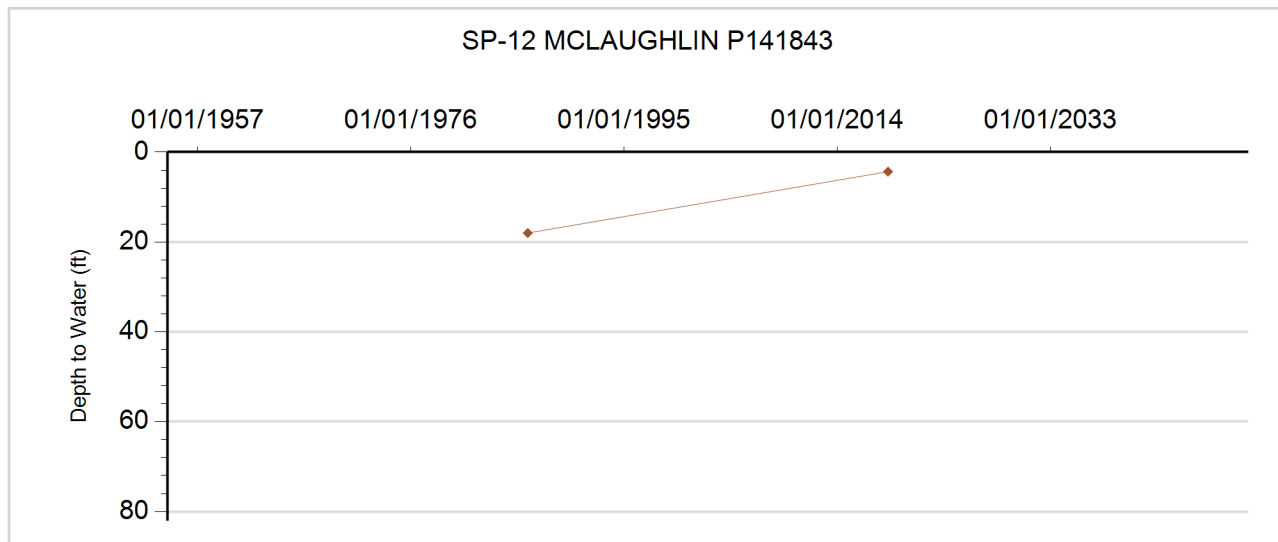
Depth to Bottom of Perforated Casing (ft): 82

Source Aquifer(s): FRACTURED GRANITE

Well Measurement Summary

Start Date: 06/06/1986 End Date: 07/12/2018

Number of Measurements: 2





GROUNDWATER DETAILS

Well Name: SP-13 CUSP SPMW3

Permit Number: 51560-MH

WDID:

Data Source: DWR

Location Number: SC01107610BC

USGS Site ID: 390639105525701

Applicant/Contact:

Physical Location

Dist N/S	Dist E/W	Q10	Q40	Q160	Sec	Township	Range	PM	UTMx	UTMy	Location Accuracy
			SW	NW	10	11.0 S	76.0 W	S	423695.6	4329435.0	GPS

Division: 1 District: 23

County: PARK

Designated Basin:

Management District:

Ten Most Recent Published Readings

Date	Depth to Water Feet Below Land Surface	Elevation of Water (ft)	Change From Previous Measure (ft)
06/20/2018	3.35	9163.65	0.47
06/03/2013	2.88	9164.12	

Construction Information

Surface Elevation (ft): 9167.00

Well Depth (ft): 19.00

Depth to Base of Grout (ft):

Depth to Top of Perforated Casing (ft): 9

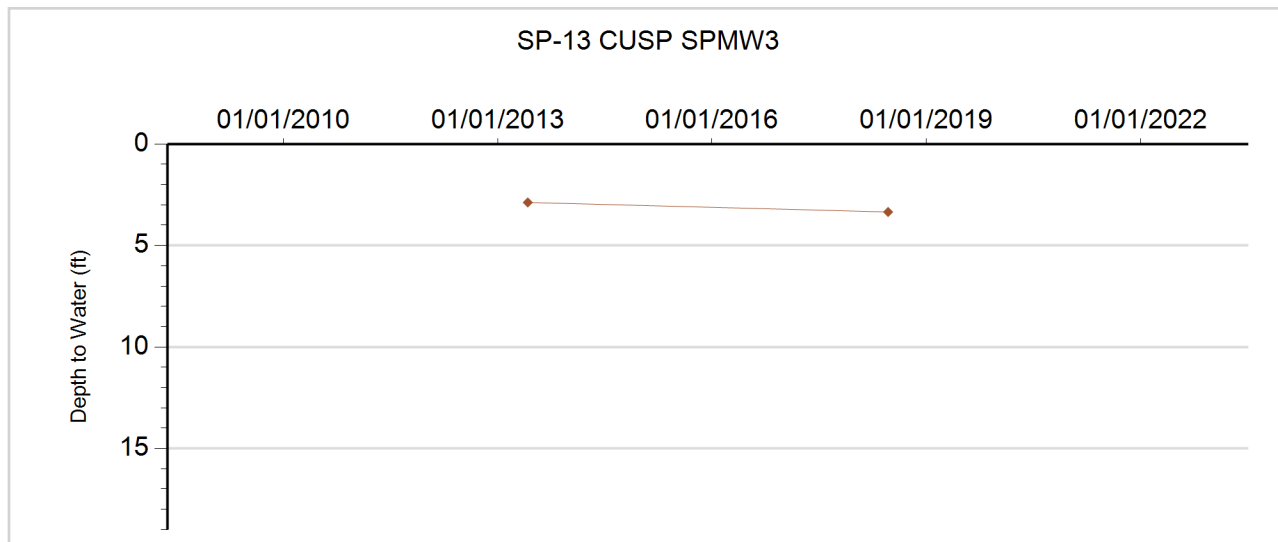
Depth to Bottom of Perforated Casing (ft): 19

Source Aquifer(s): QUATERNARY ALLUVIUM

Well Measurement Summary

Start Date: 06/03/2013 End Date: 06/20/2018

Number of Measurements: 2





GROUNDWATER DETAILS

Well Name: SP-14 MEYERS P247843

Permit Number: 247843-

WDID:

Data Source: DWR

Location Number: SC01107530BD

USGS Site ID:

Applicant/Contact:

Physical Location

Dist N/S	Dist E/W	Q10	Q40	Q160	Sec	Township	Range	PM	UTMx	UTMy	Location Accuracy
			SE	NW	30	11.0 S	75.0 W	S	428799.9	4324249.6	GPS

Division: 1 District: 23

County: PARK

Designated Basin:

Management District:

Ten Most Recent Published Readings

Date	Depth to Water Feet Below Land Surface	Elevation of Water (ft)	Change From Previous Measure (ft)
06/19/2018	4.02	8945.98	2.02
07/13/2004	2.00	8948.00	-4.00
08/27/2003	6.00	8944.00	

Construction Information

Surface Elevation (ft): 8950.00

Well Depth (ft): 74.00

Depth to Base of Grout (ft):

Depth to Top of Perforated Casing (ft): 40

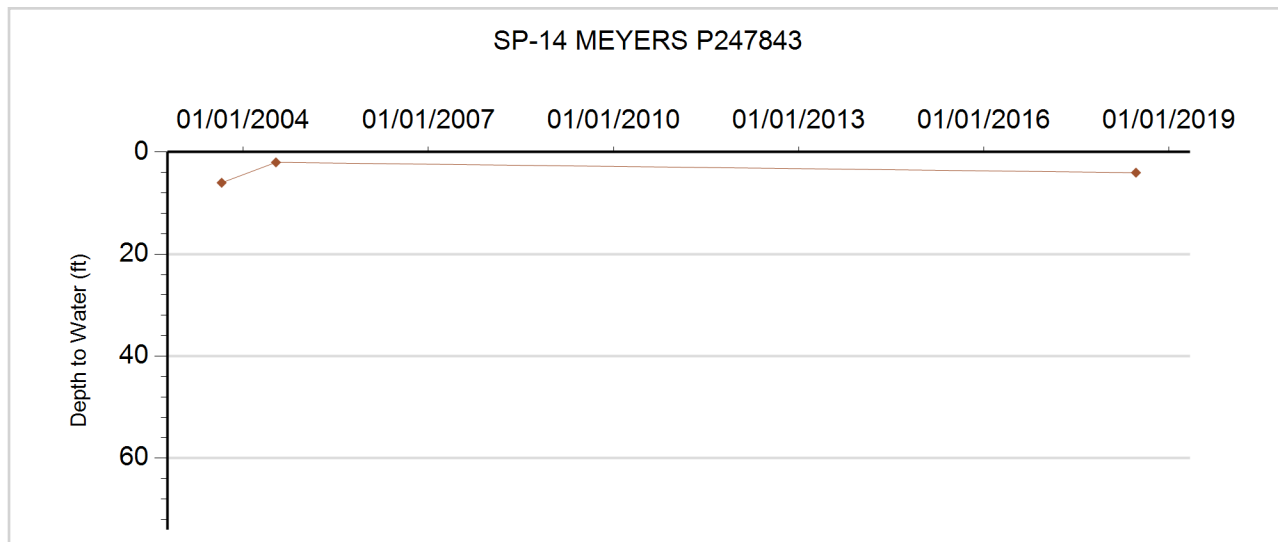
Depth to Bottom of Perforated Casing (ft): 74

Source Aquifer(s): BENTON/NIOBRARA UNIT

Well Measurement Summary

Start Date: 08/27/2003 End Date: 06/19/2018

Number of Measurements: 3





GROUNDWATER DETAILS

Well Name: SP-15 MEYERS P201400-A

Permit Number: 201400--A

WDID:

Data Source: DWR

Location Number: SC01107530CA

USGS Site ID:

Applicant/Contact:

Physical Location

Dist N/S	Dist E/W	Q10	Q40	Q160	Sec	Township	Range	PM	UTMx	UTMy	Location Accuracy
			NE	SW	30	11.0 S	75.0 W	S	429044.0	4324084.0	GPS

Division: 1 District: 23

County: PARK

Designated Basin:

Management District:

Ten Most Recent Published Readings

Date	Depth to Water Feet Below Land Surface	Elevation of Water (ft)	Change From Previous Measure (ft)
06/19/2018	2.80	8937.20	-1.20
10/02/2007	4.00	8936.00	

Construction Information

Surface Elevation (ft): 8940.00

Well Depth (ft): 90.00

Depth to Base of Grout (ft):

Depth to Top of Perforated Casing (ft): 50

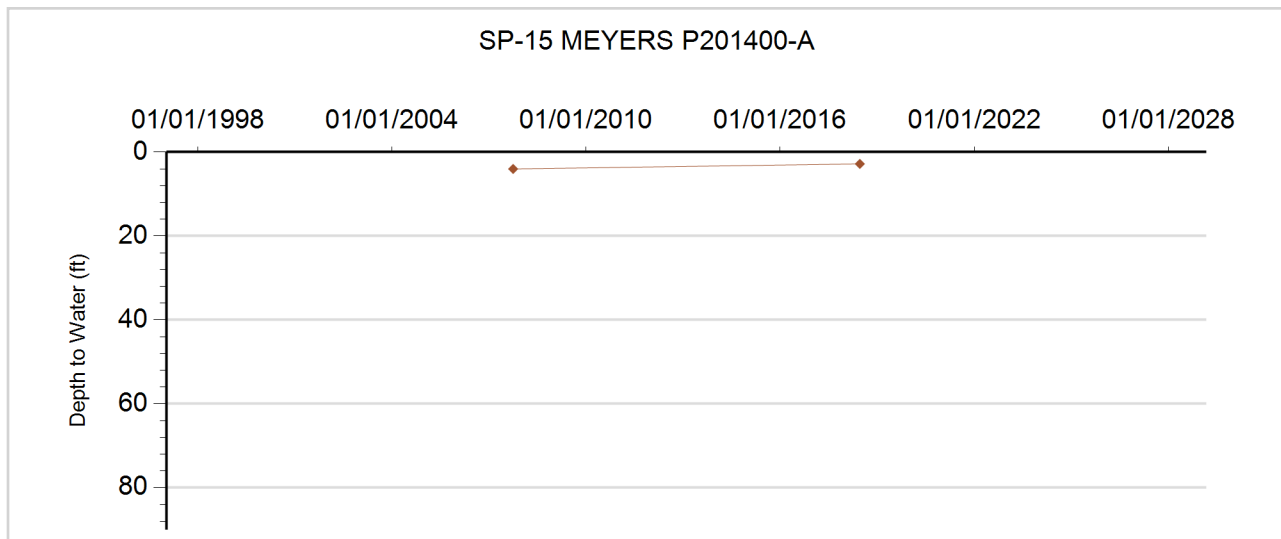
Depth to Bottom of Perforated Casing (ft): 90

Source Aquifer(s): BENTON/NIOBRARA UNIT

Well Measurement Summary

Start Date: 10/02/2007 End Date: 06/19/2018

Number of Measurements: 2





GROUNDWATER DETAILS

Well Name: SP-16 HIBBS P122339

Permit Number: 122339-

WDID:

Data Source: DWR

Location Number: SC01207508AD

USGS Site ID:

Applicant/Contact:

Physical Location

Dist N/S	Dist E/W	Q10	Q40	Q160	Sec	Township	Range	PM	UTMx	UTMy	Location Accuracy
			SE	NE	8	12.0 S	75.0 W	S	431075.0	4319561.0	GPS

Division: 1 District: 23

County: PARK

Designated Basin:

Management District:

Ten Most Recent Published Readings

Date	Depth to Water Feet Below Land Surface	Elevation of Water (ft)	Change From Previous Measure (ft)
07/12/2018	16.08	8858.92	

Construction Information

Surface Elevation (ft): 8875.00

Well Depth (ft): 50.00

Depth to Base of Grout (ft):

Depth to Top of Perforated Casing (ft):

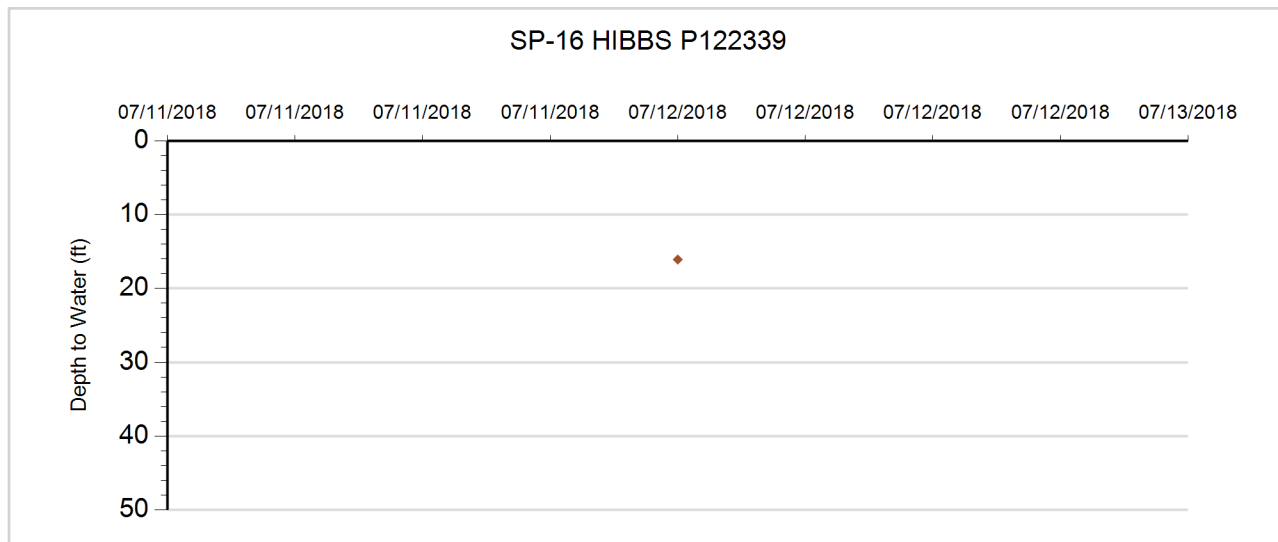
Depth to Bottom of Perforated Casing (ft):

Source Aquifer(s): QUATERNARY ALLUVIUM

Well Measurement Summary

Start Date: 07/12/2018 End Date: 07/12/2018

Number of Measurements: 1





GROUNDWATER DETAILS

Well Name: SP-17 CUSP SPMW2

Permit Number: 51561-MH

WDID:

Data Source: DWR

Location Number: SC01207418CA

USGS Site ID: 390014105423401

Applicant/Contact:

Physical Location

Dist N/S	Dist E/W	Q10	Q40	Q160	Sec	Township	Range	PM	UTMx	UTMy	Location Accuracy
			NE	SW	18	12.0 S	74.0 W	S	438574.0	4317459.0	GPS

Division: 1

District: 23

County:

PARK

Designated Basin:

Management District:

Ten Most Recent Published Readings

Date	Depth to Water Feet Below Land Surface	Elevation of Water (ft)	Change From Previous Measure (ft)
06/19/2018			
06/02/2013	3.10	8736.90	

Construction Information

Surface Elevation (ft): 8740.00

Well Depth (ft): 9.00

Depth to Base of Grout (ft):

Depth to Top of Perforated Casing (ft): 4

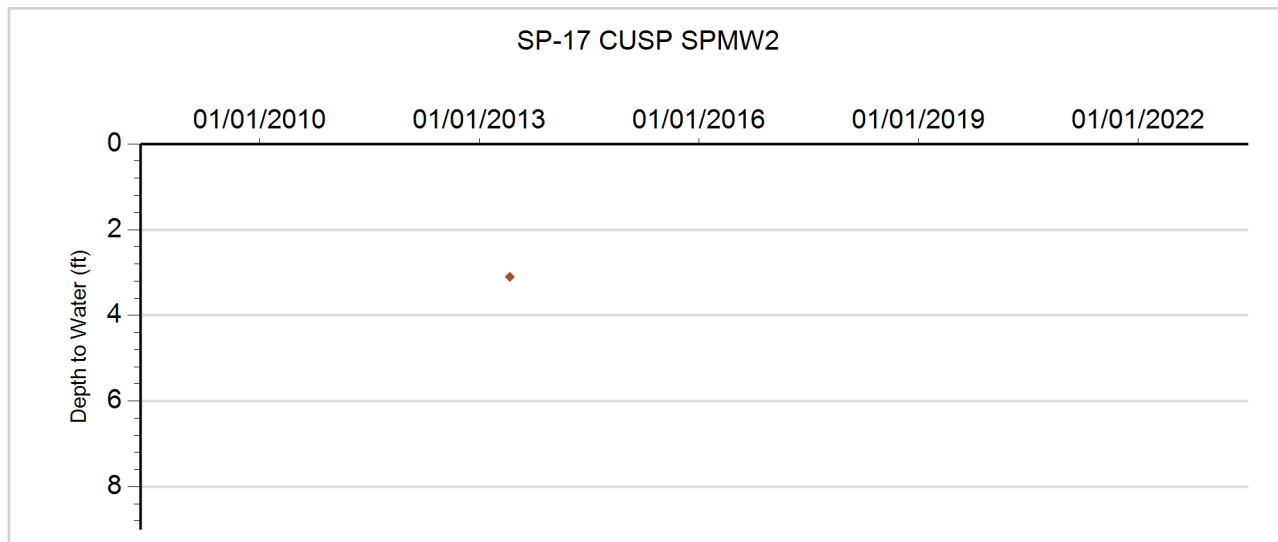
Depth to Bottom of Perforated Casing (ft): 8

Source Aquifer(s): QUATERNARY ALLUVIUM

Well Measurement Summary

Start Date: 06/02/2013 End Date: 06/19/2018

Number of Measurements: 2





GROUNDWATER DETAILS

Well Name: SP-18 CUSP SPMW1

Permit Number: 51562-MH

WDID:

Data Source: DWR

Location Number: SC01207416CB

USGS Site ID: 390010105404901

Applicant/Contact:

Physical Location

Dist N/S	Dist E/W	Q10	Q40	Q160	Sec	Township	Range	PM	UTMx	UTMy	Location Accuracy
			NW	SW	16	12.0 S	74.0 W	S	441109.0	4317314.0	GPS

Division: 1 District: 23

County: PARK

Designated Basin:

Management District:

Ten Most Recent Published Readings

Date	Depth to Water Feet Below Land Surface	Elevation of Water (ft)	Change From Previous Measure (ft)
06/19/2018	7.34	8704.66	-0.28
06/02/2013	7.62	8704.38	

Construction Information

Surface Elevation (ft): 8712.00

Well Depth (ft): 202.00

Depth to Base of Grout (ft):

Depth to Top of Perforated Casing (ft): 33

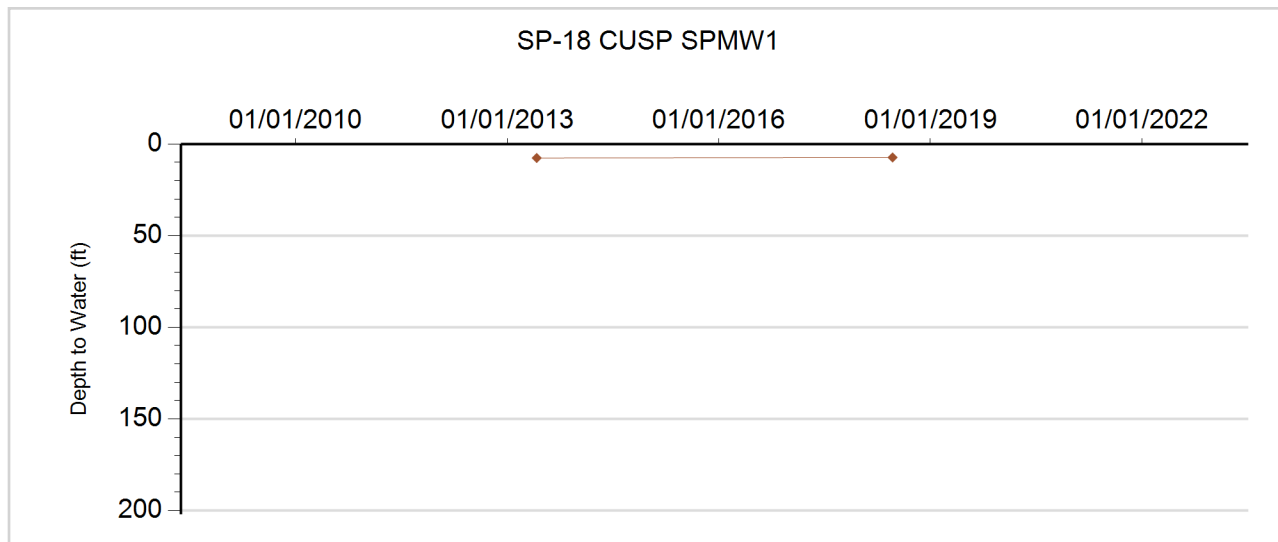
Depth to Bottom of Perforated Casing (ft): 43

Source Aquifer(s): PIERRE SHALE

Well Measurement Summary

Start Date: 06/02/2013 End Date: 06/19/2018

Number of Measurements: 2





GROUNDWATER DETAILS

Well Name: SP-19 RORA OFFICE P58310-F-R

Permit Number: 58310-F-R

WDID:

Data Source: DWR

Location Number: SC01307608DB

USGS Site ID:

Applicant/Contact:

Physical Location

Dist N/S	Dist E/W	Q10	Q40	Q160	Sec	Township	Range	PM	UTMx	UTMy	Location Accuracy
			NW	SE	8	13.0 S	76.0 W	S	420822.0	4309447.0	GPS

Division: 1 District: 23

County: PARK

Designated Basin:

Management District:

Ten Most Recent Published Readings

Date	Depth to Water Feet Below Land Surface	Elevation of Water (ft)	Change From Previous Measure (ft)
06/20/2018	21.11	8998.89	-68.89
05/23/2012	90.00	8930.00	-85.00
05/17/2012	175.00	8845.00	

Construction Information

Surface Elevation (ft): 9020.00

Well Depth (ft): 501.00

Depth to Base of Grout (ft):

Depth to Top of Perforated Casing (ft): 261

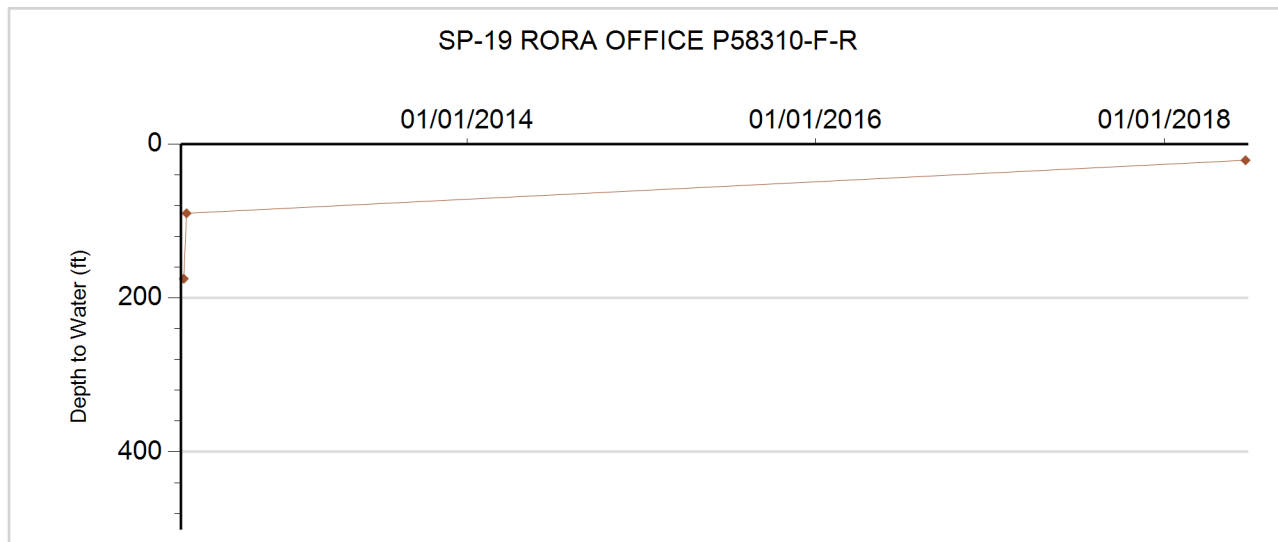
Depth to Bottom of Perforated Casing (ft): 501

Source Aquifer(s): MINTURN & BELDEN FM. UNITS

Well Measurement Summary

Start Date: 05/17/2012 End Date: 06/20/2018

Number of Measurements: 3





GROUNDWATER DETAILS

Well Name: SP-20 RORA P52566-F

Permit Number: 52566-F

WDID:

Data Source: DWR

Location Number: SC01307633BB

USGS Site ID: 385254105542201

Applicant/Contact:

Physical Location

Dist N/S	Dist E/W	Q10	Q40	Q160	Sec	Township	Range	PM	UTMx	UTMy	Location Accuracy
			NW	NW	33	13.0 S	76.0 W	S	421353.0	4304016.0	GPS

Division: 1 District: 23

County: PARK

Designated Basin:

Management District:

Ten Most Recent Published Readings

Date	Depth to Water Feet Below Land Surface	Elevation of Water (ft)	Change From Previous Measure (ft)
06/20/2018	261.10	9158.90	-0.36
10/14/2003	261.46	9158.54	4.16
05/21/2003	257.30	9162.70	-3.62
07/18/2002	260.92	9159.08	

Construction Information

Surface Elevation (ft): 9420.00

Well Depth (ft): 478.00

Depth to Base of Grout (ft): 21

Depth to Top of Perforated Casing (ft): 375

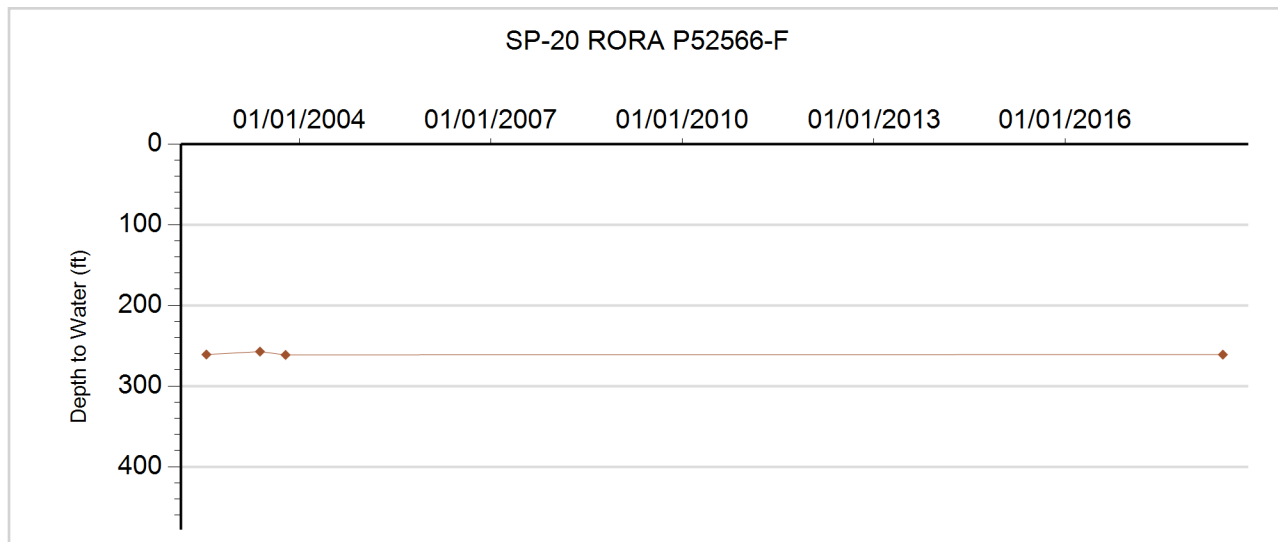
Depth to Bottom of Perforated Casing (ft): 478

Source Aquifer(s): MINTURN FM. UNIT

Well Measurement Summary

Start Date: 07/18/2002 End Date: 06/20/2018

Number of Measurements: 4





GROUNDWATER DETAILS

Well Name: SP-21 RORA SMITH P58508-F

Permit Number: 58508-F

WDID:

Data Source: DWR

Location Number: SC01307725CA

USGS Site ID:

Applicant/Contact:

Physical Location

Dist N/S	Dist E/W	Q10	Q40	Q160	Sec	Township	Range	PM	UTMx	UTMy	Location Accuracy
			NE	SW	25	13.0 S	77.0 W	S	417135.0	4304654.0	GPS

Division: 1 District: 23

County: PARK

Designated Basin:

Management District:

Ten Most Recent Published Readings

Date	Depth to Water Feet Below Land Surface	Elevation of Water (ft)	Change From Previous Measure (ft)
06/20/2018	97.19	9612.81	-142.81
11/21/2002	240.00	9470.00	

Construction Information

Surface Elevation (ft): 9710.00

Well Depth (ft): 360.00

Depth to Base of Grout (ft):

Depth to Top of Perforated Casing (ft): 320

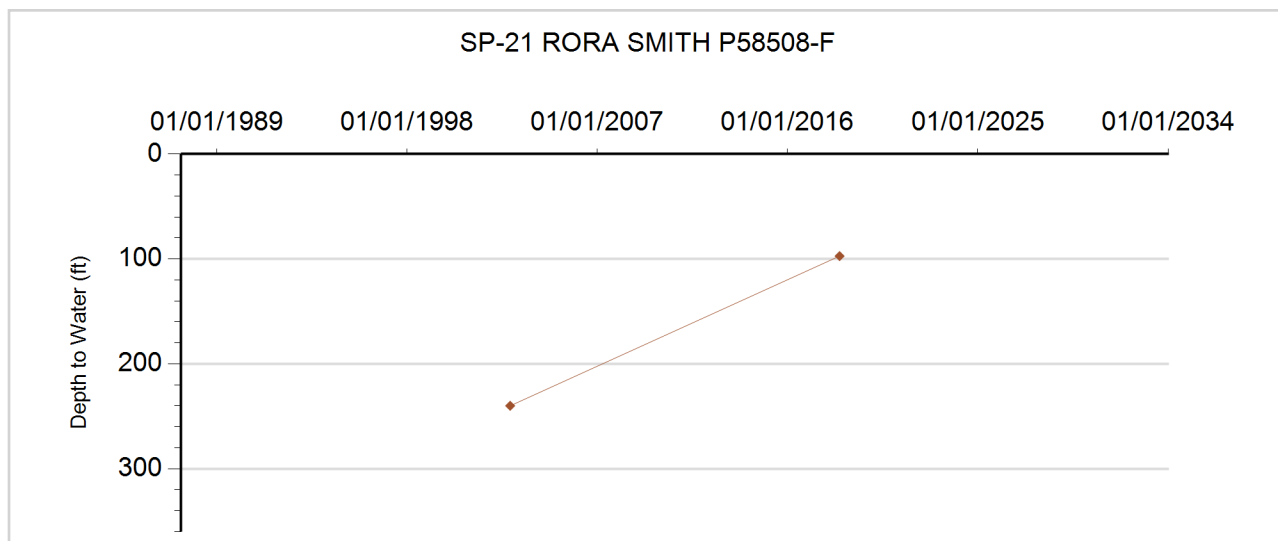
Depth to Bottom of Perforated Casing (ft): 360

Source Aquifer(s): MINTURN & BELDEN FM. UNITS

Well Measurement Summary

Start Date: 11/21/2002 End Date: 06/20/2018

Number of Measurements: 2





GROUNDWATER DETAILS

Well Name: SP-22 CORA RED WELL P26043-F
Permit Number: 26043-F
WDID: 2306769
Data Source: DWR

Location Number: SC01207714CA
USGS Site ID:
Applicant/Contact:

Physical Location

Dist N/S	Dist E/W	Q10	Q40	Q160	Sec	Township	Range	PM	UTMx	UTMy	Location Accuracy
			NE	SW	14	12.0 S	77.0 W	S	415863.2	4317489.6	GPS

Division: 1 District: 23
County: PARK
Designated Basin:
Management District:

Ten Most Recent Published Readings

Date	Depth to Water Feet Below Land Surface	Elevation of Water (ft)	Change From Previous Measure (ft)
07/12/2018	48.24	8991.76	-1.76
05/02/1980	50.00	8990.00	

Construction Information

Surface Elevation (ft): 9040.00
Well Depth (ft): 85.00
Depth to Base of Grout (ft):
Depth to Top of Perforated Casing (ft): 45
Depth to Bottom of Perforated Casing (ft): 85
Source Aquifer(s): MINTURN FM. UNIT

Well Measurement Summary

Start Date: 05/02/1980 End Date: 07/12/2018
Number of Measurements: 2

