

## Lindstrom, Linda

**From:** Butler, David  
**Sent:** Tuesday, August 28, 2018 11:01 AM  
**To:** Lindstrom, Linda  
**Cc:** Parrish, D. Michael  
**Subject:** FW: [EXTERNAL] Well C-311, C-974, and C-987  
**Attachments:** FW: [EXTERNAL] Well C-311, C-974, and C-987 - DBHYDRO metadata

Linda:

Instead of the previous email can you add info from this letter to the metadata for wells C-311, C-974, and C-987.

Thanks

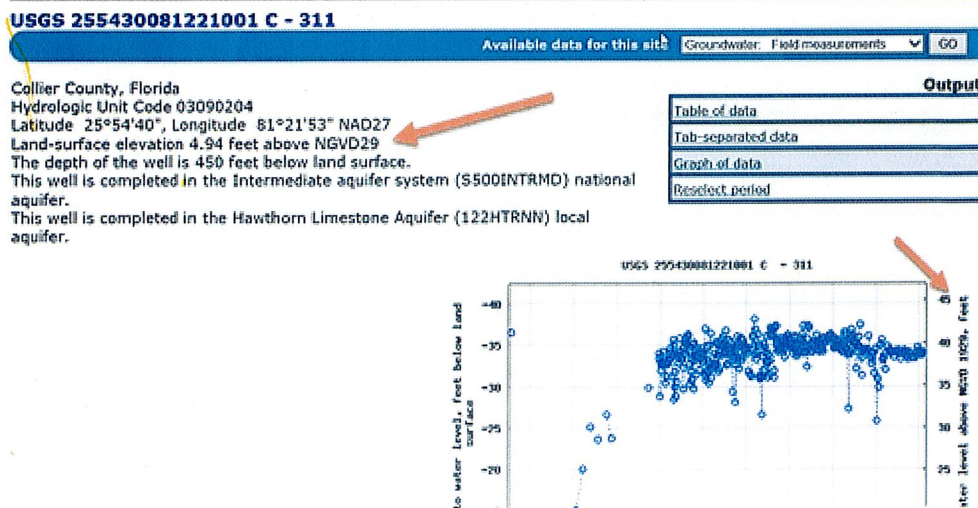
David

**From:** Hammermeister, Sara <shammer@usgs.gov>  
**Sent:** Monday, August 27, 2018 9:55 AM  
**To:** Butler, David <dbutler@sfwmd.gov>  
**Cc:** mdickman@usgs.gov  
**Subject:** Re: [EXTERNAL] Well C-311, C-974, and C-987

David,

They are all in NGVD29. Information about datum can always be found in the Water Year Summary for a continuous station, and on the main page for discrete stations (see clips below).

-Sara



## Water-Year Summary for Site USGS 260309081272601

[Click to hide state-specific text](#)

Summary of All Available Data  
Location map  
Time-series: Current Historical Observations  
Time-series: Daily Data  
Water Quality: Field/140 samples  
Groundwater: Field measurements  
Water-Year Summary  
DRIVER USGS Groundwater watch  
SITE ID: 260309081272601 - Sitefile review?  
Sensors

Available data for this site

GO

[Click to hide Water-Year Summary instructions and information](#)

- Water-Year Summary reports summarize a year of hydrologic data in a printer-friendly format.
- For water years 2014 onward, choose a water year and parameter and an on-demand Water-Year Summary report will be generated.
- For water years 2006 through 2013, choose a water year and an Annual Water Data Report will be provided.
- For water years 2005 and earlier, Annual Water Data Reports may be [available in digital format](#).
- Not all sites have reports available for every water year.

### Available Parameters

62690 Elevation, GW, NGVD2011(Max.)

Select a water year

Water year 2017: 2016-10-01 to 2017-09-30

GO

### 260309081272601 C 987

Intermediate aquifer system  
M Hawthorn Limestone Aquifer

LOCATION - lat 26°03'10", long 81°27'25" referenced to North American Datum of 1983, in SW 1/4 SW 1/4 sec 06, T.51 S., R.29 E., Collier County, FL, Hydrologic Unit 03090204, 35 ft north of James Scur 3rd east of Everglades Boulevard and 9.5 mi northwest of Copeland.

### GROUNDWATER RECORDS

WELL CHARACTERISTICS - Depth 370 ft. Upper casing diameter 6 in; top of first opening 280 ft, bottom of last opening 370 ft.

DATUM - Land-surface datum is 9.49 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of 3/4-in. elbow, 3.12 ft above land-surface datum, Dec. 11, 2003 to present. See REMARKS.

On Fri, Aug 17, 2018 at 4:44 PM, Butler, David <[dbutler@sfwmd.gov](mailto:dbutler@sfwmd.gov)> wrote:

Hi Sara and Mark:

Can one of you verify that the measurement are in equivalent fresh water head referenced to NGVD?

Thanks

David

**From:** Butler, David  
**Sent:** Wednesday, August 15, 2018 11:50 AM  
**To:** 'Hammermeister, Sara' <[shammer@usgs.gov](mailto:shammer@usgs.gov)>; [mdickman@usgs.gov](mailto:mdickman@usgs.gov)  
**Subject:** RE: [EXTERNAL] Well C-311, C-974, and C-987

Sara and Mark:

Thanks for your prompt responses.

Your cooperation is greatly appreciated.

David

**From:** Hammermeister, Sara <[shammer@usgs.gov](mailto:shammer@usgs.gov)>  
**Sent:** Wednesday, August 15, 2018 10:07 AM  
**To:** Butler, David <[dbutler@sfwmd.gov](mailto:dbutler@sfwmd.gov)>  
**Cc:** [mdickman@usgs.gov](mailto:mdickman@usgs.gov)  
**Subject:** Re: [EXTERNAL] Well C-311, C-974, and C-987

Good morning David,

All three of the wells you'e listed in the email are artesian wells that are in the confined aquifer. Meaning they are under constant pressure and therefore will have water-level elevations that are higher than the published land surface datum. If left to their own devices, they would be free flowing.

These wells are not measured with a steel tape but rather a calibrated pressure gage that reads specifically in feet.

C-311 and C-974 are discrete wells, meaning they are a one time measurement every other month. C-987 is a continuous pressure well where there is special instrumentation that is gathering real-time data every hour with discrete measurements every month to check the calibration of equipment.

I hope this helps to answer your questions. Should you have more, please feel free to give me a call or write back.

-Sara

On Wed, Aug 15, 2018 at 6:56 AM, Mark Dickman <[mdickman@usgs.gov](mailto:mdickman@usgs.gov)> wrote:

Hi David.

In general, some wells on the west coast are artesian at times and are not at other times, affecting the method of measuring the water level. Those stations are operated out of the Ft Myers office, and Sara Hammermeister, the field office chief, is CCd and will be able to provide the details on these sites.

Regards,

Mark

Mark R. Dickman

Davie Office Hydrologic Data Section Chief

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**From:** Butler, David [mailto:[dbutler@sfwmd.gov](mailto:dbutler@sfwmd.gov)]

**Sent:** Tuesday, August 14, 2018 2:17 PM

**To:** [mdickman@usgs.gov](mailto:mdickman@usgs.gov)

**Subject:** [EXTERNAL] Well C-311, C-974, and C-987

Hi Mark:

My name is David Butler with SFWMD. We are developing a model for the Lower West Coast, which includes Collier County. As part of this study, we encountered 3 wells where the water levels seem anomalously high:

C-311 - 255430081221001

C-974 - 260941081324201

C-987 - 260309081272601

These wells are completed in the Hawthorn Limestone Aquifer (122HTRNN).

1. The wells have a land surface elevation between 4 to 11 ft NGVD. However, the wells have water levels over 30 ft NGVD. This seems unusual that the water levels would be that high.

2. In our data base, wells C-311 and C-974 have random interval time readings; the readings are from a tape. Well C-987 has both maximum day and random samplings.

However, the USGS site has the methods of measurement as G (Pressure-gage measurement) and H (Calibrated pressure-gage measurement).

a) Can you verify which measurement methods are used?

b) Can you provide the formula/methodology for converting the pressure measurements into NGVD.

Thanks

David

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Sara Hammermeister

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