

Approving Total Dissolved Gas Data for Publication

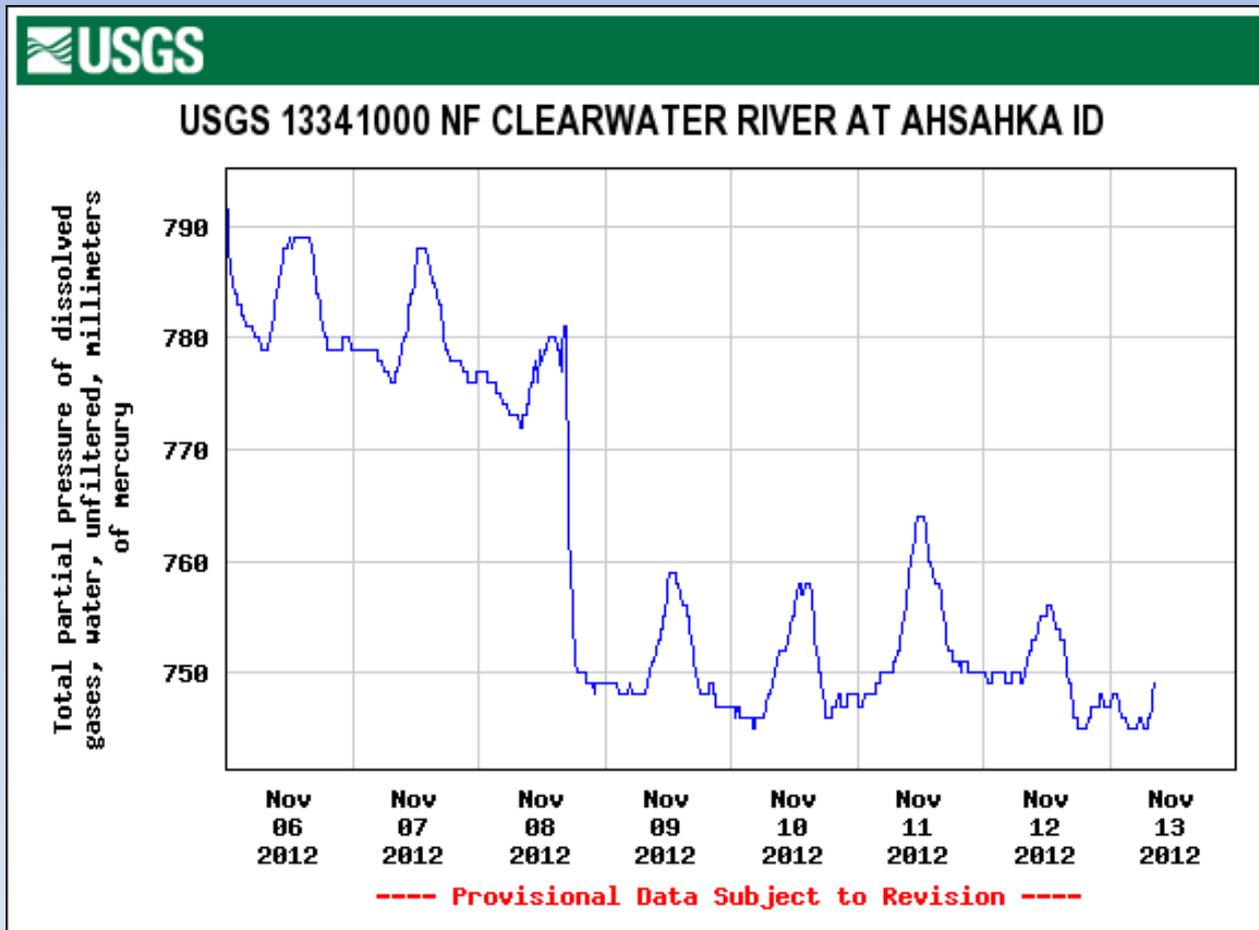
Kevin Wright

Mid-Columbia Field Office Chief

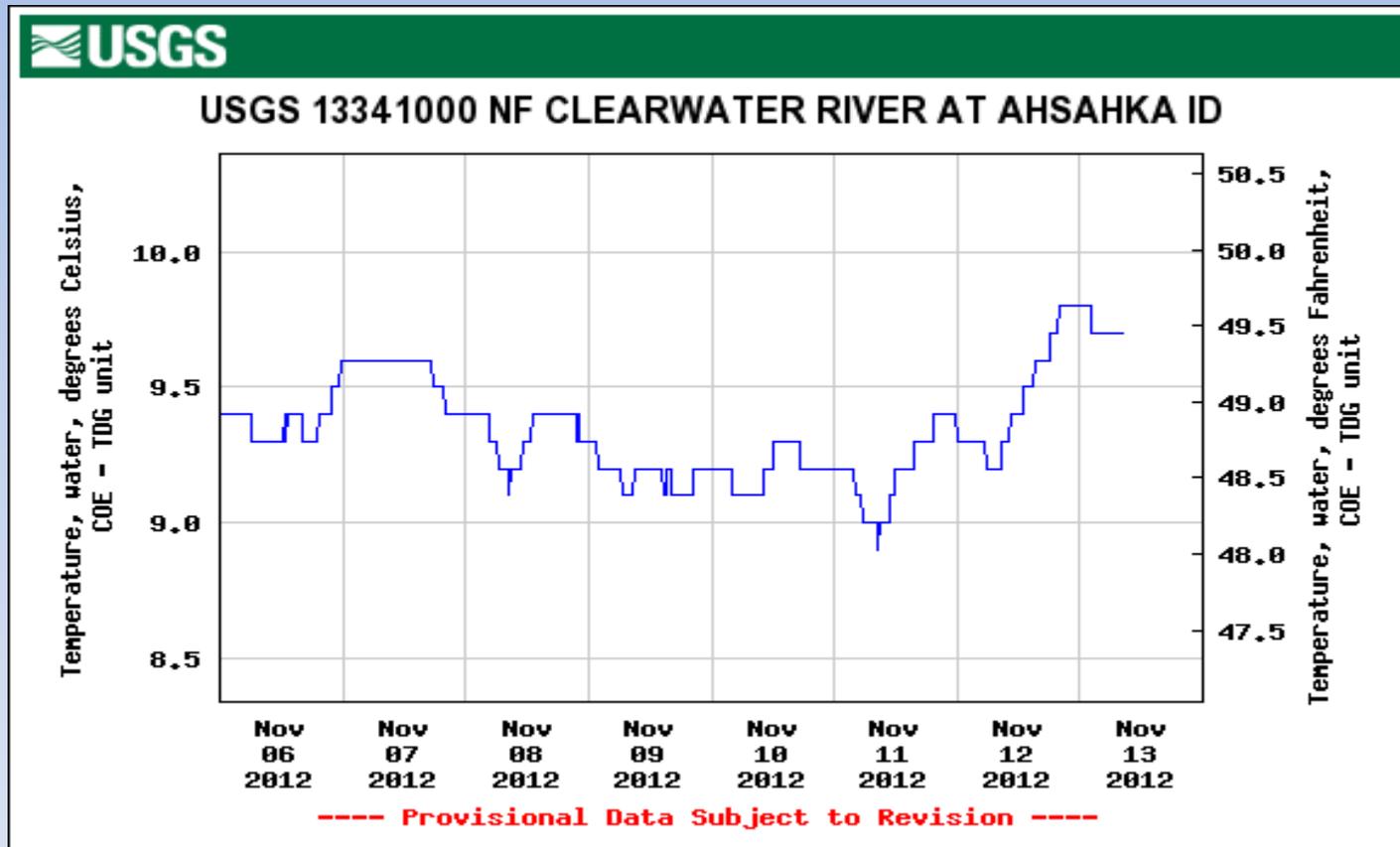
TDG Meeting Nov. 15, 2012

Initial Screening of data

<http://waterdata.usgs.gov>



There are thresholds set up in the database to do a initial screening to remove severe erroneous data.



Field Site visit enter into database.

File Edit View Help

Start Report N F CLEARWATER R A AHSAHKA ID Snsr Rdng Summ *

Sensor Reading Summary

ASCII

Report

Print...

Save...

Options

Font Size 13

U.S. DEPARTMENT OF THE INTERIOR - U.S. GEOLOGICAL SURVEY - WATER RESOURCES

Sensor Reading Summary

STATION NUMBER 13341000 NORTH FORK CLEARWATER RIVER AT AHSAHKA, ID TYPE:Stream AGENCY USGS STATE 16 COUNTY 035

LATITUDE 463011.48 LONGITUDE 1161918.15 NAD27 DRAINAGE AREA 2440 CONTRIBUTING DRAINAGE AREA DATUM 1150 NGVD29

Date Processed:2012-11-13 09:40 By kswright

SUMMARY OF GAGE SENSOR READINGS (* indicates primary reference gage)
DD: 1 Air pressure FROM DCP (mm/Hg) at location

ST	DATE	PARTY	REFERENCE GAGE READINGS	PRIMARY RECORDER READINGS	*IND.*W/IN*	NEAREST UNIT	VALUE
* TIME *	* READING	ACCY NAME	* READING	ACCY NAME	*CORR*ACCY*	VALUE RMK	TIME CORR
L 2011/10/20 DDC	08:31		737.8 *BAROM:31759 - 1			737.7	08:30
			[00025 - BAROM] (BAROM):31759 - 1				REMARKS:
L 2011/11/17 DDC	09:16		731.1 *BAROM:31759 - 1			731.0	09:15
			[00025 - BAROM] (BAROM):31759 - 1				REMARKS:
L 2011/12/15 DDC/R.H	09:16		742.2 *BAROM:31759 - 1			742.1	09:15
			[00025 - BAROM] (BAROM):31759 - 1				REMARKS:
L 2012/01/12 DDC	10:02		749.1 *BAROM:31759 - 1			749.0	10:00
			[00025 - BAROM] (BAROM):31759 - 1				REMARKS:
L 2012/01/19 DDC	16:31		724.0 *BAROM:31759 - 1			724.1	16:30
			[00025 - BAROM] (BAROM):31759 - 1				REMARKS:
L 2012/01/26 DDC	11:03		735.9 *BAROM:31759 - 1			736.0	11:00
			[00025 - BAROM] (BAROM):31759 - 1				REMARKS:
L 2012/02/03 DDC							

SUMMARY OF GAGE SENSOR READINGS (* indicates primary reference gage)
DD: 1 Air pressure FROM DCP (mm/Hg) at location

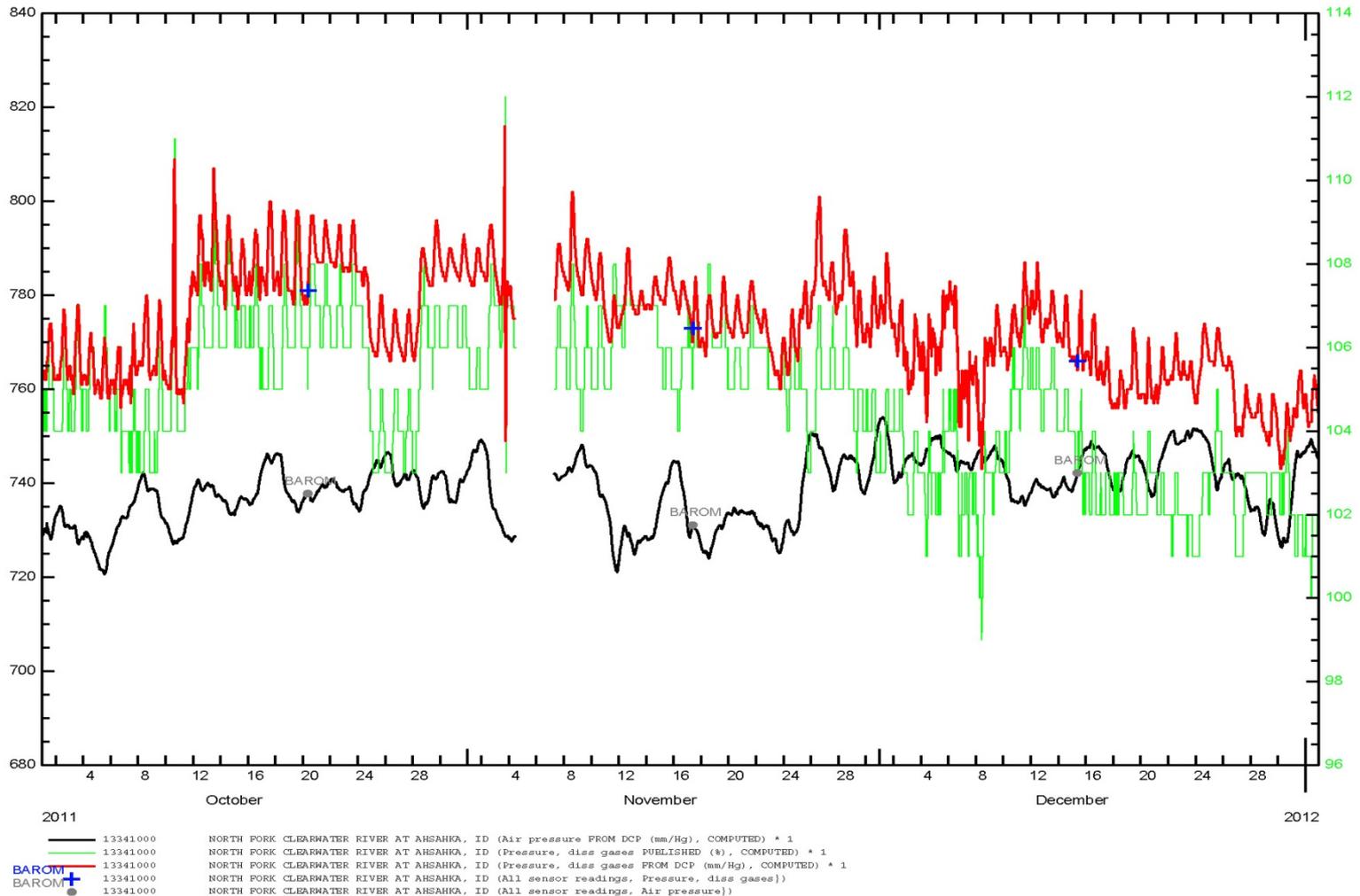
Missing real time data recovered

- Data stored on the datalogger is downloaded.
- In the office the data is loaded into the database.
- Bad data spreadsheet is reviewed along with both sets of data. Real Time and Datalogger data are plotted to see if any data is available to merge due to missing transmissions.

Merging datasets

- Available datalogger data is merged with the real time data to make a complete dataset.
- After all data is merged and erroneous data removed for the three parameters TDG, BP and WT, the data sets are reprocessed to produce % Sat for all sites.

Plot three months of data per site.



After data is screened for last of bad values a Station Primary is run to compute daily values.

```

sun2dwtcm.wr.usgs.gov - PUTTY
727.7 727.5 727.5

More? [Y/N DEFAULT=Y]:
<NEW PAGE>

      U.S. DEPARTMENT OF THE INTERIOR - U.S. GEOLOGICAL SURVEY - WATER RESOURCES

STATION:13341000 NORTH FORK CLEARWATER RIVER AT AHSAHKA, ID TYPE:STREAM AGENCY:USGS STATE:16 COUNTY:035
LATITUDE: 463011.48 LONGITUDE: 1161918.15 NAD27 DRAINAGE AREA:2440 CONTRIBUTING DRAINAGE AREA: DATUM:1150 NGVD29
Date Processed: 2012-11-13 11:10 By kswright
Primary Computations of Air pressure
Air pressure FROM DCP (mm/Hg)
Time zone: PST DST used

Stored statistics: Maximum, Minimum, Mean
Input DD 1 (00025) Air pressure FROM DCP (mm/Hg)
PROVISIONAL DATA FOR PERIOD 10/01/2011 to 09/30/2012
working

----- (00025) Air pressure mm/Hg -----
-----
---- PARAM -- CORR | MEAN | Value At Indicated Hours
Maximum | Computed |
Flags Date Time Minimum | Final | 0000 0100 0200 0300 0400 0500 0600 0700
-----|-----|-----
10-11-2011 2400 737.7 | 731.5 | 729.0 727.9 728.1 728.2 728.3 728.2 728.5 729.5
0045 727.9 | 731.5 | 728.8 729.3 730.1 730.7 731.3 731.6 731.7 732.5
| | | 732.8 733.3 734.0 734.8 735.3 735.9 736.5 737.2
-----|-----|-----
10-12-2011 0830 740.8 | 739.4 | 737.7 738.3 738.9 739.2 739.3 739.5 739.8 740.2
0000 737.7 | 739.4 | 740.7 740.7 740.6 740.3 739.9 739.2 738.9 738.8
| | | 738.4 738.4 738.4 738.7 738.7 739.0 739.5 739.6
-----|-----|-----
10-13-2011 0200 740.1 | 738.6 | 739.7 740.0 740.1 739.8 739.7 739.4 739.5 739.4
1645 737.1 | 738.6 | 739.5 739.4 739.4 739.4 739.0 738.6 738.1 737.5
| | | 737.2 737.1 737.2 737.5 737.4 737.5 737.3 737.2
-----|-----|-----
10-14-2011 0000 737.2 | 735.1 | 737.2 736.9 736.7 736.7 736.3 736.2 736.4 736.2
1800 733.3 | 735.1 | 736.4 736.2 736.1 735.7 735.4 734.6 734.3 733.9
| | | 733.5 733.5 733.3 733.3 733.7 733.7 733.8 733.6
-----|-----|-----
10-15-2011 1200 737.2 | 736.0 | 733.5 733.7 734.3 734.4 734.6 734.8 735.2 735.6
0045 733.2 | 736.0 | 736.1 736.4 736.8 736.9 737.2 737.1 736.9 736.8
| | | 736.7 736.6 736.5 736.7 736.8 736.6 736.6 736.5
-----|-----|-----
10-16-2011 2400 742.7 | 737.6 | 736.2 735.9 736.0 735.4 735.4 735.7 735.8 735.6
0300 735.4 | 737.6 | 735.8 736.3 736.6 736.7 737.0 737.1 737.4 737.6
| | | 737.9 737.8 738.6 739.5 740.3 741.1 741.7 742.3
-----|-----|-----
10-17-2011 0930 746.3 | 744.9 | 742.7 743.0 743.7 743.9 744.2 744.6 745.0 745.2
0000 742.7 | 744.9 | 745.6 746.1 746.2 746.1 745.9 745.4 745.1 744.8
| | | 744.4 744.3 744.3 744.8 745.0 745.2 745.7 745.9
-----|-----|-----
10-18-2011 0315 746.4 | 742.7 | 746.1 746.1 746.3 746.3 746.2 746.2 746.2 746.0
2400 737.2 | 742.7 | 746.1 746.1 745.7 744.9 743.9 742.6 741.5 740.5
| | | 739.8 739.1 738.6 738.4 738.1 737.9 737.8 737.6
-----|-----|-----
10-19-2011 0000 737.2 | 735.6 | 737.2 737.2 737.1 736.8 736.4 736.4 736.1 736.1
1645 733.8 | 735.6 | 736.3 736.2 735.9 735.8 735.2 734.6 734.1 734.0
| | | 734.0 734.2 734.2 734.4 734.9 735.3 735.8 736.0
-----|-----|-----
10-20-2011 1045 738.2 | 737.1 | 736.0 736.5 736.8 736.9 736.8 737.2 737.2 737.3
0000 736.0 | 737.1 | 737.7 737.9 738.1 738.0 737.6 736.9 736.4 736.4
| | | 736.2 736.1 736.4 736.7 736.9 737.1 737.4 737.6
-----|-----|-----

```

Then a daily value table is created.

sun2dwatcm.wr.usgs.gov - PuTTY

U.S. DEPARTMENT OF THE INTERIOR - U.S. GEOLOGICAL SURVEY - WATER RESOURCES

STATION:13341000 NORTH FORK CLEARWATER RIVER AT AHSAHKA, ID TYPE:STREAM AGENCY:USGS STATE:16 COUNTY:035
LATITUDE: 463011.48 LONGITUDE: 1161918.15 NAD27 DRAINAGE AREA:2440 CONTRIBUTING DRAINAGE AREA: DATUM:1150 NG
Date Processed: 2012-11-13 11:13 By kswright
Lowest aging status in period is WORKING
DD #3, PUBLISHED

Total partial pressure of dissolved gases, water, unfiltered, percent of saturation
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	106	104	105	106	105	105	105	103	104	102	100	101
2	106	104	105	108	105	106	105	103	104	103	99	101
3	107	104	105	112	103	107	104	102	103	101	97	100
4	106	104	105	---	---	---	104	101	103	103	101	102
5	107	104	105	---	---	---	105	102	103	103	102	102
6	105	103	105	---	---	---	105	101	104	103	102	102
7	105	103	104	---	---	---	103	101	103	103	101	102
8	105	103	104	108	105	106	104	99	102	103	101	102
9	106	103	104	107	104	105	104	102	103	104	101	103
10	111	104	105	107	105	106	106	103	104	104	101	103
11	106	104	105	108	105	106	107	104	105	104	99	102
12	108	105	106	108	106	107	106	104	105	104	101	102
13	109	106	107	107	107	107	106	104	105	103	102	103
14	109	106	107	107	106	107	105	104	104	105	102	103
15	107	106	106	106	105	106	105	102	10	10	102	103
16	108	105	106	106	104	105	104	102	10	10	102	103
17	107	105	106	107	105	106	103	102	10	10	102	103
18	108	105	106	108	106	107	103	102	10	10	102	103
19	109	106	107	107	105	106	104	102	10	10	102	103
20	108	105	107	106	105	105	104	102	10	10	102	103
21	108	106	107	107	105	106	103	102	10	10	102	103
22	108	106	107	106	105	106	103	101	10	10	102	103
23	108	106	107	106	105	105	102	101	10	10	102	103
24	107	104	106	106	104	105	103	101	10	10	102	103
25	105	103	104	106	103	105	105	102	10	10	102	103
26	105	103	104	107	103	105	103	101	10	10	102	103
27	105	103	104	107	105	105	103	101	10	10	102	103
28	108	103	105	107	105	105	103	103	10	10	102	103
29	107	105	106	105	103	104	103	102	10	10	102	103
30	107	106	106	105	103	104	104	102	10	10	102	103
31	107	106	107	---	---	---	102	101	10	10	102	103
MONTH	111	103	106	---	---	---	107	99	10	10	102	103

More? [Y/N DEFAULT=Y]:

Station Analysis is written.

RMS - Records Management System

Station Analysis

13341000 NF CLEARWATER RIVER AT AHAHKA ID

Analysis Period: 10/1/2010 to 9/30/2011

Analysis Notes:

LOCATION.--Lat 46°30'16", long 116°19'10" referenced to North American Datum of 1927, in SW 1/4 SE 1/4 sec.26, T.37 N., R.1 E., Clearwater County, ID, Hydrologic Unit 17060308, Ahsahka quad., just upstream from the county road bridge, upstream from the mouth, and above the Dworshak fish hatchery.

EQUIPMENT.--A Sutron 8210/Satlink 2 with display S/N 807640 (DCP) with a Sutron barometric sensor S/N 70707 along with multiple Hydrolab MiniSonde with a TDG membrane that records Temperature, Depth and Total Dissolve Gas at a 15 minute interval. The Sutron 8210/Satlink is owned by USGS and barometric sensor are owned by USACE Walla Walla. The unit is powered by a solar panel and a sealed battery. The GOES antenna is a yagi style antenna.

WATER QUALITY RECORD.-- TEMPERATURE

PUBLISHED RECORDS: Daily maximum, minimum, and mean temperature published to the nearest 0.1 °C.

RECORD: The record was incomplete for the year, for the period Oct. 1 to Sept. 30, numerous days with incomplete or no data due to DCP failure.

CHANNEL CHARACTERISTICS: Free flowing river. The sonde is deployed in a 10 inch tube and the depth varies from approx 1 to 20 ft.

RATING: None. Raw values from the Minisonde are used directly with no conversion. Measured values during the year ranged from 4.2 to 9.5°C and recorded extremes were 3.8 and 10.6°C.

CALIBRATION: Calibration checks were made to the Minisonde during pre and post deployment checks. The pre and post deployment checks showed the sensor readings within +/-0.2°C.

COMPUTATIONS: Corrections to the record are the result of the differences between observed Minisonde readings versus field readings taken at the same time. Corrections of 0.2°C or less were not applied since the accuracy of the logger is only reliable to values greater than 0.2°C. No corrections were applied to this year's record.

CROSS-SECTION MEASUREMENT: None made.

REMARKS: Published record poor.

TOTAL DISSOLVED GAS

EQUIPMENT: Hydrolab multi parameter Minisonde attached with a Sutron 8210/Satlink 2 GOES Platform (DCP) in communication with a Sutron barometric sensor housed in a NEMA box fastened to side of Hatchery building.

PUBLISHED RECORDS: Although the units of measure for total dissolved gas (TDG) are in milligrams of mercury, the published record is expressed as percent of saturation for daily maximum, minimum and mean rounded to three significant digits.

RECORD: The TDG record was incomplete for the year. Numerous bad days caused by DCP failure.

Checking and Reviewing

- After the analysis is written, the computational checklist is completed and the data is set in the database from 'working' to 'in-review'. Then a notification is sent to the person responsible to check the station.
- The checker goes through the checklist, reviews to make sure the values entered into the spreadsheets and database are correct, and that no bad values are still in the database.

Checking and Reviewing Cont'd

- After the checker is done, he sets the status in the USGS Record Management System to 'Checked' and a notification is sent to the reviewer.
- The Reviewer looks at the data to see if any erroneous data or outliers are still in the database and reviews the checkers note, then sets the data to 'approved' in the database.
- He then sets the record to 'reviewed' and writes any notes in the USGS Record Management System.

Checking and Reviewing Cont'd

- Reviewer: verifies that Maximum and Minimum values for Water Temperature and Percent Saturation are correct.
- Complies and makes edit remarks on manuscript.
- Submits manuscript for publication.
- Reviews edited manuscript.
- Signs off on Manuscript and has it submitted for publication.

Final Product



Water-Data Report 2011

13343000 CLEARWATER RIVER NEAR LEWISTON, ID

Clearwater Basin
Clearwater Subbasin

LOCATION.--Lat 46°28'03" N, long 116°58'04" W referenced to North American Datum of 1983, in NW ¼ SE ¼ sec.28, T.36 N., R.5 W., Nez Perce County, ID, Hydrologic Unit 17060306, on right edge bank 3.0 miles upstream of U.S. Highway 12/Memorial Bridge, 4.8 mi upstream of the confluence of the Clearwater and Snake Rivers, and at mile 4.8

DRAINAGE AREA.--9,346 mi².

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2009 to current year (seasonal records only). Seasonal records from April 2003 to September 2008, available in files of the U.S. Geological Survey Kennewick Field Office (U.S. Army Corps of Engineers Walla Walla office has data for April 1996 to September 2003).

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: April 2009 to current year (seasonal records only).

TOTAL DISSOLVED GAS: April 2009 to current year (seasonal records only).

INSTRUMENTATION.--Water quality monitor with a 1-hour logging interval since 1996.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum recorded, 18.1°C, Sept. 18, 2009; minimum recorded, 4.2°C, Apr. 1, 2009, but may have been higher or lower during periods of missing record.

TOTAL DISSOLVED GAS: Maximum recorded, 111 percent saturation, Aug. 1-3, 2009, minimum, 87 percent saturation, Mar. 31, 2010, but may have been higher or lower during periods of missing record.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 16.0°C, Sept. 19; minimum recorded, 4.3°C, March 18, 20, but may have been higher or lower during periods of missing record.

TOTAL DISSOLVED GAS: Maximum recorded, 110 percent saturation, Aug. 12, 13; minimum, 98 percent saturation, April 19, Sept. 20, but may have been higher or lower during periods of missing record.

Water-Data Report 2011

13343000 CLEARWATER RIVER NEAR LEWISTON, ID--Continued

TEMPERATURE, WATER, DEGREES CELSIUS WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Day	June			July			August			September		
	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
1	8.6	8.3	8.5	10.6	9.4	10.0	15.1	12.5	13.8	12.7	10.6	11.7
2	8.5	8.0	8.2	11.3	9.8	10.5	15.4	12.7	14.0	12.5	10.3	11.5
3	8.8	7.8	8.3	11.9	10.6	11.2	15.4	13.1	14.2	12.4	10.3	11.4
4	9.6	8.3	8.9	12.3	11.0	11.6	14.8	12.9	13.9	12.3	10.1	11.3
5	10.3	9.0	9.6	12.2	11.1	11.7	13.5	11.4	12.5	13.2	10.9	12.0
6	10.1	9.6	10	12.5	11.1	11.8	13.8	11.2	12.5	13.2	11.0	12.2
7	9.6	8.2	9.2	12.2	11.4	11.8	13.6	11.2	12.5	13.3	11.1	12.2
8	8.4	7.8	8.1	12.3	11.4	11.8	13.5	11.1	12.4	13.3	11.3	12.3
9	8.8	7.8	8.1	12.3	11.2	11.7	13.3	10.9	12.1	13.2	11.3	12.3
10	8.5	7.7	8.1	12.1	11.2	11.6	13.0	10.7	11.9	14.0	11.3	12.6
11	10.2	8.4	9.3	12.6	11.3	11.9	12.9	10.6	11.8	14.2	12.2	13.2
12	10.5	9.4	9.9	13.8	12.1	12.9	12.7	10.4	11.6	14.3	12.3	13.3
13	9.8	9.1	9.5	13.1	12.1	12.8	12.7	10.5	11.6	14.4	12.3	13.4
14	9.6	8.6	9.0	12.8	11.9	12.3	13.4	10.6	12.1	14.0	12.0	13.1
15	10.0	9.0	9.4	13.6	12.3	12.8	12.9	11.6	12.3	13.1	12.0	12.6
16	9.0	7.9	8.3	12.8	12.0	12.4	13.2	11.0	12.1	13.8	11.8	12.7
17	9.0	7.8	8.4	14.1	12.0	13.0	12.9	11.0	12.0	12.9	11.5	12.3
18	9.1	8.7	8.9	14.3	12.3	13.3	13.4	10.9	12.2	14.4	12.1	13.2
19	9.7	8.8	9.1	13.8	12.7	13.3	13.4	11.0	12.2	16.0	13.5	14.6
20	9.6	8.6	9.1	14.6	12.5	13.5	13.5	11.2	12.3	---	---	---
21	10.9	9.3	10.1	14.3	12.9	13.5	13.4	11.1	12.3	---	---	---
22	11.3	9.8	10.6	14.4	12.4	13.3	13.5	11.0	12.2	---	---	---
23	11.0	9.8	10.4	14.3	11.9	13.1	13.2	10.8	12.1	---	---	---
24	10.1	8.8	9.5	14.4	11.9	13.2	13.4	11.1	12.3	---	---	---
25	10.2	8.7	9.5	14.7	12.2	13.4	13.2	11.5	12.4	---	---	---
26	10.7	9.1	9.9	14.3	12.4	13.4	13.5	11.0	12.2	---	---	---
27	10.6	9.5	10.1	14.6	12.3	13.4	13.6	10.9	12.3	---	---	---
28	11.2	9.8	10.5	14.6	12.3	13.4	13.7	11.5	12.7	---	---	---
29	11.5	10.7	11.1	14.6	12.3	13.4	13.4	11.8	12.6	---	---	---
30	10.8	10.0	10.4	14.6	12.3	13.4	12.8	11.0	12.1	---	---	---
31	---	---	---	14.9	12.7	13.7	12.9	11.0	12.0	---	---	---
Month	11.5	7.7	9.3	14.9	9.4	12.6	13.4	10.4	12.4	---	---	---