



Water-Data Report 2013

352832076470102 Local number BO-384, BATH RESEARCH STATION 017I2 NEAR BATH, NC

Castle Hayne aquifer
Castle Hayne Limestone

Beaufort County, NC

LOCATION.--Lat 35°28'32", long 76°47'01" referenced to North American Datum of 1927, Beaufort County, NC, Hydrologic Unit 03020104, 0.17 mi west of Secondary Road 1743 and 1.5 east of Bath.

GROUNDWATER RECORDS

WELL CHARACTERISTICS.--Depth 200 ft. Upper casing diameter 4 in; top of first opening 165 ft, bottom of last opening 200 ft.

DATUM.--Land-surface datum is 7.97 ft above National Geodetic Vertical Datum of 1929. Measuring point: 1.05 ft above land-surface datum, February 4, 2009 to present.

PERIOD OF RECORD.--January 1973, September 1981, December 1987, August 2003 to September 2005, June 2007 to current year.

GAGE.--Measured periodically with electric tape, steel tape and transducer.

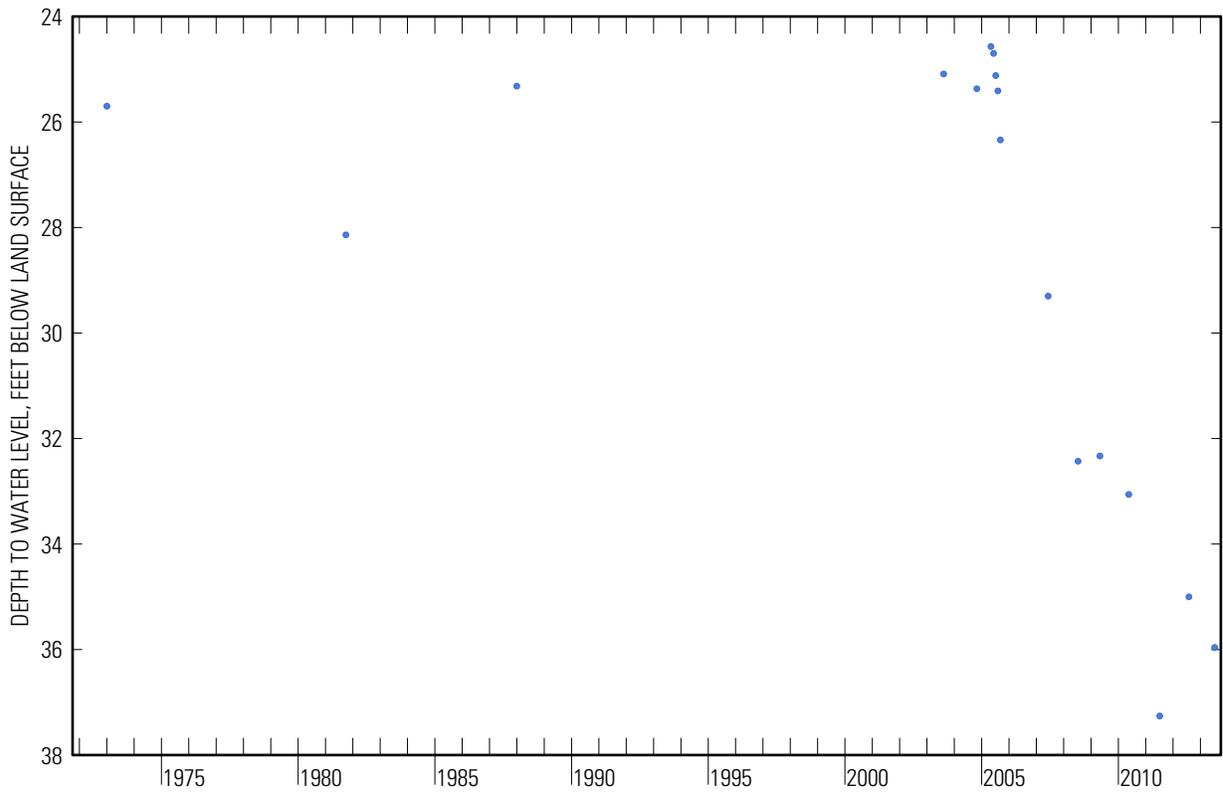
REMARKS.--Well measured as part of the National Water Quality Assessment (NAWQA) program.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 24.57 ft below land-surface datum, May 3, 2005; lowest water level measured, 37.26 ft below land-surface datum, July 7, 2011.

WATER LEVELS IN FEET BELOW LAND-SURFACE DATUM

Date	Water level
Jul 9, 2013	35.96

352832076470102 Local number BO-384, BATH RESEARCH STATION 01712 NEAR BATH, NC—Continued



352832076470102 Local number BO-384, BATH RESEARCH STATION O17I2 NEAR BATH, NC—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 2003, 2013.

REMARKS.--Well is sampled as part of the National Water Quality Assessment (NAWQA) Program.

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 1 of 14

[CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; per mil, parts per thousand; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than; M, presence verified but not quantified; R, radchem non-detect, below ssLc; U, analyzed for but not detected]

Date	Sample start time	Medium name	Sample type	Barometric pressure, mm Hg (00025)	Temperature, air, °C (00020)	Depth to water level, ft below land surface (72019)	Dissolved oxygen, water, unfiltered, mg/L (00300)	Flow rate, instantaneous, gallons per minute (00059)	pH, water, unfiltered, field, standard units (00400)	Specific conductance, water, unfiltered, µS/cm at 25°C (00095)
07-09-2013	1000	Groundwater	Regular	771	26.2	35.96	M	1.7	7.0	755

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 2 of 14

[CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; per mil, parts per thousand; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than; M, presence verified but not quantified; R, radchem non-detect, below ssLc; U, analyzed for but not detected]

Date	Sample start time	Temperature, water, °C (00010)	Turbidity, water, unfiltered, broad band light source (400-680 nm), detectors at multiple angles including 90 +/- 30 degrees, ratiometric correction, NTRU (63676)	Water level, depth below measuring point, feet (61055)	Calcium, water, filtered, mg/L (00915)	Magnesium, water, filtered, mg/L (00925)	Potassium, water, filtered, mg/L (00935)	Sodium, water, filtered, mg/L (00930)	Alkalinity, water, filtered, inflection-point, incremental titration method, field, mg/L as CaCO ₃ (39086)
07-09-2013	1000	18.3	0.9	37.01	84.0	26.1	12.2	36.2	317

352832076470102 Local number BO-384, BATH RESEARCH STATION 01712 NEAR BATH, NC—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 3 of 14

[CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; per mil, parts per thousand; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than; M, presence verified but not quantified; R, radchem non-detect, below ssLc; U, analyzed for but not detected]

Date	Sample start time	Bicarbonate, water, filtered, inflection-point, incremental titration method, field, mg/L (00453)	Bromide, water, filtered, mg/L (71870)	Chloride, water, filtered, mg/L (00940)	Fluoride, water, filtered, mg/L (00950)	Hydrogen sulfide, water, unfiltered, mg/L (71875)	Silica, water, filtered, mg/L as SiO ₂ (00955)	Sulfate, water, filtered, mg/L (00945)	Ammonia, water, filtered, mg/L as N (00608)	Nitrate plus nitrite, water, filtered, mg/L as N (00631)
07-09-2013	1000	386	0.202	47.4	0.58	U	60.2	1.28	0.905	< .040

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 4 of 14

[CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; per mil, parts per thousand; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than; M, presence verified but not quantified; R, radchem non-detect, below ssLc; U, analyzed for but not detected]

Date	Sample start time	Nitrite, water, filtered, mg/L as N (00613)	Orthophosphate, water, filtered, mg/L as P (00671)	Total nitrogen, water, filtered, analytically determined, mg/L (62854)	Aluminum, water, filtered, µg/L (01106)	Barium, water, filtered, µg/L (01005)	Beryllium, water, filtered, µg/L (01010)	Cadmium, water, filtered, µg/L (01025)	Chromium, water, filtered, µg/L (01030)
07-09-2013	1000	< .001	0.023	1.02	3.4	5.38	0.009	< .016	< .07

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 5 of 14

[CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; per mil, parts per thousand; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than; M, presence verified but not quantified; R, radchem non-detect, below ssLc; U, analyzed for but not detected]

Date	Sample start time	Cobalt, water, filtered, µg/L (01035)	Copper, water, filtered, µg/L (01040)	Iron, water, filtered, µg/L (01046)	Lead, water, filtered, µg/L (01049)	Lithium, water, filtered, µg/L (01130)	Manganese, water, filtered, µg/L (01056)	Molybdenum, water, filtered, µg/L (01060)	Nickel, water, filtered, µg/L (01065)	Silver, water, filtered, µg/L (01075)
07-09-2013	1000	0.077	< .80	601	< .025	30.4	2.87	0.041	0.41	< .005

352832076470102 Local number BO-384, BATH RESEARCH STATION O17I2 NEAR BATH, NC—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 6 of 14

[CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; per mil, parts per thousand; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than; M, presence verified but not quantified; R, radchem non-detect, below ssLc; U, analyzed for but not detected]

Date	Sample start time	Strontium, water, filtered, µg/L (01080)	Thallium, water, filtered, µg/L (01057)	Vanadium, water, filtered, µg/L (01085)	Zinc, water, filtered, µg/L (01090)	Antimony, water, filtered, µg/L (01095)	Arsenic, water, filtered, µg/L (01000)	Boron, water, filtered, µg/L (01020)	Selenium, water, filtered, µg/L (01145)	1,2-Dichloroethane, water, unfiltered, recoverable, µg/L (32103)
07-09-2013	1000	980	0.021	0.12	< 1.4	< .027	0.08	143	< .03	< .08

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 7 of 14

[CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; per mil, parts per thousand; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than; M, presence verified but not quantified; R, radchem non-detect, below ssLc; U, analyzed for but not detected]

Date	Sample start time	1,4-Dichlorobenzene, water, unfiltered, recoverable, µg/L (34571)	Bromomethane, water, unfiltered, recoverable, µg/L (34413)	Carbon disulfide, water, unfiltered, recoverable, µg/L (77041)	cis-1,3-Dichloropropene, water, unfiltered, recoverable, µg/L (34704)	trans-1,3-Dichloropropene, water, unfiltered, recoverable, µg/L (34699)	1,1,1,2-Tetrachloroethane, water, unfiltered, recoverable, µg/L (77562)	1,1,1-Tri-chloroethane, water, unfiltered, recoverable, µg/L (34506)	1,1,2-Tri-chloroethane, water, unfiltered, recoverable, µg/L (34511)	1,1-Di-chloroethane, water, unfiltered, recoverable, µg/L (34496)
07-09-2013	1000	< .026	< .2	< .1	< .10	< .14	< .040	< .030	< .046	< .044

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 8 of 14

[CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; per mil, parts per thousand; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than; M, presence verified but not quantified; R, radchem non-detect, below ssLc; U, analyzed for but not detected]

Date	Sample start time	1,1-Di-chloroethene, water, unfiltered, recoverable, µg/L (34501)	1,2,4-Tri-chlorobenzene, water, unfiltered, recoverable, µg/L (34551)	1,2,4-Tri-methylbenzene, water, unfiltered, recoverable, µg/L (77222)	1,2-Dichlorobenzene, water, unfiltered, recoverable, µg/L (34536)	11-Ketotestosterone, water, filtered, recoverable, nanograms per liter (64507)	17-alpha-Estradiol, water, filtered, recoverable, nanograms per liter (64508)	17-alpha-Ethynyl estradiol, water, filtered, recoverable, nanograms per liter (64509)	17-beta-Estradiol, water, filtered, recoverable, nanograms per liter (64510)	3-beta-Coprostanol, water, filtered, recoverable, nanograms per liter (64512)
07-09-2013	1000	< .022	< .08	< .032	< .028	< 2.00	< .80	< .80	< .80	< 200

352832076470102 Local number BO-384, BATH RESEARCH STATION O17I2 NEAR BATH, NC—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 9 of 14

[CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; per mil, parts per thousand; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than; M, presence verified but not quantified; R, radchem non-detect, below ssLc; U, analyzed for but not detected]

Date	Sample start time	4-Androsten e-3,17-dione, water, filtered, recoverable,	Benzene, water, unfiltered, recoverable,	Bisphenol A, water, filtered, recoverable,	Bromo-chloro-methane, water, unfiltered, recoverable,	Bromo-dichloro-methane, water, unfiltered, recoverable,	Chloro-benzene, water, unfiltered, recoverable,	Chloro-methane, water, unfiltered, recoverable,	Cholestero l, water, filtered, recoverable,	cis-1,2-Di-chloro-ethene, water, unfiltered, recoverable,
		nanograms per liter (64513)	µg/L (34030)	nanograms per liter (67304)	µg/L (77297)	µg/L (32101)	µg/L (34301)	µg/L (34418)	nanograms per liter (64514)	µg/L (77093)
07-09-2013	1000	< .80	< .026	< 100	< .06	< .034	< .026	< .1	< 200	< .022

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 10 of 14

[CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; per mil, parts per thousand; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than; M, presence verified but not quantified; R, radchem non-detect, below ssLc; U, analyzed for but not detected]

Date	Sample start time	cis-Androstero ne, water, filtered, recoverable,	Dibromo-chloro-methane, water, unfiltered, recoverable,	Dichloro-methane, water, unfiltered, recoverable,	Dihydrotes tosterone, water, filtered, recoverable,	Epitesto ne, water, filtered, recoverable,	Equilenin, water, filtered, recoverable,	Equilin, water, filtered, recoverable,	Estriol, water, filtered, recoverable,	Estrone, water, filtered, recoverable,
		nanograms per liter (64515)	µg/L (32105)	µg/L (34423)	nanograms per liter (64524)	nanograms per liter (64517)	nanograms per liter (64518)	nanograms per liter (64519)	nanograms per liter (64520)	nanograms per liter (64521)
07-09-2013	1000	< .80	< .12	< .04	< 4.00	< 2.00	< 2.00	< 8.00	< 2.00	< .80

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 11 of 14

[CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; per mil, parts per thousand; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than; M, presence verified but not quantified; R, radchem non-detect, below ssLc; U, analyzed for but not detected]

Date	Sample start time	Ethyl-benzene, water, unfiltered, recoverable,	Mestranol, water, filtered, recoverable,	m-Xylene plus p-xylene, water, unfiltered, recoverable,	Naphtha-lene, water, unfiltered, recoverable,	Norethindr one, water, filtered, recoverable,	n-Propyl-benzene, water, unfiltered, recoverable,	Organic carbon, water, filtered,	o-Xylene, water, unfiltered, recoverable,	Progesterone, water, filtered, recoverable,
		µg/L (34371)	nanograms per liter (64522)	µg/L (85795)	µg/L (34696)	nanograms per liter (64511)	µg/L (77224)	mg/L (00681)	µg/L (77135)	nanograms per liter (64523)
07-09-2013	1000	< .036	< .80	< .08	< .18	< .80	< .036	5.09	< .032	< 8.00

352832076470102 Local number BO-384, BATH RESEARCH STATION O17I2 NEAR BATH, NC—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 12 of 14

[CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; ft, feet; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; per mil, parts per thousand; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than; M, presence verified but not quantified; R, radchem non-detect, below ssLc; U, analyzed for but not detected]

Date	Sample start time	sec-Butyl-	Styrene,	Testostero-	Tetra-	Tetra-	Toluene,	trans-1,2-	trans-	Tribromo-
		benzene,	water,	ne, water,	chloro-	chloro-	water,	Dichloro-	Diethylstil-	methane,
		unfiltered,	unfiltered,	filtered,	unfiltered,	unfiltered,	unfiltered,	unfiltered,	unfiltered,	unfiltered,
		recover-	recover-	recoverabl-	recover-	recover-	recover-	recover-	recoverabl-	recover-
		able,	able,	e,	able,	able,	able,	able,	e,	able,
		µg/L	µg/L	nanograms	µg/L	µg/L	µg/L	µg/L	nanograms	µg/L
		(77350)	(77128)	per liter	(34475)	(32102)	(34010)	(34546)	(64516)	(32104)
07-09-2013	1000	< .034	< .042	< 1.60	< .026	< .06	< .02	< .018	< .80	< .10

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 13 of 14

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Date	Sample start time	Trichloro-	Trichloro-	Vinyl	Gross	Gross	Gross beta	Gross beta	Lead-210,	Polonium-
		ethene,	methane,	chloride,	alpha	alpha	radioactivi-	radioactivi-		
		water,	water,	water,	radioactivi-	radioactivi-	radioactivi-	radioactivi-	water,	water,
		unfiltered,	unfiltered,	unfiltered,	ty, 30-day	ty, 72-hour	ty, 30-day	ty, 72-hour	filtered,	filtered,
		recover-	recover-	recover-	count,	count,	count,	count,	filtered,	filtered,
		able,	able,	able,	water,	water,	water,	water,	Th-230	Th-230
		µg/L	µg/L	µg/L	filtered,	filtered,	filtered,	filtered,	curve,	curve,
		(39180)	(32106)	(39175)	curve,	curve,	curve,	curve,	picocuries	picocuries
					per liter	per liter	per liter	per liter	per liter	per liter
					(62639)	(62636)	(62645)	(62642)	(17503)	(19503)
07-09-2013	1000	< .022	< .03	< .06	R -.5	R .8	13.8	14.7	R .15	R -.01

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 14 of 14

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Date	Sample start time	Radium-	Radium-	Uranium	Oxygen-	Deuterium/
		226, water,	228, water,	(natural),	18/Oxygen-	Protium
		filtered,	filtered,	water,	16 ratio,	ratio,
		per liter	per liter	filtered,	water,	water,
		(09503)	(81366)	µg/L	unfiltered,	unfiltered,
				(22703)	per mil	per mil
					(82085)	(82082)
07-09-2013	1000	0.13	R -.04	< .004	-4.12	-18.50