Prepared for

SCE&G, VC Summer Station
Highway 215 and Bradham Blvd
Jenkinsville, South Carolina 29065

SOURCE WATER PHYSICAL DATA
V.C. SUMMER NUCLEAR STATION UNIT 1
40 CFR § 122.21(r)(2)

SOUTH CAROLINA ELECTRIC & GAS COMPANY
JENKINSVILLE, SOUTH CAROLINA

Prepared by

Geosyntec consultants

engineers | scientists | innovators
1255 Roberts Boulevard, Suite 200
Kennesaw, Georgia 30144

Project Number GK5356

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Geosyntec
consultants

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LIST OF ACRONYMS AND ABBREVIATIONS

ADCP	acoustic Doppler current profiling
°C	degrees Celsius
CFR	Code of Federal Regulations
cfs	cubic feet per second
CWA	Clean Water Act
CWIS	cooling water intake structure
DO	dissolved oxygen
EPA	U.S. Environmental Protection Agency
FERC	Federal Energy Regulatory Commission
FPSF	Fairfield Pumped Storage Facility
ft	feet
Geosyntec	Geosyntec Consultants, Inc.
m	meters
MGD	million gallons per day
mg/L	milligrams per liter
MSL	mean sea level
NGVD29	National Geodetic Vertical Datum of 1929
NPDES	National Pollutant Discharge Elimination System
NRC	U.S. Nuclear Regulatory Commission
SCDHEC	South Carolina Department of Health and Environmental Control
SCDNR	South Carolina Department of Natural Resources
SCE&G	South Carolina Electric and Gas Company
USFWS	U.S. Fish and Wildlife Service
VCSNS	Virgil C. Summer Nuclear Station

1. INTRODUCTION

This report provides source water physical data for South Carolina Electric & Gas Company's (SCE&G's) Virgil C. Summer Nuclear Station (VCSNS) Unit 1. VCSNS Unit 1 is an existing nuclear-powered generating facility located on Monticello Reservoir in the Broad River basin near Jenkinsville, Fairfield County, South Carolina. SCE&G operates VCSNS Unit 1 under National Pollutant Discharge Elimination System (NPDES) Permit Number SC0030856. The information provided in this report supports the facility's compliance with section 316(b) of the Clean Water Act (CWA).

The U.S. Environmental Protection Agency (EPA) published 316(b) regulations for cooling water intake structures (CWISs) at existing power generating and manufacturing facilities that became effective October 14, 2014. The final 316(b) rule requires the submittal of applicable CWIS information under 40 CFR § 122.21(r) to the South Carolina Department of Health and Environmental Control (SCDHEC), the NPDES permitting agency in South Carolina.

As provided in the NPDES permit application requirements at 40 CFR § 122.21(r)(2), all existing facilities with CWISs must submit the following source water physical data:

> *(i) A narrative description and scaled drawings showing the physical configuration of all source water bodies used by your facility, including areal dimensions, depths, salinity and temperature regimes, and other documentation that supports your determination of the water body type where each cooling water intake structure is located;*
>
> *(ii) Identification and characterization of the source waterbody's hydrological and geomorphological features, as well as the methods you used to conduct any physical studies to determine your intake's area of influence within the water body and the results of such studies; and*
>
> *(iii) Locational maps.*

The following sections present source water physical data for Monticello Reservoir as the source waterbody used by VCSNS Unit 1.

2. BACKGROUND AND ENVIRONMENTAL SETTING

2.1 VCSNS Unit 1

VCSNS Unit 1 is a 972.7-megawatt, nuclear-fueled, base-load generating facility located at the southern end of Monticello Reservoir, a freshwater impoundment (Figure 1). Unit 1 operates using a single CWIS located along the shoreline (Figure 2). It has a design intake capacity of approximately 533,122 gallons per minute or 768 million gallons per day (MGD). The actual intake flow of the CWIS is greater than 125 MGD. Although the cooling water system operates in a "once-through" mode, Monticello Reservoir was constructed for the purpose of serving as part of the cooling water system (U.S. Nuclear Regulatory Commission [NRC], 2004). Thus, the use of Monticello Reservoir as a cooling impoundment for VCSNS Unit 1 has been determined by SCDHEC and EPA to be a closed-cycle recirculating system under 40 CFR, Part 125, Subpart J, §125.92(c)(2).

The VCSNS Unit 1 CWIS consists of an inlet bay about 550 feet (ft) wide (east to west) and 200 ft in length (north to south) (Figure 2). Water depth in the inlet bay ranges from 30 to 40 ft. The circulating water intake structure is 93-ft wide with six intake bays each approximately 13-ft wide. Parallel concrete retainer walls extend out into the intake bay approximately 30 ft. Steel trash racks with 10-inch spacing are located along the upstream face of the intake structure to prevent large debris from entering the intake bays. They are mounted to the bottom of a skimmer wall that extends from the surface to a depth of 9.5 ft (415.5 ft MSL) at normal high water (425 ft MSL). The skimmer wall excludes floating debris from entering the cooling water system and, combined with the intake retainer walls, optimizes withdrawal of the coolest water from the water column. Vertical traveling water screens are located 25 ft behind the trash racks to strain out smaller debris. At normal high water, the CWIS withdraws water from the water column at elevations between 415.5 and 390 ft MSL, or from a depth of 9.5 ft to 35 ft.

2.2 Monticello Reservoir

Monticello Reservoir is a 6,500-acre freshwater lake with 51 miles of shoreline. It is located on a small tributary of the Broad River. The reservoir was built in the Frees Creek valley (completed in 1978) to serve as the upper pool for the Fairfield Pumped Storage Facility (FPSF) and the cooling water source for VCSNS Unit 1 (NRC, 2004). Monticello Reservoir is hydrologically connected to a 300-acre sub-impoundment that is managed for recreational boating and fishing by SCE&G and the South Carolina Department of

Natural Resources (SCDNR). Monticello Reservoir has a total storage capacity of approximately 400,000 acre-feet (Kleinschmidt, 2015) with an average depth of 59 ft, a maximum depth of 125 ft, and a watershed area of 17.4 square miles (NRC, 2011).

2.3 Geology and Climate

VCSNS is located in a sparsely populated, mostly rural area approximately 26 miles northwest of Columbia, South Carolina. The facility is located on 2,246 acres of property, of which approximately 860 acres are inundated by waters of Monticello Reservoir. The facility lies within the Piedmont physiographic province, a region characterized by gently rolling to hilly terrain with broad stream valleys. The area is underlain by igneous and metamorphic crystalline rocks, including migmatites in transitional areas between metamorphic and igneous bodies. Bedrock within this portion of the Piedmont is metasedimentary and metavolcanic and contains granites, gneisses, and schists. Crystalline bedrock has been deeply weathered into a saprolitic mantle of soil 66 to 131 ft thick at the site. The upper soil profile is characterized by a silty and clayey horizon (SCE&G, 2002).

Normal yearly rainfall in the Broad River basin is about 44.3 inches (US Climate Data.com, 2018). The highest rainfall amounts typically occur in the summer (15.3 inches), followed by winter (10.3 inches), spring (9.3 inches), and fall (9.4 inches). The daily temperature averages 63.8 (17.7°C) annually. Seasonal daily average temperatures vary from a low of 45.5°F (7.5°C) in winter to a high of 82.5°F (28.1°C) in summer.

2.4 Source Water Fishery Characteristics

Monticello Reservoir supports a warmwater fish community characteristic of a southeastern Piedmont reservoir. It shares many of the same fish species with Parr Reservoir on the Broad River (Kleinschmidt, 2013), with which it exchanges water daily through FPSF operations. Fisheries surveys, impingement sampling, and ichthyoplankton surveys conducted between 1983 and 2016 have documented the occurrence of 42 species of freshwater fish from 10 families in Monticello Reservoir (Dames & Moore, 1985; Christie and Stroud, 1996, 1997; NRC, 2004; Geosyntec Consultants, Inc. [Geosyntec], 2007; Normandeau Associates, Inc., 2007, 2008, 2009a, 2009b; SCDNR, 2013, Normandeau, 2017); The principal sport fishes inhabiting the reservoir include blue catfish, channel catfish, white catfish, largemouth bass, black crappie, white bass, yellow perch, and a variety of sunfishes. Other recreationally

important species include bluegill and white perch. Important forage fish for predators include gizzard shad, threadfin shad, and juvenile white perch.

There are no known occurrences of federally protected threatened or endangered fish or shellfish species, or designated critical habitat for these species, in Monticello Reservoir (SCDNR, 2019; U.S. Fish and Wildlife Service [USFWS], 2016). The endangered mussel Carolina heelsplitter (*Lasmigona decorata*) historically occurred in Fairfield County but the species no longer occurs in the Broad River system (USFWS, 2012).

3. OPERATIONAL SETTING AND HYDROLOGY

Monticello Reservoir and Parr Reservoir serve as the upper and lower pools, respectively, of FPSF (Figure 1). FPSF is part of the Parr Hydroelectric Project operated by SCE&G, which is licensed by the Federal Energy Regulatory Commission (FERC) as Project Number 1894. FPSF generates hydroelectricity by releasing water from Monticello Reservoir into Parr Reservoir using an active storage of 29,000 acre-feet (Kleinschmidt, 2015). During off-peak power demand periods, FPSF turbines reverse and pump water from Parr Reservoir back into Monticello Reservoir. Created by Parr Dam on the main-stem Broad River, Parr Reservoir was enlarged in 1977 from 1,853 to 4,398 acres for added pumped storage exchange with Monticello Reservoir and as makeup water for evaporative losses from Monticello Reservoir due to VCSNS Unit 1 operations (SCE&G, 2002). The drainage area of the Broad River upstream of Parr Reservoir is 4,750 square miles. Monthly mean flows of the Broad River downstream of Parr Dam (for water years 1981-2013) range from a low of 2,760 cubic feet per second (cfs) in September to a high of 9,023 cfs in March (Kleinschmidt, 2015). Based on generation data for FPSF for the years 2008-2017, average daily discharge from Monticello Reservoir into Parr Reservoir is about 5,829 cfs.

The full-pool elevation of Monticello Reservoir is typically managed to 425 ft mean sea level (MSL, NGVD29). Monticello Reservoir experiences daily fluctuations in surface elevation of up to a maximum of 4.5 ft due to pumped storage operations (Kleinschmidt, 2015). Under the FERC license for the Parr Hydroelectric Project, SCE&G operates Monticello Reservoir within an elevation range of 420.5 to 425.0 ft MSL.

Operations of FPSF vary by season and system power needs. In the summer, the pumping cycle generally occurs daily between the hours of 11:00 pm and 8:00 am, and generation occurs between 10:00 am and 11:00 pm. In the winter, pumping generally occurs daily from Parr Reservoir between 11:00 pm and 6:00 am, and generation occurs between 6:00 am and 1:00 pm. The level of generation varies from one generator up to the maximum output of eight, depending on demand. Maximum output may not be necessary on all days. Pumping is normally done at maximum capacity during off-peak periods.

The NRC defines a "cooling pond" as a manmade impoundment that does not impede the flow of a navigable system and is used primarily to remove waste heat from condenser water (NRC, 1996). Under this definition, Monticello Reservoir is categorized as a cooling pond. The NRC (1996) notes that nuclear power plants with cooling ponds

represent a unique subset of closed-cycle systems in that they operate similar to once-through plants (with large condenser flow rates) but withdraw from relatively small bodies of water created for the plant. EPA's 316(b) regulations for existing facilities at 40 CFR § 125.92(c)(2) define closed-cycle recirculating systems to include a system with impoundments of water of the U.S., where the impoundment was created for the purpose of serving as part of the cooling water system as documented in the project purpose statement for any required CWA section 404 permit obtained to construct the impoundment. EPA and SCDHEC has determined that the use of Monticello Reservoir as a cooling pond for VCSNS Unit 1 constitutes a closed-cycle recirculating system for the purposes of 316(b) compliance.

At the northern end of Monticello Reservoir is a 300-acre impoundment known as the Monticello Sub-impoundment (Figure 1). Although hydraulically connected to the main reservoir by a conduit that passes under South Carolina Highway 99, the water level in this sub-impoundment is minimally influenced by pumped storage operations on Monticello Reservoir proper. The sub-impoundment is managed for fishing and recreation by SCE&G and SCDNR.

Water is withdrawn from Monticello Reservoir for potable use and other non-cooling related uses at VCSNS Unit 1. This water is treated at the facility water treatment plant prior to use. The total rate of water withdrawal from Monticello Reservoir by the water treatment plant is typically about 0.01 m3/s (0.35 cfs).

4. WATER QUALITY

SCDHEC (2012) classifies Monticello Reservoir as "Freshwaters." Freshwaters are suitable for primary and secondary contact recreation, as a source of drinking water supply after conventional treatment, for fishing and the survival and propagation of a balanced indigenous aquatic community of fauna and flora, and for industrial and agricultural uses (SCDHEC, 2014a).

SCE&G collects vertical profile water quality data for Monticello Reservoir, including water temperature, dissolved oxygen (DO), specific conductivity and pH measured at 1-meter (m) intervals from the surface to the bottom. Vertical profiles are measured at four sites: the VCSNS Unit 1 intake area; the discharge area; the OWS Intake area; and up-lake toward the northern end of the reservoir (Figures 1 and 2). As part of the FERC relicensing effort for the Parr Hydroelectric Project, SCE&G compiled 10 years of water quality data for the period January 2003 through December 2012 (Kleinschmidt, 2014). SCDHEC also monitors water quality of the reservoir at two permanent stations (B-327 and B-328) and, in some years, at four other stations (RL-04370, RL-04374, RL-08055, and RL-11031) (NRC, 2011; Kleinschmidt, 2014). SCDHEC has collected grab samples on a monthly, bi-monthly, or quarterly frequency depending on the site and year, with parameters including temperature, DO, turbidity, pH, biological oxygen demand, alkalinity, nitrogen, phosphorus, fecal coliform, organic carbon, and metals.

Monitoring data collected by SCE&G and SCDHEC near the VCSNS Unit 1 intake and in up-lake locations indicate the following water quality trends for Monticello Reservoir (NRC, 2011; Kleinschmidt, 2014):

- Surface water temperatures range from about 9°C during the winter to 32°C during the summer. Through the spring and mid-summer, temperatures at depths of 15 m are up to 6.7°C cooler than the surface, while at other times of the year, little variation with depth is observed. The maximum temperatures observed have not exceeded the numeric criterion for Freshwaters (32.2°C).

- DO values typically range from 5 to 8 milligrams per liter (mg/L) in the summer months to up to 12 to 15 mg/L in the winter months. These values fall within the numeric criteria for Freshwaters (daily average of 5.0 mg/L, low of 4.0 mg/L). DO values below 5.0 mg/L have occasionally been measured during the summer in the deepest part of the water column at the up-lake site.

- Specific conductivity typically ranges from 80.0 to 120.0 microSiemens per centimeter at all monitoring sites at all depths in the reservoir.

- The pH values at the sites near the VCSNS Unit 1 intake and discharge are consistently around 7.5, ranging from 6.8 to 8.0. The numeric criterion for Freshwaters is a range of 6.0 to 8.5. The values measured at the up-lake site tend to be more alkaline, ranging up to 8.5 to 8.7 (see below). Throughout the lake, the pH decreases at increasing depths.

- Analyses of metals in surface-water samples collected quarterly in years from 1999 to 2012 reported results below quantification limits for most metals or detection at low concentrations, indicating support of aquatic life use.

Appendix A summarizes minimum, maximum, and mean values for temperature, specific conductivity, DO concentration, and pH measured at 2-m depth in Monticello Reservoir during the monitoring years 2003-2012 (Table 3-11 from Kleinschmidt, 2014).

The monitoring data indicate that Monticello Reservoir waters are low in common ions, hardness, dissolved solids, and conductivity, and do not exhibit values atypical for Piedmont reservoirs (NRC, 2011). South Carolina assesses the trophic condition of lakes by ecoregion against numeric nutrient criteria adopted in 2001 for total phosphorus, total nitrogen, and chlorophyll *a*. Monticello Reservoir was assessed at three sampling locations within the lake and found to meet the numeric criteria (SCDHEC, 2014b).

The data for monitoring years 2015-2018 are also summarized in Appendix B. Temperature values were expectedly warmest in the discharge area with heat having dissipated in the uplake temperatures. DO concentrations range from an instantaneous low of 4.8 to over 12 mg/L. pH values had more variability, but reservoir waters continue to be alkaline with average pH of 8.3 in the uplake location.

SCDHEC (2018) currently lists five locations on Monticello Reservoir (stations B-327, RL-04370 RL-04374, RL-13089, and RL-15009) as impaired because of pH values exceeding 8.5. These stations are located on the east side of the reservoir and up-lake, outside of the area of influence of the VCSNS Unit 1 intake. SCDHEC (2014c) projected a target date of 2019 for developing Total Maximum Daily Loads to address the impairment. However, due to limited agency resources, the TMDL development for Monticello Reservoir and other lakes will be delayed. (SCDHEC, 2018).

5. CWIS AREA OF INFLUENCE

A survey to delineate the area of hydraulic influence attributable to the VCSNS Unit 1 CWIS was performed in April 2005 using acoustic Doppler current profiling (ADCP) technology (Geosyntec, 2005). The area of influence survey remains relevant and representative of conditions at the facility today because the cooling water system operations have not changed. Intake flow was at or near 739 MGD throughout the survey period. The survey included three hydraulic data collection events conducted over a 24-hour period to represent daily changes in reservoir elevations that occur as a result of FPSF operations. Boundaries of the area of influence at the three reservoir elevations were conservatively estimated (Figure 3) based on the detection of any flow vector oriented towards the CWIS regardless of the associated velocity (ichthyoplankton may be susceptible to entrainment even at low velocities directed toward the CWIS). The overall boundary of the area of influence was delineated to encompass the three areas of hydraulic influence measured at the different reservoir elevations. The survey delineated a maximum area of influence of 2.92 surface acres, extending from the intake structure approximately 550 ft out into the reservoir with a width of about 250 ft (Figure 3).

6. SUMMARY AND CONCLUSION

Monticello Reservoir is a 6,500-acre freshwater lake with 51 miles of shoreline and a total storage volume of approximately 400,000 acre-feet. The reservoir is deep, averaging 59 ft depth, and has a relatively small watershed area of 17.4 square miles in the Frees Creek valley, a tributary to the Broad River. At normal full pool, the CWIS withdraws water from a depth of 9.5 to 35 ft.

Monticello Reservoir serves as the upper reservoir for the FPSF and exchanges water daily with Parr Reservoir (the lower reservoir). Monticello Reservoir experiences daily fluctuations in surface elevation up to 4.5 ft due to pumped storage operations. SCE&G manages the reservoir elevations within an operating band of 420.5 to 425.0 ft MSL.

Monticello Reservoir is classified as Freshwaters. Surface water temperatures range from 9 to 32°C. From spring through mid-summer, temperatures at depths to 15 m and greater are up to 6.7°C cooler than at the surface. DO values vary seasonally from 5 to 8 mg/L in the summer to up to 12 to 15 mg/L in the winter. The reservoir waters are low in specific conductivity, common ions, hardness, and dissolved solids, and they meet numeric nutrient criteria for total phosphorus, total nitrogen, and chlorophyll *a*. Three sites in the lake are currently listed by SCDHEC as being impaired because of elevated pH. These sites are located outside of the area of influence of the Unit 1 CWIS.

A survey conducted in 2005 using ADCP technology at three different reservoir elevations delineated a maximum area of influence of the VCSNS Unit 1 CWIS of 2.92 surface acres. The area of influence extends from the intake structure approximately 550 ft out into the reservoir with a width of about 250 feet.

Monticello Reservoir was constructed for the purpose of serving as part of the cooling water system. Thus, its use as a cooling water impoundment for VCSNS Unit 1 has been determined to constitute a closed-cycle recirculating system for the purposes of CWA section 316(b) compliance.

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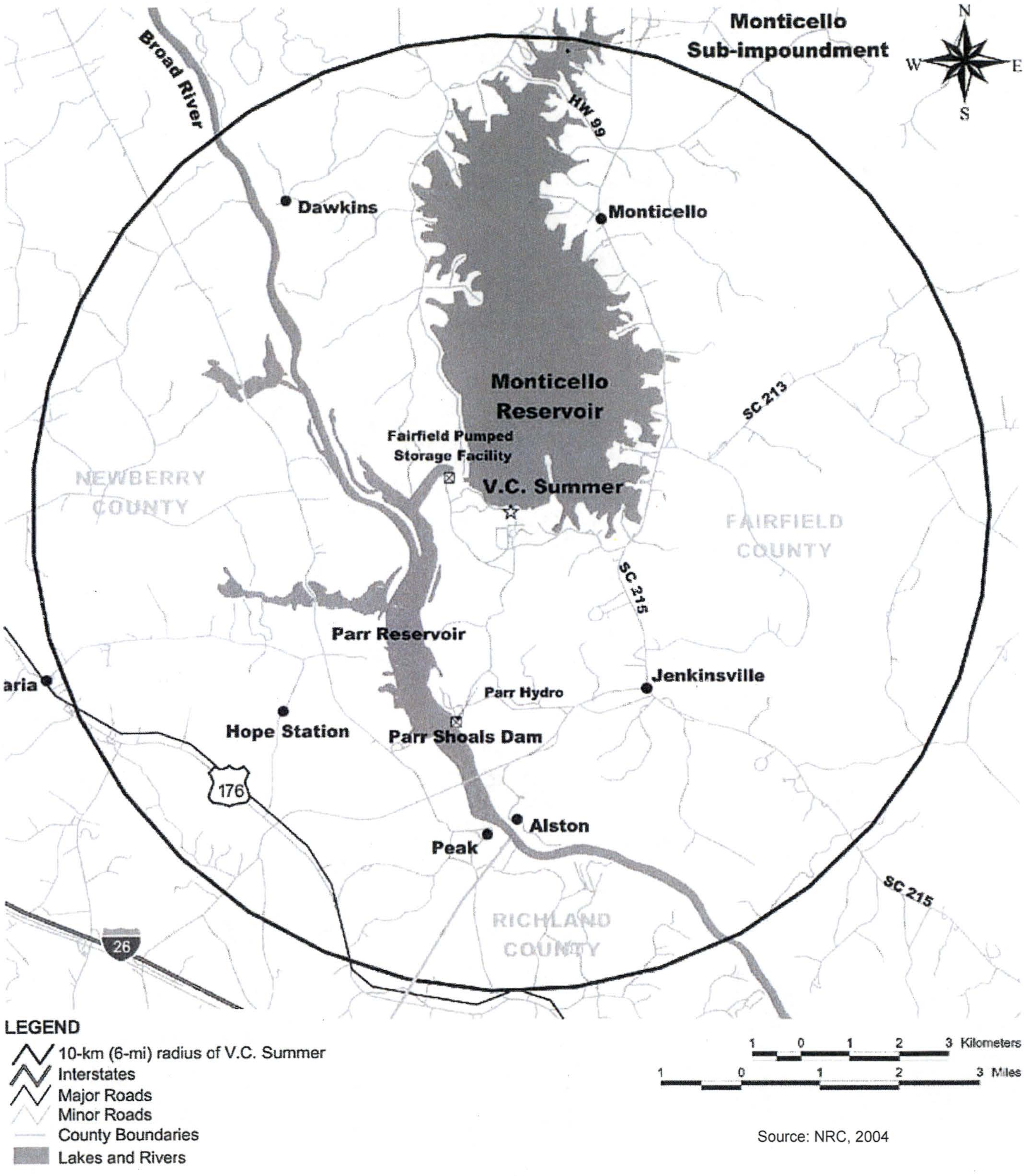
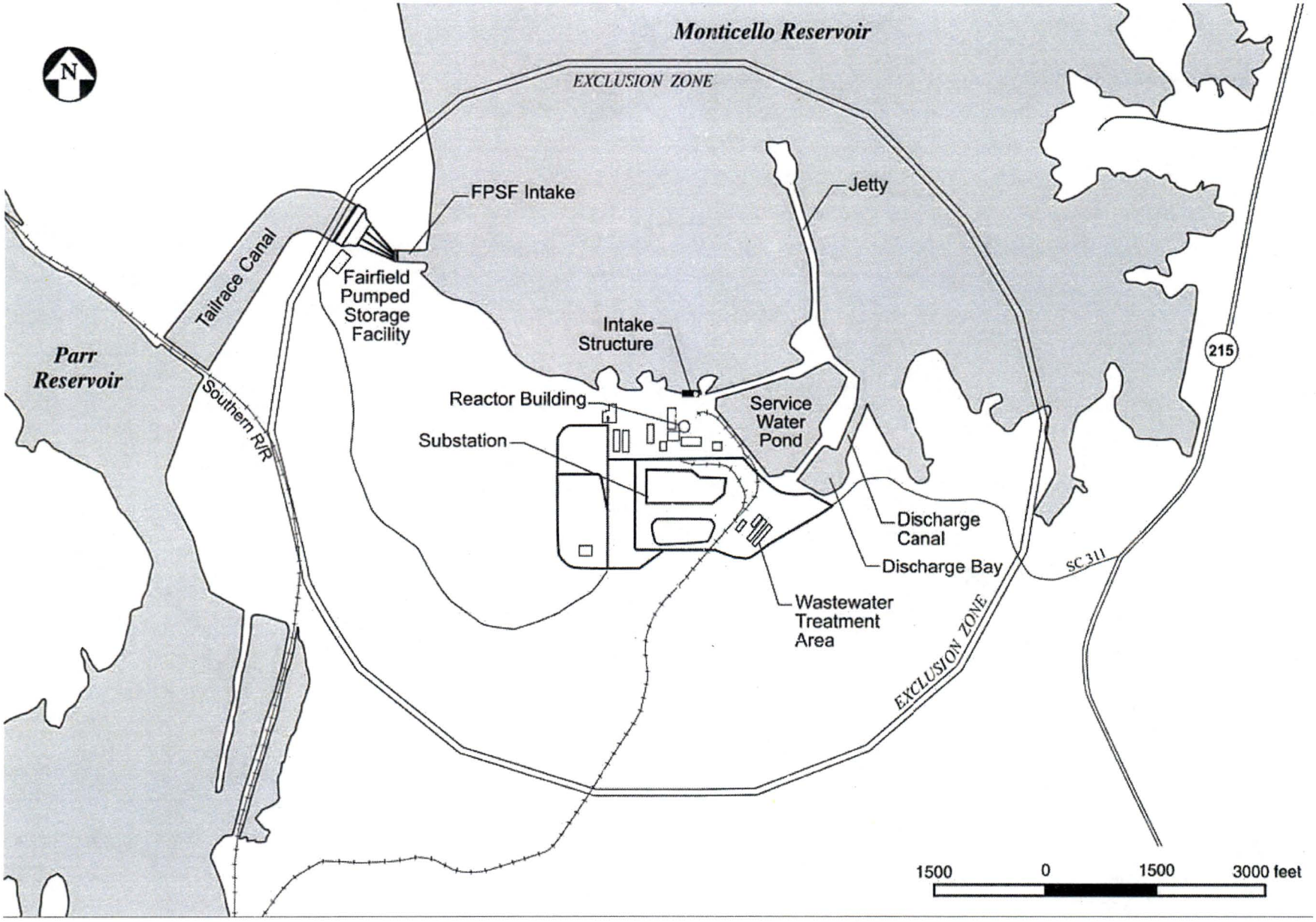
FIGURES



Site Vicinity of VCSNS Unit 1 Jenkinsville, South Carolina	Geosyntec consultants		Figure 1
	Atlanta, Georgia	October 2016	



Site Layout of the VCSNS Unit 1 Cooling Water Intake Structure and the Fairfield Pumped Storage Facility

Jenkinsville, South Carolina

Geosyntec consultants

Atlanta, Georgia | October 2016

Figure 2

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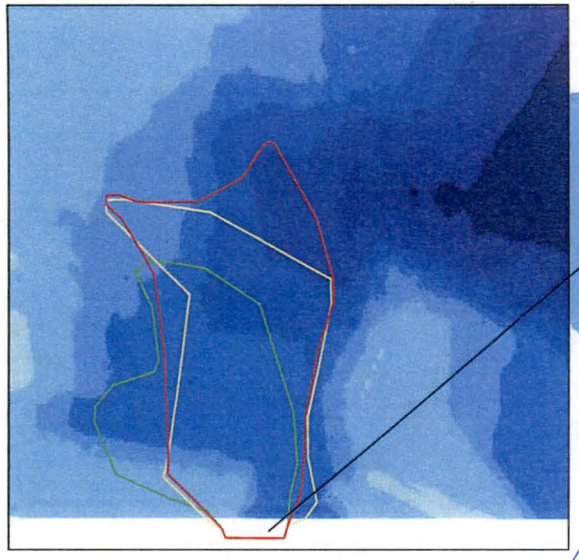
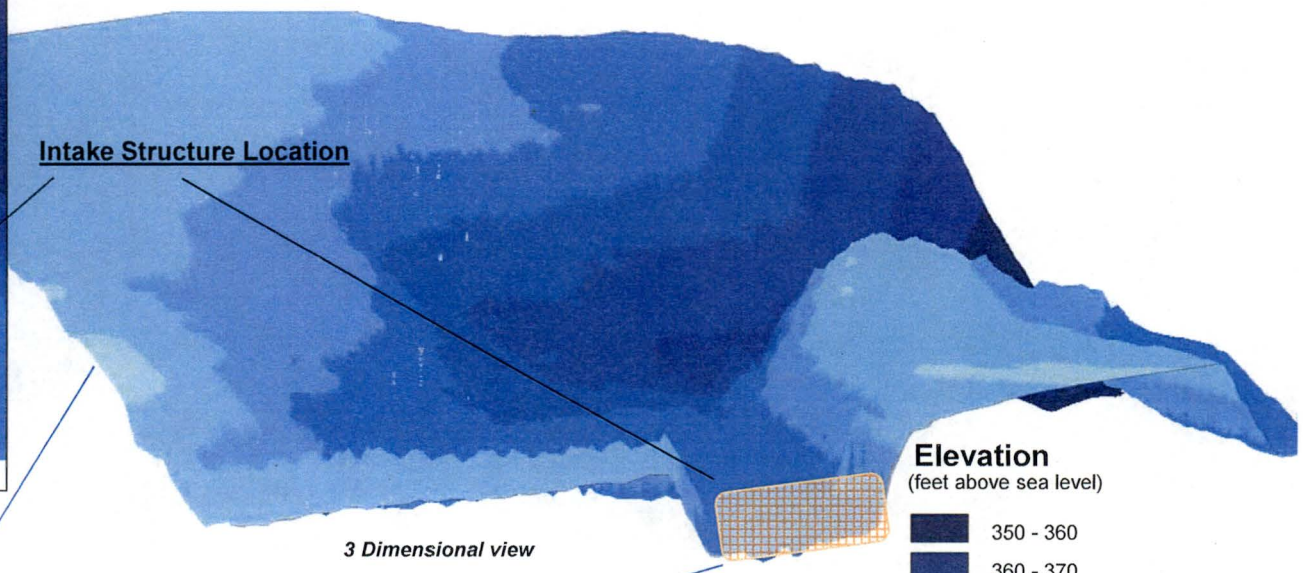


Plan view with zones of CWIS Hydraulic influence

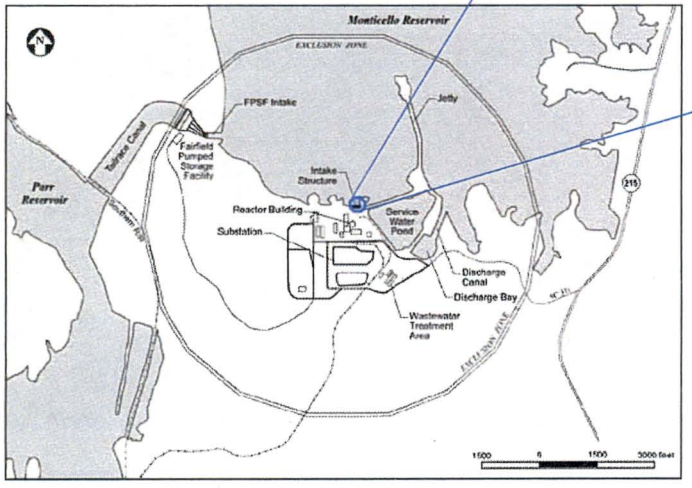
Intake Structure Location



3 Dimensional view

Elevation
(feet above sea level)

- 350 - 360
- 360 - 370
- 370 - 380
- 380 - 390
- 390 - 400
- 400 - 410
- 410 - 420
- 420 - 430
- High elevation hydraulic influence boundary
- Declining elevation hydraulic influence boundary
- Low elevation hydraulic influence boundary



Bathymetric Depiction of Monticello Reservoir and the CWIS Area of Influence near VCSNS Unit 1, April 2005

Jenkinsville, South Carolina

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Figure 3

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APPENDIX A

Summary Water Quality Table for Monticello Reservoir

TABLE 3-11 SUMMARY TABLE FOR MONTICELLO RESERVOIR

		INTAKE				DISCHARGE				UPLAKE			
		Temp	SpCond	DO Conc	pH	Temp	SpCond	DO Conc	pH	Temp	SpCond	DO Conc	pH
		C	uS/cm	mg/L		C	uS/cm	mg/L		C	uS/cm	mg/L	
2003	MAX	26.73	126	13.39	8.65	28.77	132	12.96	8.22	29.95	140	13.98	9.31
	MIN	8.62	98	7.13	6.97	11.48	102	7.17	6.96	10.38	102	9.60	7.38
	AVG	18.47	110	9.60	7.54	20.52	113	9.92	7.51	20.30	115	11.41	8.31
2004	MAX	29.01	129	14.28	8.09	29.27	120	14.59	7.96	29.89	129	14.07	9.06
	MIN	6.50	68	4.70	7.02	9.46	67	5.13	6.95	6.76	67	7.53	7.19
	AVG	17.12	100	9.06	7.65	18.22	97	11.19	7.57	18.53	99	11.72	8.11
2005	MAX	28.49	78	12.34	7.80	31.29	96	14.01	7.82	31.52	77	12.79	8.80
	MIN	9.64	63	5.30	6.68	10.46	63	5.28	7.02	10.72	60	7.72	6.91
	AVG	19.92	71	8.32	7.33	21.43	73	8.76	7.41	20.79	69	9.83	7.73
2006	MAX	28.98	101	12.09	8.16	29.51	102	13.08	7.93	30.69	101	12.16	8.97
	MIN	10.88	73	4.84	7.08	10.55	73	5.10	7.12	11.61	68	7.45	7.37
	AVG	19.04	85	8.62	7.52	19.60	84	9.36	7.53	20.26	84	9.59	7.98
2007	MAX	29.96	147	11.21	8.28	31.67	129	11.85	8.20	30.41	126	11.82	9.19
	MIN	9.52	78	5.45	7.35	13.29	79	5.32	7.33	10.52	80	6.62	7.39
	AVG	20.61	98	8.06	7.71	23.02	100	8.57	7.60	21.79	95	9.41	8.03
2008	MAX	27.90	166	11.55	8.11	28.44	169	12.49	7.70	28.28	169	12.51	9.28
	MIN	10.44	99	5.96	7.16	11.19	98	5.30	7.11	10.48	98	5.56	7.08
	AVG	19.32	118	8.55	7.54	20.14	119	9.12	7.48	19.66	119	9.75	7.83
2009	MAX	29.33	101	11.68	8.16	29.67	103	13.01	7.86	30.33	105	11.73	8.79
	MIN	10.18	66	5.64	7.31	10.88	66	5.61	7.27	11.57	66	6.85	7.31
	AVG	19.67	86	8.65	7.70	21.31	87	9.07	7.55	20.56	86	9.57	7.86
2010	MAX	30.50	85	16.31	8.32	31.53	85	15.35	7.95	32.13	88	14.27	8.71
	MIN	8.90	58	5.83	7.53	8.53	57	5.81	7.38	8.81	58	7.99	7.66
	AVG	20.52	74	9.93	7.91	21.93	74	9.57	7.67	21.98	75	10.00	8.10
2011	MAX	29.76	101	12.49	8.14	32.61	101	13.56	8.55	30.67	101	12.25	8.90
	MIN	9.00	75	4.98	7.09	9.14	73	5.03	7.03	8.91	75	5.82	7.12
	AVG	20.88	91	8.50	7.46	23.09	89	8.86	7.61	21.44	89	9.06	7.84
2012	MAX	28.74	100	11.73	8.52	30.29	101	12.15	7.81	30.57	98	12.75	9.01
	MIN	11.85	83	4.48	6.58	12.42	80	4.57	6.98	12.23	81	5.31	7.13
	AVG	19.69	92	9.05	7.42	20.72	92	8.95	7.41	20.68	91	9.95	7.94

2015-2018 Summary for Monticello Reservoir

		Discharge				Intake				Uplake			
		Temp	**SpCond**	**DO Conc.**	**pH**	**Temp**	**SpCond**	**DO Conc.**	**pH**	**Temp**	**SpCond**	**DO Conc.**	**pH**
		°C	uS/cm	mg/L	SU	°C	uS/cm	mg/L	SU	°C	uS/cm	mg/L	SU
2015	MAX	33.7	105.0	12.7	8.3	29.6	106.0	12.0	7.9	31.3	105.0	12.4	9.3
	MIN	10.8	86.0	4.8	6.8	9.0	87.0	4.9	6.6	8.6	86.0	6.8	6.9
	AVG	21.5	94.1	9.0	7.2	20.5	95.0	8.6	7.3	21.7	95.6	9.6	7.8
2016	MAX	30.8	97.5	11.0	8.0	30.1	97.3	10.6	8.1	31.5	97.3	11.7	9.0
	MIN	11.5	74.4	5.2	6.9	10.8	74.0	4.9	6.6	12.6	76.4	7.8	6.8
	AVG	22.1	86.3	7.8	7.4	21.3	86.4	7.6	7.3	22.6	87.2	8.9	8.0
2017	MAX	29.1	97.4	11.7	9.2	28.9	97.1	10.3	8.0	30.5	98.0	12.2	9.5
	MIN	13.0	85.8	5.7	7.3	12.6	84.0	4.3	6.9	14.3	87.3	6.1	7.4
	AVG	21.4	90.0	8.2	7.9	20.9	89.8	7.6	7.5	21.9	92.4	9.9	8.6
2018	MAX	29.9	91.1	10.3	8.7	29.3	90.7	10.3	7.7	30.6	90.6	11.1	9.5
	MIN	11.2	71.4	5.4	7.2	11.3	71.5	4.9	7.1	12.4	72.3	8.1	7.3
	AVG	21.0	78.6	8.4	7.7	20.2	78.3	7.9	7.4	21.5	80.5	9.9	8.5

Source: SCANA monthly sampling logs.