

A M E N D E D

Withlacoochee Regional Water Supply Authority
3600 W. Sovereign Path, Suite 228, Lecanto, Florida 34461

Bills For Payment
1/15/2020

<u>Administrative Invoices</u>	<u>Invoice Number(s)</u>	<u>Invoice Date</u>	<u>Amount</u>
Suzannah J. Folsom, PE, Executive Director	1019	1/3/2020	\$7,106.63
Richard S. Owen, AICP, Owen Consulting Services	2019-12	1/5/2020	\$6,796.95
Rob Batsel, General Counsel			\$0.00
C. LuAnne Stout, Admin Asst (Services)	12-Dec-19	1/3/2020	\$3,125.00
Karen Allen (Web Maintenance)	119	1/8/2020	\$100.00
Alliance for Water Efficiency	6231	1/1/2020	\$500.00
Sun Trust Business Card Statement	1.2.2020	1/2/2020	\$73.88
Total Administrative Invoices			\$17,702.46

<u>Water Supply Studies and Facilities</u>	<u>Contract/ Budget</u>	<u>Balance Remaining</u>	<u>Current Invoice(s)</u>
General Services Contract	\$75,000.00	\$75,000.00	
Work Order 2020-02 Weber & Associates	\$10,000.00	\$9,682.50	
Regional Water Supply Plan Update	\$299,940.00	\$1,973.79	\$2,058.17 (1)
FY2018-19 Water Conservation Grants Program			
Citrus County	\$36,875.00	\$2,214.33	
Hernando County	\$48,350.00	\$8,039.35	
Marion County	\$42,595.00	\$36,699.63	\$5,281.87 (2)
FY19-20 Water Conservation Grants Program			
Citrus County	\$45,998.50	\$45,998.50	
Hernando County	\$48,350.00	\$48,350.00	
Marion County	\$33,095.00	\$33,095.00	
Crystal River	\$9,090.00	\$9,090.00	
Phase 4 Irrigation Program	\$200,000.00	\$60,439.78	
Phase 5 Irrigation Program	\$145,000.00	\$56,161.02	\$3,000.11 (3)
Total Project Invoices	\$994,293.50	\$386,743.90	\$10,340.15

Total Bills to be Paid	\$28,042.61
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State Board of Administration	Transfer from SBA2 to SBA1	\$10,340.15
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State Board of Administration	Transfer from SBA1 to SunTrust Bank	\$28,042.61
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Notes:

(1) Regional Water Supply Update

Cardno, Inc \$2,058.17 Invoice 285142

(2) Water Conservation Grant Program

Marion County \$5,281.87 WRWSA FY 18-19

(3) Phase 5 (Q040) - Irrigation Audits

Jack Overdorff, ECO Land Design	\$2,700.11	Invoice 390
C. LuAnne Stout, Admin Services	\$300.00	Invoice 12-Dec-Q040 2019
	\$3,000.11	

Florida Specifier December 2019/January 2020

Duke Power files assessment of corrective action for Crystal River power plant contamination

By ROY LAUGHLIN

This summer, Duke Power Corp. filed a Coal Combustion Residuals rule Assessment of Corrective Measures Report describing findings of excess levels arsenic, lithium and molybdenum in groundwater at its Crystal River Energy Center, or CREC, in Citrus County.

Following passage of the CCR rule, Duke initiated required monitoring around its coal ash handling and impoundment areas at the plant.

Monitoring showed fugitive contaminants in groundwater that had leached from the facility's ash storage and disposal area, or AS/DA.

Arsenic exceeding the groundwater protection standard occurred in samples from a majority of the CREC wells. More than half of the wells around the perimeter and downgradient of the AS/DA had arsenic concentrations above acceptable levels.

From 2018 to the spring of 2019, arsenic levels ranged from well below the 10 micrograms per liter arsenic standard to as high as 79.8 micrograms per liter, according to the annual monitoring report required by the CCR.

A small number of monitoring wells along the facility's northern boundary had high arsenic levels attributable to an adjacent U.S. Gypsum facility. That off-property-source arsenic is not subject to the current remediation plan.

Also notable was that high arsenic levels were not found in groundwater on area wells downgradient and near the Gulf of Mexico. Contamination, at least arsenic contamination, is localized only around the AS/DAs.

Lithium concentrations were also occasionally high with one result as high as 502 micrograms per liter. Molybdenum's highest concentration was 328 micrograms per liter.

Water quality standards for those metals are 40 and 100 micrograms per gram, respectively.

Duke began installing monitoring wells in 2015 and has now installed an array of 26 wells.

Some additional monitoring wells may be required to provide the desired data to guide corrective actions for lithium and molybdenum.

The data, obtained and reported by Geosyntec Consultants Inc., is presented in the CREC's required 2018 and 2019 CCR annual reports covering four quarterly sampling intervals in 2018 in early 2019.

The good news for Duke is that monitoring well arsenic concentrations, especially evident for wells that initially had high arsenic concentrations, are largely stable.

In addition, a couple of the high-level wells are exhibiting slight downward trends in arsenic concentrations.

Arsenic-contaminated groundwater is confined to Duke's property. Sampling wells yielding arsenic above the 10 micrograms per liter limit are adjacent to the approximately 100-acre AS/DA on the 4,730-acre property.

Of that total, only 1,462 acres are developed for power plant and transmission facilities. No public potable water wells are near or downgradient of the coal ash impoundment.

Monitoring wells near the Gulf of Mexico, downgradient from the AS/DA, yielded no water samples with excess coal ash contaminants.

Duke Power's Assessment of Corrective Measures Report, submitted this summer, is a significant milestone for remediation efforts at the Crystal River Energy Center. It starts the clock on a required remediation effort.

In its report, Geosyntec noted that if Duke decides to close the AS/DA as a control measure, the company would have to

install a final cover system over the ash pits.

It could choose to excavate the ash for beneficial use or it could excavate and store ash off-site, a strategy used elsewhere in Florida to decommission coal-burning power plants.

A hybrid option presented in the report is to beneficially reuse as much of the ash

as possible and store the remainder on-site in a smaller landfill. The smaller landfill would require construction.

Ditches and stormwater ponds on the site will also require removal of coal combustion residuals and sediments contaminated by it.

When excavated, it would be subject to the same remediation treatment as the AS/DA.

"These source control measures (described above from the report) will substantially reduce the introduction of additional constituent of interest mass into groundwater from the AS/DA," the report noted.

In response to a query, Paige Sheehan, APR, director of regional communications at Duke Energy, said that in recent years, Duke has found a substantial beneficial reuse market for ash from the CREC coal plant.

"The net amount of ash sold directly from the generating station and reclaimed from the ash landfill for beneficial reuse was higher than the amount generated during the year," she said.

She explained that Duke works through coal ash marketing companies to provide ash for Portland cement and ready-mix concrete.

"We've recycled more than we produce for many years, with the possible exception of 2016," she said. "We're likely to continue the process for at least another decade."

"Bottom line is that we look for recycling opportunities that turn this waste into a valuable product and benefit our customers. Also, safe recycling is the only way to avoid permanent disposal. We're pretty proud of this work."

Cleaning up groundwater will also be required. The report provided a list of candidate remediation technologies.

In-situ methods include migration barriers, chemical immobilization and permeable reactive barriers.

Groundwater extraction, through either conventional vertical well systems or phytoremediation, is a second category of candidate cleanup methods.

Other groundwater treatments and monitored natural attenuation are also listed as candidate remediation methods.

By submitting its CCR Assessment of Corrective Measures Report, Duke is committed to site remediation but has an unspecified time frame for selecting the best method or methods.

Duke and its consultants will continue monitoring to provide additional assessment that will guide remediation planning for molybdenum and lithium contamination on certain parts of the site.

After selecting a remediation method, Duke must by law hold a public meeting within 30 days to characterize what the company plans to do.

"Duke has been working with the Florida Department of Environmental Protection regarding groundwater issues and corrective action," Sheehan said. "When Duke has corrective action options more fully fleshed out, we'll continue discussions with the regulators and the public."

She noted that the CCR rule does not specify a specific date to select a remediation plan but that Duke is now working to further explore the feasibility of the various options as quickly as possible.

The clock is ticking down to the start of coal ash and groundwater remediation at Crystal River, and reuse may be a significant component of the eventual fate of the ash.

Florida's imperiled springs destined for doom

By ROBERT KNIGHT, PHD

The Florida Legislature had ample warning that their 2016 Florida Springs and Aquifer Protection Act was inadequate to fix the nitrate pollution nightmare in Florida's springs. The Florida Springs Council warned legislators that the law as written did not have the teeth needed to solve a problem 50 years in the making.

As required by FSAPA, the Florida Department of Environmental Protection determined that 24 of 30 Outstanding Florida Springs are currently impaired by excessive nitrate pollution.

The department also estimated that nitrate loads discharging from these 24 impaired Outstanding Florida Springs needed to be reduced by 68 percent to meet water quality targets.

This nitrate reduction goal will require the elimination of approximately 63 million pounds of nitrogen loading to the land surface in the associated springsheds. The FSAPA directed DEP to develop basin management action plans to achieve this goal, resulting in 13 BMAPs that were adopted by DEP in 2018 to provide a 20-year roadmap to restore these springs.

Prior to 2016, DEP scientists had already documented that reliance on BMAPs to reduce groundwater and springs nitrate pollution was unsuccessful. After implementation of upgraded agricultural best management practices to achieve the 2012 Santa Fe BMAP, nitrate concentrations are still increasing in the Santa Fe basin groundwater and springs.

Albert Einstein is famously quoted as saying that the definition of insanity is doing something over and over and expecting a different result. Unfortunately, Florida's top legislators trusted lobbyists to write the 2016 Florida Springs and Aquifer Protection Act rather than accepting the evidence provided by their own springs technical experts that current springs BMAPs are not effective.

The Suwannee River and its 250+ artesian springs were designated Outstanding Florida Waters in 1979. This legally binding status allows "no degradation of water quality."

Since that time, nitrate discharging from those springs has increased by 50 percent. The sources of this nitrate pollution are an estimated 36 million pounds of nitrogen per year, primarily from farm fertilizer and livestock operations.

The 2018 BMAP for the springs along the Suwannee does not have any requirement for reduced nitrogen fertilizer application or reduction in livestock density. It is a 20-year plan destined to fail.

This example of inadequate springs restoration actions applies to all 24 of the impaired Outstanding Florida Springs. None of these BMAPs have a reasonable chance

of success because they do not confront and curtail the major sources of nitrate pollution. Two thirds of this pollution is from agriculture and the remaining third is from urban fertilizer runoff and human wastewater.

Fortunately, the Florida Springs Council and eight additional petitioners decided to challenge DEP on a representative group of these inadequate springs BMAPs that includes Silver, Rainbow, Santa Fe, Suwannee, Wekiva and Volusia Blue springs.

At the November administrative hearing in Tallahassee, DEP argued that their BMAPs do everything allowed by law but may still not achieve success.

DEP invested thousands of hours of staff time and many hundreds of thousands of taxpayer dollars to prepare and defend these inadequate BMAPs.

The Florida Springs Council's rule challenge was supported by volunteer services and private donations from individuals with no economic interest in the outcome.

The petitioners' challenges to these flawed springs BMAPs were brought with the sole purpose of proving to the administrative law judge that the BMAPs must be significantly improved or Florida's springs are doomed.

On a personal note, this is my fifth springs-related administrative challenge. The first two were battles over groundwater extraction permits issued to Frank Stronach's Sleepy Creek Ranch, a.k.a. Adena Springs. Thousands of private citizens opposed this for-profit groundwater grab.

The next hearing focused on the emergency and final minimum flows for Silver Springs, allowing additional flow reductions in one of our state's most imperiled water bodies. St. Johns River Water Management District lawyers and staff used substantial public resources and personal intimidation to defeat the concerned public's attempt to save Silver Springs from additional flow depletion.

These three unsuccessful administrative challenges convinced me that some government leaders will stop at nothing to serve special interests. When the goal is restoration and protection of Florida's priceless springs, one must learn from one's failures and try again.

This year, I have had the opportunity to testify and present the best available science during two additional administrative hearings, the Rainbow Springs minimum flows challenge and the Outstanding Florida Springs BMAP challenge. Neither case has been decided, but I am confident that in both hearings the facts speak for themselves and the administrative law judges have the evidence they need to improve these flawed agency actions.

Robert Knight, PhD, is executive director of the non-profit Howard T. Odum Florida Springs Institute and is a member of the executive committee of the Florida Springs Council.

Florida Specifier December 2019 / January 2020

SWFWMD adopts reduced flow rates for Homosassa, Chassahowitzka rivers

Staff report

In late October, the Southwest Florida Water Management District Governing Board adopted new minimum flow rates for the Homosassa and Chassahowitzka rivers. The new rates allow minimum flow reductions of eight percent for the Chassahowitzka and five percent for the Homosassa, replacing the three percent reduction established for both in 2015.

In terms of volumes, in 2015 the three percent reduction amounted to 4.86 cubic feet per second at Homosassa Springs. But under the new minimum flow standard,

flow reductions could increase to 7.77 cubic feet per second, a five percent flow reduction.

With water conservation and reuse, the projected 2035 flows could be reduced by only 6.70 cubic feet—even if it were legally allowed to be reduced more.

For Chassahowitzka Springs, flow reduction due to groundwater withdrawals in 2015 was 2.85 cubic feet per second. By 2035, flow reduction will increase to 4.13 cubic feet per second, but could be only 3.48 cubic feet per second with conservation and reuse.

The new flow rates were approved at

the board's October meeting. According to local news accounts, the meeting was heavily attended by residents opposed to the approved reductions, a decision that essentially allows more groundwater withdrawals that would lead to reduced flow.

One point of criticism was that only seven members of what should be a 13-member board made the decision.

Currently, six board positions are vacant.