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Jacksonville, Florida 32202-3139

January 21, 2011



E L E C T R I C

W A T E R

S E W E R

Mr. Michael P. Halpin, P.E.  
Siting Coordination Office, Administrator  
Florida Department of Environmental Protection  
3900 Commonwealth Blvd. MS 48  
Tallahassee, Florida 32399

RE: JEA - St. Johns River Power Park  
Petition to Modify Site Certification PA 81-13  
Groundwater Monitoring (Mod P)  
DEP Case Number PA 81-13P  
Response to Request for Additional Information (RAI)

Dear Mr. Halpin,

On September 20, 2010, JEA submitted a petition and associated fee to the Department of Environmental Protection (Department or FDEP) requesting modification to the St. Johns River Power Park's (SJRPP) site certification conditions to reduce the frequency of certain groundwater sampling and analysis from quarterly to semi-annually and to provide for submittal of such sampling results on the 30<sup>th</sup> day of the month instead of the 15<sup>th</sup> day of the month. The attached "Request for Additional Information" (RAI) (Attachment A), dated October 20, 2010, was transmitted by your office to JEA in order for the Department to make an adequate review of the submitted petition.

The following are JEA's responses to the Department's RAI questions. For ease of reference, the Department's RAI questions are repeated below in italics followed by JEA's response:

1. *In reference to the facility's Industrial Wastewater Groundwater Monitoring Program, including the "B" and "C" wells and the request for modification of the Site Certification to reduce the frequency of monitoring from quarterly to semi-annually, it is requested the facility submit an evaluation of the historic monitoring results from these wells over the last five years. The evaluation should include graphs of each monitored parameter showing any trends, and a review of the data for any seasonality changes to justify a reduction in the monitoring frequency.*

**JEA Response:** Pursuant to the December 9, 2010 telephone conference call held with Mr. Robert Martin, FDEP's Northeast District Office, please find enclosed (Attachment B) an evaluation of the historic quarterly conductivity monitoring results from 1999 through the third quarter of 2010, including graphs depicting trends as well as a statistical review of the data for any potential seasonal variability which supports the requested reduction in the monitoring frequency. Please also refer to the "B" and "C" well graphical representation in Attachment B regarding conductivity trends. In addition, based on the statistical evaluation, there is no significant seasonal variation observed for the "B" or "C" wells.

2. *This modification request will require the groundwater monitor conditions of the Site Certification to be updated to today's language by incorporating the standard conditions that are required by current rules. This will include separating the groundwater monitoring conditions according to each program. There will be a separate Solid Waste groundwater monitoring section and a separate Industrial Wastewater groundwater monitoring section.*

**JEA Response:** JEA agrees that groundwater monitoring requirements would be easier to understand if the specific groundwater monitoring wells that are the subject of this petition were separately identified in the conditions of certification based on whether the wells are associated with SJRPP solid waste storage areas or industrial wastewater treatment basins. In that regard, please find enclosed Attachment C which separately identifies groundwater monitoring wells for SJRPP's solid waste storage areas and industrial wastewater treatment basins. JEA suggests that relevant portions of SJRPP's existing site certification conditions (III. F.6.) can be modified as set forth below to incorporate the separate listing of SJRPP solid waste storage area and industrial wastewater treatment groundwater monitoring wells found in Attachment C. JEA proposes that Attachment C would become Appendix D to the SJRPP's site certification conditions.

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### III. F. 6. Minimum Water Level Restrictions

If the Department and SJRWMD at a future date establish a minimum water level of general applicability to all users in the aquifer or aquifers hydrologically associated with these withdrawals, they may propose pursuant to Section 403.516, F.S. that JEA reduce or cease withdrawal from these groundwater sources at times when water levels fall below these minimums.

After consultation with the DEP and SJRWMD, JEA shall install a monitoring well network to monitor groundwater quality horizontally and vertically through to the top of the Hawthorne Formation's first clayey lithologic unit. Groundwater quantity and flow directions will be determined seasonally at the site through the preparation of

seasonal water table contour maps, based upon water level data obtained during the applicant's preoperational monitoring program. From these maps the water quality monitoring well network will be located. Monitoring well locations and designs shall be submitted to the Department and SJRWMD for review. Approval or disapproval of the locations and design shall be granted within 60 days. Monitoring wells shall be installed up gradient and down gradient from each solid waste disposal area, each liquid waste pond and each coal pile storage area. An additional monitoring well will be placed immediately down gradient of the first section of each solid waste landfill to be utilized. Insofar as possible, these monitoring wells may be selected from the existing wells and piezometers used in the licensee's preoperational monitoring program. Existing wells will be properly sealed in accordance with Rule 62-535.500(4), F.A.C., whenever they are abandoned due to construction of facilities or landfill cells. The water samples collected from each of the monitor wells shall be collected immediately after removal by pumping of a quantity of water equal to at least two casing volumes. The water quality analyses for the current solid waste storage area and industrial wastewater treatment basin groundwater monitoring wells identified in Appendix D shall be performed monthly during the year prior to commercial operation and semi-annually thereafter. Any new groundwater monitoring wells mutually agreed upon by the Department and JEA to be installed in relation to the solid waste storage areas or industrial wastewater treatment basins shall automatically be incorporated by the Department into Appendix D. Results shall be submitted to the Department and the SJRWMD by the thirtieth (30<sup>th</sup>) day of the month following the month during which such analyses were performed. The Department may revise, upon mutual agreement by JEA, the groundwater monitoring constituents, frequency, and analytical result submittal deadline. Testing for the following constituents is required around unlined ponds or storage areas:

Aluminum, Arsenic, Beryllium, Cadmium, Chloride, Chromium, Color, Conductance, Copper, Gross Alpha, Iron, Lead, Mercury, Nickel, pH, Selenium, Redox, Sulfate, Sulfite, Total Dissolved Solids, Zinc.

Conductivity shall be monitored in wells around all lined solid waste disposal sites, coal piles, and wastewater treatment and sedimentation ponds.

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To the extent that the Department believes that additional modifications are needed to the facility's groundwater monitoring conditions, JEA requests that a meeting be scheduled between JEA and Department representatives to discuss any such proposed modifications.

In the FDEP's RAI, it noted and included RAI questions from the St. Johns River Water Management District (SJRWMD). As before, the SJRWMD questions are repeated below in italics, followed by JEA's response.

1. *Please provide a statistical trend analyses for chloride concentration (milligrams per liter) sampled from the SJRPP production and monitoring wells that includes the following:*
  - a. *A screening test such as LOWESS (“locally weighted scatterplot smoothing”) for determining that a trend is monotonic or non-monotonic over the period and for detecting break points.*
  - b. *Nonparametric Mann-Kendall regression Sen’s test for quantifying trends over single or multiple (piecewise) periods detected in initial screening tests.*
  - c. *A nonparametric test for evaluating the presence of autocorrelation and/or seasonality (if appropriate).*
  - d. *A report that documents procedures and tabulates results including period of record, break points (if present), MK Sen slope (in milligrams per liter per year), p-value, significance and conclusions. [Paragraphs 9.4.2 (b)(c), 10.3 (d)(h)(j), Applicant’s Handbook: Consumptive Uses of Water Chapter 40C-2, F.A.C.]*
2. *For water quality samples collected, as required per your Site Certification, since water quality monitoring began from the SJRPP production and monitoring wells (with an anion-cation balance less than 10% difference):*
  - a. *Please determine the geochemical type(s) of groundwater (e.g. calcium bicarbonate, calcium sulfate, sodium chloride) based upon the equivalent concentration, and*
  - b. *Prepare Piper-trilinear diagrams that graphically represent geochemical patterns and classification (e.g., fresh recharge water, transitional water, connate water, sea water) for anion-cation pairs (Piper diagram) and for anions and cations (trilinear diagrams) according to the procedures described by Frazee in Geochemical Pattern Analysis: Method of Describing the Southeastern Limestone Regional Aquifer System (1982). [Paragraphs 9.4.2 (b)(c), 10.3 (d)(h)(j), Applicant’s Handbook: Consumptive Uses of Water Chapter 40C-2, F.A.C.]*

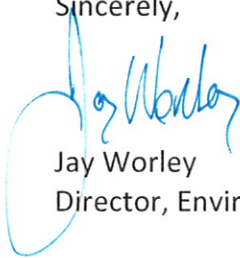
**JEA Response:** Pursuant to a discussion with Ms. Caroline Silvers, SJRWMD, JEA clarified that the groundwater monitoring wells under consideration were **not** the aquifer production groundwater monitoring wells but were the shallow ground water monitoring wells associated with the SJRPP solid waste storage areas and the facility’s industrial wastewater basins. Please refer again to Attachment C, a listing of the

groundwater monitoring wells, with associated casing lengths, for identification purposes which are the subject of this petition. These wells are currently being sampled and analyzed on a quarterly basis and JEA is now requesting that these wells be sampled semi-annually.

During the discussion with Ms. Silvers, she clarified that the SJRWMD questions were not related to the solid waste storage area and industrial wastewater treatment basin groundwater monitoring wells identified in the petition but to the aquifer production groundwater monitoring wells. Therefore, sampling and analysis of the aquifer production groundwater monitoring wells will continue to be collected and analyzed quarterly. Thus, Ms. Silvers agreed that JEA need not respond to the SJRWMD's questions.

Please do not hesitate to contact me at (904) 665-8729 if you have any questions or require any additional information.

Sincerely,



Jay Worley  
Director, Environmental Programs

xc: Robert Martin, FDEP NED  
Chris Kirts, FDEP NED  
Caroline Silvers, SJWMD

Attached: Attachment A – FDEP RAI dated 10-20-10  
Attachment B – SJRPP “B” & “C” Wells: Conductivity Evaluation  
Attachment C – SJRPP Solid Waste and Industrial Monitoring Wells