

FACT SHEET

Lee County Corkscrew WTP ASR System
Permit ID Number: 0142222-018-022-UO/5X
WACS ID Number: 75566
September 16, 2014

1. General Information

A. Statutory Basis For Requiring/Issuing Permit

The Department has permitting jurisdiction under Chapter 403 Florida Statutes (F.S.), and 62-4, 62-520 and 62-528, Florida Administrative Code (F.A.C.). The project is not exempt from permitting procedures. The Department has determined that a construction permit is required.

B. Name and Address of Applicant

Ms. Pam Keys, P.E., Utility Director
Lee County Utilities
1500 Monroe Street, 3rd Floor
Ft Myers, FL 33901

C. Facility Location

Corkscrew Water Treatment Plant (WTP) Aquifer Storage and Recovery (ASR) system
16101 Alico Road
Fort Myers, Florida 33913

D. Description of Applicant's Operation

To operate a Class V, Group 7 aquifer storage and recovery (ASR) system consisting of 5 ASR wells (ASR-1 through ASR-5), eight storage zone monitor wells (MW-A and MW-C, and MW-1 through MW-6), one overlying zone monitor well completed in the Sandstone aquifer (MW-LM926) and one underlying storage zone monitor well (MW-B) completed in the Mid-Hawthorn Group Zone II. These wells are located at the Lee County Utilities Corkscrew Water Treatment Plant (WTP), 16101 Alico Road, Ft Myers, Lee County. The injection wells are used for ASR of potable water from the Lee County Corkscrew WTP to meet seasonal demands of the potable water system. The maximum injection volume for the wellfield is 350 million gallons per year. The storage zone is within the Mid-Hawthorn Group upper-Arcadia Formation Zone I. See Documents 2, 3, and 8.

The 2009 permit and the accompanying Administrative Order allowed continued operational testing to occur simultaneously with an assessment of the current operation of the ASR wellfield and aquifers affected by the operation of this wellfield. The water quality data from the monitor wells confirms no arsenic mobilization outside a 500 foot radius of any of the ASR wells. Thirteen complete ASR cycles and water quality data from the overlying monitoring well LM-926 (monitoring interval of 155-195 bls) indicate no changes in water quality in the upper monitor zone.

Institutional Controls for this facility are provided pursuant to Chapter 14 of the Environment and Natural Resources Lee County Florida Land Development Code: Section 14-219; Aquifer storage and recovery wells, which states: “The installation of a water supply well is prohibited within 2,640 feet of an existing or permitted aquifer storage and recovery well, unless confinement exists between the production zone of the water well and the storage/production zone of the ASR well.”

E. Permitting History of this Facility

1. Construction permit UC36-264777 was issued May 22, 1995 for ASR-1.
2. Construction permits 142222-001, 002, 003, 004 and 005 were issued January 14, 1999 for ASR-2 through ASR-6. ASR-6 was not constructed.
3. A Letter of Authorization was issued May 17, 2000 to use ASR-1. Construction permit 142222-007 through 010-UC was issued May 5, 2005 for ASR-2, 3, 4, and 5.
4. Administrative Order AO-050-SD/UIC09 and construction permit renewals 142222 012 UC/5X through 142222-016 for four Class V Group Seven (7) ASR wells, August 7, 2009.
5. Permit Modification File No. 14222-017-UC/MN July 22, 2011 – install 3 new monitor wells MW 4, MW-5, MW-6 and decreasing sampling frequencies MW-B.

F. Documents Used in Permitting Decision

1. UIC Class V Injection Well Permit Application and Supporting Documentation for the Lee Count Utilities Corkscrew WTP Site, Lee County FL, ViroGroup, January 1995.
2. Corkscrew WTP ASR Pilot Project Final Report, ASR-1, CDM/ViroGroup, July 1997.
3. Corkscrew ASR Expansion Project Completion Report, ASR-2 through ASR-5, Water Resource Solutions and Pitman Hartman & Assoc., Inc., September 1999.
4. Application for construction and operational testing Class V, Group 7 ASR wells with supporting information, March 2007 and April 24, 2009.
5. Additional information, Lee County, April 3, 2009.
6. Regulatory Compliance Review, Evaluation, and Computer Modeling; RMA GeoLogic Consultants, Inc., April 2009.
7. Assessment, Evaluation, Computer Modeling, and Operation and Management Plan for Lee County Utilities Corkscrew WTP, ASR System, Lee County FL. RMA GeoLogic Consultants, Inc. Volumes I and II, July 16, 2010
8. Operation Permit Application and Supporting Documentation for the Corkscrew WTP ASR, Lee Co, RMA GeoLogic Consultants, Inc., July 18, 2014
9. Response to items of incompleteness, RMA Geologic Consultants, Inc., August 7, 2014.

2. Reasons Permit was Issued

A. Area of Review (Rule 62-528.300(4), F.A.C.)

Wells located within a 12.0 square mile (63,360 ft²) area with the WTP at the approximate center were located on a map and the well information listed. There were no wells identified that were not properly completed or plugged within the area of review. See Document 8, and Rules 62-528.300(4) and 62- 528.455(3)(b)1 and 2 F.A.C.

B. Mechanical Integrity Demonstration (Rule 62-528.300.(6), F.A.C.)

Not required by Chapter 62-528, F.A.C. for Class V Wells.

C. Confinement (Rule 62-528.405(2), F.A.C.)

Not required by Chapter 62-528, F.A.C. for Class V wells if injection will not cause violations of ground water quality standards.

D. Injection Zone Testing (Rule 62-528.405(2), F.A.C.)

Based on lithology, aquifer packer testing, water quality sampling and geophysical logs the injection zone is 250 to 450 feet below land surface (bls). This interval is within the Mid-Hawthorn Group Zone I within the upper-most sediments of the Arcadia Formation of Miocene Age. The lithology consist of mainly phosphatic limestone, with lenses of quartz sand, and moderately cohesive lime mud and clay. See Documents 2 and 3 for details.

E. Well Construction

Completed casing program for ASR wells 1-5 (all casings are new, unused steel or PVC, cemented to land surface). See Documents 2 and 3.

ASR-1: 12" OD Schedule 80 PVC casing set to 328 feet bls

The open hole extends from 328 feet to a total depth 397 feet bls.

ASR-2: 20" OD steel casing set to 33 feet bls, thickness is 0.25"

12" OD Schedule 80 PVC casing set to 337 feet bls, thickness is 0.687"

The open hole extends from 337 feet to a total depth 397 feet bls.

ASR-3: 20" OD steel casing set to 41 feet bls, thickness is 0.25"

12" OD Schedule 80 PVC casing set to 285 feet bls, thickness is 0.687"

The open hole extends from 285 feet to a total depth 347 feet bls.

ASR-4: 20" OD steel casing set to 40 feet bls, thickness is 0.25"

12" OD Schedule 80 PVC casing set to 310 feet bls, thickness is 0.687"

The open hole extends from 310 feet to a total depth 368 feet bls.

ASR-5: 20" OD steel casing set to 21 feet bls, thickness is 0.25"

12" OD Schedule 80 PVC casing set to 253 feet bls, thickness is 0.687"

The open hole extends from 253 feet to a total depth 291 bls.

F. Monitor Plan (Rule 62-528.425(1), F.A.C.)

The monitor system consist of ten monitor wells: Eight ASR zone monitor wells, MW-1, through MW-6, MW-A, and MW-C are completed in the mid-Hawthorn upper Arcadian Formation Zone I storage zone from 283 to 411 feet bls. Monitor well MW-B is completed in the underlying mid-Hawthorn Zone II aquifer (452-504 feet bls), and monitor well LM-926 is completed in the overlying Sandstone aquifer (155 to 195 feet bls). MW-C will be plugged and abandoned.

Required injection and monitor well monitoring parameters include daily injection volume, flow rate and pressure, and monitoring of the injectate stream from the WTP for the parameters listed in the specific conditions of the permit. Recovered water and monitor well water quality are also required to be submitted. See Document 8 and Draft Permit.

G. Financial Responsibility (Rule 62-528.435(9) and 62-528.455(3)(b)8. and (c)3., F.A.C.)

Not required by Chapter 62-528, F.A.C. for Class V wells.

H. Emergency Discharge (Rule 62-528.450(2)(k), F.A.C.)

Not required by Chapter 62-528, F.A.C. for Class V wells.

3. Agency Action

A draft permit will be issued as per Rule 62-528.325, F.A.C.

4. Public Rights (Rules 62-528.310, 62-528.315, 62-528.325, F.A.C.)

Any interested person may submit written comments on the draft permit, and may request a public meeting, within 30 days of the public notice. A request for a public meeting shall be in writing and shall state the nature of the issues proposed to be raised at the meeting. If a public meeting is later scheduled, there will be another 30-day notice period for that meeting. Written comments or a public meeting request may be submitted to the Department of Environmental Protection, Aquifer Protection Program, 2600 Blair Stone Road, MS 3530, Tallahassee, Florida 32399-2400. All comments received within the 30 day period and during the public meeting will be considered in formulation of the Department's final decision regarding permit issuance.

After the conclusion of the public comment period and public meeting described above, the Department may revise the conditions of the permit based on such public comment. Then the applicant will publish Notice of the Proposed Agency Action. A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing). Accordingly, the Department's final action may be different from the position taken by it in the Notice of Proposed Agency Action. The petition must conform to the requirements specified in the Notice and be filed (received) within 14 days of publication of the Notice in the Department's Office of General Counsel, MS 35, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000. The failure of any person to file a

petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 of the Florida Statutes, or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will only be at the discretion of the presiding officer upon the filing of a motion in compliance with rule 28-106.205 of the Florida Administrative Code.

The application and draft permit are available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at the Department of Environmental Protection, [South](#) District Office, 2295 Victoria Ave., Suite 364, Fort Myers, Florida 33901 or at the Department of Environmental Protection, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Please contact Mr. Neil Campbell at 850.245.8612 for additional information concerning this project.

5. Agency Contact

[Neil I. Campbell](#), Engineering Specialist, Aquifer Protection Program
Florida Department of Environmental Protection
2600 Blair Stone Road, MS 3530
Tallahassee, Florida 32399-2400
Phone: 850.245.8612