



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

BOB MARTINEZ CENTER
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

RICK SCOTT
GOVERNOR

CARLOS LOPEZ-CANTERA
LT. GOVERNOR

JONATHAN P. STEVERSON
SECRETARY

SENT VIA ELECTRONIC MAIL

In the Matter of an Application for Permit by:

21 May 2015

Mr. Clayton Lindstrom, Director
Fort Pierce Utilities Authority
206 South 6th Street
Fort Pierce, Florida 34958-3191
CLindstrom@FPUA.com

FDEP File No. 0259734-006-007-UO/II
FDEP WACS No. 95587
St. Lucie County UIC
Class I Injection Well System
Operation Permit Treasure Coast Energy Center

NOTICE OF DRAFT PERMIT

The Department of Environmental Protection hereby gives notice that a Draft Permit has been developed for the proposed project as detailed in the application specified above, for the reasons stated below.

The applicant, Fort Pierce Utilities Authority, Mr. Clayton Lindstrom, Director, 206 South 6th Street, Fort Pierce, Florida 34958-3191 applied on February 17, 2015 to the Department of Environmental Protection for a permit to operate a Class I injection well system.

The Department has permitting jurisdiction under chapter 403 of the Florida Statutes and the rules adopted thereunder. The project is not exempt from permitting procedures. The Department has determined that an operation permit is required for the proposed work.

Pursuant to section 403.815 of the Florida Statutes, and Rule 62-528.315 (6)(b) of the Florida Administrative Code, you (the applicant) are required to publish at your own expense the enclosed Notice of Draft Permit. The Notice must be published one time only within 30 days in a newspaper of general circulation in the area affected. For the purpose of this rule, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031 of the Florida Statutes, in the county where the activity is to take place. The applicant shall provide proof of publication to the Tallahassee Office of the Department within seven (7) days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.

PERMITTEE: Mr. Clayton Lindstrom, Director of Utilities
Fort Pierce Utilities Authority – TCEC/MWRF
Water Reclamation Facility

Permit Number: 0259734-006-007-UO/11
WACS ID: 95587
Date: May 21, 2015

Any interested person may submit written comments on the draft permit within 30 days of the public notice. Written comments 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 by the Department in formulating a final decision concerning this project. If a public meeting is arranged it must be held in the area of the well no less than 30 days after publication of this Notice for the purpose of receiving verbal and written comment concerning this project. If a public meeting is not arranged prior to publication, the Notice must provide an opportunity for a public meeting. If a public meeting is later scheduled, there will be another 30-day notice period for that meeting. Please contact [Neil Campbell](#), Engineering Specialist at [850.245.8612](tel:850.245.8612), for additional information.

Executed in Leon County, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION



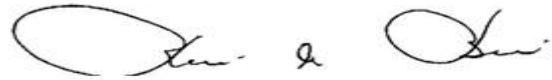
Joseph Haberfeld, P.G.
Aquifer Protection Program Administrator

CERTIFICATE OF SERVICE

The undersigned designated clerk hereby certifies that this NOTICE OF DRAFT PERMIT and all copies were mailed before the close of business on Thursday, May 21, 2015, to the listed persons.

FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to Section.120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged



Clerk

5/21/2015

Date

Copies Furnished To:

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STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

NOTICE OF DRAFT PERMIT

The Department of Environmental Protection hereby provides Notice that it has prepared a Draft Permit for the proposed project as detailed in application File No. [0259734-006-007-UO/11](#) (WACS ID no. [95587](#)), subject to the conditions specified in the draft permit and summarized below. The applicant, Fort Pierce Utilities Authority (FPUA), Mr. Clayton Lindstrom, Director, 206 South 6th Street, Fort Pierce, Florida 34958-3191 applied on February 17, 2015 for a permit to operate a non-hazardous Class I injection well system. The project is located at the FPUA Treasure Coast Energy Center (TCEC) and Mainland Water Reclamation Facility (MWRF), 4515 Energy Drive, Fort Pierce, Florida, 34981 in the county of St. Lucie.

The current wastestream for injection well IW-1 consists of cooling tower blowdown and wastewater from floor drains at the TCEC power generating unit and leachate from the St. Lucie County (SLC) Bailing and Recycling Facility Class I landfill. Groundwater from extraction wells located in the northeast corner of the SLC Bailing and Recycling Facility and cooling tower blowdown (gasification cooling water) from the proposed gasification water-to-energy facility are also authorized under this permit after submittal of wastestream characteristics and Department approval.

IW-1 is constructed with a 24-inch injection steel casing and a Redbox 1000, 18-inch fiberglass reinforced pipe (FRP) injection tubing and a fluid-filled annulus. Injection well IW-2 was constructed as a municipal injection well for the MWRF, but has not been placed into service and will be included in this permit with no wastewater injection permitted. The maximum allowable injection rate for IW-1 shall not exceed 2.7 million gallons per day.

The Department has permitting jurisdiction under Chapter 403 of the Florida Statutes and the rules adopted thereunder. The project is not exempt from permitting procedures. The Department has determined that an operation permit is required for the proposed work.

Any interested person may submit written comments on the draft permit and may request a public meeting within 30 days after publication of this public notice. A request for a public meeting shall be submitted in writing and shall state the nature of the issues proposed to be raised in 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 shall be submitted to the Department of Environmental Protection, Aquifer Protection Program, 2600 Blair Stone Road, MS 3530, Tallahassee, Florida 32399-2400, which is the office processing this permit application. All comments received within the 30-day period will be considered in formulation of the Department's final decision regarding permit issuance.

The application, draft permit, and fact sheet 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, [Southeast District Office](#), 3301 Gun Club Road, MSC7201-1, West Palm Beach, Florida, 33406, and at the Department of Environmental Protection, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Any additional information concerning this project may be obtained by contacting [Neil Campbell](#), Engineering Specialist, at [850.245.8612](tel:850.245.8612).



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JONATHAN P. STEVERSON
SECRETARY

Underground Injection Control Class I Injection Well System Operation Permit

Permittee:

Fort Pierce Utilities Authority

Responsible Official:

Mr. Clayton Lindstrom, Utilities Director
206 South 6th Street
Ft. Pierce, Florida 34948
CLindstrom@FPUA.com

Facility:

FPUA – Treasure Coast Energy Center
(Mainland WRF)
4515 Energy Drive
Fort Pierce, Florida, 34981

Permit/Certification

Permit ID Number: 0259734-006-007-UO/II
WACS ID Number: 95587
Date of Issuance: Draft
Date of Expiration: Draft
Permit Processor: Neil I. Campbell

Section/Township/Range: S31/ T35S / R40E

Location

County: St. Lucie
Latitude: 27° 23' 11" N
Longitude: 80° 22' 37.9" W

Project: Class I Injection Well System

This permit is issued under the provisions of Chapter 403, Florida Statutes, and the rules adopted thereunder. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows.

TO OPERATE: Two Class I non-hazardous injection wells IW-1 and IW-2 and dual-zone monitor well MW-1 located at the FPUA Treasure Coast Energy Center (TCEC) and Mainland Water Reclamation Facility (MWRf). The current wastestream for injection well IW-1 consists of cooling tower blowdown and wastewater from floor drains at the TCEC power generating unit, and leachate from the St. Lucie County (SLC) Bailing and Recycling Facility Class I landfill. Groundwater from extraction wells located in the northeast corner of the SLC Bailing and Recycling Facility and cooling tower blowdown (gasification cooling water) from the proposed gasification water-to-energy facility are also authorized under this permit after submittal of wastestream characteristics and Department approval. IW-1 is constructed with a 24-inch injection steel casing and a Redbox 1000, 18-inch fiberglass reinforced pipe (FRP)

PERMITTEE: Mr. Clayton Lindstrom, Director of Utilities
Fort Pierce Utilities Authority – TCEC/MWRF
Water Reclamation Facility

Permit Number: 0259734-006-007-UO/11
WACS ID No.: 95587
Date: May 21, 2015

injection tubing and a fluid-filled annulus. Injection well IW-2 was constructed at MWRF as a municipal injection well, but has not been placed into service and will be included in this permit with no wastewater injection permitted. The maximum allowable injection rate for IW-1 shall not exceed 1900 gallons per minute (gpm) or 2.7 million gallons per day as designated by this permit. IW-1 is the only well that may be used for injection.

IN ACCORDANCE WITH: The Application to Operate DEP Form No. 62-528.900(1) received February 17, 2015 and technical specifications, drawings, plan of study and addenda submitted to this agency.

LOCATION: The project is located at the FPUA Treasure Coast Energy Center and Mainland Water Reclamation Facility, 4515 Energy Drive, Fort Pierce, Florida, 34981 in the county of St. Lucie.

The injection and monitoring wells at this facility are designated as follows:

Injection Wells

<i>Well Name</i>	<i>WACS Effluent Testsite ID</i>	<i>Total Well Depth*</i>	<i>Casing Diameter (inches)</i>	<i>Casing or Tubing Type</i>	<i>Casing or Interval*</i>
IW-1 0259734-006-UO/11		3200	54	Steel	72
			44	Steel	565
			34	Steel	1850
			24	Steel	2883
			18	FRP	2881
				Open hole	From 2883 to 3200
IW-2 0259734-007-UO/11		3209	54	Steel	70
			44	Steel	565
			34	Steel	1850
			24	Steel	2877
				Open hole	From 2877 to 3209

*Estimated Approximate Depth in Feet Below Land Surface (BLS)

Monitoring Wells

<i>Well Name</i>	<i>WACS Monitoring Well Testsite ID</i>	<i>Total Well Depth*</i>	<i>Casing Diameter (inches)</i>	<i>Casing Type</i>	<i>Casing or Interval depth*</i>
MW-1		1950	30	Steel	78
			20	Steel	565
			12	Steel	1765
					From 1765 to 1808
			6.625	FRP	1900
	Open Hole	From 1900 to 1950			

* Estimated Approximate Depth in Feet Below Land Surface (BLS)

SUBJECT TO: Specific Conditions I-VI and General Conditions 1- 24.

Specific Conditions

I. GENERAL REQUIREMENTS

A. General

1. Only non-hazardous injectate as described in this permit and purge water from the on-site monitoring wells (associated with the injection well system) may be discharged into the injection wells. [62-528.400(1)]
2. The injection pressure at the wellhead shall be monitored and controlled at all times to ensure the maximum pressure at the wellhead does not exceed two-thirds of the most recent tested pressure on the final casing, final cemented tubing, or casing/tubing annular space, as applicable. The following table outlines wellhead pressures applicable at the time of permit issuance:

Well	Maximum Permitted Wellhead Pressure (psi)	Most Recent tested wellhead pressure at the time of issuance of this permit (psi)
IW-1	104	156
IW-2	N/A	148

At such time as the next pressure test is performed and a report for that test is submitted to and accepted by the Department, the maximum wellhead pressure allowable will become two-thirds of the tested pressure from the successive test.

[62-528.300(6)(e)]

3. The flow to the injection wells at each wellhead shall be monitored and controlled at all times to ensure the maximum fluid velocity down the well during operation does not exceed the respective flow rate indicated below, and shall not exceed 10 feet per second except during planned testing, maintenance, or emergency conditions in which case the flow rate shall not exceed 12 feet per second [62-528.415(1)(f)]:

Well	Peak Flow Rate	
	GPM	MGD
IW-1	1,900	2.7
IW-2	0	0

4. No underground injection is allowed that causes or allows movement of fluid into an underground source of drinking water if such fluid movement may cause a violation of any Primary Drinking Water Standard or may otherwise affect the health of persons. [62-528.440(2)(c)]
5. All equipment of this facility shall be operated and maintained so as to function consistently as designed in removing pollutants. The wastewater stream shall remain non-hazardous at all times. [62-528.307(3)(b) and 62-528.400(1)]

6. In the event a well must be plugged or abandoned, the permittee shall obtain a permit from the Department as required by Chapter 62-528, Florida Administrative Code. When no longer used for their intended purpose, these wells shall be properly plugged and abandoned. Within 180 days of well abandonment, the permittee shall submit to the Department the proposed plugging method, pursuant to Rule 62-528.460, F.A.C. [62-528.460(1) and 62-528.435(6)]
7. In accordance with rules 62-4.090 and 62-528.455(3)(a), F.A.C., the permittee shall submit an application for permit renewal at least 60 days prior to expiration of this permit. [62-528.307(3)(a)]
8. Hurricane Preparedness: Preparations to be made by permittee upon issuance of a “Hurricane Watch” by the National Weather Service include, but are not limited to:
 - a) Secure all onsite salt and other stockpiled additive materials to prevent surface and/or ground water contamination.
 - b) Properly secure equipment to prevent damage to well(s) and onsite treatment process equipment.[62-528.307(1)(f)]
9. The casing of injection well IW-2 shall be kept filled with non-corrosive fresh water, and the wellhead pressure shall be recorded monthly to monitor the integrity of the well casing. [Rule Reference]

B. Mechanical Integrity and Mechanical Integrity Testing (MIT)

1. Mechanical Integrity.
 - a. The permittee shall maintain the mechanical integrity of the well at all times.
 - b. If the Department determines that the injection well lacks mechanical integrity, written notice shall be given to the permittee.
 - c. Within 48 hours of receiving written notice that the well lacks mechanical integrity, unless the Department requires immediate cessation of injection, the permittee shall cease injection into the well unless the Department allows continued injection pursuant to subparagraph d below.
 - d. The Department shall allow the permittee to continue operation of a well that lacks mechanical integrity if the permittee has made a satisfactory demonstration that fluid movement into or between underground sources of drinking water is not occurring.[62-528.307(3)(e)]
2. The permittee shall demonstrate mechanical integrity at least once every five years during the life of each injection well. In the event operational or other data indicate a possible loss of integrity in an injection well, the mechanical integrity and other testing may be required at less than a five-year interval. For each injection well, the mechanical integrity testing program shall include: TV survey, pressure test, radioactive tracer survey (RTS), and temperature log. Mechanical integrity testing shall be run and completed prior to the following dates:

Five-Year MIT	
Well Name	Required Completion Date
IW-1	October 12, 2016
IW-2	N/A

[62-528.300(6)(b)2, 62-528.300(6)(c) and 62-528.425(1)(d)]

3. A plan describing the mechanical integrity procedures shall be submitted to the Department's Tallahassee and Southeast District offices for approval at least 90 days prior to the required completion date noted above. *[62-528.307(1)(m)4.]*
4. The Department's Southeast District office must be notified a minimum of seventy-two (72) hours prior to all testing for mechanical integrity on the injection wells. The testing procedure must be approved by the Department before testing begins. All testing must be initiated during daylight hours, Monday through Friday. An evaluation of all test results must be submitted with all test data. *[62-528.300(6)(f)]*
5. Pursuant to Rule 62-528.430(2)(b)2.a., F.A.C., the final MIT report for the demonstration of mechanical integrity for the injection wells shall be submitted to the Department's Tallahassee office for review and approval within three months of the completion date for mechanical integrity testing. In addition, a copy of the cover letter for the MIT results shall be sent to the U.S. Environmental Protection Agency, Region 4, UIC program, 61 Forsyth St. SW, Atlanta, GA 30303-8909. The final MIT report shall be prepared by a registered/certified Professional Engineer and/or Professional Geologist (as appropriate), and it shall address all tests noted in condition I.B.2 (including procedures followed, interpretations and results), and shall include a tabular presentation/graphical evaluation of monitoring well data over the previous 5-year period. If the well has failed any of the specified tests, the MIT report shall include a plan for corrective action for all discovered deficiencies. *[62-528.440(5)(b)]*

C. Surface Equipment

1. The integrity of the monitoring zone sampling systems shall be maintained at all times. Sampling lines shall be clearly and unambiguously identified by monitoring zone at the point at which samples are drawn. All reasonable and prudent precautions shall be taken to ensure that samples are properly identified by monitoring zone and that samples obtained are representative of those zones. Sampling lines and equipment shall be kept free of contamination with independent discharges and no interconnections with any other lines. *[62-528.307(1)(f) and 62-528.307(3)(b)]*
2. The surface equipment for the each injection well disposing of domestic (municipal) effluent shall maintain compliance with Chapter 62-600.540(4), F.A.C., for water hammer control, screening, access for logging and testing, and reliability and flexibility in the event of damage to the well and effluent piping. *[62-600.540(4), 62-528.307(1)(f), and 62-528.307(3)(b)]*
3. Injection wells not disposing of domestic (municipal) effluent shall maintain

- compliance with Chapter 62-528.450(2)(j), F.A.C. for water hammer control, as well as access for logging and testing, and reliability and flexibility in the event of damage to the well and effluent piping. [62-528.450(2)(j), 62-528.307(1)(f), and 62-528.307(3)(b)]
4. The surface equipment and piping for the injection and monitoring wells shall be kept free of corrosion at all times. [62-528.307(1)(f) and 62-528.307(3)(b)]
 5. Spillage onto the injection well pad(s) during construction activities, and any waters spilled during mechanical integrity testing, other maintenance, testing or repairs to the system(s) shall be contained on the pad(s) and directed to the pumping station, wet well, or via other approved means to the injection well system(s). [62-528.307(1)(f) and 62-528.307(3)(b)]
 6. The injection well pads shall be maintained and retained in service for the life of the injection wells. The injection well pads are not, unless specific approval is obtained from the Department, to be used for storage of any material or equipment at any time. [62-528.307(1)(f) and 62-528.307(3)(b)]
 7. The surficial aquifer monitoring wells adjacent to the injection and monitoring wells shall be secured, maintained, and retained in service for subsequent sampling that may be needed (i.e., should there be an accidental discharge to the surficial aquifer); alternatively, the facility may submit a request to the Department for cessation of sampling followed by capping, or plugging and abandonment of these wells. [62-528.307(3)(b) and 62-520.600(6)(k)]

II. QUALITY ASSURANCE/QUALITY CONTROL

1. The permittee shall ensure that the operation of this injection well system shall be as described in the application and supporting documents. Any proposed modifications to the permit shall be submitted in writing to the Tallahassee office of the Aquifer Protection Program for review and clearance prior to implementation. Changes of negligible impact to the environment and staff time will be reviewed by the program manager, cleared when appropriate and incorporated into this permit. Changes or modifications other than those described above will require submission of a completed application and appropriate processing fee as per Rule 62-4.050, F.A.C. [62-528.100 and 62-4.050]
2. Proper operation and maintenance include effective performance and appropriate quality assurance procedures; adequate operator staffing and training; and adequate laboratory and process controls. [62-528.307(3)(b)]
3. All water quality samples required by this permit shall be collected in accordance with the appropriate Department Standard Operation Procedures (SOP), pursuant to Chapter 62-160, Field Procedures. A certified laboratory shall conduct the analytical work, as provided by Chapter 62-160, F.A.C., Laboratory Certification. Department approved test methods shall be utilized, unless otherwise stated in this permit. All calibration

procedures for field testing and laboratory equipment shall follow manufacturer's instrumentation manuals and satisfy the requirements of the Department SOPs. A listing of the SOPs pertaining to field and laboratory activities is available at the FDEP website at: <http://www.dep.state.fl.us/water/sas/sop/sops.htm>. [62-4.246 and 62-160]

4. All indicating, recording and totalizing devices associated with the injection well system shall be maintained in good operating condition and calibrated annually at a minimum. The pressure gauges, flow meter, and chart records shall be calibrated using standard engineering methods. [62-528.307(1)(f) and 62-528.307(3)(b)]
5. All reports submitted to satisfy the requirements of this permit shall be signed by a person authorized under Rule 62-528.340(1), F.A.C., or a duly authorized representative of that person under Rule 62-528.340(2), F.A.C. All reports required by this permit which are submitted to the Department shall contain the following certification as required by Rule 62-528.340(4), F.A.C.:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

[62-528.340(1), (2), and (4)]

6. Analyses shall be conducted on unfiltered samples, unless filtered samples have been approved by the **Southwest** District Office as being more representative of ground water conditions. [62-520.310(5)]

III. TESTING AND REPORTING REQUIREMENTS

A. General

1. The permittee shall submit monthly to the Department the results of all injection well and monitoring well data required by this permit no later than the last day of the month immediately following the month of record. The report shall include:
 - a. A cover page summarizing the current status of all monthly activities, including the certification and signature required in condition II.5.;
 - b. Operational and water quality data in a tabular format. The following identifying information must be included on each data sheet:
 - i. Facility Name
 - ii. Well Name
 - iii. UIC Permit Number
 - iv. WACS Facility ID

Monitoring Continued

PARAMETER	UNIT	RECORDING FREQUENCY	FREQUENCY OF ANALYSES			
			IW-1	IW-2	MW-1 (upper)	MW-1 (lower)
Total Kjeldahl Nitrogen	mg/L	Grab	M			
Ammonia	mg/L	Grab	M			
Temperature ^b	°C	Grab	M		M	M
Specific Conductance ^b	µmhos/cm	Grab	M		M	M
pH ^b	std. units	Grab	M		M	M
Chloride	mg/L	Grab	M		M	M
Total Dissolved Solids	mg/L	Grab	M		M	M
Total Suspended Solids	mg/L	Grab	M		M	M
Sulfate	mg/L	Grab	M		M	M
Iron	mg/L	Grab	M		M	M
Magnesium	mg/L	Grab	M		M	M

See injection well and monitoring well tables at beginning of permit for more information.

M – Monthly; Q – Quarterly;

^b – Field samples

Refer to the Tables on [Page 2](#) for the appropriate WACS testsite IDs to be used for reporting.

One sample to be taken for WRF concentrate sent to all wells.

2. A specific injectivity test shall be performed quarterly on the injection well as required by Rule 62-528.430 (2) (b)l.b., F.A.C. Pursuant to Rule 62-528.430(2) (d), F.A.C, the specific injectivity test shall be performed with the pumping rate to the well set at a predetermined level and reported as the specific injectivity index (gallons per minute/specific pressure). The pumping rate to be used shall be based on the expected flow, the design of the pump types, and the type of pump control used. As part of this test, the well shall be shut-in for a period of time necessary to conduct a valid observation of pressure fall-off. The specific injectivity test data shall be submitted along with the monitoring results of the injection and monitoring well data. *[62-528.430(2) (b) and (d)]*

3. Pertaining to the evacuation (purging) of the monitoring wells, which is required prior to the collection of samples for the Monthly Operating Reports (MORs), the facility may elect to follow one of the following three purging protocols:
 - a. The protocol stated below:
 A minimum of three well volumes of fluid shall be evacuated from the monitoring systems prior to sampling for the chemical parameters listed above. Sufficient purging shall have occurred when either of the following has occurred:
 - 1) pH, specific conductance and temperature when sampled, upon purging the third or subsequent well volume, each vary less than 5% from that sampled upon purging the previous well volume; or
 - 2) Upon purging the fifth well volume.
 - b. The following protocol taken from DEP-SOP-001/01(Field Procedures):

- 1) Purge until the water level has stabilized (well recovery rate equals the purge rate), then purge a minimum of one well volume, and then collect the first set of stabilization parameters, namely pH, specific conductance and temperature;
- 2) Thereafter, collect stabilization parameters \geq every $\frac{1}{4}$ well volume;
- 3) Purging shall be complete when either of the following have occurred:
 - a) 3 consecutive readings of the parameters listed below are within the following ranges^[1]:
 - i. pH \pm 0.2 Standard Units
 - ii. Specific Conductance \pm 5.0% of reading
 - iii. Temperature \pm 0.2°C
 - b) Upon purging the fifth well volume.

[62-160.210(1) and 62-528.430(2)]

4. The flow from the monitoring zones during well evacuation and sampling shall not be discharged to surface waters or aquifers containing an underground source of drinking water. Waters purged from monitoring wells in preparation for sampling shall be diverted to the injection well head via the pad drainage system, wet well, or treatment plant. *[62-4.030, 62-620.320]*

IV. ABNORMAL EVENTS

1. In the event the permittee is temporarily unable to comply with any of the conditions of a permit due to breakdown of equipment, power outages or destruction by hazard of fire, wind, or by other cause, the permittee of the facility shall notify the **Southeast** District office. *[62-528.415(4)(a)]*
2. Notification shall be made in person, by telephone, or by electronic mail (e-mail) within 24 hours of breakdown or malfunction to the **Southeast** District office. *[62-528.307(1)(x)]*
3. A written report of any noncompliance referenced in Specific Condition (1) above shall be submitted to the **Southeast** District office and the Tallahassee office within five days after its occurrence. The report shall describe the nature and cause of the breakdown or malfunction, the steps being taken or planned to be taken to correct the problem and prevent its reoccurrence, emergency procedures in use pending correction of the problem, and the time when the facility will again be operating in accordance with permit conditions. *[62-528.415(4)(b)]*

V. EMERGENCY EVENTS

1. All applicable federal, state and local permits must be in place to allow for any alternate

^[1] Provided dissolved oxygen in the groundwater of the zone being monitored is \leq 20% of saturation for the measured temperature and turbidity is \leq 20 NTUs. This assumption holds true for groundwater in most zones of the Floridan aquifer.

discharges due to emergency or planned outage conditions. *[62-528.415(4)(c)1]*

2. Any proposed changes in emergency disposal methods shall be submitted to the **Southeast** District office and the Tallahassee office for review and approval prior to implementation. *[62-528.415(4)(c)]*
3. The emergency disposal method must be fully operational in the event of planned or emergency outages of the injection well system. *[62-528.415(4)(c)2]*

VI. FINANCIAL RESPONSIBILITY

1. The permittee shall maintain at all times the financial resources necessary to close, plug, and abandon the injection and associated monitoring wells. *[62-528.435(9)]*
2. The permittee shall annually review the cost estimate for plugging and abandonment. Upon the occurrence of the plugging and abandonment cost estimate exceeding, by 10 percent or more on an annual basis, the cost estimate upon which the current financial responsibility is based, the permittee shall submit to the Department certified financial documentation necessary to amend, renew, or otherwise replace the existing financial responsibility pursuant to Rule 62-528.435(9)(b), F.A.C. and the conditions of this permit. Documentation that the annual updates are being conducted shall be submitted thirty (30) months after the date of permit issuance. *[62-528.435(9)(b)]*
3. In the event that the mechanism used to demonstrate financial responsibility should become insufficient or invalid for any reason, the permittee shall notify the Department's Tallahassee office in writing within 14 days of such insufficiency or invalidation. The permittee shall within 90 days of said notification submit to the Department's Tallahassee office for approval new financial documentation certifying either the remedy of current financial insufficiency or resolution of the financial instrument invalidation in order to comply with Rule 62-528.435(9)(b), F.A.C. and the conditions of this permit. *[62-528.435(9)(b)]*

General Conditions

1. The terms, conditions, requirements, limitations and restrictions set forth in this permit are "permit conditions" and are binding and enforceable pursuant to section 403.141, F.S. *[62-528.307(1)(a)]*
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action. *[62-528.307(1)(b)]*
3. As provided in subsection 403.087(7), F.S., the issuance of this permit does not convey any vested rights or exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor infringement of federal, state, or local laws or regulations. This permit is not a waiver of or approval of any other

Department permit that may be required for other aspects of the total project which are not addressed in this permit. [62-528.307(1)(c)]

4. This permit conveys no title to land, water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title. [62-528.307(1)(d)]
5. This permit does not relieve the permittee from liability for harm to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties there from; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department. [62-528.307(1)(e)]
6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed and used by the permittee to achieve compliance with the conditions of this permit, or are required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules. [62-528.307(1)(f)]
7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at reasonable times, access to the premises where the permitted activity is located or conducted to:
 - a. Have access to and copy any records that must be kept under conditions of this permit;
 - b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and
 - c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.
 - d. Reasonable time will depend on the nature of the concern being investigated.[62-528.307(1)(g)]
8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
 - a. A description of and cause of noncompliance; and
 - b. The period of noncompliance, including dates and times; or, if not corrected the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent the recurrence of the noncompliance. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

[62-528.307(1)(h)]

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is proscribed by sections 403.111 and 403.73, F.S. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules. [62-528.307(1)(i)]
10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance; provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules. [62-528.307(1)(j)]
11. This permit is transferable only upon Department approval in accordance with rules 62-4.120 and 62-528.350, F.A.C. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department. [62-528.307(1)(k)]
12. This permit or a copy thereof shall be kept at the work site of the permitted activity. [62-528.307(1)(l)]
13. The permittee shall comply with the following:
 - a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records shall be extended automatically unless the Department determines that the records are no longer required.
 - b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
 - c. Records of monitoring information shall include:
 - i. the date, exact place, and time of sampling or measurements;
 - ii. the person responsible for performing the sampling or measurements;
 - iii. the dates analyses were performed;
 - iv. the person responsible for performing the analyses;
 - v. the analytical techniques or methods used;
 - vi. the results of such analyses.
 - d. The permittee shall furnish to the Department, within the time requested in writing, any information which the Department requests to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit.

- e. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly. *[62-528.307(1)(m)]*
14. All applications, reports, or information required by the Department shall be certified as being true, accurate, and complete. *[62-528.307(1)(n)]*
15. Reports of compliance or noncompliance with, or any progress reports on, requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each scheduled date. *[62-528.307(1)(o)]*
16. Any permit noncompliance constitutes a violation of the Safe Drinking Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. *[62-528.307(1)(p)]*
17. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. *[62-528.307(1)(q)]*
18. The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit. *[62-528.307(1)(r)]*
19. This permit may be modified, revoked and reissued, or terminated for cause, as provided in 40 C.F.R. sections 144.39(a), 144.40(a), and 144.41 (1998). The filing of a request by the permittee for a permit modification, revocation or reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition. *[62-528.307(1)(s)]*
20. The permittee shall retain all records of all monitoring information concerning the nature and composition of injected fluid until five years after completion of any plugging and abandonment procedures specified under rule 62-528.435, F.A.C. The permittee shall deliver the records to the Department office that issued the permit at the conclusion of the retention period unless the permittee elects to continue retention of the records. *[62-528.307(1)(t)]*
21. All reports and other submittals required to comply with this permit shall be signed by a person authorized under rules 62-528.340(1) or (2), F.A.C. All reports shall contain the certification required in rule 62-528.340(4), F.A.C. *[62-528.307(1)(u)]*
22. The permittee shall notify the Department as soon as possible of any planned physical alterations or additions to the permitted facility. In addition, prior approval is required for activities described in rule 62-528.410(1)(h). *[62-528.307(1)(v)]*
23. The permittee shall give advance notice to the Department of any planned changes in the permitted facility or injection activity which may result in noncompliance with permit requirements. *[62-528.307(1)(w)]*

PERMITTEE: Mr. Clayton Lindstrom, Director of Utilities
Fort Pierce Utilities Authority – TCEC/MWRF
Water Reclamation Facility

Permit Number: 0259734-006-007-UO/11
WACS ID No.: 95587
Date: May 21, 2015

24. The permittee shall report any noncompliance which may endanger health or the environment including:
- a. Any monitoring or other information which indicates that any contaminant may cause an endangerment to an underground source of drinking water; or
 - b. Any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between underground sources of drinking water.

Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause, the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

[62-528.307(1)(x)]

Issued this _____ day of _____ 2015

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Draft

Joseph Haberfeld
Aquifer Protection Program Administrator
Division of Water Resource Management

FACT SHEET

Fort Pierce Utilities Authority – Treasure Coast Energy Center (TCEC) and
Mainland Water Reclamation Facility (MWRF)
WACS Facility ID No.: 095587
Permit No.: 0259734-006-007-UO/II
May 21, 2015

Operation permit for the Fort Pierce Utilities Authority – Treasure Coast Energy Center (TCEC) and Mainland Water Reclamation Facility (MWRF), Town of Davie WTP and WRF, Class I, Injection Well IW-1 and IW-2 and dual-zone monitoring well MW-1.

1. General Information

A. Statutory Basis for Requiring/Issuing Permit

The Department has permitting jurisdiction under Chapter 403, Florida Statutes (F.S.), and the rules adopted thereunder. The project is not exempt from permitting procedures. The Department has determined that an UIC operation permit is required for the proposed project.

B. Name and Address of Applicant

Mr. Clayton Lindstrom, Director of Utilities
Fort Pierce Utilities Authority
206 South 6th Street
Fort Pierce, Florida 34958-3191

Facility Address

FPUA – Treasure Coast Energy Center and Mainland WRF
4515 Energy Drive
Fort Pierce, Florida, 34981

C. Description of Applicant's Proposed Operation

A renewal operating permit application for the TCEC (MWRF) is requested. The current nonhazardous wastestream for injection well IW-1 consists of cooling tower blowdown and wastewater from floor drains at the TCEC power generating unit and leachate from the St. Lucie County (SLC) Bailing and Recycling Facility Class I landfill. Groundwater from extraction wells located in the northeast corner of the SLC Bailing and Recycling Facility and cooling tower blowdown (gasification cooling water) from the proposed gasification water-to-energy facility are also authorized under this permit after submittal of wastestream characteristics and Department approval.

IW-1 is constructed with a 24-inch injection steel casing and a Redbox 1000, 18-inch fiberglass reinforced pipe (FRP) injection tubing and a fluid-filled annulus. Injection well IW-2 was constructed for the MWRF as a municipal injection well, but has not been placed into service and will be included in this permit with no wastewater injection permitted. The maximum allowable injection rate for IW-1 shall not exceed 1900 gallons per minute (gpm) or 2.7 million gallons per day as designated by this

permit. The TCEC/MWRF is located in St. Lucie County, on 4515 Energy Drive in Ft. Pierce, Florida at latitude 27°23'11" North, longitude 80°22'37.9" West.

D. Permitting History of this Facility

1. Permit #259734-001-UC April 3, 2007 – Construct IW-1 and the dual zone monitor well MW-1
2. Permit #259734-002-UC April 16, 2010 - April 15, 2015 – IW-1 operation
3. Permit #259734-003-UC December 20, 2007 – December 19, 2012 - IW-2 construction
4. Permit #259734-004-UC December 28, 2012 – Major Modification of IW-1, for additional wastestream.
5. Permit #259734-005-UO October 23, 2014 – Minor Modification to add IW-2 to the IW-1 permit with no flow into IW-2

E. Documents Used in Permitting Decision

1. Engineering Report on the Construction and Testing of the Industrial Injection Well (IW-1) and Dual-zone Monitoring Well at the Proposed Fort Pierce Utilities Authority Mainland Water Reclamation Facility, prepared by CH2MHill, December 2007
2. Report on the Mechanical Integrity Testing of Injection Well IW-1 at the Fort Pierce Utilities Authority Mainland Water Reclamation Facility site, by CH2MHill, December 2011
3. FDEP draft Major Modification to permit for MWRF IW-1, #259734-004-UC, October 8, 2012
4. Ft. Pierce Utilities Authority, Mainland Water Reclamation Facility Deep Injection Well System, Operating Renewal Application, February 2015
5. Financial Responsibility documentation and Certificate of Demonstration, January 6, 2015, Attachment D of Document 4
6. Operation and Maintenance Manual for the Industrial Injection Well (IW-1) and the Dual-Zone Monitor Well at the Proposed Fort Pierce Utilities Authority Mainland Water Reclamation Facility, December 2009

2. Reasons Permit Was Issued; Derivation of Conditions

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

1. The five-year Mechanical Integrity Test (MIT) for IW-1 at TCEC/MWRF included an annular pressure test conducted October 13, 2011. Well IW-1 was pressurized to 156 psi for one hour, and showed no pressure loss, documenting a successful test. The external MIT included a Radioactive Tracer Survey (RTS) and temperature survey which were conducted on October 12, 2011. The RTS test was conclusive in successfully demonstrating the external integrity of IW-1. *See Document 2 for details.*

The MIT for IW-2 included a casing pressure test conducted April 15, 2008. Well IW-1 was pressurized to 148 psi for one hour, and showed a 5 psi loss, within the 5% pressure loss allowed by the Department, documenting a successful test. The external MIT has not been demonstrated because the well has not been put into

service, although a cement bond log was run on the cemented 24-inch casing on April 13, 2008. If IW-2 is to be used for wastewater injection under a future permit, the full MIT demonstration will be required prior to its use. *See Document 2 for details.*

B. Confinement (Rule 62-528.405(3), F.A.C.)

Confinement was demonstrated with testing of the well during construction (Document 1), and after five years of operation (Document 4) with sampling of the deep and shallow zones of MW-1, which monitors the overlying Avon Park formation from 1,765'-1,808' below land surface (bls) and 1,900'-1,950' bls. The weekly and monthly monitoring results of the chemical and physical parameters required by permit for analyses from MW-1, conducted from December 2009 to present demonstrate no evidence of migration of effluent upward into the overlying Underground Source of Drinking Water.

C. Injection Zone Testing (Rule 62-528.405(30), F.A.C.)

An injection test was conducted in December 2007 to evaluate the hydraulic characteristics of the injection well. The flow rate, 2,325 gpm, and the injection pressure were measured throughout the 12-hour test. The pressures were measured on one minute intervals at the wellheads of the injection and monitor wells.

D. Underground Source of Drinking Water (USDW) (Rule 62-528.405(1)(a), F.A.C.)

The base of the lowermost Underground Source of Drinking Water (USDW) occurs in the Avon Park limestone at approximately 1,825 feet bls. This depth of the 10,000 mg/L Total Dissolved Solids (TDS) interface and the background water quality of the monitoring zones was determined by geophysical logging, water samples taken while drilling, coring, and packer tests. The injection zone completely underlies the USDW in the area of review (*See Documents 1, 2 and 4 for details*).

E. Well Construction

As-built casing program for injection well IW-1 (all casings and tubing were new and unused and all casings were cemented to land surface). See and Rules 62-528.410(1)(e), 62-528.410(4) and (5), and 62-528.450(3)(a)3.h., F.A.C.

IW-1

54" OD steel casing set to 72 feet bls
44" OD (0.375" thick) steel casing set to 565 feet bls
34" OD (0.375" thick) steel casing set to 1,850 feet bls
24" OD (0.50" thick) steel casing set to 2,883 feet bls
17.8" OD (0.50" thick) FRP tubing set to 2,881 feet bls with fluid-filled annulus
Total well depth is 3,200 feet bls.

IW-2

54" OD steel casing set to 70 feet bls
44" OD (0.375" thick) steel casing set to 565 feet bls

34" OD (0.375" thick) steel casing set to 1,850 feet bls
24" OD (0.50" thick) steel casing set to 2,877 feet bls
Total well depth is 3,209 feet bls.

MW-1

30" OD (0.375" thick) steel casing set to 78 feet bls
20" OD (0.375" thick) steel casing set to 565 feet bls
12" OD (0.50" thick) steel casing set to 1,765 feet bls; upper MW zone: 1765'-1,808'
6.625" OD (0.50" thick) FRP tubing set to 1,900 feet bls; lower MW zone: 1900'-1950'
Total well depth is 1,950 feet bls.

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

The dual zone monitor well is located 106 feet from injection well IW-1 (Document 1). The monitor intervals are 1765 feet to 1808 feet bls and 1900 to 1950 feet bls (Avon Park Formation). The upper monitor well monitors the basal portion of the USDW. The lower zone is for early warning monitoring below the USDW. Required parameters for monitoring include daily injection volume, continuous flow rate and injection pressure; monthly monitoring of the injectate for chemical parameters; annual pressure fall-off testing; continuous monitor well and annular pressures; and monthly sampling of the monitor wells for chemical parameters.

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

Demonstration of Financial Responsibility was demonstrated by Local Government Guarantee, approved by FDEP December 21, 2009. A recent cost estimate to plug and abandon the system is in *Document 4, Appendix D*.

H. Emergency Discharge (Rule 62-528.455(1)(d), F.A.C.)

Non-hazardous TCEC industrial wastewater and leachate from the Treasure Coast Energy Center power plant and the SLC Bailing and Recycling Facility Landfill are the only wastewater streams being injected into IW-1. There will be no back-up means for disposal of cooling tower blowdown. Therefore, the facility shall discontinue generating wastewater during emergency or planned outages and all of the injection shall cease, until the injection well has resumed full operation.

3. Agency Action

A draft permit shall be issued as per rule 62-528.310, F.A.C.

4. Public Rights (Rules 62-528.315, .321, and .325, F.A.C.)

Any interested person may submit written comments on the draft permit and may request a public meeting within 30 days after publication of this public notice. A request for a public meeting shall be submitted in writing and shall state the nature of the issues proposed to be raised in 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 shall be submitted to the [Neil Campbell](#), Florida Department of Environmental Protection, Aquifer

Protection Program, 2600 Blair Stone Road, MS 3530, Tallahassee, Florida 32399-2400, which is the office processing this permit application. All comments received within the 30-day period 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, [Southeast](#) District office, 3301 Gun Club Road, MSC 7210-1, West Palm Beach, Florida 33406, 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. Department of Environmental Protection Contact

Mr. [Neil 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