

## Part B, Section III: Other Technologies



*(These are emerging technologies which have been in operation with an air quality permit, however do not yet qualify as LAER)*

Source Type: **Minor**  
 Application No.: **591787**  
 Equipment Category: **Fuel Cell Electricity Generator – Digester Gas fueled**  
 Equipment Subcategory: \_\_\_\_\_  
 Date: **March 1, 2017**

### 1. EQUIPMENT INFORMATION

A. MANUFACTURER: Fuel Cell Energy		B. MODEL: DFC 1500	
C. DESCRIPTION: Fuel Cell, digester gas fueled with biogas clean-up system and start-up air heater with natural gas burner (Rule 222 Registration per Rule 219(b)(5)).			
D. FUNCTION: On-site electrical power generation and heat recovery.			
E. SIZE/DIMENSIONS/CAPACITY: 1.4 MW, 355 scfm Digester gas flow			
<b>COMBUSTION SOURCES</b>			
F. MAXIMUM HEAT INPUT: ---			
G. BURNER INFORMATION			
TYPE	INDIVIDUAL HEAT INPUT	NUMBER	
---	<input type="checkbox"/>	<input type="checkbox"/>	
H. PRIMARY FUEL: DIGESTER GAS		I. OTHER FUEL: NATURAL GAS	
J. OPERATING SCHEDULE: 24 HRS/DAY 7 DAYS/WEEK 52 WKS/YR			
K. EQUIPMENT COST: Not Available			
L. EQUIPMENT INFORMATION COMMENTS: Biogas clean-up system consists of condensate drain tank, hydrogen sulfide removal vessel, siloxane removal vessels, polishing vessel and refrigerant chiller.			

### 2. COMPANY INFORMATION

A. COMPANY: Riverside Fuel Cell, LLC		B. FAC ID: 181483	
C. ADDRESS: 5950 Acorn Street CITY: Riverside STATE: CA ZIP: 92504		D. NAICS CODE:	
E. CONTACT PERSON: Don Bell		F. TITLE: Field Service Manager	
G. PHONE NO.: 203-648-3658		H. EMAIL: dbell@fce.com	

### 3. PERMIT INFORMATION

A. AGENCY: SCAQMD	B. APPLICATION TYPE: NEW CONSTRUCTION PERMIT TO OPERATE
C. SCAQMD ENGINEER: Gaurang Rawal	
D. PERMIT INFORMATION: PC ISSUANCE DATE: 2/25/17 P/O NO.: G45213 PO ISSUANCE DATE: 3/1/2017	
E. START-UP DATE: 10/1/2015	
F. OPERATIONAL TIME: Fuel cell is operational 24 hour/day, 365 days/year.	

### 4. EMISSION INFORMATION

A. EMISSION LIMITS AND AVERAGING TIMES:						
	<b>VOC</b>	<b>NOx</b>	<b>SOx</b>	<b>CO</b>	<b>PM OR PM<sub>10</sub></b>	<b>INORGANIC</b>
BACT Limit	0.10 LBS/MW-HR	0.07 LBS/MW-HR		0.10 LBS/MW-HR		
Averaging Time	Per test method					
Correction						
B. OTHER REQUIREMENTS:						
C. PENDING STATUS: Technology has been in operation with an active air quality permit. <i>Other (add comment)</i>						
D. EMISSION INFORMATION COMMENTS: Fuel cells are typically tested during steady state mode, not during startup or shutdown.						

**5. CONTROL TECHNOLOGY**

A. MANUFACTURER: ---		B. MODEL: ---	
C. DESCRIPTION: ---			
D. SIZE/DIMENSIONS/CAPACITY: ---.			
E. CONTROL EQUIPMENT PERMIT INFORMATION: APPLICATION NO. ---      PC ISSUANCE DATE: --- PO NO.: ---              PO ISSUANCE DATE: ---			
F. REQUIRED CONTROL EFFICIENCIES: ---			
CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	___%	___%	___%
NOx	___%	___%	___%
SOx	___%	___%	___%
CO	___%	___%	___%
PM	___%	___%	___%
PM <sub>10</sub>	___%	___%	___%
INORGANIC	___%	___%	___%
G. CONTROL TECHNOLOGY COMMENTS ---			

**6. DEMONSTRATION STATUS**

A. COMPLIANCE DEMONSTRATED BY: Source Test
B. DATE(S) OF SOURCE TEST: December 20, 2016
C. COLLECTION EFFICIENCY METHOD:
D. COLLECTION EFFICIENCY PARAMETERS:
E. SOURCE TEST/PERFORMANCE DATA: < 0.024 lb NOx/MW-hr; <0.012 lb CO/MW-hr; 0.045 lb VOC/MW-hr (as hexane)
F. TEST OPERATING PARAMETERS AND CONDITIONS: Testing performed under steady state conditions. Method 100.1 results for NOx and CO had to be corrected up to 20% full scale range of analyzer, but still demonstrated compliance with permit limits.
G. TEST METHODS (SPECIFY AGENCY): SCAQMD M. 100.1, 25.3
H. MONITORING AND TESTING REQUIREMENTS:

I. DEMONSTRATION OF COMPLIANCE COMMENTS:

**7. PENDING CONSIDERATIONS**

A. START-UP AIR HEATER WITH COMBUSTION BURNER EXHAUST EMISSIONS: Testing commenced after the fuel cell reached stable steady state operation.

B. COST EFFECTIVENESS: TBD

**8. ADDITIONAL SCAQMD REFERENCE DATA**

A. BCAT:	B. CCAT:	C. APPLICATION TYPE CODE:	
D. RECLAIM FAC? YES <input type="checkbox"/> NO <input type="checkbox"/>	E. TITLE V FAC: YES <input type="checkbox"/> NO <input type="checkbox"/>	F. SOURCE TEST ID(S):	
G. SCAQMD SOURCE SPECIFIC RULES:			
H. HEALTH RISK FOR PERMIT UNIT			
H1. MICR:	H2. MICR DATE:	H3. CANCER BURDEN:	H4. CB DATE:
H5. HIA:	H6. HIA DATE:	H7. HIC:	H8. HIC DATE: