



103-26-023

JAN 20 2026 PM 4:04  
REC'D AIR AND NOISE PERMITS

Site Design  
Utility Design  
Transportation  
Environmental  
Surveying  
Construction Contract Administration

January 15, 2026  
Ms. Kay Parker  
Air Pollution Control Engineer  
Jefferson County Department of Health  
1400 Sixth Avenue South  
Montgomery, AL 35233

Re: Warrior Met Coal Gas, LLC  
East Facility  
Site 27-14-02 – Unit 410174  
**Proposed Compressor & Combustor Permitting**

Dear Ms. Parker:

On behalf of Warrior Met Coal Gas, LLC (WMCG), we have prepared this notification to inform Jefferson County Department of Health (JCDH) of the proposed installation of a used reciprocating internal combustion engine (RICE) unit at well site 27-14-02. The proposed unit consists of a Caterpillar G3306NA engine with serial number 07Y07206 and includes a Frick 233L compressor with serial number 2131F. A proposed flare combustor will also be installed at well site 27-14-02. This compressor and flare are being moved from site 06-15-08 where they are currently permitted.

This active well site was constructed after December 6, 2022. However, the Rotary Screw compressor is exempt to 40 CFR Part 60.14 and 60.5365 of Subpart OOOOb requirements.

JCDH and ADEM air permit application forms and supporting documentation, including the new engine specifications and performance information, are attached for your use.

If there is additional information which I can provide, please advise.

Yours truly,

McGIFFERT AND ASSOCIATES, LLC

Q. Hansel Stewart  
DDH/am

Enclosures

2814 Stillman Boulevard  
Tuscaloosa, AL 35401

Post Office Box 20559  
Tuscaloosa, AL 35402

Telephone 205.759.1521  
Fax 205.759.1524

www.mcgiffert.com



6. Please check the type of permit application being submitted. Check all that apply.

Existing Source - Current Permit Number (if applicable): \_\_\_\_\_

Initial Application

Major Source

Minor Source

Synthetic Minor Source

Partial Application

Permit Renewal

Modification

Major Modification

Minor Modification

New Source (To Be Constructed)

Change of:

Facility Name

Ownership

Location

Early reductions demonstrations under Section 112(i)(5) of the Act

Other (specify) Install used compressor unit with combustor flare at existing site 27-14-02.

If application is being made to construct or modify, please provide the name, address, and telephone number of the installer or contractor.

Warrior Met Coal Gas, LLC

P.O. Box 133

Brookwood, Alabama 35444

Date Construction/Modification to Begin January 28, 2026 To Be Completed January 30, 2026

7. Indicate the number of each form contained in your facility's application package. If a form does not apply to your operation indicate "N/A" in the space provided.

1 JCDH-APCP-104 – Indirect Heating or Fuel Burning Unit

N/A JCDH-APCP-105 – Manufacturing or Processing Operation

N/A JCDH-APCP-106 – Waste Disposal

1 JCDH-APCP-107 – Stationary Internal Combustion Engines

N/A JCDH-APCP-108 – Loading, Storage, & Dispensing of Organic Compounds

N/A JCDH-APCP-109 – Volatile Organic Compound (VOC) Surface Coating Emission Sources

1 JCDH-APCP-110 – Air Pollution Control Device

N/A JCDH-APCP-111 – Coal Preparation Facility

N/A JCDH-APCP-112 – Solvent Metal Cleaning

N/A JCDH-APCP-113 – Continuous Emission Monitoring System (CEMS)

N/A JCDH-APCP-114 – Compliance Schedule



10. Indicate the compliance status for each program below that you are subject to for each emission unit or source at your facility and the method used to determine compliance. Also cite the applicable regulations.

Emission Unit or Source (describe): N/A

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PROGRAM REQUIREMENT	COMPLIANCE STATUS	APPLICABLE REGULATIONS AND METHOD USED TO DETERMINE COMPLIANCE
PSD (TITLE I PART C)		
NON-ATTAINMENT NSR (TITLE I PART D)		
NSPS (40 CFR 60)		
NESHAP (40 CFR 61)		
NESHAP (40 CFR 63)		
ACCIDENTAL RELEASE (112(r), 40 CFR 68)		
TITLE I (PART B-OZONE PROTECTION)		
TITLE IV (ACID RAIN)*		
ENHANCED MONITORING (40 CFR 51, 52, 60, 61, 63, & 64)		
TITLE VI (STRATOSPHERIC OZONE)		
SIP (JCBH RULES & REGULATIONS)		
OTHER (SPECIFY):	Install used compressor unit with combuster flare at existing site 27-14-02	

\*Sources subject to Title IV must complete and submit Nationally Standardized Application Forms.



12. List and discuss any exemption from the applicable requirements your facility is claiming:

- a. N/A
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_
- f. \_\_\_\_\_
- g. \_\_\_\_\_
- h. \_\_\_\_\_


13. List the supporting documentation your facility is including as a part of this application. All supporting engineering calculations must be included.

- a. ADEM Form 107
- b. ADEM Form 104
- c. ADEM Form 110 w/attachment
- d. CSI COMPRESSCO LP Engine Pedigree (Dated 11/03/2022)
- e. Gas Engine Site Specific Technical Data Sheet
- f. Emissions Calculations
- g. Remote Area Map
- h. Area Map

14. Attach a facility plot plan including building dimensions & fence locations. Stack data, including latitude, longitude, grade elevation (in feet above mean sea level), stack height and orientation, and flow barriers should be provided.

***I certify under penalty of law that,*** based on information and belief formed after reasonable inquiry, the statements and information contained in this application are true, accurate, and complete.

***I also certify*** that the source will continue to comply with applicable requirements for which it is in compliance, and that the source will, in a timely manner, meet all applicable requirements that will become effective during the permit term and submit a detailed schedule, if needed, for meeting the requirements.

Signature of Responsible Official  Date 1/14/24



**PERMIT APPLICATION FOR INDIRECT HEATING EQUIPMENT  
ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
AIR DIVISION**

-     -

Do not write in this space

1. Name of facility or organization: Warrior Met Coal Gas, LLC, Site 27-14-02 - Unit 410174

2. Unit Description (i.e. No. 1 Power Boiler): No. 1 Combustor - SN 07Y05745

Source Classification Code(s): N/A

Equipment manufacturer's information

Name of manufacturer: Hero Flare

Model number: C6030

Rated capacity-input: 20 (MMBtu/hr.)

Boiler type:  Fire Tube  Water Tube  Other (specify): \_\_\_\_\_

Manufactured date: 11/2020

Proposed installation date: Jan 2026

Original installation date (if existing): N/A

Reconstruction/Modification date (if applicable): N/A

3. Type of fuel used:

Primary:

Fuel	Heat Content	Units	Max. % Sulfur	Max. % Ash	Grade No. [fuel oil only]	Supplier [used oil only]
Coal		Btu/lb				
Fuel Oil		Btu/gal				
Natural Gas		Btu/ft <sup>3</sup>				
L. P. Gas		Btu/ft <sup>3</sup>				
Wood		Btu/lb				
Other (specify)	(Methane Gas) 1012	Btu/scf	N/A	N/A	N/A	N/A

Standby:

Fuel	Heat Content	Units	Max. % Sulfur	Max. % Ash	Grade No. [fuel oil only]	Supplier [used oil only]
Coal		Btu/lb				
Fuel Oil		Btu/gal				
Natural Gas		Btu/ft <sup>3</sup>				
L. P. Gas		Btu/ft <sup>3</sup>				
Wood		Btu/lb				
Other (specify)						

4. Purpose ( if multipurpose, note percent in each use category):

- Space heat \_\_\_\_\_ %
- Power generation \_\_\_\_\_ %
- Process heat \_\_\_\_\_ %
- Other (specify) \_\_\_\_\_ % Clean combustion of coal mine methane preventing release to atmosphere

5. Normal schedule of operation:

Hours per day: 24 Days per week: 7 Weeks per year: 52

6. For each regulated pollutant, describe any limitations on source operation or any work practice standards which affect emissions:

N/A

7. Are you requesting a limitation for permitting?  Yes  No if "yes", specify the limit and affected unit(s):

8. Is there any emission control equipment on this emission source?

Yes  No (If "yes", ADEM Form 110 must be completed and attached)

9. Stack data (if a control device is installed, the information should be for the control device's stack exit; if multiple stacks associated, provide additional sheet):

Stack No. & Description:	<u>Warrior Met Coal Gas, LLC, Site 27-14-02 - Unit 410174</u>		Stack Type:	<u>Vertical</u>
Stack UTM Coordinate (E-W)	<u>475704.56</u> (km)	Stack UTM Coordinate (N-S)	<u>3700363.50</u> (km)	
Latitude	<u>33.442398°</u> (LAT)	Longitude	<u>-87.261390°</u> (LONG)	
Height above grade	<u>30</u> (ft)	Gas temperature at exit	_____ (°F)	
Inside diameter at exit (round)	<u>5</u> (ft)	Gas Velocity	_____ (ft/Sec)	
Inside area at exit (not round)	<u>N/A</u> (ft²)	Volume of gas discharged	_____ (ACFM)	
Base Elevation	<u>548(Google)</u> (ft)	GEP Stack Height	<u>30</u> (ft)	

Are sampling ports available? (If "yes", describe. Draw on separate sheet if necessary)  Yes  No :

Is this a merged stack (do multiple units use this release point)?  Yes  No

If yes, provide units: N/A

10. Is this item subject to the Transport Rule 335-3-8-.07 or NOX Budget Program under 335-3-8-.71?

Yes  No If "Yes", provide ORIS Plant and Unit ID: N/A

11. Is this item in compliance with all applicable air pollution rules and regulations?

Yes  No if "No", a compliance schedule, ADEM Form 437, must be attached.)

12. Fugitive Emissions:

POLLUTANT	UNCONTROLLED POTENTIAL EMISSIONS		CONTROLLED POTENTIAL EMISSIONS		BASIS OF CALCULATION	REGULATORY EMISSION LIMIT  Provide in lb/hr or specify alternative Unit of Measure
	lb/hr	ton/yr	lb/hr	ton/yr		
Total Particulate						
PM-10 Filterable						
PM-2.5 Filterable						
PM-Condensable						
Sulfur dioxide						
Nitrogen oxides						
Carbon monoxide						
VOC's						

Attach calculation worksheets. Particulate emissions should be speciated to include PM10-filterable, PM2.5-filterable, and PM-condensable. Speciated HAP emissions should also be provided. Attach additional page(s) as necessary.

13. Point Emissions:

POLLUTANT	UNCONTROLLED POTENTIAL EMISSIONS		CONTROLLED POTENTIAL EMISSIONS		BASIS OF CALCULATION	REGULATORY EMISSION LIMIT  Provide in lb/hr or specify alternative Unit of Measure
	lb/hr	ton/yr	lb/hr	ton/yr		
Total Particulate	N/A	N/A	N/A	N/A	N/A	
PM-10 Filterable	N/A	N/A	N/A	N/A	N/A	
PM-2.5 Filterable	N/A	N/A	N/A	N/A	N/A	
PM-Condensable	N/A	N/A	N/A	N/A	N/A	
Sulfur dioxide	N/A	N/A	N/A	N/A	N/A	
Nitrogen oxides	3.0	13.14	N/A	N/A	MFR	
Carbon monoxide	6.0	26.28	N/A	N/A	MFR	
VOC's	N/A	N/A	N/A	N/A	NA	

Attach calculation worksheets. Particulate emissions should be speciated to include PM10-filterable, PM2.5-filterable, and PM-condensable. Speciated HAP emissions should also be provided. Attach additional page(s) as necessary.

Name of person preparing application: Q.Hansel Stewart, PE

Company of preparer: McGiffert and Associates, LLC

Signature:  Date: 1/15/26



ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
AIR DIVISION

Three empty boxes for identification numbers.

Do not write in this space

1. Name of facility or organization: Warrior Met Coal Gas, LLC, Site 27-14-02 - Unit 410174

2. Purpose of Application:  
 Initial installation of a new engine (i.e. engine that has never been in service at any location)  
 Initial installation of a used engine (i.e. engine that has been in service at another location)  
 Modification/Reconstruction of an engine currently installed at the facility  
 Update information for an engine currently installed at the facility  
 Title V Application  
 Other, specify: Install used compressor unit and flare at existing well site.  
If this application is for the installation, modification, or reconstruction of an engine, please provide the date construction is scheduled to begin: Desired - 01/28/26  
If this application is for an engine currently installed at this facility, please provide the date that the engine was initially installed at this facility: N/A

3. Engine Identification:  
A. Manufacturer Name: Caterpillar B. Model No.: G3306 C. Model Year: 1999  
D. Facility's Identification or Description: Site 27-14-02 - Unit 410174 E. Serial No.: 07Y07206

4. Engine Applicability Dates:  
A. Date Ordered (New): N/A B. Date Manufactured: 01/19/1999 C. Date Modified/Reconstructed N/A  
D. For a used engine, approximate date engine was first put in service at any location: ±1999

5. Engine Function:  
 Compression  Electrical Generation (Max Output): \_\_\_\_\_  
 NFPA Certified  Fire/Other Pump Driver  
 Test Cell/Stand  Other, please describe: \_\_\_\_\_  
 Research & Development

6. Engine Operation:  
 Non-Emergency (provide typical operating schedule in A-D): A. Hours/day: 24  
 Emergency Only B. Days/week: 7  
 Limited Use (<100 hr/yr) C. Weeks/year: 52  
D. Peak Season (if any): N/A

7. Engine Specifications:  
A. Max Brake Horsepower (bhp): 145 B. Max Engine Power (kWm): 108.126 C. Max Heat Input (MMBtu/hr): 0.3639  
D. Type:  Simple Cycle Turbine  Reciprocating Engine  
E. Piston Movement:  2-Stroke RICE  4-Stroke RICE  N/A  Other: \_\_\_\_\_  
F. Air/Fuel Mix:  Rich Burn Rice  Lean Burn RICE  Diffusion Flame Turbine  Lean Premix Turbine  Other: \_\_\_\_\_  
G. Ignition Type:  Spark  Compression  N/A  
H. Cylinder Displacement: 1.75 (Liters/cylinder)

8. Compressor Specifications:

A. Compressor Type Screw B. Compressor Mfg. Date 1999 C. Location on well?  Yes  No  
 D. Compressor Instal. Date: 2-23-2014 E. Compressor Serial No.: 2131F F. Compressor Brake Horsepower (bhp): 150

9. Fuel Information:

	Fuel Type/ Desc.	Heat Content	Sulfur Content (% by weight or ppm)	Fuel-Bound Nitrogen Content (% by weight or ppm)	% of Gross Heat Input	Max Ash %	Used Oil Supplier
Primary	Natural Gas	N/A	Neg	<2%	100	N/A	N/A
Secondary/ Backup							

10. Point Source Emissions:

POLLUTANT	UNCONTROLLED <sup>1</sup> POTENTIAL EMISSIONS		CONTROLLED <sup>2</sup> POTENTIAL EMISSIONS		BASIS OF CALCULATION	REGULATORY EMISSION LIMIT  Provide in lb/hr or specify alternative Unit of Measure
	lb/hr	ton/yr	lb/hr	ton/yr		
Total Particulate	N/A	N/A	N/A	N/A	N/A	
PM-10 Filterable	0.0029	0.0126	N/A	N/A	AP-42	
PM-2.5 Filterable	0.0029	0.0126	N/A	N/A	AP-42	
PM-Condensable	0.0030	0.0131	N/A	N/A	AP-42	
Sulfur dioxide	N/A	N/A	N/A	N/A	N/A	
Nitrogen oxides	3.96	17.34	0.1572	0.69	MFR	
Carbon monoxide	3.96	17.34	0.2388	1.05	MFR	
VOC's	0.066	0.291	0.0121	0.05	MFR	

Attach calculation worksheets. Manufacturer specification sheets should be provided if used as the basis for emission estimates. Particulate emissions should be speciated to include PM10-filterable, PM2.5-filterable, and PM-condensable. Speciated HAP emissions should also be provided. Attach additional page(s) as necessary.

11. Applicable Regulations:

- |  |   |
|--|---|
| <input type="checkbox"/> 40 CFR 63, Subpart YYYY, NESHAP for Stat. Combustion Turbines | <input checked="" type="checkbox"/> 40 CFR 63, Subpart ZZZZ, NESHAP for Stat. RICE        |
| <input type="checkbox"/> 40 CFR 60, Subpart GG, NSPS for Stationary Gas Turbines       | <input type="checkbox"/> 40 CFR 60, Subpart IIII, NSPS for Stat. Compression Ignition ICE |
| <input type="checkbox"/> 40 CFR 60, Subpart KKKK, NSPS for Stat. Combustion. Turbines  | <input type="checkbox"/> 40 CFR 60, Subpart JJJJ, NSPS for Stat. Spark Ignition ICE       |
| <input type="checkbox"/> 40 CFR 60, Subpart OOOO/OOOOa                                 | <input type="checkbox"/> Other: _____   |

Does this unit have an EPA Certificate of Conformity?  Yes  No if yes, please provide: \_\_\_\_\_

12. Regulatory Standards, Limitations, and Requirements:

Pollutant/Parameter	Rate/Value	Units of Standard	Regulatory Basis <sup>3</sup>	Engine Potential Emission Rate (in units of standard)
<i>Example: NOx + NMHC</i>	6.4	<i>g/kW-hr</i>	<i>NSPS, Subpart IIII</i>	<i>4.95 g/kW-hr</i>
<i>Example: Annual Operation</i>	6,000	<i>hr/yr</i>	<i>SMS-PSD</i>	<i>NA</i>
PM - Cond	0.0030	lb/hr	N/A	N/A
SOx	N/A	lb/hr	N/A	N/A
NOx	0.1572	lb/hr	N/A	N/A
CO	0.2388	lb/hr	N/A	N/A
VOC (NMNEHC)	0.0121	lb/hr	N/A	N/A
HAPS (total)	0.02	lb/hr	N/A	N/A

3. for federal regulations, specify which NSPS or NESHAP is the basis. If a synthetic minor limit, specify either SMS-PSD or SMS- Title V

B. For engines subject to emission standards under NSPS, Subpart IIII or NSPS, Subpart JJJJ, is this engine certified by the manufacturer pursuant to the applicable regulation to meet the applicable emission standards?  N/A  Yes  No

(if yes, provide a copy of the certification)

C. For emergency or limited use engines, is this engine equipped with a non-resettable hour meter?  Yes  No

13. Pollution Control Information:

A. Device/Technology Type(s)

- No Controls
- Air-to-Fuel Ratio Controller
- Water or Steam Injection
- Low NOX Burners
- Oxidation Catalyst
- Selective Non-catalytic Reduction(SNCR)
- Non-selective Catalytic Reduction (NSCR/3-way Catalyst)
- Selective Catalytic Reduction (SCR)
- Diesel Particulate Filter
- Other \_\_\_\_\_
- Other \_\_\_\_\_

B. Control Efficiencies

Pollutant	% Reduction
NO <sub>x</sub>	96.03
CO	93.97
VOC	81.82
Formaldehyde	78.57

C. Operational Parameters (if any):

14. Compliance Status:

Is this item in compliance with all applicable air pollution rules and regulations?

Yes  No (if "no", a compliance schedule, ADEM Form 437, must be attached.)

15. Stack Parameters (if a control device is installed, the information should be for the control device's stack exit)

Emission Point & Description: Warrior Met Coal Gas, LLC Site 27-14-02 - Unit 410174 Stack Type: Vertical

Stack UTM Coordinate (E-W)	<u>475710.21</u> (km)	Stack UTM Coordinate (N-S)	<u>3700349.75</u> (km)
Latitude	<u>33.442274°</u> (LAT)	Longitude	<u>-87.261329°</u> (LONG)
Height above grade	<u>9.42</u> (ft)	Gas temperature at exit	<u>1101</u> (°F)
Inside diameter at exit (round)	<u>0.33</u> (ft)	Gas Velocity	<u>N/A</u> (ft/Sec)
Inside area at exit (not round)	<u>N/A</u> (ft <sup>2</sup> )	Volume of gas discharged	<u>677</u> (ACFM)
Base Elevation	<u>540(Google)</u> (ft)	GEP Stack Height	<u>9.42</u> (ft)

Are sampling ports available? (If "yes", describe. Draw on separate sheet if necessary)  Yes  No

Is this a merged stack (do multiple units use this release point)?  Yes  No

If yes, provide units: N/A

16. Clarifying/Supplemental Information (Optional):

The emissions information for the engine has been provided and is attached.

This engine was manufactured prior to August 23, 2011 and not subject to 40 CFR 60 Subpart OOOO.

This engine was manufactured prior to September 15, 2015 and is not subject to 40 CFR 60 Subpart OOOOa.

This active well site was constructed after December 6, 2022. However, the Rotary Screw compressor is exempt to 40 CFR Part 60.14 and 60.5365 of Subpart OOOOb requirements.

This engine was manufactured prior to July 1, 2008 and has not been modified or reconstructed and is not subject to 40 CFR 60 Subpart JJJJ.

This engine is subject to 40 CFR 63 Subpart ZZZZ and regular maintenance requirements are performed.

There is no glycol dehydration unit on-site.

Name of person preparing application: Q. Hansel Stewart, PE

Company of preparer McGiffert and Associates, LLC

Signature: 

Date: 1/15/26



**PERMIT APPLICATION FOR AIR POLLUTION CONTROL DEVICE  
ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
AIR DIVISION**

-     -

Do not write in this space

1. Name of facility or organization Warrior Met Coal Gas, LLC (Site 27-14-02 - Unit 410174)

2. Type of pollution control device: (if more than one, check each; however, separate forms are to be submitted for each specific device.)

- |   |   |
|---|---|
| <input type="checkbox"/> Settling chamber                                   | <input type="checkbox"/> Electrostatic precipitator |
| <input type="checkbox"/> Afterburner  | <input type="checkbox"/> Baghouse                   |
| <input type="checkbox"/> Cyclone  | <input type="checkbox"/> Multiclone                 |
| <input type="checkbox"/> Absorber   | <input type="checkbox"/> Adsorber                   |
| <input type="checkbox"/> Condenser  | <input type="checkbox"/> Wet Suppression            |
| <input type="checkbox"/> Thermal Oxidizer                                   |   |
| <input type="checkbox"/> Wet scrubber (kind): _____                         |   |
| <input checked="" type="checkbox"/> Other (describe): <u>3-way Catalyst</u> |   |

3. Control device manufacturer's information:

Name of manufacturer DCL Model No. DC47

4. Emission source(s) to which device is installed or is to be installed:

Caterpillar G3306NA 4 Stroke RB 137hp engine for Compressor Station 27-14-02

5. Emission parameters:	Pollutants Removed		
	Pollutant #1	Pollutant #2	Pollutant #3
	NOx	CO	VOC NMNEHC
<b>Mass emission rate (#/hr)</b>			
Uncontrolled .....	3.96	3.96	0.066
Designed .....	0.1572	0.2388	0.0121
Manufacturer's guaranteed .....	0.1572	0.2388	0.0121
<b>Mass emission rate (Expressed as units of standard)</b>			
Required by regulation .....	N/A	N/A	N/A
Manufacturer's guaranteed .....	N/A	N/A	N/A
<b>Removal efficiency (%)</b>			
Designed .....	96.03	93.97	81.82
Manufacturer's guaranteed .....	96.03	93.97	81.82

6. Gas conditions:

	Inlet	Intermediate Locations	Outlet
Volume (SDCFM, 68°F, 29.92" hg)			
(ACFM, existing conditions)	677		677
Temperature (°F)	1101		1101
Velocity (ft/sec)			
Percent moisture	Neg		

Pressure drop across device: 3" - 5" wc (inches H<sub>2</sub>O)

7. Stack dimensions:

Stack No. & Description: Warrior Met Coal Gas, LLC (Site 27-14-02 - Unit 410174)

Stack Type: Vertical

Stack UTM Coordinate (E-W)	<u>475710.21</u> (km)	Stack UTM Coordinate (N-S)	<u>3700349.75</u> (km)
Latitude	<u>33.442274°</u> (LAT)	Longitude	<u>-87.261329°</u> (LONG)
Height above grade	<u>9.42</u> (ft)	Gas temperature at exit	<u>1101</u> (°F)
Inside diameter at exit (round)	<u>0.33</u> (ft)	Gas Velocity	<u>N/A</u> (ft/Sec)
Inside area at exit (not round)	<u>N/A</u> (ft <sup>2</sup> )	Volume of gas discharged	<u>677</u> (ACFM)
Base Elevation	<u>540(Google)</u> (ft)	GEP Stack Height	<u>0.33</u> (ft)

Are sampling ports available? (If "yes", describe. Draw on separate sheet if necessary)  Yes  No :

Is this a merged stack (do multiple units use this release point)?  Yes  No

If yes, provide units: N/A

8. Provide a flow diagram which includes gas exit from process, each control device, location of by-pass, fan or blower, each emission point, exits for collected pollutants, and location of sampling ports.

9. Enclosed are:

- Blueprints  Particle size distribution report  
 Manufacturer's literature  Size efficiency- curves  
 Emissions test of existing installation  Fan curves  
 Other \_\_\_\_\_

10. If the pollution control device is of unusual design, please provide a sketch of the device.

11. List below the important operating parameters for the device. (For example: air/cloth ratio and fabric type, weight, and weave for baghouse; throat velocity and water use rate for a venturi scrubber; etc.)

N/A

12. By-pass (if any) is to be used and when:

None

13. Disposal of collected air pollutants:

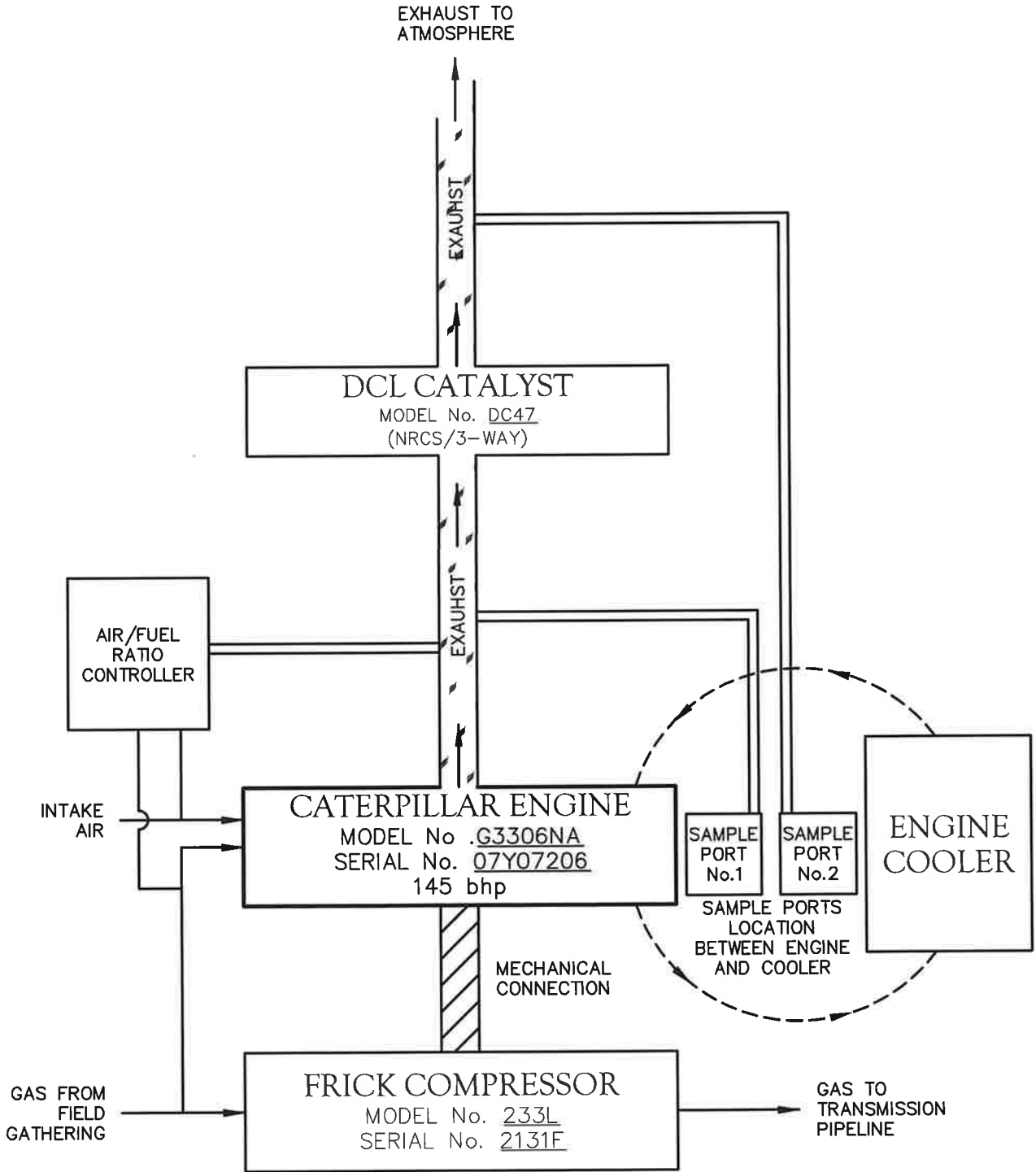
	Solid waste	Solid waste	Liquid waste	Liquid waste
Volume	N/A			
Composition				
Is waste hazardous?				
Method of disposal				
Final destination				

If collected air pollutants are recycled, describe:

Name of person preparing application: Q. Hansel Stewart, PE

Company of preparer McGiffert and Associates, LLC

Signature:  Date: 1/15/26



**McGiffert**  
and Associates, LLC  
— SINCE 1949 —  
**CIVIL ENGINEERS**

2814 STILLMAN BLVD. • P.O. BOX 20559  
TUSCALOOSA, ALABAMA 35402-0559  
WWW.MCGIFFERT.COM (205)759-1521 FAX (205)759-1524

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**WARRIOR MET COAL GAS, LLC**  
SITE 27-14-02 Unit 410174  
ADEM FORM 110 - ITEM 8  
JEFFERSON COUNTY ALABAMA

**FLOW DIAGRAM**

REVISION		
DATE	DESCRIPTION	BY

SCALE: NA  
DATE OF FIELD SURVEY: N/A  
FB. N/A PG. N/A  
DRAWN BY: M D S  
JOB No. 25-3111  
FILE NAME: WMCGE-27-14-02-FD

**SHEET No. 1 of 1**

CHECKED BY: QHS  
DWC. No. 07-26



To: Warrior Metcoal

RE: NSPS Subpart JJJJ Applicability Summary

Date: 11/03/2022

Service Order Number:	
Service Site Name:	
CSI/Compressco Unit Number:	410174
Driver Make & Model:	Caterpillar G3306NA
Driver Serial Number:	07Y07206
Driver Type:	4SRB
Driver Category:	Existing
OEM Rated Driver Horsepower:	145 HP
Driver Manufacture Date:	01/19/1999
“New” Engine Subject to NSPS JJJJ?	No
Engine Displacement:	10.5 liters
Driver RPM:	1,800
Fuel Type:	Natural Gas,
Control Equipment:	AFR / Catalytic Converter
Compressor Make & Model:	Frick 233L
Number of Stages:	1
Compressor OEM Rated HP:	150 HP
Compressor Rated Speed:	1,800
Compressor Serial Number:	2131F
Compressor Type:	Rotary Screw
Compressor Manufacture Date:	
Compressor NSPS Quad O Status:	Exempt
Engine Certification:	None

**Reconstruction Status:** Since the date of manufacture noted above, this engine has not been modified per 40 CFR 60.14, or reconstructed per 40 CFR 60.15.

Please contact Brad Johnson with any questions regarding this information at 432-495-3242 or [brad.johnson@compressor-systems.com](mailto:brad.johnson@compressor-systems.com).

NOTE: UNIT SPECIFICATIONS AND NUMBERS LISTED IN THIS DATA SHEET ARE USED FOR REFERENCE PURPOSES ONLY IN ORDER TO OBTAIN ANY PERMITS REQUIRED FOR PROVISION OF THE COMPRESSION SERVICES AT THE SERVICE SITE. NOTWITHSTANDING THE FOREGOING, THE LISTING OF THE UNIT SPECIFICATIONS AND NUMBERS ON THIS DATA SHEET SHALL NOT BE CONSTRUED AS LIMITING IN ANY WAY CONTRACTOR'S CONTRACTUAL RIGHT TO FREELY SUBSTITUTE THE UNIT BEING USED TO PROVIDE COMPRESSION AND RELATED PRODUCTION ENHANCEMENT SERVICES UNDER THE MASTER AGREEMENT AND THE APPLICABLE SERVICE ORDER AT ANY TIME, IN ITS SOLE DISCRETION, AND WITHOUT NOTICE, SO LONG AS SUCH SUBSTITUTION DOES NOT UNREASONABLY INTERFERE WITH THE PROVISION OF SUCH SERVICES OR CUSTOMER'S OPERATIONS AT THE SITE. UPON ANY SUBSTITUTION OR REPLACEMENT OF ANY UNIT USED FOR THE PROVISION OF THE COMPRESSION SERVICES, CONTRACTOR SHALL PROVIDE CUSTOMER WITH A NEW DATA SHEET REFLECTING THE APPLICABLE UNIT SPECIFICATIONS AND NUMBERS.

**G3306**  
NON-CURRENT

**GAS ENGINE SITE SPECIFIC TECHNICAL DATA**  
**G3306NA-BWM-4**



GAS COMPRESSION APPLICATION  
ENGINE SPEED (rpm): 1800  
COMPRESSION RATIO: 10.5  
JACKET WATER OUTLET (°F): 210  
ASPIRATION: NA  
COOLING SYSTEM: JW+OC  
CONTROL SYSTEM: MAG  
EXHAUST MANIFOLD: WC  
COMBUSTION: CATALYST SETTING  
EXHAUST OXYGEN (% O2): 0.5  
SET POINT TIMING: 30

RATING STRATEGY: STANDARD  
RATING LEVEL: CONTINUOUS  
FUEL SYSTEM: LPG I/MPCO  
WITH CUSTOMER SUPPLIED AIR FUEL RATIO CONTROL  
**SITE CONDITIONS:**  
FUEL: Gas Analysis  
FUEL PRESSURE RANGE(psig) (See note 1): 1.5-10.0  
FUEL METHANE NUMBER: 99.7  
FUEL LHV (Btu/scf): 892  
ALTITUDE(ft): 500  
INLET AIR TEMPERATURE(°F): 105  
STANDARD RATED POWER: 145 bhp@1800rpm

RATING	NOTES	LOAD	SITE RATING AT MAXIMUM INLET AIR TEMPERATURE			
			MAXIMUM RATING	100%	75%	53%
ENGINE POWER (WITHOUT FAN)	(2)	bhp	145	137	103	72
INLET AIR TEMPERATURE		°F	77	105	105	105

ENGINE DATA							
FUEL CONSUMPTION (LHV)		(3)	Btu/bhp-hr	7775	7887	8509	9513
FUEL CONSUMPTION (HHV)		(3)	Btu/bhp-hr	8639	8763	9454	10570
AIR FLOW (@inlet air temp, 14.7 psia)	(WET)	(4)(5)	ft <sup>3</sup> /min	208	210	169	132
AIR FLOW	(WET)	(4)(5)	lb/hr	922	884	710	556
FUEL FLOW (60°F 14.7 psia)			scfm	21	20	16	13
INLET MANIFOLD PRESSURE		(6)	in Hg(abs)	26.2	26.2	21.8	17.6
EXHAUST TEMPERATURE - ENGINE OUTLET		(7)	°F	1101	1094	1063	1037
EXHAUST GAS FLOW (@engine outlet temp, 14.5 psia)	(WET)	(5)(8)	ft <sup>3</sup> /min	677	647	510	392
EXHAUST GAS MASS FLOW	(WET)	(5)(8)	lb/hr	976	936	753	589

EMISSIONS DATA - ENGINE OUT							
NOx (as NO2)		(9)(10)	g/bhp-hr	13.42	13.11	11.60	9.69
CO		(9)(10)	g/bhp-hr	13.42	13.11	11.60	9.69
THC (mol wt. of 15.84)		(9)(10)	g/bhp-hr	2.19	2.25	2.58	3.21
NMHC (mol wt. of 15.84)		(9)(10)	g/bhp-hr	0.33	0.34	0.39	0.48
NMNEHC (VOCs) (mol wt. of 15.84)		(9)(10)(11)	g/bhp-hr	0.22	0.22	0.26	0.32
HCHO (Formaldehyde)		(9)(10)	g/bhp-hr	0.27	0.28	0.31	0.33
CO2		(9)(10)	g/bhp-hr	484	490	531	599
EXHAUST OXYGEN		(9)(12)	% DRY	0.5	0.5	0.5	0.5

HEAT REJECTION							
HEAT REJ. TO JACKET WATER (JW)		(13)	Btu/min	6059	5943	5214	4465
HEAT REJ. TO ATMOSPHERE		(13)	Btu/min	751	723	585	459
HEAT REJ. TO LUBE OIL (OO)		(13)	Btu/min	991	972	853	730

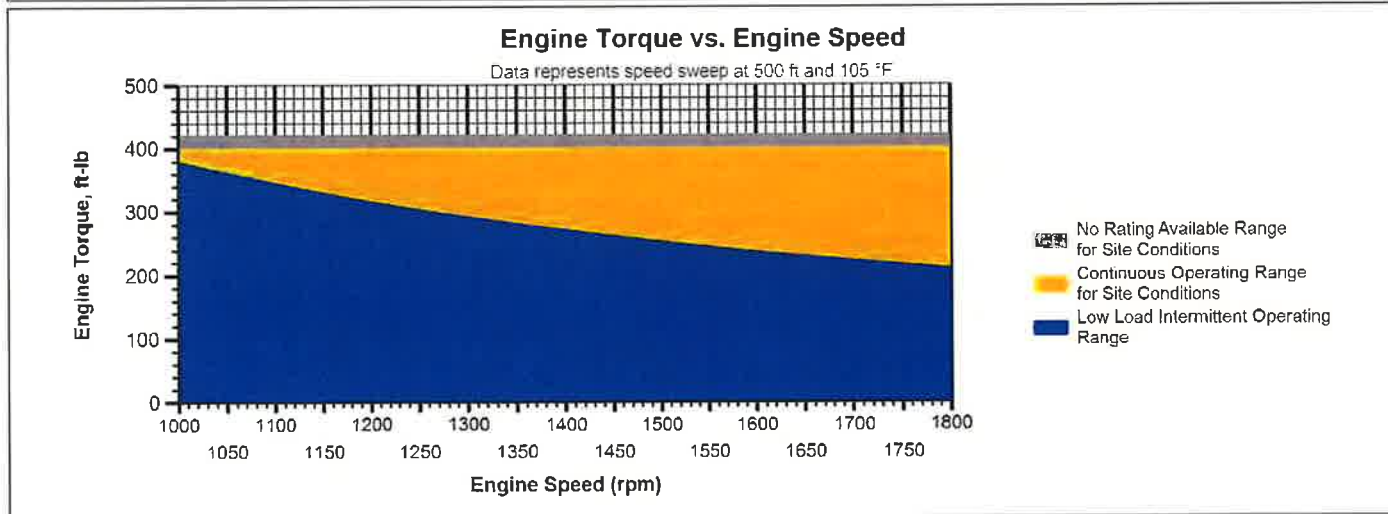
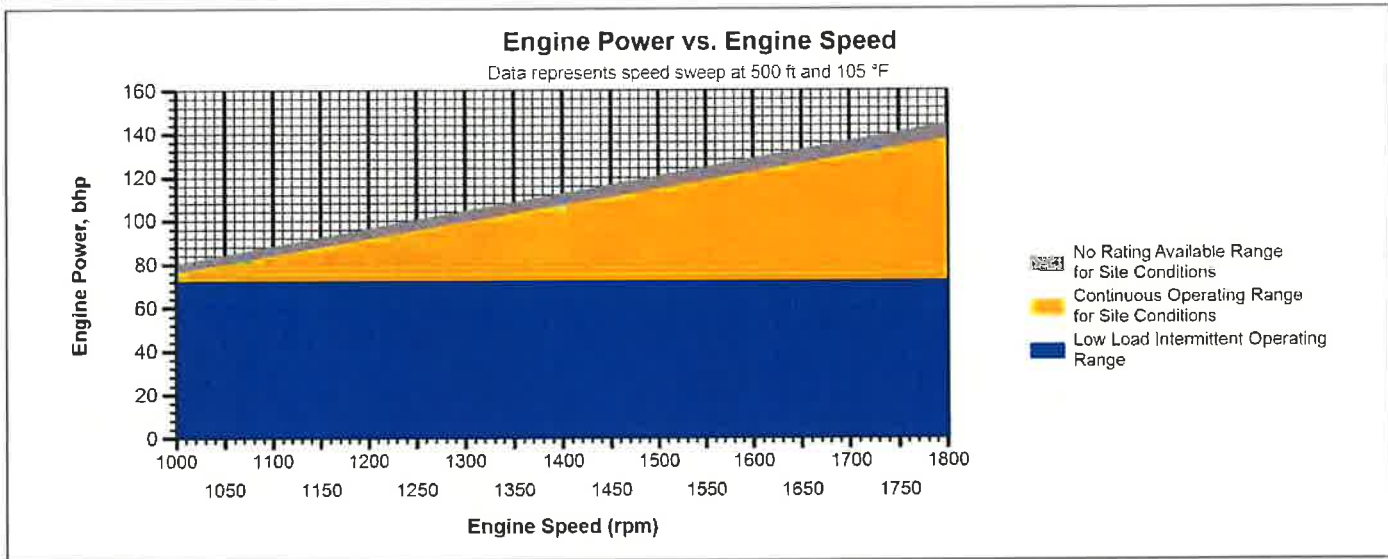
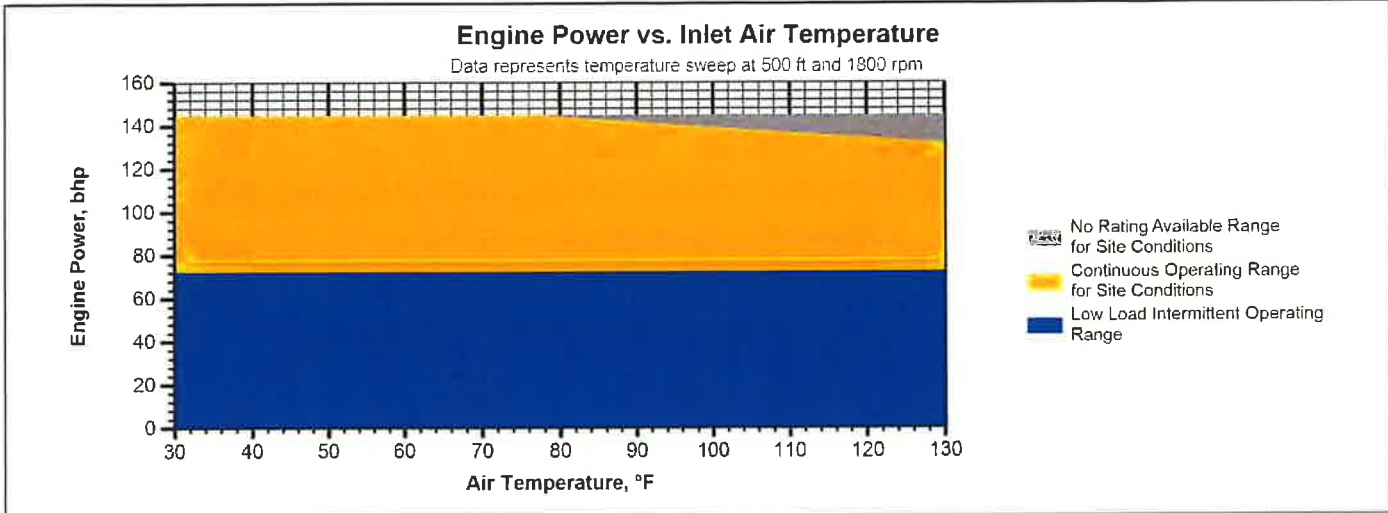
COOLING SYSTEM SIZING CRITERIA			
TOTAL JACKET WATER CIRCUIT (JW+OO)	(14)	Btu/min	7855

A cooling system safety factor of 0% has been added to the cooling system sizing criteria.

**CONDITIONS AND DEFINITIONS**

Engine rating obtained and presented in accordance with ISO 3046:1, adjusted for fuel, site altitude and site inlet air temperature. 100% rating at maximum inlet air temperature is the maximum engine capability for the specified fuel at site altitude and maximum site inlet air temperature. Maximum rating is the maximum capability for the specified fuel at site altitude and reduced inlet air temperature. Refer to product O&M manual for details on additional lower load capability. No overload permitted at rating shown.

For notes information consult page three



**Note:**  
At site conditions of 500 ft and 105°F inlet air temp., constant torque can be maintained down to 1000 rpm. The minimum speed for loading at these conditions is 1000 rpm.

**NOTES:**

- 1 Fuel pressure range specified is to the engine fuel pressure regulator. Additional fuel train components should be considered in pressure and flow calculations.
- 2 Engine rating is with one engine driven jacket water pump. Tolerance is  $\pm 3\%$  of full load.
- 3 Fuel consumption tolerance is  $\pm 5.0\%$  of full load data.
- 4 Air flow value is on a "wet" basis. Flow is a nominal value with a tolerance of  $\pm 5\%$ .
- 5 Inlet and Exhaust Restrictions must not exceed A&I limits based on full load flow rates from the standard technical data sheet.
- 6 Inlet manifold pressure is a nominal value with a tolerance of  $\pm 5\%$ .
- 7 Exhaust temperature is a nominal value with a tolerance of (+)63°F (-)54°F.
- 8 Exhaust flow value is on a "wet" basis. Flow is a nominal value with a tolerance of  $\pm 6\%$ .
- 9 Emissions data is at engine exhaust flange prior to any after treatment.
- 10 Emission values are based on engine operating at steady state conditions. Fuel methane number cannot vary more than  $\pm 3$ . Values listed are higher than nominal levels to allow for instrumentation, measurement, and engine-to-engine variations. They indicate "Not to Exceed" values. THC, NMHC, and NMNEHC do not include aldehydes. Part Load data requires customer supplied air fuel ratio control.
11. VOCs - Volatile organic compounds as defined in US EPA 40 CFR 60, subpart JJJJ.
- 12 Exhaust Oxygen tolerance is  $\pm 0.2$ .
13. Heat rejection values are nominal. Tolerances, based on treated water, are  $\pm 10\%$  for jacket water circuit,  $\pm 50\%$  for radiation,  $\pm 20\%$  for lube oil circuit.
- 14 Cooling system sizing criteria are maximum circuit heat rejection for the site, with applied tolerances.

Constituent	Abbrev	Mole %	Norm
Water Vapor	H2O	0.0000	0.0000
Methane	CH4	97.5200	97.5200
Ethane	C2H6	0.2200	0.2200
Propane	C3H8	0.0000	0.0000
Isobutane	iso-C4H10	0.0000	0.0000
Norbutane	nor-C4H10	0.0000	0.0000
Isopentane	iso-C5H12	0.0000	0.0000
Norpentane	nor-C5H12	0.0000	0.0000
Hexane	C6H14	0.0000	0.0000
Heptane	C7H16	0.0000	0.0000
Nitrogen	N2	1.7500	1.7500
Carbon Dioxide	CO2	0.4000	0.4000
Hydrogen Sulfide	H2S	0.0000	0.0000
Carbon Monoxide	CO	0.0000	0.0000
Hydrogen	H2	0.0000	0.0000
Oxygen	O2	0.1100	0.1100
Helium	HE	0.0000	0.0000
Neopentane	neo-C5H12	0.0000	0.0000
Octane	C8H18	0.0000	0.0000
Nonane	C9H20	0.0000	0.0000
Ethylene	C2H4	0.0000	0.0000
Propylene	C3H6	0.0000	0.0000
TOTAL (Volume %)		100.0000	100.0000

Fuel Makeup:  
Unit of Measure:

Gas Analysis  
English

**Calculated Fuel Properties**

Caterpillar Methane Number	99.7
Lower Heating Value (Btu/scf):	892
Higher Heating Value (Btu/scf):	991
WOBBE Index (Btu/scf):	1185
THC: Free Inert Ratio:	56.30
Total % Inerts (% N2, CO2, He)	2.15%
RPC (%) (To 905 Btu/scf Fuel):	100%
Compressibility Factor:	0.998
Stoich A/F Ratio (Vol/Vol):	9.33
Stoich A/F Ratio (Mass/Mass):	16.46
Specific Gravity (Relative to Air):	0.567
Fuel Specific Heat Ratio (K):	1.316

**CONDITIONS AND DEFINITIONS**

Caterpillar Methane Number represents the knock resistance of a gaseous fuel. It should be used with the Caterpillar Fuel Usage Guide for the engine and rating to determine the rating for the fuel specified. A Fuel Usage Guide for each rating is included on page 2 of its standard technical data sheet.

RPC always applies to naturally aspirated (NA) engines and turbocharged (TA or LE) engines only when they are derated for altitude and ambient site conditions.

Project specific technical data sheets generated by the Caterpillar Gas Engine Rating Pro program take the Caterpillar Methane Number and RPC into account when generating a site rating.

Fuel properties for Btu/scf calculations are at 60F and 14.696 psia.

Caterpillar shall have no liability in law or equity for damages, consequently or otherwise, arising from use of program and related material or any part thereof.

**FUEL LIQUIDS**

Field gases, well head gases, and associated gases typically contain liquid water and heavy hydrocarbons entrained in the gas. To prevent detonation and severe damage to the engine, hydrocarbon liquids must not be allowed to enter the engine fuel system. To remove liquids, a liquid separator and coalescing filter are recommended, with an automatic drain and collection tank to prevent contamination of the ground in accordance with local codes and standards.

To avoid water condensation in the engine or fuel lines, limit the relative humidity of water in the fuel to 80% at the minimum fuel operating temperature.



## Emission Guarantee

Date: 1/30/2023

---

Brad Johnson  
CSI Compressco  
Midland, TX

RE: Spec Sheet - 410174

Brad,

I am pleased to provide this guarantee based on the following information. If you have any questions or concerns please feel free to contact myself or any of my associates at DCL America.

Please note: This guarantee is subject to DCL's standard terms and conditions of sale attached. Copies of the limited warranty statement are available from DCL upon request (DCL doc. No. X0000-0000-K1).

Best Regards,

**Michael Kourkoubes**  
Regional Sales Manager  
DCL America Inc.  
Cell: 713-897-1596  
[mkourkoubes@dcl-inc.com](mailto:mkourkoubes@dcl-inc.com)



**Global Leader in Emission Control Solutions**  
DCL America Inc. 27603 Commerce Oaks Drive, Oak Ridge North, TX 77385  
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**Confidential**



<b>Catalyst Element (Table 1A)</b>		
<b>Application</b>	Gas Compression	
<b>Engine Model</b>	CAT 3306NA	
<b>Engine Mechanical Power</b>	137 hp	
<b>Fuel</b>	Natural Gas (PQNG)	
<b>Exhaust Flowrate</b>	936 lb/hr	
<b>Exhaust Temperature</b>	1094 deg. F	
<b>Catalyst Model</b>	DC47	
<b>Catalyst Part Number</b>	CB000-LQ-0126-0123-01	
<b>Number of Elements</b>	1	
<b>Catalyst Code</b>	O / 300 cpsi	
<b>Dimensions</b>	~10.16"D	
<b>Pre-Catalyst Emissions</b> g/bhp-h	NOx	13.11
	CO	13.11
	NMNEHC	0.22
	HCHO	0.28
<b>Post-Catalyst</b> g/bhp-h	NOx	0.52
	CO	0.79
	NMNEHC	0.04
	HCHO	0.06
<b>Limited Warranty</b>	(doc. X0000-0000-K1) one year or 8000 hours operation, whichever first	



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 Toll free: 1-877-965-8989 Fax: 281-605-5858 Email: info@dcl-inc.com www.dcl-inc.com



**Confidential**



# Warrior Met Coal Gas, LLC

Jefferson County, Alabama

1/12/2026



## Compressor Station - 27-14-02

Air Permit Review

WMCGE Lease Name: Unit No. 410174

Alabama Department of Environmental Management

Air Division

Air Pollution Control Program

### FORM 107 - Calculations of Point Source Emissions

Engine Information	Emission Factors (1)		Production (hr) Utilized	Control Device Removal Efficiency (%)	Potential Emissions			
	pollutant	(gm/hp-hr)			Uncontrolled		Controlled (4)	
				(lb/hr)	(Ton/yr)	(lb/hr)	(Ton/yr)	
Manufacturer: Caterpillar								
Model Number: G3306NA								
Serial Number: 07Y07206								
Brake Horsepower (bhp): 137								
	NOx	13.11	8760	96.03%	3.96	17.34	<b>0.1572</b>	<b>0.69</b>
	CO	13.11	8760	93.97%	3.96	17.34	<b>0.2388</b>	<b>1.05</b>
	VOC NMNEHC (3)	0.22	8760	81.82%	0.066	0.291	<b>0.0121</b>	<b>0.05</b>
	PM-10 (6)	0.00950	8760	0.00%	<b>0.0029</b>	<b>0.0126</b>	N/A	N/A
	PM-2.5 (6)	0.00950	8760	0.00%	<b>0.0029</b>	<b>0.0126</b>	N/A	N/A
	PM-Cond (6)	0.00991	8760	0.00%	<b>0.0030</b>	<b>0.0131</b>	N/A	N/A
	SOx	Neg (2)	8760	0.00%	-	-	N/A	N/A
	Formaldehyde (6)	0.28	8760	78.57%	0.08	0.37	<b>0.0181</b>	<b>0.08</b>
	HAPs	0.0772	8760	0.00%	<b>0.02</b>	<b>0.10</b>	N/A	N/A

HAPs Emissions Summary		Pollutants					
Emission Factors (5) (gm/hp-hr)	Acet-aldehyde	Acrolien	Benzene	Formaldehyde	Toluene	Xylene	Total
	0.0039	0.0034	0.0046	0.0623	0.0016	0.0014	<b>0.0772</b>

(1) - The manufacturer provided the emission factors

(2) - Coalbed methane gas samples tested in the laboratory showed no sulfur compounds. (Taurus Exploration)

(3) - VOC NMHC represents non-methane hydrocarbons as provided by the manufacturer

(4) - No Catalytic Reduction Device Installed

(5) - Gas Research Institute (GRI) software GRI-HAPcalc was referenced to provide these factors

(6) - Emission factors taken from AP-42 Fifth Edition Volume 1: Stationary Point and Area Sources



# Warrior Met Coal Gas, LLC

Jefferson County, Alabama

1/12/2026



**Gas Combustor - 27-14-02**  
Air Permit Exemption Review

Alabama Department of Environmental Management  
Air Division  
Air Pollution Control Program

**Potential Calculations of Point Source Emissions**

Combustor Information	Emission Factors <sup>(1)</sup>		Production (hr) Utilized	Combustor Removal Efficiency (%)	Potential Emissions			
	pollutant	(lb/mmbtu)			Uncontrolled		Controlled <sup>(4)</sup>	
					(lb/hr)	(Ton/yr)	(lb/hr)	(Ton/yr)
Manufacturer: Hero Flare								
Model Number: C6030	NO <sub>x</sub>	0.15	8760	0%	3.00	13.14	N/A	N/A
Serial Number: 07Y05745	CO	0.30	8760	0%	6.00	26.28	N/A	N/A
Burnner Rate (mmbtu/hr): 20	VOC NMHC <sup>(3)</sup>	N/A	8760	98%+ DRE	-	-	N/A	N/A
	PM	Neg <sup>(2)</sup>	8760	0%	-	-	N/A	N/A
	SO <sub>x</sub>	Neg <sup>(2)</sup>	8760	0%	-	-	N/A	N/A

(1) - The manufacturer provided the emission factors

(2) - Coalbed methane gas samples tested in the laboratory showed on sulfur compounds. (Taurus Exploration)

(3) - The destruction removal efficiency of any potential VOC is 98%+ as provided by the manufacturer

(4) - Reduction Device not Applicable



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918 941 2166  
[www.heroflare.com](http://www.heroflare.com)

---

Druid Capital

*Rev 2: 10/12/20*  
Flare Technology: Combustor  
Smokeless: Yes  
Flare Model: C6030

Hero Flare is pleased to provide a proposal for the supply of a combustor system that is designed to fully comply with the datasheets your company provided for this project.

The Hero combustor is specifically designed to destruct low flow waste gas streams for tank battery sites. Our system is designed to meet or exceed the EPA 40 CFR 60.18 subpart OOOO design standards.

There are many advantages to our combustor systems:

- Natural Draft temperature control to help maintain 500°F minimum operating temperature
- Automated pilot ignition system with continuous pilot flame monitoring.
- Flashback monitoring.

We look forward to working with you as this project progresses.

Best regards,

**Craig Rosencutter**

Office: (918) 941-2166 Ext. 101

Cell: (918) 344-4335

Email: [craig.rosencutter@heroflare.com](mailto:craig.rosencutter@heroflare.com)

Visit us at [www.heroflare.com](http://www.heroflare.com)

# Design Data Sheet

Flow Rate Case	Flow Rate MSCFD	Molecular Weight	LHV (Btu/SCF)	Pressure	Temp. (°F)
Max Flow Rate	0 to 500 <i>(rev 1)</i>	21 <i>(rev 1)</i>	600 to 700 <i>(rev 1)</i>	<20psig <i>(rev 2)</i>	Amb.

## Site Conditions

Wind	120 MPH	Temperature	0 to 120 °F	Elevation	14.5 Psi
------	---------	-------------	-------------	-----------	----------

## Site Utilities Required

Fuel Gas (per pilot)	Pilot: 25 SCFH;				
Plant Air	No Plant Air Required				
Panel Electricity	12VDC / Solar Powered <i>(rev 2)</i>				
Blower Motor Electricity	No blower included with this offer	Blower Size: N/A			

## Emission / Flare Performance

Destruction	98% +DRE of VOC's
Smokeless Rate	100% Smokeless
Tip Velocity	N/A

## Pilot Construction

Electrical Area	Non-classified area
Control Panel Type	Nema 4X (Corrosion resistance fiberglass reinforced plastic (FRP))
Pilot(s)	One (1) Gas Pilot
Pilot Construction	Stainless Steel
Pilot Monitoring	Ionization Rod
Pilot Gas Connection	½" FNPT Located at Base of Flare

## Flare Construction

Component	Dimension	Material
Stack Height x Diameter	30' x 5'	A53B
Internal Insulation	3" Thick	8# Ceramic Fiber
#1 & #2 Inlet Connection	3" FNPT	Carbon
Assist Gas Connection	¼" FNPT	CS

# Equipment Description *(Ignition & BMS System)*

---

## Spark Ignited Pilot (PF)

The Hero combustor utilizes a fully automated ignition system that is designed to automatically energize the pilot spark ignition, turn on the pilot solenoid valve and prove the pilot flame. Once the pilot flame is proven, the system will automatically de-energize the spark ignitor. In addition, the pilot flame is continuously monitored. In the event of a loss of flame, the ignition system will automatically begin the process of re-igniting the pilot. The pilot ignition system includes:

- High stability stainless steel pilot
- Pilot can be provided to operate on natural gas or propane *(must be specified at time of order)*
- Automatic spark ignition system with continuous flame monitoring
- Automatic re-ignition cycle when loss of flame is detected

## Burner Management System

In addition to the automated ignition system, the BMS will continuously monitor the temperature within the combustor. In the event of a high temperature occurrence, the BMS can automatically energize a main waste gas control valve to shutdown the waste gas flow to prevent damage to the combustor and / or unsafe conditions. It is important to note that the main waste gas valve is not included in the combustor base scope of supply and must be ordered as an option or supplied by the client. The BMS includes:

- Nema 4X fiberglass or polycarbonate enclosure
- LED display on BMS door enclosure
- Remote start and stop contacts
- Remote pilot flame indication dry contacts (on / off)
- Normal operation stack temperature monitoring with high temperature shutdown
- Redundant Thermocouple w/ Temperature Recording Device *(rev 2)*
- Flame arrestor flashback monitoring with high temperature shutdown
- Temperature control via two (2) Automated Dampers *(rev 1)*

## Combustor Controls

The Hero combustor is supplied with all the controls necessary to operate the automated ignition system. In addition, the BMS offers the ability to install an optional main waste gas valve that will automatically open once the pilot flame is proven and automatically close in the event of a pilot flame failure or high temperature shutdown occurrence. The combustor controls consist of the following:

- One (1) pilot w/ flame detection, 1/2" pilot gas solenoid valve, regulator and gauge shop assembled
- Two (2) 3" main waste gas valves
- Two (2) assist gas / enrichment valves (part of valve assembly)
- Two (2) flame arrestor temperature monitoring Type K thermocouples
- Two (2) stack temperature monitoring Type K thermocouple *(rev 2)*
- Functional shop test.
- Panel to Combustor / Pilot interconnecting tubing and wiring is by client.

# Equipment Description *(Combustor)*

---

## **Combustor Waste Gas Tip**

The Hero combustor utilizes nozzle mix technology which is the most robust burner tip technology to ensure proper performance at all flow rate conditions. Our multiple arm waste gas nozzle design maximizes the fuel / air mixing and allows for the maximum destruction efficiency to be achieved.

## **Combustor Stack**

The combustor stack consists of a carbon steel stack that is refractory lined to produce a safe operating temperature on the stack outer shell. Our combustors are shipped as a single piece (*no field welding*) to minimize the field erection costs. The combustor stack includes:

- Free Standing Carbon steel stack with internally refractory lining to minimize shell temperature
- Combustor stack will be shipped as one piece (*No field welding required*)
- Single piece lift design for reduced field installation costs
- Two (2) Square damper inlets (*rev 2*)
- The pilot can be removed without going inside the combustor
- Two 3" EPA sample ports at 180 degrees apart
- Primer and topcoat.
- Mechanical drawings and operating manual.
- Complete structural calculations for the stack, lifting trunnions and base ring. Finite element analysis of the inlet nozzle and lifting trunnions. For the record, not for approval.

## **Equipment Description *(Flashback & Over Temp. Protection)***

---

### **Waste Gas Flame Arrestor**

When burning off tank vapors and other low flow waste gas streams that have the potential for combustible gases and air, it is imperative that the proper safeguards are incorporated into the combustor design. Unlike other combustor suppliers, our arrestors consist of stainless steel internal elements as opposed to aluminum.

### **Combustor Header Tank Vapor Valve**

The Hero combustor system is provided with a 3” tank vapor valve that is to be installed between the tanks and the combustor unit. The valve is a pneumatic gas operated valve that can be operated from any sales gas supply. In the event the unit is over fired and the combustion chamber exceed normal operating temperatures, the valves will close, and the system will shutdown indicating an alarm

The valve can also be used to close in the event of a flash back occurrence. A thermocouple will be installed to monitor the flame arrestor. In the event the flame arrestor experiences a flash back occurrence, the main tank vapor valve will automatically close to isolate the tanks.

# Optional Items

---

## **Flame Arrestor Thermocouple (Flashback Detection)**

An optional thermocouple can be purchased to monitor the flame arrestor. In the event a flashback occurrence should take place, the thermocouple will send a signal to the BMS and the main tank vapor valve will automatically close in order to isolate the tanks.

## **Pre-Cast Concrete Base**

A 6' diameter pre-cast concrete block can be provided to eliminate the need for any concrete site work. The pre-cast base is equipped with a lifting lug for easy loading, offload and installation.

## **Stack Exit Bird Screen**

A stainless steel perforated screen is available to be installed on the combustor stack outlet. The screen is designed to withstand the heat for a long service life while prevent wildlife (i.e. birds) from enter the combustor chamber.

## **Delivery**

Hero Flare can arrange to have the combustor shipped from our facility to the jobsite. We utilize drivers that are teamed up with Hero so they understand how to properly load, transport, and unload the equipment without damage. Freight pricing is “per loaded mile” (one way) from Tulsa, Ok.

Our clients are welcome to pickup the equipment at the fabrication facility or use their preferred freight service.

# Flare Manufacturing Standards

---

The fabrication shop maintains quality control documentation and welder's qualifications which are available for our client's review. Inspectors have access to the facility upon short notice.

## General Industry Standards

Welding - Structural:	ANSI B31.3 AWS D1.1	Pipe Flange: Pipe Threads:	150 Lb ANSI NPT
Weld Inspection: Drawing Dimensions:	ASME V English	Electrical Wiring: Structural Design:	NEC ASCE latest version

## Non-Destructive Testing

Dimensional Check:	All exterior and mounting dimensions
All Welds:	100% Visual Inspection
Radiography/NDT	Per client spec at client cost.
Hydrostatic testing:	Not applicable.
Material certificates:	All stainless steel.

## Painting

Component	Sandblast	Shop Paint
Stainless Steel Stack	None	None
Valves and Control Panel	Manuf. Std.	Manufacturers Standard
Stainless Steel Piping	None	None

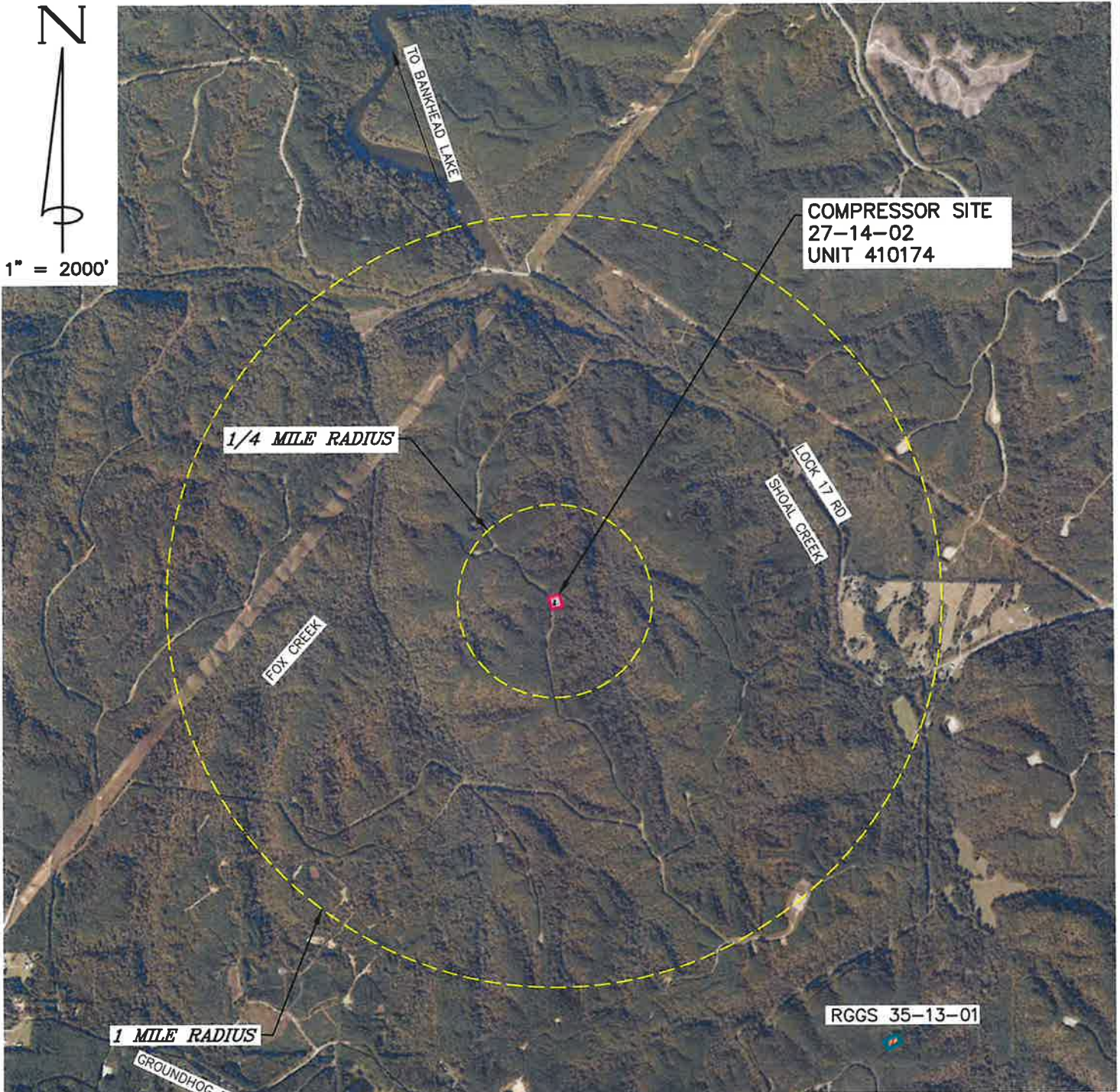
## Project Documentation

Complete Drawing Package	Design Summary Specification
Structural Calculations for record	Paint Specification
Foundation Design Summary	Welding WPS / PQR
Operating and Maintenance Manual	Material Certificates
Spare Parts List	Radiation Curves

N



1" = 2000'



COMPRESSOR SITE  
27-14-02  
UNIT 410174

1/4 MILE RADIUS

LOCK 17 RD  
SPOAL CREEK




FOX CREEK

1 MILE RADIUS

RGGS 35-13-01

GROUNDHOG RD

**LEGEND**

-  SITE BOUNDARY
-  WMCG COMPRESSOR STATIONS
-  WMCG WELL SITE WITH GAS ENGINE

REPRODUCTION OF A PORTION OF JEFFERSON COUNTY AERIAL BY LANDSAT 2021 AND GIS TAX MAP DATA.

WMCG HAS VERIFIED THAT ALL COMPANY OWNED COMPRESSORS AND WELL SITES WITH GAS ENGINES HAVE BEEN SHOWN WITHIN THE 1-MILE RADIUS ABOVE.



2814 STILLMAN BLVD. • P.O. BOX 20559  
TUSCALOOSA, ALABAMA 35402-0559

WWW.MCGIFFERT.COM (205)759-1521 FAX (205)759-1524

**WARRIOR MET COAL GAS, LLC**  
COMPRESSOR SITE 27-14-02  
UNIT 410174

JEFFERSON COUNTY SEC. 27, T. 18 S, R. 7 W ALABAMA

**REMOTE AREA MAP**

REVISION		
DATE	DESCRIPTION	BY

SCALE: 1"=2000'  
 DATE OF FIELD SURVEY: N/A  
 FB. N/A PG. N/A  
 DRAWN BY: M D S  
 JOB No. 25-3111  
 FILE NAME: WMCG-SITE 27-14-02 UNIT 410174-RAM

SHEET No. 1 of 1  
 CHECKED BY: QHS  
 DWG. No. 06-26

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**LEGEND**

-  SITE BOUNDARY
-  EXISTING WELLHEAD
-  PROPOSED COMPRESSOR STATION
-  PROPOSED FLARE COMBUSTOR

REPRODUCTION OF A PORTION OF JEFFERSON COUNTY AERIAL BY LANDSAT 2021 AND GIS TAX MAP DATA.



**McGiffert**  
and Associates, LLC  
— SINCE 1949 —  
CIVIL ENGINEERS

**WARRIOR MET COAL GAS, LLC**  
COMPRESSOR SITE 27-14-02  
UNIT 410174

JEFFERSON COUNTY SEC. 27, T. 18 S, R. 7 W ALABAMA

**AREA MAP**

REVISION		
DATE	DESCRIPTION	BY

SCALE: 1"=60'
DATE OF FIELD SURVEY: N/A
FB. N/A PG. N/A
DRAWN BY: M D S
JOB No. 25-3111
FILE NAME: WDCX-SITE 27-14-02 UNIT 410174-AW

SHEET No. 1 of 1	
CHECKED BY: QHS	DWG. No. 05-26

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