TITLE V PERMIT RENEWAL

R30-03900057-2012 (MM01)

Charleston Area Medical Center
General Hospital
Charleston, Kanawha County, West Virginia

Prepared for:
Charleston Area Medical Center, Inc.
3200 MacCorkle Avenue, SE
Charleston, West Virginia 25304

Prepared by:
Triad Engineering, Inc.
10541 Teays Valley Road
Scott Depot, West Virginia 25560

March 2017

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WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF AIR QUALITY
601 57th Street SE
Charleston, WV 25304
Phone: (304) 926-0475
www.dep.wv.gov/daq

INITIAL/RENEWAL TITLE V PERMIT APPLICATION - GENERAL FORMS

Section 1: General Information

1. **Name of Applicant (As registered with the WV Secretary of State's Office):** Charleston Area Medical Center	**2. Facility Name or Location:** Charleston Area Medical Center General Hospital
3. DAQ Plant ID No.: 0 3 9 — 0 0 0 5 7	**4. Federal Employer ID No. (FEIN):** 5 5 0 5 2 6 1 5 0

5. **Permit Application Type:**

☐ Initial Permit — When did operations commence? 11/17/1995
☒ Permit Renewal — What is the expiration date of the existing permit? 10/01/2017
☐ Update to Initial/Renewal Permit Application

6. Type of Business Entity: ☒ Corporation ☐ Governmental Agency ☐ LLC ☐ Partnership ☐ Limited Partnership	**7. Is the Applicant the:** ☐ Owner ☐ Operator ☒ Both If the Applicant is not both the owner and operator, please provide the name and address of the other party. N/A
8. Number of onsite employees: 1,965	

9. Governmental Code:

☒ Privately owned and operated; 0
☐ Federally owned and operated; 1
☐ State government owned and operated; 2
☐ County government owned and operated; 3
☐ Municipality government owned and operated; 4
☐ District government owned and operated; 5

10. Business Confidentiality Claims

Does this application include confidential information (per 45CSR31)? ☐ Yes ☒ No

If yes, identify each segment of information on each page that is submitted as confidential, and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's *"PRECAUTIONARY NOTICE-CLAIMS OF CONFIDENTIALITY"* guidance.

11. Mailing Address		
Street or P.O. Box: 3200 MacCorkle Avenue, SE		
City: Charleston	**State:** WV	**Zip:** 25304
Telephone Number: (304) 388-8208	**Fax Number:** (304) 388-8891	

12. Facility Location		
Street: 501 Morris Street	**City:** Charleston	**County:** Kanawha
UTM Easting: 445.19 km	**UTM Northing:** 4,244.56 km	**Zone:** ☒ 17 or ☐ 18
Directions: From Interstate 64, exit at Leon Sullivan Way (Exit 100) toward Capital Street. From Leon Sullivan Way, turn left onto Washington Street (US Route 60, East). Turn left onto Morris Street and end at 501 Morris Street.		
Portable Source? ☐ Yes ☒ No		
Is facility located within a nonattainment area? ☒ Yes ☐ No		**If yes, for what air pollutants?** $PM_{2.5}$
Is facility located within 50 miles of another state? ☐ Yes ☒ No		**If yes, name the affected state(s).**
Is facility located within 100 km of a Class I Area[1]? ☐ Yes ☒ No **If no, do emissions impact a Class I Area[1]?** ☐ Yes ☒ No		**If yes, name the area(s).**

[1] *Class I areas include Dolly Sods and Otter Creek Wilderness Areas in West Virginia, and Shenandoah National Park and James River Face Wilderness Area in Virginia.*

13. Contact Information		
Responsible Official: Dr. Glenn Crotty, Jr.		**Title:** Executive VP & COO
Street or P.O. Box: 501 Morris Street		
City: Charleston	**State:** WV	**Zip:** 25301
Telephone Number: (304) 388-7647	**Fax Number:** (304) 388-7696	
E-mail address: Glenn.Crotty@camc.org		
Environmental Contact: Nanci Keenan		**Title:** Safety Manager
Street or P.O. Box: 3200 MacCorkle Ave, SE		
City: Charleston	**State:** WV	**Zip:** 25304
Telephone Number: (304) 388-8890	**Fax Number:** (304) 388-8891	
E-mail address: Nanci.Keenan@camc.org		
Application Preparer: Shannon Cox		**Title:** Senior Scientist
Company: Triad Engineering, Inc.		
Street or P.O. Box: 10541 Teays Valley Road		
City: Scott Depot	**State:** WV	**Zip:** 25560
Telephone Number: (304) 755-0721	**Fax Number:** (304) 755-1880	
E-mail address: scox@triadeng.com		

14. Facility Description

List all processes, products, NAICS and SIC codes for normal operation, in order of priority. Also list any process, products, NAICS and SIC codes associated with any alternative operating scenarios if different from those listed for normal operation.

Process	Products	NAICS	SIC
Hospital	Medical Care	62211	8062

Provide a general description of operations.

Located on the eastern edge of downtown Charleston, CAMC General Hospital is home of the highest level Trauma Center, nationally-accredited Medical Rehabilitation and Stroke Centers, Neurosciences Center, one of two Facial Surgery Centers, Charleston's only accredited Sleep Center, orthopedic trauma services, and West Virginia's only Kidney Transplant Center (affiliated with the Cleveland Clinic). General Hospital also offers services such urology, behavioral medicine and psychiatry, and physical and occupational therapies. Each year, General cares for approximately 3,100 patients. Plus, nearly 1,500 patients also receive neurosurgery and medical rehabilitation services.

This permit addresses the hospital medical infectious waste incinerator (HMIWI) owned and operated by CAMC and is used to treat infectious waste generated by General Hospital along with CAMC's other hospitals and medical facilities. CAMC also accepts infectious medical waste from other facilities; however, this amount does not exceed 10% of the incinerator annual throughput.

15. Provide an **Area Map** showing plant location as **ATTACHMENT A**.

16. Provide a **Plot Plan(s)**, e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is located as **ATTACHMENT B**. For instructions, refer to "Plot Plan - Guidelines."

17. Provide a detailed **Process Flow Diagram(s)** showing each process or emissions unit as **ATTACHMENT C**. Process Flow Diagrams should show all emission units, control equipment, emission points, and their relationships.

Section 2: Applicable Requirements

18. Applicable Requirements Summary	
Instructions: Mark all applicable requirements.	
☒ SIP	☐ FIP
☒ Minor source NSR (45CSR13)	☐ PSD (45CSR14)
☐ NESHAP (45CSR34)	☐ Nonattainment NSR (45CSR19)
☐ Section 111 NSPS	☐ Section 112(d) MACT standards
☐ Section 112(g) Case-by-case MACT	☒ 112(r) RMP
☐ Section 112(i) Early reduction of HAP	☐ Consumer/commercial prod. reqts., section 183(e)
☒ Section 129 Standards/Reqts.	☐ Stratospheric ozone (Title VI)
☐ Tank vessel reqt., section 183(f)	☐ Emissions cap 45CSR§30-2.6.1
☐ NAAQS, increments or visibility (temp. sources)	☐ 45CSR27 State enforceable only rule
☒ 45CSR4 State enforceable only rule	☐ Acid Rain (Title IV, 45CSR33)
☐ Emissions Trading and Banking (45CSR28)	☐ **C**ompliance **A**ssurance **M**onitoring (40CFR64)
☐ CAIR NO_x Annual Trading Program (45CSR39)	☐ CAIR NO_x Ozone Season Trading Program (45CSR40)
☐ CAIR SO_2 Trading Program (45CSR41)	

19. Non Applicability Determinations
List all requirements which the source has determined not applicable and for which a permit shield is requested. The listing shall also include the rule citation and the reason why the shield applies. 40 CFR 64 – A CAM Plan is not required because the facility is subject to 40 CFR 60, Subpart Ec.
☒ Permit Shield

20. Facility-Wide Applicable Requirements

List all facility-wide applicable requirements. For each applicable requirement, include the underlying rule/regulation citation and/or <u>construction permit</u> with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*).

45CSR6 – Open burning

45CSR11 – Standby plans for reducing emissions

45CSR13 – NSR permit to establish synthetic minor status

45CSR30 – Operating permit requirement

45CSR34/40CFR61 – Asbestos

☒ Permit Shield

For all facility-wide applicable requirements listed above, provide monitoring/testing / recordkeeping / reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number and/or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

45CSR6 – Monitored and recorded same as 45CSR2 with the exception of objectionable odors. Odors are determined based on complaints from individuals in the vicinity of the facility and recorded in the annual Title V Report.

45CSR13 – Appropriate tests were conducted at the time that the incinerator was deemed to be in compliance with its applicable emission standard.

45CSR30 – A Certified Emissions Statement (CES) is filed each year along with paying the appropriate fee. The receipt is maintained at the facility and is available during an inspection by the Director or an authorized representative.

Are you in compliance with all facility-wide applicable requirements? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

20. Facility-Wide Applicable Requirements *(Continued)* - *Attach additional pages as necessary.*

List all facility-wide applicable requirements. For each applicable requirement, include the rule citation and/or permit with the condition number.

☒ Permit Shield

For all facility-wide applicable requirements listed above, provide monitoring/testing/recordkeeping/ reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number and/or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Are you in compliance with all facility-wide applicable requirements? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

21. Active Permits/Consent Orders		
Permit or Consent Order Number	Date of Issuance MM/DD/YYYY	List any Permit Determinations that Affect the Permit *(if any)*
R13-1772J	01/05/2016	N/A
R30-03900057-2012 (MM01)	05/02/2016	N/A
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22. Inactive Permits/Obsolete Permit Conditions		
Permit Number	Date of Issuance	Permit Condition Number
N/A	N/A	N/A
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Section 3: Facility-Wide Emissions

23. Facility-Wide Emissions Summary [Tons per Year]	
Criteria Pollutants	Potential Emissions
Carbon Monoxide (CO)	12.68
Nitrogen Oxides (NO_X)	32.22
Lead (Pb)	0.0029
Particulate Matter ($PM_{2.5}$)[1]	N/A
Particulate Matter (PM_{10})[1]	2.76
Total Particulate Matter (TSP)	2.78
Sulfur Dioxide (SO_2)	5.80
Volatile Organic Compounds (VOC)	1.70
Hazardous Air Pollutants[2]	Potential Emissions
Hydrogen Chloride (HCl)	1.87
Mercury (Hg)	0.014
Cadmium	0.0015
Regulated Pollutants other than Criteria and HAP	Potential Emissions
Dioxin	2.3E-06
Greenhouse Gases	Potential Emissions
Carbon Dioxide (CO_2)	2.58E+04
Methane (CH_4)	5.16E-01
Nitrous Oxide (N_2O)	4.53E-01
Carbon Dioxide Equivalent (CO_2e)	1.75E+03

[1] $PM_{2.5}$ and PM_{10} are components of TSP.

[2] For HAPs that are also considered PM or VOCs, emissions should be included in both the HAPs section and the Criteria Pollutants section.

Section 4: Insignificant Activities

24. Insignificant Activities (Check all that apply)		
☒	1.	Air compressors and pneumatically operated equipment, including hand tools.
☒	2.	Air contaminant detectors or recorders, combustion controllers or shutoffs.
☒	3.	Any consumer product used in the same manner as in normal consumer use, provided the use results in a duration and frequency of exposure which are not greater than those experienced by consumer, and which may include, but not be limited to, personal use items; janitorial cleaning supplies, office supplies and supplies to maintain copying equipment.
☒	4.	Bathroom/toilet vent emissions.
☒	5.	Batteries and battery charging stations, except at battery manufacturing plants.
☒	6.	Bench-scale laboratory equipment used for physical or chemical analysis, but not lab fume hoods or vents. Many lab fume hoods or vents might qualify for treatment as insignificant (depending on the applicable SIP) or be grouped together for purposes of description.
☐	7.	Blacksmith forges.
☐	8.	Boiler water treatment operations, not including cooling towers.
☐	9.	Brazing, soldering or welding equipment used as an auxiliary to the principal equipment at the source.
☐	10.	CO_2 lasers, used only on metals and other materials which do not emit HAP in the process.
☒	11.	Combustion emissions from propulsion of mobile sources, except for vessel emissions from Outer Continental Shelf sources.
☒	12.	Combustion units designed and used exclusively for comfort heating that use liquid petroleum gas or natural gas as fuel.
☒	13.	Comfort air conditioning or ventilation systems not used to remove air contaminants generated by or released from specific units of equipment.
☐	14.	Demineralized water tanks and demineralizer vents.
☐	15.	Drop hammers or hydraulic presses for forging or metalworking.
☐	16.	Electric or steam-heated drying ovens and autoclaves, but not the emissions from the articles or substances being processed in the ovens or autoclaves or the boilers delivering the steam.
☐	17.	Emergency (backup) electrical generators at residential locations.
☐	18.	Emergency road flares.
☐	19.	Emission units which do not have any applicable requirements and which emit criteria pollutants (CO, NO_x, SO_2, VOC and PM) into the atmosphere at a rate of less than 1 pound per hour and less than 10,000 pounds per year aggregate total for each criteria pollutant from all emission units. Please specify all emission units for which this exemption applies along with the quantity of criteria pollutants emitted on an hourly and annual basis: _____ _____ _____ _____ _____ _____ _____ _____ _____

24. Insignificant Activities (Check all that apply)		
☐	20.	Emission units which do not have any applicable requirements and which emit hazardous air pollutants into the atmosphere at a rate of less than 0.1 pounds per hour and less than 1,000 pounds per year aggregate total for all HAPs from all emission sources. This limitation cannot be used for any source which emits dioxin/furans nor for toxic air pollutants as per 45CSR27. Please specify all emission units for which this exemption applies along with the quantity of hazardous air pollutants emitted on an hourly and annual basis: _____ _____ _____ _____ _____
☐	21.	Environmental chambers not using hazardous air pollutant (HAP) gases.
☒	22.	Equipment on the premises of industrial and manufacturing operations used solely for the purpose of preparing food for human consumption.
☐	23.	Equipment used exclusively to slaughter animals, but not including other equipment at slaughterhouses, such as rendering cookers, boilers, heating plants, incinerators, and electrical power generating equipment.
☐	24.	Equipment used for quality control/assurance or inspection purposes, including sampling equipment used to withdraw materials for analysis.
☐	25.	Equipment used for surface coating, painting, dipping or spray operations, except those that will emit VOC or HAP.
☐	26.	Fire suppression systems.
☐	27.	Firefighting equipment and the equipment used to train firefighters.
☐	28.	Flares used solely to indicate danger to the public.
☐	29.	Fugitive emission related to movement of passenger vehicle provided the emissions are not counted for applicability purposes and any required fugitive dust control plan or its equivalent is submitted.
☐	30.	Hand-held applicator equipment for hot melt adhesives with no VOC in the adhesive formulation.
☐	31.	Hand-held equipment for buffing, polishing, cutting, drilling, sawing, grinding, turning or machining wood, metal or plastic.
☐	32.	Humidity chambers.
☐	33.	Hydraulic and hydrostatic testing equipment.
☐	34.	Indoor or outdoor kerosene heaters.
☒	35.	Internal combustion engines used for landscaping purposes.
☐	36.	Laser trimmers using dust collection to prevent fugitive emissions.
☒	37.	Laundry activities, except for dry-cleaning and steam boilers.
☒	38.	Natural gas pressure regulator vents, excluding venting at oil and gas production facilities.
☐	39.	Oxygen scavenging (de-aeration) of water.
☐	40.	Ozone generators.

24. Insignificant Activities (Check all that apply)		
☒	41.	Plant maintenance and upkeep activities (e.g., grounds-keeping, general repairs, cleaning, painting, welding, plumbing, re-tarring roofs, installing insulation, and paving parking lots) provided these activities are not conducted as part of a manufacturing process, are not related to the source's primary business activity, and not otherwise triggering a permit modification. (Cleaning and painting activities qualify if they are not subject to VOC or HAP control requirements. Asphalt batch plant owners/operators must still get a permit if otherwise requested.)
☐	42.	Portable electrical generators that can be moved by hand from one location to another. "Moved by Hand" means that it can be moved without the assistance of any motorized or non-motorized vehicle, conveyance, or device.
☐	43.	Process water filtration systems and demineralizers.
☒	44.	Repair or maintenance shop activities not related to the source's primary business activity, not including emissions from surface coating or de-greasing (solvent metal cleaning) activities, and not otherwise triggering a permit modification.
☐	45.	Repairs or maintenance where no structural repairs are made and where no new air pollutant emitting facilities are installed or modified.
☒	46.	Routing calibration and maintenance of laboratory equipment or other analytical instruments.
☐	47.	Salt baths using nonvolatile salts that do not result in emissions of any regulated air pollutants. Shock chambers.
☐	48.	Shock chambers.
☐	49.	Solar simulators.
☐	50.	Space heaters operating by direct heat transfer.
☐	51.	Steam cleaning operations.
☒	52.	Steam leaks.
☐	53.	Steam sterilizers.
☒	54.	Steam vents and safety relief valves.
☐	55.	Storage tanks, reservoirs, and pumping and handling equipment of any size containing soaps, vegetable oil, grease, animal fat, and nonvolatile aqueous salt solutions, provided appropriate lids and covers are utilized.
☐	56.	Storage tanks, vessels, and containers holding or storing liquid substances that will not emit any VOC or HAP. Exemptions for storage tanks containing petroleum liquids or other volatile organic liquids should be based on size limits such as storage tank capacity and vapor pressure of liquids stored and are not appropriate for this list.
☐	57.	Such other sources or activities as the Director may determine.
☐	58.	Tobacco smoking rooms and areas.
☒	59.	Vents from continuous emissions monitors and other analyzers.

Section 5: Emission Units, Control Devices, and Emission Points

25. Equipment Table
Fill out the **Title V Equipment Table** and provide it as **ATTACHMENT D**.
26. Emission Units
For each emission unit listed in the **Title V Equipment Table**, fill out and provide an **Emission Unit Form** as **ATTACHMENT E**.
For each emission unit not in compliance with an applicable requirement, fill out a **Schedule of Compliance Form** as **ATTACHMENT F**.
27. Control Devices
For each control device listed in the **Title V Equipment Table**, fill out and provide an **Air Pollution Control Device Form** as **ATTACHMENT G**.
For any control device that is required on an emission unit in order to meet a standard or limitation for which the potential pre-control device emissions of an applicable regulated air pollutant is greater than or equal to the Title V Major Source Threshold Level, refer to the **Compliance Assurance Monitoring (CAM) Form(s)** for CAM applicability. Fill out and provide these forms, if applicable, for each Pollutant Specific Emission Unit (PSEU) as **ATTACHMENT H**.

Section 6: Certification of Information

28. Certification of Truth, Accuracy and Completeness and Certification of Compliance

*Note: This Certification must be signed by a responsible official. The **original, signed in blue ink**, must be submitted with the application. Applications without an **original** signed certification will be considered as incomplete.*

a. Certification of Truth, Accuracy and Completeness

I certify that I am a responsible official (as defined at 45CSR§30-2.38) and am accordingly authorized to make this submission on behalf of the owners or operators of the source described in this document and its attachments. I certify under penalty of law that I have personally examined and am familiar with the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine and/or imprisonment.

b. Compliance Certification

Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

Responsible official (type or print)

Name: Dr. Glenn Crotty, Jr.	Title: Executive VP & COO

Responsible official's signature:

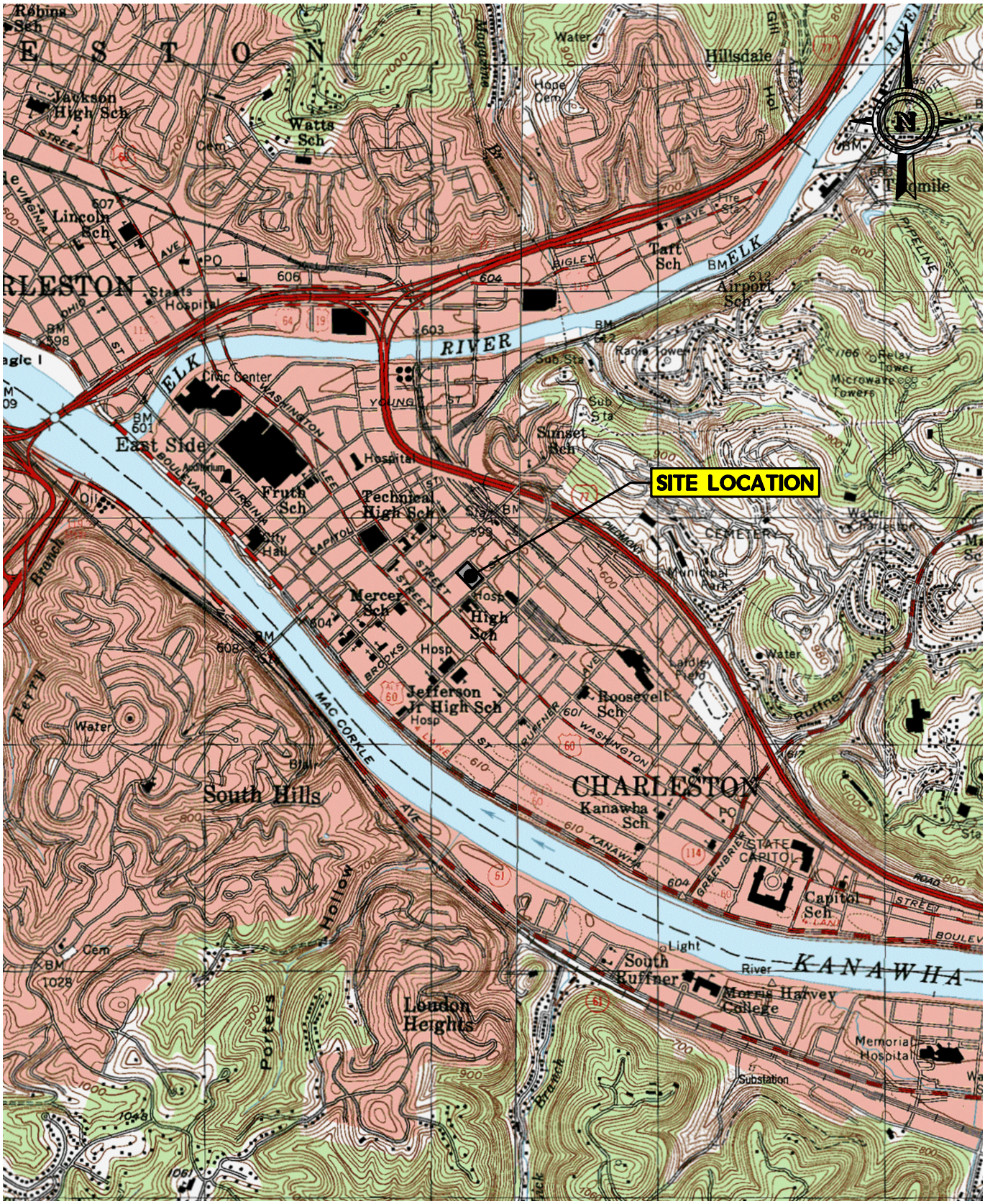
Signature: _____ (Must be signed and dated in blue ink) Signature Date: 3/28/2017

Note: Please check all applicable attachments included with this permit application:	
☒	ATTACHMENT A: Area Map
☒	ATTACHMENT B: Plot Plan(s)
☒	ATTACHMENT C: Process Flow Diagram(s)
☒	ATTACHMENT D: Equipment Table
☒	ATTACHMENT E: Emission Unit Form(s)
☐	ATTACHMENT F: Schedule of Compliance Form(s)
☒	ATTACHMENT G: Air Pollution Control Device Form(s)
☐	ATTACHMENT H: Compliance Assurance Monitoring (CAM) Form(s)

All of the required forms and additional information can be found and downloaded from, the DEP website at www.dep.wv.gov/daq, requested by phone (304) 926-0475, and/or obtained through the mail.

Attachment A

Area Map



CADD FILE: 13-0019 Site Loc.dwg		CAMC GENERAL HOSPITAL TITLE V PERMIT RENEWAL CHARLESTON, KANAWHA COUNTY, WV **AREA MAP**
DRAWN BY: SJF	CHECKED BY: SC	
DATE: 3/20/2017	SCALE: 1" = 2000'	PROJECT No.: 04-17-0001 FIGURE No.: A

TRIAD ENGINEERING, INC.
www.triadeng.com
10541 TEAYS VALLEY ROAD
SCOTT DEPOT, WV 25560

Plotted by: jmay
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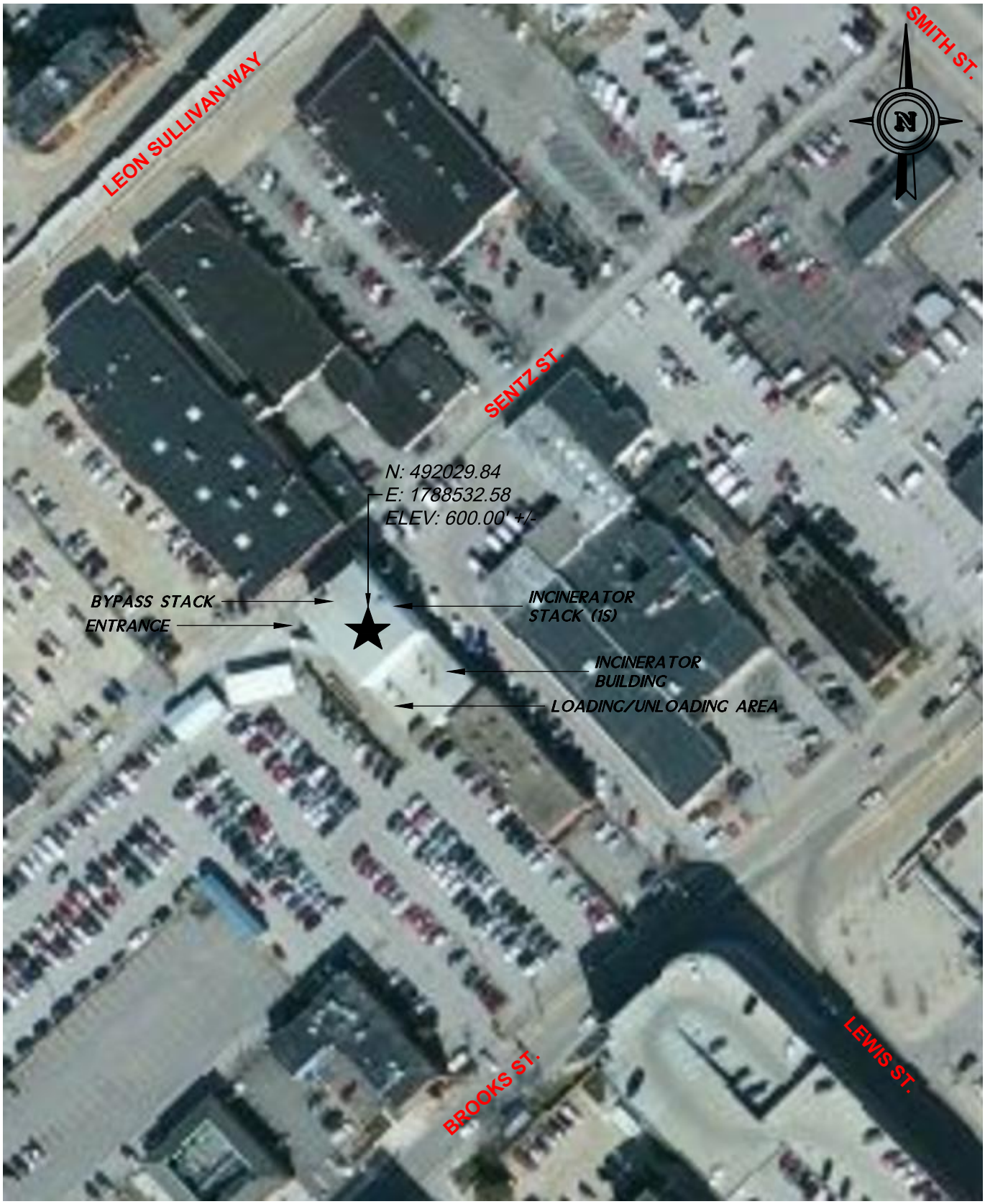
Attachment B

Plot Plan



CADD FILE: 13-0019 Site.dwg		CAMC GENERAL HOSPITAL TITLE V PERMIT RENEWAL CHARLESTON, KANAWHA COUNTY, WV **PLOT PLAN**
DRAWN BY: SJF	CHECKED BY: SC	
DATE: 3/20/2017	SCALE: 1" = 100'	PROJECT No.: 04-17-0001 FIGURE No.: B

TRIAD ENGINEERING, INC.
www.triadeng.com
10541 TEAYS VALLEY ROAD
SCOTT DEPOT, WV 25560

Plotted by: jmay
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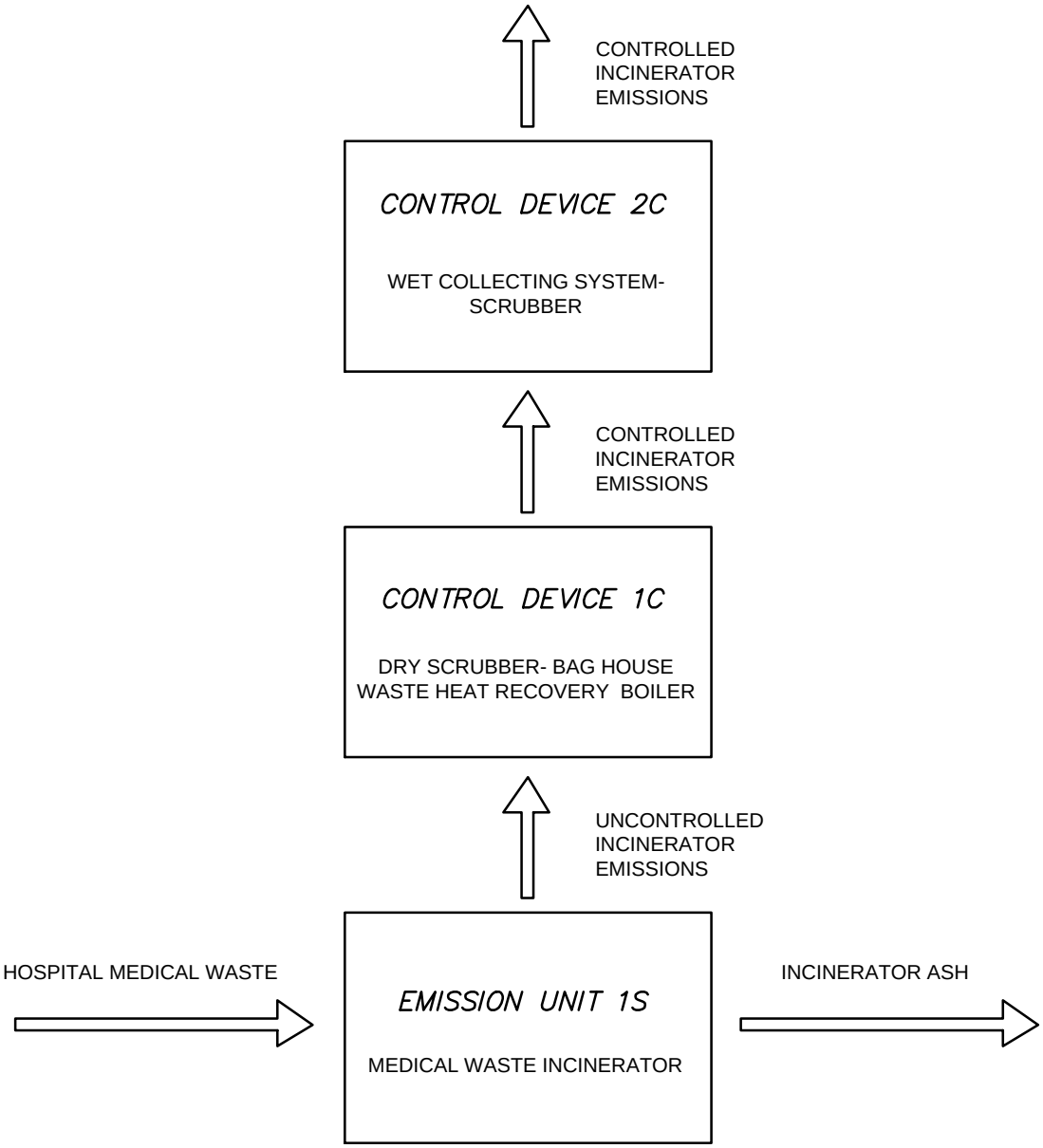
Attachment C

Process Flow Diagram



CADD FILE: 13-0019 FIG F.dwg	CAMC GENERAL HOSPITAL TITLE V PERMIT RENEWAL CHARLESTON, KANAWHA COUNTY, WV **PROCESS FLOW DIAGRAM**	TRIAD ENGINEERING, INC. www.triadeng.com 10541 TEAYS VALLEY ROAD SCOTT DEPOT, WV 25560
DRAWN BY: CLC / CHECKED BY: SC		
DATE: 3/28/2017 / SCALE: 1" = 10'	PROJECT No.: 04-17-0001 FIGURE No.: C	

Plotted by: jmay
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Attachment D

Emission Units Table

ATTACHMENT D - Title V Equipment Table

(includes all emission units at the facility except those designated as insignificant activities in Section 4, Item 24 of the General Forms)

Emission Point ID[1]	Control Device[1]	Emission Unit ID[1]	Emission Unit Description	Design Capacity	Year Installed/ Modified
1S	1C & 2C	IMWI	Medical Waste Incinerator	1,000 lb/hr	1995 / 2014
NA	1C	NA	Dry-injection fabric filter (DIFF) with sodium bicarbonate and powder activated carbon (PAC) injection.	6,300 ft/min (@ 400°F & 14.5 psia)	1995
NA	2C	NA	Monroe Environmental Corp. Model No. VPB-070 Packed Bed Scrubber using sodium hydroxide injection for HCl removal.	7,000 ACFM @ 270°F (4,500 SCFM)	2014

[1]For 45CSR13 permitted sources, the numbering system used for the emission points, control devices, and emission units should be consistent with the numbering system used in the 45CSR13 permit. For grandfathered sources, the numbering system should be consistent with registrations or emissions inventory previously submitted to DAQ. For emission points, control devices, and emissions units which have not been previously labeled, use the following 45CSR13 numbering system: 1S, 2S, 3S,... or other appropriate description for emission units; 1C, 2C, 3C,... or other appropriate designation for control devices; 1E, 2E, 3E, ... or other appropriate designation for emission points.

Attachment E

Emissions Unit Forms

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
1S	1S	1C & 2C

Provide a description of the emission unit (type, method of operation, design parameters, etc.):
Medical waste incinerator (HMIWI) used to treat infectious medical waste from CAMC's hospital facilities. Max feed rate is 1,000 lb/hour or 1,700,000 lbs/year. Minimum retention time in secondary combustion chamber (≥1,800°C) is 2 seconds.

Manufacturer:	**Model number:**	**Serial number:**
Consumat Technologies, Inc.	C5-550-2	Unknown
Construction date:	**Installation date:**	**Modification date(s):**
11/17/1995	11/17/1995	01/27/2014

Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
Maximum waste feed rate is 1,000 lb/hour and/or 1,700,000 lb/year.

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
1,000 lb/hr	850 tons/yr	24 hrs/day, 365 days/year

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? _X_ Yes ___ No	**If yes, is it?** _X_ Indirect Fired ___Direct Fired
Maximum design heat input and/or maximum horsepower rating: 8.5 MMBTU/hr	**Type and Btu/hr rating of burners:** Primary: 1.5 MMBtu/hr Secondary: 5.0 MMBtu/hr

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural gas

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	N/A	N/A	1,032 BTU/cu-ft

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	0.44	1.31
Nitrogen Oxides (NO_X)	2.60	7.80
Lead (Pb)	0.00098	0.0029
Particulate Matter ($PM_{2.5}$)	N/A	N/A
Particulate Matter (PM_{10})	N/A	N/A
Total Particulate Matter (TSP)	0.30	0.90
Sulfur Dioxide (SO_2)	1.20	3.60
Volatile Organic Compounds (VOC)	0.05	0.16
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Hydrogen Chloride (HCl)	0.622	1.87
Mercury (Hg)	0.0046	0.014
Cadmium (Cd)	0.00049	0.0015
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
Dioxin	7.56E-07	2.3E-06
Greenhouse Gases	Potential Emissions	
	PPH	TPY
Carbon Dioxide (CO_2)	136.3	597
Methane (CH_4)	0.002	0.01
Nitrous Oxide (N_2O)	0.0002	0.001
Carbon Dioxide Equivalent (CO_2e)	136.5	598

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Potential emissions were determined via manufacturer information. However, they were verified via stack test, the results of which are on file in the Director's office. The most recent stack test was conducted on July 2, 2016.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or <u>construction permit</u> with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

45CSR13 – NSR permit to establish synthetic minor status

45CSR18 – Control air pollution from combustion of solid waste

40CFR Part 60, subpart Ce – HMIWI emission guidelines

_X_ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

45CSR13 – Appropriate tests were conducted at the time that the incinerator was deemed to be in compliance with its applicable emission standard.

45CSR18 – The facility complies with the emission limits contained in Table 18-A. Opacity is continuously monitored at the facility using Teledyne Lighthawk 560DI opacity monitor. The data collected is recorded and kept on file in CAMC's database. Compliance and performance testing requirements are performed in accordance with 40 CFR 60.56c, excluding the fugitive emissions testing requirements. Reporting and recordkeeping guidelines are conducted in accordance with the requirements listed in 40 CFR 60.57c, excluding reporting and recordkeeping requirements for fugitive emissions. Monitoring at the facility is conducted in accordance with the requirements specified in 40 CFR 60.57c. Operator training and qualification as specified in 40 CFR 60.53c is conducted on an annual basis. A waste management plan is maintained at the facility as specified in 40 CFR 60.55c.

40CFR60, Subpart Ce – Compliance and performance testing are conducted as outlined in 40CFR60.56c of subpart Ec, excluding fugitive emissions testing requirements. Monitoring at the facility is performed at the facility in accordance with 40CFR60.57c of subpart Ec, except as provided under paragraph (d) of this section. Reporting and recordkeeping are in compliance with the requirements of 40CFR60.58c(b), (c), (d), (e), and (f) of subpart Ec, excluding reporting and recordkeeping for fugitive emissions.

Are you in compliance with all applicable requirements for this emission unit? _X_ Yes ___No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Attachment G

Air Pollution Control Device Forms

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: 1C	**List all emission units associated with this control device.** 1S	
Manufacturer: Consumat Systems, Inc. Donlee Technologies, Inc.	**Model number:** DS-2180 HRH-1250 (2 pass)	**Installation date:** 11/17/1995

Type of Air Pollution Control Device:

_X_ Baghouse/Fabric Filter	___ Venturi Scrubber	___ Multiclone
___ Carbon Bed Adsorber	___ Packed Tower Scrubber	___ Single Cyclone
___ Carbon Drum(s)	___ Other Wet Scrubber	___ Cyclone Bank
___ Catalytic Incinerator	___ Condenser	___ Settling Chamber
___ Thermal Incinerator	___ Flare	___ Other (describe) _____
___ Wet Plate Electrostatic Precipitator		___ Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
Particulate Matter	≥ 90%	≥ 90%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

The maximum gas flow rate to the collector is 6,300 ACFM at 400°F and 14.5 psia. Stabilized static pressure drop across the baghouse is a maximum of 6 inches water and minimum of 4 inches water. Total clothe area of bag is 2,180 square feet. Operating air to clothe is 2.9.

Is this device subject to the CAM requirements of 40 C.F.R. 64? ___ Yes _X_ No

If Yes, **Complete ATTACHMENT H**

If No**, Provide justification.** A Compliance Assurance Monitoring (CAM) Plan (as required by 40CFR64) is not required for this facility. Although the NSPS for solid waste incinerators (40CFR60, Subpart Ec) was promulgated after construction of the incinerator, the facility is subject to 40CFR24, which references 40CFR60, Subpart Ec. Therefore, because compliance requirements are outlined in 40CFR24, the facility is not required to develop a CAM Plan as per 40CFR64.

Describe the parameters monitored and/or methods used to indicate performance of this control device.
The following parameters are continuously monitored and recorded during operation of the medical waste incinerator: percent opacity, incinerator waste charge rate, secondary chamber combustion temperature, baghouse exit temperature, and scrubber sorbent feed rate. A stack test is also conducted on a triannual basis to determine the effect of these parameters have on the emission of criteria pollutants.

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: 2C	**List all emission units associated with this control device.** 1S	
Manufacturer: Monroe Environmental Corporation	**Model number:** VPB-070 / 13-5855-1	**Installation date:** 01/27/2014

Type of Air Pollution Control Device:

___ Baghouse/Fabric Filter	___ Venturi Scrubber	___ Multiclone
___ Carbon Bed Adsorber	_X_ **Packed Tower Scrubber**	___ Single Cyclone
___ Carbon Drum(s)	___ Other Wet Scrubber	___ Cyclone Bank
___ Catalytic Incinerator	___ Condenser	___ Settling Chamber
___ Thermal Incinerator	___ Flare	___ Other (describe) _____
___ Wet Plate Electrostatic Precipitator		___ Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
Hydrogen Chloride	98%	98%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

The maximum gas flow rate into the collector is 7,000 ACFM at 270°F and 8-in w.g. (negative) psia. Inlet gas stream temperature after quench is 150°F (prior is 270°F) and outlet is 140°F. Pressure drop through the scrubber is 15 inches water. The scrubbing liquor is comprised of 25% NaOH and 75% water with losses of 0.29 gal/1000 ACF gas and the liquor pressure to the scrubber is 32 psia. The type of packing is glass-filled polypropylene with a velocity through the bed of approximately 400 FPM.

Is this device subject to the CAM requirements of 40 C.F.R. 64? ___ Yes _X_ No

If Yes, **Complete ATTACHMENT H**

If No**, Provide justification.** A Compliance Assurance Monitoring (CAM) Plan (as required by 40CFR64) is not required for this facility. Although the NSPS for solid waste incinerators (40CFR60, Subpart Ec) was promulgated after construction of the incinerator, the facility is subject to 40CFR24, which references 40CFR60, Subpart Ec. Therefore, because compliance requirements are outlined in 40CFR24, the facility is not required to develop a CAM Plan as per 40CFR64.

Describe the parameters monitored and/or methods used to indicate performance of this control device.

The following parameters are continuously monitored and recorded during operation of the medical waste incinerator: conductivity, variable speed, pressure drop, scrubber liquid flow rate, and scrubber liquid pH. A stack test is also conducted on a triannual basis to determine the effect of these parameters have on the emission of HCl.