



## Memorandum

To: Michael Klosky  
Lead Remediation Engineer

From: Carter H. Strickland, Jr.

A handwritten signature in blue ink, appearing to read 'C. Strickland, Jr.', written over the printed name.

Date: November 26, 2012

Re: Variance

---

### BACKGROUND

On November 20, 2012, ECC, a contractor engaged in the Hurricane Sandy recovery effort, filed a petition for a variance from applicable provisions of the Air Pollution Control Code (APCC) (Title 24, Chapter 1 of the Administrative Code of the City of New York). ECC seeks to conduct a seven day pilot test of an air curtain burner (ACB) to combust storm-related vegetative debris, consisting of shredded and unshredded trees, limbs, and branches ("Tree Debris") generated by Hurricane Sandy. On November 23, 2012, the New York City Department of Environmental Protection published notice of having received the petition in the City Record.

On October 29 to 30, 2012, Hurricane Sandy struck New York City. Among the many impacts of this unprecedented storm, thousands of trees were felled or damaged; it is estimated that the total amount of such Tree Debris exceeds 100,000 cubic yards. Although Tree Debris is typically managed through composting or other means, given the vast quantity caused by Hurricane Sandy, the proper disposal of this debris has become a significant impediment to the successful cleanup of the City's streets, sidewalks, and parks. Large amounts of this debris are being stockpiled at Floyd Bennett Field in Brooklyn, Cunningham Park in Queens, and other locations; such stockpiling poses certain public safety risks, as discussed below.

ACBs operate by forcefully projecting a curtain of air across an open chamber in which combustion occurs. They are designed to reduce wood debris to ash while minimizing particulate emissions. The ACB is proposed to be located at Floyd Bennett Field in Brooklyn.

Section 24-118 of the APCC provides that "No person shall cause or permit the installation of refuse burning equipment." "Refuse burning equipment" is defined in Section 24-104(46) as "equipment designed to burn waste material, garbage, and refuse."

Section 24-149 of the Administrative Code provides that "No person shall cause or permit the kindling, maintenance, or use of any open fire so as to

Carter H. Strickland, Jr.  
Commissioner  
cstrickland@dep.nyc.gov

59-17 Junction Boulevard  
Flushing, NY 11373  
T: (718) 595-6565  
F: (718) 595-3525

cause the emission of an air contaminant into the open air...” Five exceptions are set forth, but the operation of an ACB to dispose of waste generated by a hurricane does not fall into any of the exceptions. Section 24-104(36) of the Administrative Code defines “open fire” as “any fire wherein the products of combustion are emitted directly into open air and are not directed thereto through a stack, conduit, flue, duct or similar device.”

ACBs fall within the definition of “refuse burning equipment” and the use of an ACB falls within the definition of “open fire.” ACBs may therefore be operated in New York City only pursuant to a variance from Sections 24-118 and 24-149 of the APCC.

Section 24-110(a) of the Administrative Code provides that “the commissioner [of DEP] may grant individual variances...beyond the limitations prescribed by this code, whenever it is found, upon presentation of adequate proof, that compliance with any provisions of this code...would impose unreasonable hardship.”

#### CLAIM OF UNREASONABLE HARDSHIP

In its Petition, ECC sets forth several bases to support a finding of unreasonable hardship. They may be summarized as follows:

- Using limited trucking and disposal resources for disposal of Tree Debris would divert these resources from the more urgent task of disposing of putrescible and noxious waste, which presents a greater public health hazard.
- The large stockpiles of Tree Debris which are accumulating at Floyd Bennett Field, Cunningham Park and other locations pose a fire hazard. As of November 24, it is reported that one of the waste piles’s internal temperature was 100 degrees Fahrenheit and is expected to climb to 130-140 degrees Fahrenheit in the next 30 days.
- Since some of the Tree Debris was generated from areas infested with the Asian Longhorned Beetle, it is necessary to destroy it promptly in a way which will prevent any possibility that the beetle may spread to uninfested areas.
- It is currently estimated that over 100,000 cubic yards of Tree Debris were generated by Hurricane Sandy. This is far more than can be used for compost under existing arrangements for management of woody debris, and incineration of a portion of the waste will greatly reduce its volume.

#### FINDING OF UNREASONABLE HARDSHIP

In light of the above, I find that ECC has demonstrated unreasonable hardship and hereby grant ECC a limited Variance from Sections 24-118 and 24-149, for a period of a maximum of seven day. As detailed below, only one ACB shall be installed for the sole purpose of conducting s, pilot burning. The pilot burning shall provide DEP additional information to evaluate the performance of the ACB and determining the feasibility of complying with proposed operating opacity limits as well as the appropriate ratio of unshredded to shredded woody debris while additional alternatives to this activity are explored. My decision is informed by the following additional considerations:

- ECC contacted 20 companies identified as reusing or landfilling shredded or unshredded wood, and received positive responses from two companies deemed to be economically viable. These companies must regrind shredded wood to meet the maximum size requirements associated with the quarantine of the Asian Long-Horned Beetle, and export from New York City requires approval of the U.S. Department of Agriculture and other authorities.
- Assuming that this authority is granted, the two companies can accommodate roughly 85,000 cubic yards of the estimated 150,000 to 200,000 cubic yards of shredded and unshredded debris. It will take approximately 30 days for the two companies to remove 85,000 cubic yards.
- The New York City Parks Department and the U.S. Army Corps of Engineers will continue to pursue reuse and alternative methods of disposal of shredded material to the maximum extent practicable.
- ACBs have been used frequently to dispose of vegetative waste during disaster recovery operations in the United States and around the world. Under Federal regulations (40 CFR 60.2969), ACBs may be used to combust debris for a limited time period in an area where the state or local government has declared that a State of Emergency exists, or where the President has declared that an emergency or major disaster exists; both of these conditions apply to New York City in the aftermath of Hurricane Sandy.
- The prior use of ACBs in New York State has resulted in very few complaints from nearby residents.
- In terms of reduction of air pollution, DEP modeling based on the best available information shows that the combustion of Tree Debris using ACBs will generate less overall emissions of the primary pollutant of concern, fine particulate matter (known as PM 2.5) than the use of trucks to remove the waste to transfer or disposal locations outside of the City, although either option would have a de minimis impact on overall air quality and ambient concentrations of particulate matter in particular, given the many other sources of that pollutant in the New York City area.
- DEP is coordinating monitoring of ambient air with the U.S. Environmental Protection Agency and the New York State Department of Environmental Conservation. There will be two air monitors located in neighbors north of the operating area (Gerritsen Beach and Mill Basin) and one air monitor located in a neighborhood south of the operating area (Rockaways).
- The conditions set forth below will, to the extent practicable, reduce the impacts of the operation of the ACBs on nearby sensitive receptors.

## CONDITIONS

This Variance is subject to compliance with the following conditions:

1. The Variance shall be effective from November 27, 2012 through December 3, 2012 (“Pilot Period”) or until such DEP requires termination of the pilot, whichever comes

first. No operations shall continue beyond that period absent the grant of a new Variance.

2. Only one ACB shall be operated.
3. Only Tree Debris related to Hurricane Sandy shall be combusted. Any other materials found to be in a Tree Debris pile must be promptly segregated.
4. Material must not be added to the ACB in such a manner as to be stacked above the air curtain.
5. If a proper mix of shredded and unshredded Tree Debris cannot be maintained so as to minimize the emission of air pollution from the ACB, then operation of the ACB shall cease until the correct mix of materials can be established.
6. The ACB must be operated at an opacity level of less than or equal to 10 percent (six-minute average) except during the first 30 minutes of operation, when it must be operated at an opacity level of less than or equal to 35 percent (six-minute average).
7. Opacity measurements shall be taken by a certified Method 9 opacity observer, and shall be taken every 20 minutes during daylight hours.
8. DEP may order the cessation of ACB operations at any time prior to the expiration of the Pilot Period upon a determination that the ACB is consistently operating within the prescribed opacity limits.
9. The ACB may be operated up to 9 hours per day, during daylight hours only.
10. The ACB may not be operated when the wind speed at the container measures 20 miles per hour or greater.
11. An operator must be present at all times when the ACB is operating, and the operator shall be qualified and trained in the proper operation of the ACB.
12. The ACB shall be installed and operated in the location depicted in the operating plan submitted with the Petition for Variance.
13. Upon notice from DEP or the New York State Department of Environmental Conservation (DEC) that there is an inversion or other weather condition which could cause operation of the ACB to violate air quality standards or cause significant air pollution, operation of the ACB shall cease until resumption is authorized. Operations shall be prohibited in wind speed of greater than 20 mph that are sustained for more than 1 hour, as established by the weather stations at JFK or LaGuardia airports.
14. If any air monitoring conducted in the vicinity of the ACB shows unacceptable levels of air pollution as determined by DEP or DEC, operation of the ACB must be adjusted or terminated in accordance with DEP instructions.
15. Ash must be removed from the ACB during burning as necessary to maintain efficient combustion.
16. Ash must be removed from the ACB in such a manner as to minimize the ash becoming airborne.

17. All material removed from the ACB must be completely extinguished before being disposed of and must be stored in a manner which does not constitute a fire hazard or allow material to smolder or burn outside of the ACB. Ash shall be disposed of in accordance with applicable laws and regulations, and best efforts shall be made to utilize the ash in a beneficial way.
18. The storage and handling of Tree Debris shall comply with the attached guidelines from the New York City Fire Department.
19. Records of all opacity measurements and hours of operation shall be maintained for the ACB, and shall be provided to DEP and by electronic mail on a daily basis, and upon request. Records may be sent to DEP at [gerryk@dep.nyc.gov](mailto:gerryk@dep.nyc.gov).
20. Any excursion from opacity and other operating limits shall be reported immediately to DEP.
21. Records of the amount of material handled, the ratio of chipped to unchipped woody debris, the amount of ash generated shall be maintained on a daily basis, and records of burn temperature if available shall be maintained on an hourly basis.
22. Records of any complaints received and any responsive action shall be maintained for each occurrence, and notification of any such complaints shall be provided to DEP on a daily basis via electronic mail.
23. At the end of the Pilot Period, ECC shall submit a written report detailing the results of the pilot operations including, but not limited to: amount of wood burned; emissions data; complaints and responses thereto; and recommendations on any future proposal to operate ACBs to limit, to the maximum extent practicable, the emissions and any nuisance odors from ACB operations.

### ENFORCEMENT

DEP shall have the right to enter and inspect premises, logbooks, and records without notice. This Variance may be suspended or terminated upon a determination by DEP that ECC is not in compliance with any condition of this Variance, or upon a determination by DEP that continued operation of the ACB is not in the public interest.

Upon notification to ECC that this Variance is suspended or revoked, operation of the ACB shall cease immediately. Continued operation of the ACB after suspension or termination of this variance may result in the issuance of a Notice of Violation pursuant to applicable provisions of the APCC.

# Attachment 1

## Attachment 1

### New York City Fire Department Guidelines for the Storage and Handling of Tree Debris

Outdoor storage of wood chips at Floyd Bennett Field will require adequate measures to be established, to assure safe storage and sufficient fire prevention. This storage and the associated plant, shall comply with the following requirements:

#### **File Location:**

1. The location of a proposed wood chip pile shall be of level ground, paved with blacktop or concrete, and shall be adequately cleaned prior to establishing a pile.
2. The proposed pile location, the surrounding yard and the spaces between piles shall be kept free and clear of weeds, grass and other vegetation at all times. This vegetation shall not be removed by means of an open-flame burner. Removal may be by means of an approved method only.
3. Piles shall be adequately separated from buildings (occupied or otherwise), or other structures which pose an exposure risk.
4. Forest, brush, and grass fire exposure shall be minimized by providing adequate clear space that is carefully kept free of combustible vegetation. Clear space of adequate width shall be provided for grass exposures.

#### **File Dimensions:**

1. Piles shall not exceed 25 feet in height, 150 feet in width, and 250 feet in length.

#### **Pile Separation and Fire Apparatus Access:**

1. In accordance with the requirements of the NYC Fire Code (2008) § FC1908 and NFPA 230, all piles shall be surrounded by approved fire apparatus access roads. These roads shall possess a minimum of 30 feet in clear, unobstructed width. Greater separation distance is desirable when the piles are high and/or the side slopes are greater than 60 Degrees.
2. Adequate provisions, in accordance with the NYC Fire Code (2008) § FC503, shall be made to provide a turnaround area for the fire apparatus, if the fire apparatus access road terminates in a dead end.
3. Where storage areas are fenced, or otherwise enclosed, gates at least 12 feet in width shall be provided to permit entry of fire department vehicles.

#### **Pile Maintenance:**

1. Any given pile shall not have a turnover time of greater than 6 months. That is, the material that comprises a given pile shall be removed within six months. When the pile size requirement has been exceeded, a new pile, conforming to the aforementioned sizing and location requirements shall be established.
2. Provisions shall be made to prevent the build-up of older material at the bottom of these piles, while new material is placed atop the existing pile. Turnover is crucial to maintain moisture content, and to minimize the risk of internal fires.
3. The pile shall be wetted regularly so as to maintain moisture content of the pile.
4. The date any given pile was established shall be clearly documented and accessible to emergency personnel upon request.

**General Conditions:**

1. Smoking shall be prohibited in chip pile areas. "No Smoking" signs shall be posted in those areas.
2. Access into the yard by un-authorized personnel shall be prohibited.
3. Incinerators or open refuse burning shall not be permitted in any area where sparks could reach the storage piles. Suitable safeguards shall be provided to minimize the hazard of sparks caused by any equipment, approved by code use on the plant. A minimum of 100 feet separation between any fuel-fired appliances and the piles shall be maintained.
4. Stacks from solid fuel-burning furnaces and boilers should be equipped with spark-arresting equipment to prevent hot sparks from reaching the ground.
5. All handling equipment shall be regularly and frequently cleaned and maintained. Combustible waste material (bark, sawdust, chips), shall not accumulate in any quantity or location that constitutes a fire hazard.
6. All vehicles operating on or servicing the areas around the piles shall be equipped with Class A portable fire extinguishers, in addition to the normal Class B units for those vehicles.
7. Compaction of the piles shall be avoided. All vehicles used on the piles shall be of the type that minimizes compaction.

**Emergency Planning and Preparedness:**

The following shall be established for each plant, prior to storage:

1. A Pre-Action Plan
2. Fire Emergency Procedures

3. Procedure for notifying the FDNY
4. Detailed maintenance procedures and instructions on fire prevention methods for control of site hazards.
5. Information regarding supervisory staff, including their fire safety duties and responsibilities.
6. Instructions and schematic diagrams describing the type, location and operation of fire emergency systems (example: location of closest fire hydrant or water supply, and a site plan).

#### **Fire Detection and Extinguishment:**

1. Fire hydrants, connected to yard mains shall be provided so that any part of any given pile can be reached by hose equipment.
2. Power-operated, shovel-type or scoop-type operated vehicles should be available for use in moving stored material for firefighting purposes.
3. Where hydrant hose houses are provided, a Class A extinguisher of at least a 2-A rating should be provided.
4. Where suitable, a small, motorized vehicle amply equipped with portable extinguishing equipment or a water tank and pump should be provided.
5. Thermocouples should be installed during the pile building-up, or other means for measuring temperatures within the pile should be provided with regular, daily reports to management. If a hot spot is detected, water spray shall be provided while the pile is dug out. An alternative is to use perforated piping to flood the hot spot with water before uncovering the pile.
6. If any given thermocouple indicates a read-out of greater than 160°F, immediate wetting of the hot spot shall be commenced, until pile is restored to less than 160°F.
7. When a hot spot is detected, plant personnel shall be notified in conjunction with the commencement of wetting procedures. When a fire is discovered, regardless of the size, the FDNY and Plant Emergency Operations shall be notified immediately. The proper telephone number and location of nearest fire alarm box shall be conspicuously posted in several locations in the yard and all associated buildings.
8. Within the storage yard, a reliable means for prompt transmission of fire alarms to the FDNY and Plant Emergency Operations shall be provided at convenient, accessible and readily identified locations in the yard.
9. Standard, hourly watchman (fire guard) service in accordance with the requirements of the NYC Fire Code (2008) and NFPA shall be provided throughout the night and

during all non-operating periods. The Fire Guard shall make rounds, supervised in accordance with the requirements of NFPA §230 E-7.4.4.

10. Fire Guards and all employees shall be fully instructed in the proper transmission of a fire alarm and in the use of all fire extinguishing systems. This shall include indicating the nature of the fire (wood chip, brush) and the possible need for special units (brush fire unit), and specific instructions directing emergency personnel to the correct fire apparatus access road once within the yard.
11. Portable fire extinguishers suitable for the fire hazard shall be provided in convenient, conspicuous locations in the yard, such that the maximum travel distance to the nearest unit shall not exceed 75 feet.

# Attachment 2



20 November 2012

**To:** Commissioner Carter Strickland *via email* [cstrickland@dep.nyc.gov](mailto:cstrickland@dep.nyc.gov)  
New York City, Department of Environmental Protection  
59 -17 Junction Blvd, 19<sup>th</sup> Floor  
Flushing, NY 111373

**To:** Commissioner Joe Martens *via email* [joemartens@gw.dec.state.ny.us](mailto:joemartens@gw.dec.state.ny.us)  
New York State Department of Environmental Conservation  
625 Broadway  
Albany NY, 12233

**Re:** **PETITION FOR VARIANCE**  
Floyd Bennett Field Air Curtain Burner *Pilot Test*  
20 Aviation Road, Brooklyn, NY 11234-7018

On October 26, 2012, Governor Cuomo declared a State of Emergency in New York and on October 30, 2012, NYSDEC Commissioner Martens authorized the issuance of Emergency Authorizations for certain situations in which action is necessary to protect the public health and safety and to re-establish normal, safe living conditions.

ECC is the primary contractor for the US Army Corps of Engineers (USACE) as part of its Hurricane Sandy Recovery Mission. The USACE has received a mission assignment from the Federal Emergency Management Agency (FEMA) to remove and dispose of storm related debris. In this capacity, ECC submits this petition for variance to *conduct a 7 day pilot test* of one air curtain burner (ACB).

Therefore, pursuant to ECL §70-0116, 6 NYCRR §621.12, NYC Administrative Code Sections 24-110, 118, and 149, ECC is submitting this petition for variance for the temporary storage and pilot test combustion of storm-related green waste debris due to the effects of Superstorm Sandy. This request excludes any construction and demolition debris, electronics, municipal solid waste, household hazardous waste and similar wastes, and only includes trees, limbs, braches, and related green wood waste that may be sized reduced (e.g. mulch).

Due to the large volume of green waste debris from Superstorm Sandy, ECC plans to evaluate ACBs as a means to safely and quickly eliminate excess green waste debris at Floyd Bennett Field (FBF). The pilot test at FBF will not exceed 7 days. At the end of the pilot test, ECC will submit a written report detailing the results of the pilot test including, but not limited to: amount of wood burned; emissions data; complaints and responses thereto; and recommendations on any future proposal to operate the ACB.

ECC will notify the Department prior to the commencement of the ACB pilot test.

**Regional Office**

110 Fieldcrest Ave.  
Suite 31, 2<sup>nd</sup> Fl.  
Edison, NJ 08837

Phone: (908) 595-1777  
Fax: (908) 595-1776

**Corporate Office**

1240 Bayshore Highway  
Burlingame, CA 94010

Phone: (650) 347-1555  
Fax: (650) 347-8789

[www.ecc.net](http://www.ecc.net)

## DESCRIPTION OF THE PROPOSED ACTION

The ACB is a self-contained refractory walled system that is manufactured as an over-the road transportable combustion system that will reduce green waste debris to ash without excessive particulate emissions. Using a diesel engine fan, the ACB generates a curtain of air that prevents embers and ash from escaping the ceramic lined firebox. The green waste debris is periodically dumped into the operating firebox to sustain the fire. The air curtain traps the smoke particles and causes them to re-burn under the air curtain. The ACB does not inject any fuels into the fire and the only fuel used in the continuous operation is that of the diesel engine driven fan. Ash will be removed daily from the unit. Once removed, the ash will be placed on the ground adjacent to the ACB, quenched with a water spray and loaded into roll-offs for off-site disposal in compliance with appropriate laws.

The FBF green waste debris pile is located on the southwest corner of the airfield at the junction of Runways #6, #12 & #15 (see attached figures). The nearest residential area is approximately 0.8 miles to the northwest (see attached figure). The green waste debris pile currently consists of approximately 20,000 cubic yards of unshredded green waste debris and 100,000 cubic yards of shredded green waste debris. The debris pile is located on the concrete runways and is surrounded by various storm water controls. Additional green waste debris is anticipated to be transported to FBF from other temporary storage sites throughout the area.

Per 40 CFR §60.2969, the ACB is excluded from Federal permitting requirements if used for less than 16 weeks to combust debris from a designated disaster area. Part 215 of NYSDEC and Section 307.1 of NYC Fire Code prohibit burning in an open fire. With this petition, ECC requests that NYSDEC and NYCDEP provide a written exemption for the ACB through their authority for deferred enforcement.

Only one ACB will be operated during the pilot test. The ACB will be operated up to 9 hours per day during daylight hours. It is anticipated the ACB will consume approximately 250 CY of unshredded debris per day.

The pilot test plan will include the following one day pilot test burns:

- 1) Consumption rate of the unshredded green waste debris to remain below the opacity limits
- 2) Operational speed of the air curtain fan to remain below the opacity limits once green waste debris is added
- 3) Determining optimal methods for adding shredded green waste debris
- 4) Different ratios of shredded to unshredded green waste debris (3 separate test points/days) to remain below the opacity limits once green waste debris is added

If a proper mix of shredded and unshredded green waste debris cannot be maintained so as to minimize the emission of air pollution from the ACB, then operation of the ACB will be ceased until the correct mix of materials can be established.

### VARIANCE FOR HARDSHIP

Superstorm Sandy has devastated multiple communities throughout the various boroughs of New York City (NYC). In addition to the personal property and commercial damages and losses, the storm damage continues to impact NYC business through disruptions to normal business and community routines.

In order for NYC to recover, large volumes of storm debris need to be removed from the communities to allow for repairs and the resumption of normal business routines. The debris includes a wide variety of putrescible wastes that are comingled with household hazardous wastes and storm debris, along with segregable green waste debris. Removal of the putrescible waste is the highest priority due to the resulting noxious odors and potential spread of disease and rodent vectors. However, removal of the putrescible waste is limited by the availability of trucking and disposal resources. Diversion of these limited trucking and disposal resources to management of the green waste debris will hinder removal efforts of the higher priority putrescible wastes. The ACB is a safe and efficient alternative to quickly manage the green waste debris and reduce demand on the limited trucking and disposal resources.

The green waste debris is flammable, and the large volumes of stockpiled green waste debris represent a significant fire hazard. Several of these green waste debris piles are located in close proximity to residential communities, like Cunningham Park. Due to limited trucking and disposal resources, the green waste debris piles may remain in close proximity to residential communities for extended periods without safe disposal alternatives like ACB. In conjunction with Federal, State and City regulators, ECC is currently transporting a significant portion of the shredded green waste debris to beneficial reuse alternatives.

The green waste debris was generated from USDA quarantine zones that contain the Asian Longhorned Beetle (ALB). Without destruction of the green waste debris, the ALB could be propagated outside the NYC quarantine zones, which would impact New York's forest products industry, the biological diversity of its hardwood forests and park lands, and the quality of the urban environment. In addition to shredding, the ACB is a safe and effective means for the destruction of any infected ALB green waste debris.

The New York Sanitation Department distributed less than 2,000 cubic yards of compost material from green wastes annually. The current estimates of Superstorm Sandy green waste debris are in excess of 200,000 cubic yards (100,000 cubic yards of existing shredded debris, 20,000 cubic yards of existing unshredded debris, and an additional 80,000 cubic yards of green waste debris to be collected still), and is significantly more than the local market can absorb. ACB ensures volume reduction of the excess green waste debris that ultimately may be landfilled without volume reduction through the ACB.

### ACTIONS TO MINIMIZE ENVIRONMENTAL IMPACTS

Only green waste debris related to Hurricane Sandy will be combusted. Any other materials found to be in the debris pile will be promptly segregated. The FBF site will not receive any other debris wastes other than green waste debris.

The ACB will be operated with less than 10% opacity (6-minute average), except during the first 30 minutes of operation during restart each day, when they will be operated at an opacity level of less than or equal to 35 percent (six-minute average). In practical terms, only certified and trained opacity inspectors would be able to identify 10% opacity; otherwise, the typical layperson would barely be able to identify some heat distortion from the unit. Opacity measurements will be made for the ACB every 20 minutes during daylight hours, or as required by NYSDEC or NYCDEP written permission. Any excursion from opacity and other operating limits will be reported immediately to NYCDEP.

The FBF site will have an attendant on duty whenever the ACB is in operation or green waste debris is being received or stored. The FBF site will remain secured during non-operational hours. The attendants at the site will control dust, noise, vectors and other potential on-site and off-site nuisances. An operator will be present at all times when the ACB is operating, and the operator will be qualified and trained in the proper operation of ACB.

The ACB will not be operated when the wind speed at the container measures 20 miles per hour or greater. Upon notice from NYCDEP or the NYSDEC that there is an inversion or other weather condition which could cause operation of the ACBs to violate air quality standards or cause significant air pollution, operation of the ACBs will cease until resumption is authorized. Operations will be prohibited in wind speed of greater than 20 mph that are sustained for more than 1 hour, as established by the weather stations at JFK or LaGuardia airports.

If any air monitoring conducted in the vicinity of the ACB shows unacceptable levels of air pollution as determined by NYCDEP, NYSDEC or USEPA, operation of the ACB will be adjusted or terminated in accordance with NYCDEP instructions.

Storm water and leachate control measures will be implemented and maintained completely around all green waste debris piles and ACB operational areas.

All green waste debris storage and ACB operations will be conducted on asphalt or concrete surfaces.

Ash will be removed from the ACB during burning as necessary to maintain efficient combustion. Ash will be removed from the ACBs in such a manner as to minimize the ash becoming airborne. All material removed from the ACB will be completely extinguished before being disposed of and will be stored in a manner which does not constitute a fire hazard or allow material to smolder or burn outside of the ACB. Ash will be disposed of in accordance with applicable laws and regulations, and best efforts will be made to utilize the ash in a beneficial way based on laboratory testing.

Records of all opacity measurements and hours of operation will be maintained, and will be provided to NYCDEP and by electronic mail on a daily basis, and upon request. Records will be sent to DEP at [gerryk@dep.nyc.gov](mailto:gerryk@dep.nyc.gov).

Records of the amount of material handled, the ratio of chipped to unchipped woody debris, the amount of ash generated will be maintained on a daily basis, and records of burn temperature if

available will be maintained on an hourly basis.

Records of any complaints received and any responsive action will be maintained for each occurrence, and notification of any such complaints will be provided to NYCDEP on a daily basis via electronic mail.

At the end of the 7 day pilot test, ECC will submit a written report detailing the results of the pilot operations including, but not limited to: amount of wood burned; emissions data; complaints and responses thereto; and recommendations on any future proposal to operate multiple ACBs to limit, to the maximum extent practicable, the emissions and any nuisance odors from ACB operations.

Your immediate attention to this issue is greatly appreciated. Should you have any questions, please do not hesitate to contact me directly at (770) 846-2864 or [mklosky@ecc.net](mailto:mklosky@ecc.net).

Sincerely,



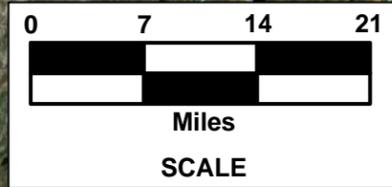
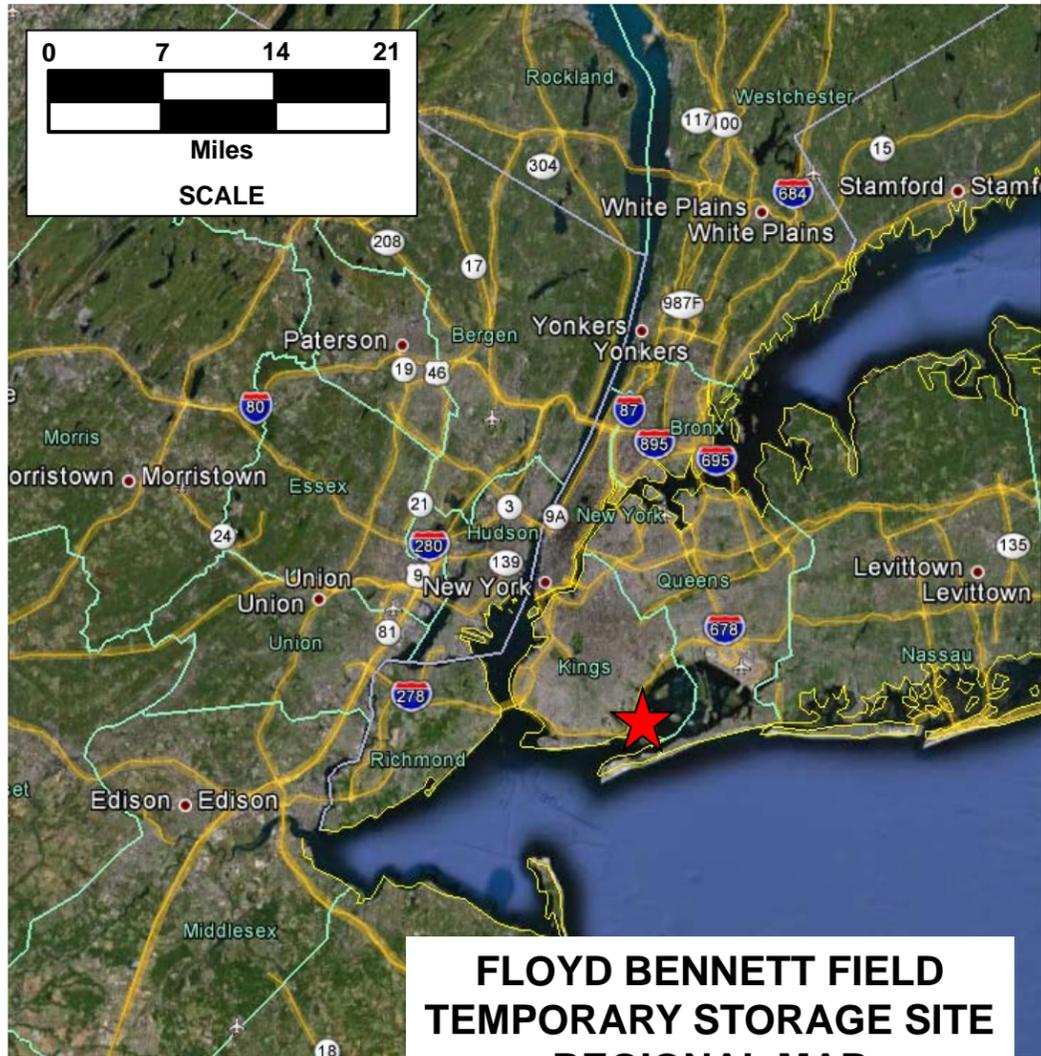
Michael Klosky, P.E.  
Lead Remediation Engineer  
New York P.E. License No. 084737-1 (Expires 12/12/2012)

***CC via email:***

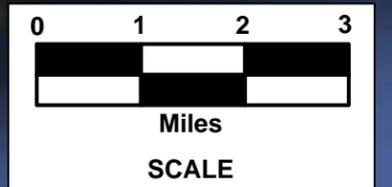
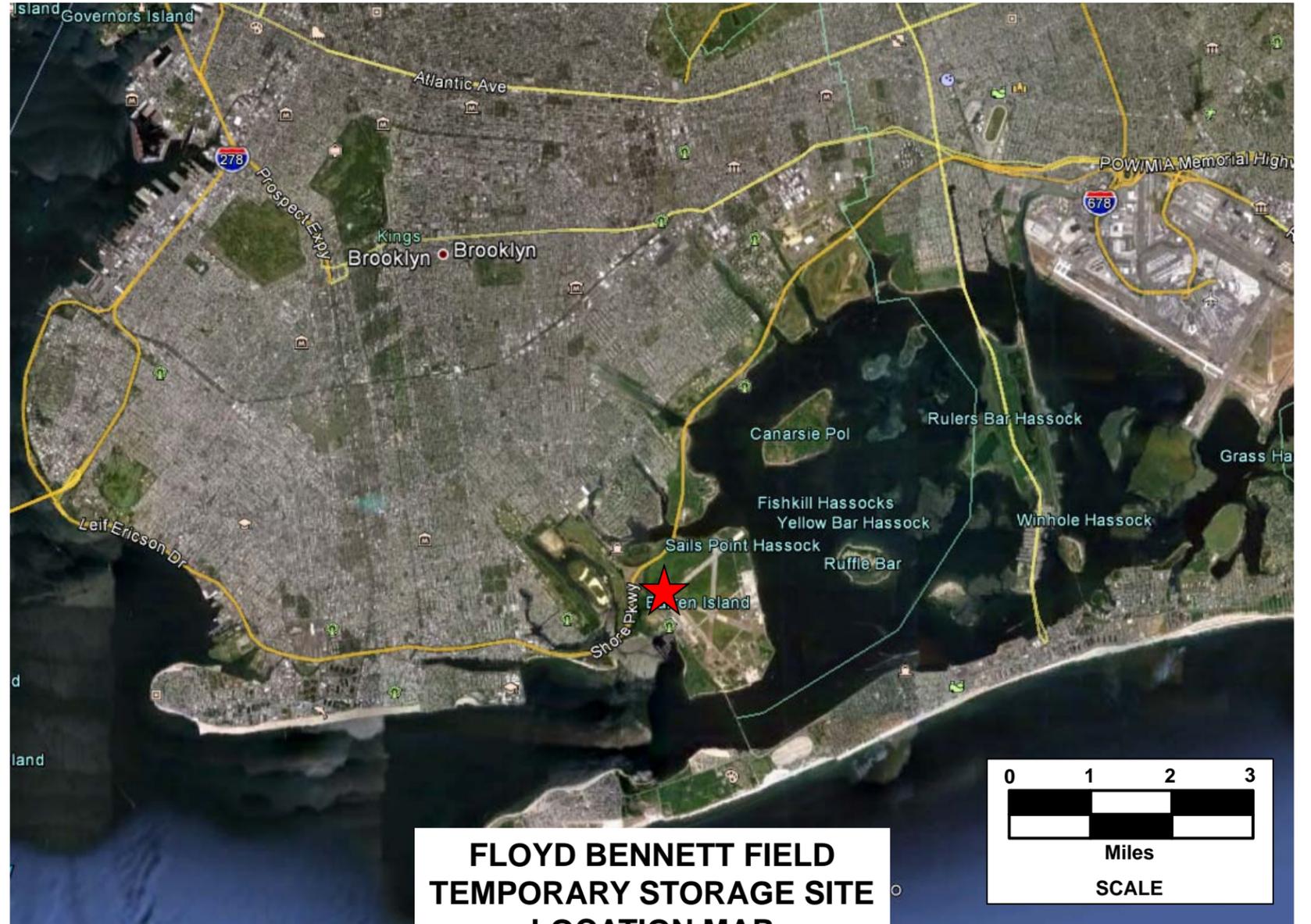
Ms. Venetian Lannon  
New York State Department of Environmental Conservation  
47-40 21<sup>st</sup> Street  
Long Island City, NY 11101  
[valannon@gw.dec.state.ny.us](mailto:valannon@gw.dec.state.ny.us)

Mr. James T. Robb  
U.S. Army Corps of Engineers, Recovery Field Office  
14-34 110<sup>th</sup> Street  
Queens, NY 11356  
[James.T.Robb@usace.army.mil](mailto:James.T.Robb@usace.army.mil)

Ms. Rosemarie Bradley  
Federal Emergency Management Agency, Joint Field Office  
118-35 Queens Blvd  
Queens, NY 11375  
[Rosemarie.Bradley@fema.dhs.gov](mailto:Rosemarie.Bradley@fema.dhs.gov)

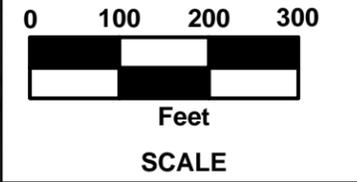
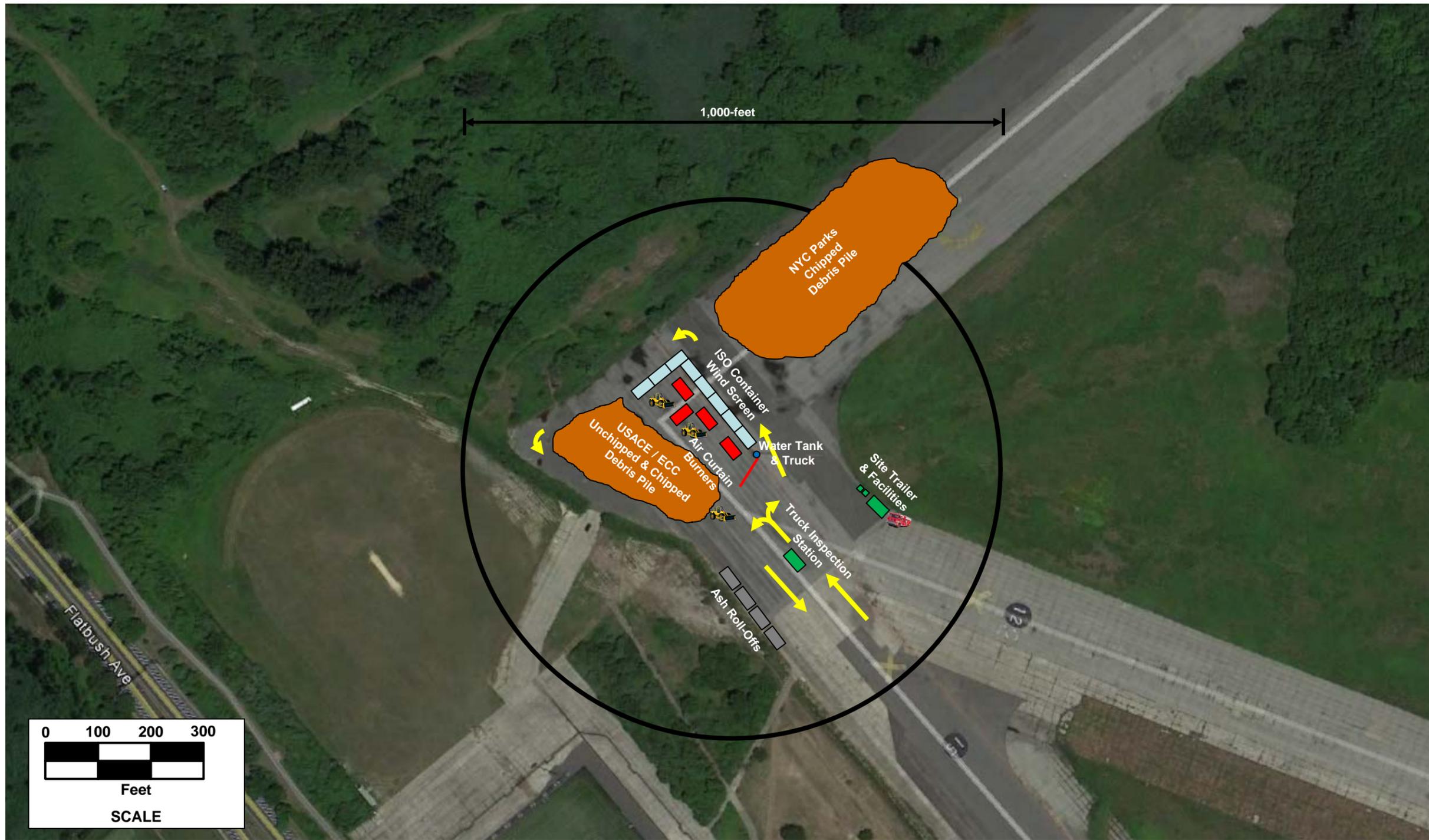


**FLOYD BENNETT FIELD  
TEMPORARY STORAGE SITE  
REGIONAL MAP**



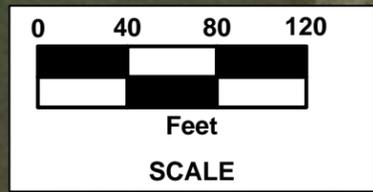
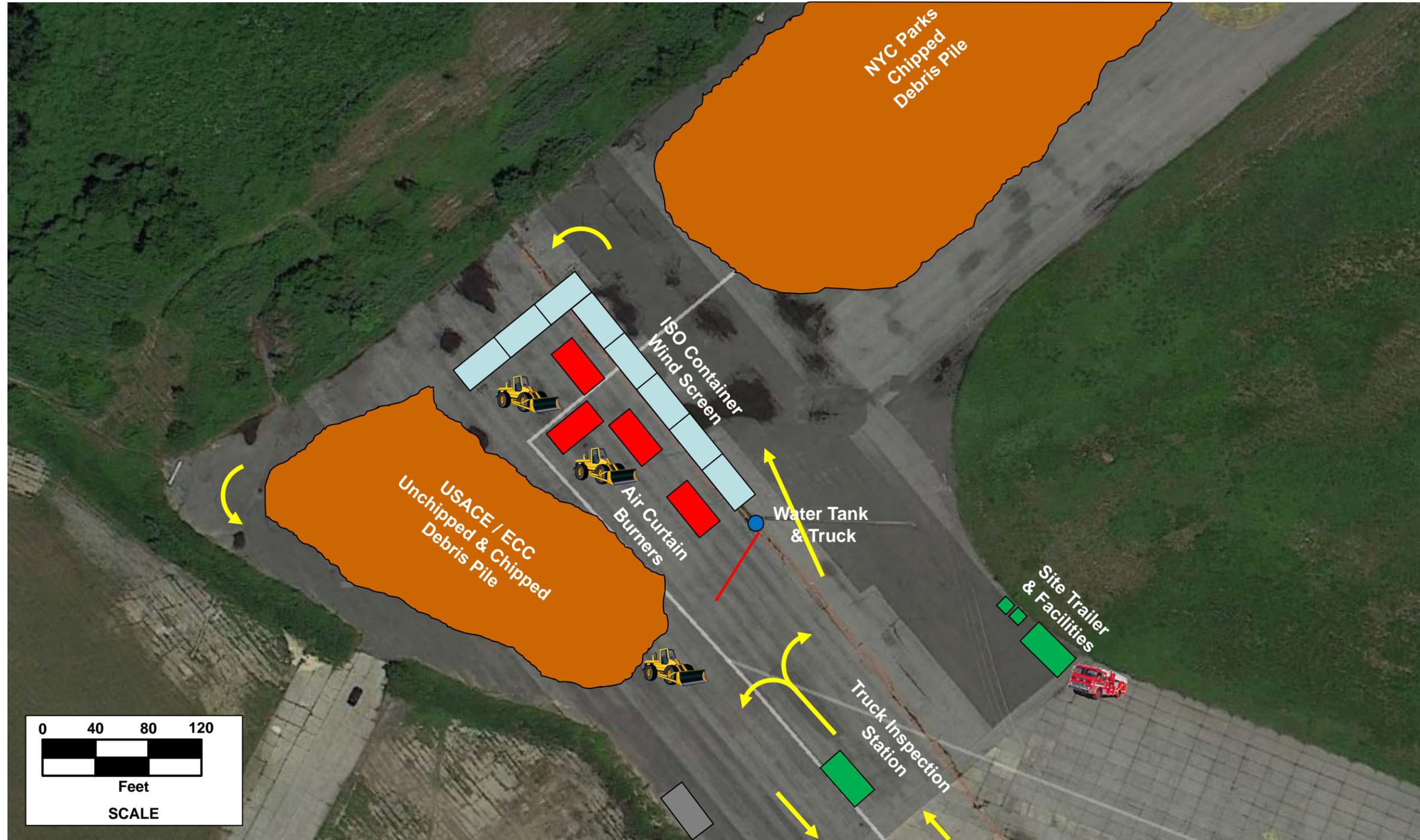
**FLOYD BENNETT FIELD  
TEMPORARY STORAGE SITE  
LOCATION MAP**

					CLIENT/PROJECT/LOCATION	
					Air Curtain Burner Location Map	
					Hurricane Sandy Recovery Mission	
					Floyd Bennett Field, New York	
			BY	DATE		
			DRAWN	MKK	18-Nov-12	
			CHECKED			
			APPROVED			
			APPROVED			
REV	DATE	DESCRIPTION	BY	CHK	SCALE	
					NONE	
<small>THIS DRAWING IS THE EXCLUSIVE PROPERTY OF ECC. ITS ACCEPTANCE CONSTITUTES AN AGREEMENT THAT IT SHOULD BE TREATED STRICTLY CONFIDENTIAL, USED FOR NO OTHER PURPOSE THAN TO AID IN THE ASSEMBLY OR OPERATION OF UNITS FURNISHED BY ECC, OR AS OTHERWISE EXPRESSLY AUTHORIZED IN WRITING BY ECC. THIS DRAWING IS TO BE RETURNED UPON REQUEST, AND IS NOT TO BE COMMUNICATED, DISCLOSED, OR COPIED EXCEPT AS EXPRESSLY AUTHORIZED IN WRITING BY ECC.</small>						
					DRAWING NO.:	REV
					4322.CE3-001	0

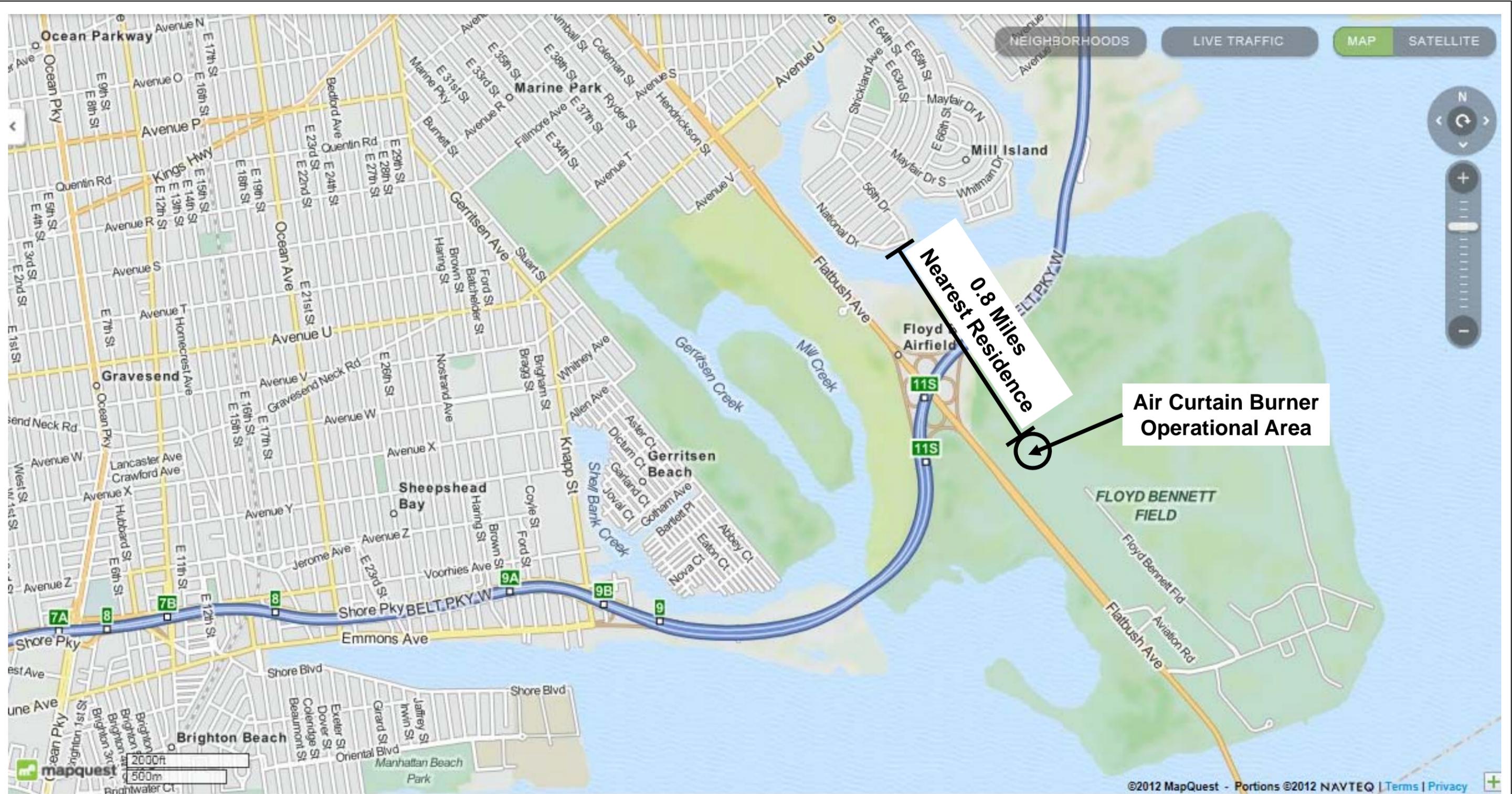


					CLIENT/PROJECT/LOCATION	
					Air Curtain Burner Site Layout	
					Hurricane Sandy Recovery Mission	
					Floyd Bennett Field, New York	
					BY	DATE
					MKK	18-Nov-12
					DRAWN	
					CHECKED	
					APPROVED	
					APPROVED	
					SCALE	
					NONE	
REV	DATE	DESCRIPTION	BY	CHK	DRAWING NO.:	
					4322.CE3-002	
THIS DRAWING IS THE EXCLUSIVE PROPERTY OF ECC. ITS ACCEPTANCE CONSTITUTES AN AGREEMENT THAT IT SHOULD BE TREATED STRICTLY CONFIDENTIAL, USED FOR NO OTHER PURPOSE THAN TO AID IN THE ASSEMBLY OR OPERATION OF UNITS FURNISHED BY ECC, OR AS OTHERWISE EXPRESSLY AUTHORIZED IN WRITING BY ECC. THIS DRAWING IS TO BE RETURNED UPON REQUEST, AND IS NOT TO BE COMMUNICATED, DISCLOSED, OR COPIED EXCEPT AS EXPRESSLY AUTHORIZED IN WRITING BY ECC.					REV	
					0	





					CLIENT/PROJECT/LOCATION			
					Air Curtain Burner Detailed Site Layout			
					Hurricane Sandy Recovery Mission			
					Floyd Bennett Field, New York			
					BY	DATE		
					DRAWN	MKK	18-Nov-12	
					CHECKED			
					APPROVED			
					APPROVED			
					APPROVED			
REV	DATE	DESCRIPTION	BY	CHK	SCALE			
					NONE			
<small>THIS DRAWING IS THE EXCLUSIVE PROPERTY OF ECC. ITS ACCEPTANCE CONSTITUTES AN AGREEMENT THAT IT SHOULD BE TREATED STRICTLY CONFIDENTIAL. USED FOR NO OTHER PURPOSE THAN TO AID IN THE ASSEMBLY OR OPERATION OF UNITS FURNISHED BY ECC, OR AS OTHERWISE EXPRESSLY AUTHORIZED IN WRITING BY ECC. THIS DRAWING IS TO BE RETURNED UPON REQUEST, AND IS NOT TO BE COMMUNICATED, DISCLOSED, OR COPIED EXCEPT AS EXPRESSLY AUTHORIZED IN WRITING BY ECC.</small>							DRAWING NO.: <b>4322.CE3-003</b>	REV <b>0</b>



					CLIENT/PROJECT/LOCATION	
					Air Curtain Burner Residence Location Map	
					Hurricane Sandy Recovery Mission	
					Floyd Bennett Field, New York	
					BY	DATE
					MKK	14-Nov-12
					CHECKED	
					APPROVED	
					APPROVED	
					APPROVED	
REV	DATE	DESCRIPTION	BY	CHK	SCALE	
					NONE	
<small>THIS DRAWING IS THE EXCLUSIVE PROPERTY OF ECC. ITS ACCEPTANCE CONSTITUTES AN AGREEMENT THAT IT SHOULD BE TREATED STRICTLY CONFIDENTIAL, USED FOR NO OTHER PURPOSE THAN TO AID IN THE ASSEMBLY OR OPERATION OF UNITS FURNISHED BY ECC, OR AS OTHERWISE EXPRESSLY AUTHORIZED IN WRITING BY ECC. THIS DRAWING IS TO BE RETURNED UPON REQUEST, AND IS NOT TO BE COMMUNICATED, DISCLOSED, OR COPIED EXCEPT AS EXPRESSLY AUTHORIZED IN WRITING BY ECC.</small>						
					DRAWING NO.: 4322.CE3-004	
					REV 0	