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COMMUNITY AIR MONITORING PLAN

JACOB RIIS HOUSES EAST 11TH STREET WORKS NEW YORK, NEW YORK NYSDEC SITE NO: V00534



May 2020
File No. 41.0162741.00

PREPARED FOR:
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1.0 INTRODUCTION

On behalf of LiRo Architects and Planners (LiRo), GZA GeoEnvironmental of New York (GZA/QEP) has prepared this Community Air Monitoring Plan (CAMP) for the New York City Housing Authority (NYCHA) Hurricane Sandy Capital Improvements Project on the northern portion of the Jacob Riis Houses in New York, New York (Site). A Site Location map is included in **Figure 1**.

The Site was the former location of the Consolidated Edison Company of New York, Inc. (ConEdison) Manufactured Gas Plant (MGP) that is currently controlled under the New York State Department of Environmental Conservation (NYSDEC) Voluntary Cleanup Program (VCP) Site Number: V00534a and managed under the Interim Site Management Plan (ISMP) dated, May 2017. In 2018, the Site transitioned from a VCP Site to a NYS Superfund Site East 11th Street Works MGP (CE – E. 11th St. MGP) No. 231110.

The CAMP has been modeled after the generic CAMP referenced in the ISMP and will be implemented during the planned capital improvements soil intrusive activities. This CAMP will be implemented within designated “Controlled Work Areas” (CWA) of the ISMP Area during the planned excavation, transportation, handling, and disposal of approximately 6,525 cubic yards of Controlled Material.

Controlled Material is a contract specification definition of meaning, “Any soil, debris, or other material removed from beneath the ground surface within the ISMP Area as a result of Intrusive Activities, including exposed soil remaining in the sides or bottom of excavations, and other material that may come in contact with such Controlled Material.”

The capital improvements construction activities generally include the following:

- Equipment, materials, and personnel mobilization and Site preparation;
- Management, handling, testing, transporting, staging, and removal of excess materials from the Site and off-Site disposal at appropriate ConEdison-approved facilities;
- Site restoration, including installation of pavement, concrete, fencing and other Site features; and
- Demobilization of equipment, materials, and personnel.

1.1 OBJECTIVE

The primary objective of the CAMP is to provide a measure of protection for the surrounding community from potential airborne releases of volatile organic compounds (VOCs), nuisance odors, and particulate dust during construction. The CAMP is intended to meet the requirements for CAMP in the NYSDEC-approved ISMP. This CAMP is a stand-alone document and will be available on-Site during construction activities. Implementation of the CAMP and operation of the air monitoring equipment will be performed by the qualified environmental professional (QEP).

The following summarizes the work to be performed to monitor VOCs, nuisance odors, and particulate dust (PM₁₀) during construction:

- Establish a background, or baseline, concentration of VOCs, odors, and dust prior to performing construction activities which are ground-intrusive or may generate dust;
- Establish an early-warning alert level to minimize emissions before action levels are exceeded;
- Monitor and document the VOC and dust concentrations to confirm compliance with regulatory limits;
- Monitor and document nuisance odors to minimize construction-related odors at the perimeter of the Site; and



- Monitor the effectiveness of odor, vapor, and dust controls and re-evaluate controls, if required, to further minimize airborne concentrations and/or odor.

1.2 SITE DESCRIPTION AND HISTORY

The Jacob Riis Houses complex consists of 19 multi-story residential buildings extending from East 6th Street to East 13th Street between Avenue D and the FDR Drive operated by NYCHA. From 1859 until the 1930s, the East 11th Street MGP Facility occupied the northern portion of the Jacob Riis Houses property. During its operational period, the MGP facility had 17 gas holders ranging in capacity from approximately 50,000 cubic feet (cu ft.) to 5,000,000 cu ft. Several of the gas holders were converted from gas storage to liquid storage of naphtha, tar or gas oil. The original gas holders built in the late-1800s were most likely constructed with below grade bottoms. The majority of the facility structures were demolished after the mid-1930s. By 1949, the northern portion of the Jacob Riis Houses complex was constructed over the former E. 11th St. MGP Site.

In August 2002, Con Edison entered into Voluntary Cleanup Agreement with NYSDEC to address residual MGP-Site contamination. During the Remedial Investigations (RI) performed by Con Edison’s consultants, contamination was identified in the subsurface of the Site. The RI identified that MGP-related impacts including elevated levels of semi-volatile organic compounds (SVOCs) and inorganics concentrations throughout the ISMP Area at concentrations are greater than Part 365 Unrestricted Use Soil Cleanup Objectives (SCOs) in the shallow soils, benzene, ethylbenzene, toluene and xylenes (BTEX) associated with the groundwater at depths of greater than 10 feet below ground surface (bgs), and contaminated soil and coal tar product at depths of 20 to 30 feet bgs.

In May 2017, as a required element of the remedial program under the VCP, an Interim Site Management Plan was established for the Site. The portion of the Jacob Riis Houses complex that is located on the grounds of the former MGP Site is included in the ISMP Area. The ISMP Area includes six multi-story brick apartment buildings known as Building Nos. 2, 3, 4, 5, 6 and 8, portions of two additional buildings known as Building Nos. 1 and 7, pathways, driveways, recreational areas, and landscaped areas. Please refer to **Appendix A** for a plan depicting the ISMP Area and the proposed Controlled Work Areas.

1.3 EXCAVATION AND DISPOSAL PROJECT TEAM

The NYCHA Construction Manager for the project is STV Construction, Inc (STV/Construction Manager) of New York City. The Construction Contractor selected by NYCHA is WDF, Inc. (WDF/Contractor) of Mount Vernon, New York. WDF will be responsible for excavation, loading, transportation and disposal of Controlled Materials. GZA will provide a QEP to on site to perform the CAMP during excavation during intrusive site work. Contact information is summarized below:

Name	Project Title/Assigned Role	Phone Numbers
Al Lombardi	WCD Site Superintendent	Work: 914-776-8000 Mobile: 914-313-6918
Corey Jones	WCD Site Safety Officer	Work: 914-776-8000 Mobile: 914-261-9346
Peter O’Hanlon	STV Project Manager	Work: 212-777-4400 Mobile: 646-942-2161
Reinbill (Bill) Maniquez	GZA/QEP Project Manager	Work: 212-594-8140 Mobile: 347-443-1059



Project activities include waste excavation and management of approximately 6,525 cubic yards of Controlled Material.

1.4 CAMP ORGANIZATION

The remainder of this CAMP is organized as follows:

- **Section 2** presents a summary of odor, vapor and dust controls to be implemented during the project;
- **Section 3** summarizes the real time vapor and dust monitoring plan;
- **Section 4** describes the nuisance odor monitoring;
- **Section 5** summarizes CAMP reporting requirements; and
- **Section 6** presents a listing of relevant references.

2.0 ODOR, VAPOR, AND DUST CONTROLS

Construction activities have potential to impact local air quality. Ground-intrusive construction activities within the CWAs at the Site with the potential to impact air quality include:

- Test Pits
- Trenching for utilities
- Pre-drilling of pile locations
- Pile installation
- Excavation for installation of property line boxes, ancillary buildings, pile caps, storm drainage detention systems, impermeable barriers along buildings
- Excavate for installation of new House Pit Traps
- Handling (including loading and unloading) of excavated Controlled Materials
- Stockpiling Controlled Materials
- Removal of debris
- Installation of the demarcation layer
- Backfilling, grading, and compacting excavation areas
- Cleaning/decontaminating personnel, equipment, and vehicles

As described in the Dust and Odor Control Plan (per Specification Section 31 23 10), dust control, vapor and odor control methods shall be capable of controlling emissions of nuisance odors from intrusive work. If nuisance odors, VOC readings or dust levels exceedances are identified at the site boundary, or if dust/odor complaints are received, work will be halted, and the sources will be identified and corrected.

Water-based, biodegradable vapor mitigation, such as Bio-Solve Pink Water and Activator may be used to aid in control of odors and/or vapor emissions resulting from exposed surfaces and during active excavation/loading activities. Bio-Solve foam will meet the requirements of RCRA Subtitle D (and will be free of Per- and Polyfluoroalkyl Substances [PFAS]). Vapor mitigation foam will be applied as necessary to exposed surfaces to form a thick, viscous barrier before each work break and at the end of the workday. In addition, long-duration foam will be applied as necessary to stockpiles that are anticipated to remain on-Site for longer than 5 days and to materials loaded in transport trucks.



In addition to application of foam, the following construction techniques and practices will be implemented during construction activities to minimize odor, vapor and dust generation:

- A dedicated on-site water supply for road wetting, applying water on traffic areas, wetting equipment, spraying water on earth-removal equipment buckets during dumping, and hauling materials in properly covered or watertight containers
- Executing ground-intrusive and dust-generating construction activities to minimize airborne dust generation
- Preventing airborne dust from dispersing into the atmosphere by watering, misting, mulching, covering unprepared areas
- Hauling excavated and clean fill material in properly covered vehicles
- Restricting vehicle speeds on the Site to 5 miles per hour (mph)
- Covering shallow excavations and stockpiles with polyethylene liners (anchored to resist wind forces) before extended work breaks and at the end of the workday
- Reducing the excavation size and/or number of excavations
- If nuisance odors develop that cannot be corrected, then odor control will be achieved by sheltering the excavation and handling areas in a temporary containment structure equipped with appropriate air venting/filtering systems

Odor, vapor, and dust controls will be implemented to prevent total VOC and PM₁₀ exceedances of response levels described in **Section 3.3** of this CAMP.

3.0 COMMUNITY AIR MONITORING

Real-time air monitoring for total VOC and airborne particulate dust (PM₁₀) concentrations will be performed continuously during intrusive or dust generating construction activities at the Site from a QEP. Portable monitoring stations will be placed upwind and downwind of the CWA. Portable monitoring stations (upwind and downwind locations) will be set up in secure locations at the perimeter of the CWA, or half the distance to the nearest occupied residential/commercial structure, whichever is less. Given the linear nature of the construction work associated with this work, we expect that the locations of these monitoring stations will be modified as the work progresses.

In addition to particulate monitoring at the stations, fugitive dust will be visually assessed during construction activities. Dust may be generated and leave the Site at a concentration in which the monitoring equipment does not measure PM₁₀ at or above the action levels described herein. If dust is visually observed leaving the Site, but has not reached the action levels, additional dust suppression controls described above will be employed to minimize migration. The air monitoring stations will be deployed prior to the start of work each day that ground intrusive or dust generating activities will be performed. Monitoring locations will be selected based on the prevailing wind direction and the location of construction activities to be performed that day. Stations will be re-located if the wind direction shifts more than approximately 60-degrees from the original direction.

Monitoring equipment will be calibrated daily and in accordance with the manufacturer's recommendations. Monitoring data from each station will be downloaded and stored at the end of each workday.



3.1 AIR MONITORING STATIONS

Air monitoring stations will consist of a data logging photoionization detector (PID) (MiniRAE 3000, or equal) and a data logging aerosol photometer (TSI DustTrak II 8530, or equal) housed in a weather-tight, portable enclosure for monitoring of airborne total VOC and PM₁₀ concentrations, respectively. The portable enclosure will be mounted on surveying tripod and will be raised to approximately 5 feet above grade. Each monitoring station will also be outfitted with data collection units (Netronix Thiamis 1000, or equal). Cut sheets of community air monitoring equipment is attached in **Appendix B**.

Supplemental portable instruments (PID and dust meter) may also be utilized for supplemental monitoring by the CAMP Monitor.

3.2 RESPONSE LEVEL CRITERIA AND ACTIONS

Immediate action will be taken in response to air monitoring levels that meet or exceed response level criteria. The following table summarizes response levels and associated trigger actions for VOCs and particulate dust emitted as a result of construction activities at the Site. The monitoring equipment will be programmed to immediately notify the CAMP Monitor via audible/visible alarm and wireless telemetry) in the event of action level exceedances.

AIR MONITORING RESPONSE LEVELS AND ACTIONS

VOC MONITORING	
Response Level	Response Actions
>5 ppm above background for 15-minute average	Temporarily halt construction activities Continue monitoring If VOC levels decrease (per instantaneous readings) below 5 ppm above background, resume construction activities
Persistent levels of >5 ppm over background and <25 ppm	Halt construction activities Identify source of vapors Perform corrective action to abate emissions Continue monitoring Resume construction activities if VOC levels at 200 feet downwind of the Site boundary, or half the distance to the nearest potential receptor, is <5 ppm for a 15-minute average If VOC levels are >25 ppm at the Site perimeter, construction activities must be shut down until the source is addressed



PARTICULATE MONITORING	
Response Level	Response Actions
>100 ug/m ³ above background for 15-minute average or visual dust observed leaving the Site	Apply dust suppression Continue monitoring Continue construction activities if downwind PM ₁₀ particulate levels are <150 ug/m ³ above upwind levels and no visual dust is leaving the Site
>150 ug/m ³ above background for 15-minute average	Stop construction activities Re-evaluate construction activities monitoring Continue construction activities if downwind PM ₁₀ particulate levels are <150 ug/m ³ above upwind levels and no visual dust is leaving the Site

3.3 NOTIFICATION AND EXCEEDANCE REPORTING

In the event of response level exceedance, the CAMP Monitor will identify the station and evaluate the activities in proximity of the work. If the exceedance is associated with construction activities, the Construction Manager, QEP, and Contractor will be notified to employ mitigation measures as described herein. An exceedance report will be included in the daily air monitoring report as described herein. At a minimum, the exceedance report will include the following:

- Date and time of exceedance
- Date and time of exceedance notification
- General location and brief description of construction activities being performed at the time of exceedance
- Weather conditions at time of exceedance
- For each air monitoring station, VOC and PM₁₀ concentrations at time of exceedance
- Expected source or cause of exceedance
- Response actions taken.

A copy of the exceedance report will be included in the daily air monitoring report. The on-site representatives from the Construction Manager and the Contractor will be notified promptly of any exceedance of an Action Level and of the corrective actions taken in connection with the exceedance.

4.0 **NUISANCE ODOR MONITORING**

During construction activities, perimeter walks will be performed to monitor for the presence of nuisance odors, including those associated with the former MGP. Environmental conditions such as temperature, precipitation, humidity, wind direction, and wind speed may affect the distribution and concentration of odors. The frequency



of odor monitoring will depend on these environmental conditions and the nature and location of the construction activities being performed.

4.1 ODOR RESPONSE

If odors are observed at the perimeter of the Site, construction activities will continue, and odor, vapor, and dust control measures will be implemented in accordance with Section 31.23.10. If odors persist, construction activities will be stopped, the source or cause of the excessive odors will be identified, and additional control measures will be implemented. Construction activities will resume provided that the control measures are successful in abating odors at the Site perimeter.

If odor complaints are received from the public, factors including construction activities being performed, prevailing wind direction, and other environmental factors will be evaluated to assess the legitimacy of the complaint. Odor response measures will be implemented if the complaint has been considered legitimate by the QEP.

4.2 DAILY COMMUNITY AIR MONITORING LOG

Daily air monitoring logs will be included in the daily field report, as described herein. Daily field calibration logs and Community Air Monitoring summary sheets are attached as **Appendix C**. At a minimum, daily odor monitoring logs will include the following:

- Date and time of perimeter odor check
- Presence or absence of nuisance related odors
- Date, time, and outcome of complaints from the public regarding odors, if any.

The on-site representatives from the Construction Manager and the Contractor will be notified promptly of any exceedance of an Action Level and of the corrective actions taken in connection with the exceedance.

5.0 REPORTING

The QEP will prepare daily air monitoring reports for inclusion in the Project's Daily Field Report. At a minimum, these air monitoring reports will include the following:

- Date and day of the week
- Weather conditions (i.e. temperature precipitation, wind speed, prevailing wind direction, humidity, etc.) observed at the time of monitoring
- Site plan showing approximate locations of air monitoring stations and location of construction activities performed at the time of monitoring
- Brief description of construction activities performed at the time of monitoring
- Daily average concentration and maximum 15-minute time-weight average concentration of VOCs and PM₁₀ for each monitoring station
- Copies of exceedance report(s) (if any) including notes of any daily odor monitoring logs

In addition, a summary of the weekly activities will be included in the weekly report to the Construction Manager's report to the Jacob Riis House community.



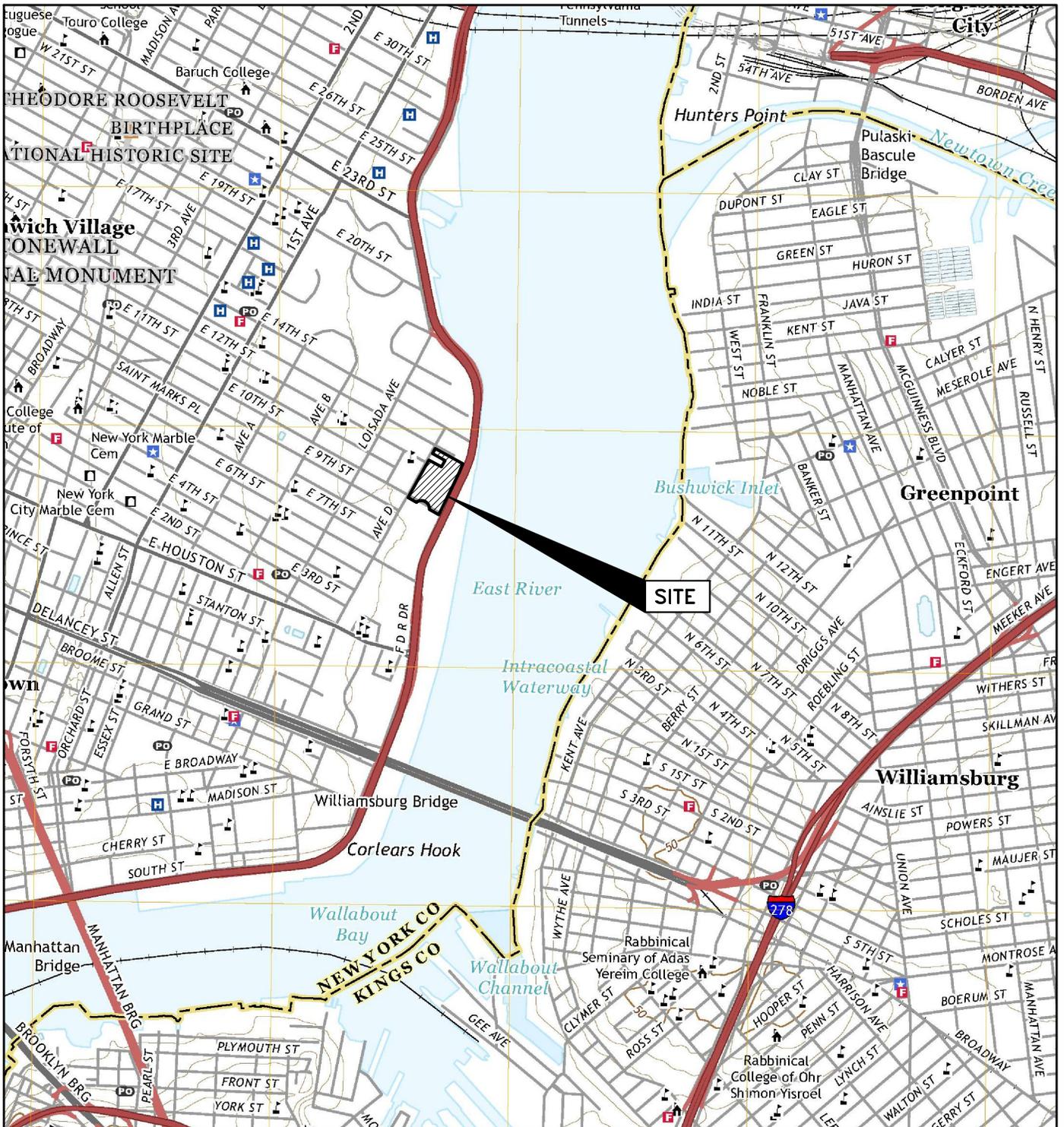
6.0 REFERENCES

GZA obtained information from the references listed below for the preparation of this CAMP. The information provided by each is discussed and referenced in the text, or as provided below.

- Special Requirements for Intrusive Activities Within Controlled Work Areas (Specification Section 31 23 10), dated January 17, 2018.
- Hurricane Sandy Capital Improvements Program (HSCIP) Dust and Odor Control Plan (Revision 2), dated May 1, 2020.
- Interim Site Management Plan for Jacob Riis Houses – NYSDEC Site Number: V000534; Arcadis of New York, Inc.; dated May 2017 including Appendix D – Generic Health and Safety Plan. This report is provided for informational purposes only and is not part of the Construction Documents.
- Occupational Safety and Health Administration (OSHA) Regulations, 29 CFR Parts 1910 and 1926 – Including, but not limited to, Excavations, Current Revision.
- NYSDEC Division of Environmental Remediation – DER-10, Technical Guidance for Site Investigation and Remediation, dated May 3, 2010.
- New York State Department of Health (NYSDOH) –Generic Community Air Monitoring Plan (NYSDEC DER-10, Appendix 1A).
- NYSDEC – Fugitive Dust Suppression and Particulate Monitoring (NYSDEC DER-10, Appendix 1B).
- NYSDEC Division Technical and Administrative Guidance Memorandum – Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites, dated October 27, 1989.



Figure 1 – Site Location Map



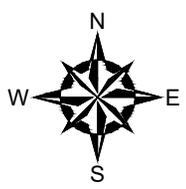
© 2019 - GZA GeoEnvironmental of NY. GZA-C:\Users\yj.xiao\Desktop\RIIS House\GZA CAD\162741.00.dwg [FIG 1 8.5x11] May 04, 2020 - 4:52pm yj.xiao



QUADRANGLE LOCATION

SOURCE:

USGS TOPOGRAPHIC MAPS: BROOKLYN, NEW YORK (2019) AND CENTRAL PARK, NEW YORK (2019). CONTOUR INTERVAL 10FT, NAVD-1988, ORIGINAL SCALE 1:24,000 (1IN=2,000FT).



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PREPARED FOR:
LIRO ARCHITECTS AND PLANNERS

SITE LOCATION MAP

PROJ MGR: MDB	REVIEWED BY: SK
DESIGNED BY: MDB	DRAWN BY: YX
DATE: MAY 2020	PROJECT NO. 41.0162741.00

CHECKED BY: SK	FIGURE 1
SCALE: 1"=2,000'	
REVISION NO. -	SHEET NO.



Appendix A – Proposed Controlled Work Area Figure

E. 13TH ST



CONSTRUCTION FENCE
RIIS HOUSES PROJECT
BUILDINGS 1 TO 8
152 AVENUE D
BOROUGH OF MANHATTAN
ZIP CODE: 10009

ZONE NO. R7-2
BLOCK NO. 367
ZONING MAP NO. 12C
LOT 1
APPLICATION: ALT 3
WORK TYPE: EQ-FN
CODE COMPLIANCE: NYC 2014-BC

E. 12TH ST

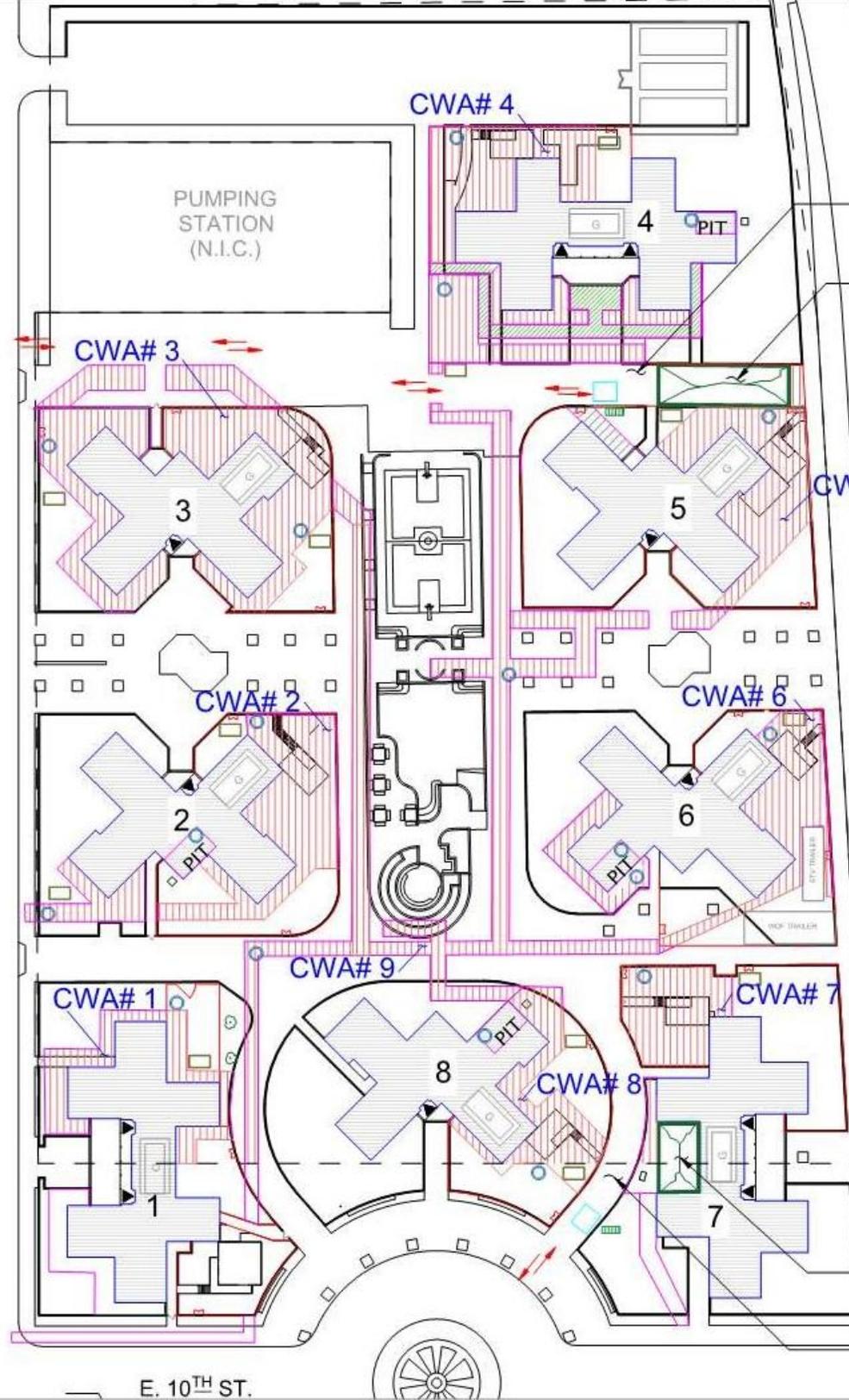
LEGENDS:

- CWA/EXCAVATION AREAS =
- DECONTAMINATION POOL/CRZ =
- 8' H. CHAIN LINK FENCE =
- TEMPORARY FENCE =
- HAUL TRUCK INGRESS/EGRESS ROUTE =
- TEMPORARY WALKWAY =
- HOUSE TRAP PIT INSIDE BLDG =
- TRUCK TIRE WASH STATION =
- SEDIMENT TRAP & BASIN =
- SPOIL CONTAINER =
- ISMP AREA =
- EXIST. BUILDINGS LIMITS =

NOTES:

1. ALL FENCING INDICATED SHALL NOT BE ERECTED AT THE SAME TIME. SECTIONS OF FENCE SHALL BE ERECTED IN COORDINATION WITH WORK ACTIVITY PHASING
2. CONTAINER BOXES/ SMALL DUMP TRUCK WILL BE PROVIDED AT CWA TO STORE CONTROLLED MATERIALS BEFORE BEING SENT TO STOCKPILES OR DIRECTLY TRANSFER EXCAVATED MATERIALS TO STOCKPILE

AVENUE D



E. 10TH ST.

EXIST. ASPHALT PAVEMENT AREA

PRIMARY STOCK PILE
75'x20'x8'

FRANKLIN D. ROOSEVELT DRIVE

SECONDARY STOCK PILE
40'x20'x8'

EXIST. ASPHALT PAVEMENT AREA



Appendix B – Community Air Monitoring Specification Sheets

DUSTTRAK™ II AEROSOL MONITORS MODELS 8530, 8530EP AND 8532

DESKTOP OR HANDHELD
UNITS FOR ANY ENVIRONMENT,
ANY APPLICATION



DustTrak™ II Aerosol Monitors are battery-operated, data-logging, light-scattering laser photometers that give you real-time aerosol mass readings. They use a sheath air system that isolates the aerosol in the optics chamber to keep the optics clean for improved reliability and low maintenance. From desktop and desktop with external pump models to a handheld model, the DustTrak II offers a suitable solution for harsh industrial workplaces, construction and environmental sites and other outdoor applications, as well as clean office settings. The DustTrak II monitors measure aerosol contaminants such as dust, smoke, fumes and mists.

Features and Benefits

All Models

- + Real-time mass concentration readings and data-logging allow for data analysis during and after sampling
- + Measure aerosol concentrations corresponding to PM1, PM2.5, Respirable, and PM10 size fractions, using a variety of inlet conditioners
- + Easy-to-use graphical user interface with color touch-screen for effortless operation

Desktop Models (8530 and 8530EP)

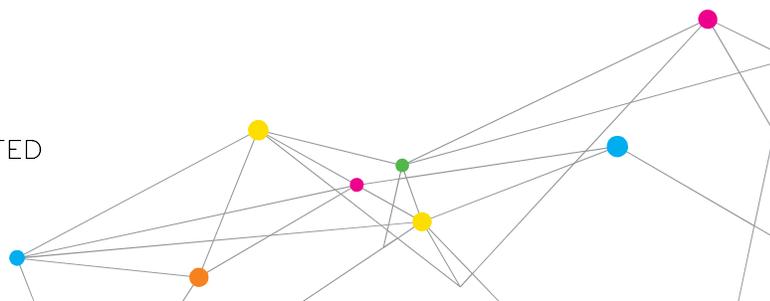
- + Energy-efficient, long lasting external pump for continuous, unattended, 24/7, outdoor monitoring applications (Model 8530EP only)
- + Long life internal pump for shorter work-shift or IAQ sampling applications (Model 8530)
- + Gravimetric reference sampling capability for custom reference calibrations
- + Automatic zeroing (with optional zero module) to minimize the effect of zero drift
- + STEL alarm setpoint for tracking 15-minute average mass concentrations

Handheld Model (8532)

- + Long life internal pump for continuous sampling
- + Single-point data collection for walk through surveys
- + Lightweight design with ergonomic handle for portable applications



UNDERSTANDING, ACCELERATED



Desktop Models: Ideal for Long-Term Surveys and Remote Monitoring Applications

The DustTrak II is offered as a standard desktop (Model 8530), as well as a desktop with external pump (Model 8530EP.) Both models have manual and programmable data logging functions, making them ideal for unattended applications. The standard desktop model is most suitable for indoor, continuous monitoring, while the desktop with external pump is designed for 24/7 unattended, remote monitoring outdoors.

The DustTrak II desktop models come with USB (device and host), Ethernet, and analog and alarm outputs allowing remote access to data. User adjustable alarm setpoints for instantaneous or 15-minute short-term excursion limit (STEL) are also available on desktop models. The alarm output with user-defined setpoint alerts you when upset or changing conditions occur.

The DustTrak II desktop monitors have several unique features:

- + Measure aerosols in high concentrations up to 400 mg/m³.
- + External pump (Model 8530EP) with low power consumption for continuous, unattended monitoring in remote outdoor locations.
- + Gravimetric sampling capability using a 37-mm filter cassette which can be inserted in-line with the aerosol stream allowing you to perform an integral gravimetric analysis for custom reference calibrations.
- + Zeros automatically using the external zeroing module. This optional accessory is used when sampling over extended periods of time. By zeroing the monitor during sampling, the effect of zero drift is minimized.
- + STEL alarm feature for tracking 15-minute average mass concentrations when alarm setpoint has been reached for applications like monitoring fugitive emissions at hazardous waste sites.

Handheld Models: Perfect for Walk-Through Surveys and Single-Point Data Collection Applications

The DustTrak II Handheld Model 8532 is lightweight and portable. It is perfect for industrial hygiene surveys, point source location monitoring, indoor air quality investigations, engineering control evaluations/validation, and for baseline trending and screening. Like the desktop models, it has manual and programmable data logging functions. In addition, the handheld model also has a single-point data logging capability. Single-point data collection is used for walk-through industrial hygiene surveys and indoor air quality investigations.

Applications	Desktop	Handheld
Aerosol research studies	+	+
Baseline trending and screening	+	+
Engineering control evaluations		+
Engineering studies		+
Epidemiology studies	+	+
Indoor air quality investigations	+	+
Industrial/occupational hygiene surveys	+	+
Point source monitoring		+
Outdoor environmental monitoring	+	
Process monitoring	+	+
Remote monitoring	+	

Battery Performance		
Models 8530 and 8530EP (Typical) 6600 mAh Li-Ion Battery Pack (P/N 801680)	1 Battery	2 Batteries
Battery runtime (hours)	Up to 6	Up to 12
Charge time* (hours) in DustTrak	4	8
Charge time* (hours) in external battery charger (P/N 801685)	4	8
Model 8532 (Typical) 3600 mAh Li-Ion Battery Pack (P/N 801681)	Battery	
Battery runtime (hours)	Up to 6	
Charge time* (hours) in DustTrak	4	
Charge time* (hours) in external battery charger (P/N 801686)	4	

* Of a fully depleted battery



Desktop Monitor with External Pump, Model 8530EP

DustTrak II Aerosol Monitor Features

All Models

- + Li-Ion rechargeable batteries
- + Internal and external battery charging capabilities
- + Outlet port for isokinetic sampling applications
- + User serviceable sheath flow and pump filters
- + Logged test pause and restart feature
- + Logged test programming
 - + Color touch screen—either manual mode or program mode
 - + TrakPro™ Data Analysis Software via a PC
- + User adjustable custom calibration settings
- + Instantaneous alarm settings with visual and audible warnings
- + Real-time graph display
- + View statistical information during and after sampling
- + On-screen instrument status indicators:
FLOW, LASER and FILTER
- + Filter service indicator for user preventative maintenance

Desktop Models (8530 and 8530EP)

- + Long life external pump (8530EP)
- + Internal pump (8530)
- + Hot swappable batteries
- + Gravimetric reference sample capability
- + Auto zeroing module (optional accessory)
- + STEL alarm setpoint

Handheld Model (8532)

- + Long life internal pump
- + Single-point data collection for walk through surveys

Easy to Program and Operate

The graphical user interface with color touch-screen puts everything at your fingertips. The easy-to-read display shows real-time mass concentration and graphical data, as well as other statistical information along with instrument pump, laser and flow status, and much more. Perform quick walk-through surveys or program the instrument's advanced logging modes for long-term sampling investigations. Program start times, total sampling times, logging intervals, alarm setpoints and many other parameters. You can even set up the instrument for continuous unattended operation.

TrakPro™ Software Makes Monitoring Easier than Ever

TrakPro™ Data Analysis Software allows you to set up and program directly from a PC. It even features the ability for remote programming and data acquisition from your PC via wireless (922 MHz or 2.4 GHz) communications or over an Ethernet network. As always, you can print graphs, raw data tables, and statistical and comprehensive reports for record keeping purposes.



Handheld Monitor, Model 8532

SPECIFICATIONS

DUSTTRAK™ II AEROSOL MONITORS MODELS 8530, 8530EP AND 8532

Sensor Type

90° light scattering

Particle Size Range

0.1 to 10 µm

Aerosol Concentration Range

8530 Desktop	0.001 to 400 mg/m ³
8530EP Desktop with External Pump	0.001 to 400 mg/m ³
8532 Handheld	0.001 to 150 mg/m ³

Resolution

±0.1% of reading or 0.001 mg/m³, whichever is greater

Zero Stability

±0.002 mg/m³ per 24 hours at 10 sec time constant

Flow Rate

3.0 L/min set at factory, 1.40 to 3.0 L/min, user adjustable

Flow Accuracy

±5% of factory set point, internal flow controlled

Temperature Coefficient

+0.001 mg/m³ per °C

Operational Temp

32 to 120°F (0 to 50°C)

Storage Temp

-4 to 140°F (-20 to 60°C)

Operational Humidity

0 to 95% RH, non-condensing

Time Constant

User adjustable, 1 to 60 seconds

Data Logging

5 MB of on-board memory (>60,000 data points)
45 days at 1 minute logging interval

Log Interval

User adjustable, 1 second to 1 hour

Physical Size (H x W x D)

Handheld	4.9 x 4.8 x 12.5 in. (12.5 x 12.1 x 31.6 cm)
Desktop	5.3 x 8.5 x 8.8 in. (13.5 x 21.6 x 22.4 cm)
External Pump	4.0 x 7.0 x 3.5 in. (10.0 x 18.0 x 9.0 cm)

Weight

Handheld	2.9 lb (1.3 kg), 3.3 lb (1.5 kg) with battery
Desktop	3.5 lb (1.6 kg), 4.5 lb (2.0 kg)-1 battery, 5.5 lb (2.5 kg)-2 batteries
External Pump	3.0 lb (1.4 kg)

Communications

8530

USB (host and device) and Ethernet. Stored data accessible using flash memory drive

8530EP

USB (host and device) and Ethernet. Stored data accessible using flash memory drive plus, cable assembly for external pump USB (Hose and device). Stored data accessible using flash memory drive

8532

Power-AC

Switching AC power adapter with universal line cord included, 115-240 VAC

Analog Out

8530/8530EP

User selectable output, 0 to 5 V or 4 to 20 mA. User selectable scaling range

Alarm Out

8530/8530EP

Relay or audible buzzer
Relay
Non-latching MOSFET switch
+ User selectable set point
+ -5% deadband
+ Connector 4-pin, Mini-DIN connectors
Audible buzzer

8532

Screen

8530
8532

5.7 in. VGA color touchscreen
3.5 in. VGA color touchscreen

Gravimetric Sampling

8530/8530EP

Removable 37 mm cartridge (user supplied)

CE Rating

Immunity
Emissions

EN61236-1:2006
EN61236-1:2006

Specifications are subject to change without notice.

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DUSTTRAK™ ENVIRONMENTAL MONITORS

REAL-TIME DUST MONITORING FOR ANY OUTDOOR ENVIRONMENT

Whether you work at a construction site, engineering firm, or monitor the aftermath of wildfires, the DustTrak™ Environmental Monitor is a robust, reliable solution for environmental monitoring. This instrument is compatible with a variety of sensors to detect volatile organic compounds (VOCs), gases, wind speed and more. Conveniently packaged solutions allow you to measure PM10, PM2.5, or PM10, PM2.5, PM1.0 and Total PM simultaneously. TSI also offers a cloud-based management system and a DustTrak Mobile App, allowing you to access data anytime and anywhere. The compact, weather-proof enclosure houses the DustTrak Environmental Photometer, along with other key components including a long-life pump, built-in auto zeroing, and an optional heated inlet.



Features and Benefits

- + Conveniently packaged solutions for measurement of PM10, PM2.5, or PM10, PM2.5 and PM1.0 and Total PM simultaneously
- + Robust design enables long-term runtime in environments from -4 to 122°F (-20 to 50°C)*
- + Field-replaceable, longer-life pump increases measurement uptime (life expectancy >10,000 hours)
- + Optional heated inlet sample conditioning improves measurement accuracy in humid environments >50% RH
- + Real-time access to secure data and sophisticated alert system via the Cloud Data Management System
- + MCERTS models available for PM10, PM2.5, and both PM10 and PM2.5

* Requires internal heater option

Applications

- + Fugitive emissions monitoring
- + Site perimeter monitoring
- + Fence-line monitoring
- + Environmental remediation
- + Construction and mining sites
- + Hazardous waste sites
- + Dust control operations



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THE DUSTTRAK ENVIRONMENTAL ADVANTAGE

CONVENIENTLY PACKAGED SOLUTIONS

Measured Mass Fraction	Base Model Number	Base Model Contents	Optional Accessories
PM10	854001-1	+ DustTrak Environmental Photometer + Environmental Enclosure + 24V AC/DC Main Power Supply	+ Heated Inlet Sample Conditioner + Rechargeable Battery System + Solar Power System + Pole Mount Kit + Solar Shield + Metrology Sensors + DustTrak Mobile Wireless Router + Impactor (not necessary for 854301-1) + Heater for Enclosure + Omni-directional Inlet + Neutronix™ Thiamis 1000™ Quad-Band 3G/GPRS Modem + Omni-directional Inlet with Water Trap
PM2.5	854001-1		
PMTotal, PM10, PM2.5 and PM1.0 (simultaneous measurements)	854301-1		

Robust Design For Long Run Time

- + Built upon patented, proven DustTrak Aerosol Monitor technology
- + Long-life pump (life expectancy >10,000 hours)
- + Built-in auto zero module minimizes drift over long sample runs and temperature changes
- + Extended beam dump minimizes optical contamination
- + Secure, weather-proof enclosure
- + Active volumetric flow control
- + Heated inlet sample conditioning minimizes effects of humidity and water vapor to provide more consistent measurement

Reduced Cost Of Operation

- + Instant access to real-time data—anytime, anywhere—via the web
- + Manage multiple sites from a single location eliminates costly field trips
- + Generate reports quickly and easily
- + SMS text messaging and email alert capabilities directs workers to take action
- + Long-lasting parts minimize downtime
- + Easy maintenance with field-replaceable parts

MCERTS MODELS

Measured Mass Fraction	MCERTS Model Number	MCERTS Model Contents	Optional Accessories
PM10	854201-M1	+ DustTrak Environmental Photometer + Environmental Enclosure + Omni-directional Inlet with Water Trap + Impactor (not necessary for 854301-M1) + Heated Inlet Sample Conditioner + 24V AC/DC Main Power Supply	+ Rechargeable Battery System + Solar Power System + Pole Mount Kit + Solar Shield + Metrology Sensors + Heater for Enclosure + DustTrak Mobile Wireless Router
PM2.5	854001-M1		
PMTotal, PM10, PM2.5 and PM1.0 (simultaneous measurements)	854301-M1		



KEY COMPONENTS

DustTrak Environmental Photometer

Models 8540/8543

The DustTrak Environmental Photometers are the heart and soul of the systems for real-time, second-by-second measurement of PM10, PM2.5 and PM1.0. They use a sheath air system that isolates the aerosol in the optics chamber to keep the optics clean for improved reliability and low maintenance as well as an extended beam dump to minimize optical contamination. Also a built-in auto zero module works to improve measurement accuracy while a robust, long-life pump maximizes uptime. A removable 37 mm filter cassette enables site-specific gravimetric calibration or sample analysis. Using patented technology, only the DustTrak DRX Environmental Photometer can simultaneously measure PMTotal, PM10, PM2.5 and PM1.0 mass fractions.

DustTrak Mobile App

The DustTrak Environmental Monitor and various DustTrak models can now communicate with your mobile device through the DustTrak Mobile App. Combined with the wireless router and antenna, the DustTrak Mobile App allows you to quickly download, review and send logged data.

Cloud Data Management System *(Optional for MCERTS Models)*

TSI partners with Netronix to provide the most comprehensive turnkey remote dust monitoring solution on the market. Using telemetry, the DustTrak Environmental Monitor continuously logs the data. The data can be accessed on demand—anytime, anywhere—with the ability to auto-send alert notifications via email and SMS text messages.

OPTIONAL ACCESSORIES

Gas Monitor GM460

This powerful handheld instrument fits inside the DustTrak Environmental Monitor. In addition to the standard confined space gases which include combustibles, O₂, CO, and H₂S, the GM460 has two additional smart channels that accept PID, IR or super toxic sensors.

Heated Inlet Sample Conditioner *(Included on MCERTS Models)*

Conditions the sampled aerosol to improve measurement accuracy by minimizing the effects of humidity when environments are consistently >50% RH.

Rechargeable Battery System

Provides continuous power to the DustTrak Environmental Monitor base system when AC power is not available. Includes two 22 Ah rechargeable batteries and battery charger.

Solar Power System

Provides continuous power to the DustTrak Environmental Monitor base system. Includes two 90W solar panels with stand, weatherproof battery and charge regulator enclosure, charge regulator, 120 Ah rechargeable battery and DC power cable.

Pole Mounting Kit

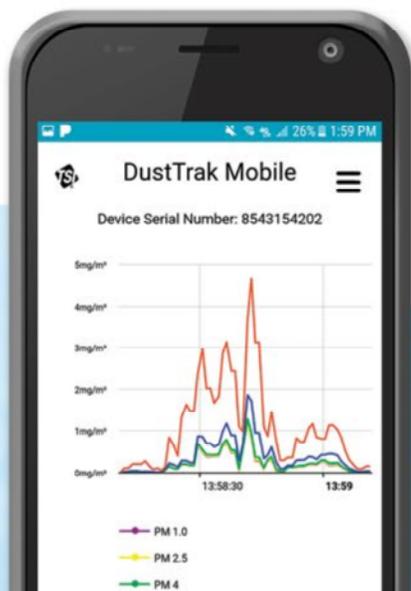
Includes bracket, hardware and mounting straps to attach Environmental Enclosure to a fixed pole (not supplied) ranging 2"-6" (50-150 mm) in diameter.

Solar Shield

Custom metal cover to shield the enclosure from sun light. Recommended for environments >104°F (40°C).

Metrology Sensors

We offer two metrology sensors. The base model measures temperature, humidity and pressure, while the advanced version measures wind speed and wind direction including temperature, humidity and pressure. Both versions include data, power connections and mounting hardware.



SPECIFICATIONS

DUSTTRAK ENVIRONMENTAL MONITORS

	Base Models		
Model Number	854003-3 854203-M3	854003-3 854003-M3	854303-3 854303-M3
Measured Mass Fraction	PM10	PM2.5	Simultaneous PMTotal, PM10, PM2.5 and PM1.0
Concentration Range	0-400 mg/m ³	0-400 mg/m ³	0-150 mg/m ³
Resolution	±0.1% of reading or 0.001 mg/m ³ , whichever is greater		
Zero Stability	±0.002 mg/m ³ per 24 hours at 10 sec time constant		
Sample Flow Rate	3.0 L/min (±5% of factory set point, internal flow controlled)		
Detection Method	Light scattering laser photometer; 90° off-axis detector		
Gravimetric Sampling	Removable 37 mm cartridge (filter media not supplied)		
Communications	Wireless: Cloud service capability via Netronix Thiamis 1000 Quad-Band 3G/GPRS Modem		
	Wireless: DustTrak Mobile wireless router and app		
	Wired: USB (host and device) and Ethernet		
Data Logging	Via Thiamis 1000: 1 Hz data rate: user selectable reporting interval from 1 minute to 24 hours (average reading). 2 GB of on-board memory, expandable to 32 GB. Stored data accessible using Environet software. ¹		
	Via internal manual mode: User selectable, 1 second to 1 hour log interval. 5 MB of on-board memory (>60,000 data points), 45 days at 1 minute logging interval. Internally stored data accessible using TrakPro Software (supplied).		
SMS Text Messaging and Email Alert Capability ¹	User programmable from Environet software		
Operating Environment	32° to 122°F (0° to 50°C) standard; extended temperature range capability of -4° to 120° F (-20° to 50° C) available with optional enclosure heater ² ; 0 to 100% RH		
Environmental Enclosure	Lockable, enclosure; 16 x 12 x 12.25 inches (HWD) (411 x 305 x 311 mm)		
Sample Inlet	Omni-directional inlet with water trap		
Power Requirements*	Requires AC mains, rechargeable batteries or solar power system		
Weight ³	~ 30 lbs. (13.6 kg)		
Mounting	Pole mount and tripod		
Approvals	+ CE + MCERTS		

* See Required Power Options table

TSI Data Plans	
TSI P/N 802915	12-month data plan (no activation fee)

System Accessories	
TSI P/N 801903	Wireless Router
TSI P/N 801904	Enclosure Wireless Mounting Kit
TSI P/N 854020	PM10 Impactor
TSI P/N 854021	PM2.5 Impactor
TSI P/N 854022	PM1.0 Impactor
TSI P/N 85 4041	Heated Inlet Sample Conditioner
TSI P/N 854048	Solar Shield
TSI P/N 854049	Pole Mounting Kit
TSI P/N 854050	Metrology Sensor (Lufft WS300)
TSI P/N 854051	Metrology Sensor (Lufft WS500)
TSI P/N 854053	Tripod Mounting Kit
TSI P/N 854054	Heater for 854038 Enclosure

Power Options	
TSI P/N 854039	AC Power Mains (100-240 VAC, 50/60Hz)
TSI P/N 854036	Rechargeable Battery System (Includes two 22Ah rechargeable batteries capable of running base model 42-48 hours (approx. 30 hours when using base model plus heated inlet accessory))
TSI P/N 854060	Solar Power System (Includes two 90 watt solar panels and 120 Ah rechargeable battery)

¹ Requires purchase of TSI data plan.

² For extended temperature range capability, order Environmental DustTrak Monitor Models EDTPM10-HEAT, EDTPM2.5-HEAT or EDTDRX-HEAT (all require and include AC mains power).

³ Weight includes base model components only. Consult TSI Representative for additional information.

Specifications are subject to change without notice.

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To see our list of patents please visit:

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MiniRAE 3000

Portable Handheld VOC Monitor



The MiniRAE 3000 is a comprehensive handheld VOC (Volatile Organic Compound) monitor that uses a third-generation patented PID technology to accurately measure more ionizable chemicals than any other device on the market. It provides full-range measurement from 0 to 15,000 ppm of VOCs.

The MiniRAE 3000 has a built-in wireless modem that allows real-time data connectivity with the ProRAE Guardian command center located up to 2 miles (3 km) away through a Bluetooth connection to a RAELink 3* portable modem or optionally via Mesh Network.

KEY FEATURES

- Third-generation patented PID technology
- VOC detection range from 0 to 15,000 ppm
- 3-second response time
- Humidity compensation with built-in humidity and temperature sensors
- Six-month datalogging
- Real-time wireless built-in – Bluetooth (and optional RAELink3 portable modem) or Mesh Network support
- Large graphic display with integrated flashlight
- Multi-language support with 10 languages encoded
- IP- 67 waterproof design

APPLICATIONS

- Oil and Gas
- HazMat
- Industrial Safety
- Civil Defense
- Environmental and Indoor Air Quality

- **Highly accurate VOC measurements**
- **Patented PID sensor**
- **Low maintenance—easy access to lamp and sensor**
- **Low cost of ownership**
- **3-year 10.6eV lamp warranty**



Workers can quickly measure VOCs and wirelessly transmit data via Bluetooth or optional Mesh radio.

*RAELink 3 modem is sold separately.



MiniRAE 3000



Portable Handheld VOC Monitor

SPECIFICATIONS

Instrument Specifications

Size	10" L x 3.0" W x 2.5" H (25.5 cm x 7.6 cm x 6.4 cm)
Weight	26 oz (738 g)
Sensors	Photoionization sensor with standard 10.6 eV or optional 9.8 eV or 11.7 eV lamp
Battery	<ul style="list-style-type: none">Rechargeable, external field-replaceable Lithium-Ion battery packAlkaline battery adapter
Running time	16 hours of operation (12 hours with alkaline battery adapter)
Display Graphic	4 lines, 28 x 43 mm, with LED backlight for enhanced display readability
Keypad	1 operation and 2 programming keys, 1 flashlight on/off
Direct Readout	Instantaneous reading <ul style="list-style-type: none">VOCs as ppm by volume (mg/m³)High valuesSTEL and TWABattery and shutdown voltageDate, time, temperature
Alarms	95dB at 12" (30 cm) buzzer and flashing red LED to indicate exceeded preset limits <ul style="list-style-type: none">High: 3 beeps and flashes per secondLow: 2 beeps and flashes per secondSTEL and TWA: 1 beep and flash per secondAlarms latching with manual override or automatic resetAdditional diagnostic alarm and display message for low battery and pump stall
EMC/RFI	Compliant with EMC directive (2004/108/EC) EMI and ESD test: 100MHz to 1GHz 30V/m, no alarm Contact: ±4kV Air: ±8kV, no alarm
IP Rating	<ul style="list-style-type: none">IP-67 unit off and without flexible probeIP-65 unit running
Datalogging	Standard 6 months at one-minute intervals
Calibration	Two-point or three-point calibration for zero and span. Calibration memory for 8 calibration gases, alarm limits, span values and calibration dates
Sampling Pump	<ul style="list-style-type: none">Internal, integrated flow rate at 500 cc/mnSample from 100' (30m) horizontally or vertically
Low Flow Alarm	Auto pump shutoff at low-flow condition
Communication & Data Download	<ul style="list-style-type: none">Download data and upload instrument set-up from PC through charging cradle or optional Bluetooth™Wireless data transmission through built-in RF modem
Wireless Network	Mesh RAE Systems Dedicated Wireless Network
Wireless Range (Typical)	EchoView Host: LOS > 660 ft (200 m) ProRAE Guardian & RAEMesh Reader: LOS > 660 ft (200 m) ProRAE Guardian & RAELink3 Mesh: LOS > 330 ft (100 m)
Safety Certifications	US and Canada: CSA, Classified as Intrinsically Safe for use in Class I, Division 1 Groups A, B, C, D Europe: ATEX II 2G EEx ia IIC T4
Temperature	-4° to 122° F (-20° to 50° C)
Humidity	0% to 95% relative humidity (non-condensing)

¹ Contact RAE Systems for country-specific wireless approvals and certificates. Specifications are subject to change.

Attachments	Durable bright yellow rubber boot
Warranty	3 years for 10.6 eV lamp, 1 year for pump, battery, sensor and instrument
Wireless Frequency	ISM license-free band. IEEE 802.15.4 Sub 1GHz
Wireless Approvals	FCC Part 15, CE R&TTE, Others ¹
Radio Module	Supports Bluetooth or RM900

Sensor Specifications

Gas Monitor	Range	Resolution	Response Time T90
VOCs	0 to 999.9 ppm	0.1 ppm	< 3 s
	1,000 to 15,000 ppm	1 ppm	< 3 s

MONITOR ONLY INCLUDES:

- MiniRAE 3000 Monitor, Model PGM-7320
- Wireless communication module built in, as specified
- Datalogging with ProRAE Studio II Package
- Charging/download adapter
- RAE UV lamp, as specified
- Flex-I-Probe™
- External filter
- Rubber boot
- Alkaline battery adapter
- Lamp-cleaning kit
- Tool kit
- Operation CD-ROM
- Operation and Maintenance manual
- Soft leather case

OPTIONAL CALIBRATION KIT ADDS:

- 100 ppm isobutylene calibration gas, 34L
- Calibration regulator and flow controller

OPTIONAL GUARANTEED COST-OF-OWNERSHIP PROGRAM:

- 4-year repair and replacement guarantee
- Annual maintenance service

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thiamis™

820G



- 4-in-1 Controller, Data logger, Modem and GPS
- Communications Link Fail Over
- Over-the-Air Configuration
- Plug-and-Play
- Low-Power

The Thiamis™ is a vital component of Neutronix's remote monitoring suite. It combines control, data logging, global positioning and telemetry into one compact and purpose-built device, making it the most advanced and cost effective solution for remote monitoring applications in the environmental sector.

The Thiamis™ 820G can interface with—and control—any type of sensor or external device in the field and establishes direct, secure communications with Neutronix's data center, via its built-in GSM/3G modem. The Thiamis also allows for alternate means of telecommunications, both for fail-over and to accommodate deployments in remote regions where GSM/3G may not be available. The Thiamis is designed for plug-and-play operation, with no complex installation, and supports over-the-air configuration and re-programming, reducing or eliminating costly field trips.





product specifications

communications		gps	
Quad-band GSM/ GPRS/HSPA+	850/900/1800/1900 MHz	Sensitivity	-159 dBm (indoor operation)
Output Power	Class 4 (2W) @ 850/900 MHz	Accuracy	<2.5 m (8 ft)
	Class 1 (1W) @ 1800/1900 MHz	Channel	20
Sensitivity	-107 dBm (typ.) @ 850/900 MHz	SBAS Support	WAAS and EGNOS
	-106 dBm (typ.) @ 1800/1900 MHz	Correlators	> 200,000
GPRS	Class 10	Antenna	SMB jack connector
Antenna	SMA male connector		
SIM Card	Pre-installed		
controller / data logger		general	
Clock	Real-time	Input Voltage	6-24VDC
Memory	4MB (up to 16MB)	Current Consumption	50mA
Digital Ports	RS-485, RS-232 (3 Multiplexed), SDI-12	Temperature Range	-30 °C to 75 °C (-22 °F to 167 °F)
DeltaPort	Expansion port for Analog and Digital I/O modules	Humidity Range	0-90% non-condensing
		L x W x H	5.1"(130mm) x 2.72"(69mm) x 1" (30mm)
certifications			
CE, FCC, RoHS	*more certifications in process		



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Appendix C – Community Air Monitoring Field Forms

Daily Instrument Calibration Log

Date: _____		Sampling Technician: _____			
Project #: _____		Project Name: _____			
Instruments Used:		Inspection Notes:			
Station 1	PID 1 _____ SN: _____ Data Ram 1 _____ SN: _____	_____ _____ _____ _____ _____ _____			
Station 2	PID 2 _____ SN: _____ Data Ram 2 _____ SN: _____				
Station 3	PID 3 _____ SN: _____ Data Ram 3 _____ SN: _____				
Hand Held	PID Model 580 _____ SN: _____ Data Ram _____ SN: _____				
Pre-Calibration/Standardization:				Repair Needed:	
PIDs: Zero 1 <input type="checkbox"/> YES <input type="checkbox"/> NO 2 <input type="checkbox"/> YES <input type="checkbox"/> NO 3 <input type="checkbox"/> YES <input type="checkbox"/> NO Hand Held <input type="checkbox"/> YES <input type="checkbox"/> NO				Gas - 100 ppm 1 <input type="checkbox"/> YES <input type="checkbox"/> NO 2 <input type="checkbox"/> YES <input type="checkbox"/> NO 3 <input type="checkbox"/> YES <input type="checkbox"/> NO Hand Held <input type="checkbox"/> YES <input type="checkbox"/> NO	
Data Zero Rams: 1 <input type="checkbox"/> YES <input type="checkbox"/> NO 2 <input type="checkbox"/> YES <input type="checkbox"/> NO 3 <input type="checkbox"/> YES <input type="checkbox"/> NO Hand Held <input type="checkbox"/> YES <input type="checkbox"/> NO					
Post-Shift Download:		Results/Comments:			
PIDs:	Instrument:	_____ _____ _____			
1	<input type="checkbox"/> Data <input type="checkbox"/> Avg <input type="checkbox"/> Summary				
2	<input type="checkbox"/> Data <input type="checkbox"/> Avg <input type="checkbox"/> Summary				
3	<input type="checkbox"/> Data <input type="checkbox"/> Avg <input type="checkbox"/> Summary				
Data Rams:		_____ _____ _____			
1	<input type="checkbox"/> Data				
2	<input type="checkbox"/> Data				
3	<input type="checkbox"/> Data				
Weather Station:		<input type="checkbox"/> YES			
Background Readings:					
PID 1:	_____	Data Ram 1:	_____		
PID 2:	_____	Data Ram 2:	_____		
PID 3:	_____	Data Ram 3:	_____		

Note: "NA" indicates when an item or section is "Not Applicable".



GZA GeoEnvironmental of New York