UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1

In the Matter of:	
Cytec Industries, Inc. South Cherry Street Wallingford, CT 06492	Docket No. CAA-01-2009-0024
Respondent.	

CONSENT AGREEMENT AND FINAL ORDER

The United States Environmental Protection Agency ("EPA"), issued an Administrative Complaint and Notice of Opportunity for Hearing ("Complaint") to Cytec Industries, Inc. ("Respondent") on February 13, 2009. EPA and Respondent agree that settlement of this cause of action is in the public interest and that entry of this Consent Agreement and Final Order ("CAFO") without further litigation is the most appropriate means of resolving the enforcement action commenced by the filing of the Complaint. The parties agree to settle the action through the issuance of this CAFO, pursuant to 40 C.F.R. §22.18(b) of EPA's "Consolidated Rules of Practice Governing the Administrative Assessment of Civil Penalties and the Revocation, Termination, or Suspension of Permits," 40 C.F.R. Part 22.

NOW, THEREFORE, before taking any testimony, without adjudication of any issue of fact or law, and upon consent and agreement of the parties, it is hereby ordered and adjudged as follows:

I. PRELIMINARY STATEMENT

1. EPA initiated this proceeding for the assessment of a civil penalty of $437,204, pursuant to Sections 113(a) and (d) of the Clean Air Act ("CAA"), 42 U.S.C. §7413(a) and (d).

2. The Complaint alleges that Respondent violated Sections 111, 112, 114 and Title V of the CAA, and EPA's regulations at 40 C.F.R. Part 60, Subpart Kb and 40 C.F.R. Part 63, Subpart OOO, at Respondent's facility located in Wallingford, Connecticut ("Facility").

3. The provisions of this CAFO shall apply to and be binding on EPA and on Respondent, its officers, directors, successors, and assigns.

4. Without admitting or denying the factual allegations contained in the Complaint, Respondent consents to the terms of this Consent Agreement and to the issuance of the Final Order hereinafter recited. Respondent also consents, for the purposes of settlement, to the payment of the civil penalty cited in paragraph 8 herein and to the performance of the supplemental environmental project ("SEP") hereinafter described.

5. Respondent stipulates that EPA has jurisdiction over the subject matter alleged in the Complaint and hereby waives any defenses it might have as to jurisdiction and venue.

6. Respondent hereby waives its right to request a judicial or administrative hearing on any issue of law or fact set forth in the Complaint and waives its right to appeal the Final Order.

II. TERMS OF SETTLEMENT

7. Respondent hereby certifies that the Facility is currently in compliance with the requirements set forth in Counts I through VI in the Complaint.

8. Respondent shall complete the following SEP, which the parties agree is intended to secure significant environmental and public health protection and improvements. The SEP, which is specifically described in the Scope of Work, attached hereto as Exhibit A and incorporated herein by reference, shall consist of designing and implementing a system to capture and control landfill gas emissions to the ambient air from the Cytec Wallingford landfill. The landfill gas capture and control system shall be designed to use sound engineering practices to achieve at least 75% control of volatile organic compounds and methane emissions. Respondent shall operate this system for at least five years following implementation.

9. Respondent shall perform the SEP in accordance with the conditions and schedule set forth in the Scope of Work. Respondent shall complete the SEP within five hundred and forty (540) days from the effective date of this CAFO.

10. The total expenditure for the SEP shall be not less than $150,000, in accordance with the specifications set forth in the Scope of Work. Respondent shall include documentation of the expenditures made in connection with the SEP as part of the SEP Completion Report, as described in paragraph 12 hereof.

11. Respondent hereby certifies that, as of the date of this CAFO, Respondent is not required to perform or develop the SEP by any federal, state, or local law or regulation; nor is Respondent required to perform or develop the SEP by agreement, grant, or as injunctive relief in this or any other case. Respondent further certifies that it has not received, and is not presently negotiating to receive, credit in any other enforcement action for the SEP.

12. Respondent shall submit a SEP Completion Report to EPA within six hundred and thirty (630) days of the effective date of this CAFO ("the Completion Date"). The Scope of Work sets forth the required contents for the SEP Completion Report.

13. a. In the event that Respondent fails to comply with any of the terms or provisions of this CAFO relating to the performance of the SEP described in paragraph 8 above and/or to the extent that the actual expenditures for the SEP do not equal or exceed the cost of the SEP set forth in paragraph 10 above, Respondent shall be liable for stipulated penalties according to the provisions set forth below:

(i) If the SEP has not been completed pursuant to the terms set forth in this CAFO and SOW, Respondent shall pay a stipulated penalty to the United States in the amount of $200,000, plus interest, from the effective date of the CAFO.

(ii) If the SEP is satisfactorily completed, but the Respondent spent less than 90 percent of the amount of money required to be spent for the project, Respondent shall pay a stipulated penalty to the United States in an amount equal to the amount by which Respondent's expenditure fell short of the amount required to be spent hereunder.

(iii) If the SEP has not been completed pursuant to the terms set forth in this CAFO and SOW, yet Respondent used good faith efforts to complete the SEP and certifies, with supporting documentation, that it spent at least $150,000 on the SEP, Respondent shall not be liable for any stipulated penalties otherwise due under this CAFO.

(iv) If the emissions monitoring component of the SEP, as described in the SOW, reveals emissions in such low quantities that EPA determines that the landfill gas capture and control system set forth in paragraph 8 above would not serve the intended purpose, Respondent shall pay $75,000 in lieu of completing the SEP.

(v) For every day that performance of the SEP does not meet the schedule for performance set forth in this CAFO, Respondent shall pay a stipulated penalty in the amount of $150 for each day that the deadline for performance is not met.

(vi) For failure to submit the SEP Completion Report required by paragraph 12 above, Respondent shall pay a stipulated penalty in the amount of $100 for each day after the Completion Date until the report is submitted.

b. The determinations of whether the SEP has been satisfactorily completed and whether the Respondent has made a good faith, timely effort to implement the SEP shall be in the sole discretion of EPA.

c. Stipulated penalties due pursuant to subparagraphs (a)(v) through (vi) above shall begin to accrue on the day after performance is due and shall continue to accrue through the final day of the completion of the required activity.

d. Respondent shall pay stipulated penalties within thirty (30) days of receipt of written demand by EPA for such penalties. Method of payment shall be in accordance with the provisions of paragraph 18 hereof, and interest and late charges shall be paid as stated in paragraph 19 hereof.

14. For federal income tax purposes, Respondent agrees that it will neither capitalize into inventory or basis nor deduct any costs or expenditures in performing the SEP. Respondent further agrees that any public announcement, presentation, speech, press release, publication or similar public statement, oral or written, referring to said expenditures shall include the following language, "This project was conducted in connection with the settlement of an enforcement action taken by the U.S. Environmental Protection Agency for violations of the Clean Air Act."

III. PENALTY

15. In light of the above, and after consideration of the nature of the CAA violations alleged in the Complaint and taking into account such other circumstances as justice may require, EPA has determined that it is fair and proper to assess a total civil penalty in the amount of one hundred and fifty-five thousand dollars ($155,000).

16. Respondent shall pay the penalty of $155,000 within thirty (30) days after the effective date of this CAFO.

17. In accordance with 40 C.F.R. §22.31(b), the effective date of this CAFO shall be the date on which the CAFO is filed with the Regional Hearing Clerk.

18. Respondent shall pay the penalty, and any interest thereon, by submitting a bank, cashier's, or certified check, payable to "Treasurer, United States of America." This check shall be sent to:

U.S. EPA
Fines and Penalties
Cincinnati Finance Center
P.O. Box 979077
St. Louis, MO 63197-9000

Respondent shall note the case name and respective docket numbers ("In the Matter of Cytec Industries, Inc.," EPA Docket No. CAA-01-2009-0024) on the check and in accompanying cover letters and shall provide copies of the checks and letters to:

Judy Lao-Ruiz
Acting Regional Hearing Clerk
U.S. Environmental Protection Agency, Region I
Suite 1100, Mail Code: RAA
One Congress Street
Boston, MA 02114-2023

and

Amanda J. Helwig
Enforcement Counsel
U.S. Environmental Protection Agency, Region I
One Congress Street
Suite 1100, Mail Code: SEL
Boston, MA 02114-2023
Tel: (617) 918-1180

19. Pursuant to § 113(d)(5) of the Clean Air Act, 42 U.S.C. § 7413(d)(5), if Respondent fails to pay any penalty amount, it will be subject to an action to compel

payment, plus interest, enforcement expenses, and a nonpayment penalty. Interest will be assessed on the civil penalty if it is not paid within 30 calendar days of Respondent's receipt of the Consent Agreement and Order signed by the Regional Judicial Officer. In that event, interest will accrue from the date the Consent Agreement and Order was signed by the Regional Judicial Officer, at the "underpayment rate" established pursuant to 26 U.S.C. § 6621(a)(2). In the event that a penalty is not paid when due, an additional charge will be assessed to cover the United States' enforcement expenses, including attorneys' fees and collection costs. In addition, a quarterly nonpayment penalty will be assessed for each quarter during which the failure to pay the penalty persists. Such nonpayment penalty shall be 10 percent of the aggregate amount of Respondent's outstanding civil penalties and nonpayment penalties hereunder accrued as of the beginning of such quarter.

20. All penalties, interest, and other charges shall represent penalties assessed by EPA, and shall not be deductible for purposes of federal taxes.

21. Payment of the penalties, interest, or other charges does not waive, suspend, or modify the responsibility of Respondent to comply with the requirements of all of the federal laws and regulations administered by EPA and, except as provided in paragraph 15 herein, shall not be a defense to any actions subsequently commenced pursuant to said laws and regulations.

22. This CAFO constitutes a settlement by EPA of all claims for civil penalties pursuant to Sections 113(a) and (d) of the CAA for the specific violations alleged in the Complaint. Compliance with this CAFO shall not be a defense to any other actions subsequently commenced pursuant to federal laws and regulations administered by EPA, and it is the responsibility of Respondent to comply with said laws and regulations. EPA

reserves all its other criminal and civil enforcement authorities, including the authority to address conditions at Respondent's facility that may present an imminent and substantial endangerment to public health or the environment.

23. Each party shall bear its own costs and attorneys' fees in this proceeding.

24. The undersigned representative of Respondent certifies that s/he is fully authorized by Cytec Industries, Inc. to enter into the terms and conditions of this CAFO and to execute and legally bind Cytec Industries, Inc. to it.

For Respondent:

K E Koster
Karen Koster
Vice President
Safety, Health, and Environmental Services
Cytec Industries, Inc.

9-21-09
Date

For Complainant:

Susan Studlien
Susan Studlien
Director
Office of Environmental Stewardship
U.S. EPA, Region 1

09/29/09
Date

Amanda J. Helwig
Amanda J. Helwig
Enforcement Counsel
U.S. EPA, Region 1

9/24/09
Date

IV. FINAL ORDER

The foregoing Consent Agreement is hereby approved and incorporated by reference into this Final Order. The Respondent is ordered to comply with the terms of the above Consent Agreement.

Jill T. Metcalf
Acting Regional Judicial Officer
U.S. EPA, Region 1

Sept. 29, 2009
Date

EXHIBIT A - SCOPE OF WORK

Background

The Cytec property contains one contiguous industrial waste landfill covering approximately 8 acres in total area. The landfill is covered with a RCRA style cap, consisting of an impermeable geomembrane, geosynthetic drainage layer, and cover soils. The cap was installed in three phases. The first phase was completed in 1989. The Southern extension was completed in 1997, and the final northeast portion in 2003.

While engineering reports and anecdotal information suggest an emission rate that would not be detrimental to the cap, vents were installed as a contingency measure.

The landfill has recently come under scrutiny as a potential greenhouse gas emissions source, and, subject to the terms of a Consent Agreement and Final Order ("CAFO") requiring recovery and treatment of VOC and Methane emissions, and in the absence of definitive monitoring information, it has been treated in theoretical models as being a Municipal Solid Waste Landfill.

Overview

An iterative approach will be taken in implementing the tasks outlined in the CAFO, with several key milestones and decision points. At this time, there has been no definitive monitoring conducted, and emissions have been calculated based on theoretical Municipal Solid Waste Models. As information is collected and designs developed throughout this process, it may be necessary to adjust schedule and scope to reflect the new information.

Sampling and Analysis

The Landfill cap was constructed with 13 "gooseneck/tee vents." However, the vents were not fitted with ports for monitoring. Ports will be installed in each vent to allow for air sampling and velocity measurements within the vents.

Both real time monitoring and sample collection for offsite analysis will be conducted. A Draft Baseline Monitoring Plan is attached.

Model Runs

The results from the analysis will be evaluated, and representative data sets selected, for input into the model. The output from the initial model runs will form the basis for meeting with EPA and determining whether the mass of methane and VOCs support proceeding with the remedy as outlined in the CAFO.

Proposed Plan for Proceeding

An interim report will be prepared and submitted to EPA, documenting the results of the air monitoring and model runs. The results of the report will be used to make a decision on whether it is the preferred action to proceed with emission treatment technology.

Alternative Analysis

Based on the mass and concentration data generated from the model, various capture and treatment technologies will be evaluated that are capable of achieving the 75% collection target. At this time, it is assumed that the existing venting network can be used as the sole means of gas collection. Recommendations would be developed and presented to EPA for review prior to proceeding with the Concept/Preliminary Design. The draft schedule has allowed for up to 30 days for EPA review at key decision points. If face to face meetings can be held, there should be the potential to reduce the time of those review cycles.

Pilot Testing

The current scope does not anticipate the need for pilot testing. The need for pilot testing would be evaluated based on the field sample data and model runs. Pilot testing is typically conducted to establish performance criteria under dynamic conditions. The results would be used to more accurately predict system operating parameters.

Conceptual/Preliminary Design

Once emissions levels have been determined and design criteria agreed upon, a conceptual design and construction implementation cost estimate will be prepared. The preliminary design will include PID's to allow for conducting Cytec's "Preliminary Design Analysis."

Preliminary SHE and Design Review

A Safety, Health, and Environmental review of the preliminary design will be conducted, per the requirements of Cytec's SHE Standard. The major items covered, if applicable, include:

1.1 The SHE Review Team will develop the following as part of the Preliminary SHE Review for all projects:

- 1.1.1 A list of the building and design codes applicable to the project, including the requirements for local building permits, and the relative impact these will have.
- 1.1.2 Electrical classification for operating areas (see applicable NFPA code or equivalent) for electrical installations for chemical processing and storage areas.
- 1.1.3 A list of national and local regulations, as well as Cytec standards applicable to the project.
- 1.1.4 An identification of major potential impacts to adjacent operations, both on and off site, including utilities, existing traffic patterns, rail service and facility access.

1.1.5 A description of employee health and safety issues that could significantly impact the project cost estimate and timing.

1.1.6 A schedule for obtaining new environmental permits and/or modifying existing environmental permits.

1.1.7 An identification of remediation needs, based upon available data on groundwater analysis, soil analysis, and surveys, to confirm or deny the presence of asbestos, lead based paints, mercury containing articles, and/or PCBs (polychlorinated biphenyls), including a schedule for conducting any additional testing required to assure a complete environmental assessment.

1.1.8 A description of environmental issues and/or benefits associated with the project (e.g., minimization of waste generation, improved product yield, recycling of process streams, conservation of raw materials and energy, air emissions impacts, reduction of waste volume, and toxicity of all air, water, and solid waste streams generated, including their accompanying economics).

1.1.9 A list of any new regulatory programs triggered as a result of the project (e.g. New Source Review, New Source Performance Standards).

1.1.10 A list of anticipated additions or modifications to on-site air, water, and solids emissions control/treatment facilities.

1.1.11 A list of anticipated off-site requirements for effluent treatment, emissions controls, monitoring facilities and utilities (e.g., steam, air, nitrogen, cooling water etc.).

1.1.12 A list of additional environmental monitoring, recordkeeping, and reporting requirements.

1.1.13 A plan for obtaining the information required for the Final SHE Review (PHA, MHA, other SHE Review as defined in Section 6 of this standard).

1.1.14 A schedule for the Final SHE Review (as defined in Section 6 of this standard).

30-90% Design

Recommendations stemming from the PHA will be incorporated into the design criteria and the design completed to the 90% level. This will include provisions of detailed drawings and specification.

Final SHE Review or PHA

A Process Hazard Analysis PHA of the final design will be conducted per the requirements of Cytec's SHE Standard 104. The major items covered include those outlined above, but in final detail. The PHA is a systematic application of appropriate methodologies by a team of experts to identify the potential hazards associated with processing or handling highly hazardous chemicals in a chemical process, as well as to determine if existing process safeguards are adequate for safe operation. Recommendations are made by the team if the existing safeguards are inadequate.

EPA Design Review

The results of the PHA would be incorporated and the design submitted to EPA for its review. We would anticipate conducting a formal design review meeting with EPA at this time.

100% Final Design

The comments would be incorporated and construction documents generated, along with a Design Basis.

Procurement

The time of the procurement cycle will be highly dependent upon the technology selected. All parties should be aware that the current economic conditions have depleted inventories and many items may have to go through a complete manufacturing cycle.

Permits

During the design process the requirements for local permits will be evaluated for the construction of the capture system.

Installation

The recovery and treatment system will be constructed consistent with the design. Components will be assembled and checked for compliance with the specified requirements. Work will be coordinated with Cytec Wallingford operations.

Start Up

The system will be subject to a formal start up. These systems typically require "tuning" to optimize performance to the dynamic conditions. A start up sampling program will be developed as part of the final design to verify system compliance with the CAFO.

Final Report

A final report will be compiled at the completion of the project. The report will be submitted within 90 days of project completion. The report will include Record Drawings of the constructed system Final Costs for Implementation and an Operations Plan for continued operation.

BASELINE LANDFILL GAS MONITORING SAMPLING WORK PLAN

CYTEC INDUSTRIES INC.

Prepared for:

Cytec Industries Inc.
South Cherry Street
Wallingford, CT 06492

Prepared by:

MACTEC Engineering and Consulting, Inc.
511 Congress Street
Portland, Maine 04101

September 2009

3616086024

Geoff Shallard, P.E.
Project Manager

Nelson Breton, L.E.P.
Principal Hydrogeologist

Cytec Wallingford
BASELINE LANDFILL GAS MONITORING
SAMPLING WORK PLAN

1.0 INTRODUCTION

This Work Plan has been prepared to provide a reference for conducting the "Baseline Landfill Gas Monitoring" at Cytec's Landfill in Wallingford CT. (see Figure 1 for facility location).

The landfill once served as the disposal location for a variety of industrial wastes generated from the Cytec's production operations. The landfill was not used nor is it regulated as a Municipal Solid Waste(MSW) Landfill. Both anecdotal information and field observations suggest that emissions will be much lower than for a MSW landfill of similar fill volume.

This Work Plan is structured with the objective of providing information suitable for modeling actual emissions and evaluating the viability of meeting the technical requirements of the Consent Agreement and Final Order (CAFO) identified under USEPA Docket No. CAA-01-2009-0024

As a result of these factors the plan has been tailored to the project specific objectives.
The approach borrows selectively from pertinent USEPA guidance including "Guidance for Evaluating Landfill Gas Emissions from Closed or Abandoned Facilities" September 2005 (USEPA, 2005). Both real-time and offsite analytical methods utilize standard USEPA methods for analysis of Greenhouse Gas and VOC emissions.

Cytec proposes to conduct a 2 step program to provide data for a Baseline Evaluation using actual emission data.

- Step 1. Real-time monitoring of the vents
- Step 2. Sample collection of a minimum of 6, and a maximum of 13 vents, plus background samples for offsite laboratory analysis..

A synopsis of the scope of work for the first two tasks is provided in the following sections.

2.0 BACKGROUND

The construction of the cover system and gas venting is pertinent to the development of the sampling plan. It is important that the technicians conducting the sampling and those evaluating the data understand the basic details. A synopsis of key considerations is included below.

Cap Continuity. The Landfill cap was constructed in three phases. The first cap which is the largest in terms of area and volume closed out landfill operations that were ongoing though the early 1980's. This has historically been referred to as the "Main Capped Landfill" The cap was completed in 1989. The cap was subsequently extended to the South (Southern Capped Landfill

1995) and the last area the Northeast Capped Landfill (2003). The individual caps were connected to from one contiguous cap. (see Figure 2 for map of Cap areas and vent locations)

Gas Vent Construction/Continuity.There is no vertical perimeter or interior walls within the landfill. Each of the three capped areas has its own passive gas venting system. These systems vary in detail but typically rely on a sand blanket below the impermeable membrane over the entire area of the cap supplemented by shallow trenches to provide a preferential pathway to the vents. Vents within each area are linked however the 3 vent systems are not linked. The Main Capped Landfill has 3 vents, the Southern Cap has 7 vents and Northeast Cap has 3 vents for a total of 13 vents.

3.0 MONITORING PLAN

An initial round of "Real-Time" Monitoring on all 13 "gooseneck/tee vents" will be completed. The scope of the real-time monitoring program is described later in this section. Real-time data will be evaluated and if results are determined to be similar for vents within a common network or capped area, the number of vents used for sample collection for offsite laboratory analysis may be reduced to a representative set of vents from each area.

INSTALLATION OF SAMPLING PORTS

The vents have no flow control valving and are not fitted with ports for monitoring. To facilitate monitoring within the vent, sample ports will be installed in each vent. This will allow for direct quick connection of both the "real-time" instruments and SUMMA canisters. The ports will be installed approximately 18 inches above the ground.

REAL-TIME ANALYSIS

As noted above, Real-time analysis will be conducted on all 13 vents. Prior to sampling, the technician will check the barometric pressure and temperature from a local weather station. If possible, readings will be taken during a period where the barometric pressure is falling (when the landfill is exhaling). If there is strong high pressure in place or a rising barometer sampling will be deferred.

Landfill Gas. Landfill gas measurements will be recorded using a Landtec GEM™2000 Plus or equivalent gas monitor. A specification sheet for the GEM™2000 Plus is attached. Measurements for the following gases will be recorded with this monitoring device:

- Methane (CH_4)
- Carbon Dioxide (CO_2)
- Carbon Monoxide (CO)
- Hydrogen Sulfide (H_2S)
- Oxygen (O_2)

Flow Velocity. Gas flow velocity readings will be taken using a TSI Q-TrakTM Model 7565 AirMonitor with velocity probe attachment. A specification sheet for this meter is attached.

4.0 SAMPLING AND LABORATORY ANALYSIS.

The real-time data will be evaluated and a determination made on which vents will be sampled for offsite analysis. Since the largest mass of solid waste resides below the Main Capped Landfill, all three of these vents will be sampled. A minimum of two samples will be collected from the Southern Cap extension and one sample from the Northeast Cap vent system. Based on the nature of the fill in these landfill cap extensions and the construction details on the vents, it is likely that all vents in each cap will exhibit similar results. Vents that exhibit the highest levels of emissions based on the real-time analysis will be selected for sampling.

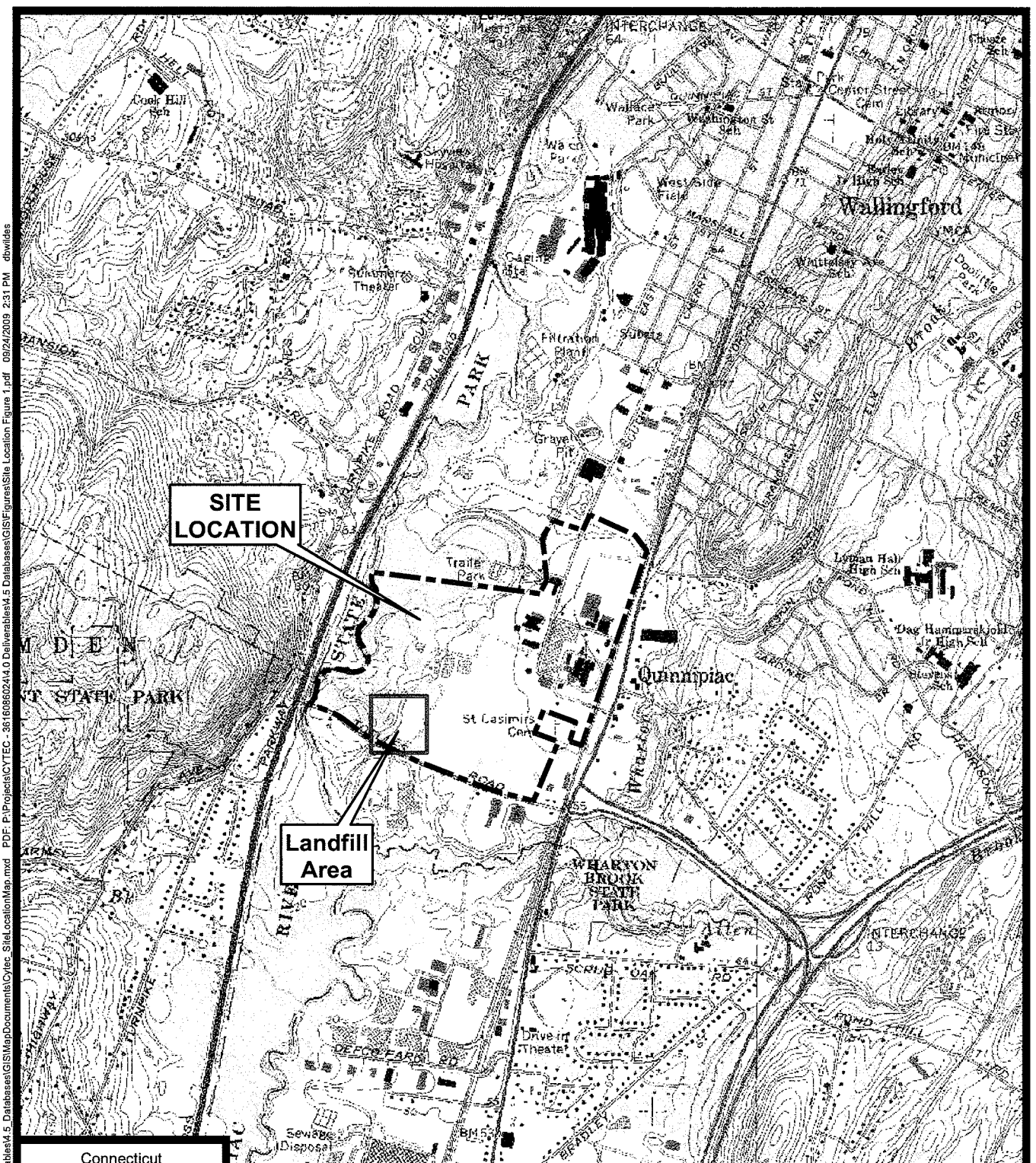
A minimum of two background sample will also be collected. Background samples will be located upwind and downwind, respectively, based on prevailing winds at the time of sampling..

Laboratory analytical samples will be collected as time-integrated samples over a 24 hour period by means of filling 6 liter capacity SUMMA canisters equipped with flow control regulators. Flow regulators will be adjusted to fill each canister for a 24 hour period. Gas samples will be submitted to Test America Laboratories Inc. in Burlington, Vermont for VOC analysis by USEPA Compendium Method TO-15 and Federal Reference Method (FRM)3C for Methane, Carbon Dioxide, Nitrogen, and Oxygen.. VOCs expected to be present in media beneath the landfill are included in the analytical target list under Method TO-15.

If additional sampling is required, it is likely that it will be targeted to meet specific requirements which may for example involve a lesser number of sample points or modified detection limits for compounds of specific interest which were detected in the initial sampling. In the event further sampling is required an addendum will be submitted to the scope This *Work Plan* will be submitted to USEPA prior to proceeding with the work.

A letter report will be generated summarizing the results and recommendations made for future stages.

FIGURES

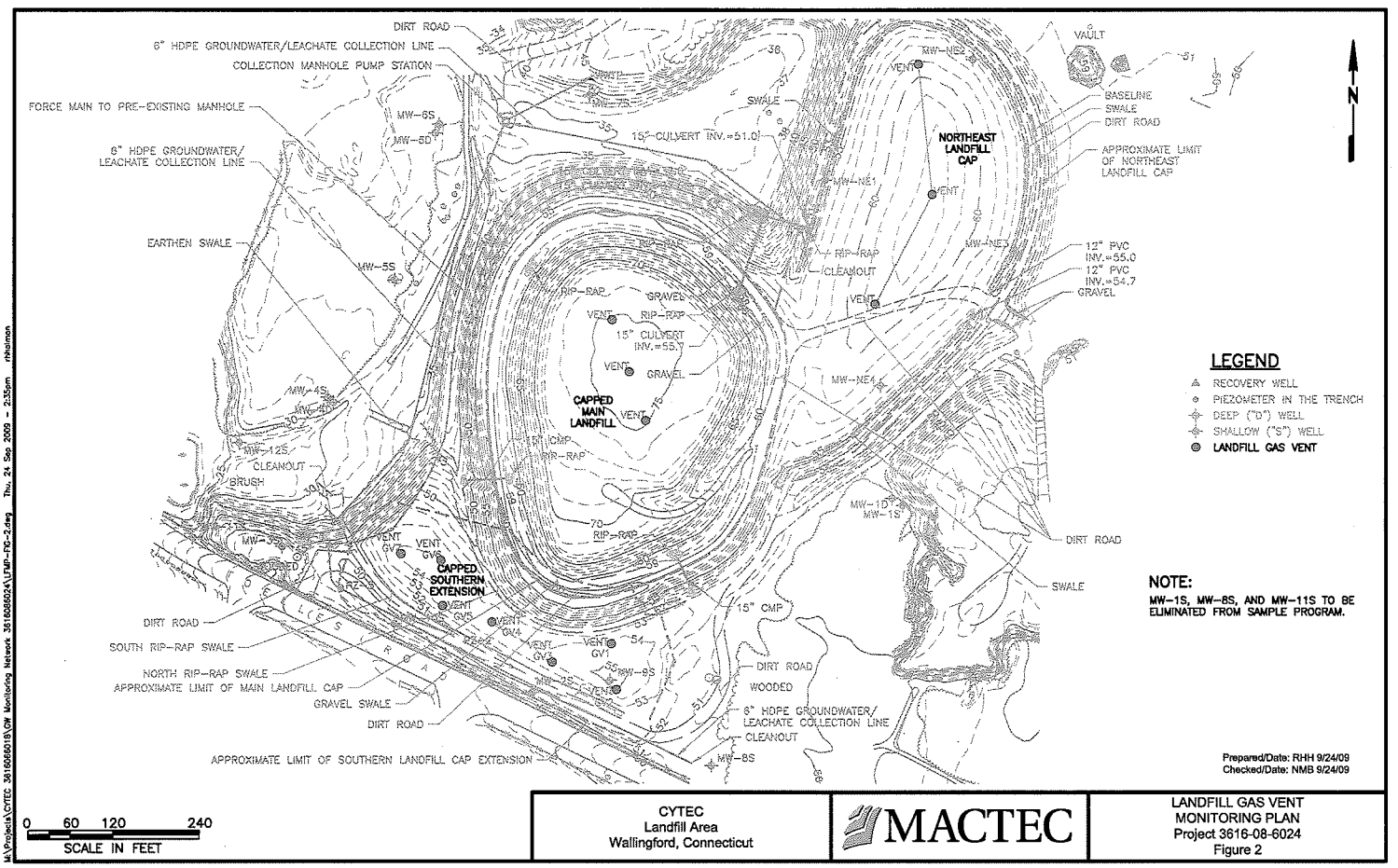


Cytec Industries, Inc.
Wallingford, CT

MACTEC

Site Location
Landfill Area

Project 3616-08-6024 Figure 1



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CYTEC
Landfill Area
Wallingford, Connecticut

MACTEC

LANDFILL GAS VENT
MONITORING PLAN
Project 3616-08-6024
Figure 2

REAL TIME MONITORING

INSTRUMENT SPECIFICATIONS

GEM™2000PLUS

PORTABLE GAS ANALYZER INSTRUMENTATION

Enhanced Model Enables Field Technicians

The GEM™2000 is designed & field proven to monitor landfill gas extraction systems accurately & efficiently. The GEM™2000 PLUS offers all the advantages and capabilities of the GEM™2000. Utilizing new technology the GEM™2000 PLUS adds the enhanced ability to read Carbon Monoxide and Hydrogen Sulfide.

Features

- Measures CO & H_2S gases
- Measures % CH_4, CO_2 and O_2 Volume, static pressure and differential pressure
- Calculates balance gas, flow (SCFM) and calorific value (KW or BTU)
- Displays % LEL of CH_4, Peak CH_4 and user-defined comments
- Records site and well conditions
- Extended operation (10 - 14 hrs use from one charge)
- Accepts protocols
- Two instruments in one (GA and GEM mode)

Benefits

- Minimize erroneous CO readings
- No need to take more than one instrument to site
- Can be used for routine sub-surface migration monitoring of landfill site perimeters and for measuring gas composition, pressure and flow in gas extraction systems
- The user is able to set up comments and questions to record information at site and at each sample point
- Ensures consistent collection of data for better analysis
- Allows balancing of gas extraction systems

Applications

- Gas Extraction Wells
- Flare Monitoring
- Landfills
- Biogas Sites

 850 South Via Lata, Suite 112 Colton, CA 92324 Phone (800) LANDTEC, (909) 783-3636
Visit our web site at http://www.ces-landtec.com

Technical Specification

Gases Measured	CO_2, CH_4 by dual wavelength infrared cell with reference channel O_2, H_2S, CO (Hydrogen compensated) by internal electrochemical cell

Range			
CH_4	0-100% Reading	O_2	0-25%
CO_2	0-100% Reading	CO	0-2000ppm
		H_2S	0-200ppm

Gas Accuracy	CH_4	CO_2	O_2
0-5%	±0.5%	±0.5%	±1.0%
5-15%	±1.0%	±1.0%	±1.0%
15% - Full Scale	±3.0%	±3.0%	±1.0%

Other Parameters	Unit	Accuracy	Comments
Energy	KW/h	0.1 kW/h	Calculated from specific parameters.
Static Pressure	in.H_2O	±1.6 in.H_2O	Direct Measurement
Differential Pressure	in.H_2O	±0.12 in.H_2O	Direct Measurement (less barometric)

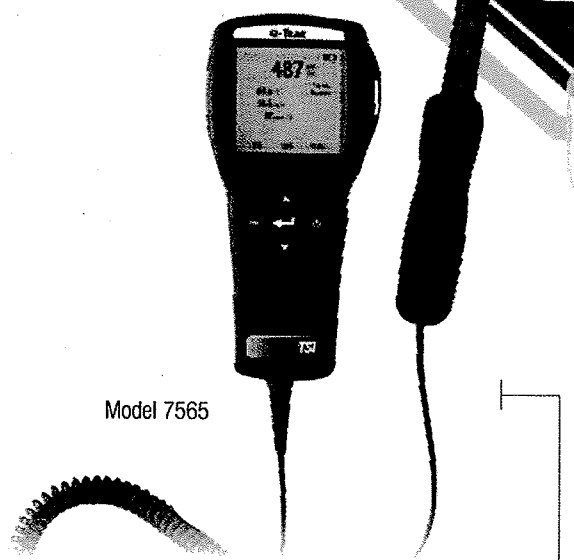
CO Measurement	Compensated for interference from Hydrogen up to 1% Hydrogen. Cross sensitivity approx 1%.
Flow	Typically 300 cc/min
Flow with 5.9 in.Hg vacuum	Approximately 250 cc/min
Operating Temperature Range	32°F - 104°F
Relative Humidity	0-95% non condensing
Barometric Pressure	±5.9 in.Hg from calibration pressure
Barometric Pressure Accuracy	±0.15 in.Hg typically
Battery Life	Typical use 10 hours from fully charged
Charge Time	Approximately 2 hours from complete discharge.

SWANA MEMBER
An involved and contributing member of the Solid Waste Association of America

Western Sales Office
(800) 821-0496 • Fax (909) 825-0591

Eastern Sales Office
(800) 390-7745 • Fax (301) 391-6546

CERTIFIED ISO 9001



Model 7565

Q-TRAK™
Indoor Air Quality Monitor
Model 7565

Providing a comfortable, safe and healthy indoor environment is an increasingly important concern. Good air quality increases concentration and productivity. It can also reduce lost days due to absence. TSI's Q-TRAK IAQ Monitor provides quick, accurate information to assess key IAQ parameters.

Features and Benefits

- Measures CO_2, temperature, humidity, and CO
- Calculates dew point, wet bulb and percent outside air
- Displays up to 5 measurements simultaneously
- One instrument with multiple plug-in probe options
- User-selectable logging intervals and start/stop times
- Store up to 38.9 days of data collected at one-minute log intervals
- TRAKPRO™ software provided for data logging, analysis and documenting results
- Perform single-point tests for quick building surveys

Easy to Use

The Q-TRAK features a menu-driven user interface for easy operation. On-screen prompts and step-by-step instructions guide the user through operation and field calibration. The Q-TRAK also features an ergonomic, overmolded case design and a keypad lockout to prevent tampering during unattended use.

Accurate Results

The Q-TRAK monitor's state-of-the-art sensors and large, easy-to-read graphics allow real-time, simultaneous display of CO_2 temperature, relative humidity, and CO.

Data Collection and Reporting

Expanded data logging capacity and the inclusion of TRAKPRO Data Analysis Software provides the capabilities to work more effectively and efficiently. The Q-TRAK can store up to 38.9 days of data collected at one-minute log intervals. The stored data can be recalled, reviewed on screen, and downloaded for easy reporting. TRAKPRO helps you to generate professional graphs for your reports.

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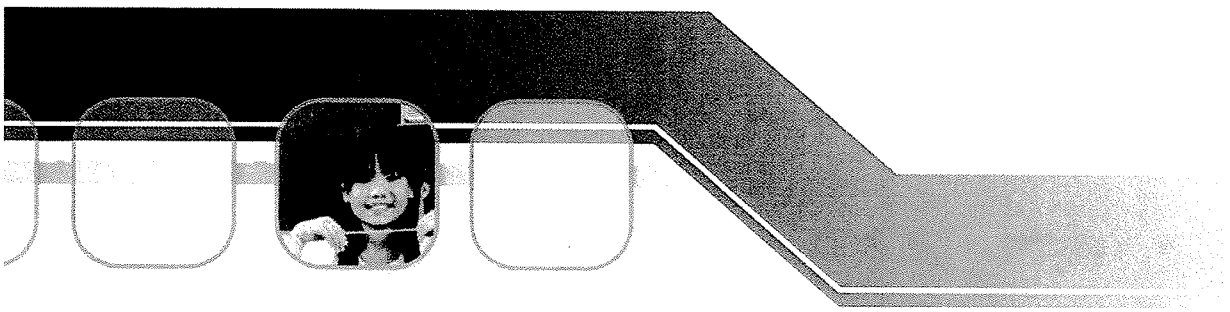


Specifications

Q-TRAK Model 7565 (includes Model 982 Probe)

Carbon Monoxide (IAQ Probe Model 982)
Sensor Type Electro-chemical
Range 0 to 500 ppm
Accuracy[1] ±3% of reading or 3 ppm, whichever is greater
Resolution 0.1 ppm
Response Time <60 seconds to 90% step change

Carbon Dioxide (IAQ Probe Models 980 and 982)
Sensor Type Dual-wavelength NDIR (non-dispersive infrared)
Range 0 to 5,000 ppm
Accuracy[2] ±3.0% of reading or ±50 ppm, whichever is greater
Resolution 1 ppm
Response Time 20 seconds

Temperature (IAQ Probe Models 980 and 982)
Sensor Type Thermistor
Range 32 to 140°F (0 to 60°C)
Accuracy ±1.0°F (0.6°C)
Resolution 0.1°F (0.1°C)
Response Time 30 seconds (90% of final value, air velocity at 400 ft/min [2 m/s])

Relative Humidity (IAQ Probe Models 980 and 982)
Sensor Type Thin-film capacitive
Range 0 to 95% RH
Accuracy[3] ±3% RH
Resolution 0.1% RH
Response Time 20 seconds (for 63% of final value)

% Outside Air
Range 0 to 100%
Resolution 0.1%

Barometric Pressure
Range 20.36 to 36.648 in. Hg (517.15 to 930.87 mm Hg)
Accuracy ±2% of reading

Operating Temperature
40 to 113°F (5 to 45°C)

Storage Temperature
-4 to 146°F (-20 to 60°C)

Logging Capability
Range Logs up to 56,035 data points with key (4) measured parameters enabled, 38.9 days at 1-minute log intervals

Time Constants
1 sec, 5 sec, 10 sec, 20 sec, 30 sec (user selectable)

Log Intervals
1 second up to 1 hour (user selectable)

Meter Dimensions
3.8 in. × 8.3 in. × 2.1 in. (9.7 cm × 21.1 cm × 5.3 cm)

Probe Dimensions
Length 7.0 in. (17.8 cm)
Diameter 0.75 in. (1.9 cm)

Weight (with batteries)
0.8 lbs (0.36 kg)

Power Requirements
Four AA-size alkaline batteries or AC adapter, both included

	7565
Probe that measures CO, CO_2, temperature, and humidity	includes 982 probe
CO_2	•
CO	•
Temperature	•
%RH, wet bulb, and dew point	•
%Outside air	•
Statistics	•
Review data	•
Optional plug-in probes	•
TRAKPRO data analysis software	•
LogDat2 downloading software	•
Optional Bluetooth printer	•
Certificate of Calibration	•

[1] At 77°F (25°C). Add uncertainty of ±0.2%/°F (±0.36%/°C) away from calibrated temperature.
[2] At calibration temperature. Add uncertainty of ±0.28%/°F (0.5%/°C) for change in temperature.
[3] At 77°F (25°C). Add uncertainty of ±0.03% RH/°F (±0.05% RH/°C) away from calibrated temperature.

Specifications are subject to change without notice.

Probe Specifications

Models 960, 962, 964, 966, 995, 496, 980, 982, 792 and 794

Thermoanemometer Probe Models		Range	Accuracy	Resolution	Probe Dimensions
	962	0 to 9,999 ft/min (0 to 50 m/s) 0 to 200°F (-18 to 93°C)	±3% of reading or ±3 ft/min (±0.015 m/s), whichever is greater[4&5] ±0.5°F (±0.3°C)[6]	1 ft/min (0.01 m/s) 0.1°F (0.1°C)	Length 40 in. (101.6 cm) Tip dia. 0.28 in. (7.0 mm) Base dia. 0.51 in. (13.0 mm) Articulating Section Length 6 in. (15.2 cm) Articulating Knuckle dia. 0.38 in. (9.5 mm)
	966	0 to 9,999 ft/min (0 to 50 m/s) 14 to 140°F (-10 to 60°C) 0 to 95% RH	±3% of reading or ±3 ft/min (±0.015 m/s), whichever is greater[4&5] ±0.5°F (±0.3°C)[6] ±3% RH[7]	1 ft/min (0.01 m/s) 0.1°F (0.1°C) 0.1% RH	Length 40 in. (101.6 cm) Tip dia. 0.28 in. (7.0 mm) Base dia. 0.51 in. (13.0 mm) Articulating Section Length 6 in. (15.2 cm) Articulating Knuckle dia. 0.38 in. (9.5 mm)
	960	0 to 9,999 ft/min (0 to 50 m/s) 0 to 200°F (-18 to 93°C)	±3% of reading or ±3 ft/min (±0.015 m/s), whichever is greater[4&5] ±0.5°F (±0.3°C)[6]	1 ft/min (0.01 m/s) 0.1°F (0.1°C)	Length 40 in. (101.6 cm) Tip dia. 0.28 in. (7.0 mm) Base dia. 0.51 in. (13.0 mm)
	964	0 to 9,999 ft/min (0 to 50 m/s) 14 to 140°F (-10 to 60°C) 0 to 95% RH	±3% of reading or ±3 ft/min (±0.015 m/s), whichever is greater[4&5] ±0.5°F (±0.3°C)[6] ±3% RH[7]	1 ft/min (0.01 m/s) 0.1°F (0.1°C) 0.1% RH	Length 40 in. (101.6 cm) Tip dia. 0.28 in. (7.0 mm) Base dia. 0.51 in. (13.0 mm)

Rotating Vane Probe Models		Range	Accuracy	Resolution	Probe Dimensions
	995	50 to 6,000 ft/min (0.25 to 30 m/s) 32 to 140°F (0 to 60°C)	±1% of reading ±4 ft/min (±0.02 m/s) ±2.0°F (±1.0°C)	1 ft/min (0.01 m/s) 0.1°F (0.1°C)	Diameter 4 in. (100mm)
	496	100 to 3,000 ft/min (0.50 to 15.00 m/s) 32 to 140°F (0 to 60°C)	±3% of reading ±4 ft/min (±0.02 m/s) ±2.0°F (±1.0°C)	1 ft/min (0.01 m/s) 0.1°F (0.1°C)	Diameter 1.5 in. (35mm)

IAQ Probe Models		Range	Accuracy	Resolution	Probe Dimensions
	980	0 to 5000 ppm CO_2 0 to 95% RH 14 to 140°F (-10 to 60°C)	±3% of reading or ±50 ppm, whichever is greater[9] CO_2 ±3% RH[7] ±0.5°F (±0.3°C)[6]	1 ppm CO_2 0.1% RH 0.1°F (0.1°C)	Length 7.0 in. (17.8 cm) Diameter 0.75 in. (1.9 cm)
	982	0 to 500 ppm CO 0 to 5000 ppm CO_2 0 to 95% RH 14 to 140°F (-10 to 60°C)	±3% of reading or ±3 ppm, whichever is greater[8] CO ±3% of reading or ±50 ppm, whichever is greater[9] CO_2 ±3% RH[7] ±0.5°F (±0.3°C)[6]	0.1 ppm CO 1 ppm CO_2 0.1% RH 0.1°F (0.1°C)	Length 7.0 in. (17.8 cm) Diameter 0.75 in. (1.9 cm)

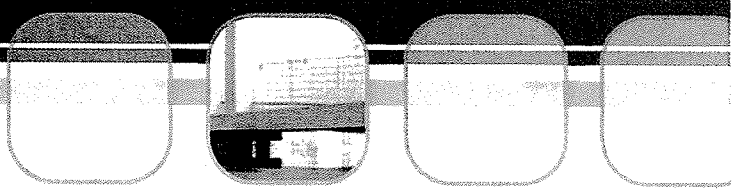
Thermocuple Probe Models		Range	Accuracy	Resolution	Probe Dimensions
	792	-40 to 1200°F (-40 to 650°C)	±0.1% of reading +2°F (±0.056% of reading +1.1°C)	0.1°F (0.1°C)	Length 6 in. (15.0 cm) Diameter
	794	-40 to 1200°F (-40 to 650°C)	±0.1% of reading +2°F (±0.056% of reading +1.1°C)	0.1°F (0.1°C)	Length 6 in. (15.0 cm) Diameter

[4] Temperature compensated over an air temperature range of 40 to 150°F (5 to 65°C).
[5] The accuracy statement begins at 30 ft/min through 9,999 ft/min (0.15 m/s through 50 m/s).
[6] Accuracy with instrument case at 77°F (25°C), add uncertainty of 0.05°F/°F (0.03°C/°C) for change in instrument temperature.
[7] Accuracy with probe at 77°F (25°C). Add uncertainty of 0.1% RH/°F (0.2% RH/°C) for change in probe temperature. Includes 1% hysteresis.
[8] At 77°F (25°C). Add uncertainty of ±0.2%/°F (0.36%/°C) for change in temperature.
[9] At calibration temperature. Add uncertainty of ±0.28%/°F (0.5%/°C) for change in temperature.

Specifications are subject to change without notice.

ENERGY AND COMFORT

Ventilation Test Instruments



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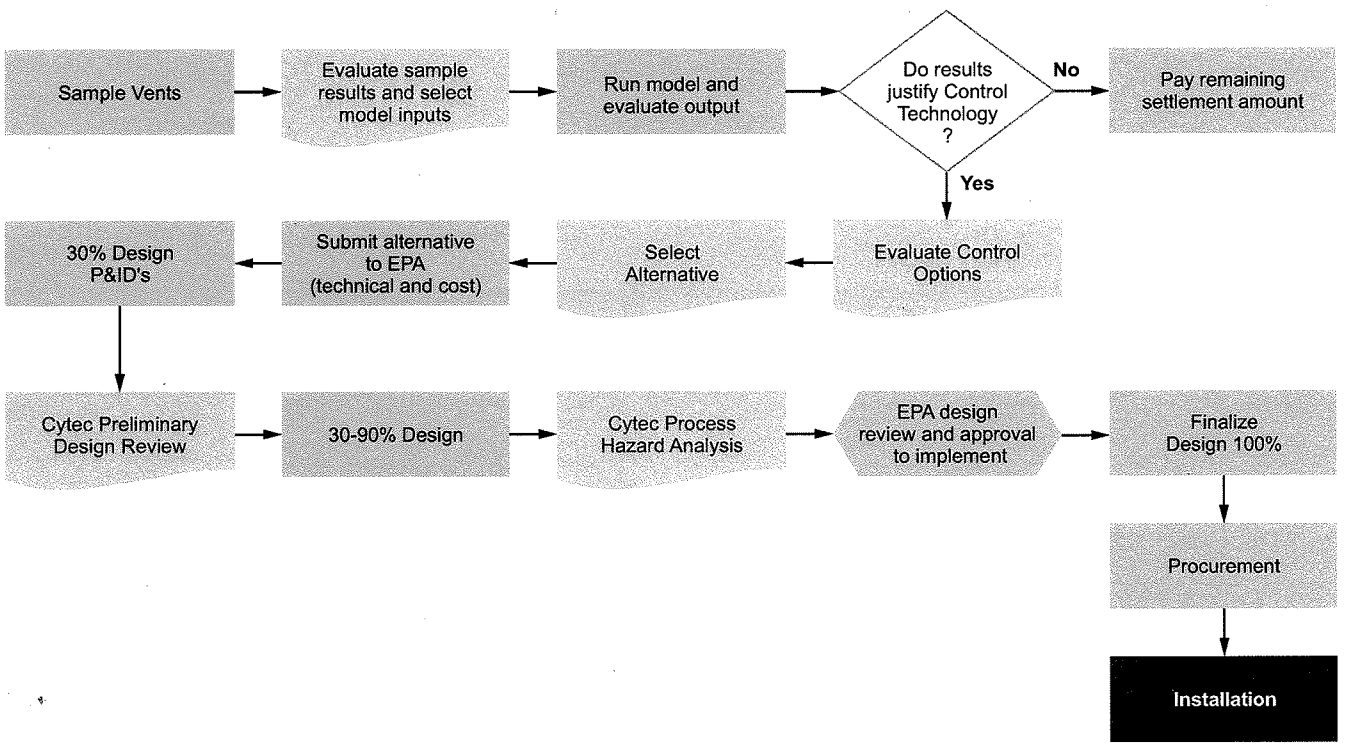


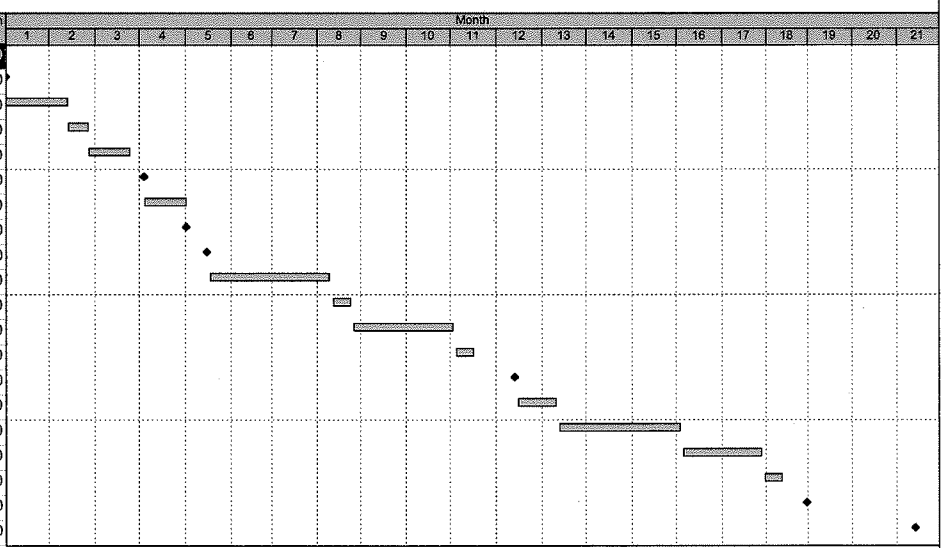
Prepared/Date: SGS 9/23/09
Checked/Date: JPH 9/23/09

CYTEC	MACTEC	Preliminary Logic for Landfill Gas Emission Evaluation Southern Landfill

PORT2009027a.cdr

Cytec Wallingford Landfill GAS SEP Schedule

Activity ID	Activity Name	Duration
	Cytec Wallingford Landfill GAS SEP Schedule	440
00	Sign CAFO	0
01	Baseline Landfill Gas Monitoring	30
02	Model using actual emissions	10
03	Plan for Proceeding (Report)	20
04	Decision to Procced	0
05	Alternative Analysis Control Options	20
06	Alternative Selection	0
07	EPA Agreement on Selected Alternative	0
08	0-50% Design	60
09	Cytec Design Review	10
10	50-90% Design	50
11	Cytec Design Review (include HAZOP)	10
12	EPA Design Review	0
13	90-100% Design	20
14	Procurement	60
15	Installation	40
16	Start Up	10
17	SEP Completion	0
18	Submit Final Report	0



Remaining Work
Milestone

24-Sep-09

EPA ENFORCEMENT ACCOUNTS RECEIVABLE CONTROL NUMBER FORM FOR ADMINISTRATIVE ACTIONS

This form was originated by Judy Lao for Amanda Helwig (Name of Case Attorney) 9/29/09 (Date)

in the ORC (RAA) (Office & Mail Code) at 918-1454 (Phone number)

Case Docket Number CAA-01-2009-0024

Site-specific Superfund (SF) Acct. Number _____

X This is an original debt ____ This is a modification

Name and address of Person and/or Company/Municipality making the payment:

Cytec Industries, Inc.
South Cherry Street
Wallingford, CT 06492

Total Dollar Amount of Receivable $ 155,000.00 Due Date: 10/29/09

SEP due? Yes X No _____ Date Due June 21, 2011

Installment Method (if applicable)

INSTALLMENTS OF:

1ST $ _____ on _____

2nd $ _____ on _____

3rd $ _____ on _____

4th $ _____ on _____

5th $ _____ on _____

For RHC Tracking Purposes:

Copy of Check Received by RHC _____ Notice Sent to Finance _____

TO BE FILLED OUT BY LOCAL FINANCIAL MANAGEMENT OFFICE:

IFMS Accounts Receivable Control Number _____

If you have any questions call: _____ _____
in the Financial Management Office Phone Number