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13 December 2006

Mr. Joseph T. Martella, II, Senior Engineer  
Rhode Island Department of Environmental Management  
Office of Waste Management  
Site Remediation Program  
235 Promenade Street  
Providence, Rhode Island 02908

RE: RAWP Implementation Status Letter No. 2, Former Gorham Manufacturing Facility,  
Parcel B, 333 Adelaide Avenue, Providence, Rhode Island  
Case No. 2005-029  
EA Project No. 61965.01

Dear Mr. Martella:

On behalf of the Providence Department of Public Property (City), EA Engineering, Science, and Technology, Inc. (EA) is providing this Remedial Action Work Plan (RAWP) Implementation Status Letter for the referenced site for your review and approval as necessary. Provision 6(e)(ii) of the Rhode Island Department of Environmental Management (the Department) Order of Approval (OA) dated 9 June 2006 for the referenced site states that the location of each interior methane/alarm (i.e., continuous within the building), as well as each proposed interior and sub-slab sample collection location be provided to the Department prior to installation. Please note that this letter is not intended to be a comprehensive description of the indoor methane monitoring/alarm system features, capabilities, or O&M procedures. The purpose of this letter is to: a) present the locations where methane will be continuously monitored within the building (i.e., the methane/alarm locations); b) to present the proposed interior air sampling locations; and c) to present the sub-slab vapor sampling locations to comply with the Order of Approval provision described above.

### **On-Site Meeting**

On 16 November 2006, technical and sales representatives of DOD Technologies, Inc. (DOD, the supplier of the indoor methane monitoring/alarm system components), the Department, EA, and the electrical subcontractor responsible for installation of the system electrical components met at the former Gorham Manufacturing Facility for a demonstration of the components, an explanation of system operation, and to collectively discuss the optimal locations for the various system components. The selected locations for the system components presented herein are based upon the recommendations made by the DOD representatives, comply with the RAWP with respect to the number of monitoring locations and general areas of continuous monitoring, and are designed to provide the best possible level of access to designated responsible parties performing system operations and maintenance (O&M).



## **Overview of Main System Components and General System Operation**

The Department-approved indoor methane monitoring/alarm system consists of eight continuous methane monitors, a central controller, and an auto dialer to notify designated, responsible parties (e.g., school officials, environmental engineering contractor, etc.) of alarm conditions should they be detected. A diagram illustrating the conceptual functionality between the sensors and the controller is provided in Attachment A. Per the recommendation of the DOD representatives, the sensor housings can be physically located up to approximately 125 feet away from the actual indoor air monitoring locations. Individual polypropylene tubing runs will connect the individual sensor units to the various school building areas from which the continuous monitoring will occur. Each tubing run will be connected to the corresponding air sampling intake on the individual sensor units, which will communicate data with the central controller and auto dialer.

## **Location of Main System Components and Monitoring Locations**

The central controller will be installed in the school administration work room area. Placement of the controller in close proximity to school administrators will facilitate prompt responses to audible/visual alarms and will prohibit unauthorized access or possible vandalism to the controller. Four of the eight system monitors will be installed in the main electrical room located within the east wing of the school building (just north of the main corridor running east-west in central portion of the school), and the remaining four monitors will be installed in the electric room within the west wing of the school building (adjacent to the mechanical room). The electrical rooms will only be accessible by authorized personnel.

Tubing emanating from the four sensors in the east wing electrical room will be run to the following locations where indoor air will be continuously monitored by the sensors:

- student classroom located within the east wing of the school building just south of the guidance office/waiting area;
- student classroom located directly across corridor from boys and girls restrooms within east wing of the school building;
- cafeteria; and
- kitchen storage room away from natural gas food service equipment.

Tubing emanating from the four sensors in the west wing electrical room will be run to the following locations where indoor air will be continuously monitored by the sensors:

- meeting room located within west wing of the school building just north of the computer lab;
- student classroom located across corridor from science lab within west wing of the school building;



- north-west corridor located in close proximity to elevator (per Department suggestion to facilitate monitoring potential methane intrusion via the elevator shaft area); and
- gymnasium.

These continuous monitoring locations are illustrated on the Figure in Attachment B along with the sensor and central controller locations. All tubing will be run over drop ceilings or, in areas where no drop ceilings and the potential for tampering exists, within protective PVC piping. The tubing will terminate inside the various rooms/areas described above just under the finished ceiling height, with the exception of the cafeteria and gymnasium. Since there are no traditional ceilings in these areas, the tubing will terminate in the gymnasium and cafeteria at a height of approximately 12 feet above the finished floor. This height will facilitate access by authorized personnel for O&M (if needed) but will also minimize the potential for tampering by unauthorized personnel (e.g., sporting event spectators).

### **Proposed Sub-Slab and Indoor Air Sampling Locations**

In accordance with the RAWP and the OA, three representative sub-slab vapor samples and three representative indoor air samples are required prior to sub-slab venting system start-up, after system start-up but prior to building occupancy, and quarterly thereafter. The proposed sampling locations are discussed below.

EA proposes to collect the sub-slab vapor samples from monitoring points MP-2, MP-5, and MP-8, which generally correspond to areas beneath the northern, western, and eastern portions of the school building, respectively, and provide representative coverage of the sub-slab region. Please refer to the Figure provided in Attachment C for the location of these three monitoring points.

With respect to indoor air sampling, EA proposes to collect the representative indoor air samples within rooms or areas on the first floor of the school building that roughly correspond to (i.e., located above) the sub-slab sampling locations (MP-2, MP-5, and MP-8) and three of the continuous indoor methane monitoring locations. These locations are within the cafeteria, the west wing student classroom, and the east wing student classroom opposite the boys and girls rooms. Collecting the representative indoor air samples in these corresponding locations will facilitate comparative analysis of the data and evaluation of potential vapor migration into the school building (or absence thereof) from the subsurface.



We trust that this correspondence satisfies the OA Provision 6(e)(ii). However, if you have any questions or require additional information, please do not hesitate to contact me at 401-736-3440, Ext. 216.

Sincerely,

EA ENGINEERING, SCIENCE,  
AND TECHNOLOGY, INC.

A handwritten signature in black ink that reads "Peter M. Grivers". The signature is written in a cursive style with a large, sweeping 'P' and 'G'.

Peter M. Grivers, P.E., LSP  
Project Manager

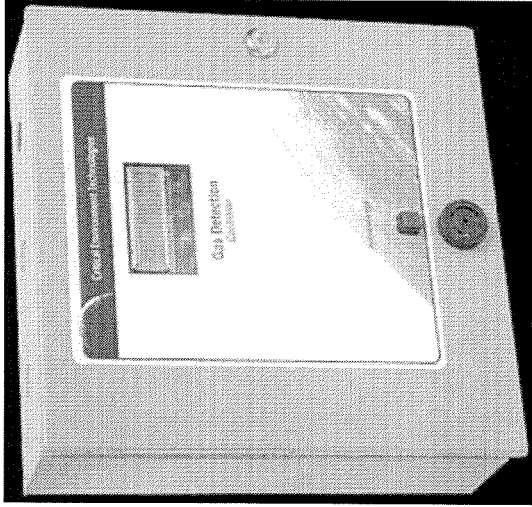
PMG

Attachments

cc: A. Sepe, Providence Department of Public Property  
B. Wagner, Esq., RIDEM Legal Services  
K. Owens, RIDEM Office of Waste Management  
L. Hellested, RIDEM Office of Waste Management  
T. Gray, RIDEM/AW&C  
C. Walusiak, RIDEM Office of Waste Management  
S. Rapport, City of Providence Law Department  
J. Boehnert, Partridge, Snow, & Hahn  
T. Deller, Providence Redevelopment Agency  
J. Simmons, City of Providence  
J. Hartley, GZA  
S. Fischbach, RI Legal Services  
J. Pichardo, Senator - District 2  
G. Simpson, Textron  
T. Slater, Representative  
Former Gorham Site, Parcel B – Knight Memorial Library Repository

## **Attachment A**

# **Methane Monitoring System Components**

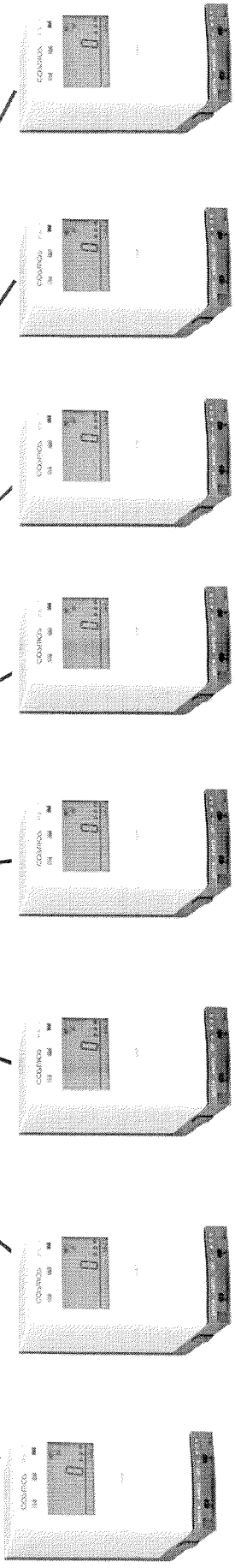
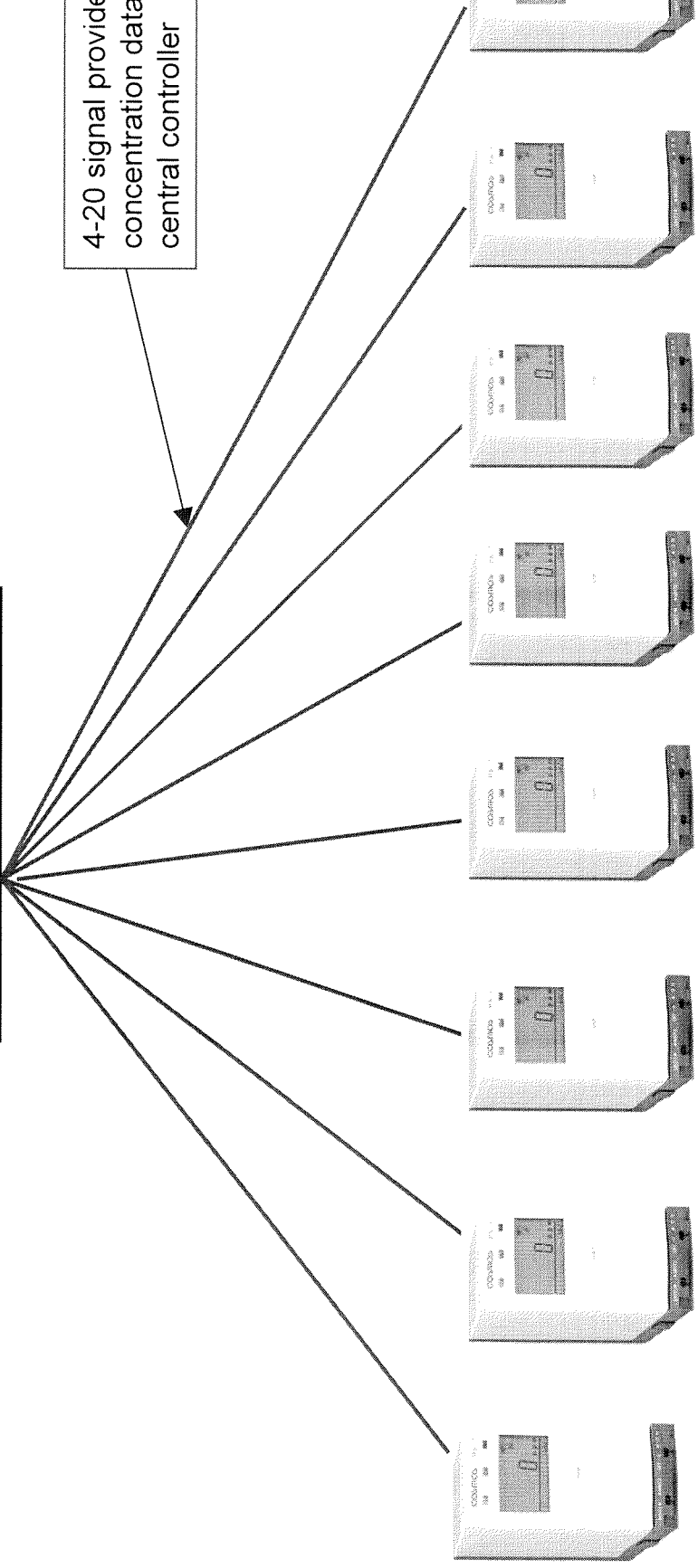


PDC Controller can connect to up to 8 PS-7 units. PDC provides concentration at each point, programmable alarm levels, audible alarm & strobe light (not shown). Provided with 8 programmable relays.

Auto Dialer

Auto Dialer will dial a pager or phone when 500ppm alarm level is reached

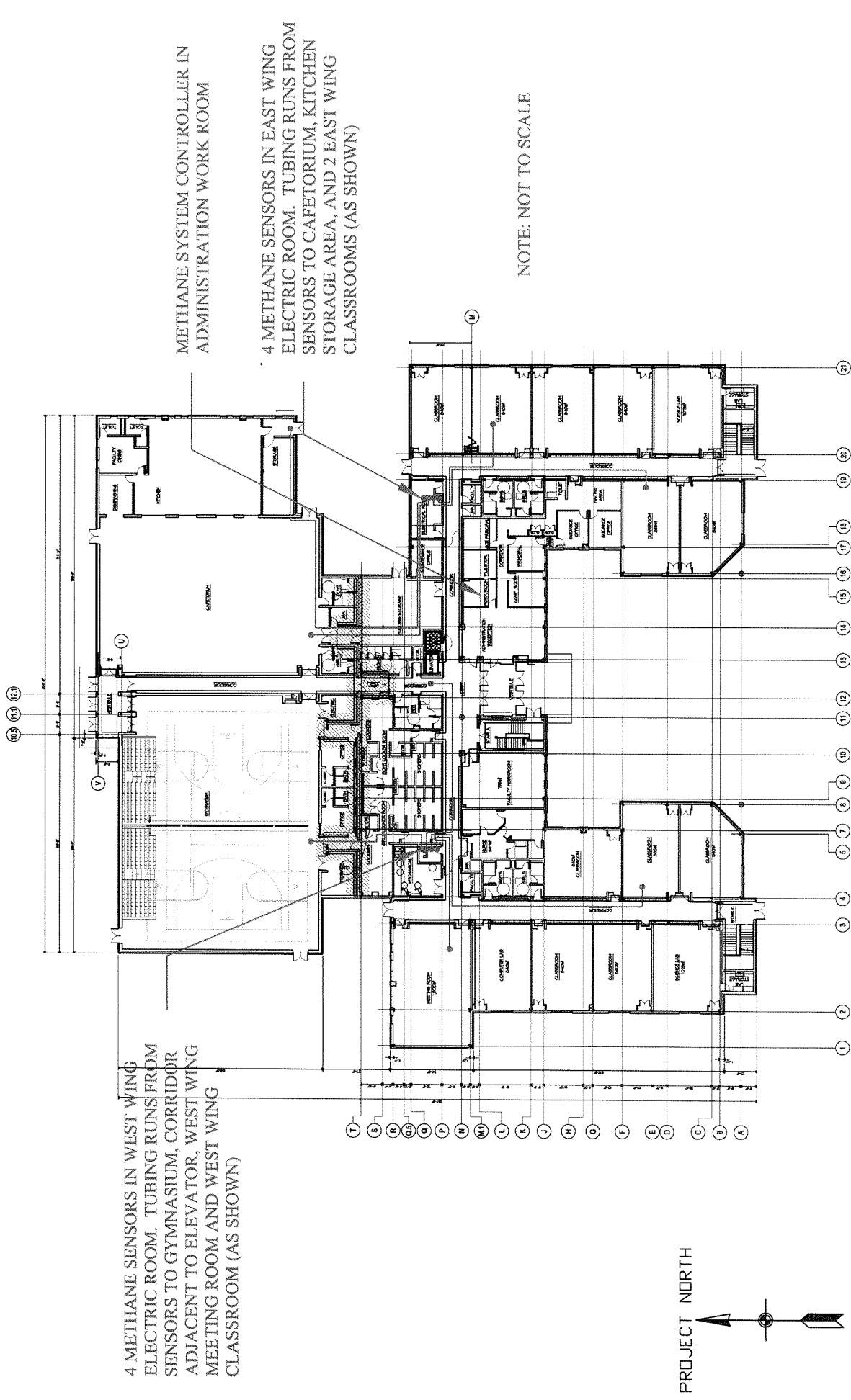
4-20 signal provides concentration data to central controller



PS-7 CH4 0-1000ppm gas detection units installed through out school

## **Appendix B**

### **Figure Illustrating Monitoring System Component Locations**



4 METHANE SENSORS IN WEST WING ELECTRIC ROOM. TUBING RUNS FROM SENSORS TO GYMNASIUM, CORRIDOR ADJACENT TO ELEVATOR, WEST WING MEETING ROOM AND WEST WING CLASSROOM (AS SHOWN)

METHANE SYSTEM CONTROLLER IN ADMINISTRATION WORK ROOM

4 METHANE SENSORS IN EAST WING ELECTRIC ROOM. TUBING RUNS FROM SENSORS TO CAFETORIUM, KITCHEN STORAGE AREA, AND 2 EAST WING CLASSROOMS (AS SHOWN)

NOTE: NOT TO SCALE

PROJECT NORTH



ATTACHMENT B  
FIGURE

METHANE MONITORING SYSTEM LOCATION DIAGRAM  
CORHAM HIGH SCHOOL  
PROVIDENCE, RHODE ISLAND

DESIGNED BY PMG	DRAWN BY DMA	DATE 12-8-06	PROJECT NO. 61965.01	FILE NAME 6196501-ATT-B
CHECKED BY PMG	PROJECT MGR. PMG	SCALE NTS	DRAWING NO. -	FIGURE ATT B



## **Appendix C**

### **Figure Illustrating Proposed Sub-Slab Sampling Locations**

