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August 16, 2010

Mr. Allen Perez
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Subject: **Report of Lead-Based Paint and Asbestos Surveys**
Glynn Archer/Reynolds School
1300 White Street
Key West, Florida 33040
MACTEC Project 6786-10-2152.01/02

Dear Mr. Perez:

Via e-mail & 1st Class Mail

MACTEC Engineering and Consulting, Inc. (MACTEC) has completed the Limited NESHAP Asbestos and Lead-Based Paint Survey of Glynn Archer/Reynolds School located in Key West, Florida. These services were provided in accordance with the MACTEC Proposal PROP10MIAM-069, dated June 7, 2010. This report, consisting of 14 pages of narrative and 2 appendices, must be considered and utilized in its entirety.

We appreciate the opportunity to be of service to you and look forward to our continued association. If you should have any questions concerning this report, please contact us at your convenience.

Sincerely,

MACTEC ENGINEERING AND CONSULTING, INC.
Asbestos Business License No. ZA-0000116

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1.0 BACKGROUND INFORMATION

We understand that the Glynn Archer/Reynolds School is scheduled for possible renovation. MACTEC was requested by Perez Engineering to perform a Pre-renovation National Emissions Standards for Hazardous Air Pollutants (NESHAP) Asbestos and Lead-Based Paint Survey that will assist in complying with the Environmental Protection Agency (EPA), the Occupational Safety & Health Administration (OSHA), and other applicable regulations.

2.0 PROJECT INFORMATION SUMMARY

MACTEC PROJECT NUMBER	6786-10-2152.01/02
FACILITY NAME	Glynn Archer/Reynolds School
FACILITY ADDRESS	Key West, Florida
TYPE OF FACILITY	School
APPROX. SQUARE FOOTAGE	77,000 Square Feet
OCCUPIED/NON-OCCUPIED	Occupied
AREAS NOT ACCESSIBLE	Attic, Crawl Spaces, Roofing, Wall Cavities, Interior Duct Insulation
DATES OF INSPECTION	July 19-22, 2010
ACCREDITED INSPECTORS	Russ Stauffer and Ron Trapane
FLOORS	Vinyl Floor Tile, Cellulose Flooring, Carpet, Ceramic Tile
WALLS	Stucco, Plaster, Neoprene, Ceramic Tile, Textured Wallboard
CEILINGS	Drywall, 2'x4' & 1'x1' Ceiling Tiles
ROOF	Metal/Built-up
HVAC	Central, Wall Units

2.1 EXECUTIVE SUMMARY/PROJECT RESULTS OVERVIEW

- **Asbestos:** Significant amounts of materials were identified that would impact the current usage of the facility, and any planned renovations and/or demolitions.
- **Lead-Paint:** Significant amounts of coatings and components were identified that would impact the current usage of the facility, and any planned renovations and/or demolitions.
- **Regulatory Compliance Issues:** Based on the results of the limited findings, significant regulatory impacts exist which apply to not only the current usage of the facility, but also to any planned renovations, demolitions, or combinations thereof.
- **Design and Budget Impacts:** These can range from somewhat moderate to extensive, depending upon the choices and combinations associated with the facility's current and future usages and the myriad of design and construction options chosen. In order to minimize the impacts of such, this would include the involvement of the appropriately licensed professionals from the earliest planning stages.

3.0 SURVEY PROCEDURES

3.1 ASBESTOS SURVEY PROCEDURES

3.1.1 General

The focus of the NESHAP Asbestos survey was to locate, identify, and sample designated materials, which were suspected to contain asbestiform minerals. The presence of friable and non-friable suspect asbestos containing materials (ACM) encountered during the survey is addressed in this report. Generally stated, friable materials, when dry, will crumble and release fibers under normal hand pressure.

We must emphasize that this survey was limited to the accessible areas, as it was not possible to look within every possible in-accessible location in the building. This survey documents only general locations of suspect materials and does not determine the exact boundaries. No attempt was made to demolish structural elements and finishes or mechanical equipment, as this is beyond the scope of our authorized services. Due to these limitations, operating mechanical equipment, wall voids, building cavities, and other areas may contain unobserved ACM. In addition, due to the impeding full occupancy of the facility, roofing samples were not obtained so as to not impact warranties and the integrity of the existing roofing systems.

3.1.2 Bulk Sampling Procedures

The bulk sampling procedures used for the collection of suspect ACM first required the establishment of homogeneous sampling areas, which are defined as areas of materials of the same type and applied during the same general time period. The homogeneous sampling areas were then examined, and representative samples of suspect materials were obtained from these areas.

The EPA has published guidelines and recommendations for obtaining samples of ACM. These guidelines were followed during our survey, where appropriate. Additionally, samples of these materials were obtained at the discretion of our personnel based on past experience.

Bulk samples collected during the site survey were analyzed by Polarized Light Microscopy (PLM) coupled with dispersion staining in accordance with EPA Method 600/R-93/116.

PLM is an analytical method for asbestos identification, which depends on the unique optical properties of mineral forms in the samples and specifically identified the various asbestos types. The optical properties are a result of the mineral's chemical composition, physical atomic structure, and visual morphology. This is the referenced method of analysis by EPA for asbestos identification in bulk samples. The samples were shipped to Cates Laboratories, which has attained National Institute of Standards and Technology (NIST) accreditation Number 200569-0 through participation in the National Voluntary Laboratory Accreditation Program (NVLAP).

3.1.3 Suspect Homogeneous Sampling Areas

135 samples were obtained during this survey of Glynn Archery/Reynolds School from the following types of suspect ACM:

- Exterior Stucco
- Caulk
- Tackboard
- Baseboard
- Ceramic Floor Tile
- Plaster
- Window Glazing
- Pipe Insulation
- Vinyl Floor Tile
- Sheet Vinyl Flooring
- Ceramic Wall Tile
- Sink Undercoating
- FRP Panels (build out)
- Wall board
- Mastic
- Wall Plaster
- Ceiling Plaster
- Ceiling Tile
- Insulation
- Carpet Adhesive
- Drywall/Joint Compound
- Cellulose Flooring Material

3.2 LEAD-BASED COATING SURVEY PROCEDURES

3.2.1 Survey Overview

MACTEC obtained 84 paint chip samples on interior and exterior coated surfaces. This testing was conducted during July 19-22, 2010, by Mr. Russ Stauffer of MACTEC using select portions of Chapter 7 of Housing and Urban Development (HUD) *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing* (1997 revision), to document whether lead-based coatings were present. The results, to assist in compliance with requirements of OSHA, are reported in a format that documents which surfaces are covered with lead-based coatings. Copies of certifications of MACTEC personnel performing the lead-based paint survey are provided in Appendix B of this report.

Assuming the interior and exterior components of the building areas not tested were painted at the same time and with the same type of paint as those building areas tested, it is reasonable to assume that similar results would apply to components that were not tested.

3.2.2 Regulatory Definition of Lead-Based Paint

3.2.2.1 HUD has defined lead-based paint as coatings where the concentration of lead is equal to or exceeds either of 1.0 milligram or lead per square centimeter of surface area (1.0 milligram per square centimeter (mg/cm^2)), when tested by XRF or 0.5 percent by weight when analyzed by laboratory methods.

3.2.2.2 EPA has defined lead-based paint as coatings where the concentration of lead is equal to or exceeds either of 1.0 mg/cm^2, when tested by XRF or 0.5 percent by weight when analyzed by laboratory methods.

3.2.2.3 In 1998, the Consumer Product Safety Commission (CPSC) banned coatings for non-industrial applications where the concentration of lead is equal to or exceeds 600 parts per million (ppm) or 0.06 percent be weight in the dry film.

3.2.2.4 OSHA does not have a definition of lead-based paint. Instead, OSHA addresses lead that can become airborne if **coatings containing any concentrations of lead** are disturbed during construction activities.

3.2.3 Methodology

The specific test locations from where the samples were obtained are identified in the field test results sheets in Appendix B attached to this report. Eighty-four paint chip samples were collected and analyzed utilizing Flame Atomic Absorption methodologies.

4.0 RESULTS OF LABORATORY ANALYSES

4.1 ASBESTOS

Based on the limited sampling available, 86 suspect homogeneous areas were sampled (135 total samples). Of the suspect materials sampled, significant amounts of the homogeneous areas were found to contain asbestos. The 23 homogeneous areas found to contain asbestos are listed in Table 1 under six general categories of materials. See Appendix A for the Asbestos Results. Additionally, Table 1 offers a summary/impact of the obtained asbestos results:

TABLE 1 – ASBESTOS SUMMARY

MATERIAL(S)	EPA/OSHA CLASSIFICATION(S)	IMPACTS TO
Pipe Insulation	Friable/Class I	Occupancy, Renovation, Demolition
Vinyl Flooring	Category I, Non-Friable/Class II	Occupancy, Renovation, Demolition
Sink Undercoatings	Category I, Non-Friable/Class II	Occupancy, Renovation, Demolition
Ceramic Flooring	Category II, Non-Friable/Class II	Occupancy, Renovation, Demolition
Caulking	Category II, Non-Friable/Class II	Occupancy, Renovation, Demolition
Window Glazing	Category II, Non-Friable/Class II	Occupancy, Renovation, Demolition

4.2 LEAD-BASED COATINGS

Of the 85 paint chip samples obtained, 8 revealed lead concentrations at or above the EPA/HUD definition of lead-based paint (at or above 0.5% wt.) on tested interior and exterior paint coatings. Additionally, 62 other samples were documented to have lead concentrations present, but at levels below the EPA/HUD level. See Appendix B for the Lead-Based Coatings Results.

Additionally, Table 2 offers a summary/impact of the obtained lead results:

TABLE 2 – LEAD SUMMARY

COLOR	COMPONENTS	RESULTS (% wt)	IMPACTS TO
Black	Doors, baseboards, etc.	0.070	Occupancy, Renovation, Demolition
Blue	Walls, doors, etc.	0.11 – 1.7	Occupancy, Renovation, Demolition
Bright Yellow	Floors	0.11	Occupancy, Renovation, Demolition
Dark Green	Doors, trim, etc.	0.019 – 0.30	Occupancy, Renovation, Demolition
Gray	Walls, doors, floors, etc.	0.014 – 2.1	Occupancy, Renovation, Demolition

COLOR	COMPONENTS	RESULTS (% wt)	IMPACTS TO
Green	Walls, doors, floors, etc.	0.030 – 0.41	Occupancy, Renovation, Demolition
Light Blue	Doors, etc.	0.28 – 0.32	Occupancy, Renovation, Demolition
Light Purple	Walls, doors, etc.	0.23	Occupancy, Renovation, Demolition
Olive	Walls, baseboards	0.48	Occupancy, Renovation, Demolition
Peach	Walls, doors, trim, etc.	0.034 – 0.48	Occupancy, Renovation, Demolition
Purple	Doors, walls, etc.	0.14	Occupancy, Renovation, Demolition
Red	Doors, etc.	0.019 – 0.23	Occupancy, Renovation, Demolition
Tan	Walls, floors, doors, etc.	0.022 – 0.43	Occupancy, Renovation, Demolition
Turquoise	Wall, doors, etc.	0.12 – 0.41	Occupancy, Renovation, Demolition
White	Walls, doors, trim, etc.	0.012 – 1.0	Occupancy, Renovation, Demolition
Yellow	Walls, doors, trim, etc.	0.049 – 2.9	Occupancy, Renovation, Demolition

NOTE: ***Components documented as not exceeding the HUD/EPA thresholds, may contain lower concentrations of lead which, if disturbed, may release sufficient lead to exceed airborne concentrations above the OSHA Action Level or Permissible Exposure Limit.***

5.0 RECOMMENDATIONS

5.1 ASBESTOS

The following section outlines our assessments and recommendations for the ACM identified in MACTEC's survey within the Glynn Archer/Reynolds School:

Friable

- **Pipe Insulation**

Category I Non-Friable

- **Sheet Vinyl Flooring**
- **Vinyl Floor Tile**
- **Sink Undercoating**

Category II Non-Friable

- **Ceramic Floor Tile**
- **Caulk**
- **Window Glazing**

Materials Containing <1% Asbestos

- **Gray Glazing**

Overview Recommendations

In their normal state, the materials were observed to be in generally good to fair condition with a low potential for disturbance. We recommend that these materials be removed prior to any disturbance during repair, renovation, or demolition that would dislodge or similarly break up the material. If subjected to activities that would cause the materials to become Regulated Asbestos-Containing Materials (RACM), they should be removed as such. Removal as RACM would also apply if the materials, or the substrates to which they are adhered, were planned to be co-mingled with normal construction debris and/or subject to recycling activities which would also break up the materials.

Window Caulking Materials Containing <1% Asbestos

OSHA has noted in interpretations that materials containing less than 1% asbestos are subject to *"...certain precautions...[that are] universal and apply to all work with asbestos, regardless of airborne exposures or asbestos content of previously installed materials. These requirements are to utilize wet methods, to the extent feasible...and to promptly clean up and dispose in closed containers, waste and debris contaminated with asbestos..."* (OSHA Standards Interpretation and Compliance Letter, July 7, 1998). As such, MACTEC would present the conservative, risk-minimizing recommendation that the identified gray window glazing be removed as though it is a Category II, Non-Friable ACM.

The materials being removed must be removed in compliance with Chapter 469, Florida Statutes, typically by a State Licensed Asbestos Abatement Contractor. These materials must also be removed in compliance with the requirements of the OSHA.

Likewise, it is recommended that renovations, demolitions and/or removals to be conducted include the requirements to further qualify and quantify extent and condition of the applicable materials present and to incorporate the delineation, control, and documentation of Technical Specifications/Bidding Documents. This would be especially important due to the various options available as to the:

- high visibility/impacts of the facility usage,
- current usage of the facility,
- future usage of the facility,
- current and future condition of the materials,
- selected scope of work and impacts on the materials, and most of all
- regulatory compliance issues.

It is also important to realize that the results of the current testing be incorporated into the updating of the significant, EPA/AHERA requirements applicable to the current occupancy/usage of the facility as an elementary schools. This would involve items such as training, notifications, updating of the existing Management Plans, etc.

5.2 LEAD-BASED COATINGS

The disturbance of lead containing painted surfaces should also be addressed in accordance with OSHA Construction Standard for Lead (29 CFR 1926.62). The OSHA Lead Regulations include provisions for training; written compliance programs; exposure assessments; notifications; engineering controls; and specified work practices.

In addition, the EPA has elaborated on and clarified the renovation, repair, painting and demolition requirements that are required for compliance with its Child-Occupied Facility, and Renovation, Repair and Painting (RRP) regulations (40 CFR 745, etc.). Also, based on the concentration of lead identified, any waste generated by operations that would disturb these materials should be considered potentially hazardous and waste characterization (including TCLP testing) should be performed by the contractor, prior to off-site waste shipment, in a manner of other than construction debris, to determine the proper disposal requirements.

Likewise, it is recommended that renovations, demolitions and/or removals to be conducted include the requirements to further qualify and quantify extent and condition of the applicable materials present and to incorporate the delineation, control, and documentation of Technical Specifications/Bidding Documents. This would be especially important due to the various options available as to the:

- high visibility/impacts of the facility usage,
- current usage of the facility,
- future usage of the facility,
- current and future condition of the materials,
- selected scope of work and impacts on the materials, and most of all
- regulatory compliance issues.

6.0 QUALIFICATIONS

MACTEC has endeavored to observe the existing conditions at the designated areas of the facility using generally accepted procedures. Regardless of the thoroughness of a survey, there is always the possibility that some areas were overlooked, inaccessible, or different from those at specific sample locations. Therefore, conditions at every location may not be as anticipated and as summarized in this report. In addition, renovation or demolition may uncover altered or differing conditions. We recommend that you notify MACTEC if any changed conditions are encountered so that we can assess the situation and its impact on our original recommendations.

This report is intended for the exclusive use of Perez Engineering and Development Inc. This survey was not intended to be or developed as a substitute for project-specific Bidding or Contract Documents. Use of this report or reliance upon information contained in this report by any other party acts as an agreement by that party to the same terms and conditions under which our services were provided. Furthermore, any use of this report by a party for purposes beyond those intended by MACTEC and Perez Engineering and Development Inc. will be at the sole risk of that party.