

MEMO

To **Amanda Cruz, USEPA Region 9**

From **Jason Wilkinson and Travis Hinman, Ramboll**

Subject **Long Term Maintenance & Monitoring Plan, Buildings D, F, G, I, and J, Malibu High School, Malibu, California CAC001032064**

INTRODUCTION

This memorandum summarizes the flooring materials known to contain polychlorinated biphenyls (PCBs) ≥ 50 parts per million (ppm), in Buildings D, F, G, I, and J on the Malibu High School (MHS) campus, and the long-term monitoring process which will be used to evaluate these areas after flooring renovations have been completed. The flooring removal and encapsulation activities are described in the Ramboll workplan titled *Notification and Request for Approval, PCB Remediation Waste Plan, Buildings D, F, G, I, and J, Malibu High School, Malibu, California* (“the Workplan”) dated April 23, 2018 (Ramboll, 2018), which was approved by the U.S. Environmental Protection Agency (USEPA) in a letter dated May 15, 2018 (USEPA, 2018).

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In the USEPA approval letter, the following condition was included:

The District must submit a Maintenance and Monitoring Plan (MMP) for EPA approval in accordance with section 4.2.10 of the Application. The MMP must include the procedures for routine inspections of the encapsulant, procedures for maintenance of the encapsulant, identification of future maintenance actions that could impact the encapsulant, and a schedule for periodic air and surface wipe samples. The MMP must be approved by the EPA prior to the renovated areas being occupied by students or teachers.

This Long-Term Maintenance & Monitoring Plan (MMP) has been prepared in accordance with the USEPA request above.

Figure 1 depicts the layout of all buildings on the MHS campus. As part of a campus-wide modernization project, all buildings at MHS constructed prior to 1981 are tentatively scheduled for renovation/demolition within the next 5 to 15 years. Specifically, a summary of planned renovation/demolition activities for Buildings D, F, G, I, and J is provided below:

- Building D – demolition of this building is planned for Summer 2020
- Buildings F and I - removal of all PCB-impacted flooring and encapsulation
- Building G - demolition of this building is planned for Summer 2021

- Building J - no renovation work scheduled at this time

NATURE AND EXTENT OF PCB-IMPACTED FLOORING

A summary of the nature and extent of PCB-impacted flooring materials in Buildings D, F, G, I, and J was provided in the Workplan. With the exception of the emergency work conducted below under USEPA consultation, the PCB-impacted flooring materials have not been disturbed.

Emergency Flooring Removal and Encapsulation

In December 2018, in response to a flood in a portion of the 1st floor of Building D, Alta Environmental (Alta) and Karcher Environmental conducted removal of the ≥ 50 ppm PCB containing flooring and encapsulation of the underlying concrete prior to installation of new flooring. Removal of flooring and encapsulation was conducted in rooms 112/120 (Workroom), Room 112A, Rooms 101A, and 101B in accordance with the Workplan. The flooring and adhesive was disposed of as PCB Bulk Product Waste in accordance with 40 CFR 761.62. The area of encapsulated concrete is shown on **Figure 2**.

Immediately subsequent to the removal of flooring, and prior to application of the encapsulant, in order to attempt to remediate the concrete slab to ≤ 1 ppm PCBs, bead blasting of the concrete slab was conducted. The bead blasting work was completed using a full containment with temporary negative pressure differential by HAZWOPER trained workers using proper PPE. Each pass of the bead blasting equipment removed approximately 1/8" from the surface of the concrete. Subsequent to removal of 3/16" thickness from the surface of the concrete, the concrete surface was tested by Alta in general compliance with the guidelines provided by the *USEPAs Standard Operating Procedure for Sampling Porous Surfaces for Polychlorinated Biphenyls (PCBs)* (USEPA, 2011). The results ranged from < 0.5 to 8.95 ppm. As the concrete still contained PCB concentrations > 1 ppm, and remediation to ≤ 1 ppm was not successfully achieved, the concrete slab was then encapsulated in accordance with the Workplan.

In accordance with the Workplan, upon completion of the encapsulation work, Alta collected confirmatory air and wipe samples from the rooms to verify that there are no exceedances of USEPA Region IX's cleanup goals prior to release of the area for unrestricted access. All air and wipe samples were below the cleanup goals. The confirmatory sampling work is documented in the Alta report titled *PCB Wipe and Air Sampling Results, Malibu High School, Building D, Rooms 120 (Workroom), Copy Room, 101A, 101B*, dated January 25, 2019 (Alta, 2019).

LONG TERM MAINTENANCE & MONITORING PLAN

The procedures outlined in this section are to be utilized after the ≥ 50 mg/kg PCB flooring materials have been removed from Buildings D, F, G, I, and J, and the concrete slab containing PCBs has been encapsulated. Following the completion of the remediation and encapsulation activities for the materials described above, this MMP will be implemented. The main components of the MMP are as follows:

Routine Inspections of the Encapsulant

Custodial workers or maintenance employees will report to their managers any damaged/deteriorated flooring materials in the rooms which are noticed during routine daily, weekly or annual cleaning. The inspection will focus on the exposed surfaces of the flooring, looking for cracks and wear points or any observations of the underlying epoxy coating.

Procedures for Maintenance of the Encapsulant

If damaged flooring is observed, repairs will be performed as follows.

Minor Repairs

- If the flooring is damaged or missing from a section of the floor, and the encapsulant is not visible, then new flooring materials will be used to patch the floor. In this situation, hand tools may be used to scrape away the previous mastic/glue (as necessary), but care should be taken to not damage the encapsulated layer. No grinding of the floor surfaces should be performed for minor repairs.
- For this scenario, as the encapsulant has not been damaged, maintenance staff may perform the repair and HAZWOPER training is not required.

Moderate Repairs

- If the flooring is damaged or missing from a section of the floor, and the upper coat of encapsulant is visible (i.e., the top color of the encapsulant, but not the bottom color), then a new cementitious layer will be installed (as needed) prior to patching the floor. Hand tools may be used to scrape away the previous mastic/glue (as necessary), but care should be taken to not damage the encapsulated layer.
- For this scenario, as the encapsulant has not been damaged, maintenance staff may perform the repair and HAZWOPER training is not required.

Major Repairs

- If the flooring is damaged or missing from a section of the floor, and the bottom coat of encapsulant is visible (i.e., the bottom color of the encapsulant), then one coat of encapsulant (different color than bottom layer) will be applied. After the encapsulant has cured, a new cementitious layer will be installed prior to patching the floor. Hand tools may be used to scrape away the previous mastic/glue, but care should be taken to not damage the bottom coat of the encapsulant.
- If the flooring is damaged or missing from a section of the floor, and if any portion of the concrete slab is visible, then two coats of encapsulant (different color for each coat) need to be applied. After the encapsulant has cured, a new cementitious layer will be installed prior to patching the floor. Hand tools may be used to scrape away the previous mastic/glue, but care should be taken to not damage any encapsulant that is remaining in place.
- For this scenario, as the encapsulant has been damaged, HAZWOPER trained employees will be required to conduct repair activities. The workers will wear appropriate PPE, including, gloves, Tyvek suit, and shoe cover.
- Before starting a major repair, the work area will be set up with 6-mil poly protection to minimize dust accumulating on the nearby surfaces and collect debris. Movable furniture will be placed in a different area. If deemed necessary after consultation with a professional, containment with negative pressure will be erected. The HVAC system will be isolated by blocking the air distribution openings with plastic sheeting or other appropriate means. Dust generation will be minimized by using wet methods and/or HEPA filter vacuuming during repair activities.

- After a major repair, the immediate surfaces will be vacuumed with a HEPA-filtered vacuum cleaner and then wiped with a wet cloth. The work area will then be visually inspected to monitor that no dust or debris is present, and the area will be re-cleaned thoroughly if dust or debris is identified.
- All waste generated during repair activities will be disposed as PCB Remediation Waste in accordance with 40 CFR 761.61(a)(5)(i) and (iii).
- Confirmatory sampling will be performed in accordance with Section 4.2.4.1 of the Workplan.
- In the event that containment is necessary, confirmatory sampling will be conducted in accordance with Section 4.2.4.2 of the Workplan.

If any future maintenance actions are identified that could impact (i.e., damage) the encapsulant, further evaluation and consultation with USEPA will be performed.

Schedule for Periodic Air and Surface Wipe Samples

Verification sampling will be performed 1, 3 and 5 years after installation of the encapsulation. This sampling is to be conducted prior to the annual BMP “deep cleaning” that is conducted at the end of each school year. Sampling procedures are outlined below.

- At least one surface wipe sample of the floor will be collected from randomly selected locations within each of the encapsulated rooms. Wipe samples will be collected following the standard wipe test procedures described in 40 CFR 761.123.
- One air sample will be collected within each of the encapsulated rooms. Air samples will be collected following the procedures outlined in Section 4.2.4.4 of the Workplan.

A report documenting the findings of the visual inspections, and wipe/air testing results will be prepared after each sampling event for submittal to USEPA.

If results of the verification sampling indicate PCB concentrations in excess of the project-specific action levels listed below, corrective measures shall be determined and taken following consultation with USEPA.

- <1 µg/100 cm² for surface wipes
- USEPA’s Exposure Levels for Evaluation of PCBs in Indoor School Air (USEPA, 2016)

If after 3 rounds of sampling, to be conducted after Year 1, 3 and 5, there are no PCBs detected greater than the action levels listed above, no additional sampling will be conducted.

REFERENCES

Alta Environmental. 2019. PCB Wipe and Air Sampling Results, Malibu High School, Building D, Rooms 120 (Workroom), Copy Room, 101A, 101B. January 25. Available online:

<http://fip.smmusd.org/reports/Malibu/PCBClearanceLetter012519.pdf>

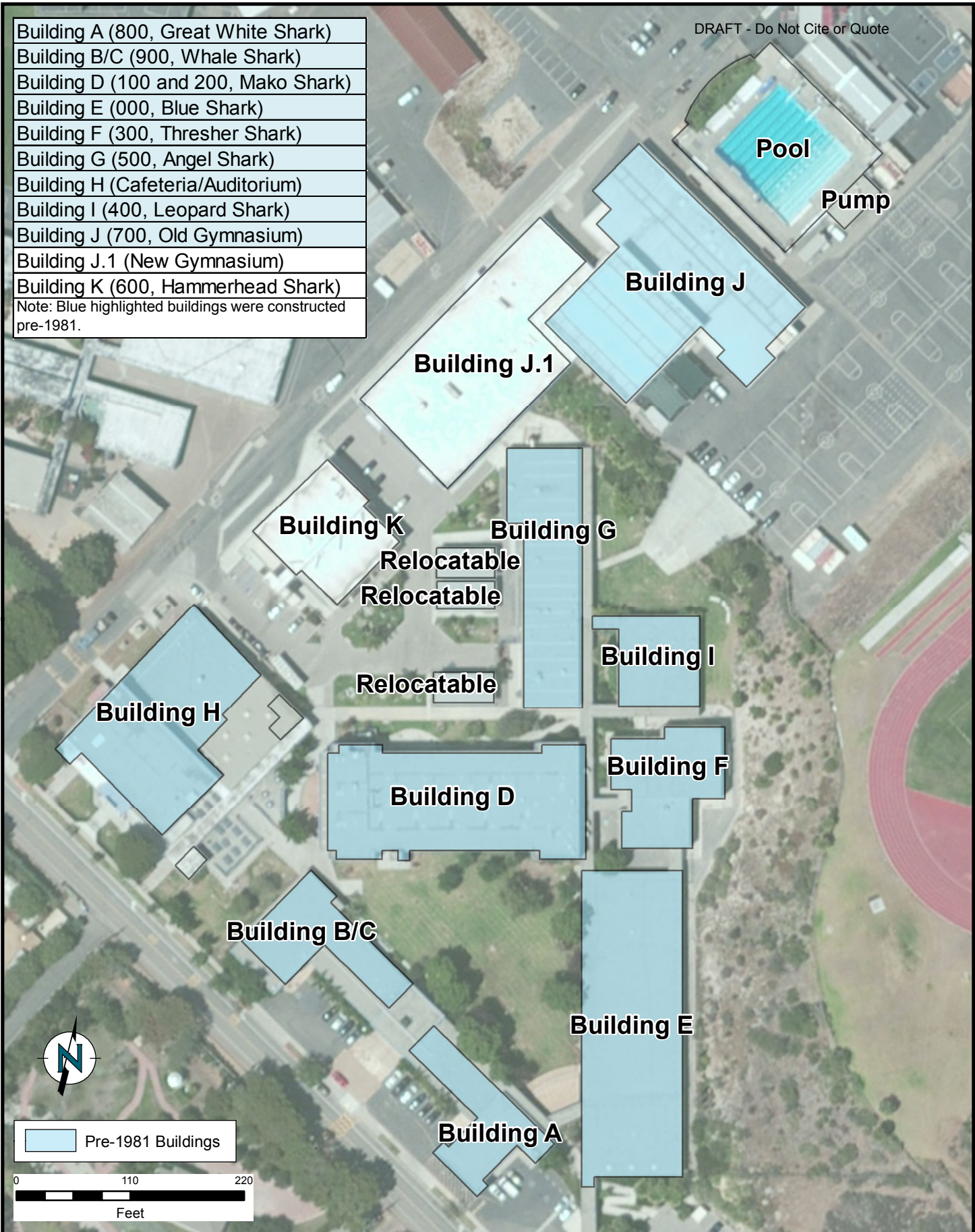
Ramboll. 2018. Notification and Request for Approval, PCB Remediation Waste Plan, Buildings D, F, G, I, and J, Malibu High School, Malibu California. April 23.

USEPA. 2018. TSCA PCB Cleanup and Disposal Approval Under 40 CFR 761.61(c) for PCB Remediation Waste at Buildings D, F, G, I, and J, Malibu High School, Malibu, California (CAC001032064). May 15.

USEPA. 2016. Exposure Levels for Evaluation of PCBs in Indoor School Air. February 26. Available online: <https://www.epa.gov/pCBS/exposure-levels-evaluation-polychlorinated-biphenyls-pCBS-indoor-school-air>

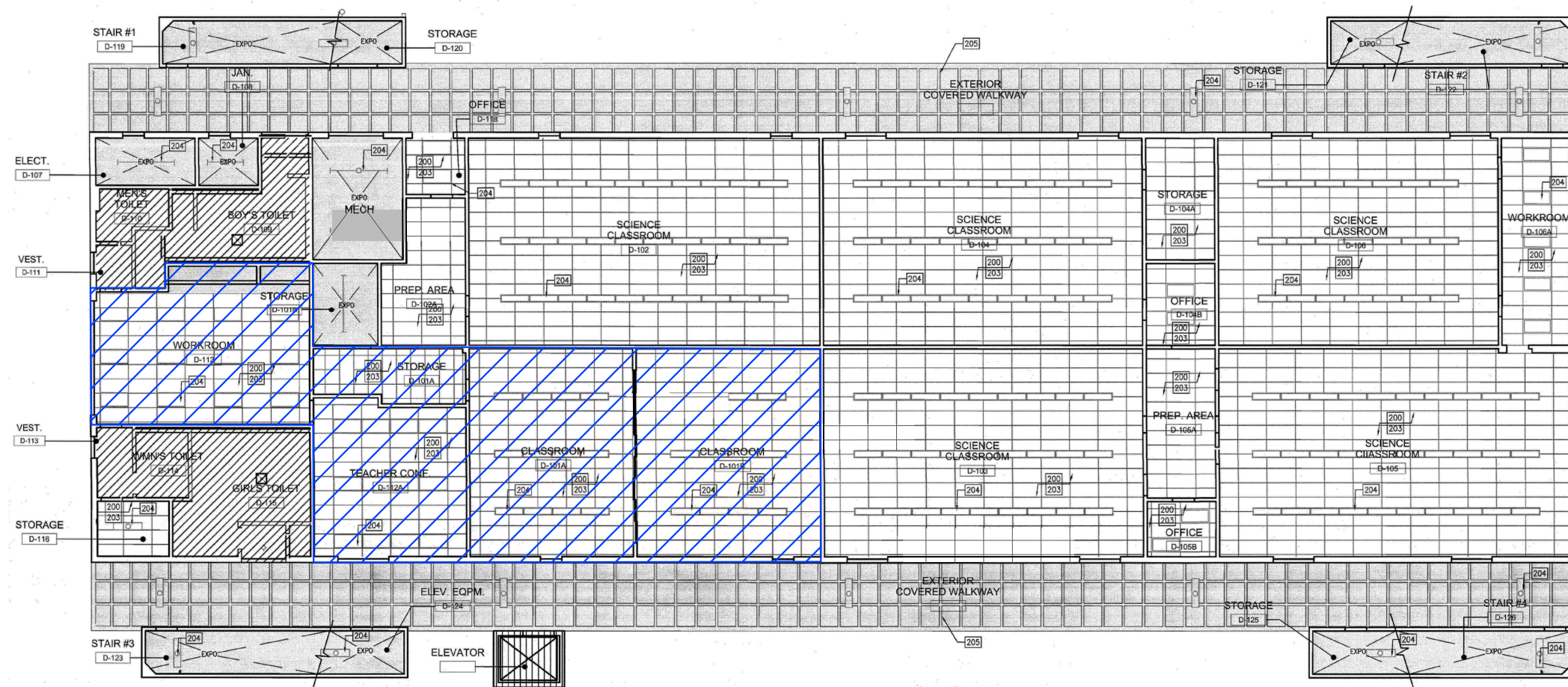
USEPA. 2011. Standard Operating Procedure for Sampling Porous Surfaces for Polychlorinated Biphenyls. May.

Building A (800, Great White Shark)
Building B/C (900, Whale Shark)
Building D (100 and 200, Mako Shark)
Building E (000, Blue Shark)
Building F (300, Thresher Shark)
Building G (500, Angel Shark)
Building H (Cafeteria/Auditorium)
Building I (400, Leopard Shark)
Building J (700, Old Gymnasium)
Building J.1 (New Gymnasium)
Building K (600, Hammerhead Shark)
Note: Blue highlighted buildings were constructed pre-1981.



Site Plan for Malibu High School
 Malibu High School
 30215 Morning View Drive, Malibu, California

Figure 1



LEGEND:



AREA OF ENCAPSULATED CONCRETE

ENCAPSULATED CONCRETE AREA BUILDING D - FIRST FLOOR

MALIBU HIGH SCHOOL
30215 MORNING VIEW DRIVE
MALIBU, CALIFORNIA



FIGURE
2

SOURCE:
ALTA ENVIRONMENTAL. "SAMPLE LOCATION MAP - BUILDING
D 1st FLOOR - PCB SAMPLING". DATE: MARCH 2020.
PROJECT NO.: SMSD-19-8997.

DRAFTED BY: DLB

DATE: 04/29/2020

PROJECT: 1690010467