10 Piñon Hills Elementary School

10.1 Summary

Short-term radon measurements were conducted in this school from March 17-19, 2009. The results obtained from these tests reflect the conditions that existed within this school and within these dates.

Tests were conducted in accordance with the US EPA's Guidance Document Radon Measurements in Schools, Revised Edition, EPA 402-R-92-014, July 1993.

These tests included all frequently occupied ground floor rooms within all structures on the campus. Additional details on the methodology of these tests as well as room selection can be found in Section 1.2 of this report.

Locations tested:	49
Locations where devices retrieved:	49
Locations with short-term results at or above 4.0 pCi/L:	0
Rooms at or above 4.0 pCi/L:	Not applicable
Survey anomalies:	None noted

Quality control and quality assurance measures that were taken for this school, which are detailed in Section 13, indicate that confidence can be placed in the survey results for this facility.

10.2 Results

The results provided below in both tabular and pictorial form represent the radon levels within these locations that were present at the time of the survey and under the condition in which the building was being operated, including its HVAC system. There are no locations that were at or above the 4.0 pCi/L action level.

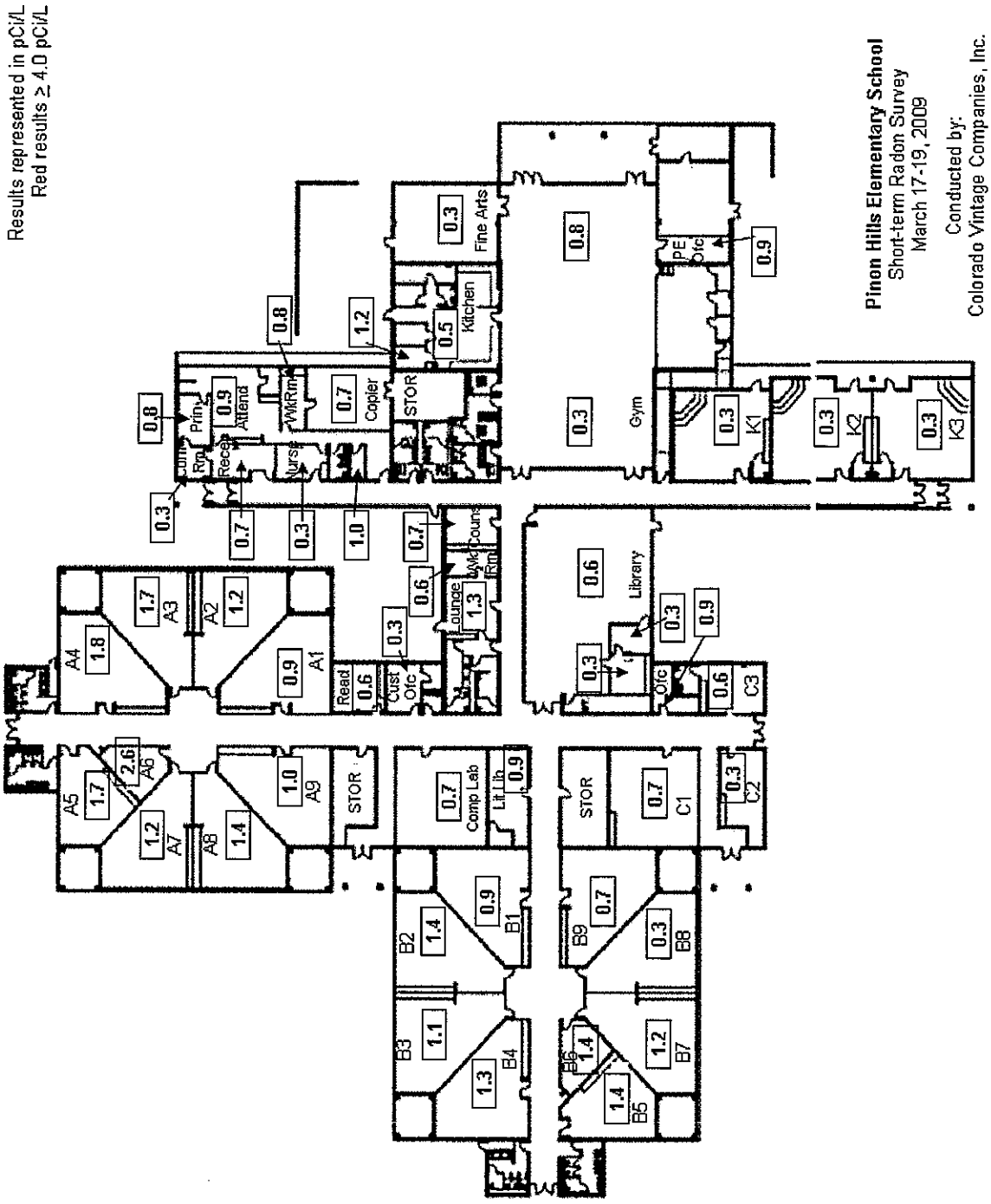
All times indicated are Eastern Daylight Savings Time. Results indicated as <0.3 pCi/L are at the lower level of detection for the devices.

Table 11: Piñon Hills Elementary School Radon Survey Results

Room	Device	Start Date	Start Time	End Date	End Time	Result (pCi/L)
A1	4328372	2009-03-17	11:00 pm	2009-03-20	1:00 am	0.9
A2	4328381	2009-03-17	11:00 pm	2009-03-20	1:00 am	1.2
A3	4328392	2009-03-17	11:00 pm	2009-03-20	1:00 am	1.7
A4	4328975	2009-03-17	11:00 pm	2009-03-20	1:00 am	1.8
A5	4328909	2009-03-17	11:00 pm	2009-03-20	1:00 am	1.7
A6	4328921	2009-03-17	11:00 pm	2009-03-20	1:00 am	2.6
A7	4328364	2009-03-17	11:00 pm	2009-03-20	1:00 am	1.2
A8	4328385	2009-03-17	11:00 pm	2009-03-20	1:00 am	1.4
A9	4328371	2009-03-17	11:00 pm	2009-03-20	1:00 am	1.0
B1	4265510	2009-03-17	11:00 pm	2009-03-20	1:00 am	0.9
B2	4265493	2009-03-17	11:00 pm	2009-03-20	1:00 am	1.4
B3	4265497	2009-03-17	11:00 pm	2009-03-20	1:00 am	1.1
B4	4328467	2009-03-17	11:00 pm	2009-03-20	1:00 am	1.3
B5	4265539	2009-03-17	11:00 pm	2009-03-20	1:00 am	1.4
B6	4328386	2009-03-17	11:00 pm	2009-03-20	1:00 am	1.4
B7	4265492	2009-03-17	11:00 pm	2009-03-20	1:00 am	1.2
B8	4265501	2009-03-17	11:00 pm	2009-03-20	1:00 am	< 0.3
B9	4328374	2009-03-17	11:00 pm	2009-03-20	1:00 am	0.7
C1	4265494	2009-03-17	10:00 pm	2009-03-20	1:00 am	0.7
C2	4265504	2009-03-17	10:00 pm	2009-03-20	1:00 am	< 0.3
C3	4328357	2009-03-17	10:00 pm	2009-03-20	1:00 am	0.6
K1	4265536	2009-03-17	10:00 pm	2009-03-20	1:00 am	< 0.3
K2	4265517	2009-03-17	10:00 pm	2009-03-20	1:00 am	< 0.3
K3	4328382	2009-03-17	10:00 pm	2009-03-20	1:00 am	< 0.3
Attendance	4328391	2009-03-17	10:00 pm	2009-03-20	1:00 am	0.9
Comp Lab	4265519	2009-03-17	11:00 pm	2009-03-20	1:00 am	0.7
Conf Rm	4265521	2009-03-17	10:00 pm	2009-03-20	1:00 am	< 0.3
Copier	4328375	2009-03-17	10:00 pm	2009-03-20	1:00 am	0.7
Counselor	4265518	2009-03-17	10:00 pm	2009-03-20	1:00 am	< 0.3
Custodian Ofc	4265500	2009-03-17	11:00 pm	2009-03-20	1:00 am	< 0.3
Fine Arts	4328369	2009-03-17	10:00 pm	2009-03-20	1:00 am	< 0.3
Gym 1	4265490	2009-03-17	10:00 pm	2009-03-20	1:00 am	< 0.3
Gym 2	4265535	2009-03-17	10:00 pm	2009-03-20	1:00 am	0.8
Kitchen	4328380	2009-03-17	10:00 pm	2009-03-20	1:00 am	0.5
Kitchen Office	4328379	2009-03-17	10:00 pm	2009-03-20	1:00 am	1.2
Library	4265491	2009-03-17	10:00 pm	2009-03-20	1:00 am	0.6
Library Ofc 1	4265499	2009-03-17	10:00 pm	2009-03-20	1:00 am	< 0.3
Library Ofc 2	4265514	2009-03-17	10:00 pm	2009-03-20	1:00 am	< 0.3
Literacy Library	4328365	2009-03-17	10:00 pm	2009-03-20	1:00 am	0.9
Lounge	4265503	2009-03-17	10:00 pm	2009-03-20	1:00 am	1.3
Nurse	4265506	2009-03-17	10:00 pm	2009-03-20	1:00 am	< 0.3
Nurse 2	4328378	2009-03-17	10:00 pm	2009-03-20	1:00 am	1.0
C - Office	4265522	2009-03-17	10:00 pm	2009-03-20	1:00 am	0.9
PE Office	4265495	2009-03-17	10:00 pm	2009-03-20	1:00 am	0.9
Principal	4265505	2009-03-17	10:00 pm	2009-03-20	1:00 am	0.8
Read Spec	4265507	2009-03-17	11:00 pm	2009-03-20	1:00 am	0.6

Room	Device	Start Date	Start Time	End Date	End Time	Result (pCi/L)
Reception	4265502	2009-03-17	10:00 pm	2009-03-20	1:00 am	0.7
Ofc Wkroom	4265496	2009-03-17	10:00 pm	2009-03-20	1:00 am	0.8
Workroom	4328348	2009-03-17	10:00 pm	2009-03-20	1:00 am	0.6

Figure 10: Piñon Hills Elementary School Radon Survey Results



10.3 Discussion

It would appear that the potential for radon in this facility, based upon its current operation, is relatively low. The highest reading observed in this building was 2.6 pCi/L with some locations being at or near the lower level of detection for the devices utilized.

10.4 Recommendations

Due to the acceptable measurements obtained throughout this structure, no specific recommendations are being made, other than to maintain the HVAC system in such a manner as it is currently operating and to insure that adequate fresh air make-up is provided during occupied hours.

However, it would be reasonable to inspect room A6, where the radon measurement was 2.6 pCi/L, to determine if a slight adjustment of either the air supply, or an increase in fresh air make-up for the FAU that serves this pod could improve the level for this room.

Maintenance

The following recommendations are made as a best practice approach for continuing to maintain low radon exposures in this campus.

1. Retest rooms after renovations, which would affect air flow and air supply, occur. This would include but not be limited to situations when:
    - HVAC system is modified, (Retest rooms affected by HVAC that is modified)
    - Partition walls are added within a room,
        - Insure that renovations include provisions for balanced air supply and return from newly created room.
    - Additions occur at this campus, whether they are new buildings or portable classrooms.
2. Maintain fresh air make-up in conformance with ASHRAE standards and state codes for schools and to insure an interior positive building pressure during occupied hours.
3. Develop a database either specifically for this school or district wide for all schools that allows for the retention of future test results that clearly delineate:
    - Location
    - Date of test
    - Purpose of test (routine, post-mitigation or post renovation, etc.)
    - Method by which room nomenclature is maintained or a clear means of determining when names are changed or rooms added.