

## 8 Minden Elementary School

### 8.1 Summary



Short-term radon measurements were conducted in this school from March 16-19, 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:	50
Locations where devices retrieved:	50
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 observed

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.

### 8.2 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 9: Minden Elementary School Radon Survey Results**

Room	Device	Start Date	Start Time	End Date	End Time	Result (pCi/L)
A1	4328328	2009-03-17	1:00 am	2009-03-19	9:00 pm	1.2
A2	4328311	2009-03-17	1:00 am	2009-03-19	9:00 pm	0.8
A3	4328277	2009-03-17	1:00 am	2009-03-19	9:00 pm	1.4
A4	4328309	2009-03-17	1:00 am	2009-03-19	9:00 pm	0.8
A5	4328289	2009-03-17	1:00 am	2009-03-19	9:00 pm	0.9
A6	4328327	2009-03-17	1:00 am	2009-03-19	9:00 pm	0.9
A7	4328310	2009-03-17	1:00 am	2009-03-19	9:00 pm	1.3
A8	4328284	2009-03-17	1:00 am	2009-03-19	9:00 pm	0.9
A9	4328317	2009-03-17	1:00 am	2009-03-19	9:00 pm	1.1
B1	4328314	2009-03-17	1:00 am	2009-03-19	9:00 pm	0.6
B2	4328288	2009-03-17	1:00 am	2009-03-19	9:00 pm	0.9
B3	4328324	2009-03-17	1:00 am	2009-03-19	9:00 pm	1.3
B4	4328271	2009-03-17	1:00 am	2009-03-19	9:00 pm	0.7
B5	4328319	2009-03-17	1:00 am	2009-03-19	9:00 pm	1.2
B6	4328270	2009-03-17	1:00 am	2009-03-19	9:00 pm	0.9
B7	4328320	2009-03-17	1:00 am	2009-03-19	9:00 pm	0.9
B8	4328315	2009-03-17	1:00 am	2009-03-19	9:00 pm	1.0
B10	4328321	2009-03-17	1:00 am	2009-03-19	9:00 pm	< 0.3
B11	4328294	2009-03-17	1:00 am	2009-03-19	9:00 pm	0.9
B12	4328293	2009-03-17	1:00 am	2009-03-19	9:00 pm	0.8
C1	4328287	2009-03-17	1:00 am	2009-03-19	9:00 pm	1.0
C2	4328296	2009-03-17	1:00 am	2009-03-19	9:00 pm	1.0
C3	4328290	2009-03-17	1:00 am	2009-03-19	9:00 pm	< 0.3
K1	4328282	2009-03-17	1:00 am	2009-03-19	9:00 pm	0.6
K2	4328292	2009-03-17	1:00 am	2009-03-19	9:00 pm	< 0.3
K3	4328265	2009-03-17	1:00 am	2009-03-19	9:00 pm	0.7
Attendance	4328268	2009-03-17	12:00 am	2009-03-19	9:00 pm	0.9
Beds	4328273	2009-03-17	12:00 am	2009-03-19	9:00 pm	< 0.3
Counselor	4328266	2009-03-17	1:00 am	2009-03-19	9:00 pm	1.0
Cust Ofc	4328272	2009-03-17	1:00 am	2009-03-19	9:00 pm	0.8
ESL	4328281	2009-03-17	1:00 am	2009-03-19	9:00 pm	1.0
Fine Arts	4328274	2009-03-17	1:00 am	2009-03-19	9:00 pm	< 0.3
Gym 1	4328285	2009-03-17	1:00 am	2009-03-19	9:00 pm	0.5
Gym 2	4328298	2009-03-17	1:00 am	2009-03-19	9:00 pm	0.9
Kitchen	4328291	2009-03-17	1:00 am	2009-03-19	9:00 pm	0.5
Kitchen Ofc	4328283	2009-03-17	1:00 am	2009-03-19	9:00 pm	< 0.3
Library 1	4328301	2009-03-17	1:00 am	2009-03-20	4:00 pm	1.1
Library 2	4328308	2009-03-17	1:00 am	2009-03-19	9:00 pm	0.6
Library Ofc 1	4328300	2009-03-17	1:00 am	2009-03-19	9:00 pm	0.6
Library Ofc 2	4328302	2009-03-17	1:00 am	2009-03-19	9:00 pm	0.8
Literacy Ofc	4328318	2009-03-17	1:00 am	2009-03-19	9:00 pm	0.7
Lounge	4328303	2009-03-17	1:00 am	2009-03-19	9:00 pm	0.8
Nurse	4328275	2009-03-17	12:00 am	2009-03-19	9:00 pm	0.7
Ofc Lounge	4328278	2009-03-17	12:00 am	2009-03-19	9:00 pm	0.7
Ofc Wkroom	4328297	2009-03-17	12:00 am	2009-03-19	9:00 pm	< 0.3
Office	4328276	2009-03-17	12:00 am	2009-03-19	9:00 pm	< 0.3

Room	Device	Start Date	Start Time	End Date	End Time	Result (pCi/L)
PE Office	4328304	2009-03-17	1:00 am	2009-03-19	9:00 pm	0.8
Principal	4328295	2009-03-17	12:00 am	2009-03-19	9:00 pm	0.6
Reception	4328280	2009-03-17	12:00 am	2009-03-19	9:00 pm	< 0.3
Workroom	4328313	2009-03-17	1:00 am	2009-03-19	9:00 pm	0.5



### 8.3 Discussion

It would appear that the potential for radon in this facility, based upon its current operation, is very low. The highest reading observed in this building was 1.4 pCi/L with several locations being at or near the lower level of detection for the devices utilized.

### 8.4 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.

#### Maintenance

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

4. 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.
5. 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.
6. 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.