SECTION 028219 – ASBESTOS AIR MONITORING REQUIREMENTS

PART 1 GENERAL

1.1 AIR MONITORING BY CONTRACTOR

A. An independent testing laboratory shall be retained by the contractor. All air-monitoring analysis shall be performed by an industrial hygienist. The hygienist must be experienced and trained in asbestos sampling and analysis. At minimum, documentation of prior asbestos sampling and analysis experience, plus satisfactory completion of the NIOSH 582 course or equivalent formal asbestos education, will be required. The laboratory must meet the requirements specified in Section 02 82 13. Air sample collection may be performed by an industrial hygienist or the contractor's foreman at the contractor's option.

B. Documentation shall be kept for each filter sample procured as to worker sampled, work area location, date and time taken, volume of air drawn through filter, pump identification number, and calibration. Documentation shall indicate in what areas tests were taken, what tasks were being performed, and who the tests are being performed on. Documentation shall clearly indicate the specified maximum allowable fiber levels for each test. All data shall be reported on a form that is easily interpreted with all required information. Chain-of- custody records shall be submitted along with all samples.

C. The samples shall be collected on 25 mm filters and analyzed within 12 hours using the membrane filter method at 400–500x magnification with phase contrast illumination, NIOSH Analytical Method No. 7400, for laboratory and field analysis. The analyst shall sign and submit permanent records of all samples analyzed directly to the environmental consultant. The independent testing laboratory shall seal the unused portion of all filters in airtight containers so that individual samples can be reanalyzed at a later date, if necessary. The containers shall be clearly labeled with project name and sample number and shall become the property of the owner at work completion at the owner's request.

D. The contractor's testing laboratory shall submit sample analysis results to the environmental consultant, verbally, within 18 hours from the time of collection; and in written form within two weeks, including chain-of-custody and equipment calibration records.

E. Contractor's Sampling During Abatement:

1. Air monitoring shall be performed to provide samples during the period of asbestos abatement in each work area. Sampling shall begin when asbestos removal commences. Samples are to be taken where Class I or II work is being conducted during each eight-hour work shift until abatement is complete in that work a

rea or until a negative exposure assessment is established per 29 CFR 1926.1101.

2. The contractor shall determine the worker(s), in each work area, likely experiencing the most severe exposure. Eight-hour TWA and 30-minute excursion samples shall be collected on the worker(s). The worker(s) shall wear a personal sampling pump and the sample shall be drawn from the breathing zone of the worker(s). All other samples are area samples.

3. The number of air samples collected shall be determined by the contractor, and may be altered during the project based on work activity and results.

4. The maximum allowable fiber levels shall be as determined by the environmental consultant based on the respiratory protection being utilized.

F. The contractor shall notify the Department of Environmental Quality of air monitoring clearance results as supplied by environmental consultant. Notification shall be within 30 days after monitoring procedures were performed in accordance to OAR 340-32-465.

1.2 AIR MONITORING BY OWNER

A. The owner has retained an experienced industrial hygienist/environmental consultant to collect and analyze asbestos air samples. Documentation of sample results will be forwarded to the contractor as appropriate to regulatory requirements.

B. Samples analyzed by phase contrast microscopy will use NIOSH Analytical Method No. 7400.

C. Owner's Air Sampling During and After Abatement:

1. The following air sampling table is to be used as a guide. The owner's industrial hygienist/environmental consultant may modify criteria. Modifications to the maximum allowable fiber count shall be made in writing by the owner.

Type of Sample	Average Samples per Eight-hour Work Shift	Sample Volume: Liters (L)	Approximate Flow Rate	Maximum Allowable Fiber Count (f/cc)
HEPA Fan Exhaust	0 or selected units	400–2000 L	2 to 10 LPM	0.01 f/cc
Outside of Work Area	0–5	400–2000 L	2 to 10 LPM	0.01 f/cc or <pre-abatement
Clearance PCM	1–5 per work area	1200–3000 L	2 to 15 LPM	0.01 f/cc

D. Air sampling for post-abatement work in isolated work areas will use the aggressive sampling method. Use of aggressive sampling in other areas shall be as directed by the environmental consultant. Aggressive sampling shall be conducted to assure that fibers remain airborne during sample collection.

E. Analysis of clearance samples shall be analyzed using phase contrast microscopy (PCM).

F. The owner reserves the right to monitor the contractor's performance via air samples on abatement workers and in the work area in addition to the contractor's air monitoring.

1.3 QUALITY ASSURANCE

A. If, at any time during the work, analysis of an air sample taken by the contractor, owner, or owner's representative, indicates a fiber count in excess of the allowable maximums specified, the industrial hygienist who analyzed the air sample shall immediately notify:

1. The contractor's foreman
2. The environmental consultant, PBS Engineering and Environmental Inc. (or as designated) 503.248.1939
3. The project manager and/or project superintendent
4. Other workers, employees, occupants, etc. in affected area(s).

B. Immediately upon being notified of fiber count exceeding the specified maximum allowable levels, the contractor shall perform the following steps in the order presented, at no additional cost to the owner:

1. Stop abatement work.
2. Identify source of high fiber counts.
3. Immediately correct any containment breaches, pressure differential changes, or other potential cause, and other concerns with the environmental consultant, and the owner if the owner is available. The environmental consultant will determine the affected area and affected adjacent areas considered to be contaminated. The environmental consultant will determine the actions to be taken by the contractor at no additional cost to the owner.
   a. The affected area and the affected adjacent areas. Cleaning shall use wet methods and HEPA vacuuming.
   b. Resample air until fiber counts are determined to be below one half of the specified maximum levels.
   c. Secure and repair containment barriers, repair or add e

quipment.

d. Modify work procedures, and make other changes determined to be the possible cause of high fiber counts.

4. Carefully resume work under close air monitoring.

5. The contractor shall be responsible for costs of any testing, cleanup, repair, down time loss, etc. that is a result of the contractor's negligence, poor maintenance of isolated areas or improper procedures.

END OF SECTION