

PURPOSE

On November 30, 2009 and December 10, 2009, Consolidated Safety Services Inc. (CSS) industrial hygiene personnel conducted a limited bulk sampling of suspected asbestos containing materials in the Boiler House of building N234A. The purpose of the task was to determine if the upcoming renovations in the Boiler House will be impacting any asbestos containing materials. This report documents the findings and recommendations resulting from the industrial hygiene consulting services conducted in the Boiler House on insulation found on the piping and boiler stack of building N234A of the NASA Ames Research Center (ARC).

BACKGROUND

At the request of the Safety, Health, and Medical Services Division, Code QH, CSS personnel performed a limited asbestos survey in areas identified by Joel Baldovino, code JCE, as those scheduled to be impacted by the current renovation of a new de-aerator that will tie into existing piping in the boiler room of N234A. Jennifer Morris, Industrial Hygienist and Certified Asbestos Consultant from CSS, performed the asbestos survey.

SAMPLING AND ANALYTICAL METHOD

Fifteen (15) bulk samples from Presumed Asbestos Containing Material's (PACM's) of Thermal System Insulation (TSI) were collected from the Boiler House in building N234A. The asbestos bulk samples were submitted to EMSL Lab, Inc., San Leandro, CA., an AIHA accredited laboratory and participant in NVLAP, for analysis of asbestos content. The samples were analyzed by EPA 600/R-93/116 method using polarized light microscopy (PLM).

FINDINGS AND DISCUSSION

The laboratory report indicates that asbestos is present in the insulation of many of the pipes sampled within the boiler house. The observations at the times of the survey were of some damaged jacket insulation on the piping and boiler stack causing potential exposure to the asbestos containing materials. The laboratory results are summarized in Table 1 below.

Table 1. Building N234A Bulk Samples for Asbestos Content – November 30 and December 09, 2009

Sample No.	Location / Material Description	Asbestos Concentration*	NESHAPS Category	OSHA Class of Work
N234-01Debris	2 nd floor near boiler stack (small damaged piping west of stack)	ND	N/A	N/
N234-02TSI	Insulation on boiler stack (missing jacket in some places)	25% Amosite	RACM	Class I
N234-03TSI	Large Piping going into water storage tank on 2 nd floor	15% Chrysotile & 25% Amosite	RACM	Class I
N234-04 Debris	Debris on structural steel on south side of building 2 nd floor	ND	N/A	N/A
N234-05 TSI	Large piping (AUX EHX/ some damage on insulation jacket)	10% Chrysotile & 25% Amosite	RACM	Class I
091209-N234-01	1 st floor piping Insulation	ND	N/A	N/A
091209-N234-02	1 st floor piping Insulation	8% Amosite	RACM	Class I
091209-N234-03	1 st floor piping Insulation	8% Amosite	RACM	Class I
0091209-N234-04	1 st floor piping Insulation	8% Amosite	RACM	Class I
091209-N234-05	1 st floor small horizontal pipe (damaged)	8% Amosite	RACM	Class I
091209-N234-06Debris	Debris in pan below damaged pipes	8% Amosite	RACM	Class I
091209-N234-07	Vertical piping fiberglass	ND	N/A	N/A
091209-N234-08	Large water tank 2 nd floor	ND	N/A	N/A
091209-N234-09	Large water tank 2 nd floor	ND	N/A	N/A
091209-N234-10	Piping insulation outside under stairs (damaged)	15% Chrysotile	N/A	N/A

**The NASA Ames Asbestos Management Plan has defined asbestos containing materials as those materials that contain greater than 0.1% asbestos.*

RACM-Regulated Asbestos Containing Material

ND-No Asbestos Detected

CONCLUSION

Insulation on the large diameter piping (approximately 18”) is asbestos containing. Insulation on the piping labeled AUX is asbestos containing. Insulation on the piping below the large tank on the first floor is asbestos containing. White debris on the floor below this piping is asbestos containing. Damaged elbow insulation on the piping located under the outside stairwell on the west side of building N234A is asbestos containing.

RECOMMENDATIONS

Damaged TSI that is found in the boiler house and outside under the stairwell should be repaired and associated debris should be HEPA vacuumed by asbestos trained personnel.

The findings of this report should be included in the hazardous materials section of the construction plans for the renovation project. The piping insulation material is considered a Regulated Asbestos Containing Material (RACM) and if impacted must be removed prior to the tie-ins to piping during the renovation project. All OSHA Class I engineering controls should be used during removal by a licensed abatement contractor with asbestos trained workers.

A ten (10) day notification will need to be submitted to Bay Area Air Quality Management District prior to the removal of asbestos insulation in amounts greater than 100 square feet. The insulation material removed from the piping will be considered California Hazardous Waste and should be placed in a properly labeled leak tight bag and accompanied by a Hazardous Waste Manifest. The waste bags will need to be inspected and Hazardous Waste Manifest signed by Dan Winningham code Q prior to the transportation of the waste off of NASA Ames Research Center property.

Asbestos abatement control measures shall be taken to prevent environmental releases of asbestos. The policies and procedures established in AHB 1700.1 Chapter 30, Asbestos Management Plan and the applicable sections of the Ames Standard Construction Specification shall be followed. The NASA ARC Asbestos Management Plan and applicable Federal, State, and Local Governmental Regulations pertaining to handling, disturbance, removal, storage, and disposal of asbestos containing materials must be adhered to.

REFERENCES

NASA Ames Health and Safety Plan, Chapter 30 Asbestos Management Plan

NIOSH Manual of Analytical Methods (NMAM®), 4th ed., DHHS (NIOSH) Publication 94-113 (August, 1994), Cassinelli, M.E. & O'Connor, P.F. (pfo1@cdc.gov), Eds.

OSHA Technical Manual, Directive no. TED 1-0.15A, Occupational Safety and Health Administration (January, 1999).

29 CFR 1910.1000, 1910.1001 U.S. Occupational Safety and Health Administration.

If you have any questions, please do not hesitate to contact me.

Sincerely,

Jennifer Morris
CSS, Industrial Hygienist
CAC, # 96-2013

Attachments

Appendix 1-
Laboratory
Analytical
Report

Appendix 2-
Photos of Sample
Locations & Damaged Materials



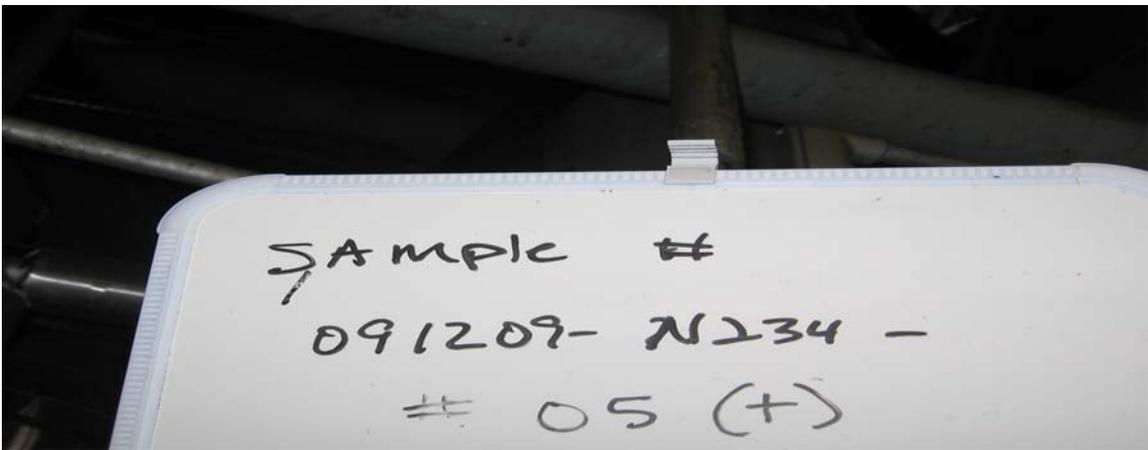
Pictures of: Sample Number N234-05TSI Description AUX EXH
Piping running from third floor tank to 1st floor tank.



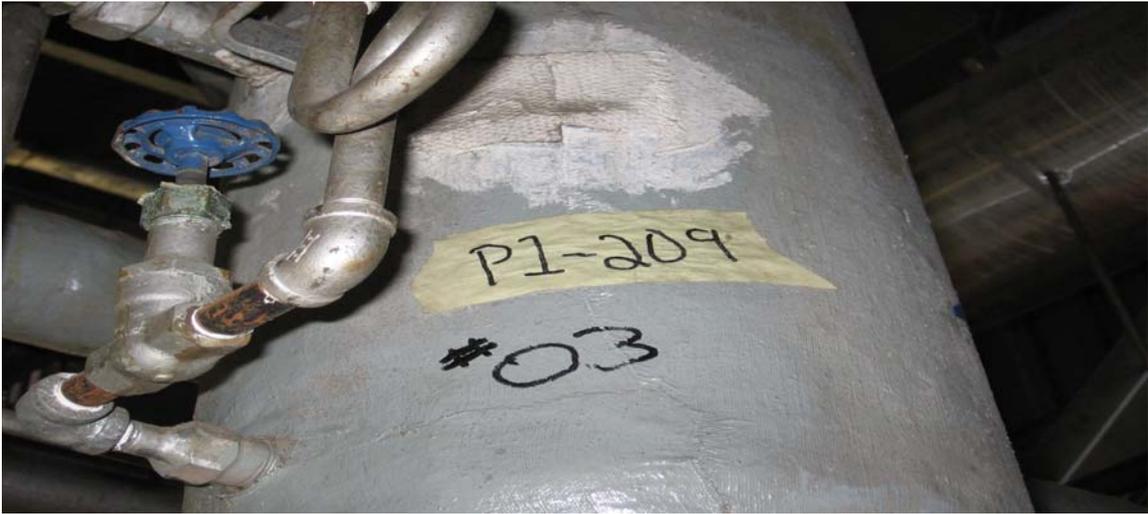
Picture of Sample Number N234-03TSI: Large piping going into tank on 2nd floor.



Asbestos Containing Damaged Piping outside under stairwell on west side of building: Sample number 091209-N234-10



Pictures of sample 091209-N234A-05 Asbestos Containing Insulation of Horizontal Pipe running north and south across boiler house about 6" diameter and about 8 feet off the ground. Connects to the boiler and some damage was observed.



Sample Number 091209-N234-03 Asbestos Containing Insulation
1st Floor. Damaged jacket observed



Sample Number 001209-N234-04: Damaged jacket observed



Sample Number N234-02TSI: boiler stack with some damaged jacket observed.