



Report Issue Date: 11/16/2012

Frank Ehrenfeld  
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Mt. Laurel, NJ 08054 Participant ID# 100188

Dear Frank Ehrenfeld,

Please find your organization's final Industrial Hygiene Proficiency Analytical Testing (IHPAT) results for **Round 191**. It is the participant's responsibility to thoroughly review results and to immediately contact the AIHA Proficiency Analytical Testing Programs in writing, if any errors are found in your report.

The proficiency demonstrated by the results of this IHPAT round is valid until the close of the retest round on January 16, 2013, if the participant chooses to enroll, or until February 15, 2013 when the next IHPAT report will be available. Unacceptable performance may be improved by correctly analyzing a set of retest samples. Retest Order Forms and the PAT Programs Schedule are available online at [www.aihapat.org](http://www.aihapat.org). The deadline to order a retest is November 28, 2012.

Participants shall not describe their proficiency status in a manner that implies accreditation, certification or variations thereof. PAT results pertain only to the participant organization at the location listed on this results report. AIHA PAT Programs makes every effort to ensure that individual participant results are kept confidential and are not made public. Round results are only released to the participant and those entities requiring this information for accreditation, regulatory and contract purposes. New participants are made aware of the arrangement in advance of participation and consent is sought prior to the release of records for participants. PAT reports may not be reproduced or distributed unless copied in its entirety.

IHPAT **Round 192** sample kits will be mailed to participants around January 1, 2013. An email will be sent out upon shipment of round 192 samples. If you do not receive samples within fifteen (15) days after the ship date please contact the AIHA PAT Programs. Your organization's data will be due by 11:59pm ET on February 1, 2013. The analytes for round 192 are:

- **Metals – cadmium, lead, nickel**
- **Asbestos – amosite**
- **Silica – coal/talc**
- **Organics – methanol (MOH)**
- **Diffusive – benzene, toluene, o-xylene**

Samples are generated, characterized, packaged, and shipped by SRI International, Menlo Park, CA 94025 under contract with AIHA Proficiency Analytical Testing Programs. Unless otherwise noted, sample homogeneity and stability criteria were satisfied for all samples.

I encourage you to contact me with any feedback, questions or if you wish to contest your results at [nmugambwa@aiha.org](mailto:nmugambwa@aiha.org).

Sincerely,

Natasha Mugambwa, MS  
Manager, AIHA PAT Programs

## Industrial Hygiene Proficiency Analytical Testing Results

This document contains three sub-reports relating to IHPAT Round 191. The first report contains your organization's results listed per contaminant, per sample. The second report contains your current and 2 previous test round performance respectively (where applicable), and the final report contains summary results for all participants for IHPAT round 191.

### Testing Results for IHPAT Round 191

This part of the report contains your organization's results listed per contaminant, per sample.

Contaminant	Units	#	Result	Ref. Value	Lower Limit	Upper Limit	z-Score	Rating
Manganese	mg	1	0.0192	0.0201	0.0177	0.0226	-1.2	A
	mg	2	0.0544	0.0552	0.0485	0.0618	-0.3	A
	mg	3	0.0716	0.0745	0.0656	0.0834	-1.0	A
	mg	4	0.0118	0.0120	0.0106	0.0135	-0.5	A
Cadmium (CAD)	mg	1	0.00480	0.00489	0.00430	0.00548	-0.5	A
	mg	2	0.00790	0.00782	0.00688	0.00876	0.3	A
	mg	3	0.01330	0.01327	0.01168	0.01486	0.1	A
	mg	4	0.01880	0.01841	0.01620	0.02062	0.5	A
Lead (LEA)	mg	1	0.0892	0.0937	0.0825	0.1050	-1.2	A
	mg	2	0.1354	0.1337	0.1177	0.1497	0.3	A
	mg	3	0.0652	0.0691	0.0608	0.0774	-1.4	A
	mg	4	0.0326	0.0345	0.0303	0.0386	-1.4	A
Asbestos / Fibers (ASB)	f/mm2	1	683	445	218	752	2.4	A
	f/mm2	2	281	168	83	285	2.9	A
	f/mm2	4	65	86	52	130	-1.8	A

**Please note:**

Reference value is the mean of the reference group

Lower limit = reference value - 3 standard deviations and Upper limit = reference value +3 standard deviations

Z-score = (reported result - reference value)/standard deviation; A - Acceptable Analysis; U - Unacceptable Analysis

Fiber data are positively skewed therefore transformations are used to obtain approximately normal distributions.

Both the assigned values and acceptance limits are based on consensus of the reference group. The acceptability of reported results is based on upper and lower acceptance limits. This is why a reported result may appear unacceptable according to z-score, but be identified as acceptable. Any non-participation or non-reporting of PAT data will result in unacceptable results (See PAT Programs Participation Policies, Section 2.1.6.2.)

## Overall Performance Summary Concluding with 191

The following table contains your organization's current and 2 previous test rounds performance respectively (where applicable). For more information in regard to the determination of proficiency, please visit: [www.aihapat.org](http://www.aihapat.org)

Sample	Round	Round Score**	Round Performance	Proficiency Status -Three Round Score
Asbestos	189	4/4	Pass	
	190	4/4	Pass	
	191	4/4	Pass	P
Metals	189	12/12	Pass	
	190	12/12	Pass	
	191	12/12	Pass	P

**Please note:**

The denominators represent the total number of samples analyzed.

The numerators represent the number of acceptable results.

Pass: Round Score  $\geq$  75%      Fail: Round Score  $<$  75%

P – Proficient; NP – Non-proficient; I – Indeterminate.

A participant is rated proficient for the applicable IHPAT analyte group if the participant has a passing score for the applicable IHPAT analyte group in two (2) of the last three (3) consecutive PT rounds. A participant is rated non-proficient for the applicable PT analyte group if the participant has failing scores for the associated PT analyte group in two (2) of the last three (3) consecutive PT rounds.

\*\*Asbestos - Statistics for asbestos sample 3 did not meet the acceptability criteria so all participants have been awarded 1 point for the sample.

## Performance of all Participants for IHPAT Round 191

The following table contains aggregate results for all participants IHPAT round 191.

Contaminant	#	Reference Value	Reference Std. Dev.**	RSD (%)	Total Participants	Total Acceptable	Low*	High*
Manganese	1	0.0201	0.0008	4.0	156	146	7	3
	2	0.0552	0.0022	4.0	156	146	6	4
	3	0.0745	0.0030	4.0	156	142	8	6
	4	0.0120	0.0005	4.0	156	141	5	10
Cadmium (CAD)	1	0.00489	0.00020	4.0	157	145	8	4
	2	0.00782	0.00031	4.0	157	147	6	4
	3	0.01327	0.00053	4.0	157	145	7	5
	4	0.01841	0.00074	4.0	157	145	8	4
Lead (LEA)	1	0.0937	0.0038	4.0	157	150	5	2
	2	0.1337	0.0054	4.0	157	143	9	5
	3	0.0691	0.0028	4.0	157	144	8	5
	4	0.0345	0.0014	4.0	157	142	10	5
Silica (SIL)	1	0.1997	0.0255	12.8	54	51	0	3
	2	0.2000	0.0288	14.4	54	51	2	1
	3	0.0935	0.0148	15.8	54	53	0	1
	4	0.1638	0.0253	15.5	54	54	0	0
Asbestos / Fibers (ASB)	1	445	89	20.0	738	562	174	2
	2	168	34	20.0	738	629	86	23
	4	86	13	15.2	738	653	49	36
Chloroform (CFM)	1	0.0659	0.0032	4.9	125	111	7	7
	2	0.8738	0.0387	4.4	125	116	3	6
	3	0.5738	0.0280	4.9	125	118	3	4
	4	0.1372	0.0056	4.1	125	113	2	10
1,2-Dichloroethane (DCE)	1	0.0531	0.0021	4.0	125	105	11	9
	2	1.3102	0.0524	4.0	125	111	7	7
	3	0.3211	0.0128	4.0	125	115	4	6
	4	0.1943	0.0078	4.0	125	110	4	11
Trichloroethylene (TCE)	1	0.6435	0.0257	4.0	125	106	11	8
	2	0.2498	0.0100	4.0	125	112	5	8
	3	0.0682	0.0027	4.0	125	93	15	17
	4	0.7351	0.0294	4.0	125	112	7	6

\*Low – < Lower Limit ; High – > Upper Limit

\*\*The reference group standard deviation is used but is limited to no less than 4% relative standard deviation or no greater than 20% relative standard deviation.