WV-0220 #21

PLAINTIFF'S EXHIBIT
UC-3536

INDUSTRIAL HYGIENE MONITORING

DATE: June 30, 1987.

PROJECT: Monitor insulator for asbestos exposure while stripping insulation using a glove bag. Second level Rectification Tower - Silanes.

DATE OF SAMPLES: 4/21/87

SUMMARY:

SAMPLE	TYPE	TIME START	TIME STOP	MINUTES	VOLUME	CONC.	PEL	RESP?
Z-9208	BZ	11:07	11:30	23	92 l	<0.05 fibers/cc	0.2 f/cc	A

A = Airline
BZ = Breathing Zone

RECOMMENDATIONS: Share this information with insulators.

DISCUSSION: The insulator's exposure was well below the TWA_8 of 0.2 fibers/cc for asbestos. Continue using proper procedure.

METHOD OF ANALYSIS: Microscopy

DATA AND REPORT BY: C. R. McMillan/T. L. Grittie

ANALYSIS BY: JHM Labs

COPY TO: D. G. Beddow, D. A. Boggs, A. A. Cosper, E. L. Doerflein, J. K. Kyle, R. P. Leichliter, K. B. Purinton, W. V. Summers, G. W. Wulfert.

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Union Carbide trial exhibit UC-3536: Union Carbide Industrial Hygiene Asbestos Monitoring Reports for Silanes, Pol... Published by AsbestosClaims.Law
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WV-0220 #2

INDUSTRIAL HYGIENE RESULTS

DATE: July 1, 1987.

PROJECT: Monitor K-57 area and personnel in area for exposure to asbestos. Painters had used air to blow dirt off of the top of ventilation ductwork in preparation for painting to be done. IH took a bulk sample of material which had been blown off the ductwork. Upon analysis, it was determined that the sample contained a small amount of asbestos. According to Poly II operators, the area had been quite dusty while the painters were working. After IH had been called, the painters were told to stop the operation.

DATE OF SAMPLES: 4/23/87 to 4/24/87

SUMMARY:

SAMPLE	DATE	TYPE	TIME START	TIME STOP	MINUTES	RESULTS	COMMENTS
Z-9218	4-23	Area	11:05	13:00	115	< 0.01 f/cc	Desk at SW wall near K-57. Kettlehouse No one in area.
Z-9219	4-23	Area	11:08	13:00	112	0.005 f/cc	Near K-57 handhole. No one in area
Z-9220	4-23	BZ	13:00	18:00	300	0.10 f/cc	Insulator performing cleanup of K-57 area
Z-9206	4-24	Area	00:10	8:25	495	< 0.005 f/cc	After cleanup completed. On breaker box at wall of kettle area
Z-9207	4-24	BZ	9:54	10:50	56	< 0.004 f/cc	Operator performing regulator duties at K-57. Protective equipment was worn.

BZ = Breathing Zone

DISCUSSION: All samples show concentrations below both the TWA_8 and the TWA_{12}. Sample Z-9220 was taken during cleanup and is at the action level of a TWA_8. The insulator wore protective clothing and an airline respirator. Samples Z-9206 and Z-9207 were taken after cleanup completion and priority analyzed to determine if the area was cleaned adequately to allow entry. The results of analysis were communicated over the phone and at approximately 2:00 p.m. on the 24th the area was opened for entry.

UCC 007234

RECOMMENDATIONS: Before air is used on dusty areas it should routinely be checked for asbestos content to avoid similar situations in the future. If anyone suspects asbestos in a dusty area I.H. should be called immediately. Share these results with all affected personnel.

METHOD OF ANALYSIS: Microscopy

DATA AND REPORT BY: C. R. McMillan/T. L. Grittie

ANALYSIS BY: JHM Labs

COPY TO: D. A. Boggs, E. L. Doerflein, J. K. Kyle, D. L. Mullins, K. B. Purinton, R. D. Smith, W. V. Summers, G. W. Wulfert.

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WV.072704#25

INDUSTRIAL HYGIENE MONITORING

DATE: 6/30/87

PROJECT: Routine area monitoring for asbestos on first level of Rectification Tower (N.W. side) in Silanes.

DATE OF SAMPLES: 4/1/87

SUMMARY:

SAMPLE	TYPE	TIME START	TIME STOP	MINUTES	FLOW RATE	VOLUME	CONC.	PEL TWA12
Z-9149	Area	13:36	16:15	159	4000 cc/min.	636 l	<0.008	0.133 f/cc

RECOMMENDATIONS: Share this information with area personnel.

DISCUSSION: The concentration of asbestos in the Rectification Tower during the sampling period was well below the TWA_{12} PEL of 0.133 f/cc.

METHOD OF ANALYSIS: Microscopy

DATA AND REPORT BY: C. R. McMillan/T. L. Grittie

ANALYSIS BY: JHM Labs

COPY TO: D. G. Beddow, D. A. Boggs, A. A. Cosper, E. L. Doerflein, R. P. Leichliter.

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Union Carbide trial exhibit UC-3536: Union Carbide Industrial Hygiene Asbestos Monitoring Reports for Silanes, Pol... Published by AsbestosClaims.Law
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WU-020 # 24

INDUSTRIAL HYGIENE RESULTS

DATE: June 30, 1987.

SUBJECT: Monitor UCC Design and Construction insulators for exposure to asbestos during removal using a glove bag. In Polymers I tank farm in area outside, behind 8" mill.

DATE OF SAMPLES: 2/13/87

SUMMARY:

SAMPLE	TIME START	TIME STOP	TOTAL (Min.)	FLOW RATE	VOLUME	TYPE	RESULTS	PEL
Z-8969	9:50	12:52	182	3900 cc/min	709.8 l	BZ	0.22 f/cc	0.2 f/cc
Z-8970	9:52	12:52	180	4000 cc/min	720 l	BZ	0.09 f/cc	0.2 f/cc

DISCUSSION: During the three hour sample period one of the insulators (sample #Z-8969) exceeded the TWA_8 permissible exposure limit of 0.2 fibers per cubic centimeter of air. Protective clothing and Comfo II half-face respirators with HEPA filters were worn. The respirators were more than adequate to protect against these fiber concentrations. Wet methods were used. The area in which the work was being performed was a small, cramped corner with little room for free movement. This may have contributed to the above results.

RECOMMENDATIONS: Use caution when removing asbestos using the glove bag method. Wet methods of removal must be stringently enforced even when used in glove bags. Continue wearing respiratory protection when using the glove bag method. Continue IH monitoring. Inform insulators of the results of these tests.

METHOD OF ANALYSIS: Microscopy

DATA AND REPORT BY: C. R. McMillan/T. L. Grittie

ANALYSIS BY: JHM Labs

COPY TO: D. A. Boggs, J. E. Boley, E. L. Doerflein, T. K. Ioannou, K. B. Purinton, L. P. Smith, S. M. Walker, G. W. Wulfert.

T. L. Grittie

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UCC 007237

WV-0220 #25

INDUSTRIAL HYGIENE RESULTS

DATE: July 1, 1987.

PROJECT: Monitor area near exposed asbestos on vertical line on fourth deck of east side of Rectification tower, Silanes.

DATE OF SAMPLES: 4/29/87

SUMMARY:

SAMPLE	TYPE	TIME START	TIME STOP	MINUTES	RESULTS
Z-9223	Area	9:38	16:04	386	<0.003 f/cc

DISCUSSION: The sample pump was placed approximately 1 1/2 ft. downwind from the exposed line. The concentration during the sample period of nearly 6 1/2 hours was well below the PEL TWA_8 and the action level.

RECOMMENDATIONS: Request IH monitoring when personnel are in the area and/or the potential for disturbing the asbestos exists.

METHOD OF ANALYSIS: Microscopy

DATA AND REPORT BY: T. L. Grittie

ANALYSIS BY: JHM Labs

COPY TO: D. G. Beddow, D. A. Boggs, A. A. Cosper, E. L. Doerflein, R. P. Leichliter.

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WV-0220 A 26

INDUSTRIAL HYGIENE MONITORING

DATE: June 20, 1987.

PROJECT: IH monitoring was requested as a result of concern over potential asbestos exposure in the Monomers control room. This concern was raised when it was found that loose insulation had dropped onto the roof of the building near the ventilation system intake.

DATE OF SAMPLES: 2/13/87

SUMMARY:

SAMPLE	TYPE	TIME START	TIME STOP	MINUTES	FLOW RATE	VOLUME	CONC.	TWA8
Z-8973	Area	11:02	18:52	470	3050 cc/min.	1433.5 l	<0.003 fibers/ cc	0.133 f/cc

RECOMMENDATIONS: Report these results to operators and staff in Monomers.

DISCUSSION: Operators should be commended for bringing this situation to the attention of I.H. Fiber concentrations were well below the 12-hour time weighted average PEL. Continued recognition/ reporting/monitoring and correction of possible problem situations is strongly encouraged.

METHOD OF ANALYSIS: Microscopy

DATA AND REPORT BY; C. R. McMillan/T. L. Grittie

ANALYSIS BY: JHM Labs

COPY TO: D. G. Beddow, D. A. Boggs, A. A. Cosper, E. L. Doerflein, R. P. Leichliter.

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UCC 007239

WV-07207

INDUSTRIAL HYGIENE MONITORING

DATE: June 30, 1987.

PROJECT: Monitor area N.E. of tank farm number 3 in Silanes for asbestos. White fibers were seen floating in the air. These fibers were never identified. Area sampling was performed upon request.

DATE OF SAMPLES: 3/24/87

SUMMARY:

SAMPLE	TYPE	TIME START	TIME STOP	MIN.	FLOW RATE	VOLUME	CONC.	TWA12
Z-9109	Area	10:48	15:48	300	3050 cc/min	915 l	<0.005 f/cc	0.133 fibers/cc

RECOMMENDATIONS: Communicate results to area personnel.

DISCUSSION: Concentrations during the sampling period were well below the TWA_{12} PEL for asbestos. This is based on the assumption that the material was asbestos even though it was never identified. Caution should be used when making such assumptions.

METHOD OF ANALYSIS: Microscopy

DATA AND REPORT BY: C. R. McMillan/T. L. Grittie

ANALYSIS BY: JHM Labs

COPY TO: D. G. Beddow, D. A. Boggs, A. A. Cosper, E. L. Doerflein, R. P. Leichliter.

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WV-0770028

INDUSTRIAL HYGIENE RESULTS

DATE: July 1, 1987.

PROJECT: Monitor Poly I control room for exposure potential to asbestos. Asbestos insulation is above the ceiling tiles and concern was expressed over the potential for a hazard to exist in the control room.

DATE OF SAMPLES: 4/29/87

SUMMARY:

SAMPLE	TYPE	LOCATION	TIME START	TIME STOP	MINUTES	RESULTS	PEL TWA12
Z-9221	Source	Next to crawl space near missing ceiling tile above Bailey	9:20	16:10	410	<0.003 f/cc	0.13 f/cc
Z-9222	Area	Operators desk	*	*	98	0.01 f/cc	0.13 f/cc

*The pump shut off at some point during the sampling but ran for 98 minutes at the flow rate.

DISCUSSION: Both samples were below the TWA_{12} PEL as well as the action level.

RECOMMENDATIONS: Conduct personnel monitoring for operator spending the most time in that area. Share the above results with personnel in that area. Notify IH if the ceiling tiles are to be removed.

METHOD OF ANALYSIS: Microscopy

DATA AND REPORT BY: T. L. Grittie

ANALYSIS BY: JHM Labs

COPY TO: D. G. Beddow, D. A. Boggs, E. L. Doerflein, T. K. Ioannou, J. K. Kyle, L. P. Smith.

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WL-0220 #79

INDUSTRIAL HYGIENE RESULTS

DATE: July 1, 1987.

PROJECT: Monitor insulators for asbestos exposure while using glove bags to strip T-111 in Tank Farm 4 in Silanes.

DATE OF SAMPLES: 4/30/87

SUMMARY:

SAMPLE	TYPE	TIME START	TIME STOP	MINUTES	RESULTS	PEL TWA8
Z-9225	BZ	12:54	13:34	40	0.14 f/cc	0.2 f/cc
Z-9226	BZ	12:57	13:34	37	<0.03 f/cc	0.2 f/cc

DISCUSSION: During the short sample time the fiber concentrations were below the PEL TWA_8 of 0.2 f/cc. Sample Z-9225 was slightly above the action level. Due to the short duration of sampling neither are truly indicative of an 8 hour exposure. The insulators wore breathing air. Glove bag method was used.

RECOMMENDATIONS: Share this information with insulators. Continue to request I.H. monitoring.

METHOD OF ANALYSIS: Microscopy

DATA AND REPORT BY: C. R. McMillan/T. L. Grittie

ANALYSIS BY: JHM Labs

COPY TO: D. G. Beddow, D. A. Boggs, A. A. Cosper, E. L. Doerflein, J. K. Kyle, R. P. Leichliter, K. B. Purinton, W. V. Summers, G. W. Wulfert.

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WV-0220#30

INDUSTRIAL HYGIENE RESULTS

DATE: June 30, 1987.

PROJECT: Monitor insulators for asbestos exposure while removing insulation from Emulsion Building, Polymers II.

DATE OF SAMPLES: 2/15/87 and 2/17/87

SUMMARY:

SAMPLE	TYPE	DATE	TIME START	TIME STOP	MINUTES	RESULTS	COMMENTS
Z-9050	BZ	2/15	13:15	14:20	65	<0.02 f/cc	Glove Bag
Z-9051	BZ	2/15	13:17	14:20	63	0.09 f/cc	Glove Bag
Z-9052	BZ	2/17	10:30	11:30	60	0.68 f/cc	Inside negative pressure enclosure

BZ = breathing zone

DISCUSSION: All insulators monitored wore airline respirators. As one can see from the above data, the use of glove bags where feasible, significantly reduces personnel exposure and should be the engineering control of choice if possible. Sample Z-9052 shows a fiber concentration above the PEL, TWA_8 of 0.2 f/cc during the sampling period. This concentration is, however, well below the limitations of the respirator.

RECOMMENDATIONS: Use glove bags whereever feasible. Regardless of the method of choice, the material must be thoroughly wetted to minimize fibers in the air. Share this information with insulators.

METHOD OF ANALYSIS: Microscopy

DATA AND REPORT BY: C. R. McMillan/T. L. Grittie

ANALYSIS BY: JHM Labs

COPY TO: D. A. Boggs, E. L. Doerflein, J. K. Kyle, D. L. Mullins, K. B. Purinton, W. V. Summers, G. W. Wulfert.

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UV-0[illegible]=31

INDUSTRIAL HYGIENE MONITORING

DATE: June 30, 1987.

PROJECT: Monitor insulators for asbestos exposure while patching exposed insulation on T-3 methyl chloride tank in Monomers.

DATE OF SAMPLES: 3/26/87

SAMPLE	TYPE	TIME START	TIME STOP	MIN.	FLOW RATE (cc/min)	VOLUME (liters)	CONC.	PEL TWA8	RESP.
Z-9132	BZ	10:27	11:24	57	4000	228	<0.0022 f/cc	0.20 f/cc	A
Z-9133	BZ	10:30	11:24	54	4000	216	0.03 f/cc	0.20 f/cc	A
Z-9134	BZ	10:28	11:24	56	4000	224	<0.02 f/cc	0.20 f/cc	A

RECOMMENDATIONS: Share this information with the insulators

DISCUSSION: All samples were well below the PEL during the sample period.

METHOD OF ANALYSIS: Microscopy

DATA AND REPORT BY: C. R. McMillan/T. L. Grittie

ANALYSIS BY: JHM Labs

COPY TO: D. G. Beddow, D. A. Boggs, A. A. Cosper, E. L. Doerflein, J. J. Kyle, R. P. Leichliter, K. B. Purinton, W. V. Summers, G. W. Wulfert.

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