

To: Mr. E. J. Heinz
Mr. J. A. Werneke

July 20, 1987

From: J. H. Pritchard

JHP-14-87

INDUSTRIAL HYGIENE MONITORING FOR COMPLIANCE
WITH OSHA HAZARDOUS WASTE STANDARD 1910.120

ABSTRACT

In December, 1986, OSHA issued a Hazardous Waste Standard (1910.120) which requires monitoring of airborne hazardous wastes. Area and personnel monitoring has been conducted at Bishop hazardous waste disposal sites and utilities areas to comply with that standard.

All samples showed concentrations significantly below the applicable OSHA, ACGIH, and Celanese Permissible Exposure Limits. In most cases results were less than the detectable limit of the analytical method.

Uniterms:

Acetates
Antimony
Area
Asbestos
Benzene
Bishop
Cadmium
Disposal
Environmental
Formaldehyde
Hazardous
Hydrogen Sulfide
Landfill
Methanol
Methylene Chloride
Monitoring
OSHA
Personnel
Solar
Utilities
Waste
1910.120
1987

Distribution:

C. R. DeRose
G. R. Llewellyn
D. H. Nordeen
D. W. Steele
G. D. Boyd
J. E. Russell
J. L. Popejoy
M. D. Smyth

D. B. Johnson - Chatham

CCTC:

Central Files (2)

Lab File No: 265.0

S.H.E. File No: 230.5.2.2

009472



To: Mr. E. J. Heinz
J. A. Werneke

July 20, 1987

From: J. H. Pritchard

JHP-14-87

**INDUSTRIAL HYGIENE MONITORING FOR COMPLIANCE
WITH OSHA HAZARDOUS WASTE STANDARD 1910.120**

SUMMARY

In December, 1986, OSHA issued a Hazardous Waste Standard (1910.120) which requires monitoring of airborne hazardous wastes. Area and personnel monitoring has been conducted at Bishop hazardous waste disposal sites and utilities areas to comply with that standard.

All samples showed concentrations significantly below the applicable OSHA, ACGIH, and Celanese Permissible Exposure Limits. In most cases results were less than the detectable limit of the analytical method.

INTRODUCTION

In December, 1986, OSHA issued a new standard covering workers exposed to hazardous wastes (1910.120). In order to comply with this standard, a monitoring survey has been conducted in the Utilities areas to determine whether significant airborne levels of known contaminants are present. Personnel sampling was conducted on those employees most likely to be exposed to hazardous wastes.

DISCUSSION

Area monitoring was conducted down-wind of the test ponds, oil-skimmer, surge pond, equalization basin, and solar pond sites for airborne concentrations of formaldehyde, benzene, methylene chloride, methanol, and acetates. The BOD analyzer building and anaerobic reactor were monitored for hydrogen sulfide concentrations. Landfill sites were sampled for airborne concentrations of asbestos, antimony, and cadmium dusts. Utilities personnel were monitored for exposures to all the above compounds except asbestos, antimony, and cadmium. All sampling was conducted under normal operating conditions over a 6- to 8-hour time period to evaluate time-weighted-average (TWA) exposures.

Analyses of asbestos and methylene chloride samples were performed by NATLSCO, Long Grove, Illinois. All other analytical work was performed on-site using the appropriate gas chromatographic, atomic absorption, or wet chemical methods.

009473

July 20, 1987

RESULTS

Analytical results and applicable permissible exposure limits are attached.

CONCLUSIONS

Initial area and personnel monitoring in utilities and hazardous waste disposal sites has indicated no significant concentrations of airborne hazardous wastes exist under normal operating conditions.

Previously reported monitoring of contract personnel working in inactive solar pond areas (JHP-42-86, MLD-56-86, JHP-51-86, JHP-09-87) offers further evidence that there are no significant health risks associated with airborne concentrations of hazardous wastes at the Bishop Facility.

Please review these finding with the personnel involved and post this report on your unit bulletin board for at least 7 working days.

JHP/im

Attachment (1)


J. H. Pritchard

009474

ATTACHMENT 1
AIRBORNE HAZARDOUS WASTE DATA

FORMALDEHYDE

Date	Sample Number	Loc. Zone	Sampling Location	TWA ¹ (ppm)	Comments
1987					
3-13	5434	041 014	Test Ponds	<0.1	
3-13	5436	041 014	Oil Skimmer	0.2	
3-13	5438	041 014	Surge Pond	0.1	
3-13	5440	041 014	Equalization Basin	0.5	
3-13	5442	041 045	Solar Pond	<0.1	

Date	Sample Number	Loc. Zone	Name Social Sec. No.	Job Descrip.	TWA ¹ (ppm)	Comments
1987						
4-29	5522	041 014	Tom Chapa, Jr. 453-94-7109	Env. operator	<0.1	
4-29	5523	041 011	R. C. Edgemon 448-24-9902	Outside operator	<0.1	
4-29	5524	041 014	Benny Rodriguez 450-82-1183	BOD operator	<0.1	
4-29	5525	041 043	Dave McCauley 465-66-0854	Operating Mechanic	<0.1	

Note:

1. OSHA permissible exposure limit (PEL) is 3.0 ppm TWA; Celanese Internal PEL is 1.0 ppm TWA.

009475

HYDROGEN SULFIDE

Date	Sample Number	Loc. Zone	Sampling Location	TWA ¹ (ppm)	Comments
1987					
3-19	5464	041 014	Analyzer Bldg.	0.8	
3-19	5465	041 014	Anaerobic Reactor	<0.1	

Date	Sample Number	Loc. Zone	Name Social Sec. No.	Job Descrip.	TWA ¹ (ppm)	Comments
1987						
5-12	5544	041 043	Dave McCauley 465-66-0854	Operating Mechanic	<1.0	Sampling Monitor Wells
5-12	5545	041 043	Benny Rodriguez 450-82-1183	Operator	<1.0	Sampling Monitor Wells

1. ACGIH Permissible Exposure Limit (PEL) is 10.0 ppm TWA.

009476

BENZENE

Date	Sample Number	Loc. Zone	Sampling Location	TWA ¹ (ppm)	Comments
1987					
3-13	5435	041 014	Test Ponds	<0.03	
3-13	5437	041 014	Oil Skimmer	<0.03	
3-13	5439	041 014	Surge Pond	<0.03	
3-13	5441	041 014	Equalization Basin	<0.03	
3-13	5443	041 045	Solar Ponds	<0.03	

Date	Sample Number	Loc. Zone	Name Social Sec. No.	Job Descrip.	TWA ¹ (ppm)	Comments
1987						
4-22	5497	041 014	Don King 455-32-08159	BOD operator	<0.03	
4-22	5498	041 014	Juan Veloz 459-84-3465	Environmental operator	<0.03	
4-29	5499	041 043	Dave McCauley 465-66-0854	Operating mechanic	<0.03	
4-22	5500	041 011	Angie Saenz 464-92-4185	Outside operator	<0.03	
5-4	5554	041 043	Dave McCauley 465-66-0854	Operating mechanic	<0.03	Sampling Monitor Wells
5-6	5555	041 043	Dave McCauley 465-66-0854	Operating mechanic	<0.03	Sampling Monitor Wells
5-6	5556	041 043	Benny Rodriguez 450-82-1183	Operator	<0.03	Sampling Monitor Wells
5-13	5558	041 043	Dave McCauley 465-66-0854	Operating mechanic	<0.03	Sampling Monitor Wells
5-13	5560	041 043	Benny Rodriguez 450-82-1183	Operator	0.32	Sampling Monitor Wells

1. OSHA Permissible Exposure Limit (PEL) is 10.0 ppm TWA; OSHA Proposed PEL is 1.0 ppm TWA.

009477

METHYLENE CHLORIDE

Date	Sample Number	Loc. Zone	Sampling Location	TWA ¹ (ppm)	Comments
1987					
3-17	5445	041 014	Test Ponds	<1.0	
3-17	5446	041 014	Oil Skimmer	<1.0	
3-17	5447	041 014	Surge Pond	<1.0	
3-17	5448	041 014	Equalization Basin	<1.0	
3-13	5449	041 045	Solar Pond	<1.0	

Date	Sample Number	Loc. Zone	Name Social Sec. No.	Job Descrip.	TWA ¹ (ppm)	Comments
1987						
4-21	5495	041 014	Juan Veloz 459-84-3465	Environ- mental operator	1.5	
4-21	5496	041 014	Don King 455-32-0815	BOD operator	1.2	
4-23	5501	041 011	Angie Saenz 464-92-4185	Outside operator	1.2	
4-23	5502	041 043	Dave McCauley 465-66-0854	Operating mechanic	<1.0	
5-4	5532	041 033	Benny Rodriguez 450-82-1183	Operator	<1.0	Sampling Monitor Wells

Note:

1. OSHA Permissible Exposure Limit (PEL) is 75 ppm TWA.

009478

METHANOL

Date	Sample Number	Loc. Zone	Sampling Location	TWA ¹ (ppm)	Comments
1987					
3-18	5452	041 014	Test Pond	<2.0	
3-18	5453	041 014	Oil Skimmer	<2.9	
3-18	5454	041 014	Surge Pond	<2.0	
3-18	5455	041 014	Equalization Basin	<2.8	
3-18	5458	041 045	Solar Ponds	3.6	

Date	Sample Number	Loc. Zone	Name Social Sec. No.	Job Descrip.	TWA ¹ (ppm)	Comments
1987						
4-22	5503	041 014	Don King 455-32-0815	BOD operator	<2.0	
4-22	5505	041 014	Juan Veloz 459-84-3465	Environmental operator	10.6	
4-22	5507	041 043	Dave McCauley 465-66-0854	Operating Mechanic	<2.0	
4-22	5509	041 043	Angie Saenz 464-92-4185	Outside operator	<2.0	
5-4	5531	041 043	Dave McCauley 465-66-0854	Operating mechanic	2.6	Sampling Monitor Wells
5-6	5534	041 043	Dave McCauley 465-66-0854	Operating mechanic	13.4	Sampling Monitor Wells
5-6	5535	041 043	Benny Rodriguez 450-82-1183	Operator	17.5	Sampling Monitor Wells
5-13	5557	041 043	Dave McCauley 465-66-0854	Operating mechanic	5.8	Sampling Monitor Wells
5-13	5559	041 043	Benny Rodriguez 450-82-1183	Operator	2.0	Sampling Monitor Wells

1. OSHA Permissible Exposure Limit (PEL) is 200 ppm TWA.

009479

ACETATES

Date	Sample Number	Loc. Zone	Sampling Location	TWA ¹ (ppm)	Comments
1987					
3-19	5456	041 014	Test Ponds	<10.0	Analyzed as Butyl Acetate
3-19	5461	041 014	Oil Skimmer	<10.0	Analyzed as Butyl Acetate
3-19	5462	041 014	Surge Pond	<10.0	Analyzed as Butyl Acetate
3-19	5463	041 014	Equalization Basin	<10.0	Analyzed as Butyl Acetate
3-19	5466	041 045	Solar Ponds	<10.0	Analyzed as Butyl Acetate

Date	Sample Number	Loc. Zone	Name Social Sec. No.	Job Descrip.	TWA ¹ (ppm)	Comments
1987						
4-22	5504	041 014	Don King 455-32-0815	BOD operator	<10.0	Analyzed as Butyl Acetate
4-22	5506	041 014	Juan Veloz 459-84-3465	Environmental operator	<10.0	Analyzed as Butyl Acetate
4-22	5508	041 043	Dave McCauley 465-66-0854	Operating mechanic	<10.0	Analyzed as Butyl Acetate
4-22	5510	041 011	Angie Saenz 464-92-4185	Outside operator	<10.0	Analyzed as Butyl Acetate
5-13	5546	041 043	Dave McCauley 465-66-0854	Operating mechanic	<2.0	Sampling Monitor Wells
5-13	5547	041 043	Benny Rodriguez 450-82-1183	Operator	<2.0	Sampling Monitor Wells

1. OSHA Permissible Exposure Limit (PEL) is 150 ppm TWA.
This standard is under review for possible Celanese Internal PEL.

009480

CADMIUM

Date	Sample Number	Loc. Zone	Sampling Location	TWA ¹ (ppm)	Comments
1987					
3-25	5477	041 050	Landfill II	<0.01	
3-25	5478	041 050	Landfill 13E	<0.01	

1. ACGIH Permissible Exposure Limit (PEL) is 0.05 mg/m³ TWA.

009481

ANTIMONY

Date	Sample Number	Loc. Zone	Sampling Location	TWA ¹ (ppm)	Comments
1987					
3-17	5451	041 050	Landfill 13E	<0.01	
3-18	5460	041 050	Landfill II	<0.01	

1. OSHA Permissible Exposure Limit (PEL) is 0.5 mg/m^3 TWA; Celanese Internal PEL is 0.15 mg/m^3 TWA.

009482

ASBESTOS

Date	Sample Number	Loc. Zone	Sampling Location	TWA ¹ (ppm)	Comments
1987					
3-17	5450	041 050	Landfill 13E	<0.01	
3-18	5459	041 050	Landfill II	<0.01	

1. OSHA Permissible Exposure Limit (PEL) is 0.2 fibers per cubic centimeter (f/cc) TWA.

009483