

ATLANTIC ALLIANCE CONFERENCE

CAMBORNE SCHOOL OF MINES UNIVERSITY OF EXETER IN CORNWALL



OCCUPATIONAL HEALTH -- U.S. Health Program --



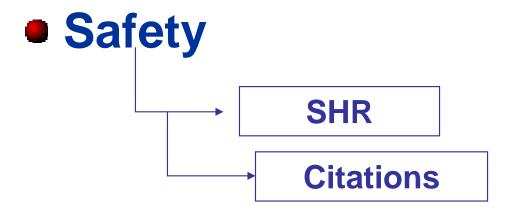
Hanson
Building
Materials
America







If you can't measure it you can't manage it







	Hours	T-	otal Injuri	ಆ	Los	t Time Inj	uries	Fatalities	L	.ostWork	Days		YTD	Incidenc	e Rates (Per 200,00	O Hours))	
Consolidated	Worked											Tot	al Case (TC	I)	Lo	st Time (L	.TI)	LostD	ay (LDI)
SAFETY	YTD	Month	YTD	PY	Month	YTD	PY		Month	YTD	PY	YTD	Target	PY	YTD	Target	PY	YTD	PY
Aggregates	0.000.005	١,	44	0.5	ا ، ا	_	١ ـ		١ .	440	400	40	ا ۵۰ ا		١.,	١		۱.,	
Midwest Region	2,068,805 2,792,775	1 1	41 25	25 34	0	7 5	7 13		0	118 42	429 178	4.0 1.8	2.0 2.0	2.4 2.6	0.7	0.6	0.7 1.0	11	41 13
Northeast Region			l		1 - 1	_			_					ı				_	
Southeast Region	1,499,950 120,895	1 0	14 0	15 0	0	2 0	5 0		0	25 0	317	1.9 0.0	2.0 0.0	1.7 0.0	0.3	0.6	0.6 0.0	3	37 0
HAE Corporate Office		_	_	74	l ő l	-	I -		lő	185	924		0.0	2.3		0.0	0.8	6	-
East Total Mid-Pacific Region	6,482,425 382,116	3	80 7	7	"	14 7	25 6		Ö	202	924 807	2.5 3.7	3.0	2.3	0.4 3.7		2.4	106	28 323
ů	1.669.155	2	32	ı	1 - 1		18		17	202	258	3.8	3.0	2.5	1		2.4	27	30
Pacific Southwest Region Permanente Cement	1,009,155 570,467	6	10	21 14	1 0	27 5	18		"	416	703	3.5	3.0	5.0	3.2 1.8		2.1	146	250
		_		30	l ő	0	10		lő	1 410	284		3.5	5.4	0.0		1.8	0	51
Mountain Region HAW Corporate	1,134,804 77,004	1 0	25 0	1 1	0	Ö	10		Ö	"	284	4.4 0.0	3.5	2.5	0.0		0.0	"	0 0
·	2,082,368	1	30	42	l ő l	7	12	1*	lő	119	126	2.9	3.0	3.8	0.0	1.0	1.1	11	11
HAC Aggregates West Total	3,833,546	3	74	73	1 1	39	40	1 1	17	843	2,052	3.9	3.0	3.6	2.0	1.0	2.0	44	104
		7	184	189	1	60	77	1	17		3.102	3.0	3.5	3.0			1.2		
Total Aggregates	12,398,339	l '	104	109	1	00	''	"	17	1,147	3,102	3.0	3.3	3.0	1.0		1.2	19	49
Building Products																			
Eastern Region	779,412	3	19	15	1	3	3		31	183	100	4.9		3.2	0.8		0.6	47	21
Central Region	1,475,359	4	17	16	2	4	5		18	43	87	2.3		2.3	0.5		0.7	8	13
North Central Region	1,293,558	1	29	48	ا آ	4	l š		Ιö	149	252	4.5		8.0	0.6		1.3	23	42
Southwest Region	1.130.334	li	14	21	l ŏ	4	5		١ŏ	319	342	2.5		2.9	0.7		0.7	56	47
Southeast Region	1,158,143	3	35	35	3	7	1 1		31	83	11	6.0		6.7	1.2		0.2	14	2
Spancrete Pacific	298,947	1	6	3	ŏ	2	li		0	14	4	4.0		1.8	1.3		0.6	9	2
N orthe ast	607.300	Ö	20	25	l	5	1		lō	191	47	6.6		12.1	1.6		0.5	63	23
South Central (Choctaw)	876,217	lŏ	12	40	١ŏ	4	13		١ŏ	22	1116	2.7		7.7	0.9		2.5	5	214
HP&P Corporate Office	162,914	ō	0	l õ	ō		0		lö	0	0	0.0		0.0	0.0		0.0	Ö	0
Total Pipe & Products	7,782,184	12	152	203	6	33	37		80	1,004	1,959	3.9		5.1	0.8		0.9	26	49
East Roof Tile	696,729	2	23	16		1	0			66	0	6.6		4.8	0.3		0.0	19	0
W est Roof Tile	663,824	2	11	18	1 1	1	2		9	9	19	3.3		5.5	0.3		0.6	3	6
Total Roof Tile	1,360,553	4	34	34	i	2	2		9	75	19	5.0		5.1	0.3		0.3	11	3
Northern Region	778,738	3	30	24	0	6	8		0	54	161	7.7		6.3	1.5		2.1	14	42
Midwest Region	422,540	3	28	41	1	8	14		15	88	307	13.3		19.6	3.8		6.7	42	147
Southeast Region	1,612,212	ĕ	75	70	2	12	11		13	177	172	9.3		8.4	1.5		1.3	22	21
South Central Region	899.037	1	18	18	1 1	6	7		3	200	327	4.0		4.0	1.3		1.5	44	72
HBT Corporate Office	40,410	Ö	ő	1	l i l	ŏ	Ö		lŏ	0	0	0.0		9.6	0.0		0.0	ö	0
Total Brick	3,752,937	13	151	154	4	32	40		31	519	967	8.0		8.1	1.7		2.1	28	51
Total Building Products	12,895,674	29	337	391	11	67	79	0	120	1,598	2,945	5.2	4.8	6.0	1.0	0.8	1.2	25	45
Total All Operations	25,294,013	36	521	580	12	127	156	1*	137	2,745	6,047	4.1		4.5	1.0		1.2	22	47





	Number o	of Inspecti	ons	То	tal Citatio	ins		8&80	itations			Fines (\$)		Ci	tations p	er Inspecti	on
OSHA / MSHA	Month	YTD	PΥ	Month	YTD	PΥ	Month		Ϋ́	PY	Month	YTD	PY	Month	YTD	Target	PY
Aggregates	_						_			_							
Midwest Region	8	82	74	6	81	66	0		14	6	360	7,175	4,910	0.8	1.0	1.1	0.9
Northe as t Region	7	73	75	19	100	78	1		9	13	1,330	7,453	6,825	2.7	1.4	1.1	1.0
Southeast Region	3	58	82	2	59	95	0	_	12	18	120	5,688	7,034	0.7	1.0	1.1	1.2
Total East	18	213	231	27	240	239	1	0	35	37	1,810	20,316	18,769	1.5	1.1	2.1	1.0
Mid-Pacific Region	4	28	21	7	22	25	2		2	2	810	2,406	23,325	1.8	0.8		1.2
Pacific Southwest Region	4	39	40	6	44	79	3		8	18	1185	4,480	8,690	1.5	1.1		2.0
Permanente Cement	1	10	- 6	0	14	44	0		2	7	0	1,225	10,595	0.0	1.4		7.3
Mountain Region	1	13	7	6	47	10	1		11	13	550	2,663	1,320	6.0	3.6		1.4
HAC Aggregates	2	40	54	24	115	139	5		25	29	2,200	11,605	14,935	12.0	2.9	2.5	2.6
TotalWest	10	90	74	19	127	158	6	0	23	40	2,546	10,774	43,930	1.9	1.4		2.1
Total Aggregates	30	343	359	70	482	536	12	0	83	106	6,555	42,695	77,634	2.3	1.4	2.5	1.5
Building Products																	
Eastern Region	0	0	1	0	0	7	0		0	4	0	0	2,240	0.0	0.0		7.0
Central Region	0	1	0	0	1	0	0		1	0	0	1,500	0	0.0	1.0		0.0
North Central Region	0	7	1	0	0	0	0		0	0	0	0	0	0.0	0.0		0.0
Southwest Region	0	2	0	0	0	0	0		0	0	0	0	0	0.0	0.0		0.0
Southeast Region	0	2	0	0	0	0	0		0	0	0	0	0	0.0	0.0		0.0
Spancrete Pacific	1	1	0	0	0	0	0		0	0	0	0	0	0.0	0.0		0.0
N or the ast	0	2	1	0	0	2	0		0	2	lo	0	2,125	0.0	0.0		2.0
South Central (Choctaw)	0	0	0	0	0	0	0		0	0	0	0	0	0.0	0.0		0.0
HP&P Corporate Office	0	0	0	0	0	0	0		0	0	l o	0	lo	0.0	0.0		0.0
Total Pipe & Products	1	15	3	0	1	9	0	0	1	6	0	1,500	4,365	0.0	0.1		3.0
East Roof Tile	0	1	0	0	2	0	0	0	2	0	0	1688	0	0	2.0	0.0	0.0
West Roof Tile	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Total Roof Tile	0	1	2	0	2	0	0	0	2	0	0	1,688	0	0	2.0	0.0	0.0
Northern Region	0	0	4	0	0	18	0		0	0	0	0	0	0.0	0.0		4.5
Midwest Region	1	7	5	Ō	4	1	Ō		ō	Ō	Ō	585	55	0.0	0.6		0.2
Southeast Region	ó	11	8	l ŏ l	7	31	١ŏ		1	lõ	lŏ	815	5,556	0.0	0.6		3.9
South Central Region	Ö	3	2	Ö	Ö	0	ŏ		Ö	ŏ	Ö	0	0,000	0.0	0.0		0.0
Total Brick	1	21	19	ŏ	11	50	ŏ	0	1	ŏ	ŏ	1,400	5,611	0.0	0.5		2.6
												·					
Total Building Products	2	37	24	0	14	59	0	0	4	6	0	4,588	9,976	0.0	0.4	2.5	2.5
Total All Operations	32	380	383	70	496	595	12	0	87	112	6,555	47,283	87,610	2.2	1.3		1.6



Hanson Industrial Hygiene



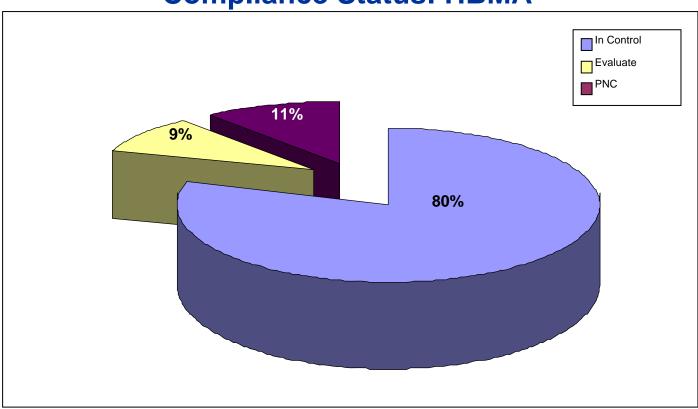
Initial Air/Noise Monitoring Program

- One of first American aggregate companies to implement company-wide in-house monitoring
- IH Program considered second only to Vulcan in U.S.



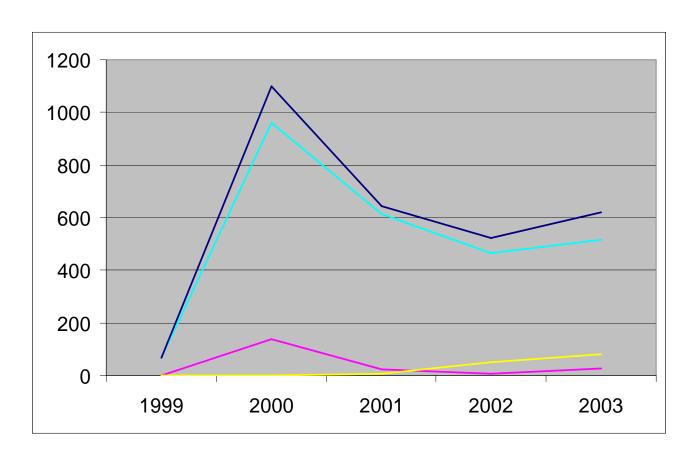
Dust Containing Respirable Crystalline Silica Air Monitoring: 2003

Compliance Status: HBMA





Air Monitoring: 1999 - 2003





IH PROGRAM REVIEW Positive Aspects

- Management commitment to program
- Monitoring equipment
- Analytical services
- Growing database of RCS results
- Unique HARP system



Harp Submittal Form

Your EMail:			er.Ward@Hanso of HARP will be s		ate
Plant:		Plur	m Run Stone		Emergency Supply Only:
Anticipated Start D	ate:		Antici	pated End Date:	
Test1: None	v ?	0	Calib. 0		Cassettes will be shipped to:
Test2: None	· ?	0	Calib. 0	Attention:	Terry Louderback
Test3: None	× ?	0	Calib. 0	Address1:	848 Plum Run Road
Test4: None	· ?	0	Calib. 0	Address2:	
Test5: None	× ?	0	Calib. 0	City:	Peebles
Blanks Needed: 0		Calibra	tion Requested:	0 State:	OH Zip: 45660
Total Cassettes: 0				Phone:	(937) 587-2671



IH PROGRAM REVIEW Areas of Concern

- Quality of some data
- Annual NIST calibrations
- Sampling strategy
- Website / database
- Corporate guidance





CALIBRATION CERTIFICATE

CALIBRATION CERTIFICATE

 Instrument: Gilibrator-2
 Date Issued: 03/04/2004

 Flow Cell Serial #: 001-194
 Valid Until: 03/04/2005

Base Serial #: 004519

Final Condition: Functional and In Tolerance for 1,000 cc/min to 3,000 cc/min

Restriction: Do NOT use for flow rate calibrations <1,000 cc/min.

Reference Standard

Device: Bios DC Lite **Model:** DCL-M **Serial #:** 102387

Last Calibration: 02/25/2004 Date Calibration Due: 02/23/2005

Measurement Uncertainty: ±1% for 90-7,000 cc/min

Test Flow Rate	Test Flow Rate Range (<u>+</u> 1%)	Lab Standard Reading	Instrument Reading	Deviation Percentag e
500 cc/min	495 – 505 cc/min	505 cc/min	474 cc/min	-6.2%
1,000 cc/min	990 – 1,010 cc/min	1,007 cc/min	1,000 cc/min	-0.7%
1,500 cc/min	1,485 – 1,515 cc/min	1,492 cc/min	1,492 cc/min	0.0%
2,000 cc/min	1,980 – 2,020 cc/min	1,999 cc/min	2,010 cc/min	0.6%
2,500 cc/min	2,475 – 2,525 cc/min	2,490 cc/min	2,510 cc/min	0.8%
3,000 cc/min	2,970 - 3,030 cc/min	2,980 cc/min	3,005 cc/min	0.8%

Calibrated By: 03/04/	2004
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Richard G. Price, CIH, CSP

This report certifies that the calibration equipment used is traceable to the NIST.



IH PROGRAM Areas of Concern

- Quality of data
 - Lack of understanding of scientific basis of IH monitoring.
 - Problems with sampling technique
 - Instrument calibration
 - Sample time
 - Cyclones
 - blanks



IH PROGRAM REVIEW UPGRAGES

Hanson IH Technician Certification Course

- Upgrade knowledge and skills of safety personnel
- Four day course in IH principles and technique
- Final exam: Hanson Certified IH Technician.
- Only Certified IH T4echs allowed to perform noise and air monitoring
- Re-certification required every three years



DAY 1

INTRODUCTION TO INDUSTRIAL HYGIENE (8 hours)

- □ IH History and Evolution
 - -IH History & recent advances
- □ IH Today
 - -Current and Evolving IH Issues (Asbestos, Silica, Carbon Reproductive Hazards, etc.
- □ Toxicology
 - Routes of Exposure; Dose Response; Acute v. Chronic Effects;
 Effects of Overexposure; Carcinogens, Teratogens, Mutagens



DAY 1

INTRODUCTION TO INDUSTRIAL HYGIENE (8 hours)

- □ Anatomy, Physiology, Pathology
 - -Lungs, Ears, Skin & Eyes
- □ States of Matter Why They Matter
 - -Gases, Vapors, Mists, Dust & Fumes
- **□** Occupation Exposure Limits
 - **-OSHA and MSHA PELs**
 - -ACGIH TLVs and NIOSH RELs
- □ Conducting **Qualitative** Industrial Hygiene Surveys



DAY 2 INDUSTRIAL HYGIENE MONITORING (8 hours)

- □ Targeted Exposure Monitoring
 - Assessing Greatest Hazards First
- □ Random Exposure Monitoring
 - –Develops Exposure Database & Detect Unnoticed Changes
- □ Specific Air contaminants Exposure Monitoring Procedures
 - Silica; total Dust; Welding Fumes; Diesel Particulate Matter;
 Asbestos; Asphalt Fumes; Coal Tar Pitch Volatiles & Xylene
- □ Noise Monitoring Procedures



DAY 3 INDUSTRIAL HYGIENE SAMPLING (12 hours)

- □ Air Contaminants and Noise Monitoring
 - -Plant or Quarry Near Training
 - -Each Trainee Tracks Two Air Samples and One Noise Dosimeter
 - -Familiarizes Trainees with IH Equipment in Use
 - -Training and Site Monitoring Accomplished Simultaneously

DAY 4 COURSE REVIEW AND WRITTEN TEST (4 hours)

- □ Course Review Questions, Answers, Discussions
- □ Written Test Covering Course Material



Industrial Hygiene Training Course

The Alpha Class –
December 8-11, 2003
Grand Prairie, TX



IH Tech Certification Course Grand Prairie - 8 - 11 Dec 03





IH Tech Cerfification Course Grand Prairie - 8 - 11 Dec 03





IH Tech Cerfification Course Grand Prairie - 8 - 11 Dec 03





IH Tech Certification Course Grand Prairie - 8 - 11 Dec 03





IH Tech Certification Course Grand Prairie - 8 - 11 Dec 03





Chip Rogers

has successfully completed the Hanson North America training and examination requirements for

Industrial Hygiene Technician 2

Industrial Hygiene Sampling and Initial Results Interpretation

Certificate # 2003-005 ansor

Completed at Grand Prairie, TX
December 8-11, 2003

Richard G. Price, CIH, CSP Senior Industrial Hygienist Peter F. Ward Corporate Safety Director

Kathleen O'Doherty, MS Corporate Industrial Hygienist



IH PROGRAM REVIEW Areas of Concern

- Calibrator certification
 - Dosimeters and field calibrators must be calibrated against a NIST standard annually.



IH PROGRAM REVIEW UPGRAGES

Hanson IH Calibration Lab

- Dosimeters and Dosimeter Field Calibrators
 - 50 dosimeters in field @ \$260 \$335 per annual calibration
 - Payback at ~ 6 months.
- Dosimeters and Dosimeter Field Calibrators
 - 20 dosimeters in field @ \$250 per annual calibration
 - Payback less than 6 months.
 - Annual saving \$2,400 in 1st year; \$3,150 subsequent years.



Areas of Concern

- Sampling Strategy
 - Targeted monitoring
 - Sites
 - Job types

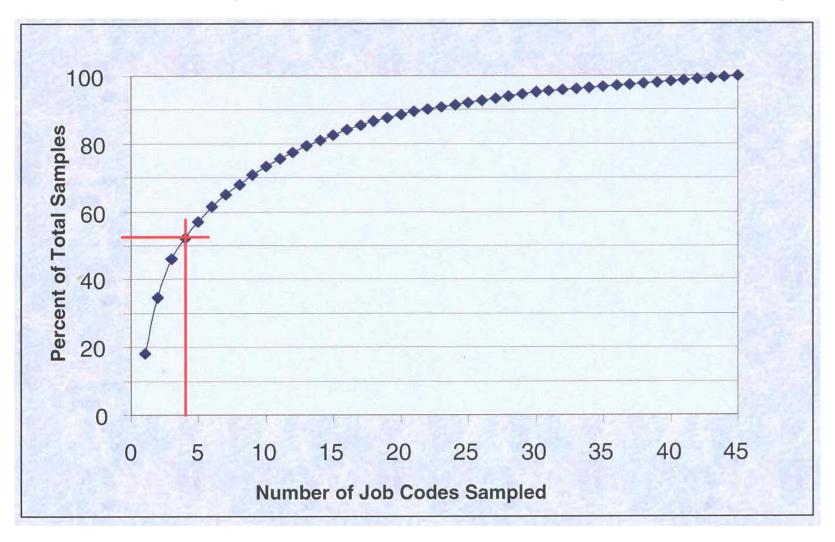


HANSON AGGREGATES OPERATIONS WITH MONITORING DATA

Operatio	n	Number	% Operations		
Туре	Number	Sampled	Sampled		
Aggregates	89	57	64		
Sand / Gravel	61	27	44		
Quarry	35	28	80		
Crushed Stone	8	5	63		
Stone	4	0	0		
Construction	2	1	50		
Fine Grind	2	0	0		
Recycle	14	0	0		
Concrete	45	0	0		
Asphalt	37	0	0		
Rail terminal	6	0	0		
Sorbent	1	0	0		
Sales Yard	5	0	0		
Cement	1	17	100		
Total	310	119	38%		



% of Total Samples vs Number of Job Codes Sampled





Areas of Concern

- Website / database
 - Design not robust enough to accommodate growth
 - Additional test methods/reports
 - Centralized database for dosimetry data
 - Documentation of field monitoring notes
 - Improved tracking for non-compliant results
 - Capability for ad hoc reports and statistical analysis



IH Website





IH Website





IH Website

Your Name:			W	ard, Peter			
Your EMail:				eter.Ward@Hanson		update	
Plant:				1st Avenue Plant	~	Emergency Supply Only:	
Anticipated Start Date:				Anticipa	ted End Date:		
Test1: None	~	P	0	Calib. 0		Cassette	s will be shipped to:
Test2: None	*	P	0	Calib. 0	Attention:		
Test3: None	*	P	0	Calib. 0	Address1:	51st & B	roadway Avenue
Test4: None	~	P	0	Calib. 0	Address2:		
Test5: None	~	P	0	Calib. 0	City:	Phoenix	
Blanks Needed: 0			Calib	ration Requested: 0	State:	AZ	Zip: 85043
Total Cassettes: 0					Phone:		

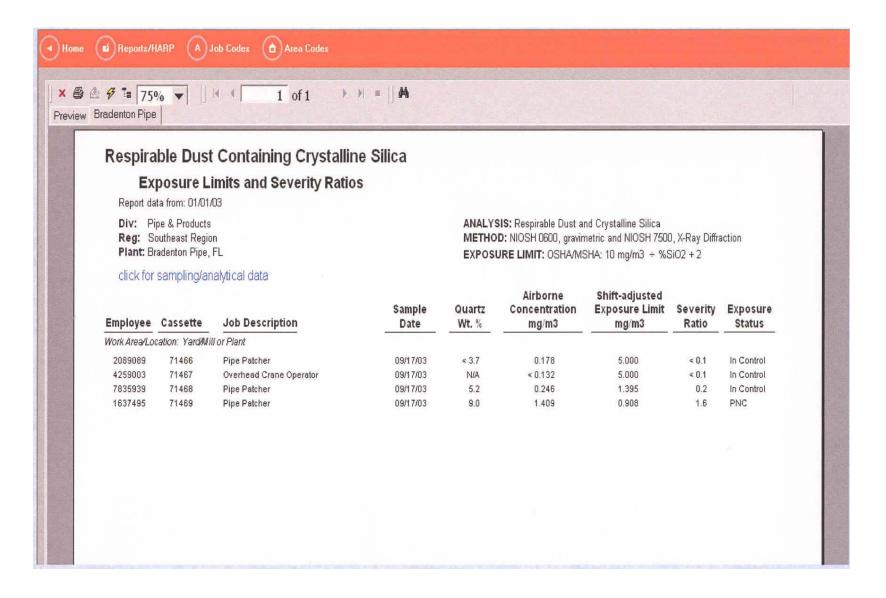


HARP

HANSON ANALYTICAL REQUEST PROCEDURE FORM (HARP) Plant Information Air Sampling Plant Name: HBMA Corporate Office Plant Contact: Kathy O'Doherty Plant Fax #: Plant Phone #: 732.919.9777 Plant Address: 1333 Campus Parkway Neptune Number of Blanks Included: 1 Anticipated Start Date: 3/09/04 Anticipated Completion Date: 3/09/04 Number Of 7 NIOSH 7500: 5 NIOSH 7300:1 Cassettes: Cal: 1 Project Management Contacts Hanson Building Materials America Contact Hanson Laboratory Coordinator: Kathy ODoherty Phone#: (909) 350-4238 10650 Poplar Avenue (909) 350-2298 Fax#: State: CA Zip: 92337 City: Fontana Laboratory Contact Laboratory Name: R.J.Lee Group, Inc. Laboratory Project Manager: Steve Brown Phone #: (724) 387-1964 Address: 350 Hochberg Road City: State: PA Zip: 15146 (724) 733-1799 Monroeville 1003 760 0000 0000 0001 HARP ID# Month/Year HARP Tracking Number Division Code Region Code Plant Code Cassette Type: Ship Cassette To: Peter Ward Phone: 732.919.9777 Samplers Name: Two Piece Address: 1333 Campus Parkway Three Piece City: Neptune State: NJ Zip: 07753 Signature Approvals for Initiation of Project Phone Fax 09/30/03 Harp Originator: Kathy O'Doherty Laboratory Project Manager: Verification of Samples Collected and Analyzed upon Project Completion Hanson Pittsburgh Only: For Laboratory Only: Does lab oratory concur with the correct number of samples collected and Hanson Laboratory Coordinator: analyzed as listed above? Does Analysis meet all applicable QA/QC requirements? (This will verify the actual number of samples analyzed for billing purposes.) Laboratory Project Manager Signature: Date



SAMPLING REPORT





IH PROGRAM UPGRAGES

Hanson IH Website Upgrade

- Website Navigation Redesign
 - Easier, quicker to use
 - Cleaner, more up-to-date look
- Website Functions Rebuilt
 - Interactive HARP for more versatility
 - Allow ad hoc reports to be run by Corp.
- Database Reconstruct
 - More stable architecture
 - Allow for future growth
 - Enable Corp IH to maintain tables and reports



IH PROGRAM UPGRAGES

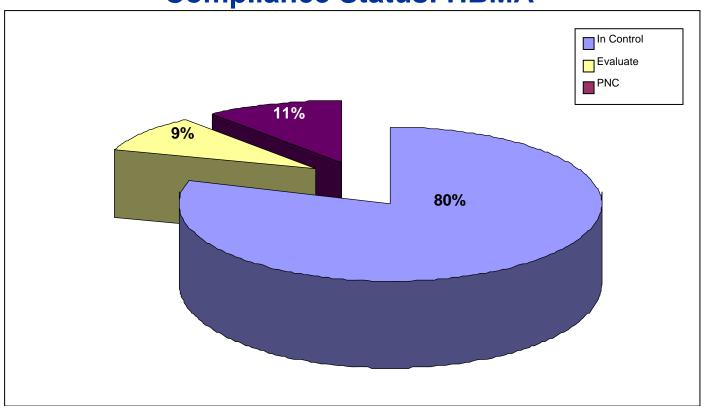
HBMA Corp. 1H Guidance

- Track and monitor potential overexposure situations
- Monitor and document exposure controls,
 e.g. PPE, engineering controls
- Report quarterly monitoring progress



Dust Containing Respirable Crystalline Silica Air Monitoring: 2003

Compliance Status: HBMA



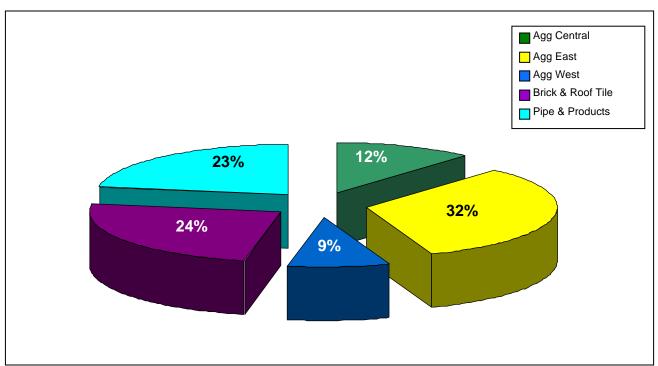


Dust Containing Respirable Crystalline Silica Air Monitoring: EOY 2003

A total of 515 respirable crystalline silica (RCS) samples were analyzed by R.J. Lee in 2003. The In Control samples made up 80% of the total and PNCs were 11%. In addition to RCS, 80 total dust and 26 welding samples were collected in 2004.

During 2002, 466 RCS samples (83% in control and 11% PNCs), 49 total dust and 6 welding samples were collected.

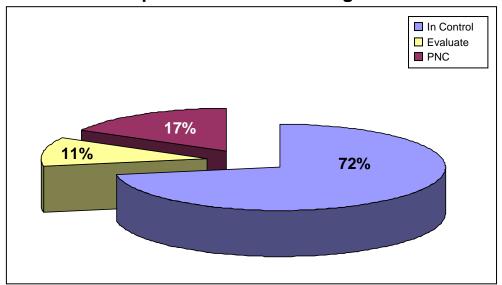
RCS Samples by Division



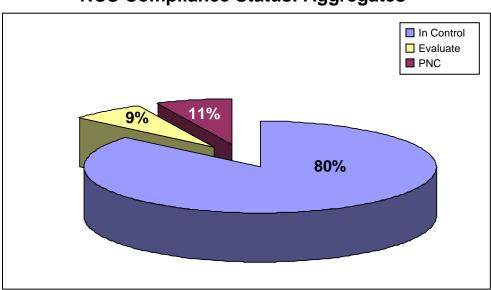
Dust Containing Respirable Crystalline Silica Air Monitoring: EOY 2003



RCS Compliance Status: Building Products



RCS Compliance Status: Aggregates





IH PROGRAM UPGRAGES

HBMA Corp. 1H Guidance

- Track and maintain calibration of equipment
- Track and evaluate performance of Certified IH Techs
- Conduct IH Hazard Assessments with field safety professionals
- Assist field safety professionals with new or unusual monitoring tests.



HBMA Corp. 1H Guidance

Current IH Regulatory Issues

SILICA

- OSHA: Small business review phase of draft standard in final stage. OSHA is noncommittal as to what the proposed standard, if any, will contain – including PEL.
- MSHA: Latest Regulatory Agenda mentions
 ANPR due in May 2004.
- ACGIH: Notice of Intended Change to lower TLV from 0.05mg/m³ to 0.025mg/m³.



HBMA Corp. 1H Guidance

Current IH Regulatory Issues

ASBESTOS

 MSHA: Advanced Notice of Proposed Rulemaking (ANPR) due in 2003, now scheduled for May 2004.

DIESEL PARTICULATE MATTER

MSHA: Limited reopening of rulemaking record for comments.

MISCELLANEOUS

- Cr+6, Be: Both hexavalent chromium and beryllium are on OSHA Regulatory Agenda for this year.
- Respiratory Protection: Assigned Protection Factors amendment to become final in 2004.



IH Legislative & Judicial Issues

U.S. SENATE

 Asbestos: Fate of Asbestos Trust Fund Act still uncertain. Both the Trust Fund and the Ban Asbestos bill initially contained expanded asbestos definitions which would have been disastrous for the aggregates industry.

CIVIL COURTS

 News coverage of continuing asbestos and mushrooming silica lawsuits continues to keep these subjects on the front burner.



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