BULK SAMPLE ANALYSIS Q.A. PROGRAM
RESULTS OF ROUND 13
DECEMBER 12, 1985

Performance Evaluation of Princeton Testing Laboratory for Asbestos Analysis

LABORATORY
I.D. NUMBER
2196

FALSE NEGATIVES: 0
FALSE POSITIVES: 0
PERFORMANCE RATING: 4/4

36960

B) 5222	C) 2839	D) 0940
	75.0 CHRY	
30.0 CELL		70.0 FBGL 30.0 CELL
70.0 NF	25.0 NF	
NONE	CHRY	NONE
NONE	NONE	NONE
FBGL	NONE	FBGL
CELL	NONE	CELL
VERM	OPQS	ANTG
0.0	80.0	0.0
40.0	100.0	70.0
0.1	99.0	0.0
0.0	90.0	0.0
0.0	60.0	0.0
0.0	21.7	0.0
0.0	0.0	0.0
45.0(369)		95.0(372)
50.0(343)	20.0(319)	10.0(232)

VERM=VERMICULITE ANTG=ANTIGORITE

ASB 001 0512

FALSE NEGATIVES: 0
FALSE POSITIVES: 0
PERFORMANCE RATING: 4/4

C) 2839 D) 0940

	75.0 CHRY	
L		70.0 FBGL
		30.0 CELL
	25.0 NF	

E	CHRY	NONE
E	NONE	NONE
L	NONE	FBGL
L	NONE	CELL
M	OPQS	ANTG

	80.0	0.0
	100.0	70.0
	99.0	0.0
	90.0	0.0
	60.0	0.0
	21.7	0.0
	0.0	0.0
)		95.0(372)
)	20.0(319)	10.0(232)

ANTG=ANTIGORITE

ASB 001 0513

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH
PROFICIENCY ANALYTICAL TESTING PROGRAM
P A T
LAB 08540-003
ROUND 084
DATA TABLE

	LAB DATA	CONTAMINANT	SAMPLE	REF.* VALUE	PERFORMANCE LIMITS	LABORATORY PERFORMANCE	NO. LABS	OUTLIERS HI	LO	TOT
	0.0440	LEAD	1	0.0513	0.0442-0.0583	OUTLIER	334	017	017	034
	0.0137		2	0.0155	0.0119-0.0191	ACCEPTABLE	334	017	003	020
	0.0300		3	0.0351	0.0300-0.0402	OUTLIER	334	018	015	033
	0.0220		4	0.0206	0.0169-0.0242	ACCEPTABLE	334	020	011	031
**	OVERALL						557			059
	0.0130	CADMIUM	1	0.0145	0.0121-0.0169	ACCEPTABLE	334	011	013	024
	0.0100		2	0.0099	0.0085-0.0112	ACCEPTABLE	334	018	009	027
	0.0053		3	0.0058	0.0049-0.0067	ACCEPTABLE	334	015	009	024
	0.0171		4	0.0171	0.0144-0.0198	ACCEPTABLE	334	012	015	027
**	OVERALL						557			047
	0.2150	ZINC	1	0.2146	0.1841-0.2451	ACCEPTABLE	333	013	016	029
	0.1885		2	0.1822	0.1571-0.2074	ACCEPTABLE	333	019	012	031
	0.0818		3	0.0857	0.0727-0.0988	ACCEPTABLE	333	018	007	025
	0.1242		4	0.1276	0.1087-0.1465	ACCEPTABLE	333	018	014	032
**	OVERALL						557			059
	------	SILICA	1	0.1320	0.0592-0.2943	NOT RATED	123	---	004	004
	------		2	0.0692	0.0305-0.1567	NOT RATED	123	---	004	004
	------		3	0.1599	0.0757-0.3380	NOT RATED	123	---	005	005
	------		4	0.1410	0.0729-0.2728	NOT RATED	123	---	006	006
**	OVERALL						557			012
	0442.0	ASBESTOS	1	0300.6	0096.8-0617.0	ACCEPTABLE	440	007	011	018
	0689.9		2	0656.9	0107.3-1672.8	ACCEPTABLE	440	002	002	004
	1074.0		3	0808.2	0267.9-1639.4	ACCEPTABLE	440	013	007	020
	0343.8		4	0327.9	0055.6-0827.1	ACCEPTABLE	440	007	003	010
**	OVERALL						557			033
	0.3250	SOLVENT 1	1	0.3756	0.1704-0.9218	ACCEPTABLE	337	014	---	014
	0.7980		2	0.7405	0.5971-0.8840	ACCEPTABLE	337	012	016	028
	1.4700		3	1.3199	0.4123-2.2275	ACCEPTABLE	337	003	015	018
	0.5200		4	0.4972	0.4075-0.5868	ACCEPTABLE	337	016	014	030
**	OVERALL						557			052
	1.0700	SOLVENT 2	1	1.0411	0.3740-1.7082	ACCEPTABLE	337	003	016	019
	0.6750		2	0.7287	0.5670-0.8904	ACCEPTABLE	337	010	013	023
	0.2150		3	0.3849	0.4353-1.2052	ACCEPTABLE	337	013	---	013
	0.4610		4	0.5407	0.4195-0.6618	ACCEPTABLE	337	013	014	027
**	OVERALL						557			046
	------	SOLVENT 3	1	------	----------	----------	---	---	---	---
	------		2	------	----------	----------	---	---	---	---
	------		3	------	----------	----------	---	---	---	---
	------		4	------	----------	----------	---	---	---	---
	-------						---			---

* REFERENCE VALUE IS CALCULATED FROM TRANSFORMED VARIABLES. SEE NIOSH PAT PROTOCOL FOR DETAILS
** OVERALL TOTAL OUTLIERS EQUALS THE NUMBER OF PARTICIPATING LABS WITH AT LEAST 1 OUT OF 4 FILTERS RATED AS OUTLIERS.

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH
PROFICIENCY ANALYTICAL TESTING PROGRAM
P A T
LAB 08540-003
ROUNDS 081 TO 084
OUTLIER TABLE

ROUND	081	082	083	084	LAB RATING	NO. OF LABS RATED	NO. OF LABS RATED NP
LEAD				1 3	P	340	035
CADMIUM					P	340	028
ZINC					P	339	037
SILICA	xxxx	xxxx	xxxx	xxxx	x	131	003
ASBESTOS					P	454	017
SOLVENT 1	1234				P	341	030
SOLVENT 2	1234					341	030
SOLVENT 3	1234	----		----			
OVERALL					P	569	056

LEGEND

--- ROUND DOES NOT HAVE A CONTAMINANT

BLANK ANALYSIS ACCEPTABLE

1 OUTLIER ANALYSIS ON FILTER 1

2 OUTLIER ANALYSIS ON FILTER 2

3 OUTLIER ANALYSIS ON FILTER 3

4 OUTLIER ANALYSIS ON FILTER 4

x ANALYSIS NOT PERFORMED OR NOT RATED

P ANALYSIS PROFICIENT

NP X ANALYSIS RATED NON-PROFICIENT
X CONSECUTIVE TIMES

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH
PROFICIENCY ANALYTICAL TESTING PROGRAM
P A T
LAB 08540-003
ROUNDS 081 TO 084
PLOTS

LEAD

```
          081       082       083       084
* +5SD ..........................................
* +4SD ..........................................
* +3SD ..........................................
  +2SD ..........................................
  +1SD .1....4...................................4...
   0SD ...2.3......1....4....1.2.3.4..............
  -1SD ................2.......................2.......
  -2SD ...............3.......................
* -3SD ...................................1...3.....
* -4SD ..........................................
* -5SD ..........................................
```

SILICA

```
          081       082       083       084
* +5SD ..........................................
* +4SD ..........................................
* +3SD ..........................................
  +2SD ..........................................
  +1SD ..........................................
   0SD ..........................................
  -1SD ..........................................
  -2SD ..........................................
* -3SD ..........................................
* -4SD ..........................................
* -5SD ..........................................
```

CADMIUM

```
          081       082       083       084
* +5SD ..........................................
* +4SD ..........................................
* +3SD ..........................................
  +2SD ..........................................
  +1SD ..........................................
   0SD .1.2.3.4....1.........1.2.3.4......2...4...
  -1SD ...............2.3.4................1...3.....
  -2SD ..........................................
* -3SD ..........................................
* -4SD ..........................................
* -5SD ..........................................
```

ASBESTOS

```
          081       082       083       084
* +5SD ..........................................
* +4SD ..........................................
* +3SD ..........................................
  +2SD ..........................................
  +1SD ...........................................1...3.....
   0SD .1.2...4........3.4....1.2.3.4......2...4...
  -1SD .....3......1.2...........................
  -2SD ..........................................
* -3SD ..........................................
* -4SD ..........................................
* -5SD ..........................................
```

ZINC

```
          081       082       083       084
* +5SD ..........................................
* +4SD ..........................................
* +3SD ..........................................
  +2SD ...............2..........................
  +1SD ............1...3......1.2.3.4..............
   0SD .1.2.3.4..........4................1.2.3.4...
  -1SD ..........................................
  -2SD ..........................................
* -3SD ..........................................
* -4SD ..........................................
* -5SD ..........................................
```