CALIBRATION DATA — ALPHA/BETA

SITE _____

INSTRUMENT TYPE _____ INSTRUMENT NUMBER _____
DETECTOR TYPE _____ DETECTOR NUMBER _____
CALIBRATION SOURCES: RADIONUCLIDE _____ _____
ID NUMBERS _____ _____
PURGE CHECK: 1ST COUNT _____ TIME _____
(check source) 2ND COUNT _____ TIME _____

ALPHA CAL. SOURCE 2π EMISSION RATE (cpm)	GROSS INSTRUMENT COUNT RATE (cpm)	NET INSTRUMENT COUNT RATE (cpm)	ALPHA INSTRUMENT EFFICIENCY (ϵ_i)	CROSS TALK*

TOTAL EFFICIENCY* [ ] * SEE REVERSE

$\epsilon_i \times \epsilon_s$

BETA CAL. SOURCE 2π EMISSION RATE (cpm)	GROSS INSTRUMENT COUNT RATE (cpm) (R_{s+b})	NET INSTRUMENT COUNT RATE (cpm) (R_s)	BETA INSTRUMENT EFFICIENCY (ϵ_i)	CROSS TALK*

TOTAL EFFICIENCY* [ ] * SEE REVERSE

$\epsilon_i \times \epsilon_s$

$$\epsilon_i = \frac{R_{s+b} - R_B}{q_{2\pi,sc}}$$

ALPHA HIGH VOLTAGE _____ THRESHOLD _____
WINDOW _____
BETA HIGH VOLTAGE _____ THRESHOLD _____ WINDOW _____
POSITION OF CHECK SOURCE RELATIVE TO DETECTOR _____

AVERAGE ALPHA BACKGROUND _____ c/_____m

ALPHA CHECK SOURCE RANGE _____ TO _____ c/_____m
(AVE ± 3σ/5%)

AVERAGE BETA BACKGROUND _____ c/_____m

BETA CHECK SOURCE RANGE _____ TO _____ c/_____m
(AVE ± 3σ/5%)

***IMPORTANT:* ALL OF THE ABOVE INFORMATION MUST BE PROVIDED**

DATE : _____ CALIBRATED BY: _____

DATA REVIEWED _____

DATE _____

Figure B-4 (Front)

CONTROL CHART CHECKOUT	CONTROL CHART CHECKOUT	CHECK SOURCE REPRODUCIBILITY	
α _____ β _____	α _____ β _____		
LOCATION _____	LOCATION _____	RADIONUCLIDE _____	RADIONUCLIDE _____
_____	_____	SOURCE ID# _____	SOURCE ID# _____
BKG. AVE (c/m) _____	BKG. AVE (c/m) _____	CHECK SOURCE REPRODUCIBILITY TEST (c/__m)	CHECK SOURCE REPRODUCIBILITY TEST (c/__m)
2σ LIMITS _____ TO _____	2σ LIMITS _____ TO _____		
3σ LIMITS _____ TO _____	3σ LIMITS _____ TO _____		
c/__m	c/__m		
1.	1.		
WITHIN 2σ LIMITS ☐YES ☐NO	WITHIN 2σ LIMITS ☐YES ☐NO		
WITHIN 3σ LIMITS ☐YES ☐NO	WITHIN 3σ LIMITS ☐YES ☐NO		
2.	2.		
3.	3.		
4.	4.		
CRITERIA MET ☐YES ☐NO	CRITERIA MET ☐YES ☐NO		
MDC _____ dpm/100cm²	MDC _____ dpm/100cm²		
PERFORMED BY: _____	PERFORMED BY: _____	AVE = _____	AVE = _____
DATE: _____	DATE: _____	3σ = _____ 5%= _____	3σ = _____ 5%= _____

SITE CRITERIA: α _____ dpm/100 cm²

SITE CRITERIA: β _____ dpm/100 cm²

$$* \textit{CROSS TALK} = \frac{\textit{NET } (\alpha \textit{ or } \beta) \textit{ CPM}}{\textit{NET } \alpha + \beta} = \%$$

Unless otherwise noted in comments

* $\epsilon_s = 0.25$ for alpha emitters and beta emitters < 400KeV β_{max}
* $\epsilon_s = 0.50$ for beta emitters > 400KeV β_{max}

COMMENTS:

Figure B-4 (Back)