IMPLEMENTATION ACKNOWLEDGEMENT

Procedure Title: [illegible] REPORT SUBMITTALS SCP/COI/CM&S # C121

Implementor: [redacted] Date Initiated: 9-22

(A) Personnel new qualification? X NO ___ YES
(B) Method new qualification? X NO ___ YES (Define requirements & return to U/M)

MCP Engineer [redacted] Date 9/23/81

Frequency of Use: ___ Daily, ___ Per Week, ___ Seldom, ___ Not Applicable (Return to
Brief description of new procedure or rev.:

Accept for Lab implement? ___ YES, ___ NO (state reason):
Training other than review required? ___ NO, ___ YES - answer (C) & (D):

(C) List type required _____
(D) Who to provide _____

Tech.(s) Affected(1)	Date Rec'd	Signature (2)	Date Signed	Signed Comments Attached: No	Yes	Reqd. to Comply(E)	Certif By (1
[redacted]	10-5-81	[redacted]	10-5-81		✓		[redacted]
	10-7-81		10-7-81	✓			
	9-30-81		9-30-81	✓			
	10/6/81		10/6/81	✓			
	10-7-81		10-7-81	✓			
	9-29-81		10-7-81	✓			
	9/30/81			✓			
	9-25-81		9-25-81	✓			

(1) Upon completion of required training, each Supervisor is to insure that their personne are now qualified to perform the procedure have read and completely understood it by obtaining their signatures and recognized any comments.
(2) I have read and understand the testing method, and will follow the procedural steps as outlined in SCP/COI/CM&S # _____R___, with the knowledge that if I am prevented or caused to deviate from the procedure as it is written I may refuse to sign off any and all analyses performed by its use. (Sign and Date)

Implementor: Issued de-qualification letter, if (A) is yes and (E) is readily resolvable. Letter # _____. Date returned to U/M _____.

Released for full implementation? ___ YES, Date _____; ___ NO, Action to resolve assigned to _____, Date _____.
Comment(s):

U/M Initial _____ Date _____

___ (Implementor) initial procedure & submit to Index Control Supervisc

- ☐ Placed new procedure in Station Book # _____.
- ☐ Marked old procedure "Backup File" and returned to U/M
- ☐ Updated Station Document Index
- ☐ Posted yellow copy for personnel implement notification

M-1

ORIG-U/M FILE YELLOW-COMPLETION FEEDBACK PINK-U/M INPROCESS FILE

IMPLEMENTATION ACKNOWLEDGE

Procedure Title: LMCS PROBLEM REPORT SUBMITTALS SCP/COI/CM8S # 512 R

Implementor: [redacted] Date Initiated: 9-23

(A) Personnel new qualification? X NO ___ YES
(B) Method new qualification? X NO ___ YES (Define requirements & return to U/M)

MCP Engineer [redacted] Date 9/25

Frequency of Use: ✓ Daily, ___ Per Week, ___ Seldom, ___ Not Applicable (Return to
Brief description of new procedure or rev.:

Accept for Lab implement? ✓ YES, ___ NO (state reason):
Training other than review required? ✓ NO, ___ YES - answer (C) & (D):

C) List type required
D) Who to provide

Tech. (s) Affected(1)	Date Rec'd	Signature (2)	Date Signed	Signed Comments Attached: No	Signed Comments Attached: Yes (Reqd. to Comply(E))	Certi By (
[redacted]	9-25-81	[redacted]	9-25-81		✓	
	9-30-81		9-30-81		✓	
	10-6-81		10-6-81		✓	
	10-7-81		10-7-81		✓	
	9-25-81		9-25-81		✓	
	9/30/81		9/30/81	✓		
	9/30/81		9/29/81		✓	
	9-30-81		9-29-81		✓	

(1) Upon completion of required training, each Supervisor is to insure that their personne are now qualified to perform the procedure have read and completely understood it by obtaining their signatures and recognized any comments.

(2) I have read and understand the testing method, and will follow the procedural steps a outlined in SCP/COI/CM8S # ___ R___, with the knowledge that if I am prevented o caused to deviate from the procedure as it is written I may refuse to sign off any an all analyses performed by its use. (Sign and Date)

Implementor: Issued de-qualification letter, if (A) is yes and (E) is readily resolvable. Letter # ___. Date returned to U/M ___.

Released for full implementation? ___ YES, Date ___; ___ NO, Action to resolve assigned to ___, Date ___.
Comment(s):

U/M Initial ___ Date ___

☐ ___ (Implementor) initial procedure & submit to Index Control Supervi

☐ Supv. of Index Control

- ☐ Placed new procedure in Station Book # ___.
- ☐ Marked old procedure "Backup File" and returned to U/M
- ☐ Updated Station Document Index
- ☐ Posted yellow copy for personnel implement notification

WHITE-ORIG-U/M FILE YELLOW-COMPLETION FEEDBACK PINK-U/M INPROCESS FILE

[illegible] Operators who have the responsibility of filling out problem report. [illegible] also necessary to make upper management aware of our problems [redacted] [illegible]

Supervision should be filling out this form and only if a change in programming is required. If we have a problem involving release of samples, a telephone call should be sufficent. Otherwise a course in quick reading should be made availa[ble] to lab personell, so that we will be able to ha[ndle] all this (what I feel like is unnecessary) paperw[ork].

[redacted]

When we have problems with [illegible], we call one of [illegible] people to correct it anyway. Why can't the individual correcting the problem fill out a problem summary, and corrective action taken report at that time. [redacted]

[redacted]

Why can't everything work sufficiently that it does not require "problem reports" filled out? [illegible] [illegible] valuable time. [redacted]

I feel that a more simplified way could be arranged by a call made to [redacted] dept. Let this technician evaluate, correct and write the "report". Also let him be responsible to see that copy of [illegible] reaches the desk [illegible] Senior Engineer. Why not try to eliminate so many "channels" and red tape - [illegible] we can get on with the lab work!! There appears to be repetitional work between 3.2 3.3 and [redacted]

OVER

GATHER ROUND CHILDREN AND LET 'EM TELL
OF A SIMPLE COMPUTER SYSTEM GONE STRAIGHT TO HELL.
JUST LISTEN TO THEM THROW THEIR FIT
MAKES YOU THINK THEY DONT GIVE A "DARN!"
COMPLAIN OF PROBLEMS AND PAPERWORK GALORE,
WHY SHOULD THEY THINK THATS WHAT A SUPERVISORS FOR
BITCHIN, BELLYACHIN - MOANIN GROAN PAPERWORK IS
BAD BUT WHAT I REALLY HATE IS THAT [redacted] PHO
THOSE GOOD OLD DAYS ARE GONE WHEN YOU COULD SEE
YOUR WORK PILE UP FRONT TO REAR
WHY SHOULD A "LITTLE" PAPER WORK CAST DISPERSIONS
OF FEAR
WHY I LOVE PAPER WORK BETTER THAN BEER
NOW WE OUR DUTY WE SHOULD NOT SHIRK
MORE TIME ON PAPERS MEANS LESS TIME ON WORK

NOW CREATIONS BY MANAGEMENT THEY CONSTANTLY MAK
BRING THEM ONE BY ONE BY ONE

IT'S TIME FOR MY BREA

Paper work; paperwork, paperwork.
It is fast approaching the day [illegible] not permit
us to be doing weekly pay [illegible] and [illegible]
exempt level amount of clerical duties [illegible]
a large paying yearly wage [illegible]
yes! Started looking [illegible] the [illegible]
syndrome. Take the [illegible] away
the responsibilities [illegible]
to doing the [illegible]. [illegible]

This is ridiculous! From [redacted] to [redacted] to [redacted] to programmer. Talking about red tape! Why not let us call a programmer, tell him our problem, let him fix it (if possible), then give the completed form to [redacted]. Only one copy is needed that way. Most of our problems are data base problems, and I don't feel that's my responsibility to write up, anyway. If we have to write up a problem report every time LINCS is down we'll never get any work done - especially on day shift! [redacted]

The wording of the COI is much to difficult and incoherently incomprehensive, protecting contrasting incomprehensibility - or do you get my drift

Could not you say it so it makes logic to an old backwood country boy [redacted]

WILMINGTON MANUFACTURING DEPARTMENT

CALIBRATION AND OPERATION INSTRUCTION

GENERAL ELECTRIC

NO.: COI # 012
REV.: 0
REFERENCES: See 5.0
ISSUE DATE:
PAGE 1 OF 3

SUBJECT: LMCS PROBLEM REPORT SUBMITTALS

1.0 PURPOSE:

This COI outlines the procedure for submitting LMCS problem reports.

2.0 SCOPE:

This document outlines the procedure to be followed by the problem report submitt Senior Engineer - Measurement Systems, Measurement Systems Engineer, and Measurement Systems Specialist (Applications) in regard to LMCS problem reports.

3.0 RESPONSIBILITIES:

3.1 Problem Report Submitter.

The Problem Report Submitter is responsible for the following:

3.1.1 Completion of an LMCS Problem Report (LPR).

3.1.2 Submittal of the entire LPR to the Senior Engineer - Measurement Syste

3.2 Senior Engineer - Measurement Systems.

The Senior Engineer - Measurement Systems is responsible for the following:

3.2.1 Review of the LPR for completeness.

3.2.2 Logging in of the LPR.

3.2.3 Submittal of the LPR to the Measurement Systems Engineer (systems problems) or Measurement Systems Specialist (applications problems) fo review and assignment.

3.2.4 Filing of the LPR(s) submitted.

3.3 Measurement Systems Engineer.

The Measurement Systems Engineer will be responsible for:

3.3.1 Evaluating the feasibility of, and effort required by, systems level problems.

PREPARED BY	[redacted]	DATE	APPROVALS		DATE	APPROVALS	
INDEP. REVIEW			QCE			NMM	
CHEMET			WE				
QID							

3.4 Measurement Systems Specialist (Applications).

3.4.1 The Measurement Systems Specialist (Applications) will be responsible evaluating the feasibility of, and effort required by, applications

4.0 PROCEDURE:

4.1 A problem arises on LMCS.

4.2 An LMCS Problem Report is completed and the Problem Report submitted to the Senior Engineer - Measurement Systems.

4.3 If the problem involves a loss of functionality normally provided by LMCS wh is necessary for sample result release, the Measurement Systems Specialist o Engineer should then be consulted.

4.4 Upon receipt of the LPR, the Senior Engineer - Measurement Systems will file pink copy, return the gold copy to the LPR submitter, and forward the remaini copies to either the Measurement Systems Engineer or Measurement Systems Specialist for manpower and time requirement evaluation and assignment to a work study programmer.

4.5 After evaluation, the LPR is returned to the Senior Engineer - Measurement Systems. If the problem requires more than one man-week, the yellow copy of report, indicating the effort required, will be returned to the submitter. T submitter will then meet with the Senior Engineer - Measurement Systems to resolve the LPR status. If the problem requires less than one week, the yell copy will be returned when the problem has been resolved.

5.0 REFERENCES:

See attached LMCS Problem Report form.

TRAVELER # 1383
OX. TRAY # 10
DISS. TRAY # 1

PRODUCTION
gU/g ISOTOPIC
& O/U RATIO

(2148)

SAMPLE #	CONTAINER #	CRUC POS.	TARE WGT.	UO_2 WGT.	TARE + U_3O_8	TARE + SOLUTION	TUBE #	ANA #	MEAS. U_{235}	CALC. U_{235}	O/U RATIO
524278	2405RM2585	1					6211	3	2.503	ok	
524280	2405RM2611	2					6274	1	2.492	OK	
524564	2950B50001	3				x	6371	1	2.862		RW
14570	2956B50017	4				x	6201		2.850		RW
525548	3303MQ67 90	5					6383				
524572	2950BS0018	6					6207				
524578	2950BS0033	7					6361				
524378	3306mm672	8					6402				
524583	2950BS0034	9					6329				
524580	2950BS0049	10					6356				
525751	2202MQ2371	11					6293	1	2.076		RW
524383	33dam0878	12					6373				

	OX. IN	OX. OUT			
DATE 11-7-83	11-7-83	11-7	11-7	Rem - 305 - 11-7	Information [redacted] in accordance with the Freedom of Information Act, exemptions 4 FOIA 87-88
TIME	0600	0805	1237	1745	
ANALYST [redacted]	RW	[redacted]	[redacted]	[redacted]	

CL-245 Rev.1 Ref: SCP 400 Issued: 5/4/82 Approved [redacted]

[redacted] REPORT# 2146

SAMPLE PREPARATION DATA

SAMPLE	TR	INITIAL WEIGHTS OPER	DATE	TARE	U02	IGNITED WEIGHTS OPER	DATE	U3O8	SOLUTION WEIGHTS OPER	DATE	SOLUT
524278	10	[redacted]	311	27.8444	4.6678	[redacted]	311	32.5025	[redacted]	311	59.5
524280	10		311	27.0855	4.4938		311	31.7208		311	58.5
524564	10		311	28.3236	4.4936		311	32.9736		311	60.1
524570	10		311	27.9807	4.4826		311	32.4883		311	59.3
525548	10		311	25.2891	4.5042		311	29.9588		311	58.8
524572	10		311	27.6841	4.5067		311	32.3533		311	58.2
524578	10		311	28.2425	4.5013		311	32.9015		311	59.4
524378	10		311	25.7154	4.4956		311	30.3006		311	56.9
524583	10		311	27.0786	4.5035		311	31.7408		311	58.0
524580	10		311	26.6875	4.4888		311	31.3549		311	57.0
525751	10		311	28.3525	4.5049		311	33.0242		311	59.9
524383	10		311	26.2175	4.4967		311	30.8065		311	56.5

REPORT FOR ANALYZER# 3

DATE: 8311 TIME: 21:23

BEFORE STANDARDS		POST STANDARDS		CONSTANTS	
LOW STD	.714	LOW STD	.716	M	61707.461383
MED STD	2.239	MED STD	2.255	K	1.877564
HIGH STD	3.981	HIGH STD	3.987	SLOPE	.999718
				INTER	.007423

SAMPLE	OPER	TUBE	NOM ENR	ENR	ENR	CNT	CNG	C/O	ENR	AVG ENR	SD Y
524278	[redacted]	6211	2.401	2.710	2.496	167.7	.1247	2.062	2.503	2.503	N
524280		6274	2.400	2.713	2.485	166.8	.1253	2.057	2.492	2.492	N
524564		6371	2.950	3.077	2.855	166.3	.1239	2.061	2.862	2.862	N
524570		6201	2.950	3.095	2.843	168.2	.1250	2.079	2.850	2.850	N
525548		6383	3.300	3.558	3.258	169.0	.1254	2.045	3.264	3.264	Y
524572		6207	2.950	3.305	2.915	175.3	.1294	2.074	2.922	2.922	Y
524578		6366	2.950	3.211	2.908	171.0	.1265	2.073	2.914	2.914	
524378		6402	3.300	3.573	3.301	167.1	.1244	2.029	3.307	3.307	Y
524583		6329	2.950	3.268	2.919	173.4	.1278	2.070	2.926	2.926	Y
524580		6356	2.950	3.204	2.916	177.5	.1300	2.069	2.922	2.922	Y
525751		6293	3.200	3.457	3.065	168.6	.1252	2.044	2.076	2.076	N
524383		6373	3.300	3.595	3.288	174.7	.1285	2.314	3.292	3.292	Y

RELEASED TO [redacted] DATE 11/7/83

Lo Report# [illegible]
Transmission Status
Released by: [illegible]
TIME:22:37
DATE:83311

amples Transmitted To LMCS

Sample#	Tube	Iso	D/L	Avg Iso	Avg D/L
524278	6211	2.503	2.062	[illegible]	[illegible]
524280	6274	2.493	2.057	[illegible]	[illegible]
525540	6383	2.264	2.045	[illegible]	[illegible]
524572	6207	2.322	2.074	[illegible]	[illegible]
524578	6366	2.414	2.073	[illegible]	[illegible]
524378	6402	2.307	2.328	[illegible]	[illegible]
524583	6329	2.926	2.070	[illegible]	[illegible]
524580	6256	2.922	2.069	[illegible]	[illegible]
524383	6373	2.292	2.014	[illegible]	[illegible]

amples Held For Recount

Sample#	Tube	Iso	D/L	Avg Iso	Avg D/L

amples Withheld

Sample#	Tube	Iso	D/L	Avg Iso	Avg D/L
524564	6371	2.062	2.081	[illegible]	[illegible]
524570	6201	2.350	2.076	[illegible]	[illegible]
525751	6293	2.076	2.042	[illegible]	[illegible]

should be 2.850

(do not have a legible copy)

DATE	TIME	EVENT	RESULT	MIN. U
8/19/82				
	8:31	CAL VER	FAILED	287636
8/20/82				
*	11:21	CAL ✓	OK	289651
*	11:56	CAL VER	OK	289165
	14:06	CAL VER	OK	287087
*	15:23	CAL ✓	OK	284805
*	15:58	CAL VER	FAILED	285973
*	21:45	CAL ✓	OK	292181
	22:21	CAL VER	FAILED	295494 *
*	23:28	CAL ✓	OK	294007 *
8/21/82				
	00:04	CAL VER	OK	~~293~~ 293186 *
	2:42	CAL VER 12 PROD	OK	293721 *
	5:23	CAL VER 12 PROD.	OK	293142 *
	7:50	CAL VER 12 PROD	OK	292046 *
8/23/82				
	6:52	CAL	ok	291741
	7:27	CAL VER	FAILED	294085
	11:45	CAL	OK	292790
	12:21	CAL VER	OK	293883
TAPE SPLICE BETWEEN 16:18 & 19:56 (PRESS EXECUTE)				
	21:45	CAL VER	FAILED	291115
	23:24	CAL	OK	295767
	24:00	CAL VER	OK	293388

M-3

CALIBRATION/VERIFICATION LOG
HIGH CURRENT ANALYZERS

DATE 8-19-88
ANALYZER # 4

TIME	BLANK		.715 VERIF./CAL.			1.004		2.225 VERIF./CAL.			2.000		3.070 VERIF./CAL.			M	K
	0	0	Conc.*	0	0	0	0	Conc.*	0	0	0	0	Conc.*	0	0		
2330																	
24																	
✓ 01 25	—				—											1412	.97
✓ 02	—	—	.715					2.178					3.070				
✓ 03 37	—				—											[illegible]	1.160
✓ 04 16	—	—	.716					2.22[illegible]					([illegible])				
✓ 05 19	—				—											[illegible]	1.742
✓ 06 0300	—	—	.716					2.226					3.0[illegible]6				
07																	
✓ 08 32	17[illegible]		[illegible]8					(2.12[illegible])					(3.053)				
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* CIRCLE OUT OF ALARM VALUES

AMP SETTING CHANGES:

TIME	VOLTS	COARSE	FINE

CL-130.81 Ref: [illegible] Approved: [illegible] Approved: [illegible]

[illegible]

[illegible]

[illegible] 8-20-81

[illegible] 9

TIME	BLANK		[illegible]														
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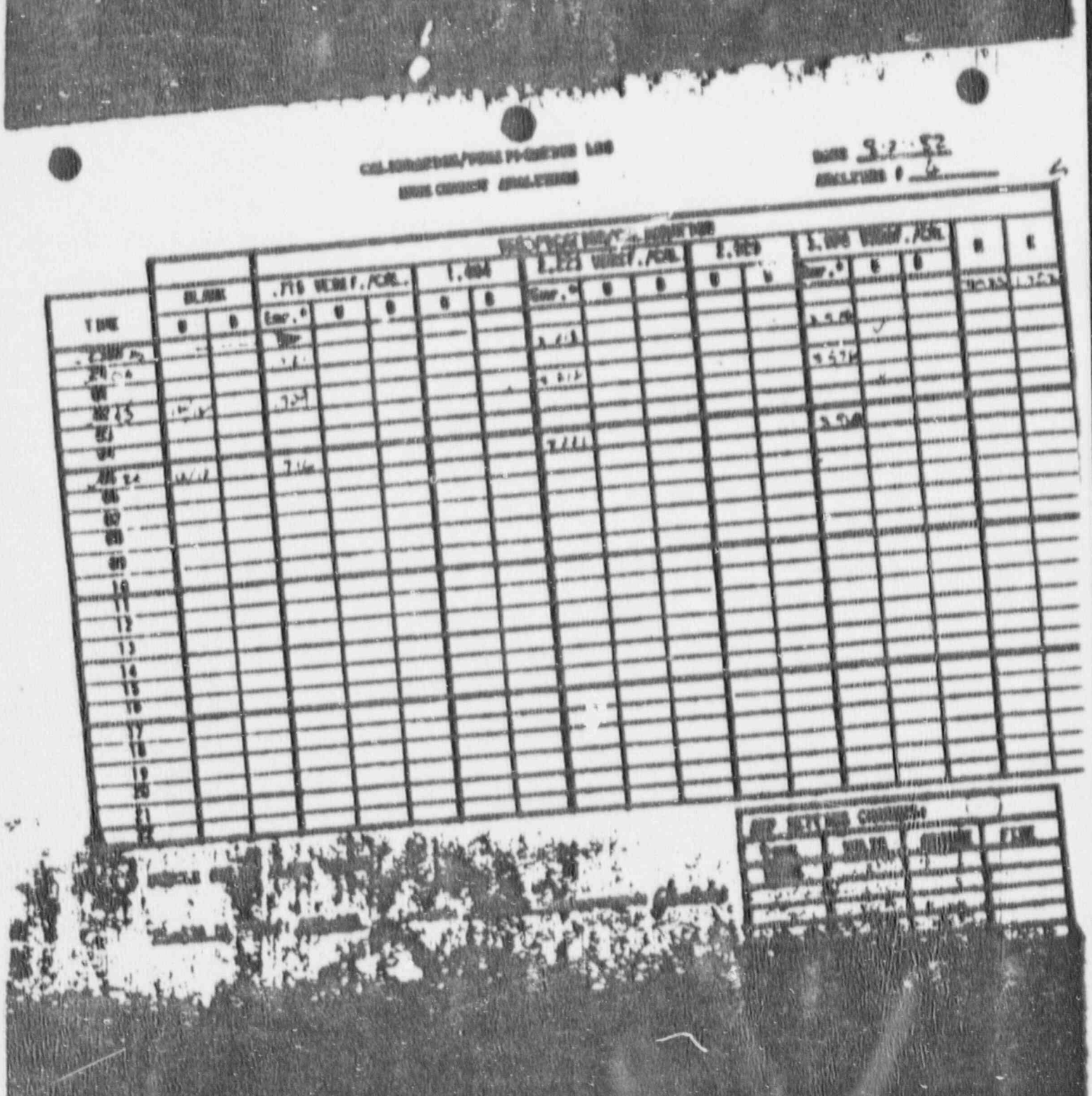
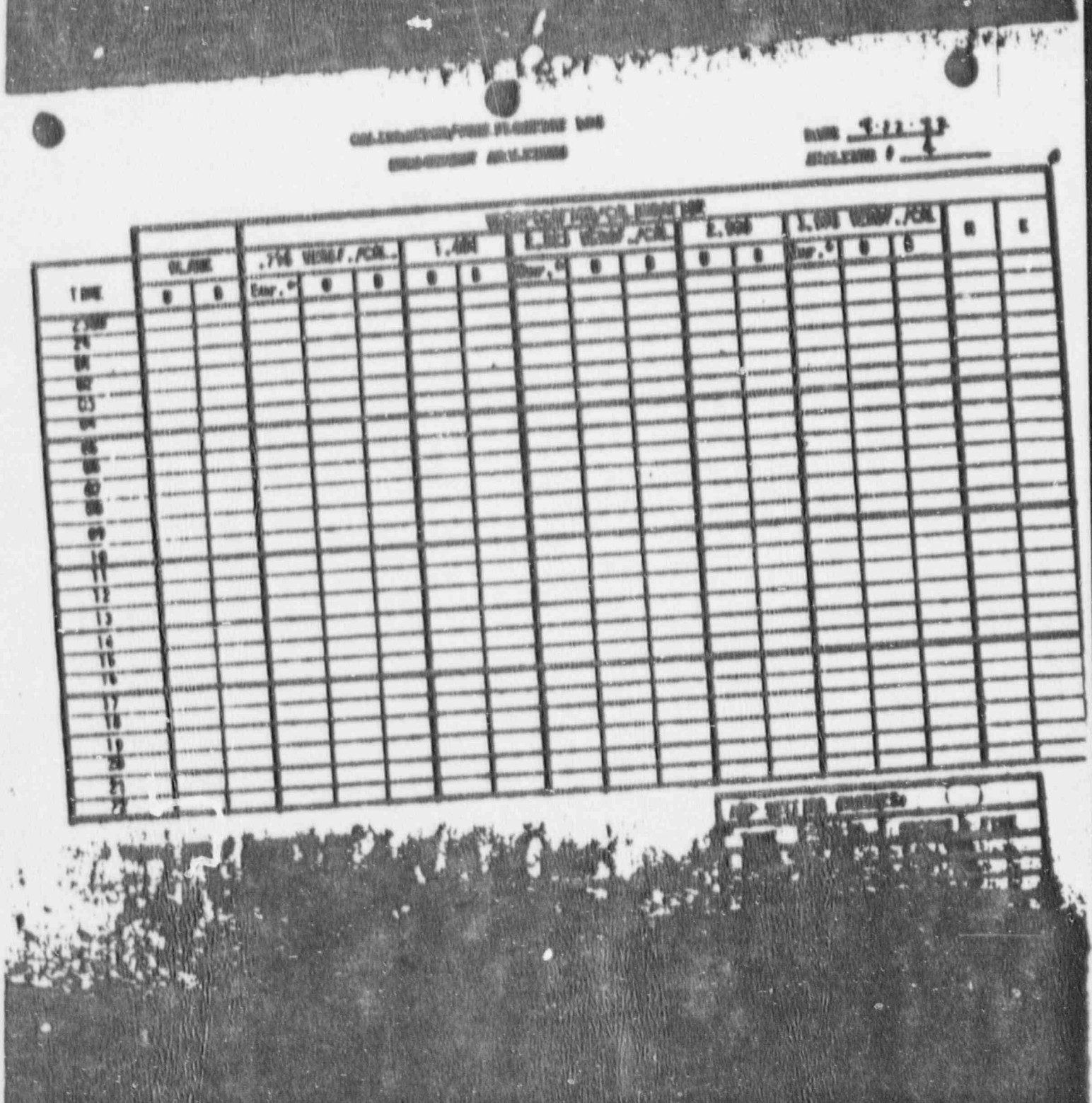
[illegible]





CALIBRATION/VERIFICATION LOG

EDGE CURRENT ANALYZERS

DATE 8-22-96

ANALYZER # 7

TYPE	BLANK		.716 VERIF./CAL.			1.064		1.223 VERIF./CAL.			2.000		3.576 VERIF./CAL.			R	E
	B	S	Conc.*	B	S	B	S	Conc.*	B	S	B	S	Conc.*	B	S		
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* CIRCLE ONE OF ALARM VALUES

AMP SETTING CHANGES:

TIME	NEW SS	COMMENTS	INIT.

CALIBRATION/VERIFICATION LOG
[illegible] ANALYZERS

DATE 8-21-82
ANALYZER # 4

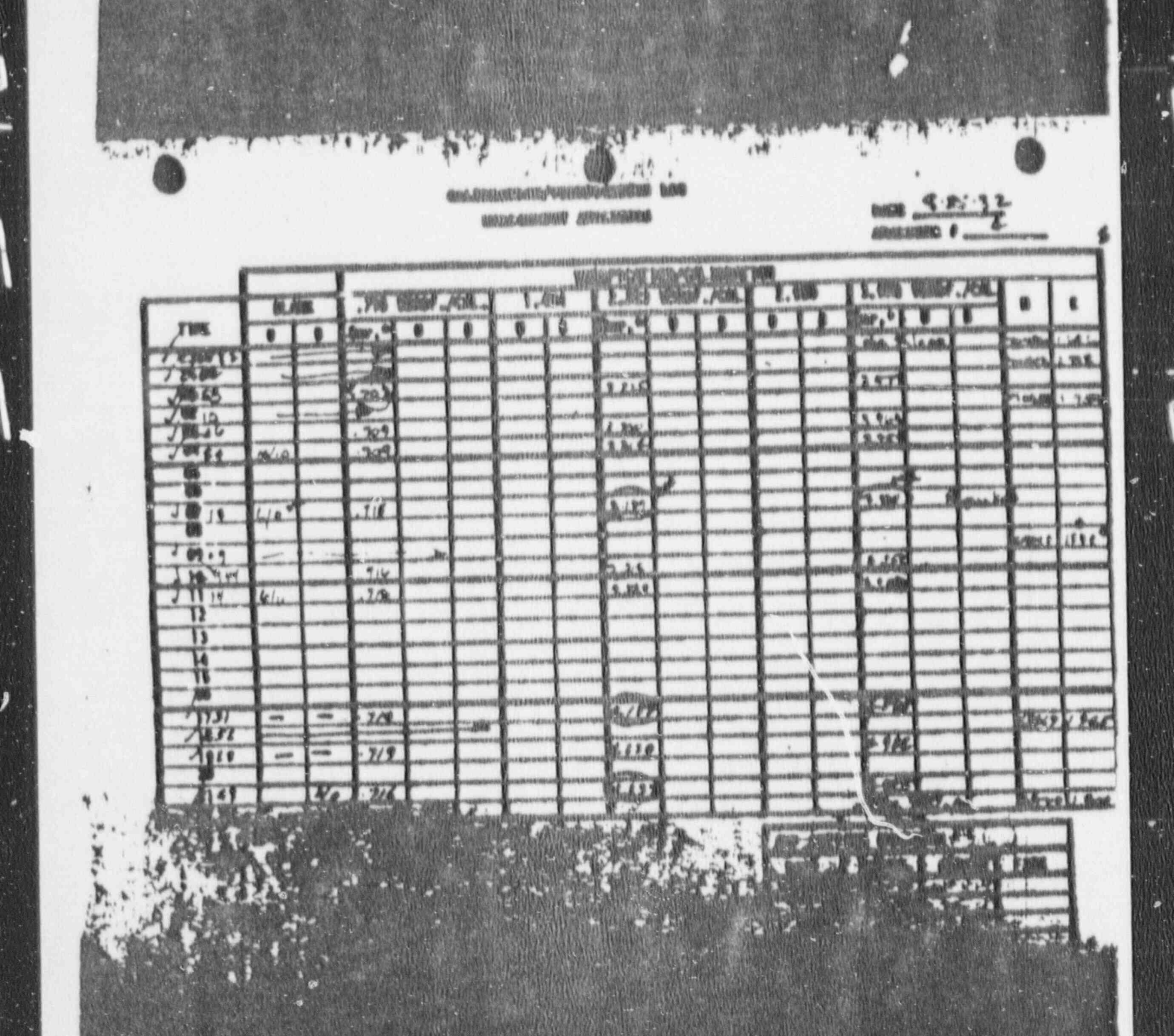
TIME	BLANK		.716 VERIF./CAL.			1.0[illegible]		2.[illegible] VERIF./CAL.			2.[illegible]		3.[illegible] VERIF./CAL.			[illegible]	[illegible]
	[illegible]	[illegible]	Dev.%	[illegible]	[illegible]	[illegible]	[illegible]	Dev.%	[illegible]	[illegible]	[illegible]	[illegible]	Dev.%	[illegible]	[illegible]	[illegible]	[illegible]
													3.35[illegible]				
✓ 2300 35	—		[illegible]					2.1[illegible]									
✓ 2401			.720										(3.3[illegible])				
01								2.2[illegible]									
✓ 02 05	19/2		.712													[illegible]	1.809
03			[illegible]										3.358				
✓ 04 00	—							2.2[illegible]									
✓ 05 35			.714										3.27[illegible]			Repeated	
06								(2.1[illegible]) Rpt								[illegible]	1.82[illegible]
✓ 07 06	19/8		.726	—	[illegible]								3.3[illegible]				
✓ 08 26	—							2.2[illegible]									
✓ 09 03			.709														
10													3.[illegible] Repeated				
11								(2.2[illegible]) ✓								[illegible]	2.05[illegible]
✓ 12 45	18/9		.713										3.36[illegible]				
✓ 13 50	—			>				2.228								[illegible]	[illegible]
✓ 14 26			.710										[illegible]				
✓ 15 37			—					2.2[illegible]									
✓ 16 [illegible]			[illegible]														
17													([illegible])				
18								[illegible]									
✓ 19 02	8/9		.7[illegible]														
20																	
21																	
22																	

* CIRCLE OUT OF ALARM VALUES

[illegible] SETTING CHANGES: ( )

[illegible]	[illegible]	[illegible]

[illegible]-320-[illegible]



CONTROL CHART CALCULATION SHEET

METHOD NAME Enrichment Analyzer
STANDARD NAME Iso (RI2005)
ANALYZER NAME(s) C14

MATERIAL CLASS(s) 21 - Counts

ATTRIBUTE NAME

DATA TAKEN FROM [redacted] - [redacted]
CALCULATIONS DONE BY [redacted]
LMCS SDCR FORM No.

CODE
CODE
CODE(s)

CODE(s)

NOMINAL
UNITS CODE
TIME PERIOD TO
DATE

293732.7 - (5.775) 1134.5

293732.7 - 6551.7

287181

Calculations by Engineering

TABLE FOR SCP-401

ANALYZER #	REGRESSION MODEL COEFFICENT	
	SLOPE	INTERCEPT
011	1.001997	-.016384
012	1.001990	-.010601
013	1.003511	-.012506
014	1.004024	-.014064

BIAS ADJUSTMENT FACTORS AND MINIMUM "U" COUNT LIMITS			
ANALYZER #	SLOPE	INTERCEPT	MINIMUM "U" COUNT
011	1.00593	-.00422	279269
012	1.00906	-.00522	289827
013	1.00544	-.00599	290003
014	1.00569	-.01038	287181

NOTE: Check each calibration. The "B" counts for the lowest enrichment must have a "B" count greater than the "B" count for the highest enrichment.

APPROVED BY [redacted]

DATE ISSUED 8/25/82

TABLE FOR SCT-401

ANALYZER #	(NP-80 Series) REGRESSION MODEL COEFFICENT	
	SLOPE	INTERCEPT
011	.999535	-.015054
912	1.000361	-.011828
013	1.003814	-.014472
014	— Down —	

(NP-9725A)

BIAS ADJUSTMENT FACTORS AND MINIMUM "U" COUNT LIMITS

ANALYZER #	SLOPE	INTERCEPT	MINIMUM "U" COUNT
011	1.00593	-.00422	279269
012	1.00906	-.00522	285827
013	1.00544	-.00599	290003
014	—	Down	—

NOTE: Check each calibration. The "B" counts for the lowest enrichment must have a "B" count greater than the "B" count for the highest enrichment.

APPROVED BY [redacted]

DATE ISSUED 8/29/82

TABLE FOR SCP-401

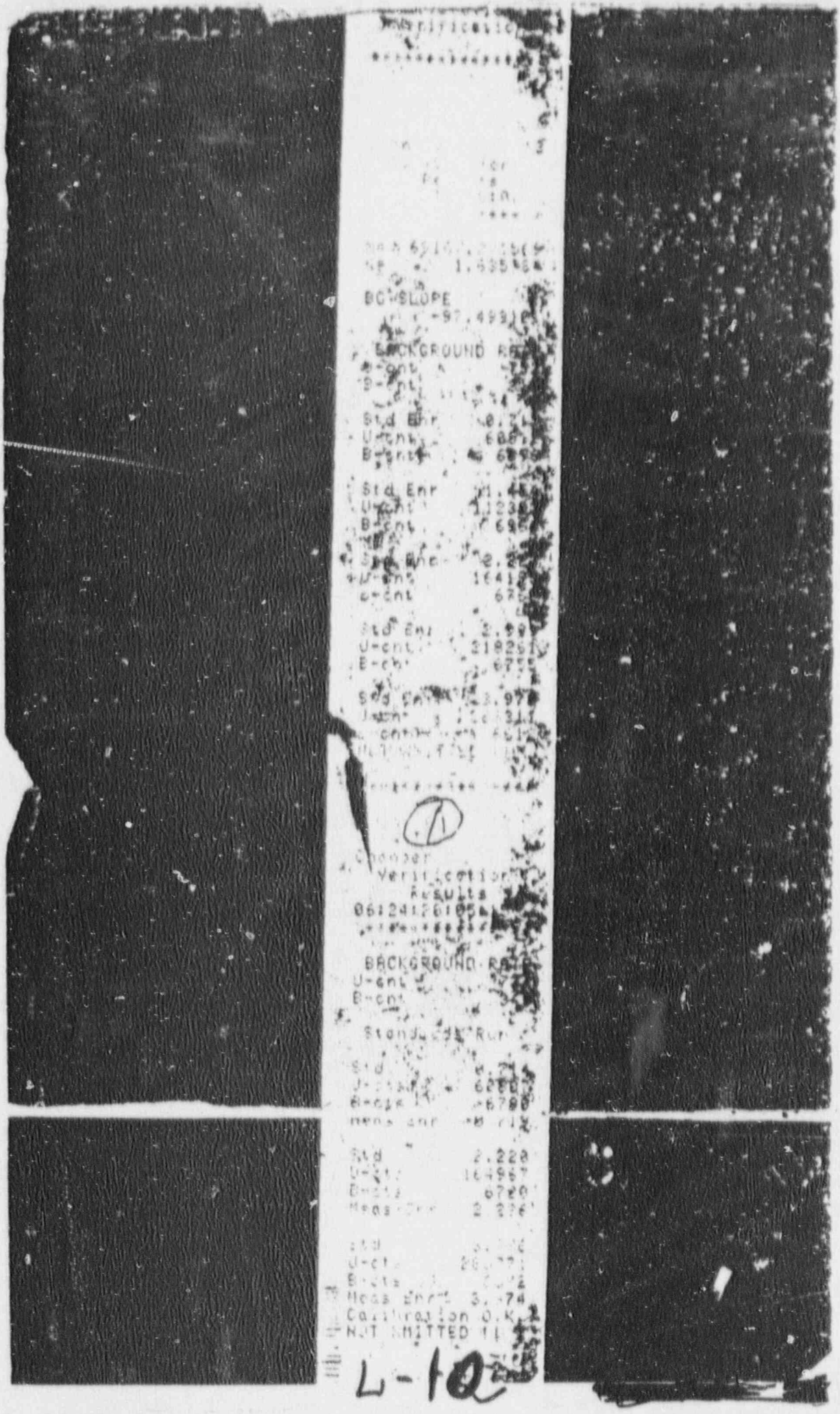
ANALYZER #	(HIP-80 Series) REGRESSION MODEL COEFFICENT	
	SLOPE	INTERCEPT
011	.996176	-.014264
012	.997627	-.014055
013	1.001445	-.016088
014	1.000996	-.010504

(HIP-9725A) BIAS ADJUSTMENT FACTORS AND MINIMUM "U" COUNT LIMITS			
ANALYZER #	SLOPE	INTERCEPT	MINIMUM "U" COUNT
011	1.00593	-.00422	279269
012	1.00906	-.00522	289827
013	1.00541	-.00599	290003
014	1.00569	-.01088	273364

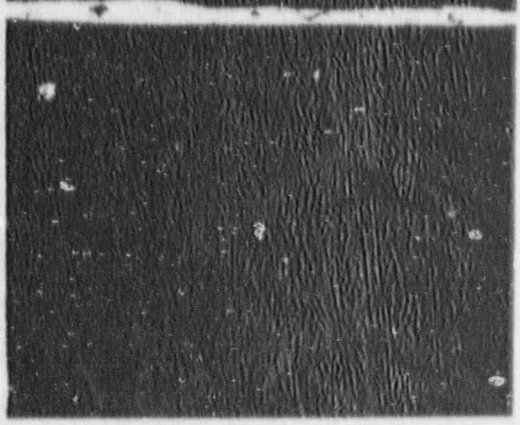
NOTE: Check each calibration. The "B" counts for the lowest enrichment must have a "B" count greater than the "B" count for the highest enrichment.

APPROVED BY [redacted]

DATE ISSUED---8/12/82



L-10



Std Err 0.221
U-cnt 162790
B-cnt 6674

Std Err 2.959
U-cnt 218755
B-cnt 6746

Std Err 3.978
U-cnt 29225
B-cnt 6761

Cts out of Range

****

****
****
Channel 33

(33)

Channel 34
Verification
Results
04-24-16:51:29
********** **********

BACKGROUND RATE
U-cnt 1560
B-cnt 979.

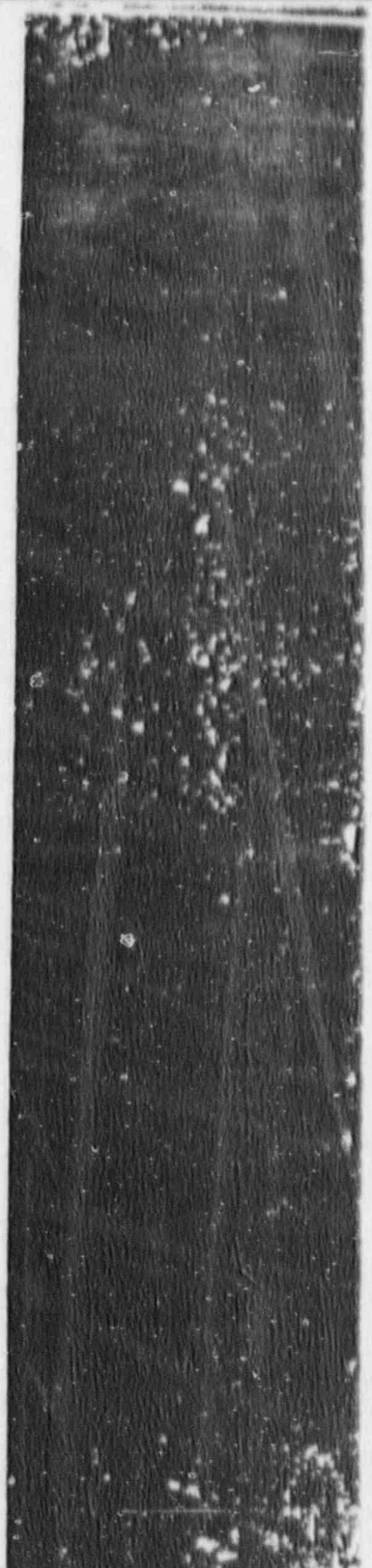
Standard Run

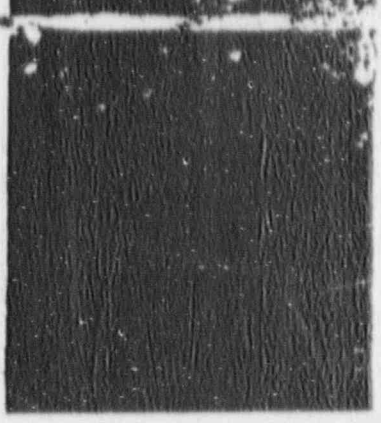
Std 0.715
U-cts 62218
B-cts 6999
Mean Err 0.714

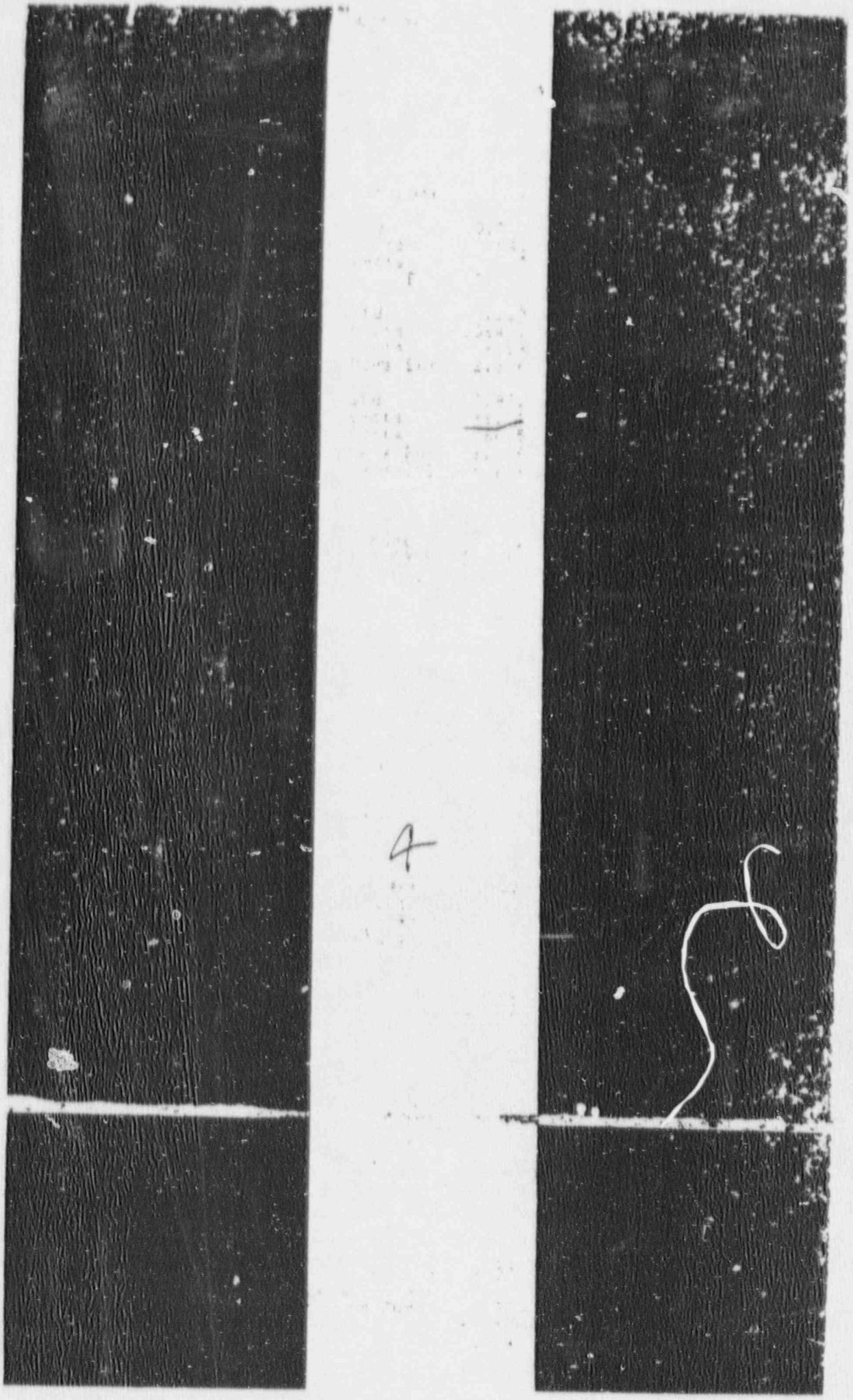
Std 2.224
U-cts 168776
B-cts 6998
Mean Err 2.217

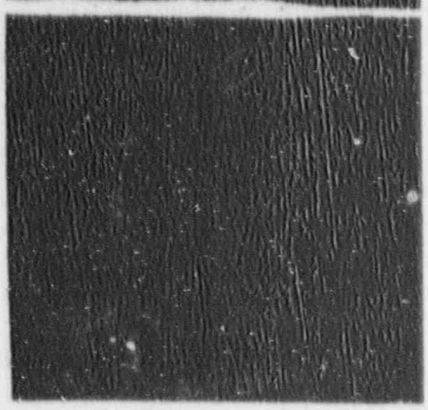
****

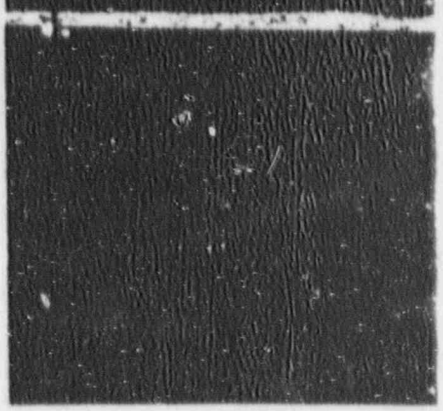
Small 7988











Before... I.005644
Int -0.010350
Mx 71090.262474
K= 1.651108

Smpl No. 7649
06:24:12:38:25
Avg Results
U-Cnt 389171
B-Cnt 1137
Meas Enr 3.316

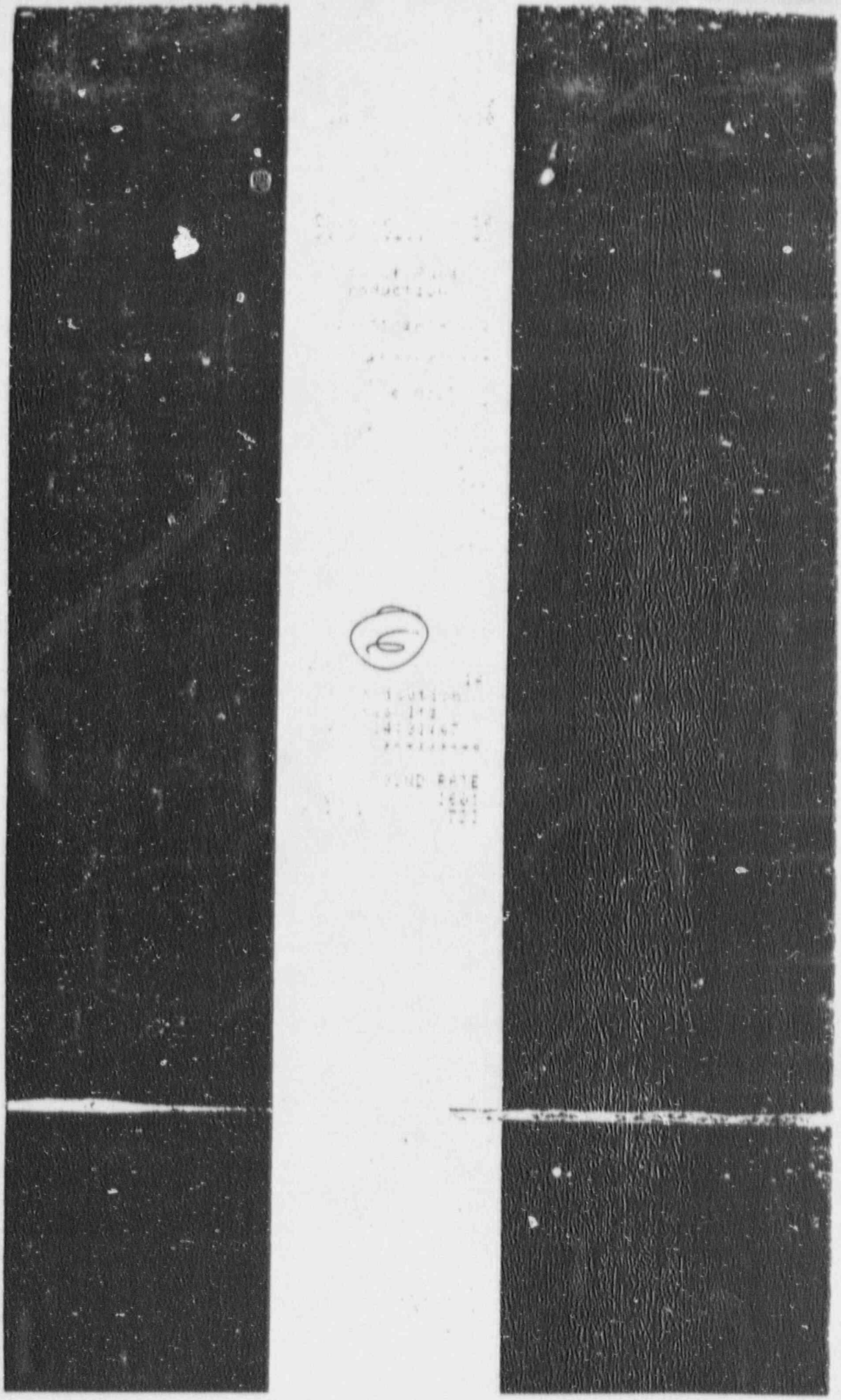
Smpl No. 7651
06:24:13:09:54
Avg Results
U-Cnt 311757
B-Cnt 1
Meas Enr

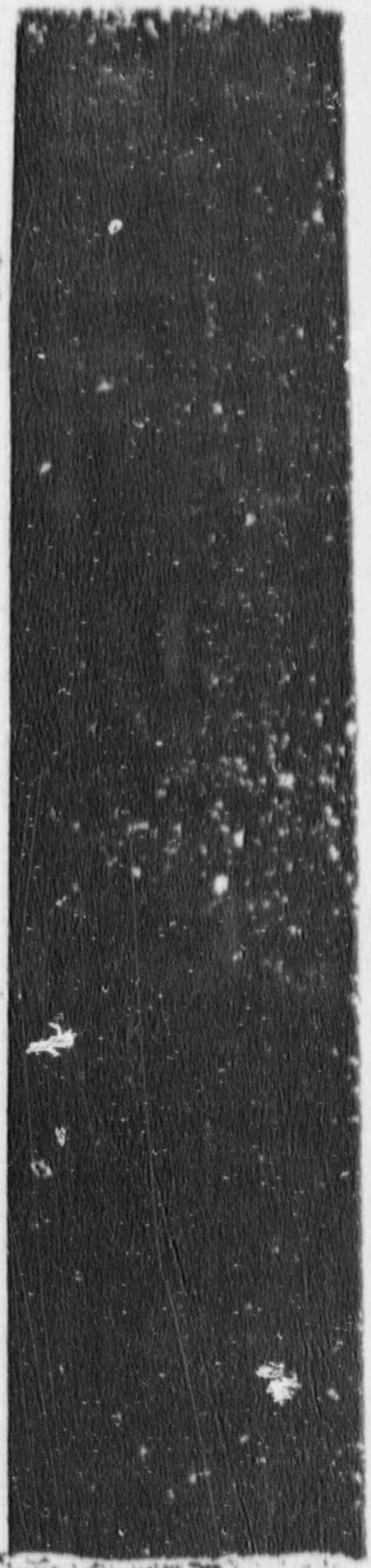
Smpl No. 7652
06:24:13:54:52
Avg Results
U-Cnt 316159
B-Cnt 1506
Meas Enr 4.412

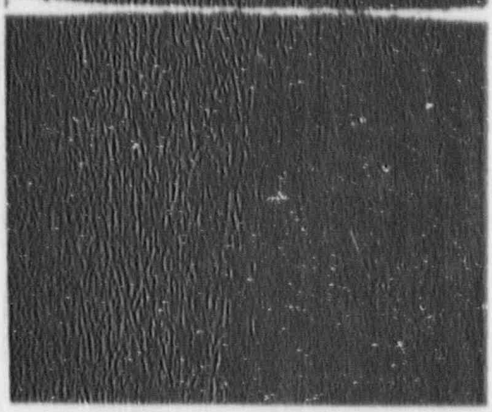
Before Stds' Enr
Low Std 0.719
Med Std 2.222
High Std 3.960

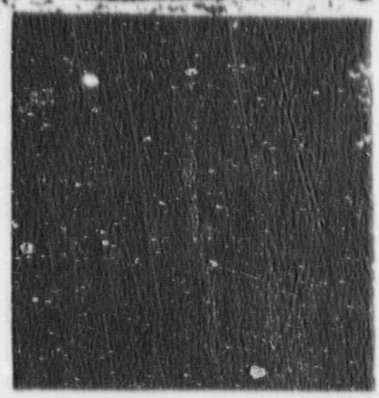
Post Stds' Enr
Low Std 0.716
Med Std 2.218
High Std 3.962

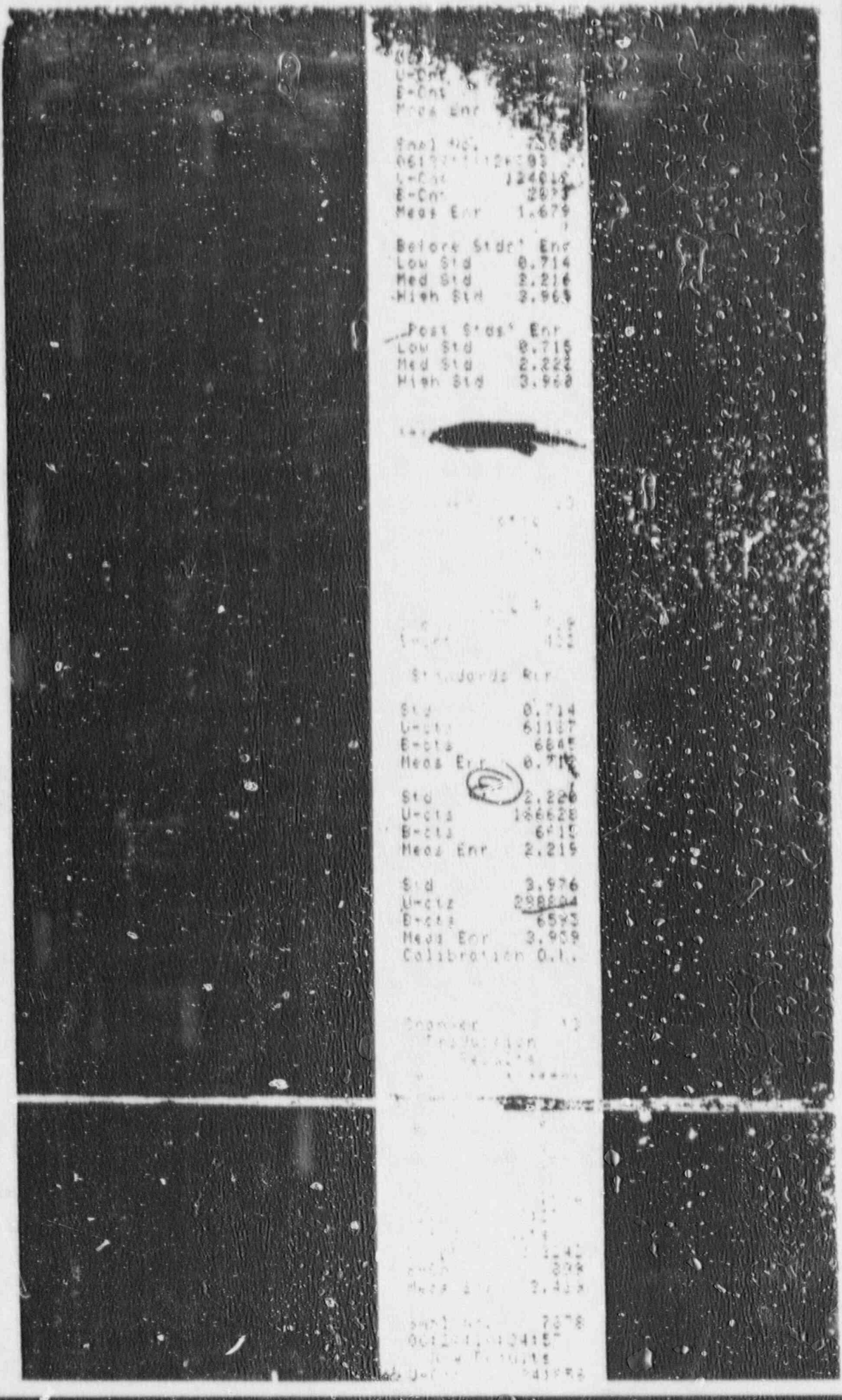
Chamber S











U-Cnt
E-Cnt
Meas Enr

Anal No.
U-Cnt 124614
E-Cnt 2093
Meas Enr 1.679

Before Stds' Enr
Low Std 0.714
Med Std 2.216
High Std 3.963

Post Stds' Enr
Low Std 0.715
Med Std 2.222
High Std 3.960

Standards Run

Std 0.714
U-cts 61187
E-cts 664
Meas Enr 0.71

Std 2.220
U-cts 186628
E-cts 615
Meas Enr 2.219

Std 3.976
U-cts 298604
E-cts 6593
Meas Enr 3.959
Calibration 0.1.

Changer 14
Production
Results
****

Slope 1.005690
Int -0.010360
A= [illegible]
K= 1.051100

Smpl No. 7820
[illegible]
U-Cnt 174[illegible]
B-Cnt [illegible]
Meas Err [illegible]

Smpl No. [illegible]
[illegible]
U-Cnt [illegible]
B-Cnt 1219
Meas Err [illegible].900

Smpl No. 7823
06:24:10:07:00
U-Cnt 232804
B-Cnt 6486
Meas Err 3.124

Smpl No. 7575
06:24:10:15:47
U-Cnt 174563
B-Cnt 2040
Meas Err 2.408

Smpl No. 7681
06:24:10:24:34
U-Cnt 176832
B-Cnt 2456
Meas Err 2.430

Smpl No. [illegible]
[illegible]
U-Cnt [illegible]
B-Cnt [illegible]
Meas Err [illegible].084

Smpl No. 7564
06:24:10:42:09
U-Cnt 139872
B-Cnt 292
Meas Err 3.367

9

Smpl No. 7986
06:24:10:50:55
U-Cnt 58467
B-Cnt 1495
Meas Err 0.788

Smpl No. 7260
[illegible]
U-Cnt [illegible]

Channeer 13
Production
Results
****

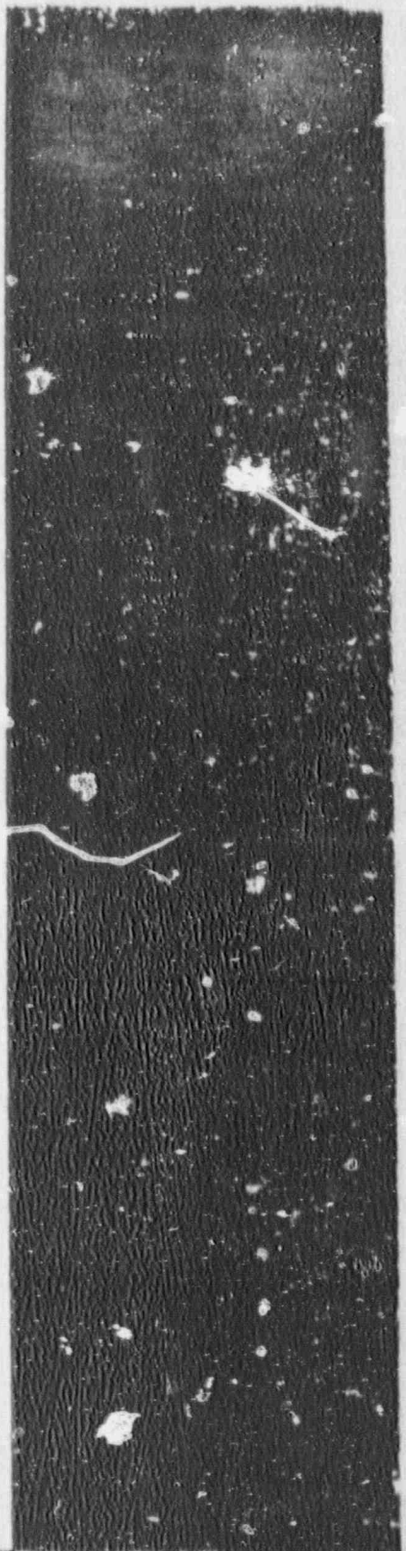
Slope 1.005440
Int -0.605990
M= 70210.196771
K= 1.640774

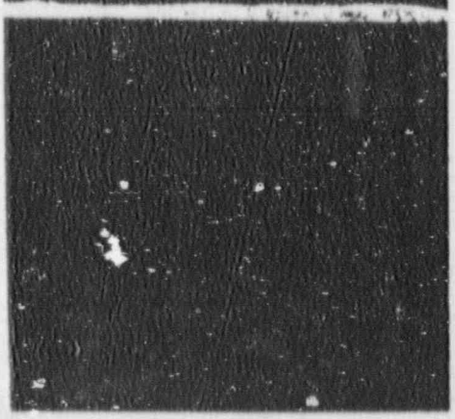
Smpl No. 7853
06:24:07:09:15
Ave Results
U-Cnt 227780
B-Cnt 1750
Meas Enr 3.203

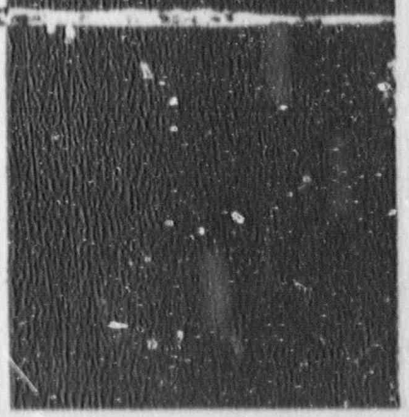
Smpl No. 7857
06:24:07:14:08
Ave Results
U-Cnt 226440
B-Cnt 1754
Meas Enr 3.184

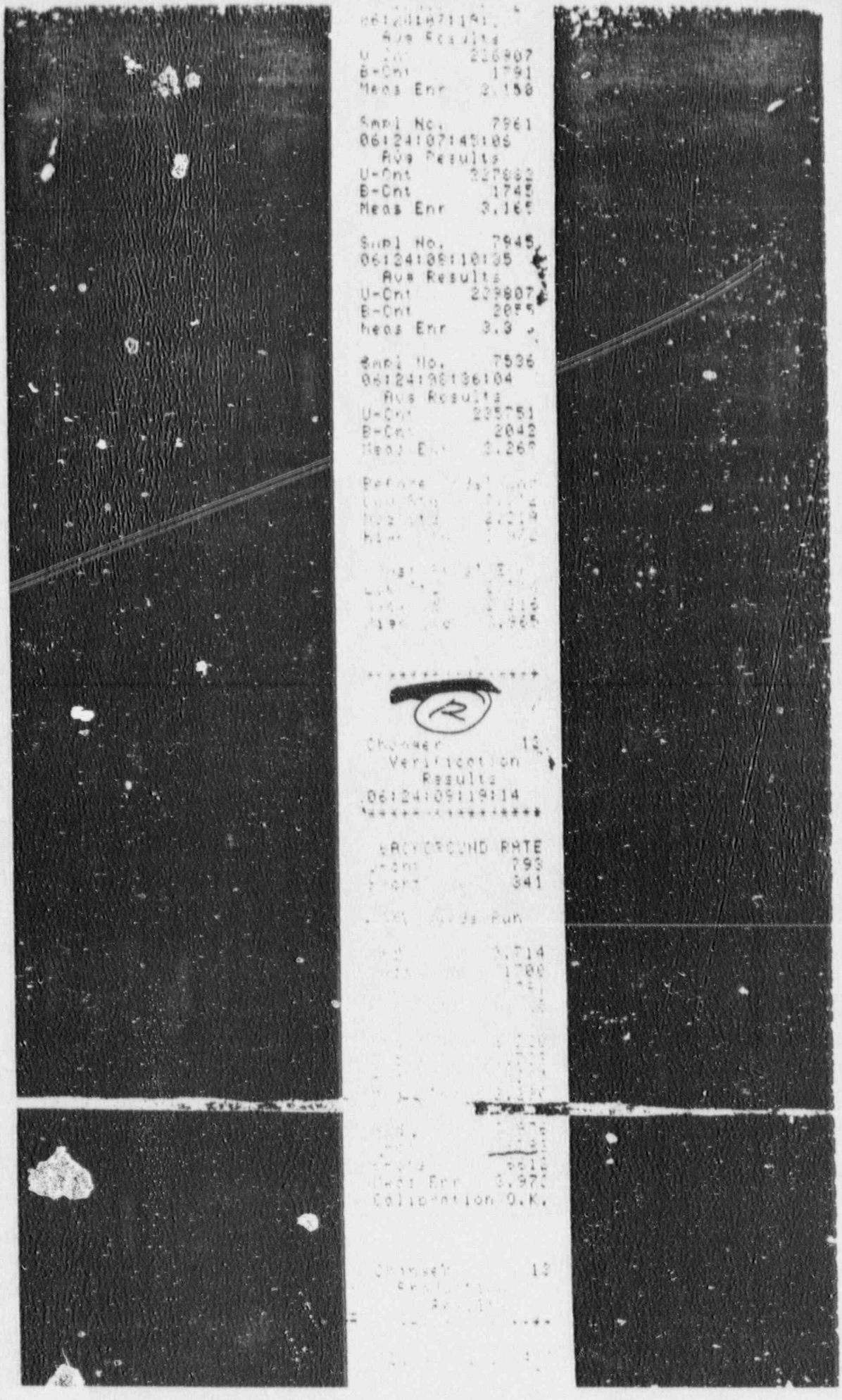
Smpl No. 7846
06:24:08:00:16
Ave Results
U-Cnt 224302
B-Cnt 1766
Meas Enr 3.153

Smpl No. 7862
06:24:08:25:47
Ave Results
U-Cnt 224893
B-Cnt 1745
Meas Enr 3.162









Ave Results
U-Cnt 226907
B-Cnt 1791
Meas Enr 3.150

Smpl No. 7961
06:24:07:45:05
Ave Results
U-Cnt 227660
B-Cnt 1745
Meas Enr 3.165

Smpl No. 7945
06:24:08:10:35
Ave Results
U-Cnt 229807
B-Cnt 2055
Meas Enr 3.3

Smpl No. 7536
06:24:08:36:04
Ave Results
U-Cnt 235751
B-Cnt 2042
Meas Enr 3.260

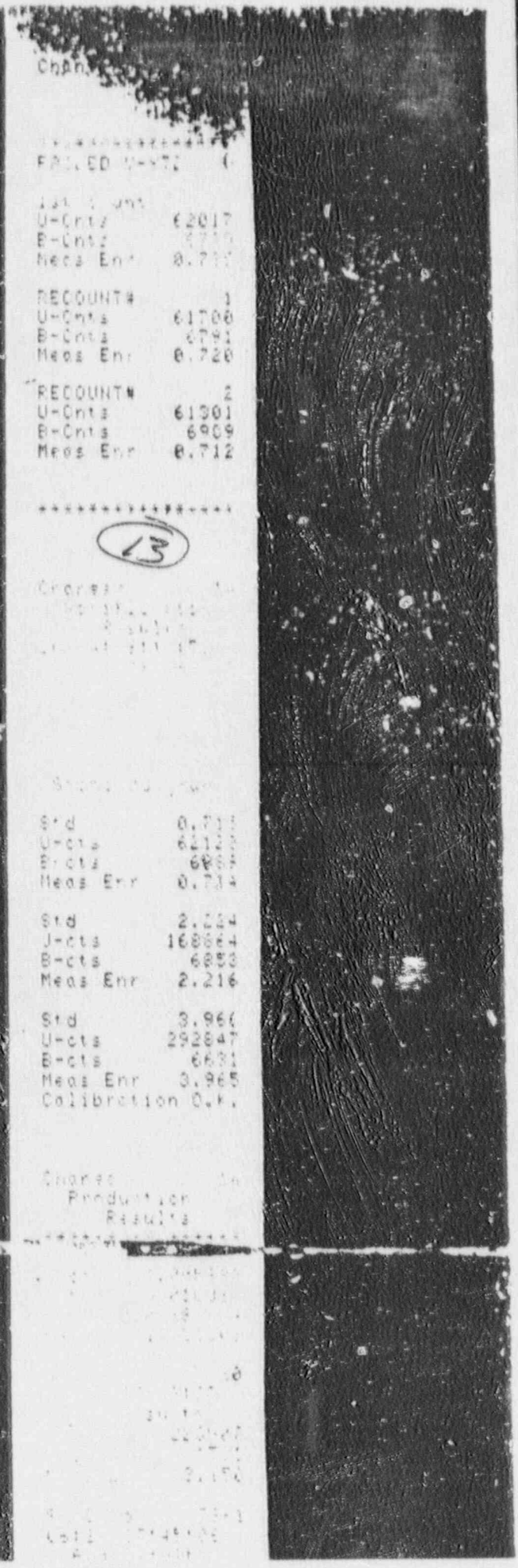
Channel 13
Verification
Results
06:24:09:19:14

BACKGROUND RATE
U-Cnt 793
B-Cnt 341

Meas Enr 3.714
1700

Meas Enr 3.97
Calibration O.K.

Channel 13


U-Cnts 62017
Meas Enr 0.712
RECOUNT# 1
U-Cnts 61700
B-Cnts 6741
Meas Enr 0.720
RECOUNT# 2
U-Cnts 61301
B-Cnts 6909
Meas Enr 0.712
13
Std 0.711
Meas Enr 0.714
Std 2.224
J-cts 168864
B-cts 6853
Meas Enr 2.216
Std 3.966
U-cts 292847
B-cts 6631
Meas Enr 3.965
Calibration O.K.

Chamber 14
Production
Results
****

Slope 1.005690
Int -0.010386
M= .1090.262474
K= 1.651108

Smpl No. 7981
06:24:05:00:05
Ave Results
U-Cnt 194787
B-Cnt 2049
Meas Err -.3[illegible]

Smpl No. 7[illegible]
06:24:05:25:[illegible]
Ave Results
U-Cnt 1[illegible]
B-Cnt [illegible]
Meas Err 2.545

Smpl No. 7[illegible]
06:24:05:51:[illegible]
Ave Results
U-Cnt 191[illegible]
B-Cnt 201[illegible]
Meas Err 2.642

Smpl No. 7936
06:24:06:16:01
Ave Results
U-Cnt 197802
B-Cnt 2055
Meas Err 2.563

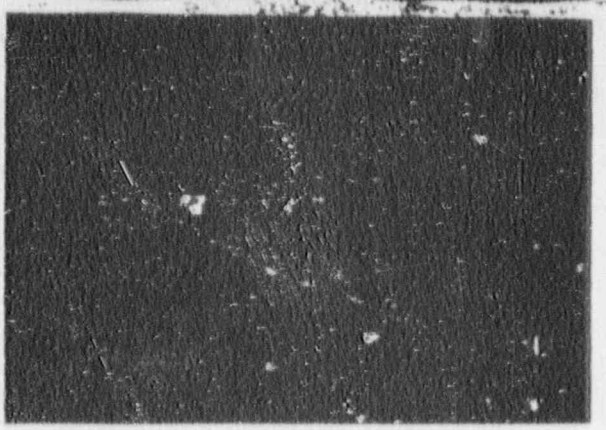
Before Stds' Err
Low Std 0.714
Med Std 2.229
High Std 3.[illegible]

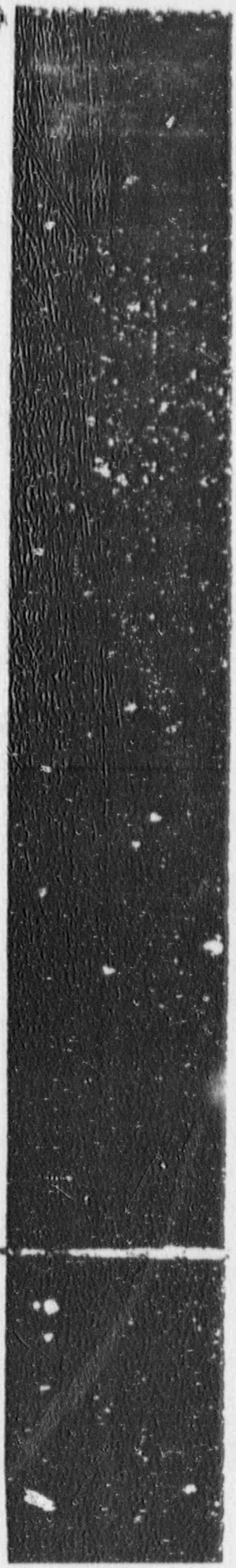
After Stds' Err
Low Std 0.[illegible]
Med Std [illegible]
High Std 2.[illegible]

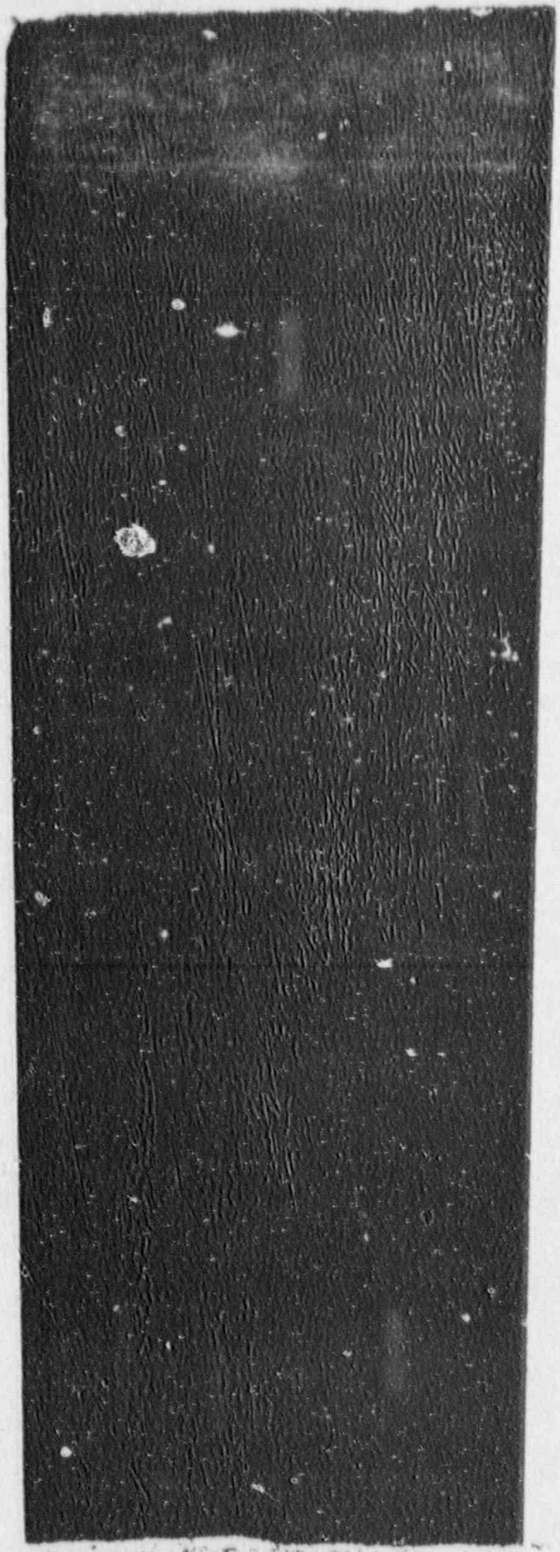
Chamber 14
******* *******

Type of Runs
Production

Prod ct/smp= 3







Smpl No. 76
06:24:05 46:50
Avg Results
U-Cnt 183228
B-Cnt 1987
Meas Enr 2.563

Before Stds' Enr
Low Std 0.718
Med Std 2.228
High Std 3.969

Post Stds' Enr
Low Std 0.710
Med Std 2.222
High Std 3.974

Sample No.'s
Sample 7858
Sample 7871
Sample 7846
Sample 7862,

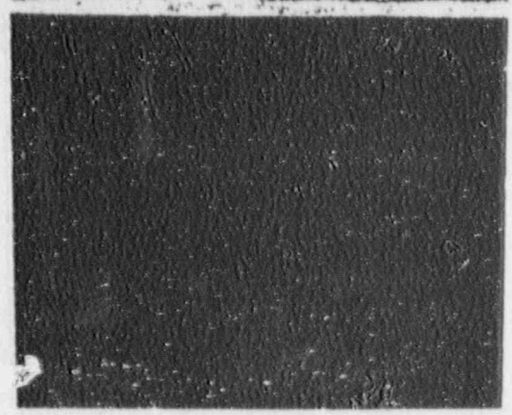
Chamber
Verification
Results
06:24:06 53:04

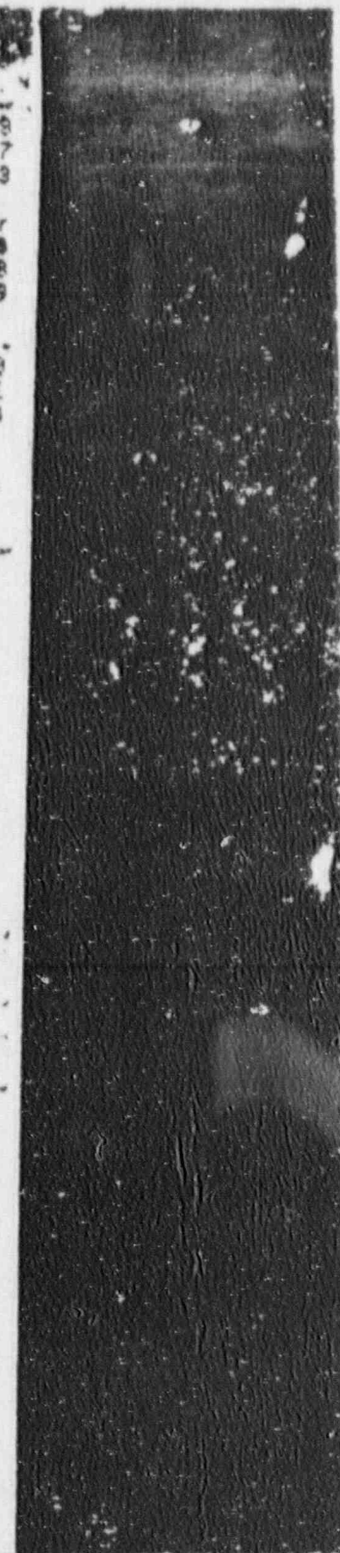
RATE
1594
671

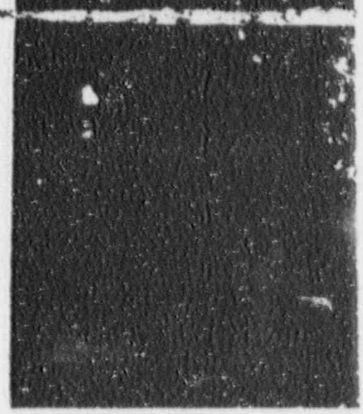
Run

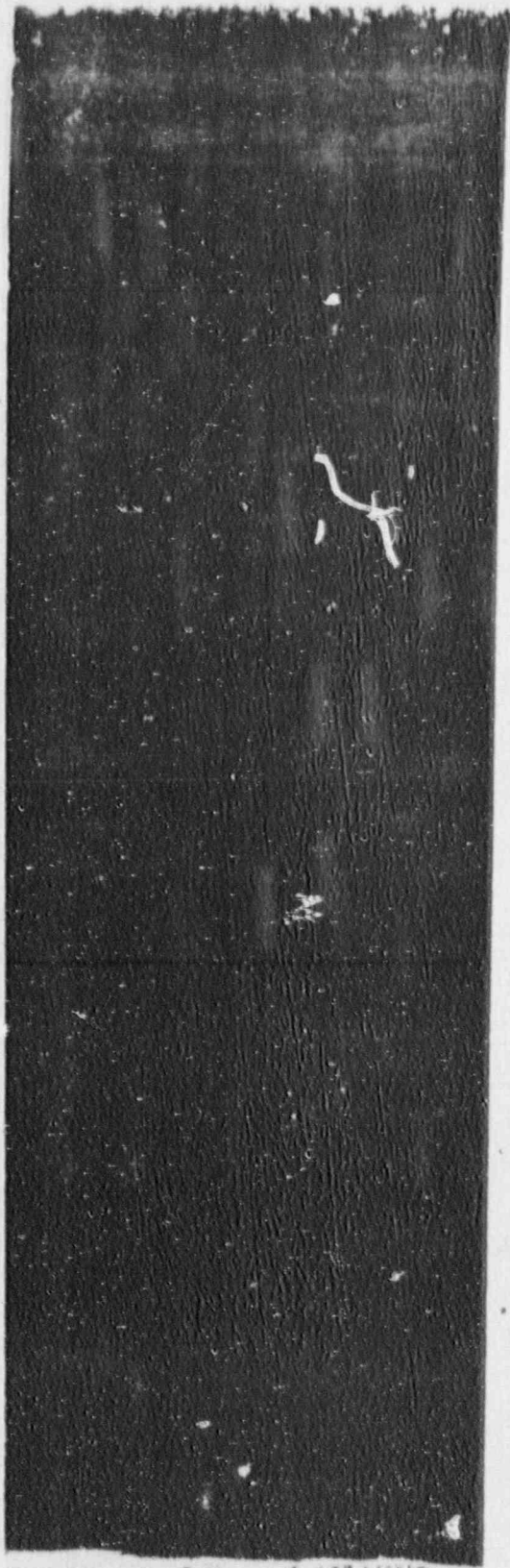
Meas Enr 2.562
Verification O.K.

14
Evaluation
Results









RECOUNT# 2
U-Cnts 166585
B-Cnts 6718
Meas Enr 2.216

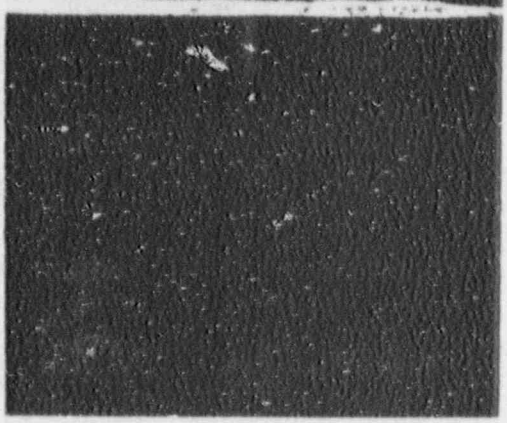
Standards Run

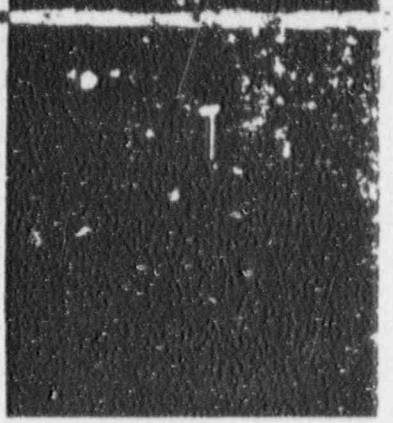
Std 0.714
U-cts 61082
B-cts 6826
Meas Enr 0.710

Std 2.220
U-cts 157217
B-cts 6841
Meas Enr 2.222

Slope 1.205440
Int -0.005990
M= 70210.146771
K= 1.640774

Smpl No. 7896
06124104:0019
Ave Results
U-Cnt 242317
B-Cnt 1768
Meas Enr .410





Smpl No. 79[illegible]
06:24:03:29:34
U-Cnt 240586
B-Cnt 6911
Meas Enr 3.224

Smpl No. 7886
06:24:03:37:20
U-Cnt 128208
B-Cnt 329
Meas Enr [illegible].79[illegible]

Smpl No. 7[illegible]07
06:24:03:46:07
U-Cnt 2[illegible]4[illegible]6[illegible]
B-C[illegible] 625[illegible]
Meas Enr [illegible]

[illegible]

[illegible] Stds' [illegible]
Low Std [illegible]
Med Std 2.[illegible]
High Std [illegible]

****.***********

(17)

Chamber 14
****

Type of Runs
Production

Prod of Smp= [illegible]

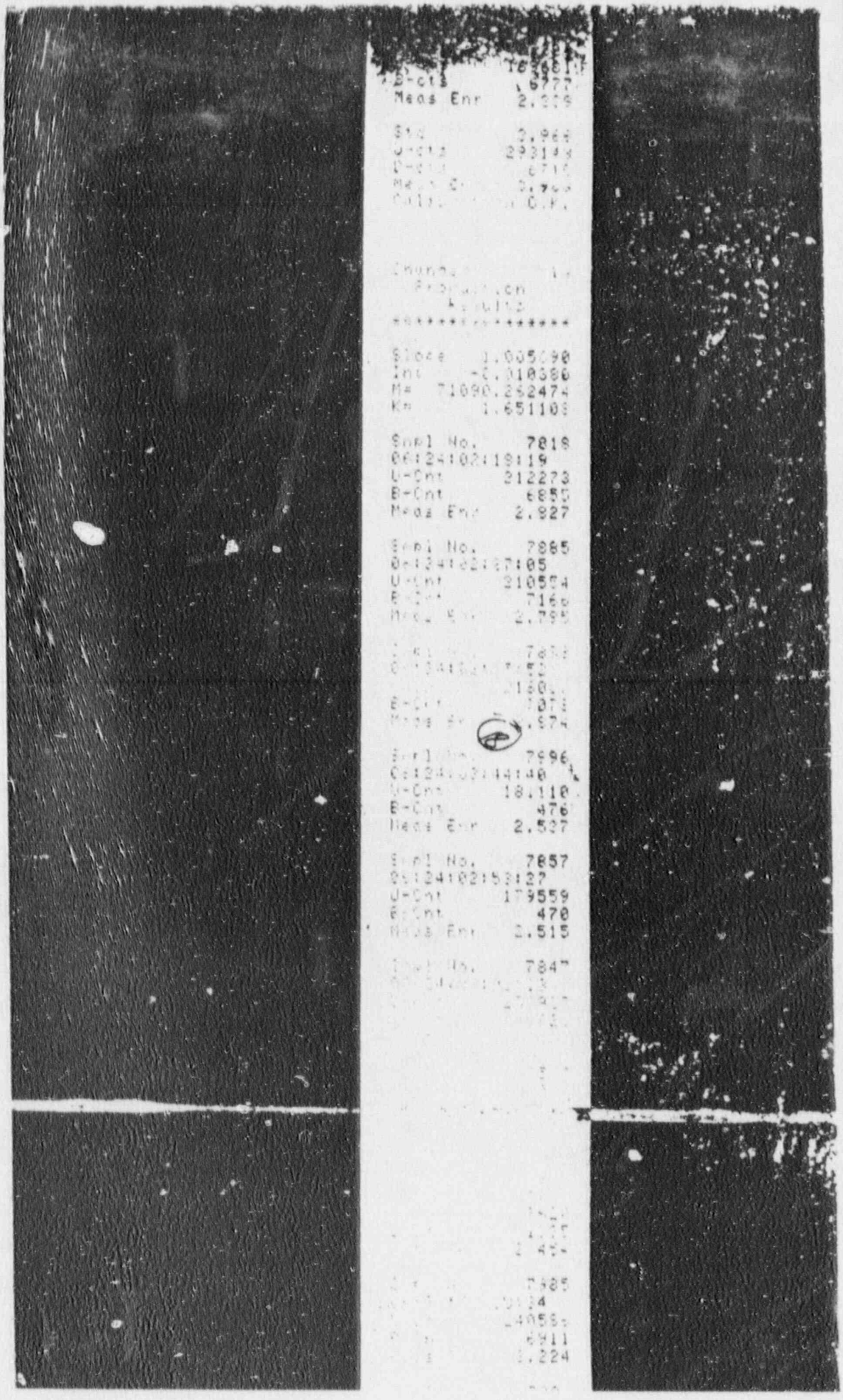
*.***********.***

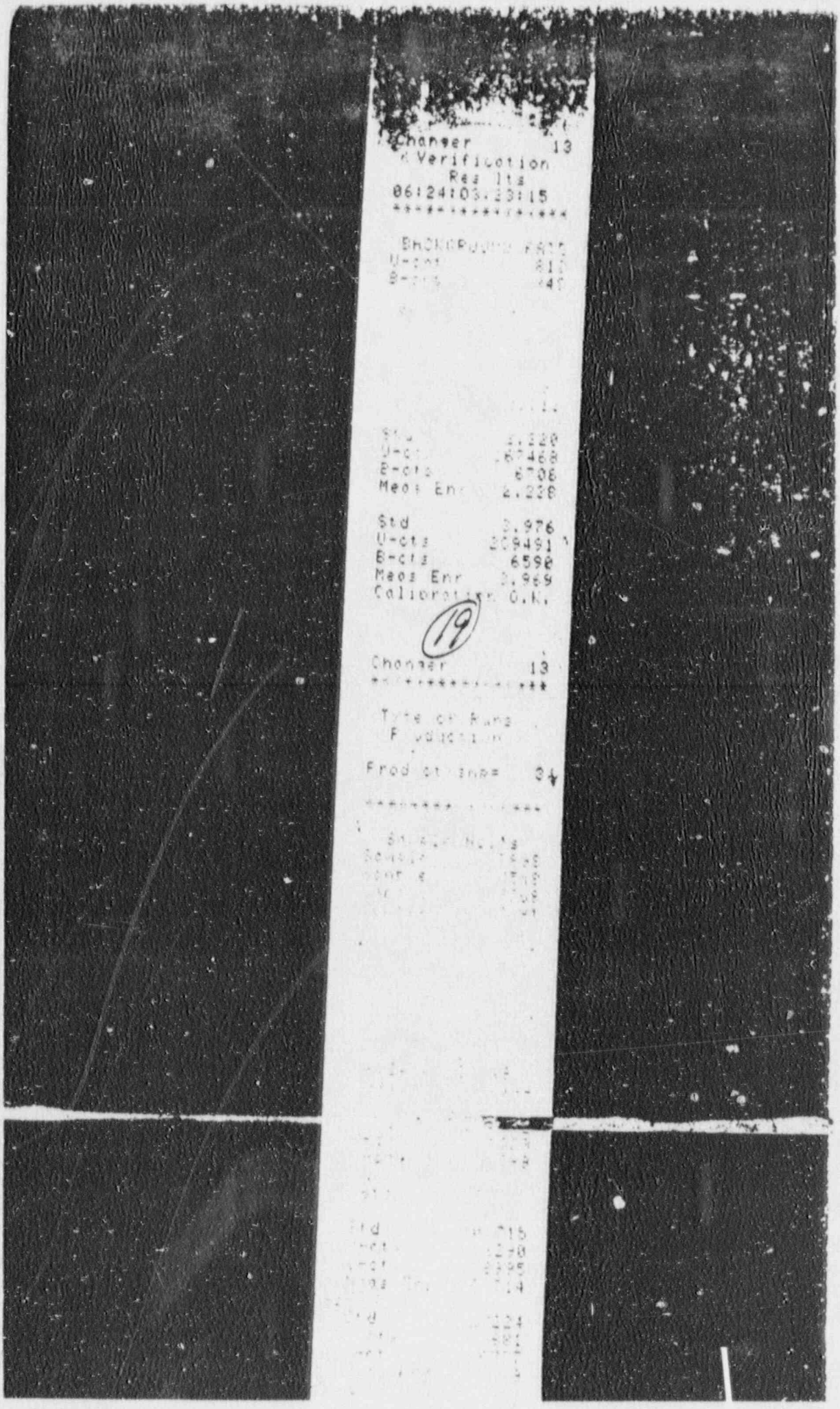
Sample No.'s
[illegible] 798[illegible]
[illegible]
[illegible]
[illegible] 79[illegible]

[illegible]

[illegible]
[illegible] 167[illegible]
B-Cnt 684[illegible]
Meas Enr 3.21[illegible]

RECOUNTS [illegible]
[illegible] 166585
B[illegible] [illegible]
[illegible] Enr 2.2[illegible]





Changer 13
Verification
Results
06:24:03 23:15

Std 4.220
U-cts 67468
B-cts 6706
Meas Err 4.238

Std 2.976
U-cts 209491
B-cts 6598
Meas Err 2.969
Calibration O.K.

19

Changer 13

Type of Run
Production

Prod or Insp= 04

Post Std' Err.
Low Std 0.717
Med Std 2.226
High Std 3.968

Type of Runs
Production

Sample No.'s
Sample 7818
Sample 7805
Sample 7803
Sample 7996
Sample 7857
Sample 7847
Sample 7577
Sample 7882

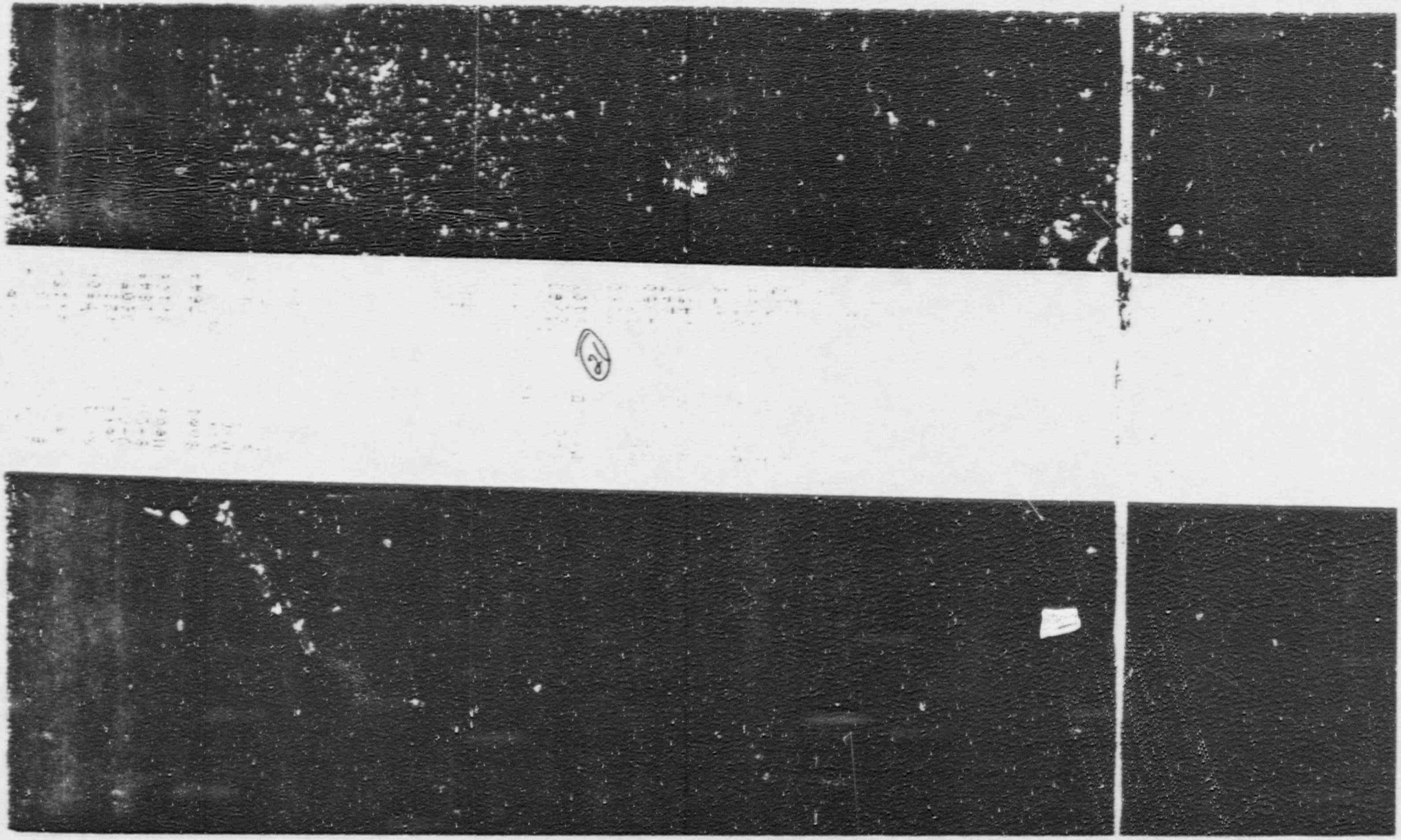
20

Calibration
Results
06:24.01:47:13

M= 10210.196771
I= 1.640774

BG SLOPE
-46.569626

BACKGROUND RATE
U-Cnt 903
B-Cnt 940



1st Count
U-Cnts 41914
B-Cnts 6954
Meas Err 0.704

RECOUNT# 1
U-Cnts 62513
B-Cnts 6987
Meas Err 0.711

RECOUNT# 2
U-Cnts 7314
B-Cnts 774

Chapter 1

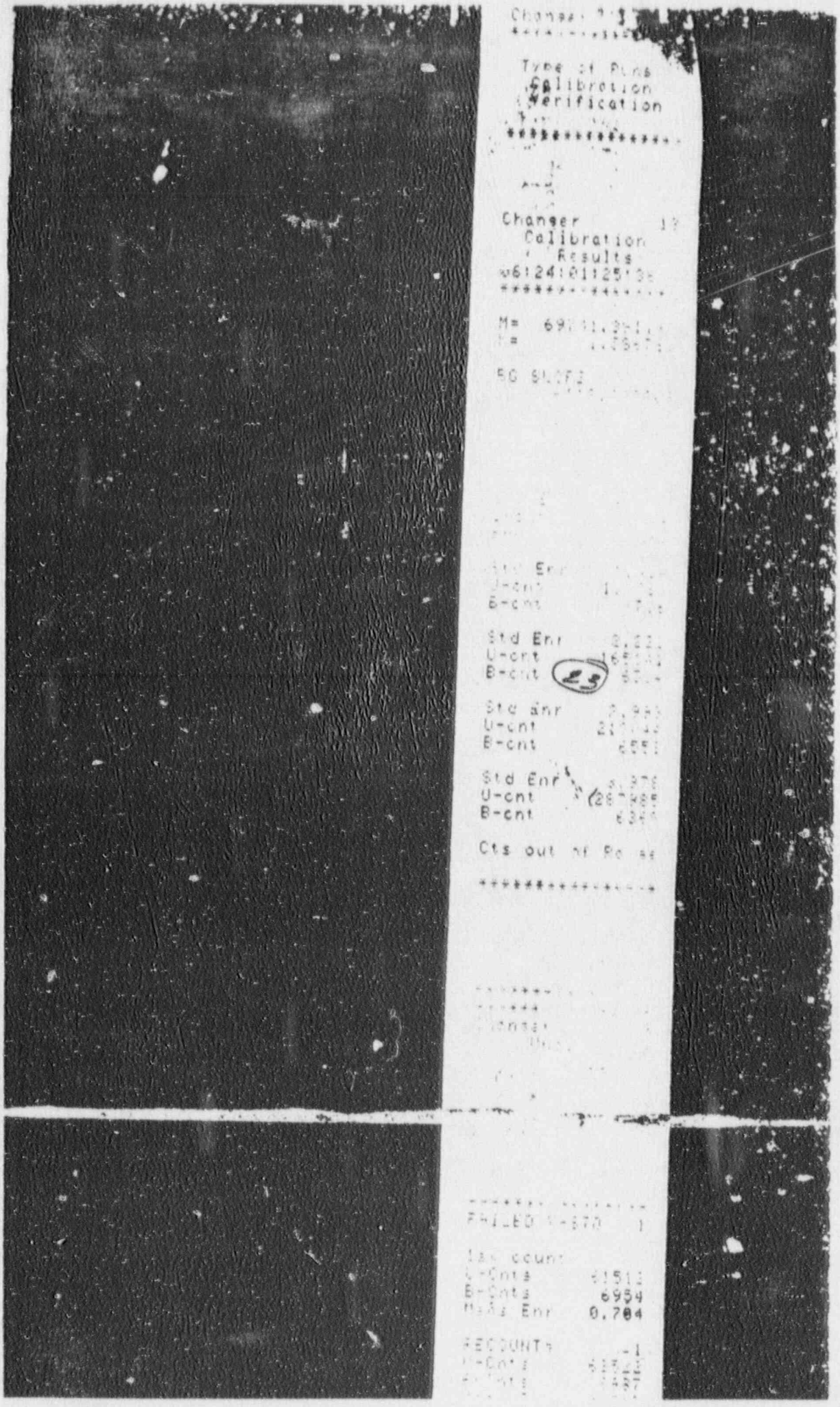
Type of Runs
Calibration
Verification

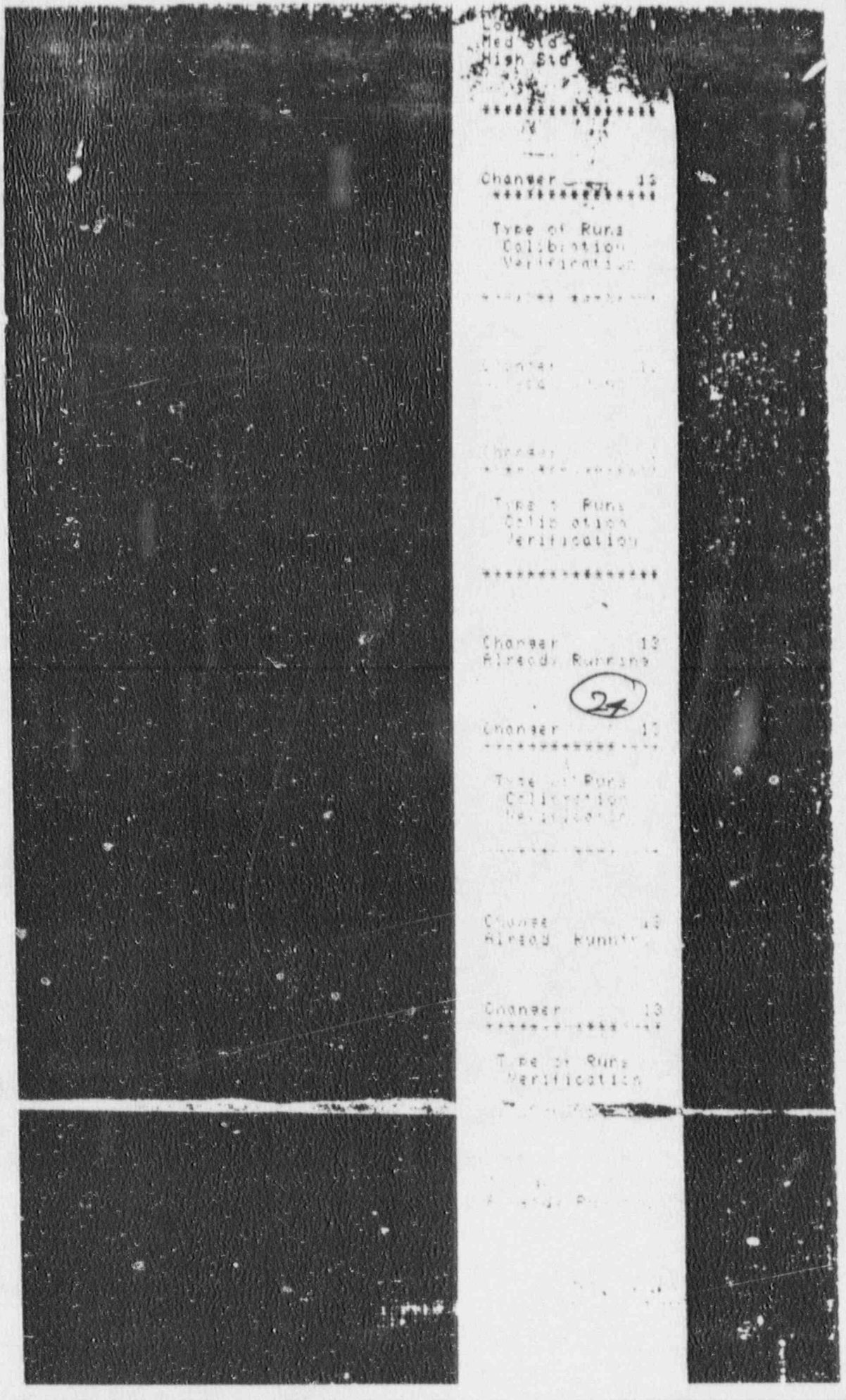
Chapter 14
Verification
Results

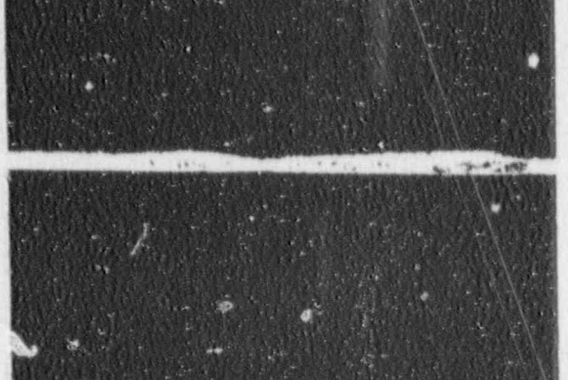
(2)

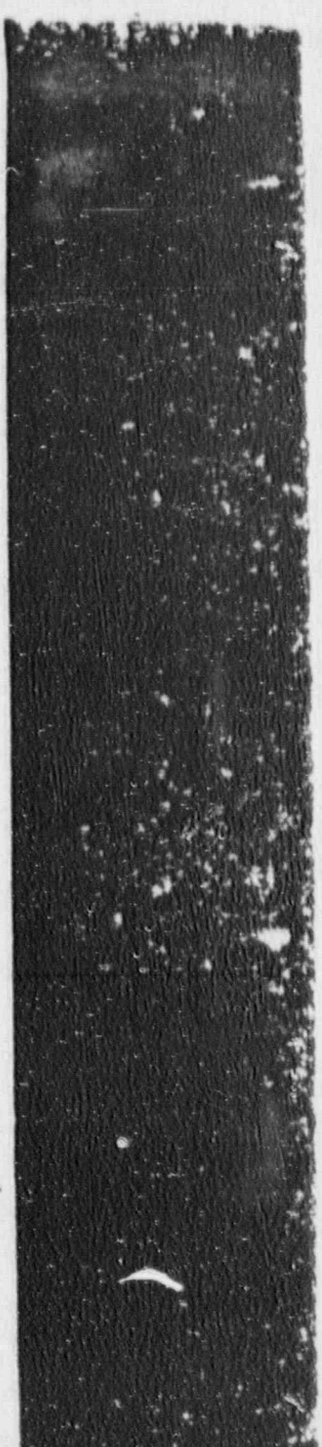
S.D. 2.314
U-Cnts 199364
B-Cnts 6782
Meas Err 2.210

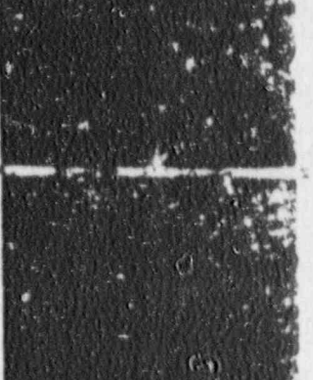
S.D. 1.965
U-Cnts 29[illegible]
B-Cnts [illegible]


Changer
Type of Runs
Calibration
Verification
Changer
Calibration
Results
Std Enr
U-cnt
B-cnt
Std Enr
U-cnt
B-cnt
Std Enr
U-cnt
B-cnt
Cts out of Po
FAILED
Ias count
U-Cnts
B-Cnts
Meas Enr
0.704
RECOUNT
U-Cnts









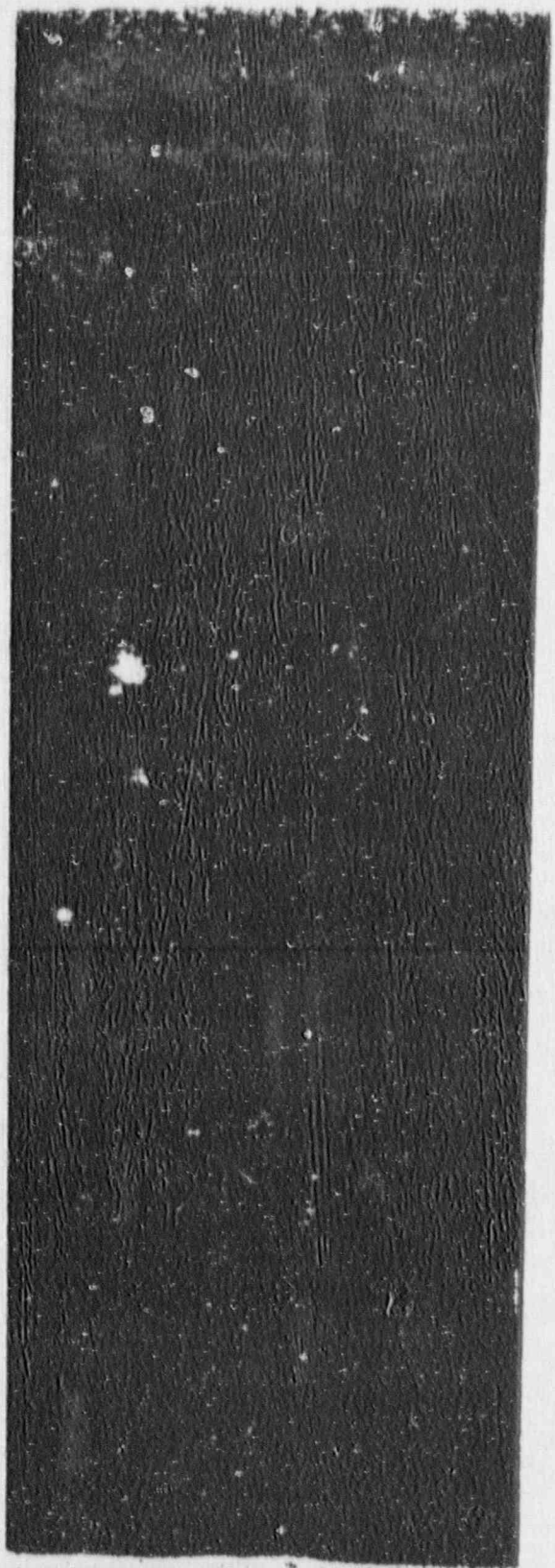
Smpl No. 7827
06:20:21:34:00
U-Cnt 242142
B-Cnt 299
Meas Enr 3.399

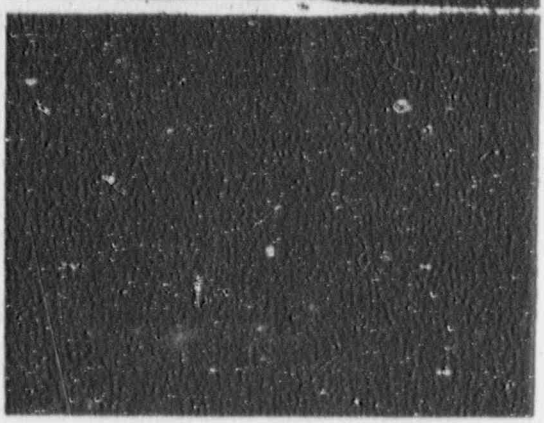
Smpl No. 7598
06:20:21:42:47
U-Cnt 244428
B-Cnt 356
Meas Enr 3.430

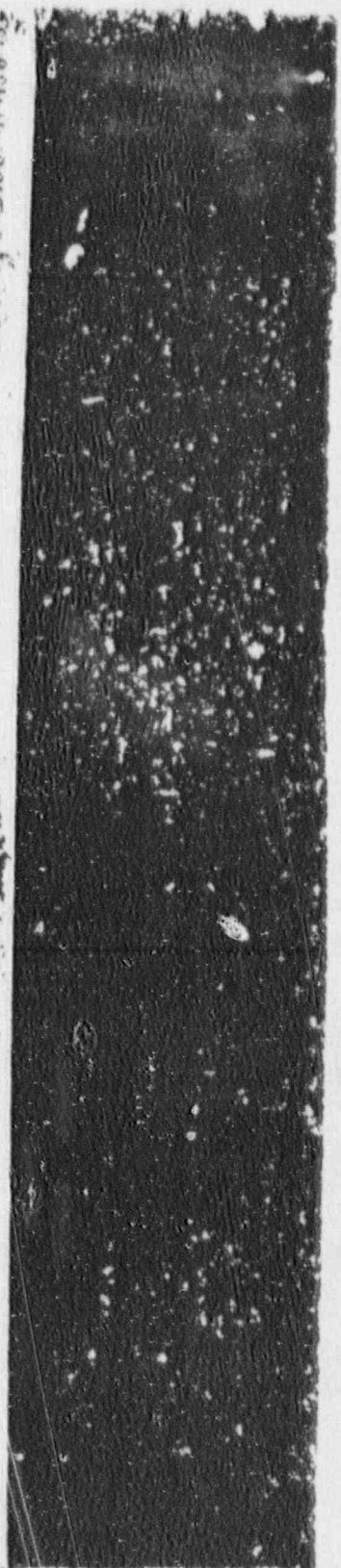
Smpl No. 7913
06:20:21:51:34
U-Cnt 104033
B-Cnt 4201
Meas Enr 2.490

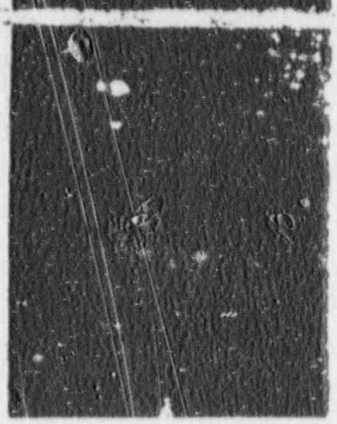
Smpl No. 7567
06:20:22:26:42
U-Cnt 173249
B-Cnt 2781
Meas Enr 2.992

Meas Enr 0.711
Meas Enr 2.230
Meas Enr 3.963









Changer
Calibration
Results
06:23:19:47:46
****

M= 17198.761177
K= 9.622064

BG SLOPE
58.187441

BACKGROUND RATE
U-cnt [illegible]
B-cnt [illegible]

[illegible]

U-cnt [illegible]
B-cnt [illegible]

Std Err 2.499
U-cnt 111210
B-cnt 6177

Std Err 2.978
U-cnt 129035
B-cnt 6233

Cts out of Range

Pos BCKGRND SLOP

****

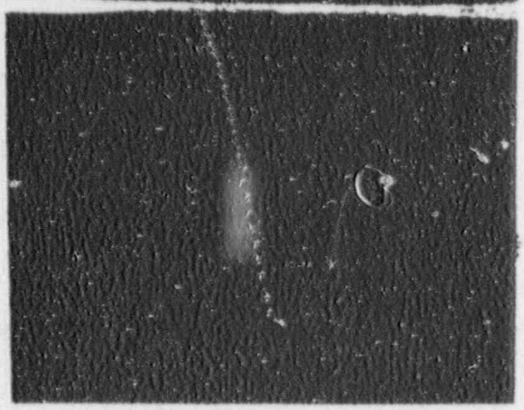
(27)

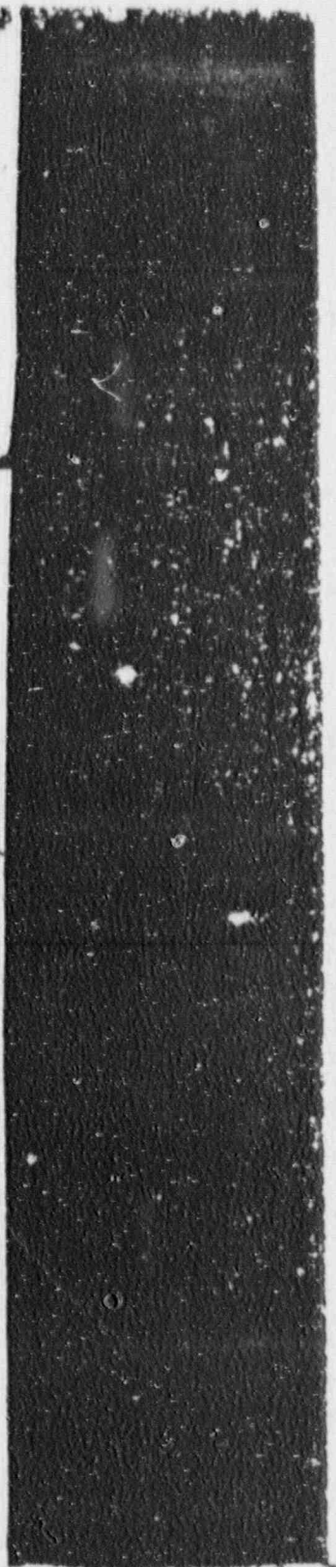
****
****
Changer [illegible]
[illegible]
Calibration
****

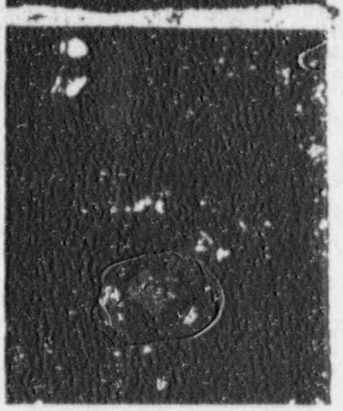
Standards Run

Std	0.715
U-cts	62301
B-cts	6848
Meas Enr	0.718
Std	2.224
U-cts	163900
B-cts	6848
Meas Enr	2.217

Smpl No. 847
06:29:11 :13:28
Aua Results
U-Cnt 314023
B-Cnt 2572
Meas Enr 4.358







```
Proce...
      Results
***************
Slope      1.005690
Int       -0.010380
M=   71090.262474
K=         1.651108

Smpl No.       7990
06:22:14:54:15
   Ave Results
U-Cnt        [illegible]
B-Cnt        [illegible]
Meas Enr   4.[illegible]

Smpl No.       [illegible]
06:22:15:19:[illegible]
   Ave Results
U-Cnt        33[illegible]421
B-Cnt          [illegible]362
Meas Enr      4.[illegible]

Smpl No.       7087
06:22:15:45:12
   Ave Results
U-Cnt        326890
B-Cnt          1358
Meas Enr      4.567

Smpl No.       7959
06:22:16:10:40
   Ave Results
U-Cnt        [illegible]019
B-Cnt        [illegible]
[illegible]  [illegible]

[illegible]   [illegible]
[illegible]   3.8[illegible]

***************

Changer          10
***************

Type of Runs
  Calibration
  Verification

***************
```

Meas Eng 4.3[illegible]

Before [illegible] Eng
Low [illegible]
Med [illegible]
Hi [illegible]

[illegible]

Hi [illegible]

[illegible]

Chosen 14

Type of Run
Production

Prod chgmns [illegible]

Sample No.'s
Sample 7990
Sample 7904
Sample 788[illegible]
Sample 79[illegible]
Sample 784[illegible]
[illegible] 77[illegible]
[illegible]
[illegible] 7866

30

[illegible]

U-[illegible] [illegible]
B-[illegible] [illegible]

Standard Run

Std 0.715
U-cts 62054
B-cts 67[illegible]
Mass Eff 0.716

Std [illegible]
U-cts [illegible]
B-cts [illegible]
[illegible] 2.[illegible]

[illegible]

[illegible] 1.[illegible] [illegible]90
[illegible] [illegible]86
[illegible] [illegible]0.[illegible]47[illegible]

(37)

Changer 13
Calibration
Results
06:23:12:52:43
****

M= 17770.721041
K= 6.737444

BG SLOPE
-40.257904

BACKGROUND RATE
U-cnt [illegible]
B-cnt [illegible]

Std Enr 0.715
U-cnt [illegible]
B-cnt [illegible]

Std Enr 1.454
U-cnt 83310
B-cnt 6545

Std Enr 2.223
U-cnt 97195
B-cnt 6596

Std Enr 2.999
U-cnt 110072
B-cnt 6504

Std Enr 3.970
U-cnt 126920
B-cnt 6442

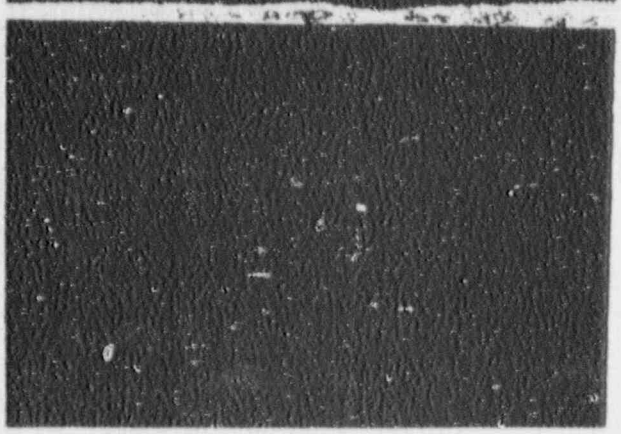
*Cts out of Range

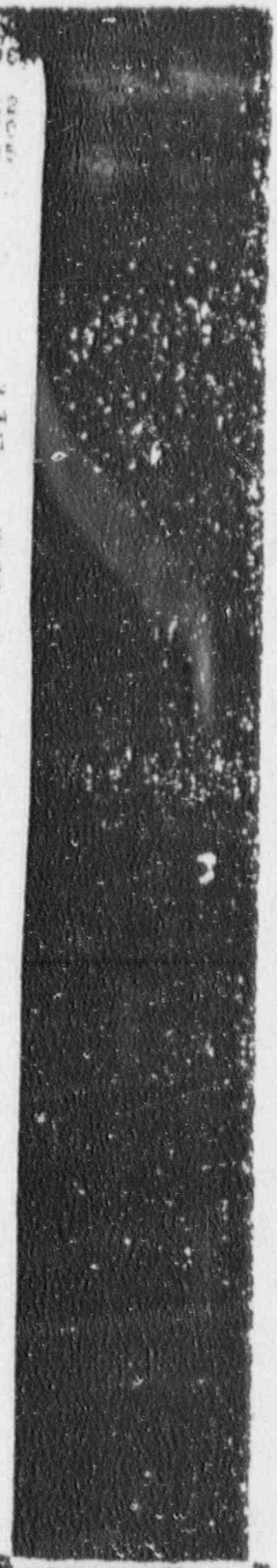
****

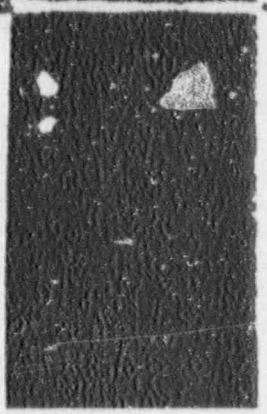
(32)

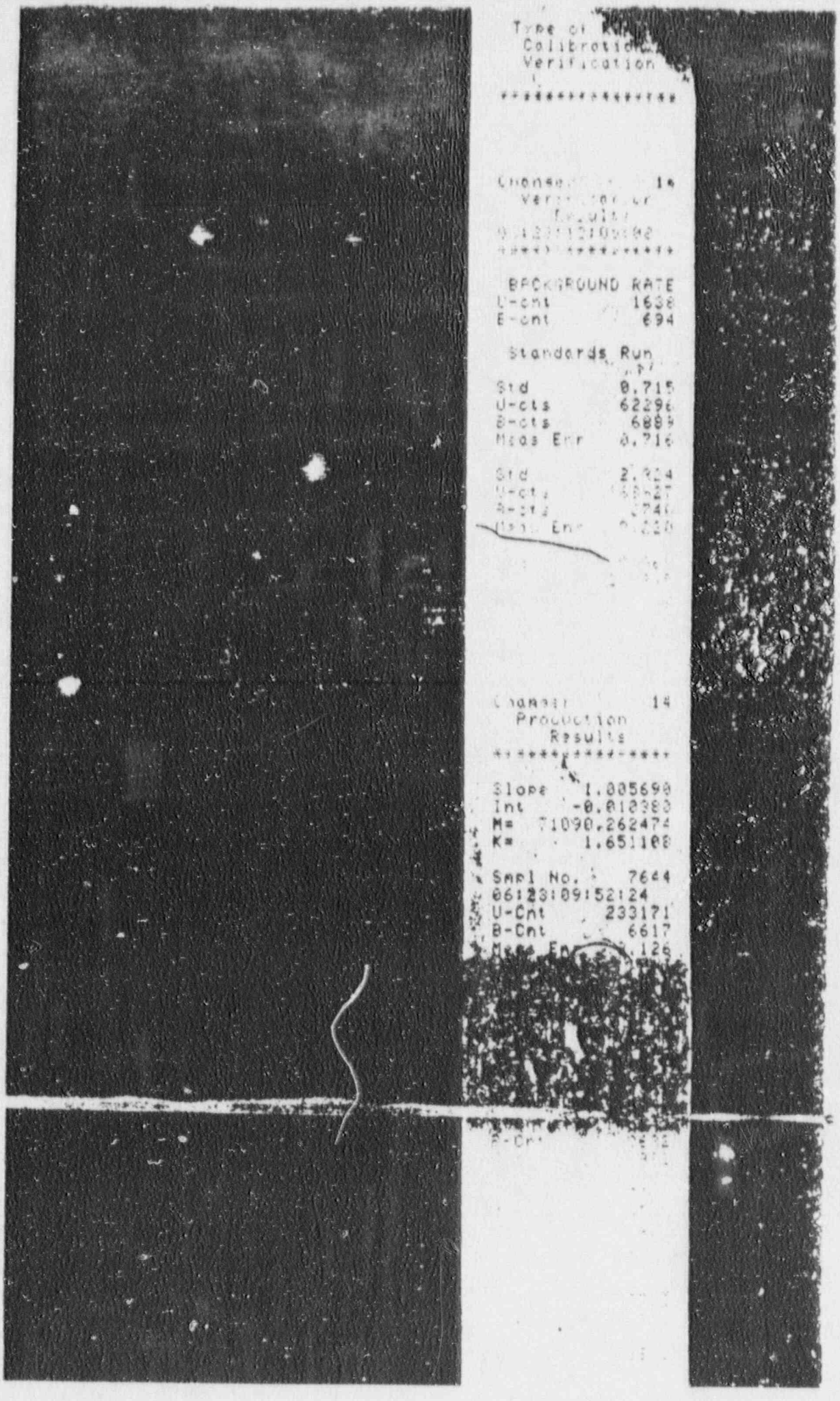
****
****
Changer 13
[illegible]
Calibration
****
****

Changer 14
Verification
Results









Type of
Calibration
Verification

****

Channel 14
Verification
Results

BACKGROUND RATE
U-cnt 1638
B-cnt 694

Standards Run

Std 0.715
U-cts 62296
B-cts 6889
Meas Err 0.716

Std 2.924
U-cts [illegible]
B-cts [illegible]
Meas Err [illegible]

Channel 14
Production
Results

Slope 1.005690
Int -0.010383
M= 71090.262474
K= 1.651108

Smpl No. 7644
06:23:09:52:24
U-Cnt 233171
B-Cnt 6617
Meas Err 0.126

Changer
****

Type of Runs
Production

Prod Ct [illegible] 1

*************** **

Sample No.[illegible]
Sample [illegible]4
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
Sample 76[illegible]
Sample 0

****

Changer 14
Already Running

35

[illegible] 14
[illegible]

[illegible]

[illegible]

Changer 15
[illegible]

Type of Runs
[illegible]

BACKGROUND RATE
U-Cnt 1691
B-Cnt 677

Standards Run

Std 0.715
U-Cts [illegible]
B-Cts [illegible]
Meas Enr [illegible]

Std 2.[illegible]
U-Cts [illegible]
B-Cts 687
Meas Enr 2.[illegible]14

Std 3.[illegible]
U-Cts [illegible]
B-Cts [illegible]
Meas Enr 3.971
Calibration O.K.

Channel 14
Production
Result
****

Slope 1.005850
Int -0.010[illegible]
[illegible] 71098.062 4
[illegible] 1.[illegible]31[illegible]

Smpl No. [illegible]
06:22:03:[illegible]
Avg Results
U-Cnt [illegible]
B-Cnt [illegible]
Meas Enr 4.384

Smpl No. 7747
06:23:03:06:29
Avg Results
U-Cnt 315150
B-Cnt 2113
Meas Enr 4.384

Smpl No. 7589
06:23:03:25:58
Avg Results
U-Cnt 315400
B-Cnt 2123
Meas Enr 4.387

Smpl No. [illegible]
[illegible]

[illegible]

Final Std Enr
Low Std 0.715
Med Std 2.2[illegible]
High Std 3.971

****

Stdy [illegible]
Int [illegible]
M= 71093.26[illegible]
k= 1.651108

Smpl No. 7614
06:23:05:06:51
Avg Results
U-Cnt 310573
B-Cnt 1260
Meas Enr 4.344

Smpl No. 7710
06:23:05:32:19
Avg Results
U-Cnt 31[illegible]
B-Cnt 1355
Meas Enr 4.464

Smpl No. 772[illegible]
[illegible]
Avg Results
[illegible]

Meas Enr [illegible]

[illegible]
Low Std [illegible]
Med Std [illegible]
High Std [illegible]

Post Stds' Enr
Low Std 0.708
Med Std 2.329
High Std 3.955

****

37

Chamber [illegible]

[illegible]

Sample [illegible]
Sample [illegible]

****

Chamber 14
Verification
Results
[illegible]

Low Std [illegible]
Med Std 2.227
High Std 3.960

Post Stds' Enr
Low Std 0.712
Med Std 2.219
High Std 3.962

****

Changer 14
****

Sample [illegible]
Sample [illegible]
Sample [illegible]
Sample [illegible]

****

Changer 14
Verification
Results
85103106159:44
****

BACKGROUND RATE
U-cnt [illegible]
B-cnt 652

Standards Run

Std 0.715
U-cts 61994
B-cts 7005
Meas Enr 0.708

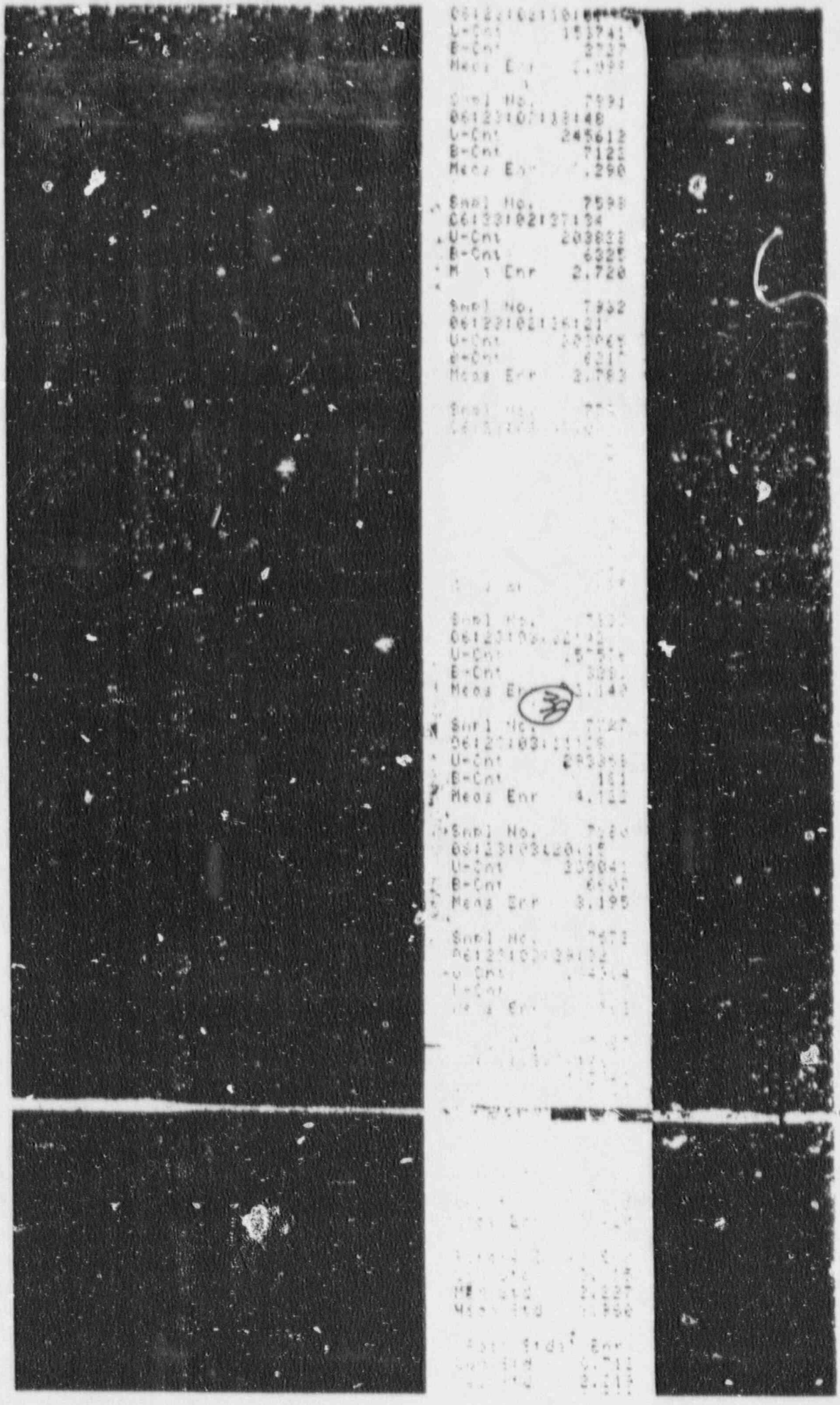
Std 2.224
U-[illegible] [illegible]9534
[illegible] [illegible]728
[illegible] [illegible]29

38

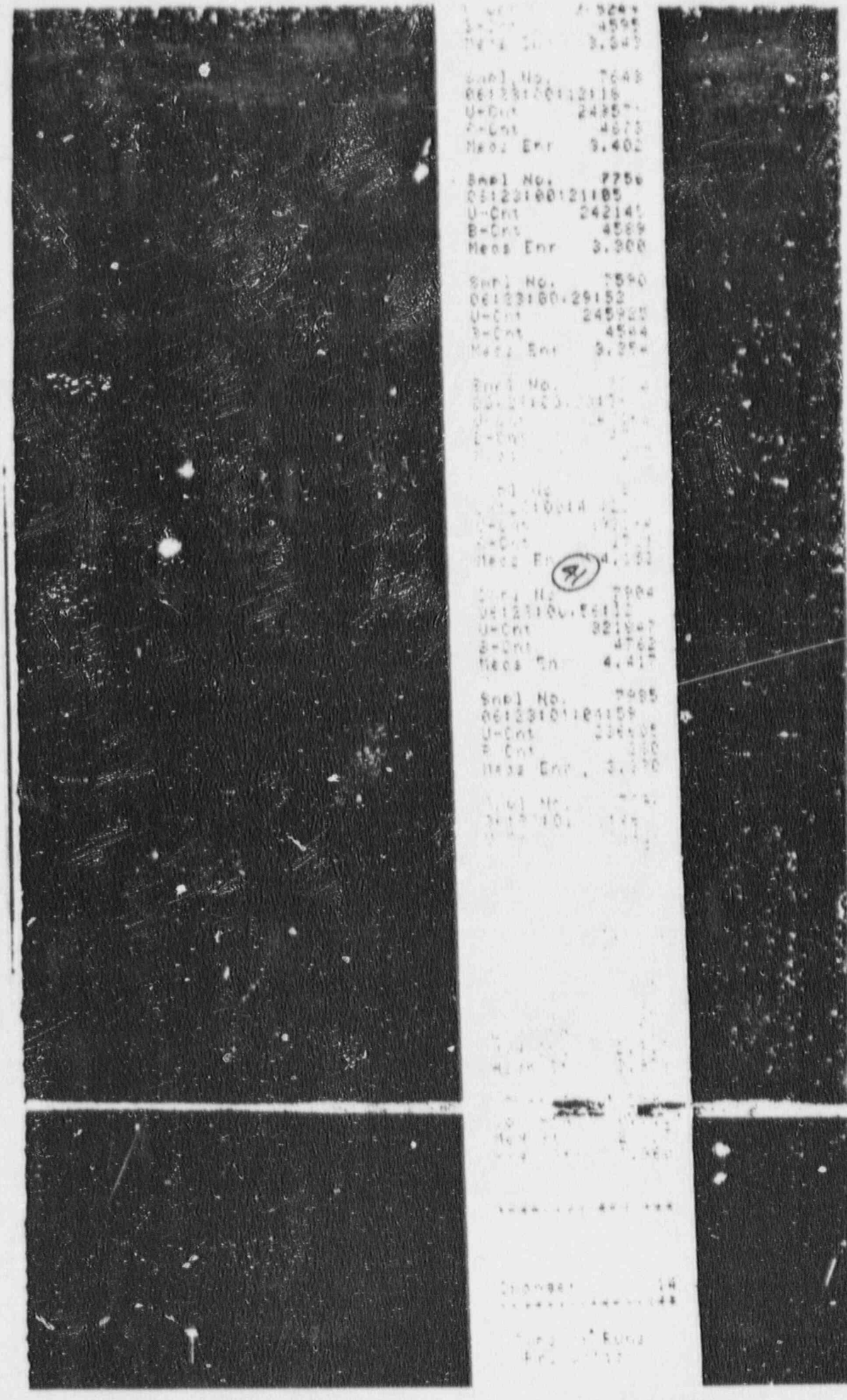
Changer 14
Production
Results
****

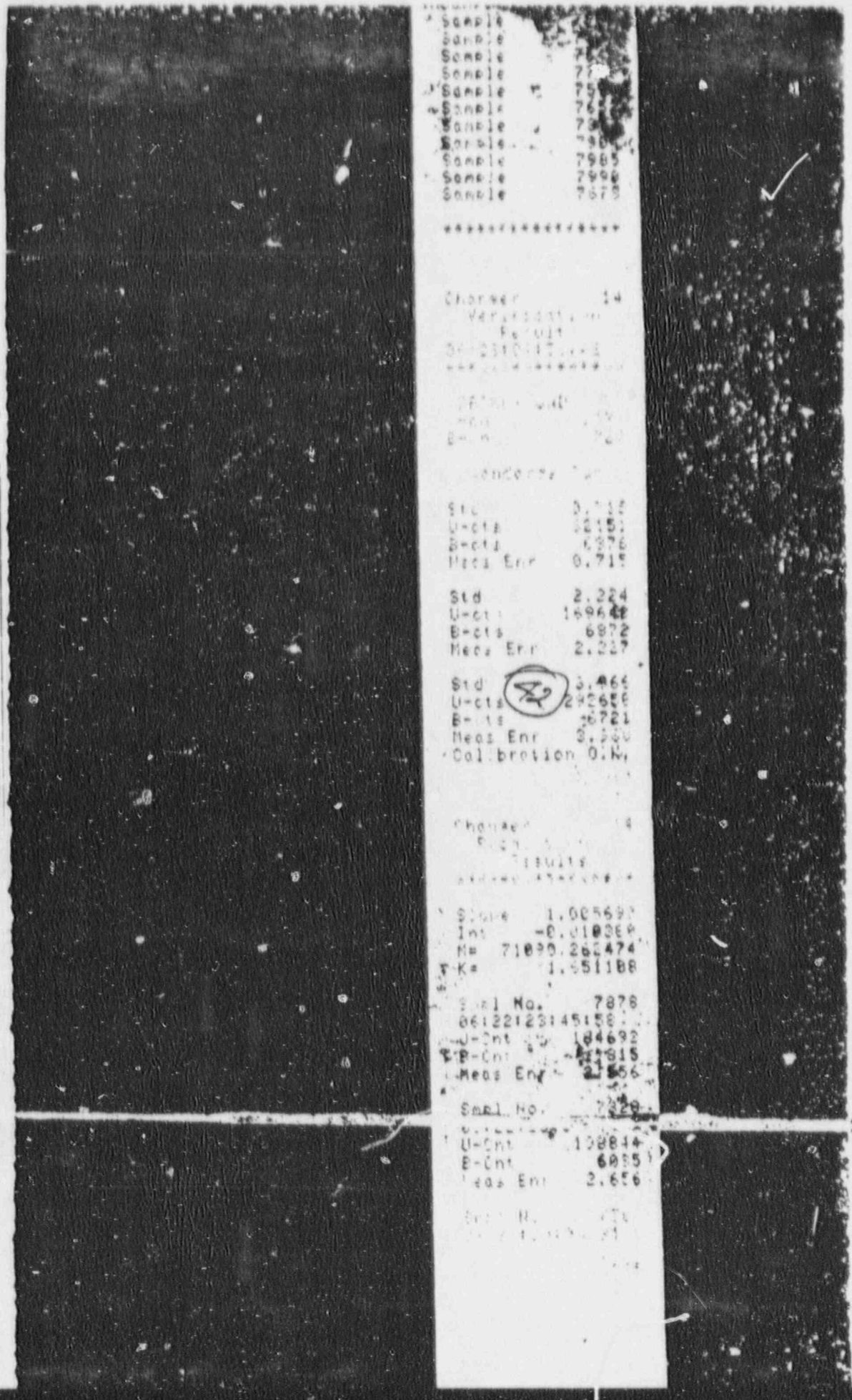
Slope 1.005690
Int -0.010382
M= 71090.262474
K= 1.651108

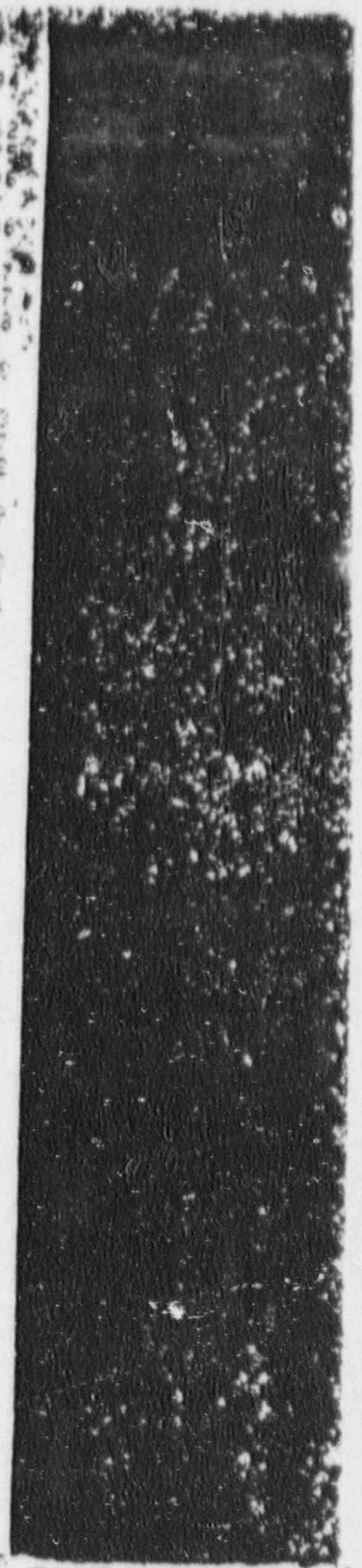
Smpl [illegible] TS14
[illegible]05:03:51

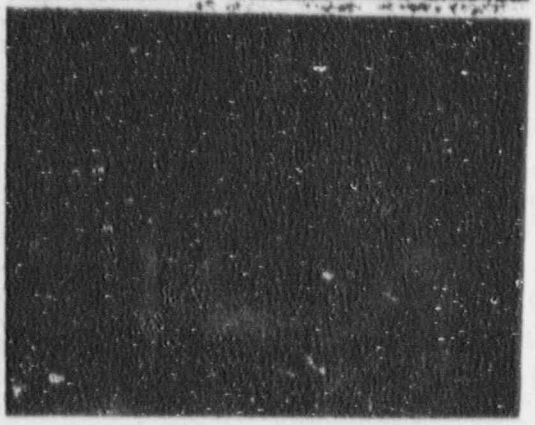


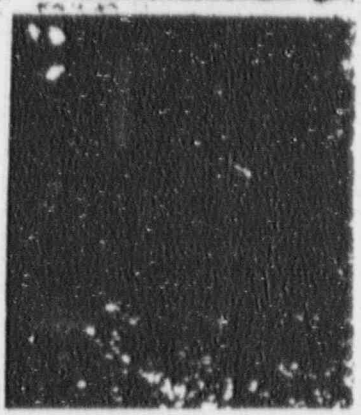
```
Changer            14
*******************

 Type of Run:
  Production

Prod c /smp         1

*******************

  Sample No.
Sample          7913
Sample          7891
Sample          [illegible]
Sample          [illegible]
Sample          [illegible]
Sample          [illegible]
Sample          [illegible]6
Sample          [illegible]
Sample          [illegible]0
Sample          7376
Sample          7467
Sample          7519

*******************

Changer
  Verification
    Results
06:23:04:22:46
*******************

 BACKGROUND RATE
U-cnt           1896
B-cnt            689

U-cts          [illegible]4
B-cts          [illegible]1
Meas Enr       2.219

Std            3.966
U-cts         292717
B-cts           6669
Meas Enr       3.962
Calibration O.K.

Changer           14
 Production
*******************

Slope     1.0956y0
Int     -0.010380
M=   71090.262474
K=        1.631108

Sampl no.       7913
06:[illegible]:02:10:[illegible]1
U-Cnt         153741
B-Cnt          [illegible]7
[illegible]
```











Chanser 14
Verification
Results
06:22:23:31:00
****

BACKGROUND RATE
[illegible] 1642

[illegible]

Std 2.82
U-cts 1[illegible]6352
B-cts 6728
Meas Err 2.112

Std 3.906
U-cts 293645
B-cts 669[illegible]
Meas Err 3.97[illegible]
Calibration O.K.

Chanver 14
Production
Results
****

Slope 1.005690
Int -0.010302
H= 1090.152474
K= [illegible] 1188

Smpl No. 774[illegible]
06:22:11:15 [illegible]
U-Cnt 57[illegible]
B-Cnt 2.5
Meas Err 0.927

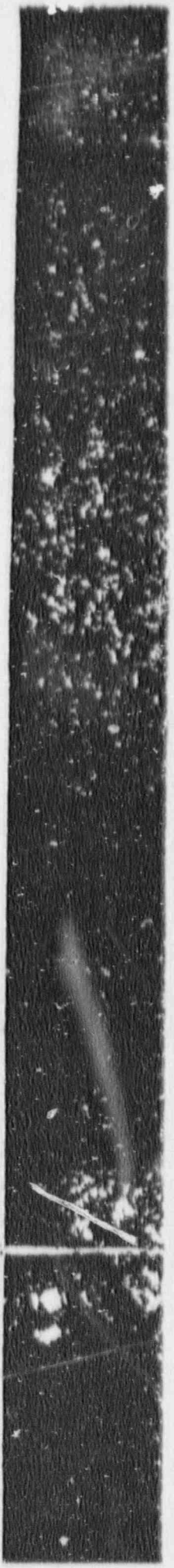
[illegible]
[illegible]
[illegible] 180[illegible]
[illegible]
Meas Err 2.527

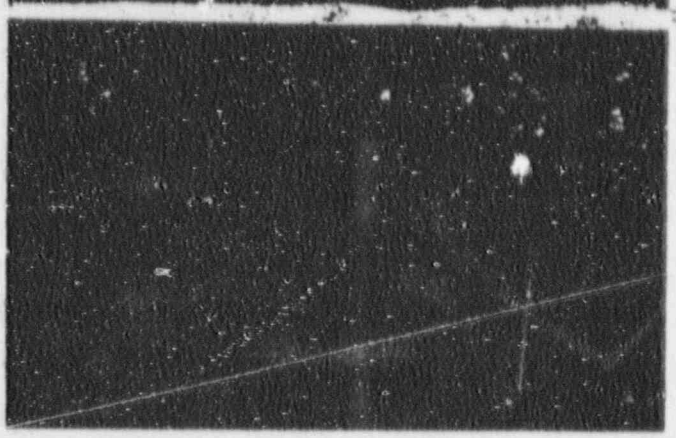
Smpl No. 7505
06:22:21:35:47
U-Cnt 290362
B-Cnt 327
Meas Err 4.119

Smpl No. 7777
06:22:21:44:24
[illegible]
B Cnt 291
Meas Err [illegible].106

Smpl No. 75[illegible]
06:22:[illegible]:58:21
[illegible] 103411
B-[illegible] [illegible]
[illegible] 2.[illegible]

[illegible] Err [illegible]





Type of Run:
Production

Prod ct/smpl 3

Sample No.'s

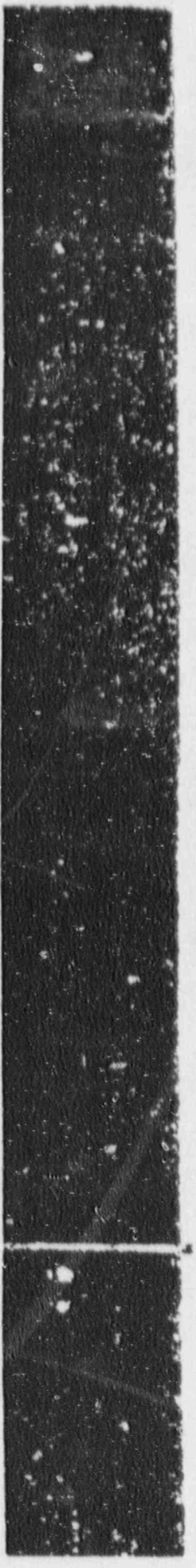
Sample 7567
Sample 7724
Sample 7880
Sample 7914

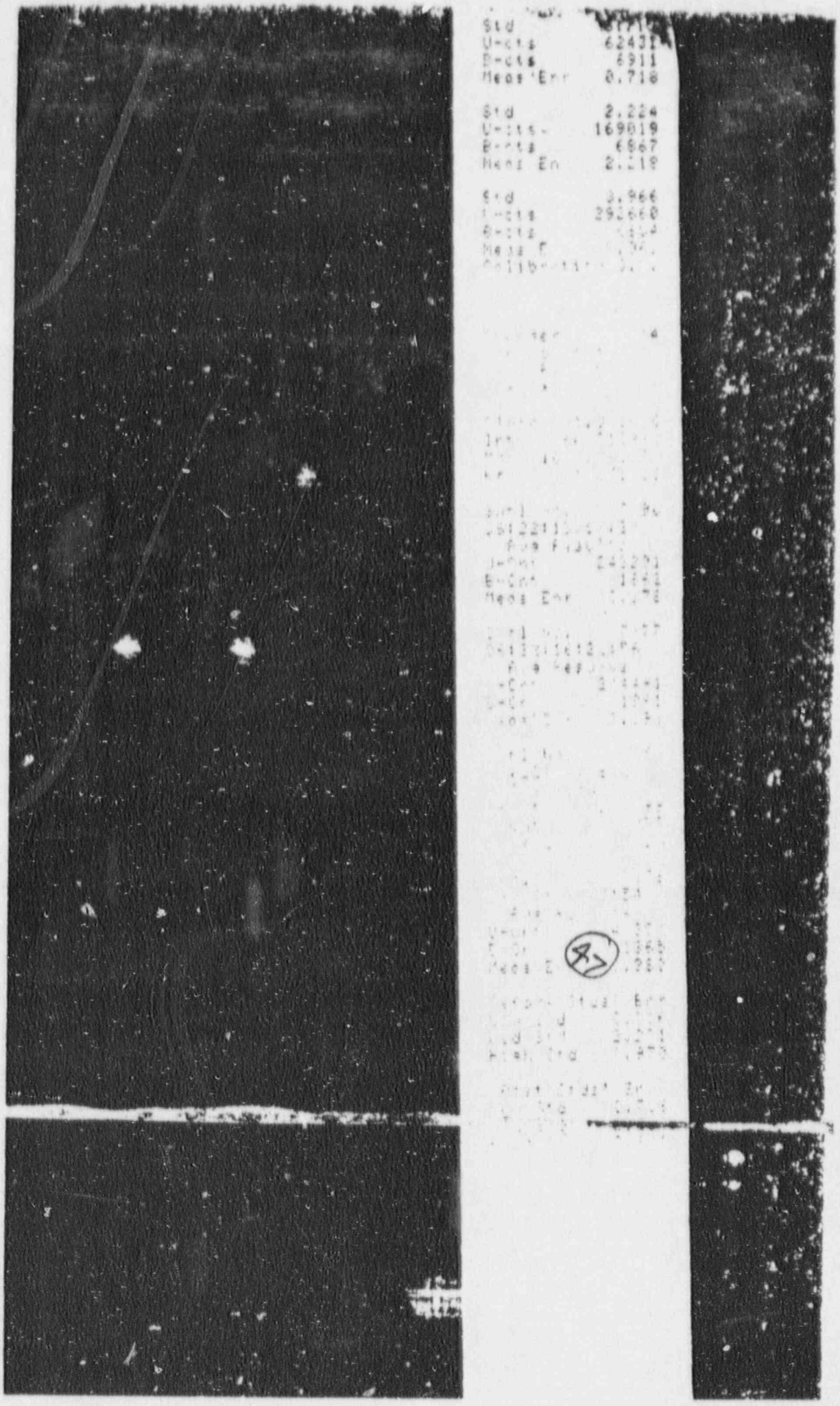
Std 6.224
U-cts 169096
B-cts 6673
Meas Enr 2.224

Std 3.966
U-cts 292872
B-cts 5629
Meas Enr 3.966

Slope 1.000780
Int -0.010913
Un 71090.262479
Un 1.651101

Smpl No. 7567
06/22/13 12:12:04
Ave Results
U-Cnts 240520
B-Cnt 1583





Chamber 14

Sample [illegible]
Sample [illegible]
Sample 75[illegible]
Sample [illegible]82[illegible]

Chamber 14
Verification
Results
05[illegible]13[illegible]6131

Background [illegible]
U [illegible]
B [illegible]

U-cts [illegible]
B-cts 6[illegible]0[illegible]
Meas Enr 3.22[illegible]

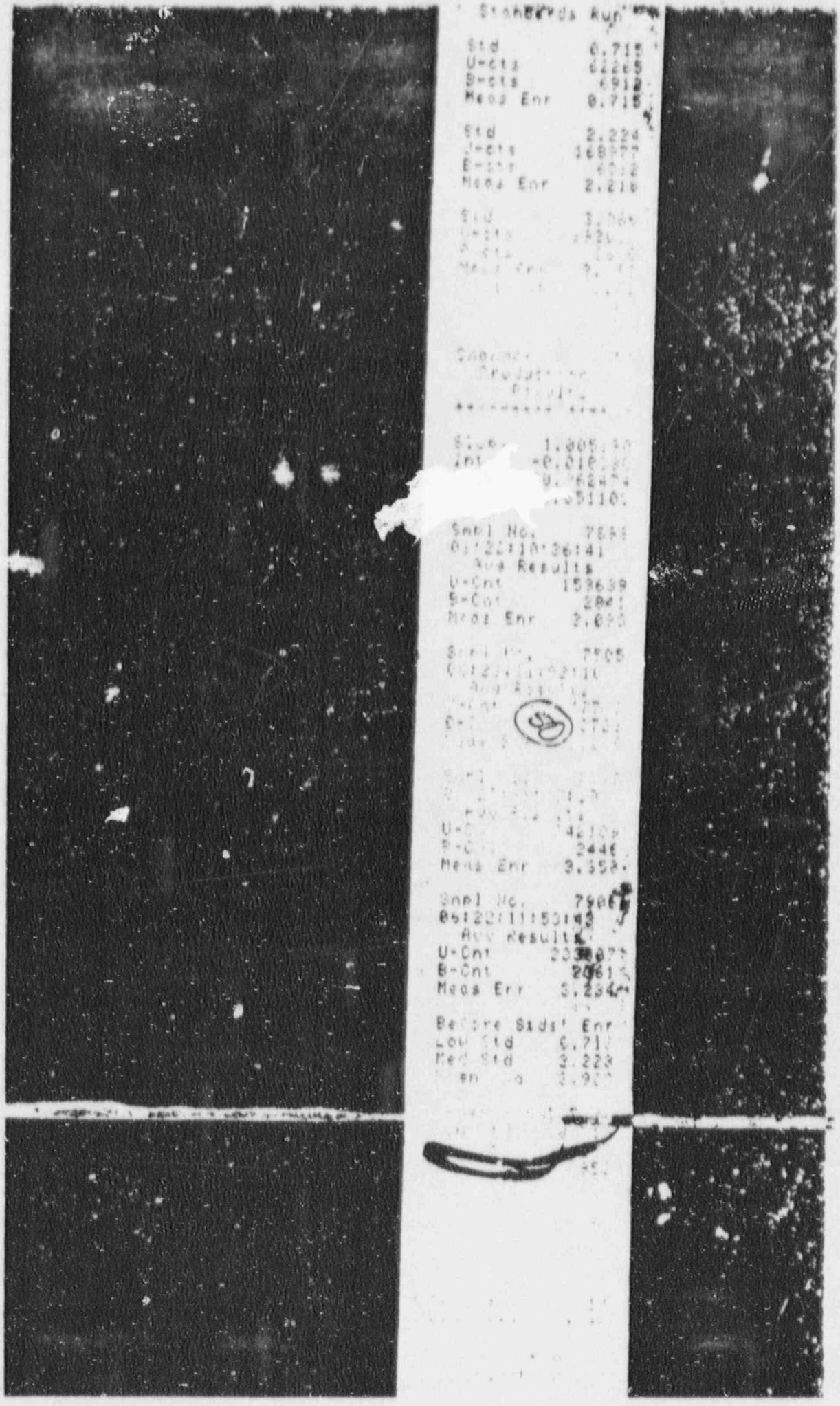
Std 3.966
U-cts 293220
B-cts 6673
Meas Enr 3.970
Calibration O.K.

Chamber 14
Production
Results

[illegible]

[illegible] Enr [illegible]

[illegible] No. 79[illegible]
[illegible]13[illegible]1106
[illegible]ults
[illegible] 254[illegible]



Calibration
Results
06122F121:1127
****

Ma 51103.166098
Lr 0.298048

RA Slope
+74.6E0167

BACKGROUND RATE
U-cnt 1.41
B-cnt 2.4

Std Enr 0.715
U-cn 51147
B-cnt 3698

Std Enr 1.454
U-cnt 102143
B-cnt 3792

Std Enr 2.237
U-cnt 14954
B-cnt 3641

(57)

****
****
Chamber 13
Unable
To Hold
Calibration
****
****

Chamber
Verification

U-Cnt 149286
B-Cnt 2758
Meas Enr 2.035

Before Stds' Enr
Low Std 0.718
Med Std 2.225
High Std 3.923

Post Stds' Enr
Low Std 0.719

Standard Run

Std 0.714
U-cts 67560
B-cts 5278
Meas Enr 0.713

Std 2.220
U-cts 181246
B-cts 5182
Meas Enr 2.215

Std 3.976
U-cts 315697
B-cts 5171
Meas Enr 3.998
Re-Calibrate

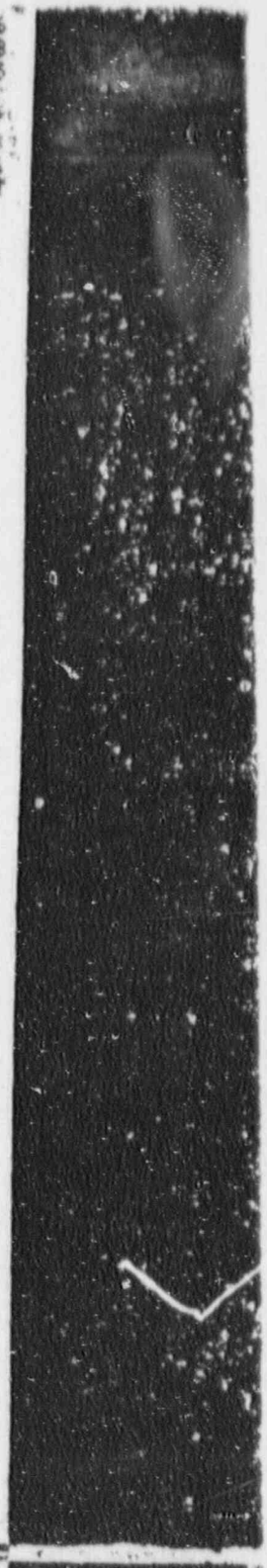
52

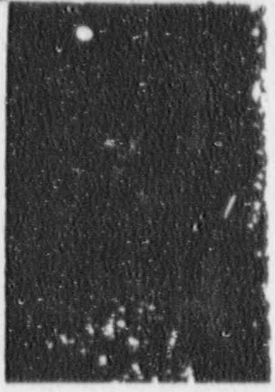
Computer 10
*** CALL T ***

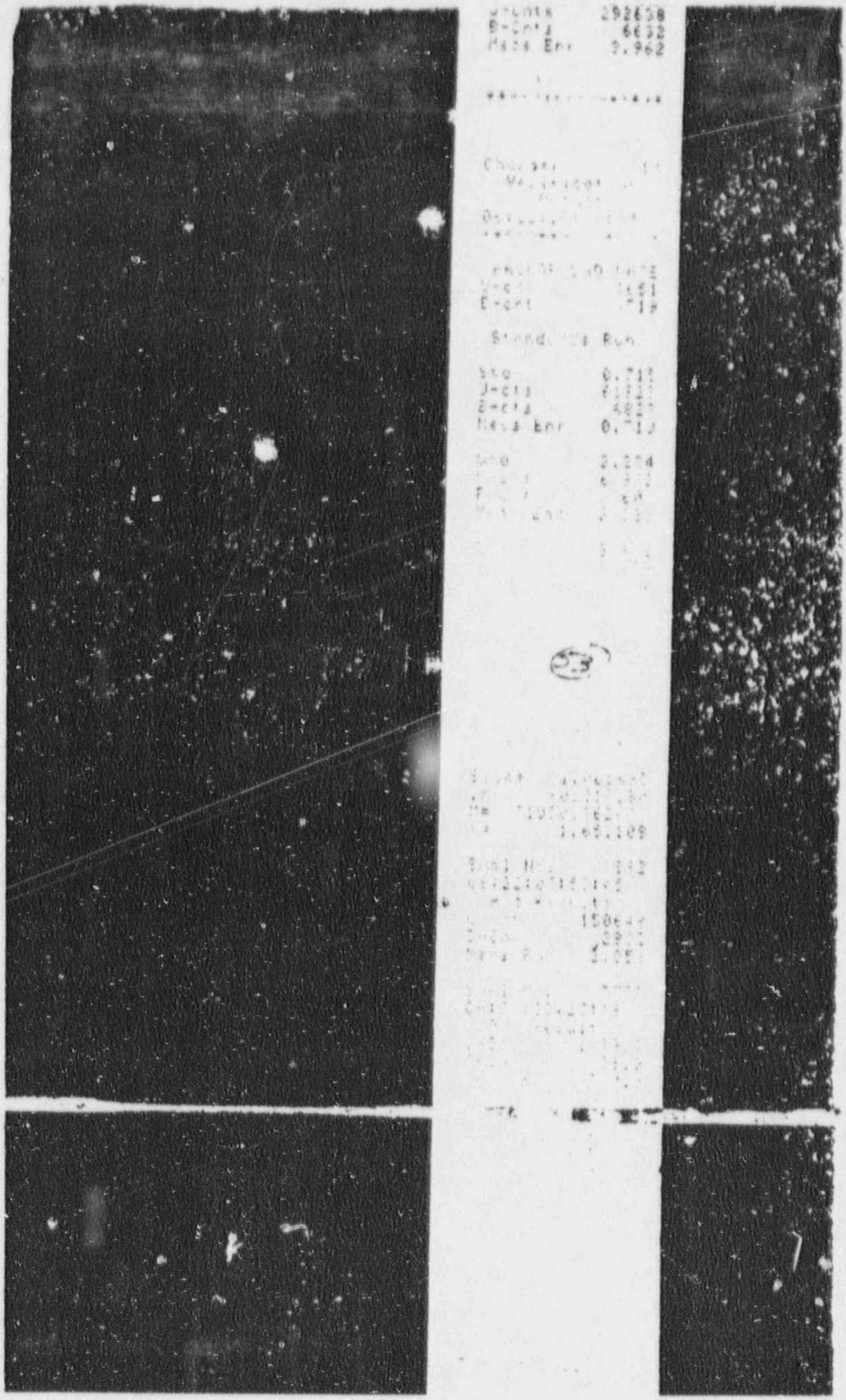
Loanmgr 10

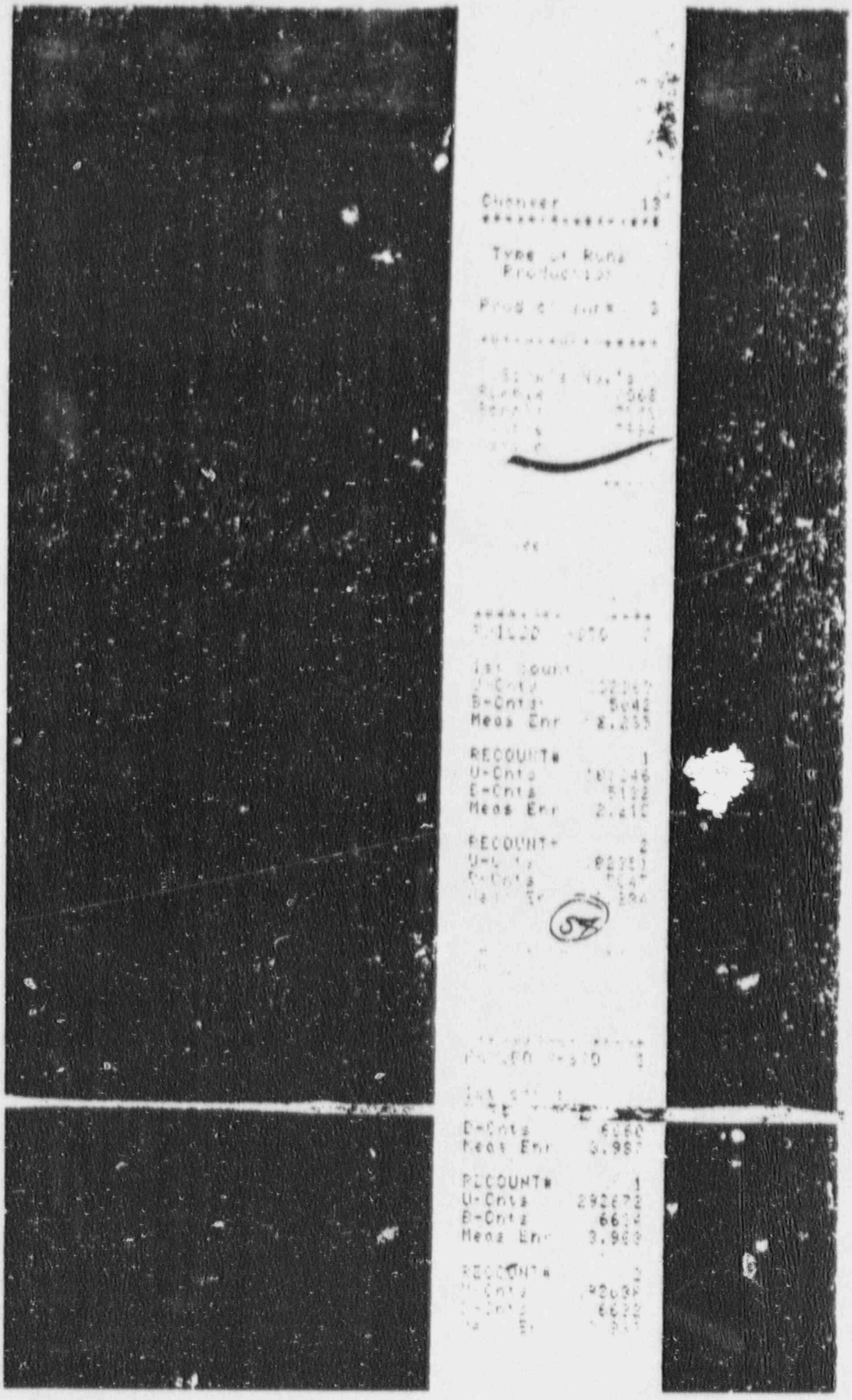
Type of Run
Verification

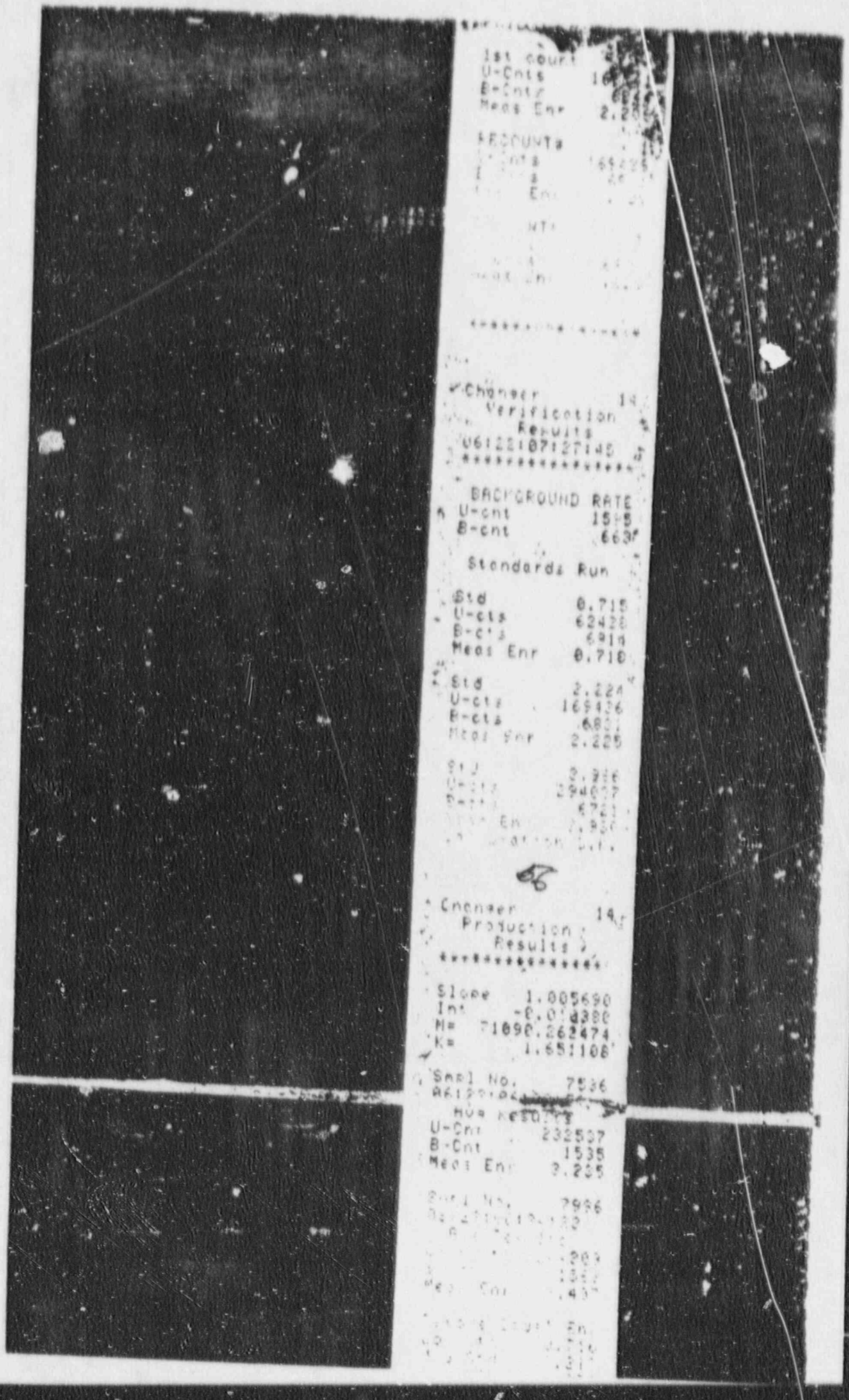
Operator 11
Calibration
Results

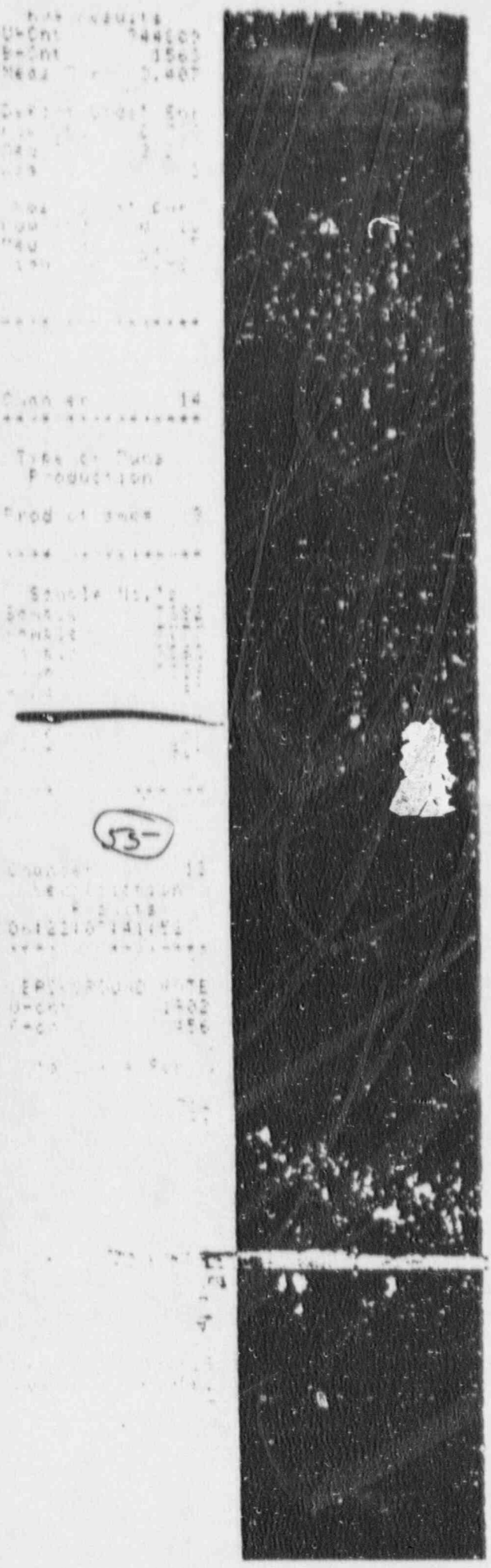












Production

Prod ct'sme= 3

****

Sample No.'s
Sample [illegible]
Range 799

****

Chamber 13
****

Type of Runs
[illegible]
Verification

****

Chamber 13
Calibration
Results
[illegible]
****

Std Err [illegible]
U-cnt [illegible]
B-cnt [illegible]

Std Err 1.454
U-cnt [illegible]
B-cnt 5246

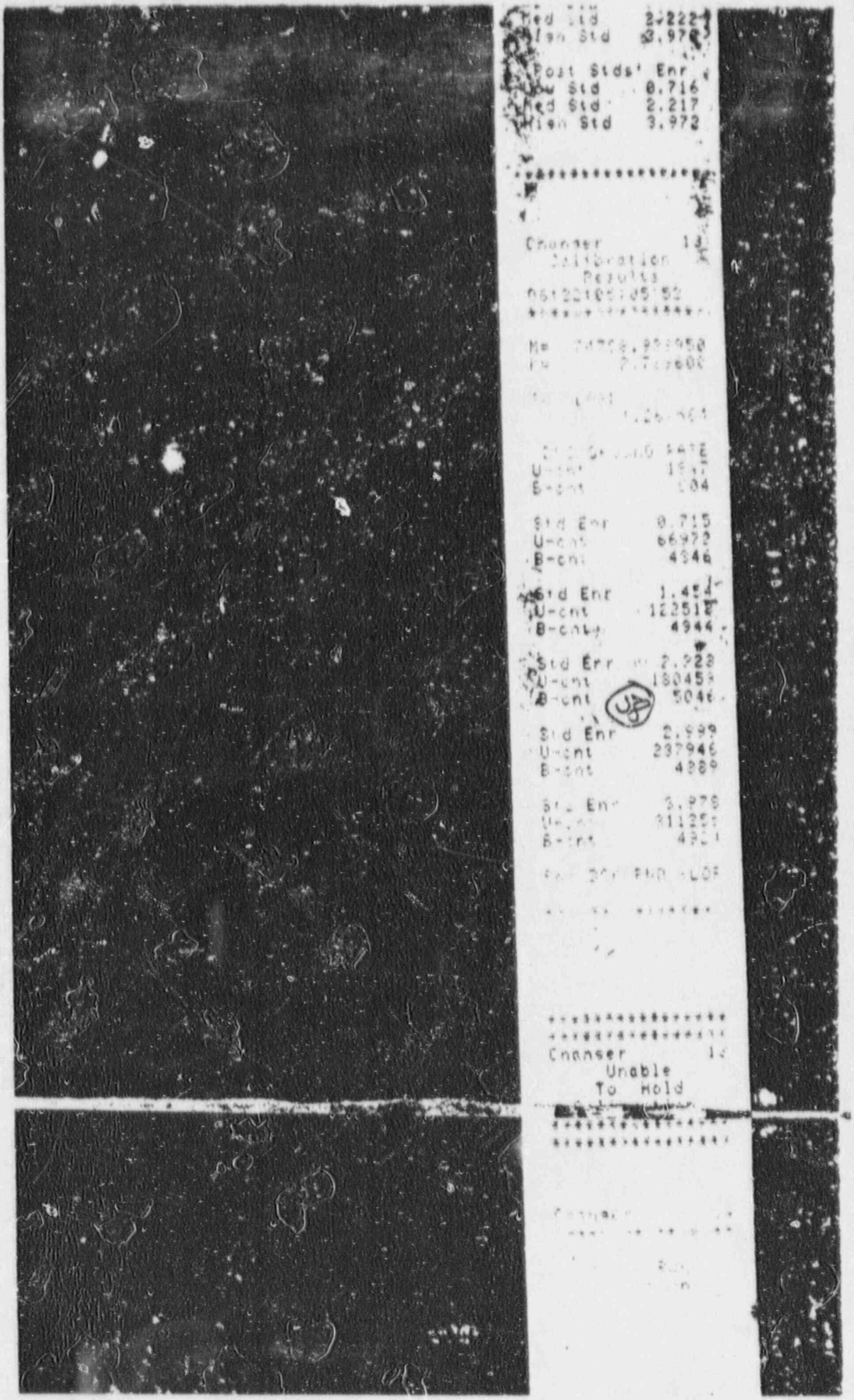
(67)

Std Err 2.223
U-cnt 181629
B-cnt 5687

Std Err 2.942
U-cnt 239441
B-cnt 4915

Std Err [illegible]
U-cnt [illegible]
B-cnt [illegible]000

****



Post Stds' Enr
Std 0.716
Std 2.217
Std 3.972

Channer 13
Calibration
Results

Std Enr 0.715
U-cnt 66972
B-cnt 4946

Std Enr 1.454
U-cnt 122518
B-cnt 4944

Std Enr 2.928
U-cnt 180458
B-cnt 5046

Std Enr 2.999
U-cnt 237946
B-cnt 4989

Channer 14
Unable
To Hold

Verification
Production

Prod ct/smpl 3

****

Sample No.
Seconds

BACKGROUND RATE
U-cnt 16[illegible]
B-cnt 639

Standards Run

Std 0.[illegible]5
U-cts 62[illegible]4
B-cts 6874
Meas Err 0.716

Std 2.[illegible]4
U-cts 15[illegible]1
B-cts [illegible]
Meas Err [illegible]

Std [illegible]
U-cts [illegible]
B-cts [illegible]
Meas Err [illegible]
Calibration [illegible]

(59)

Std [illegible]
U-cts [illegible]
B-cts [illegible]
Meas Err [illegible]

Sample No. [illegible]
Std [illegible]

B-cts [illegible]
Meas Err [illegible]

B-Cnt [illegible]229
Meas Enr 3.136

Smpl No. 796
06:22:02:44:24
Avg Results
U-Cnt 2309455
B-Cnt 2291
Meas Enr 3.195

Before Std Enr
Low Std 0.70[illegible]
Med Std 2.21[illegible]
High Std [illegible]

[illegible]
Low Std 0.71[illegible]
Med Std [illegible]
High Std [illegible]

****

Changer
Verification
Results
06:22:03:27:49
****

BACKGROUND RAT[illegible]
U-cnt 190[illegible]
B-cnt 49[illegible]

Standards Run

Std 0.714
U-cts 66721
B-cts 5219
[illegible]

[illegible]

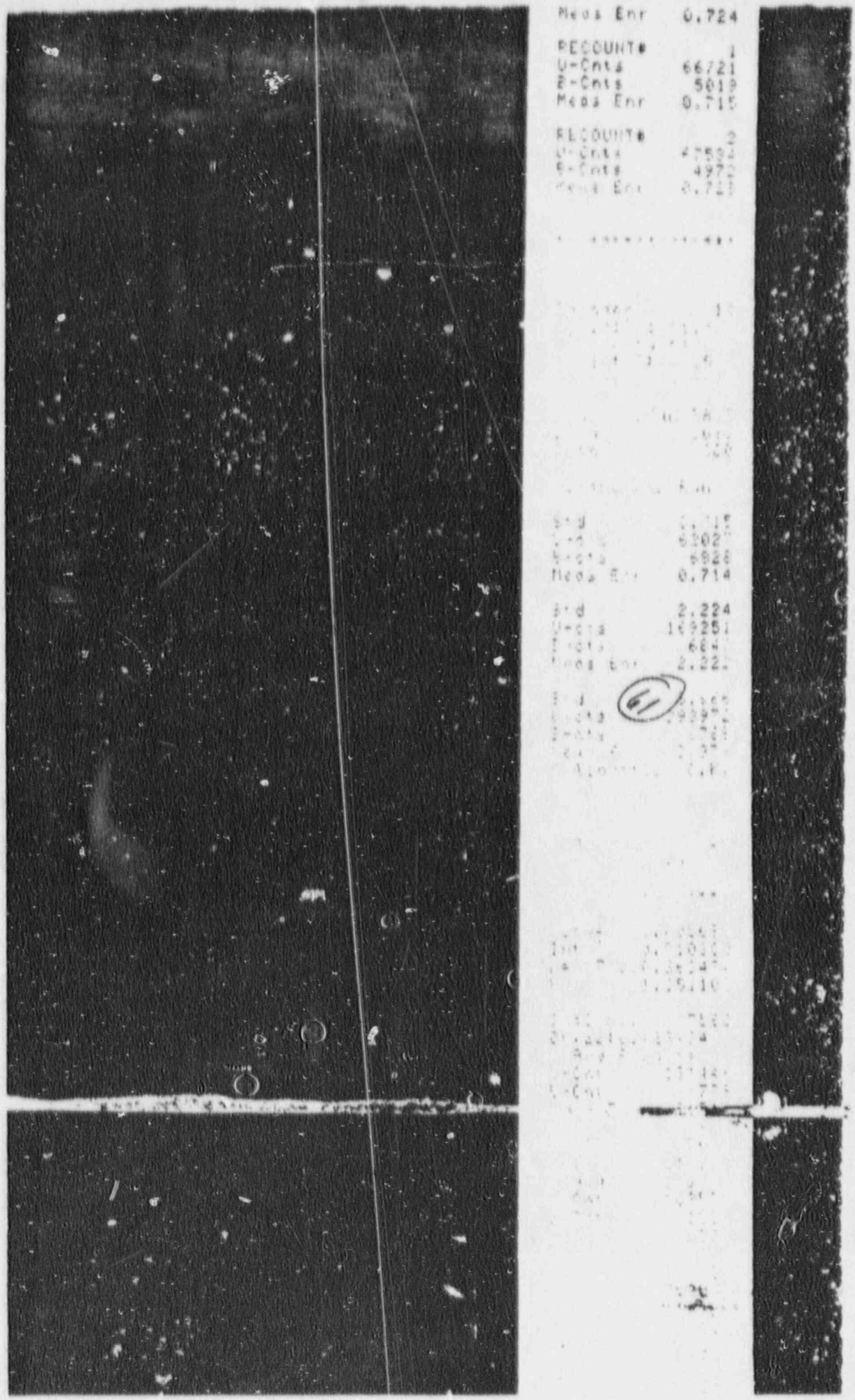
(60)

[illegible]
U-cts 310157
B-cts 4978
Meas Enr 3.969
Re-Calibrate

****
****
Changer 13
Unable
To Hold
Calibration
****
****

Changer 13
****

Type of Runs
Calibration
Verification
[illegible]



Meas Enr 0.724

RECOUNT# 1
U-Cnts 66721
E-Cnts 5019
Meas Enr 0.715

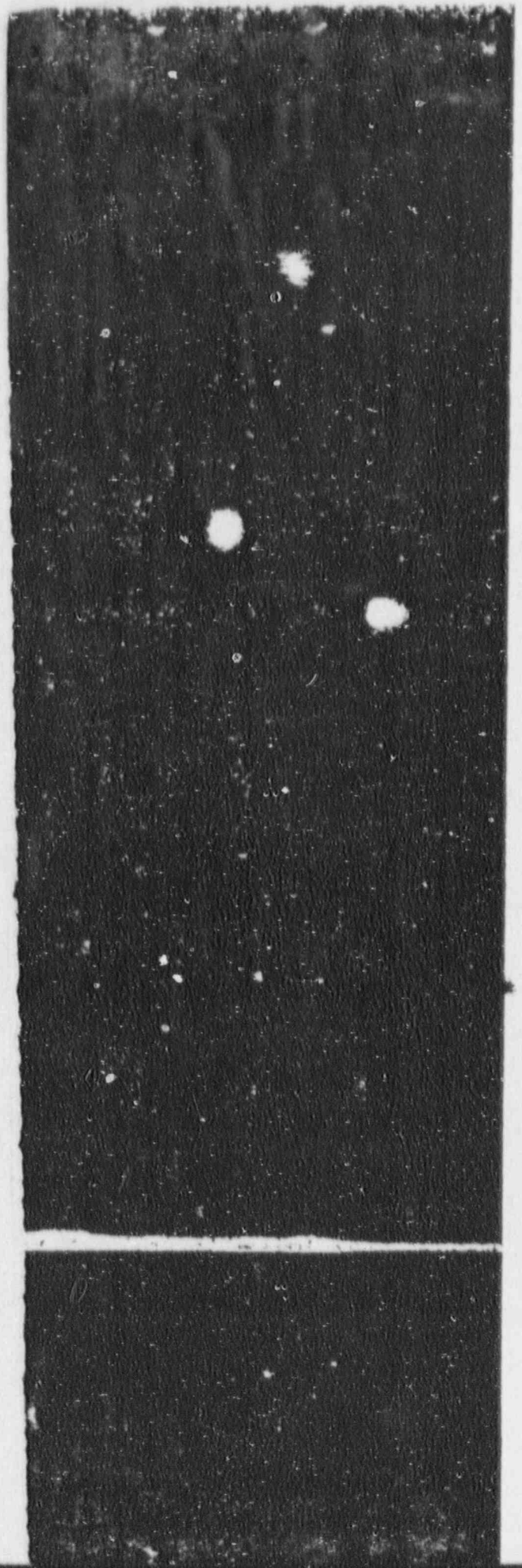
RECOUNT# 2
U-Cnts 47554
E-Cnts 4972
Meas Enr 0.713

E-d 1.19
U-Cnts 5302
E-Cnts 5826
Meas Enr 0.714

E-d 2.224
U-Cnts 169251
E-Cnts 6641
Meas Enr 2.22

61

Channel
Calibration
Results
06:22:02:35104
N= 14263.62(44
K= 2.62218
BG SLOPE
-5.200471
BACKGROUND RATES
U-chn 191
S-chn 4994
Std Err 0.716
U-chn 6.7744
S-chn 5116
U-chn 4993
U-chn 4013
Chan r
FM1 EC U-STD 1
U-chn 17319
U-chn 4994



Smpl No. 7507
06:21:22:04:18
Ave Results
U-Cnt 172707
B-Cnt 1690
Meas Enr 2.398

Smpl No. 7577
06:21:23:29:47
Ave Results
U-Cnt 178549
B-Cnt [illegible]
Meas Enr 2.476

Smpl No. 7657
06:21:23:57:16
Ave Results
U-Cnt 175099
B-Cnt 1717
Meas Enr [illegible]

[illegible]

Calc. Std. Enr
Low Std 0.716
Med Std 2.220
High Std 3.959

Post Stdz Enr
Low Std 0.707
Med Std 2.219
High Std 3.970

(63)

Chamber 13
Verification
Results
[illegible]

[illegible]

Std 0.71
U-cts [illegible]
E-cts [illegible]
Meas Enr 0.7[illegible]

Std 2.220
U-cts 1[illegible]
E-cts [illegible]
Meas Enr 2.[illegible]

[illegible]

Std	3.966
U-cts	292449
B-cts	6663
Meas Enr	3.959

Calibration O.K.

Changer 3[illegible]

****

FAILED V-STD

1st count

U-Cnts	[illegible]
B-Cnts	[illegible]
Meas Enr	[illegible]

[illegible]

****

Changer 14

Verification Results

06:22:00:57:14

****

BACKGROUND RATE

B-cnt	1653
B-cnt (6a)	667

Standards Run

Std	0.715
U-cts	61813
B-cts	6982
Meas Enr	0.707
Std	2.221
U-cts	169044
B-cts	6328
Meas Enr	2.115
Std	3.96[illegible]

[illegible]

Changer 14

Calibration Results

****

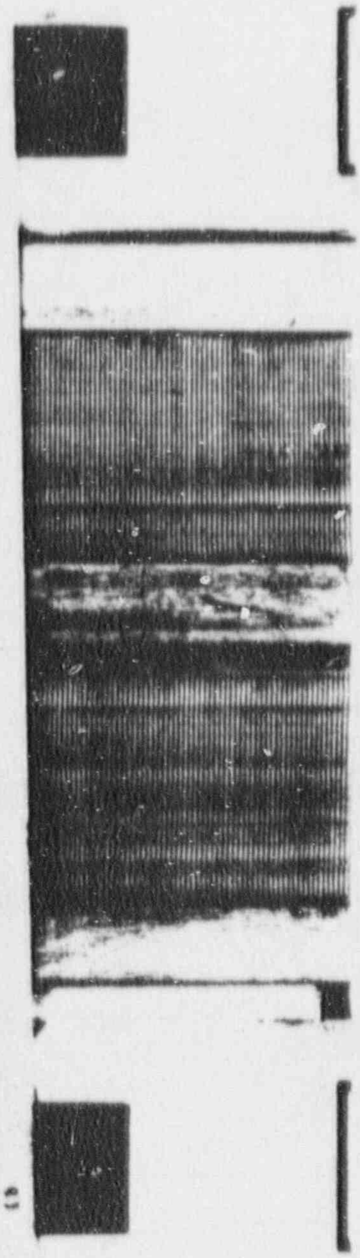
Slope	1.005690
Int	-0.010380
M=	71090.262474
K=	1.651108

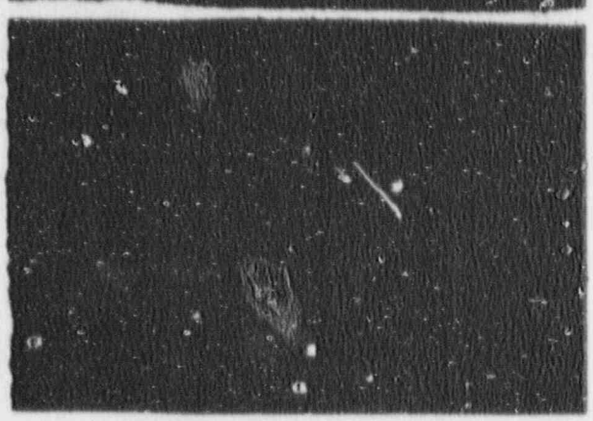
Smpl No. 7507

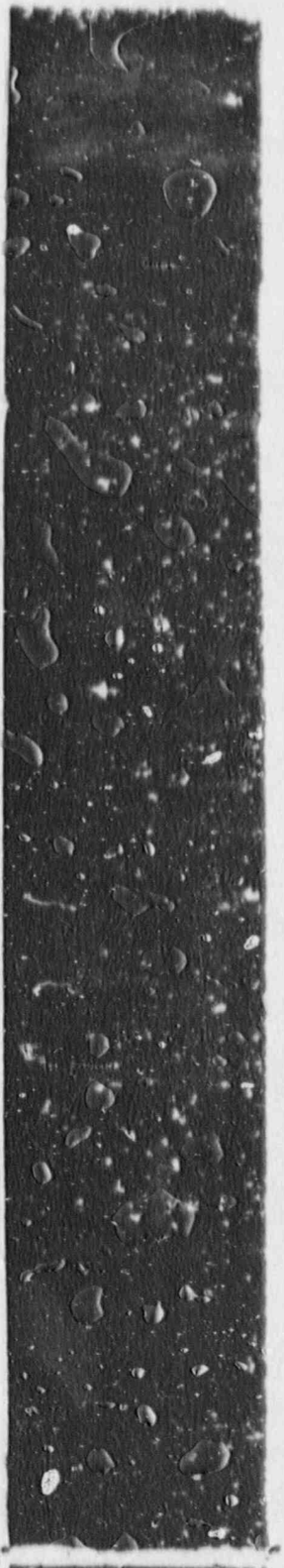
Pc:21:27:24:1[illegible]

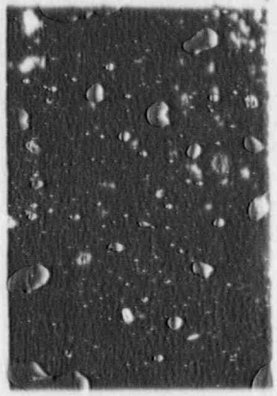
[illegible] Results

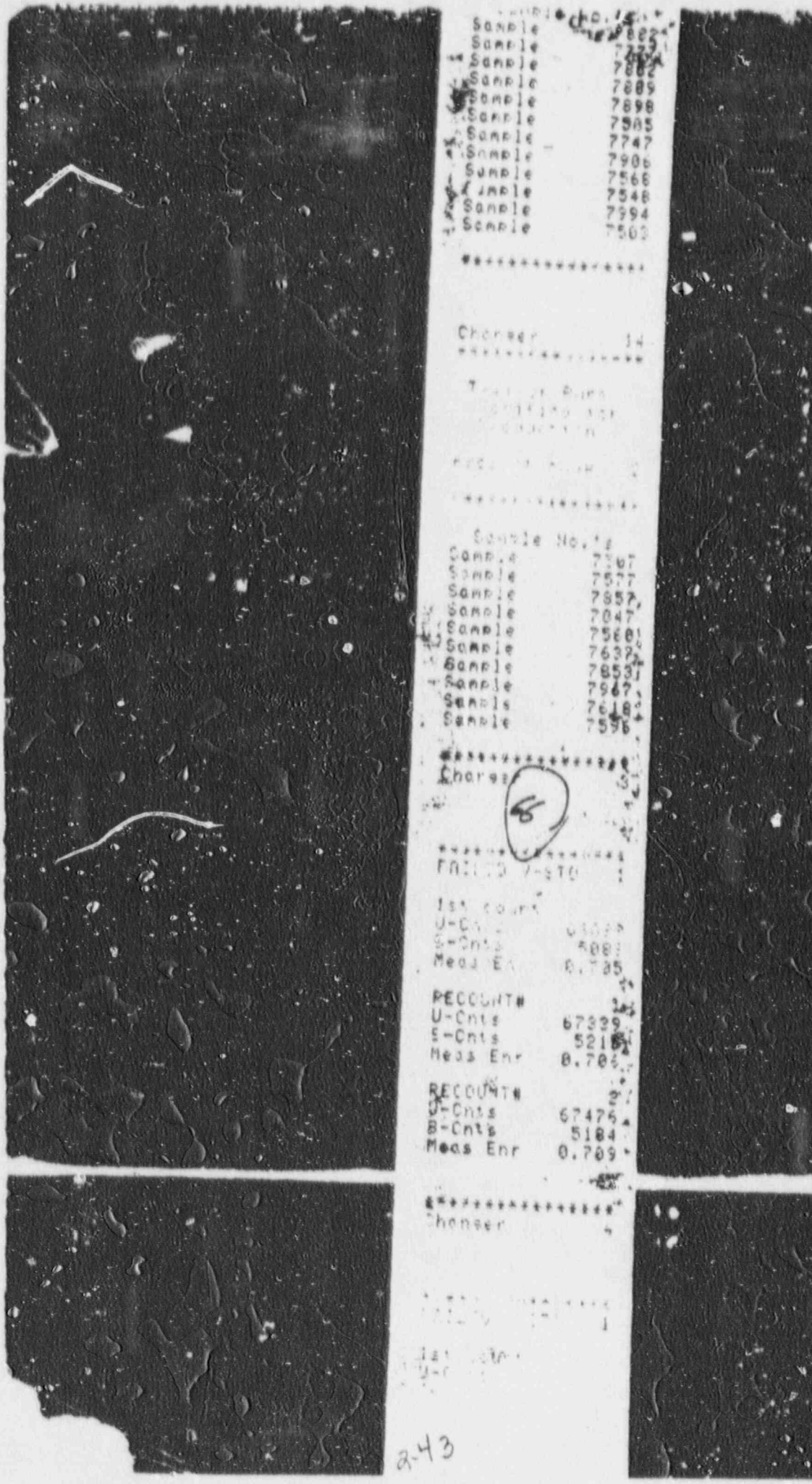
U-C[illegible] [illegible]











Sample
Sample
Sample
Sample
Sample
Sample
Sample
Sample
Sample
Sample
Sample

Changer 14

Sample No.'s

Sample
Sample
Sample
Sample
Sample
Sample
Sample
Sample
Sample
Sample

Changer 3

FAILED 7-STD

1st count
U-Cnts
S-Cnts
Meas Enr 0.735

RECOUNT#
U-Cnts 67339
S-Cnts 5218
Meas Enr 0.709

RECOUNT#
U-Cnts 67475
S-Cnts 5184
Meas Enr 0.709

Changer 4

2-43

CONTROL CHART CALCULATION SHEET

METHOD NAME Enrichment Analyzer
STANDARD NAME Iso (RIDOS)
ANALYZER NAME(s) A14

MATERIAL CLASS(s) 22 - Coupons

ATTRIBUTE NAME

DATA TAKEN FROM [redacted]
CALCULATIONS DONE BY [redacted]
LMCS SDCR FORM No.

CODE
CODE
CODE(s)

CODE(s)

NOMINAL
UNITS CODE
TIME PERIOD TO
DATE

293732.7 - (5.775) 1134.5

293732.7 - 6551.7

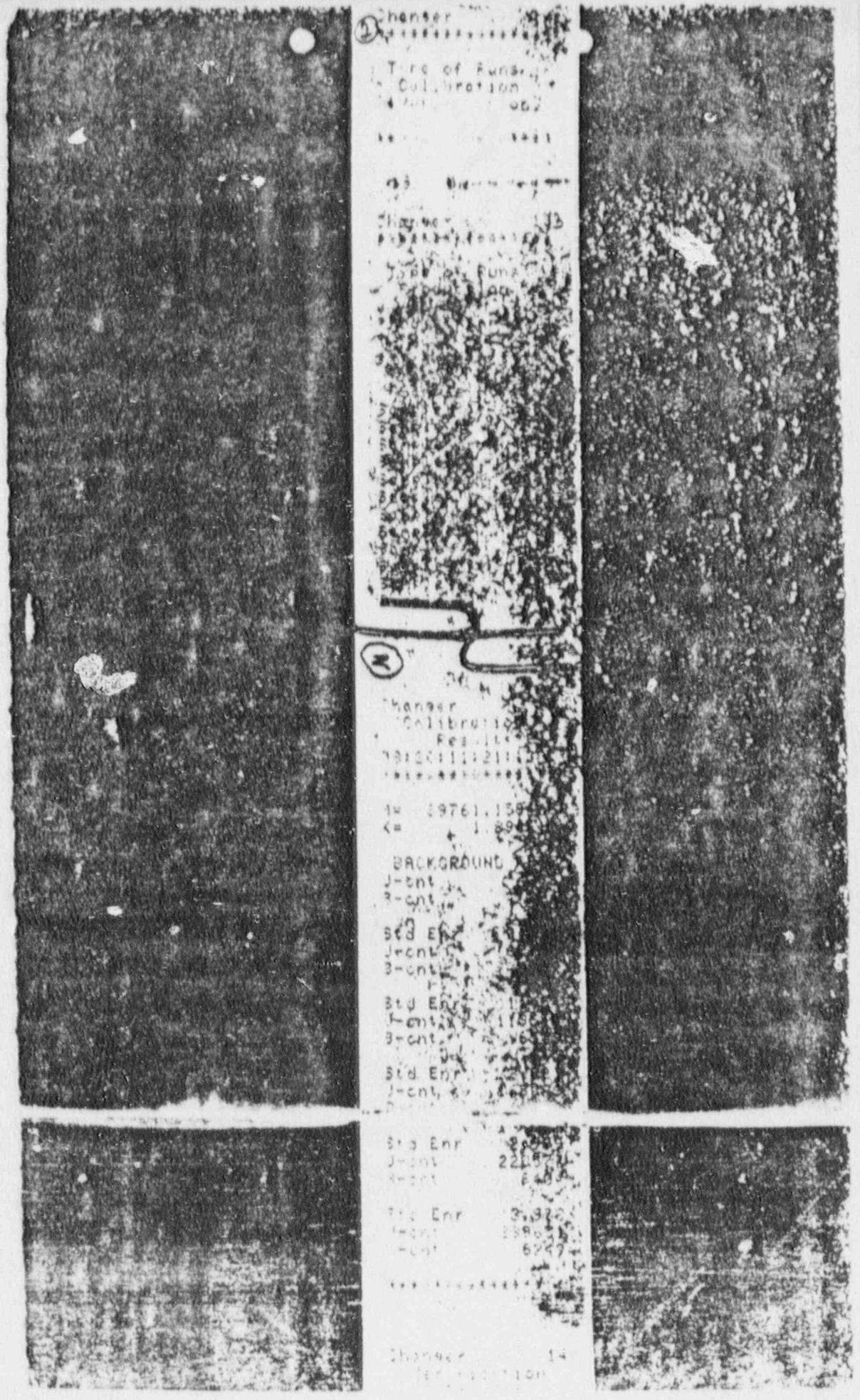
287181

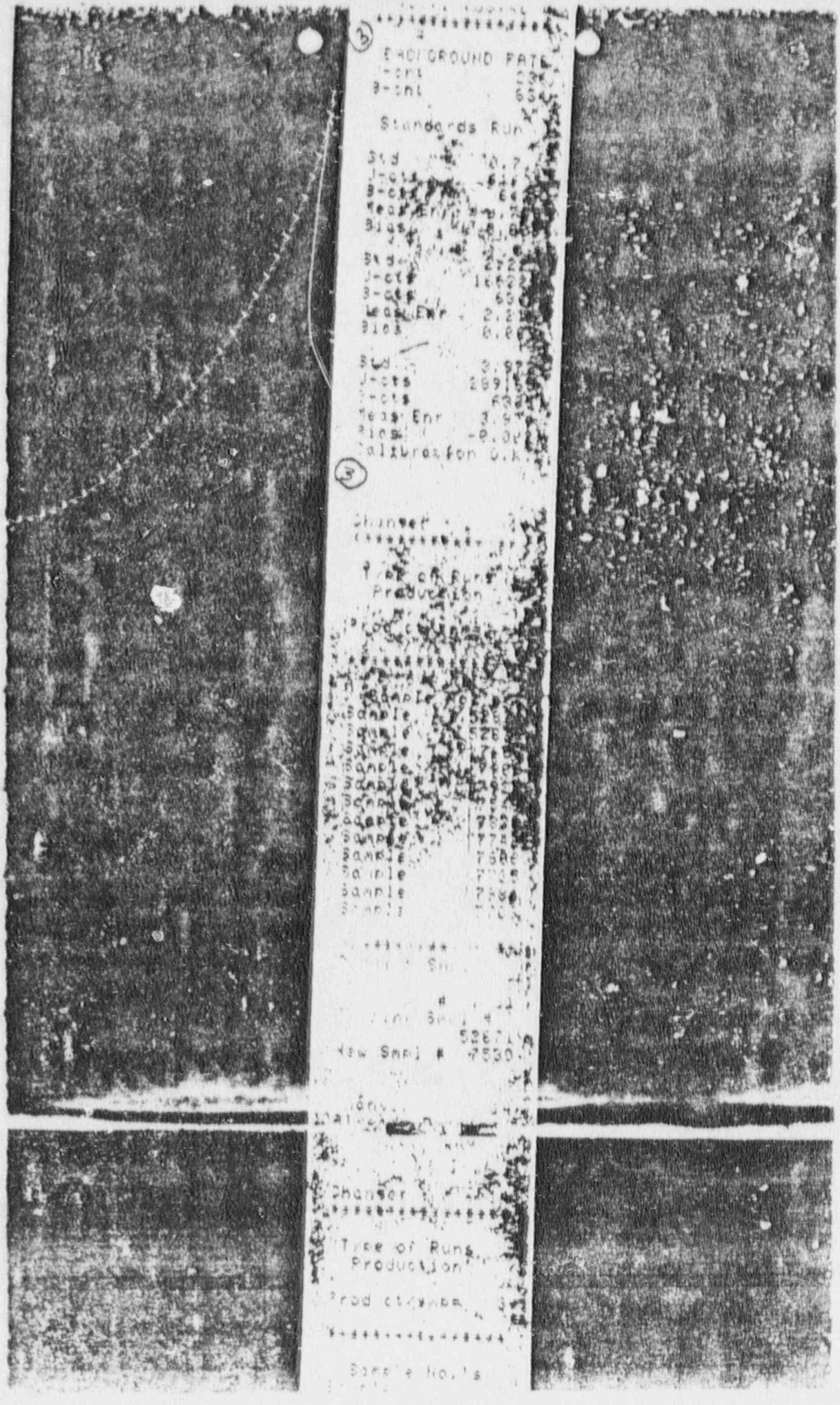
Information in this record was deleted in accordance with the Freedom of Information Act, exemptions 4
FOIA 87-88

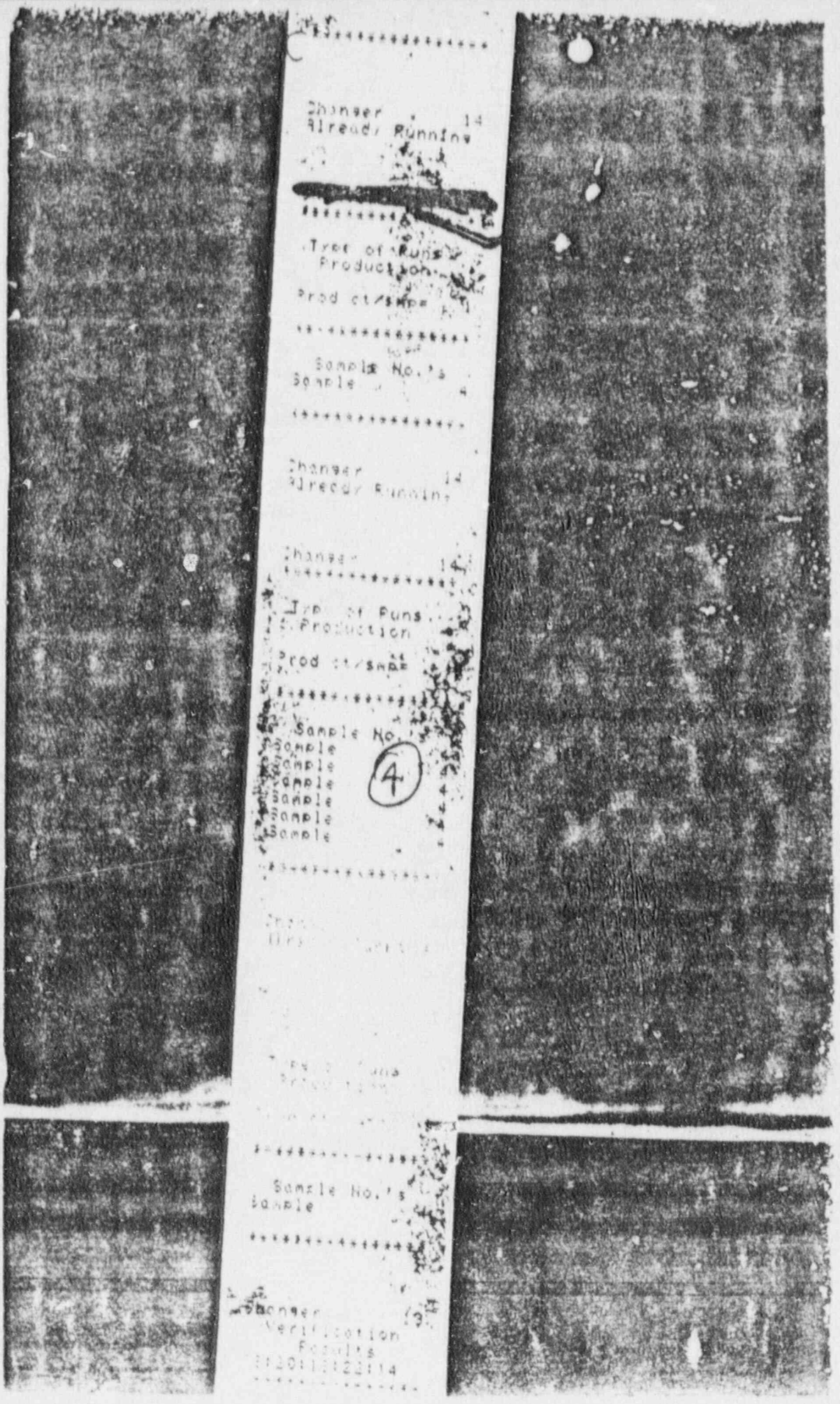
Calculations by Supervisor

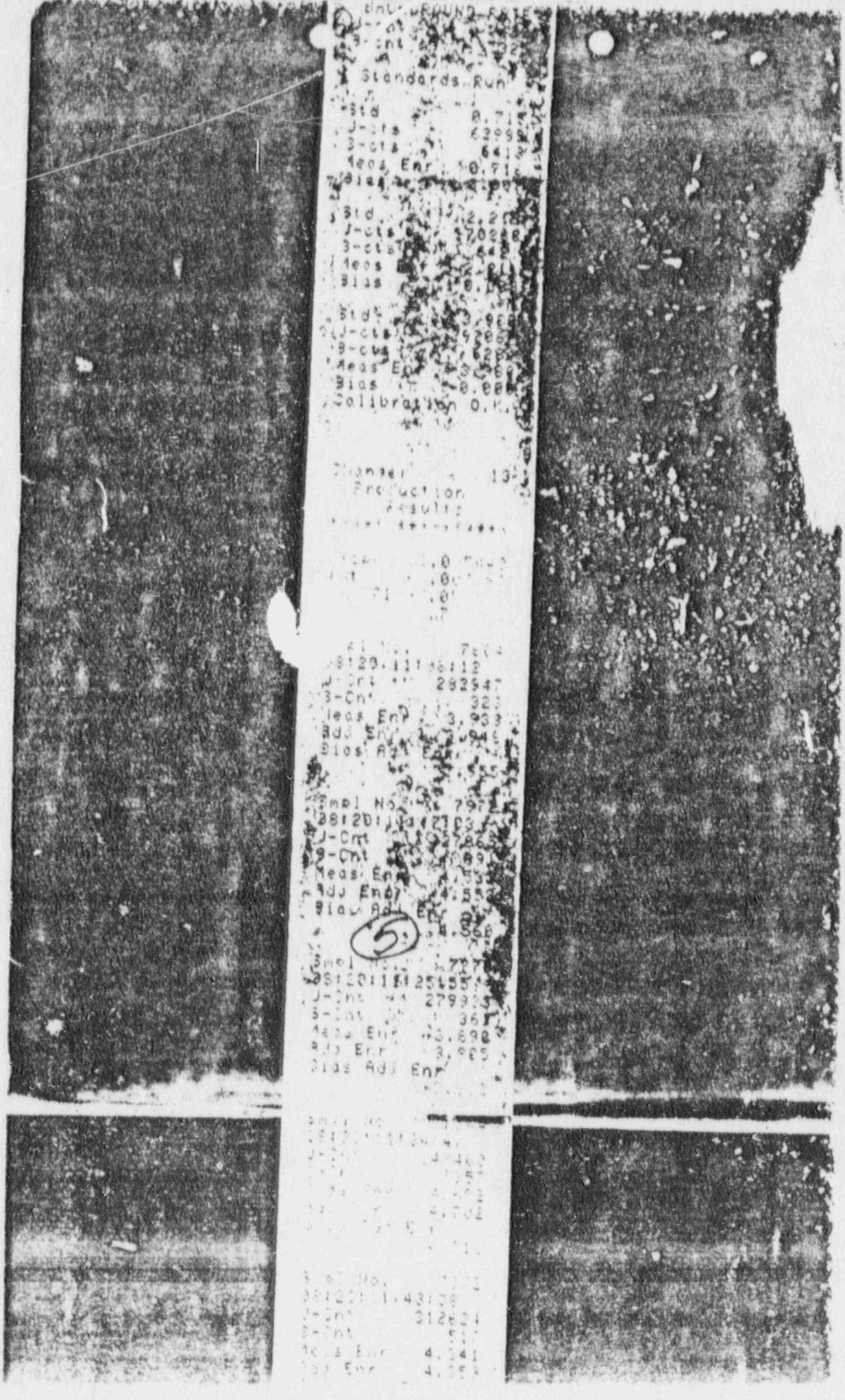
M-4
Allen

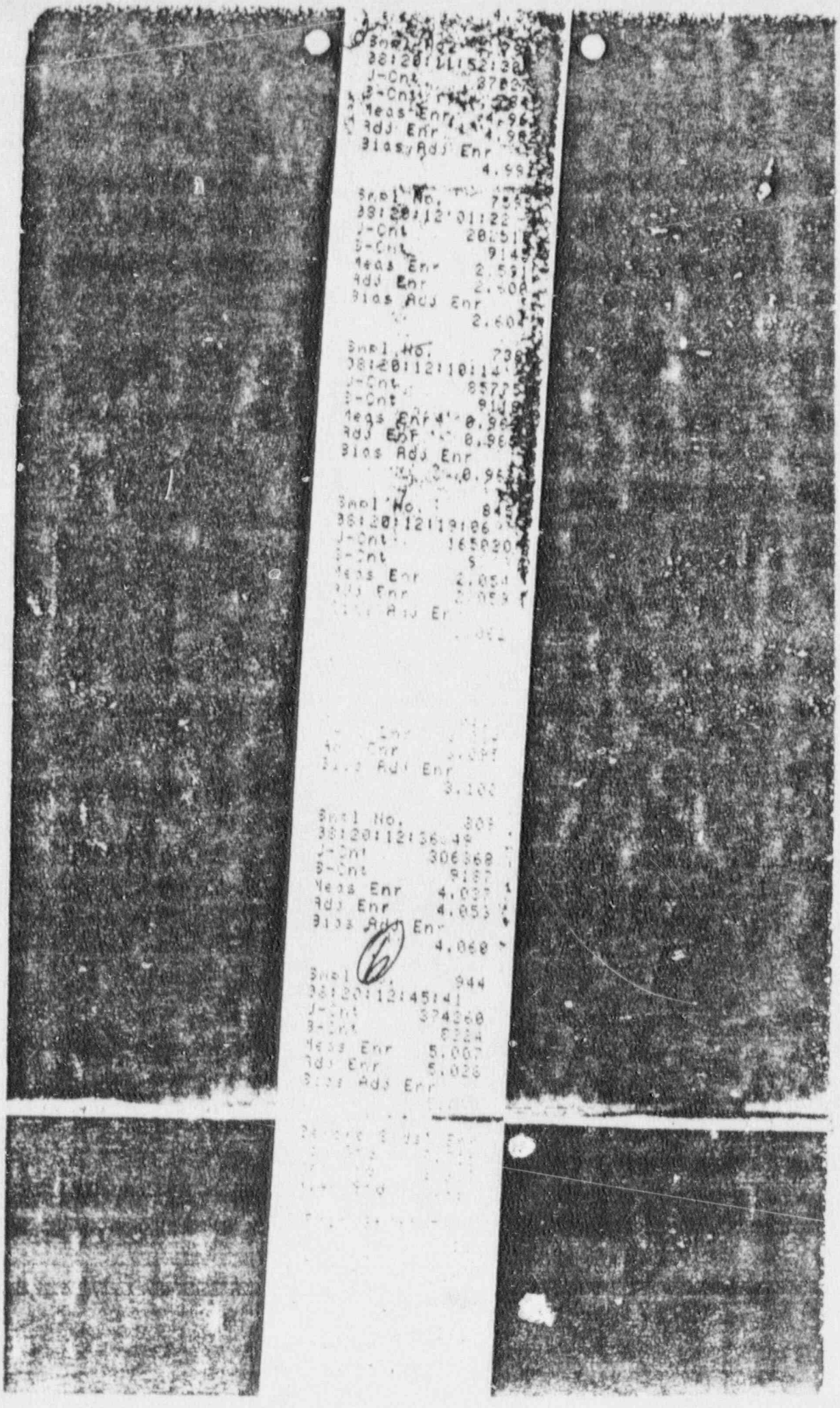
3-72

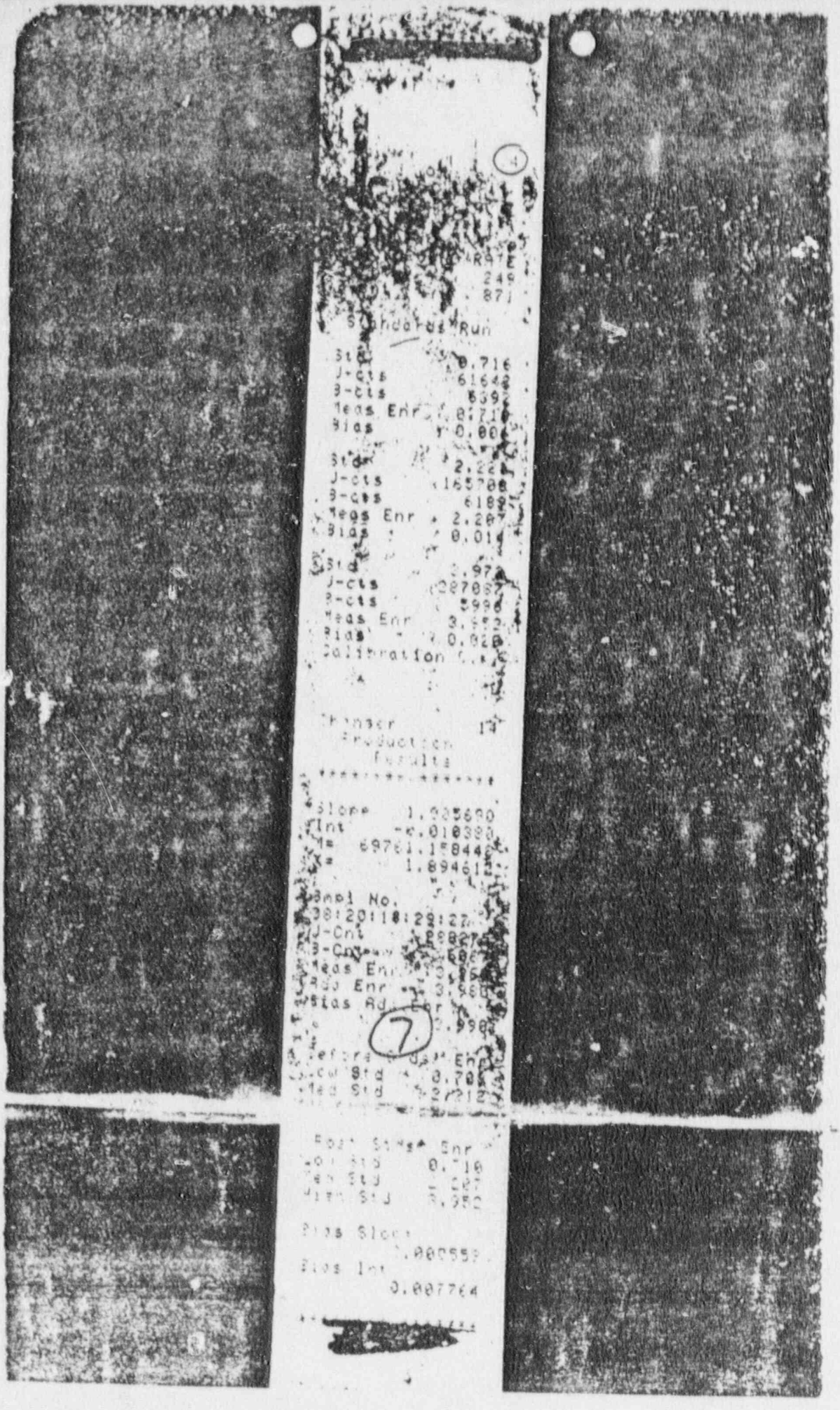





Changer 14
Already Running
Type of Runs
Production
Prod ct/sample
Sample No.'s
Sample 4
Changer 14
Already Running
Changer 14
Type of Runs
Production
Prod ct/sample
Sample No.
Sample
Sample
Sample
Sample
Sample
Sample
Sample
4
Sample No.'s
Sample
Changer 13
Verification
Results







(4)

RATE

249

.871

Standards Run

Std 0.716
J-cts 61648
B-cts 859
Meas Enr 0.871
Bias 0.000

Std 2.22
J-cts 185788
B-cts 6189
Meas Enr 2.287
Bias 0.014

Std 3.97
J-cts 328788
B-cts 9996
Meas Enr 3.992
Bias 0.020
Calibration

A

Printer
Production
Results

Slope 1.005690
Int -0.010388
Y= 69761.158446
X= 1.894612

Smpl No.
08:20:18:28:22
J-Cnt 89827
B-Cnt 68
Meas Enr
Bias Enr 3.98
Bias Adj Fac

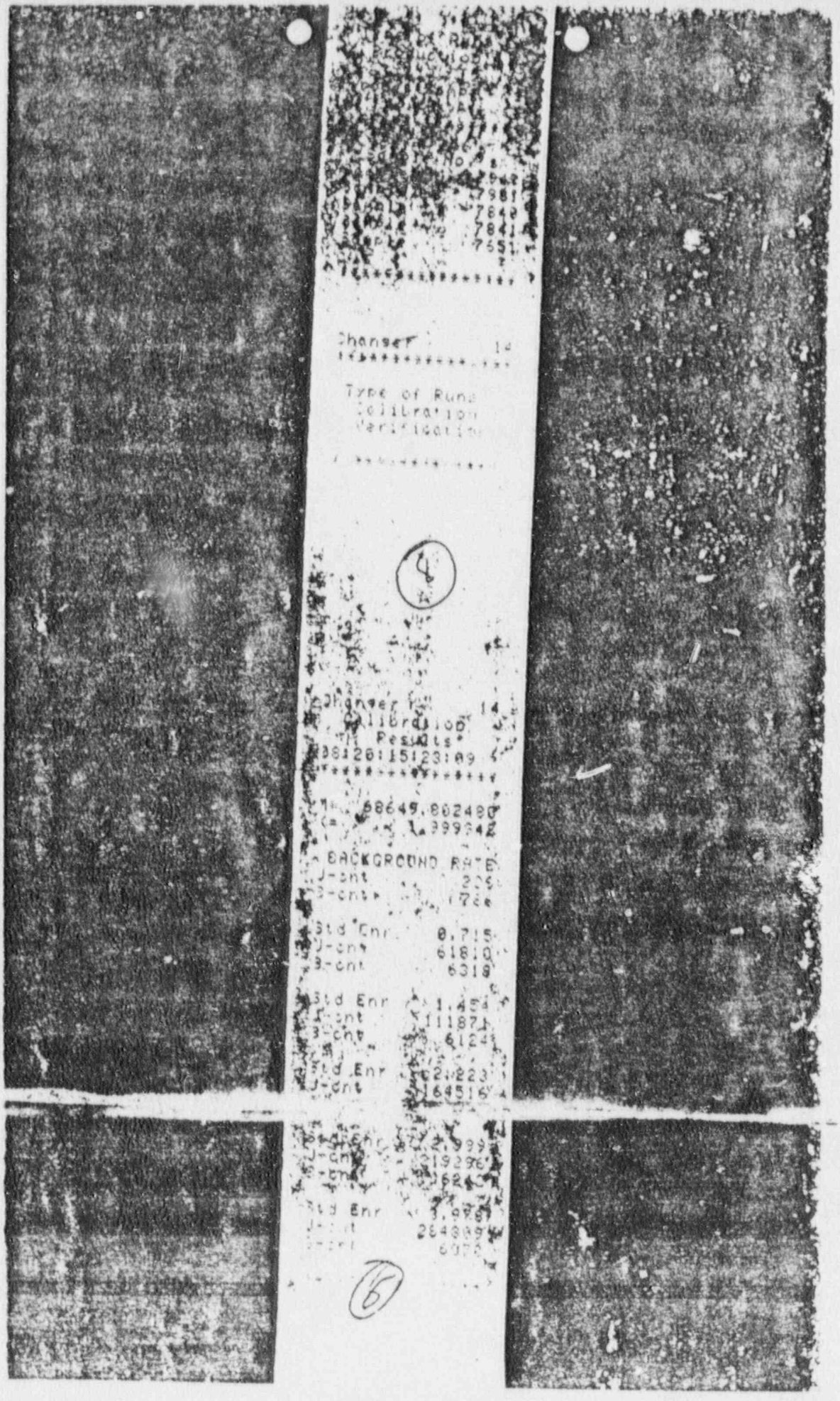
(7)

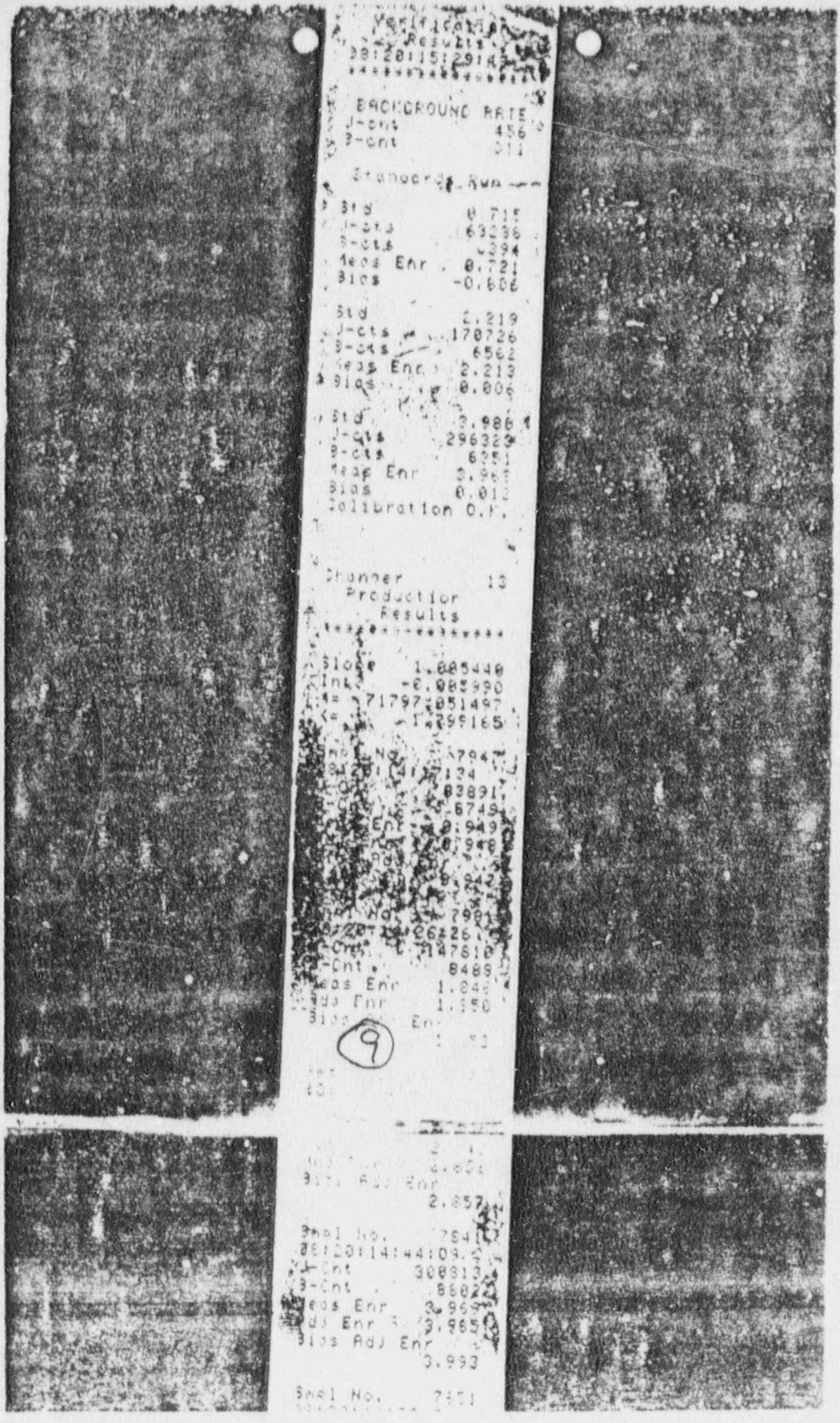
Before
New Std 0.70
Used Std 2.212

Post Stds Enr
Low Std 0.710
Med Std .227
High Std 3.980

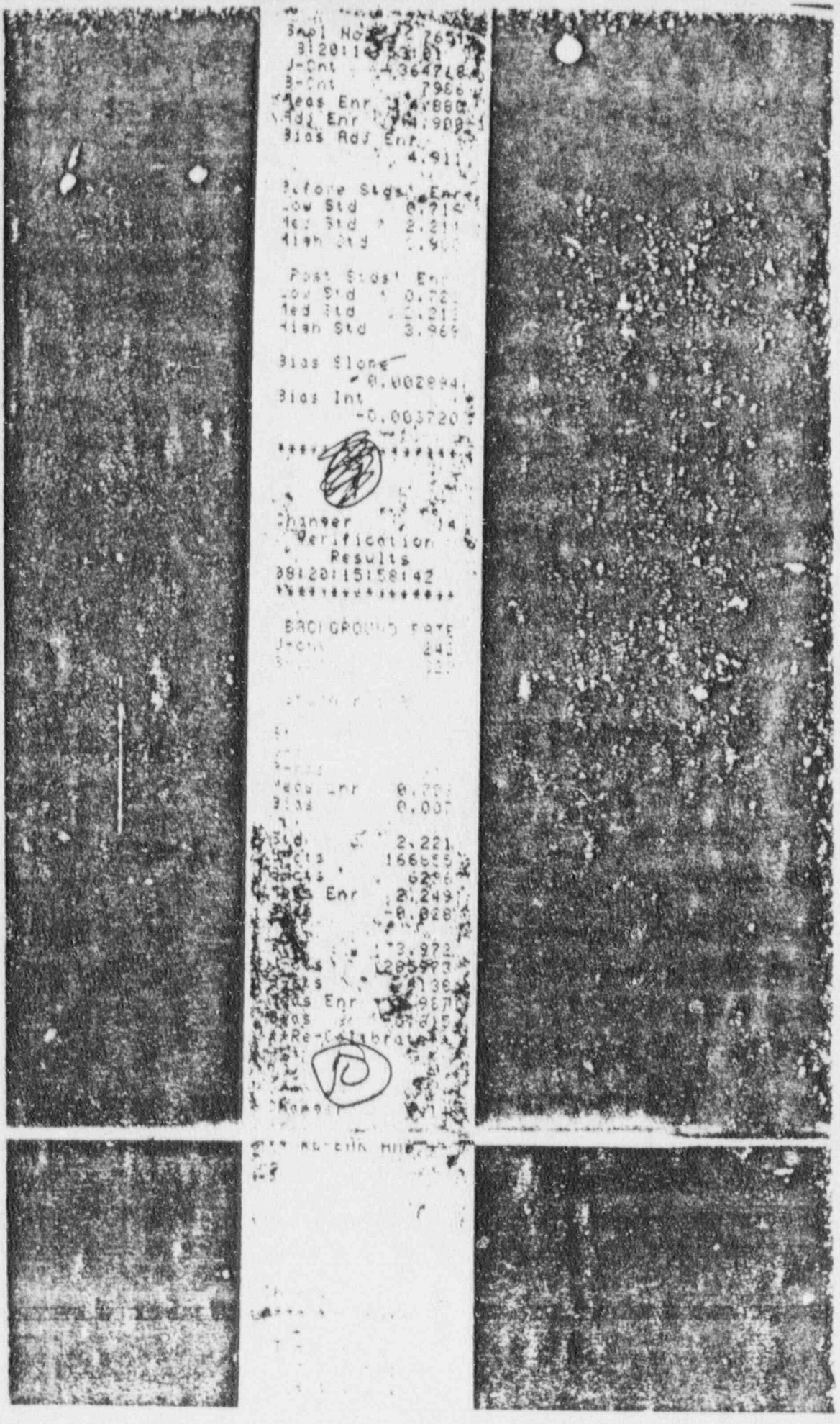
Bias Slope
.000559

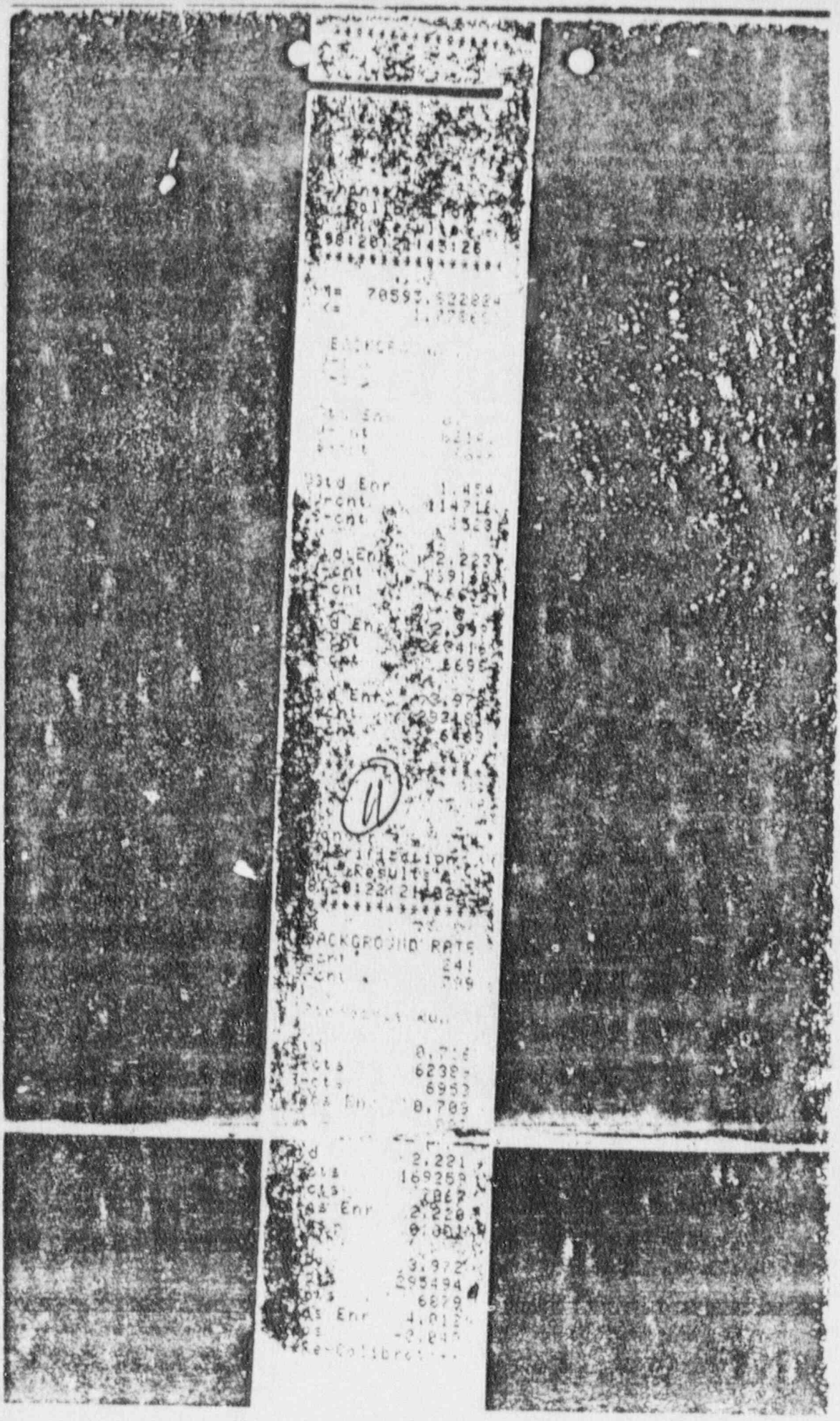
Bias Int
0.007764

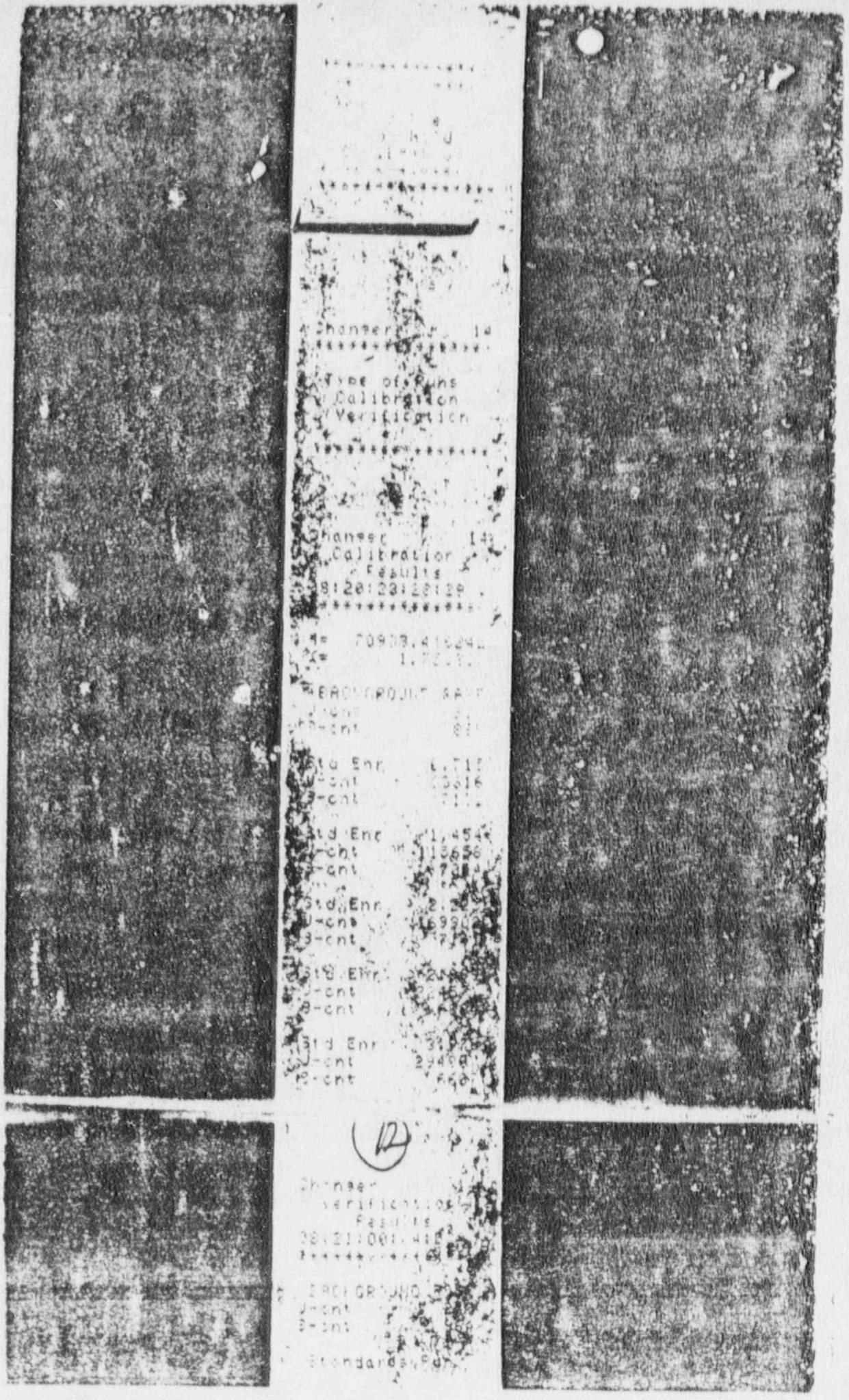


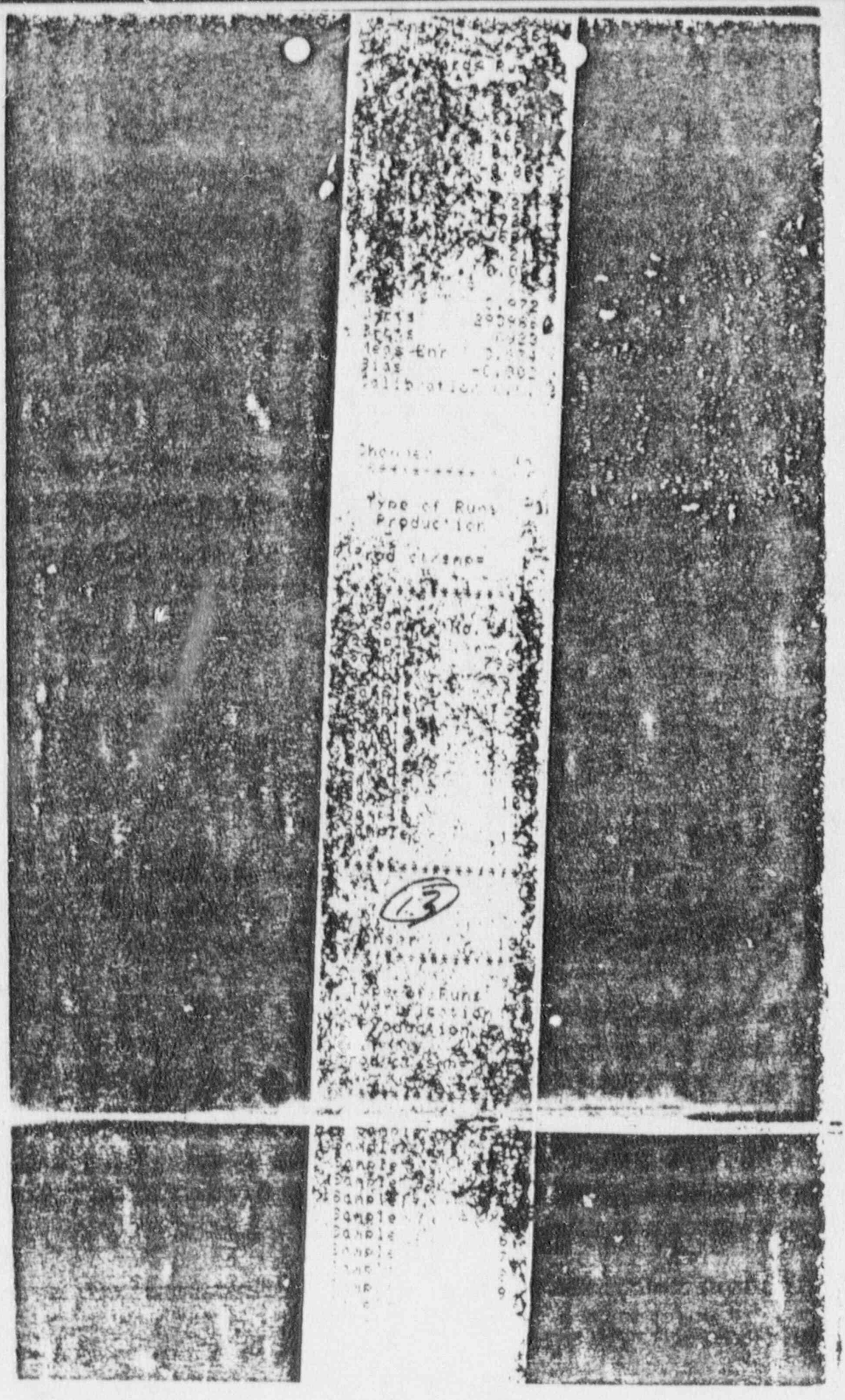


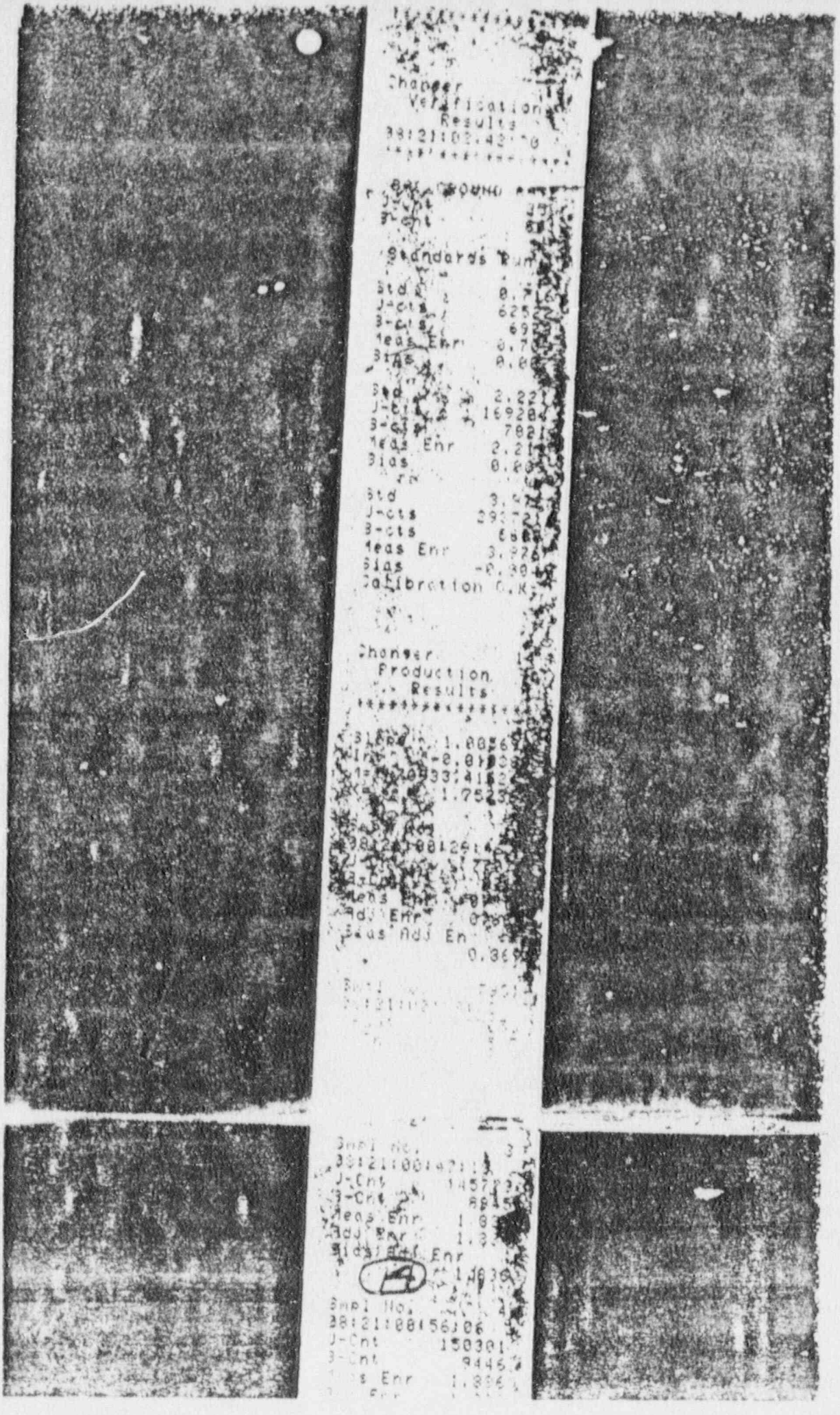
Verification
Results
881201151914
BACKGROUND RATE
J-Cnt 456
B-Cnt 311
Standard Run
Std 0.715
J-Cts 63036
B-Cts 394
Meas Enr 0.721
Bias -0.606
Std 2.219
J-Cts 170726
B-Cts 6562
Meas Enr 2.213
Bias 0.806
Std 3.986
J-Cts 296323
B-Cts 6251
Meas Enr 3.96
Bias 0.012
Calibration O.K.
Chamber 13
Production
Results
Slope 1.005440
Intc -0.005990
r= .71797.051497
r= 1.299165
Smpl No. 7794
881201141134
J-Cnt 83891
B-Cnt 6749
Meas Enr 0.949
Adj Enr 0.948
Bias Adj Enr 0.942
Smpl No. 7801
881201144126
J-Cnt 147810
B-Cnt 8489
Meas Enr 1.048
Adj Enr 1.050
Bias Adj Enr
(9)
Bias Adj Enr
2.857
Smpl No. 7841
881201144408
J-Cnt 308813
B-Cnt 8602
Meas Enr 3.969
Adj Enr 3.965
Bias Adj Enr
0.993
Smpl No. 7851

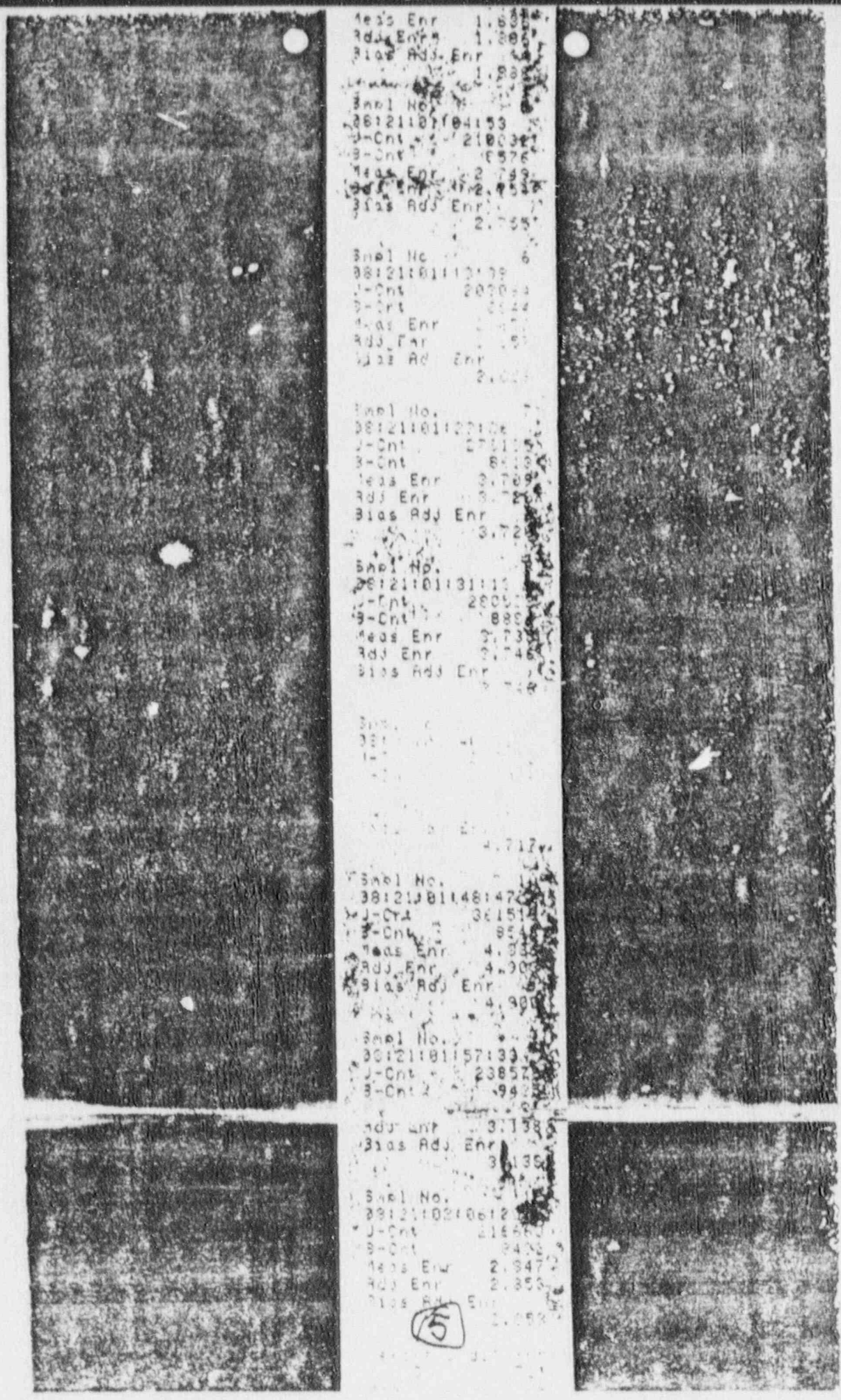









Changer
Verification
Results
Changer
Production
Results



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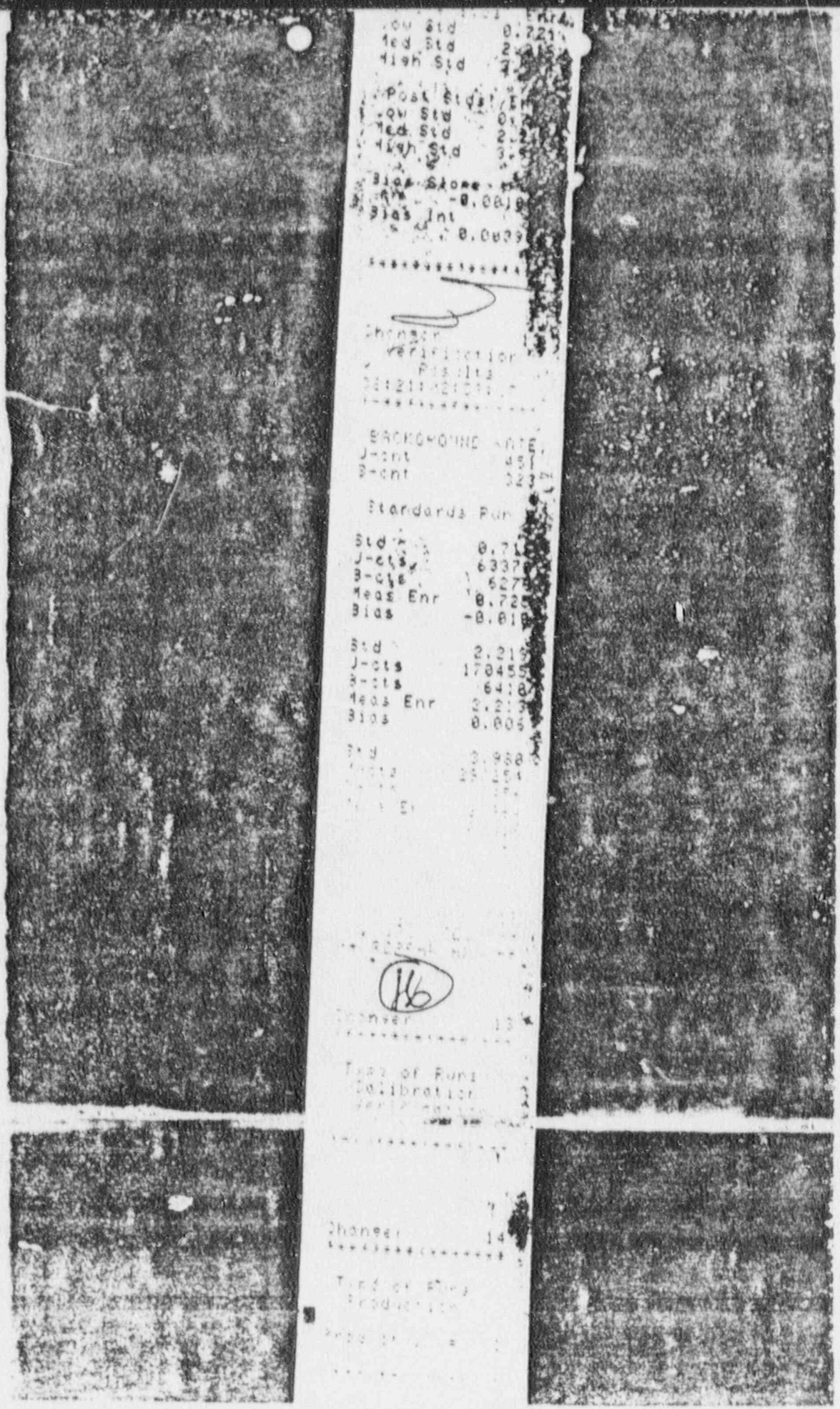
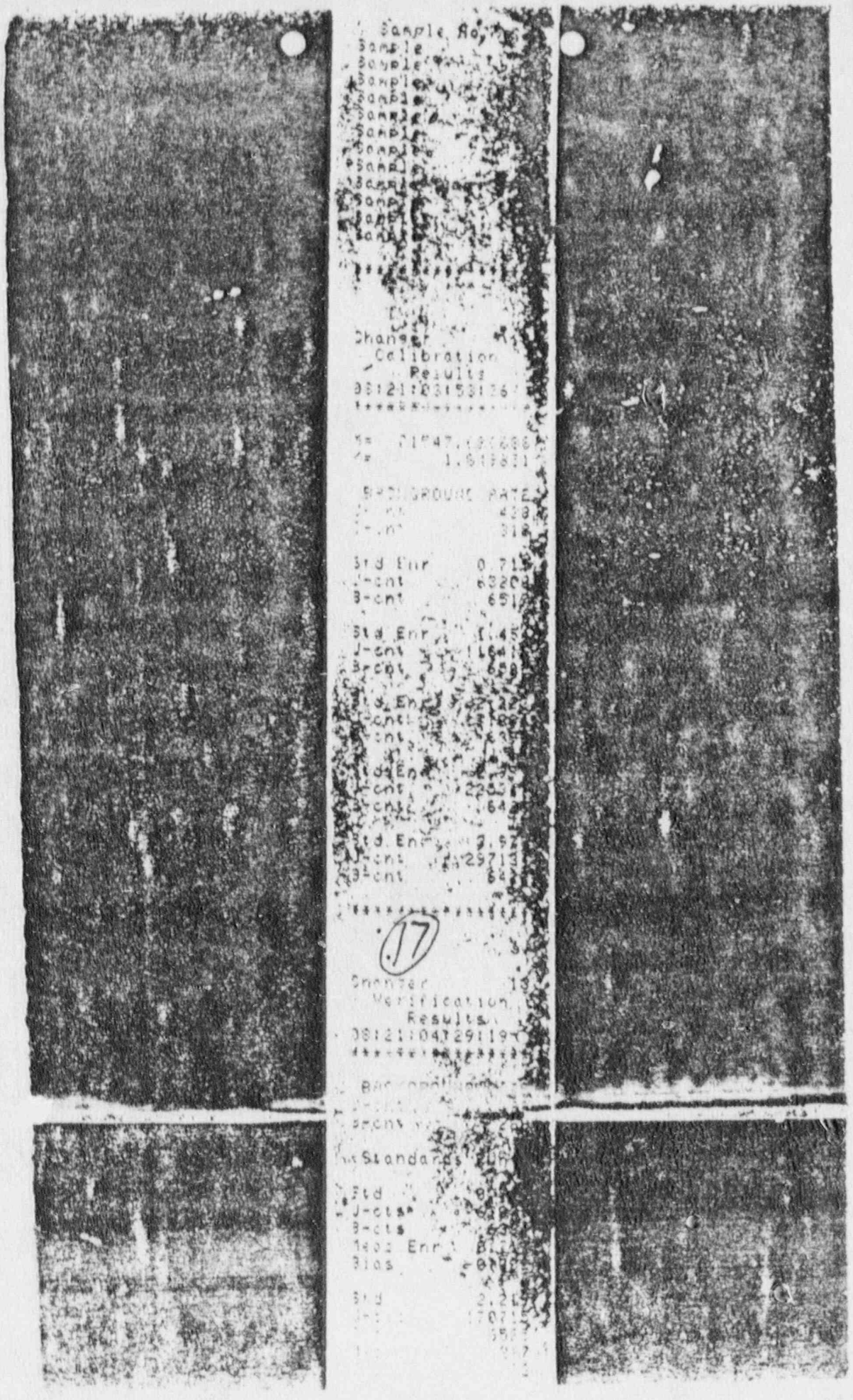
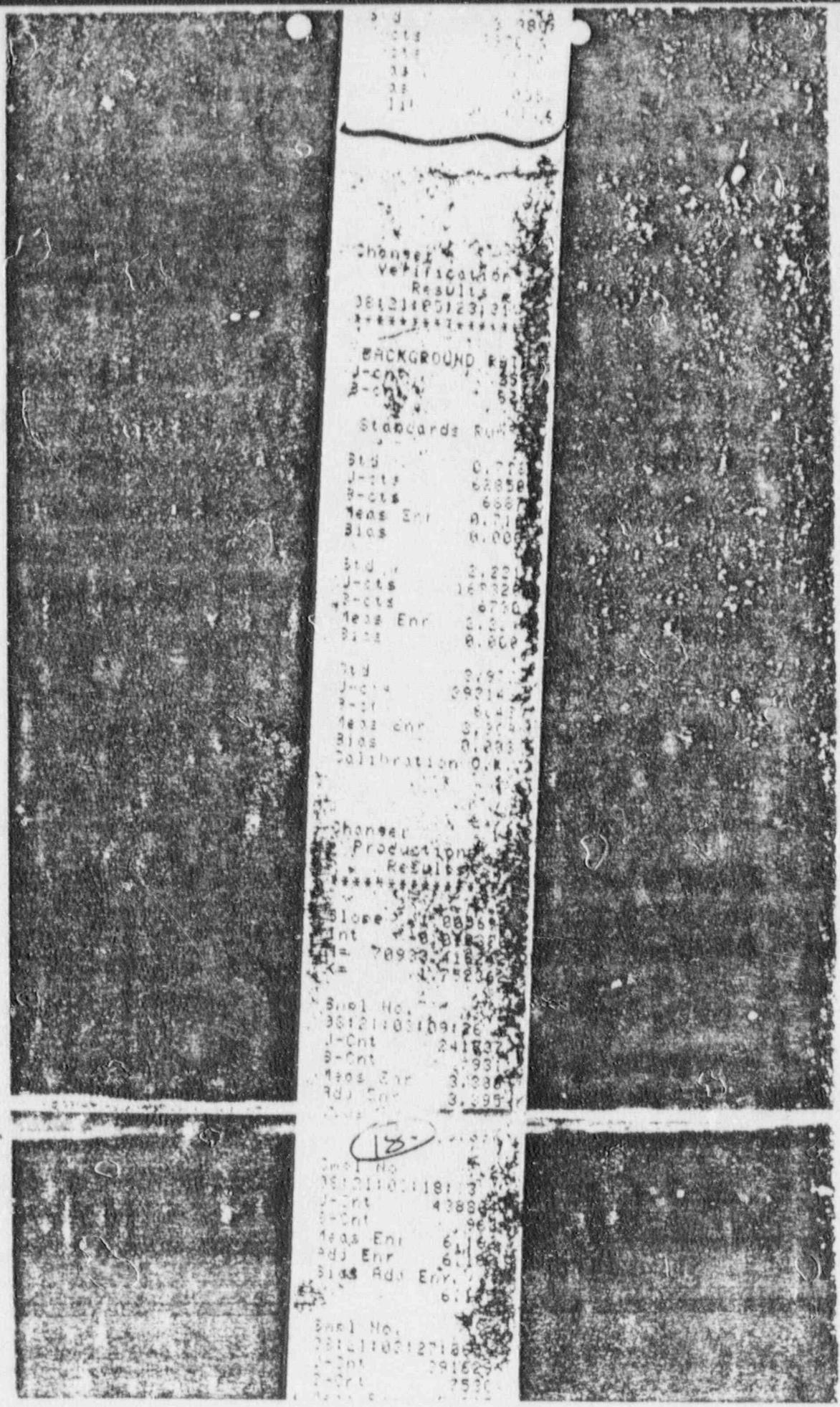
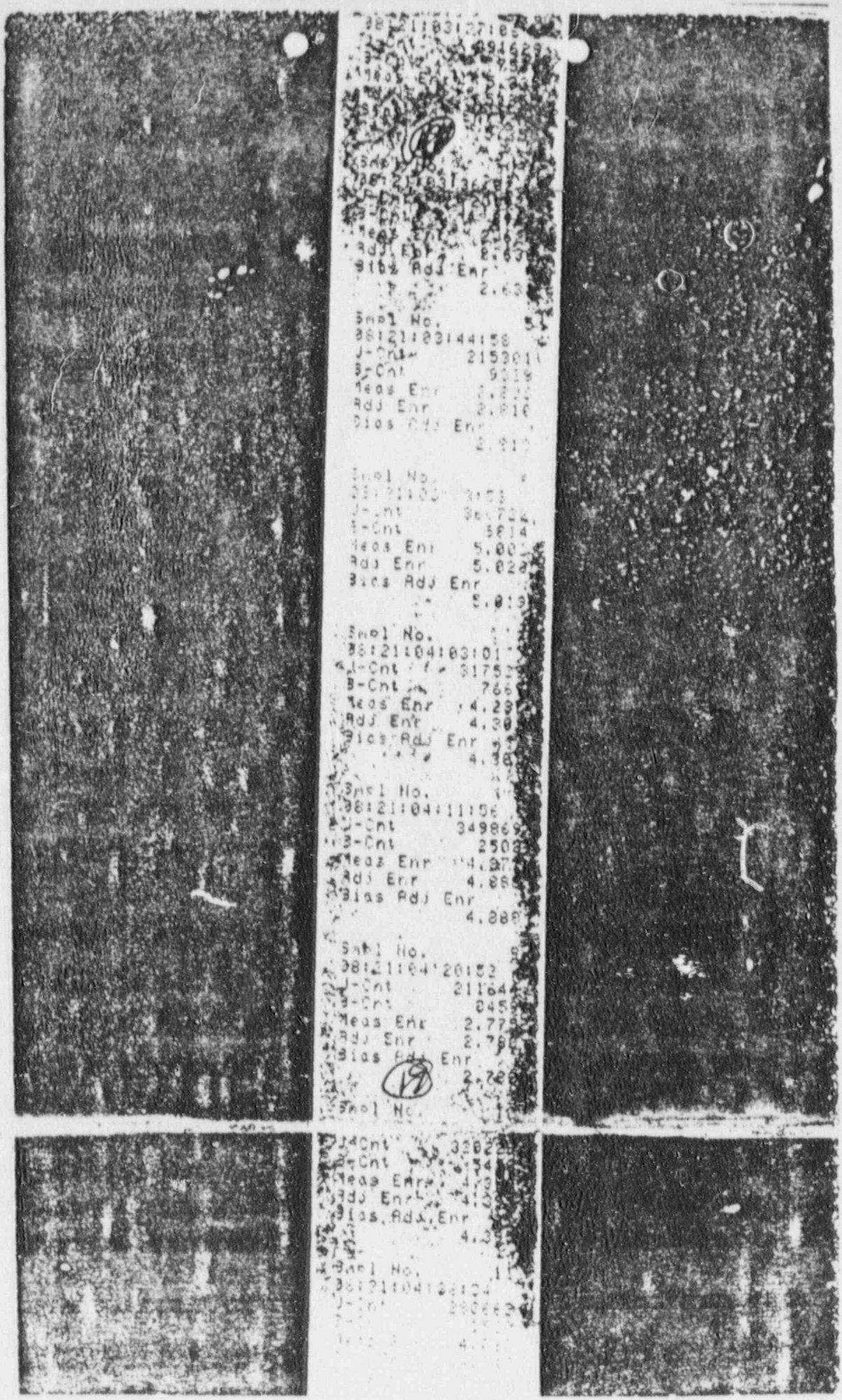


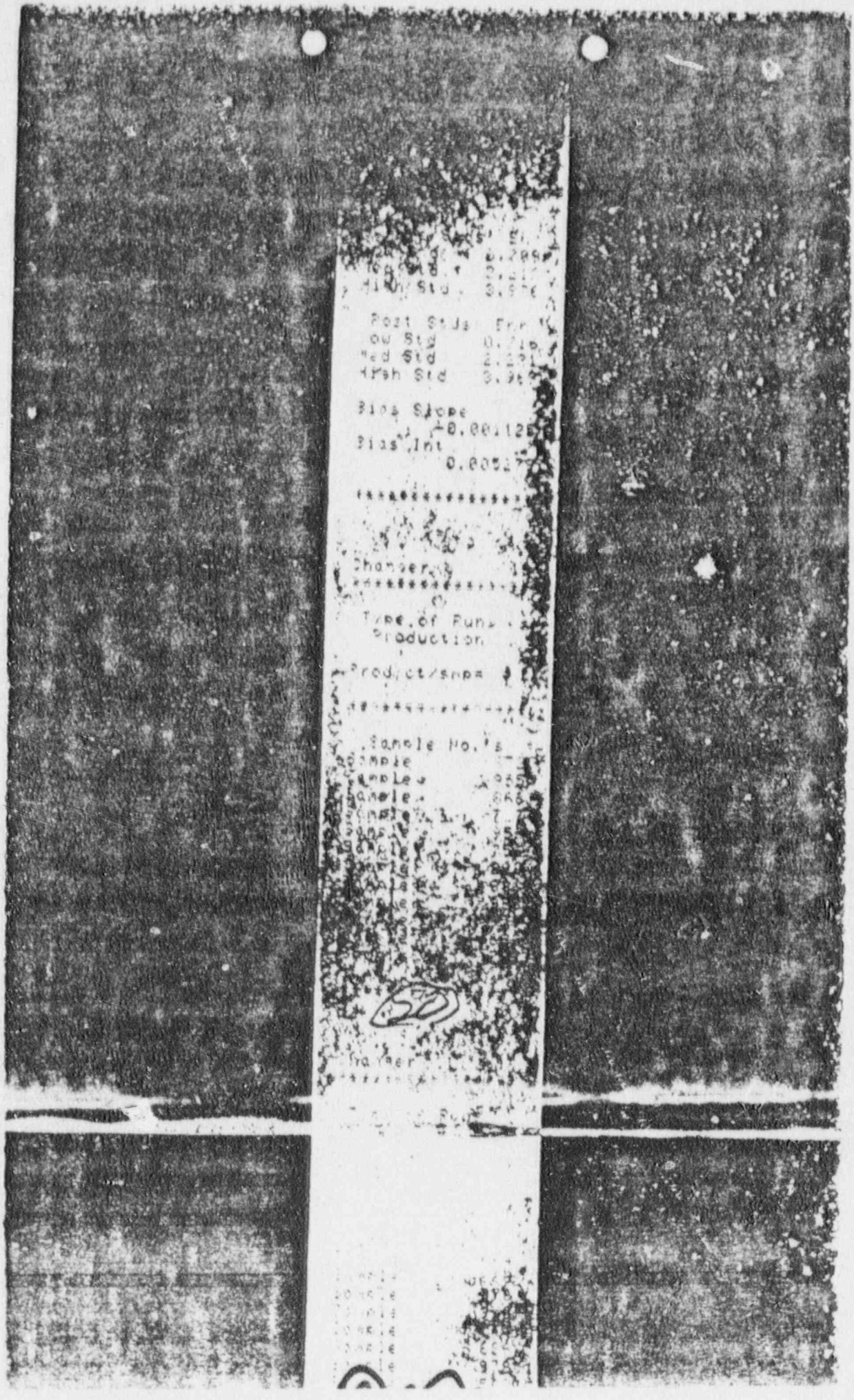


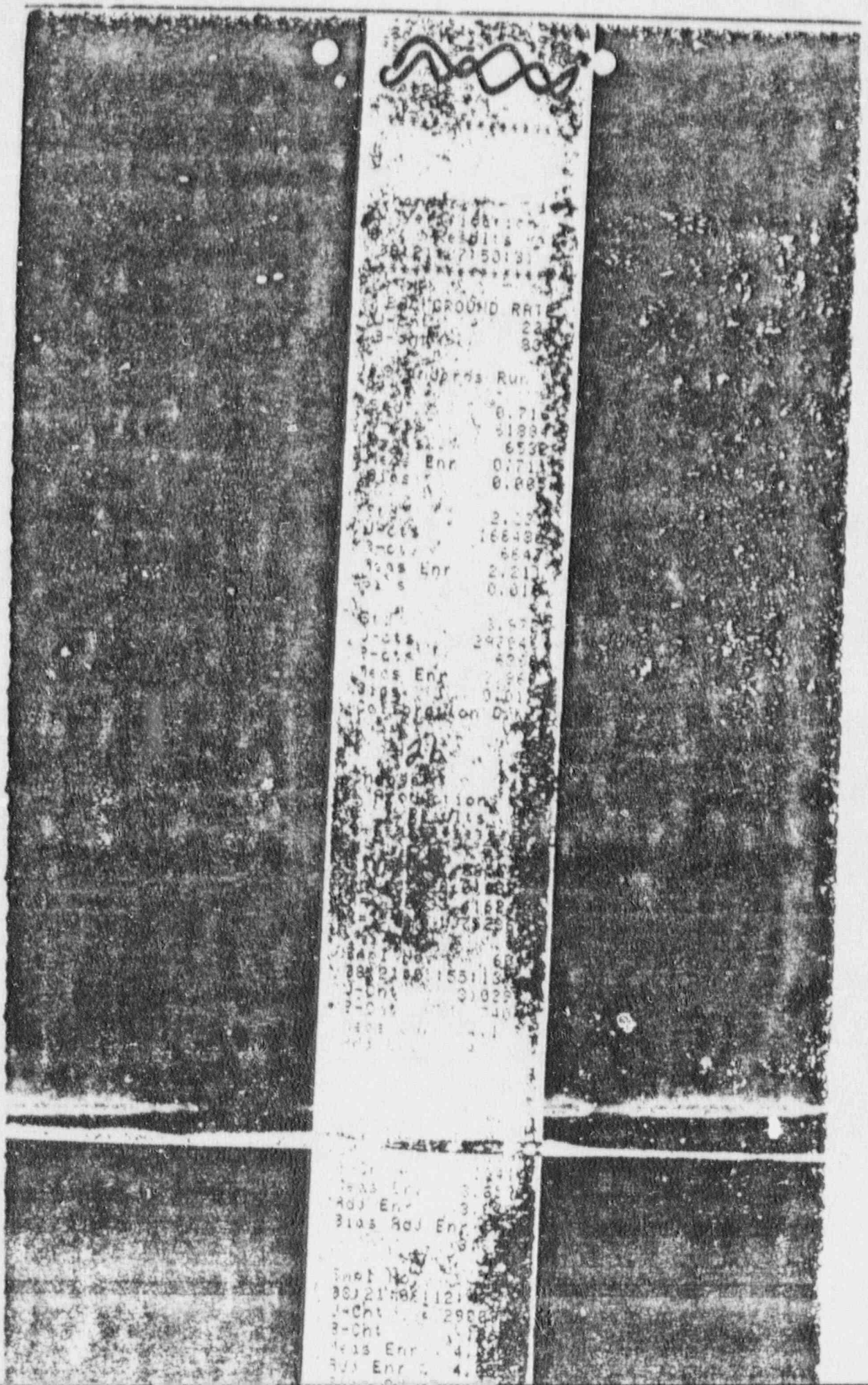


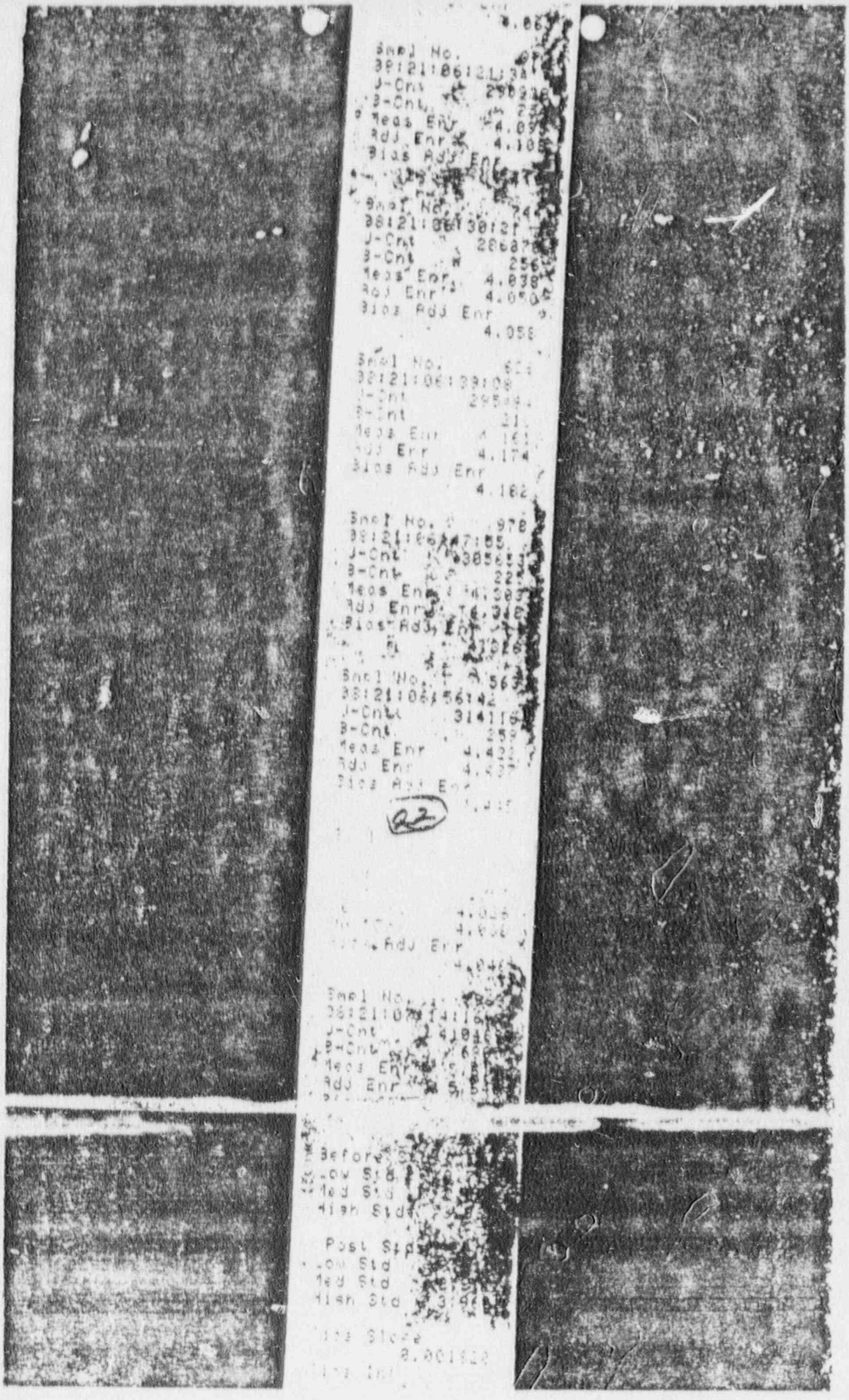
Changer
Verification
Results
08:21:00 23:21
BACKGROUND RUN
J-cnts
B-cnts
Standards Run
Std
J-cts
B-cts
Meas Enr
Bias
Std
J-cts
B-cts
Meas Enr
Bias
Std
J-cts
B-cts
Meas Enr
Bias
Calibration O.K.
Changer
Production
Results
Vial No.
08:21:00 09:26
J-Cnt
B-Cnt
Meas Enr
Adj Enr
Vial No.
08:21:00 11:18
J-Cnt
B-Cnt
Meas Enr
Adj Enr
Bias Adj Enr
Vial No.
08:21:00 12:18
J-Cnt
B-Cnt

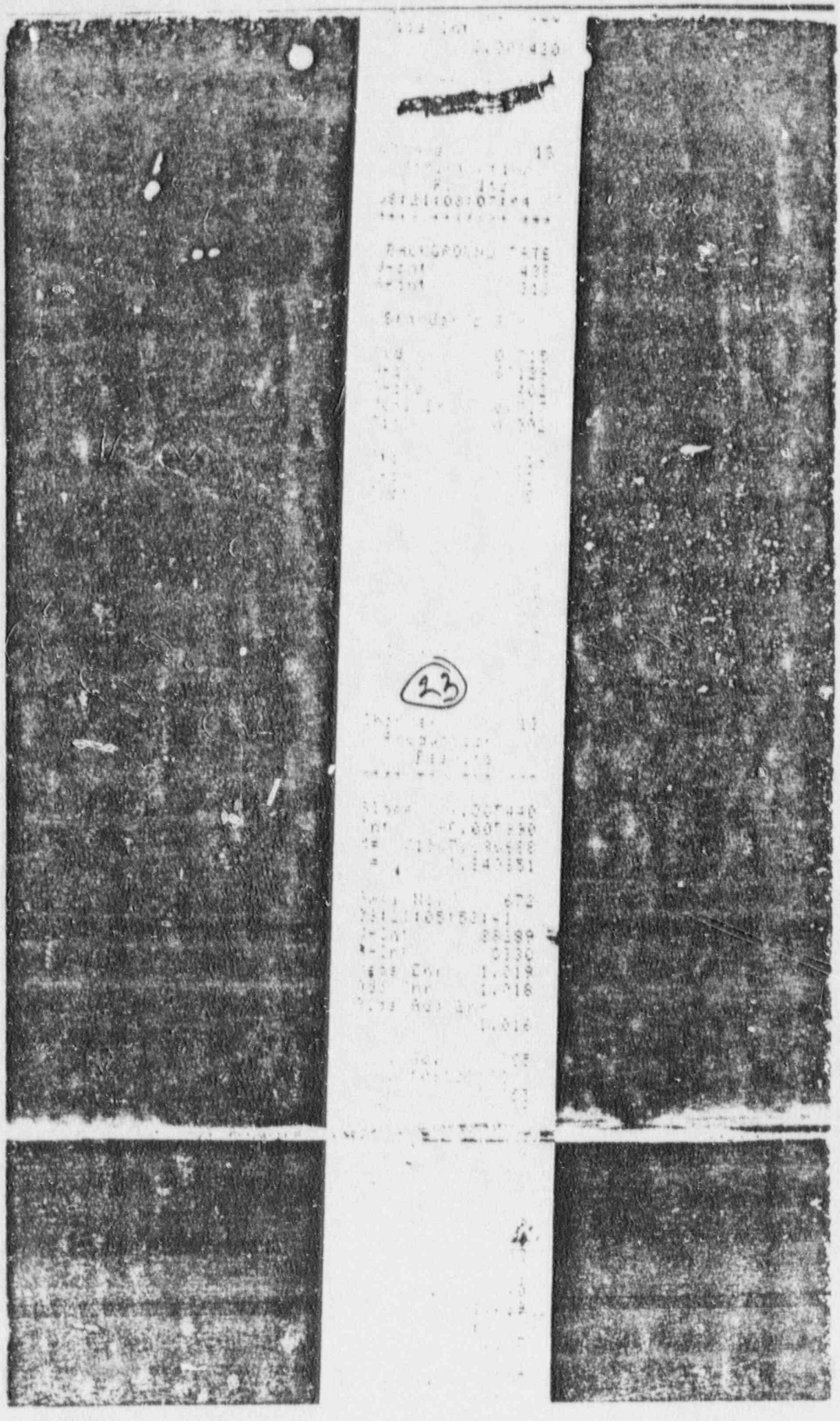
(18)

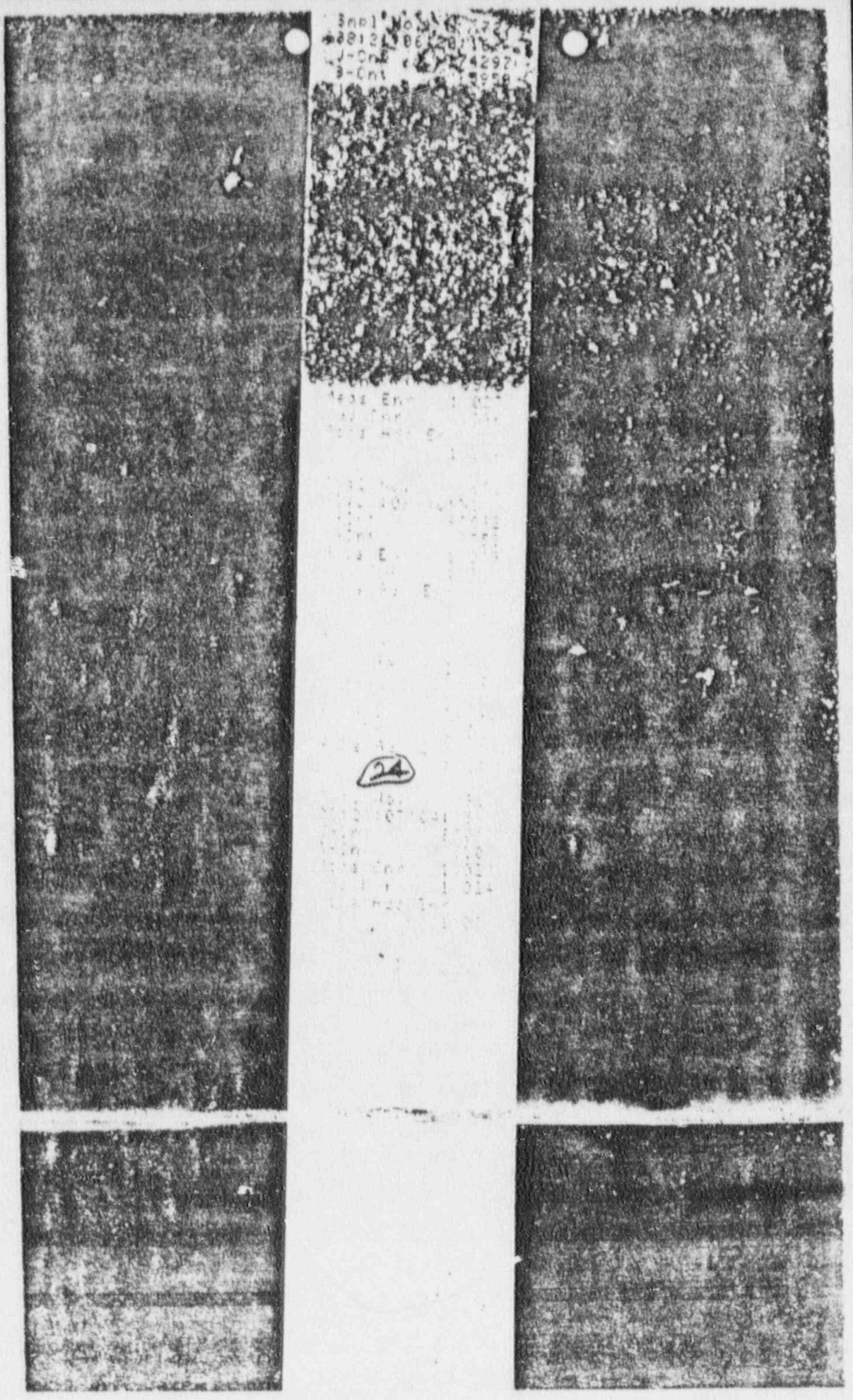


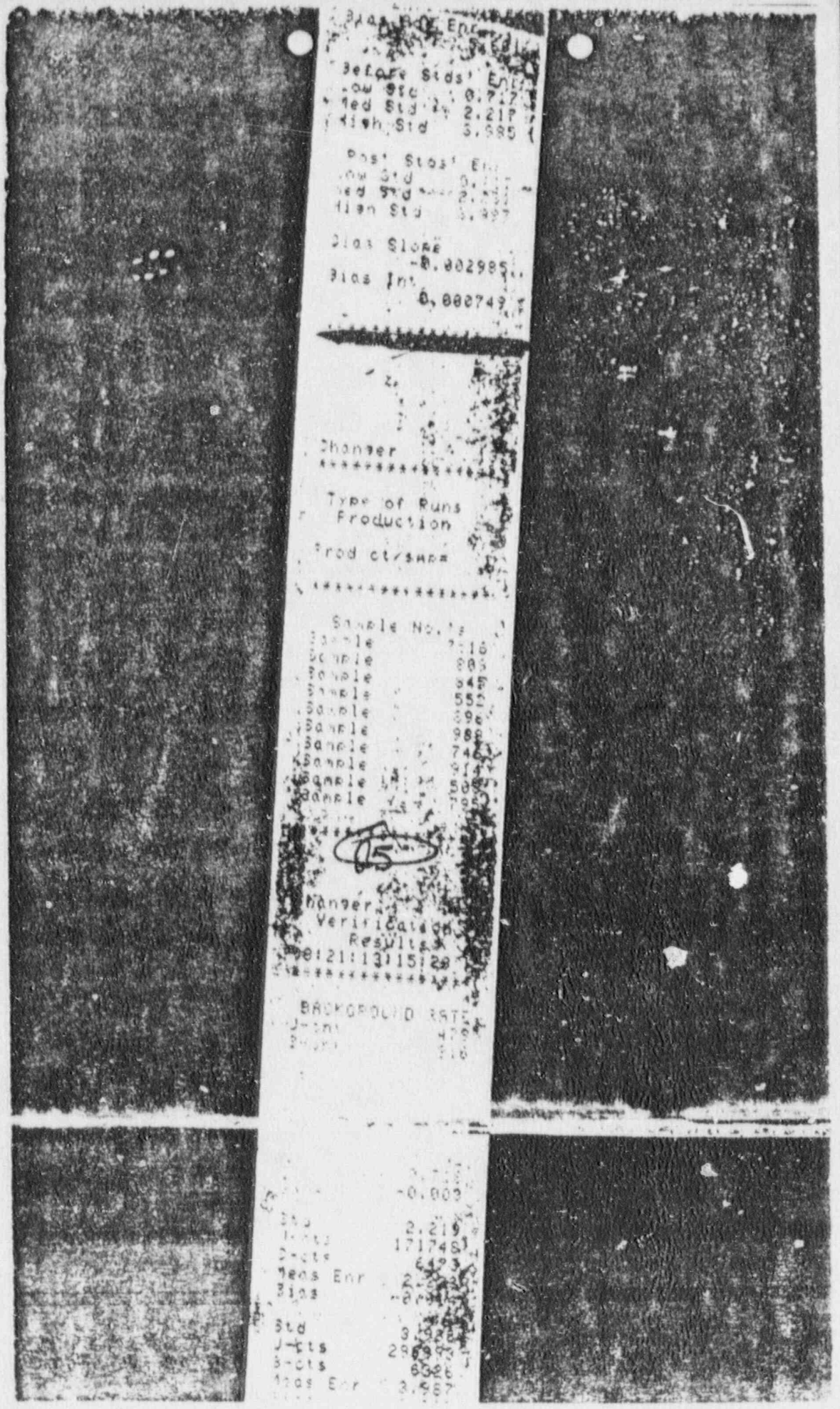


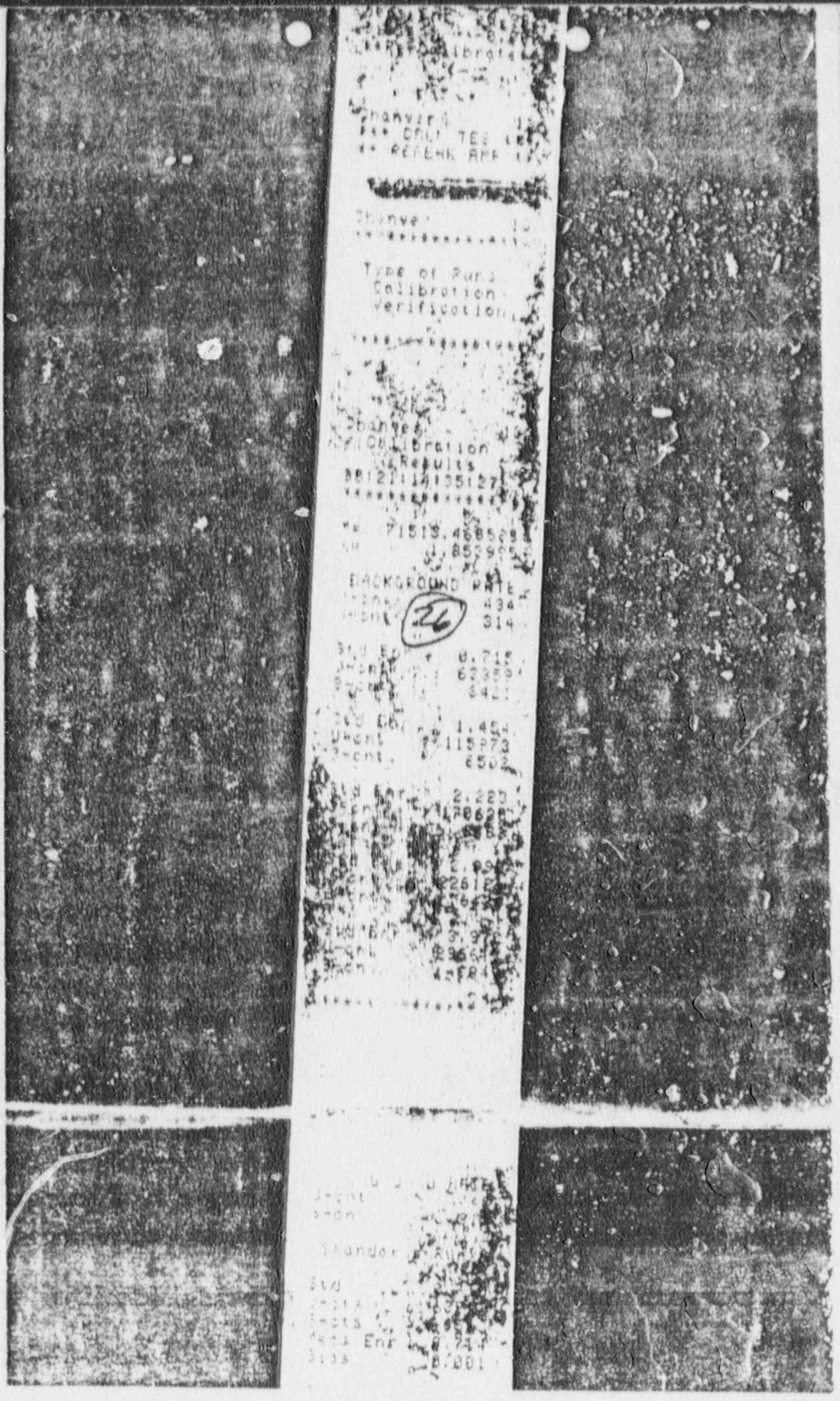


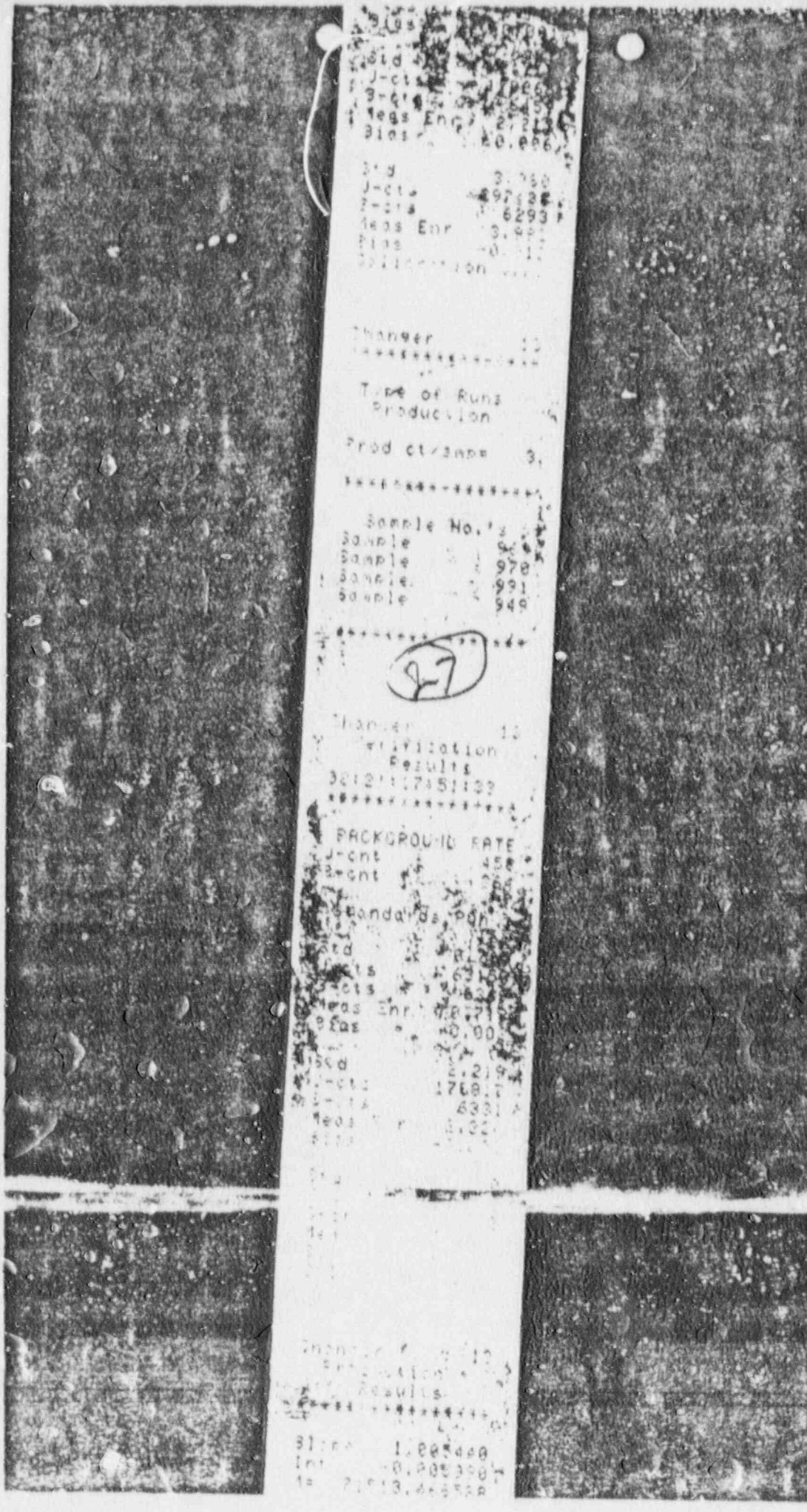


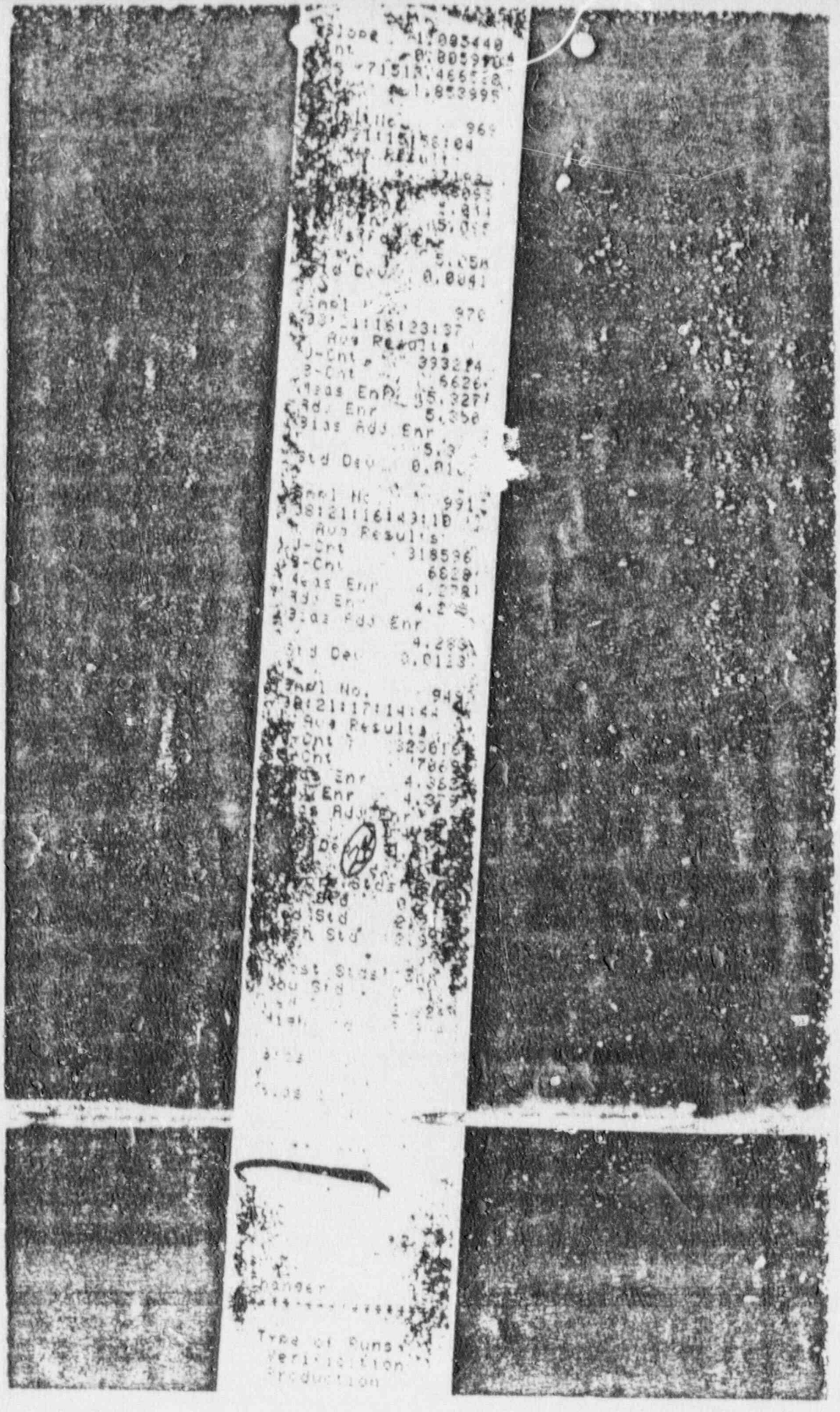


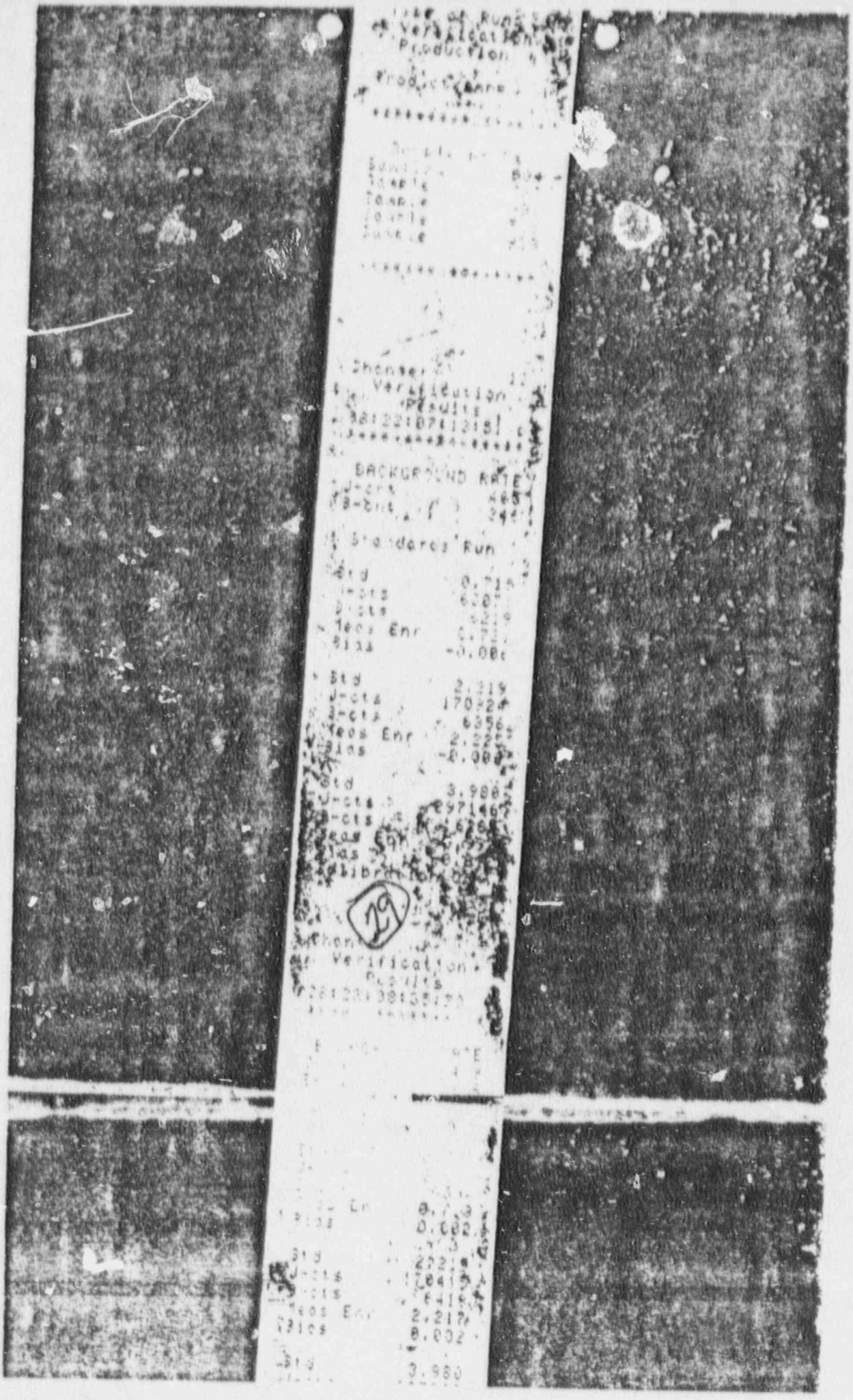


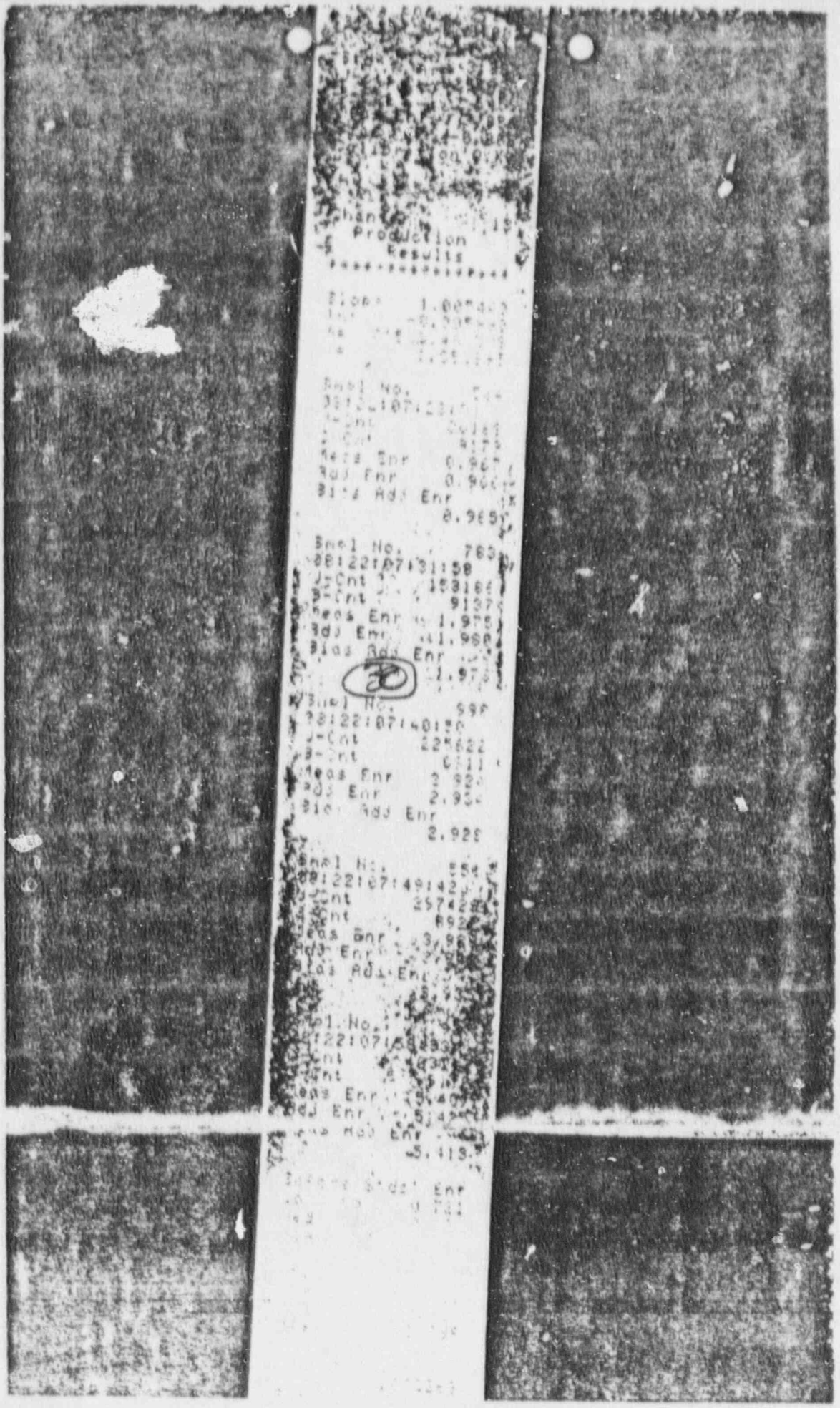


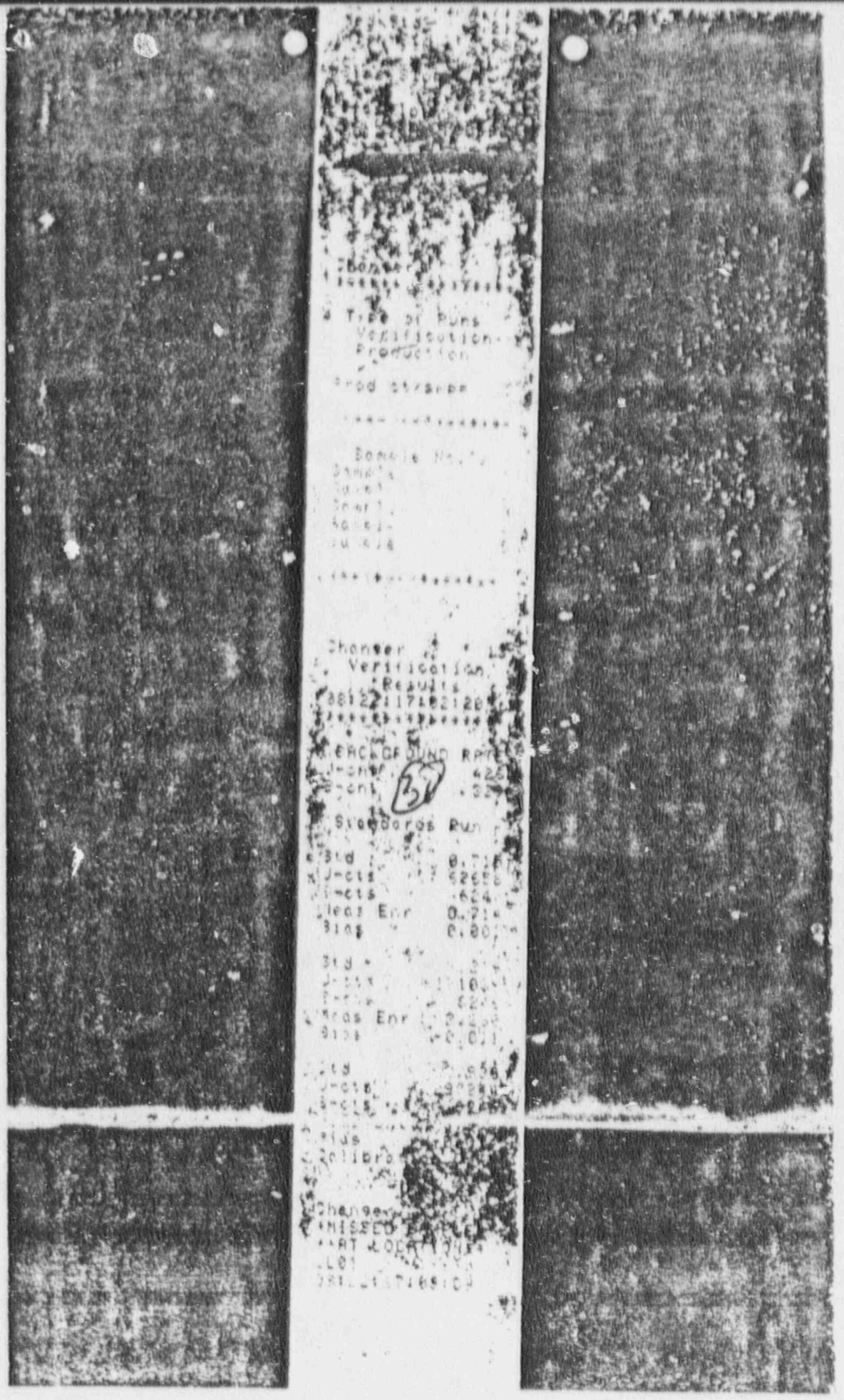


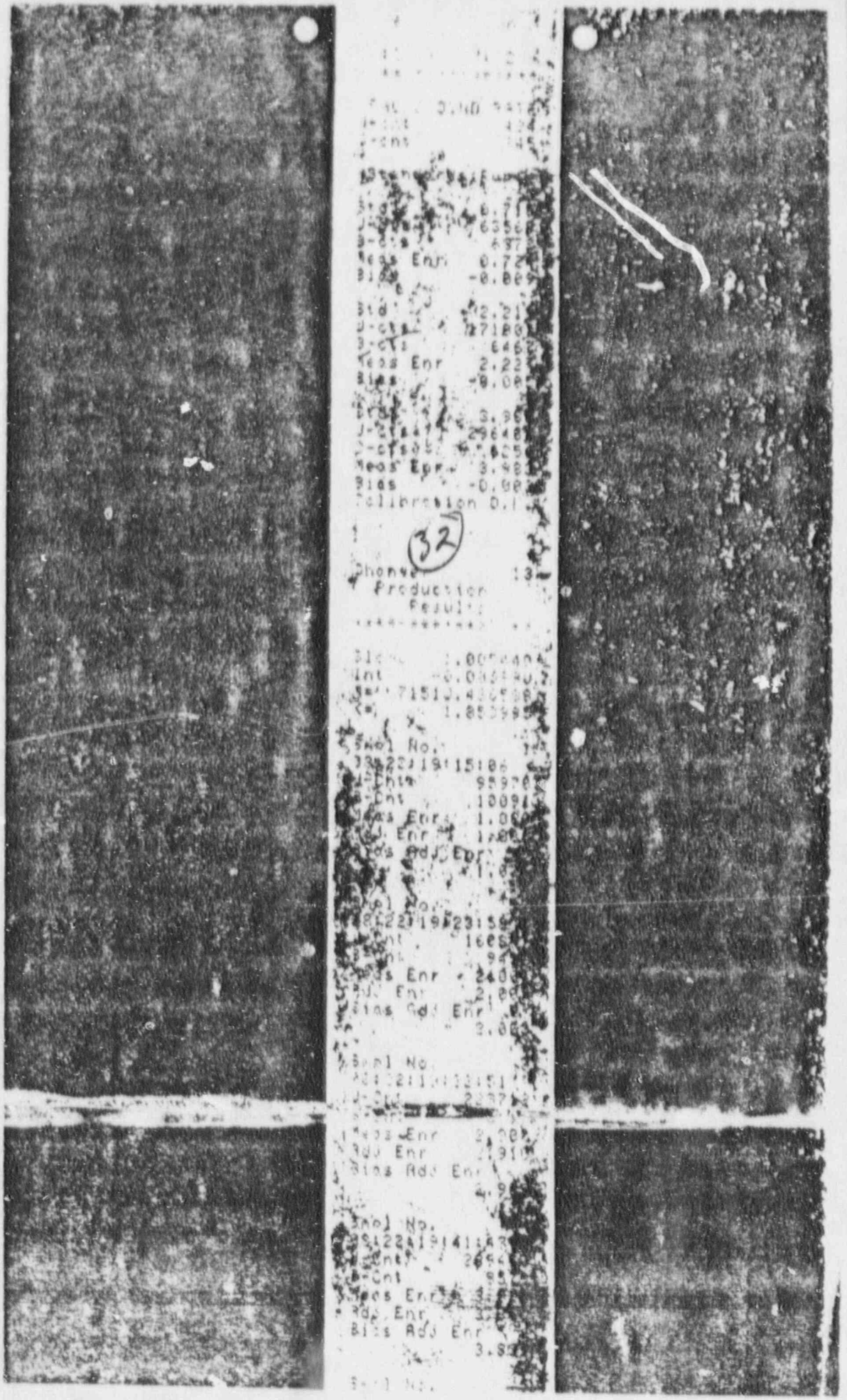


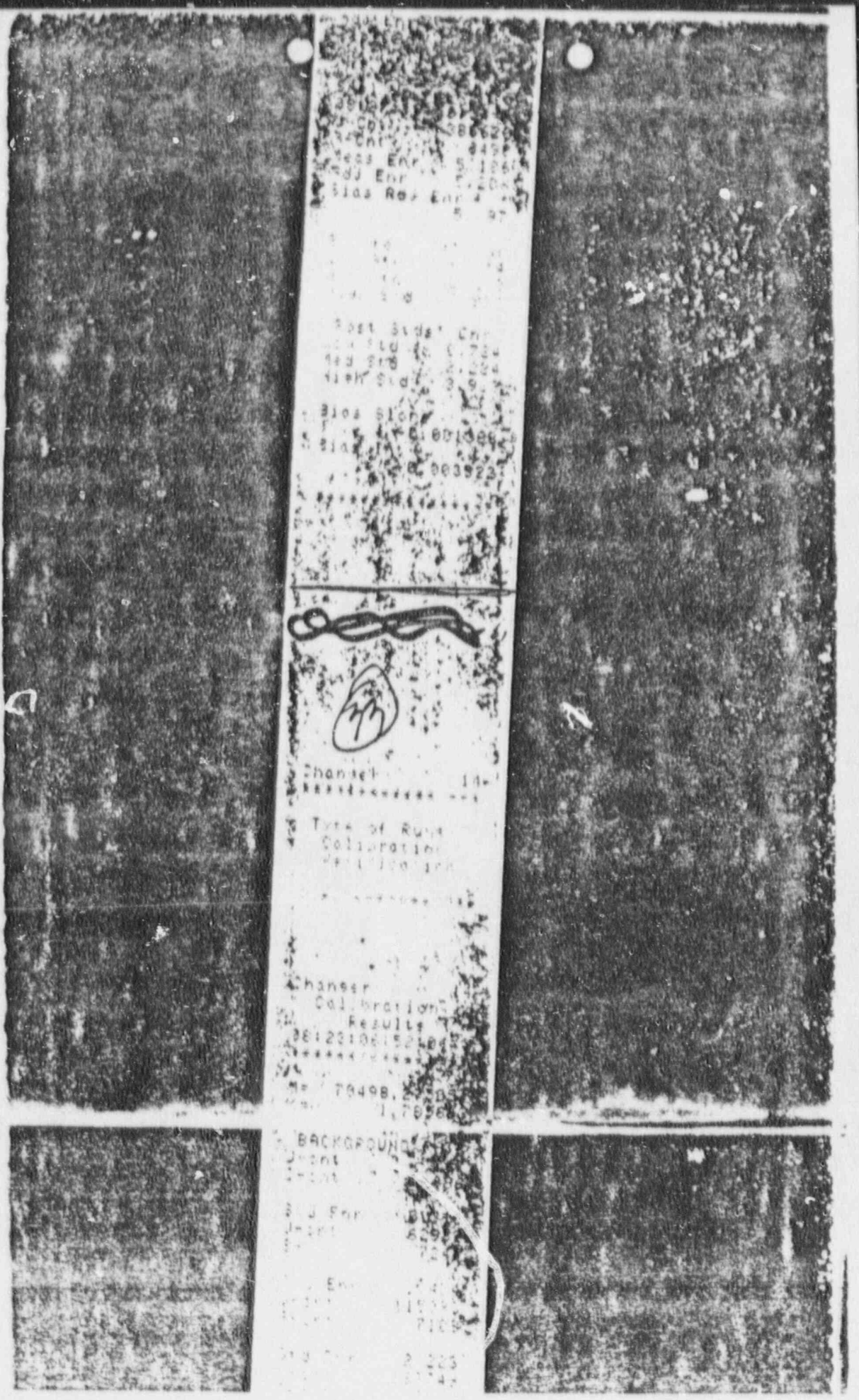


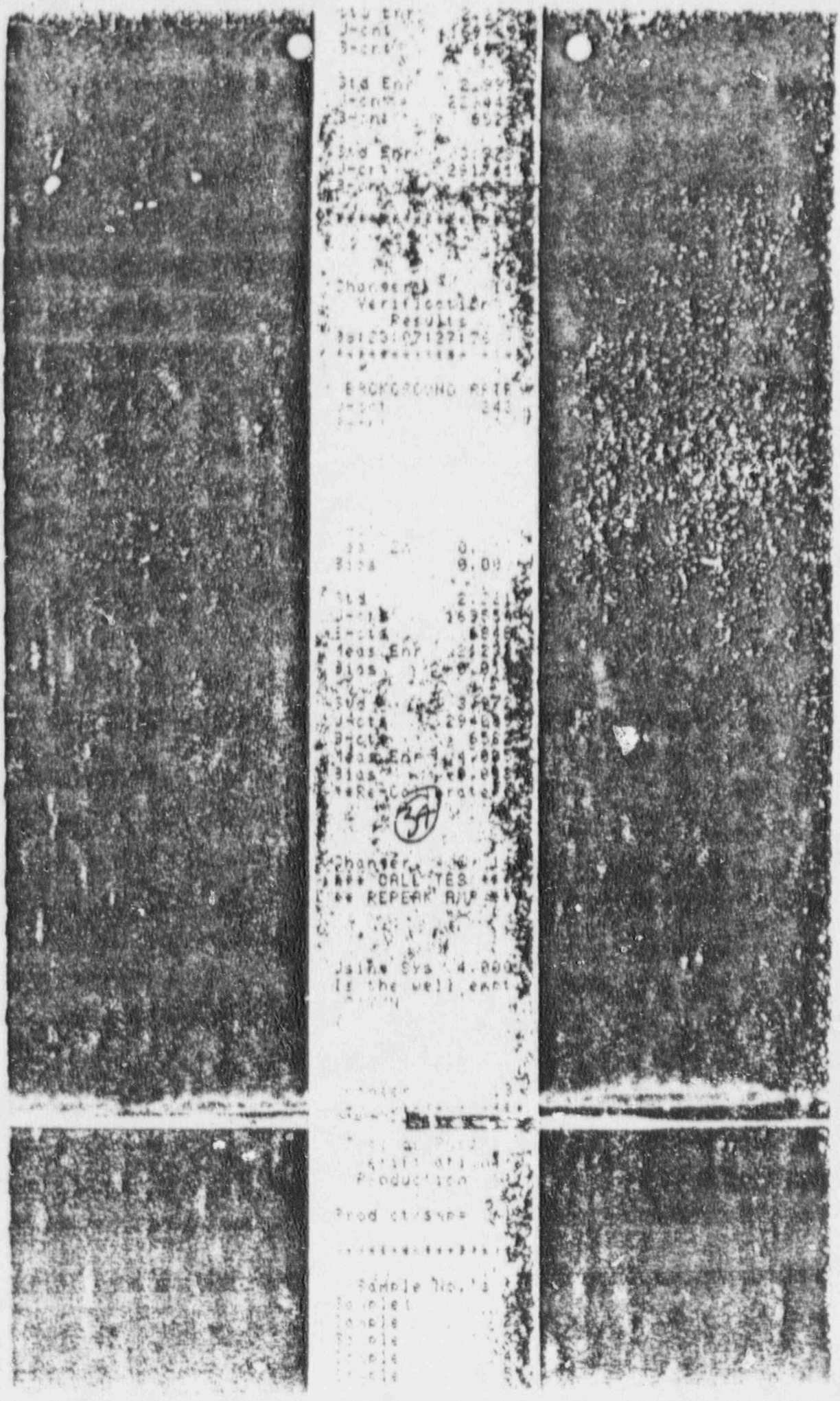


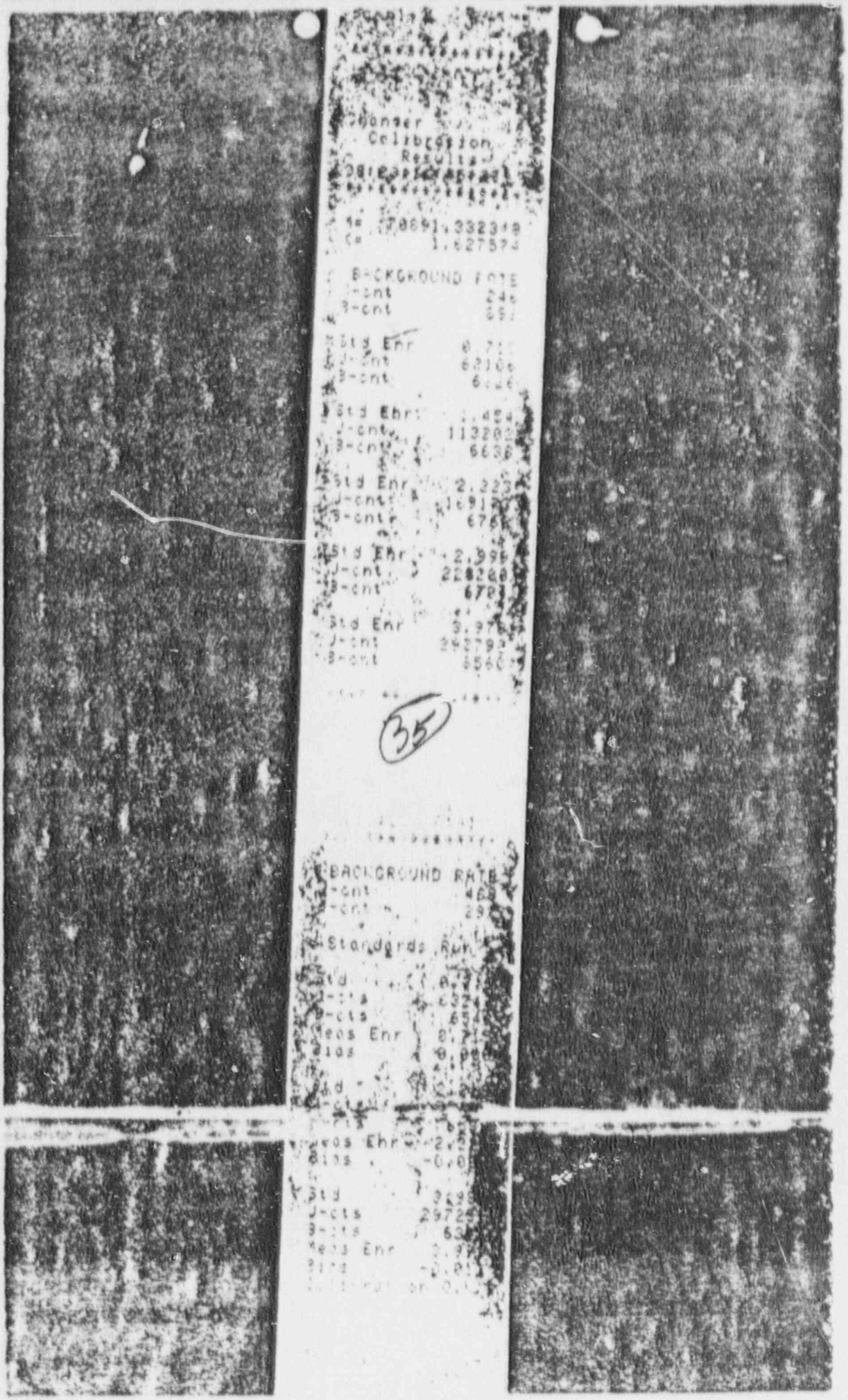


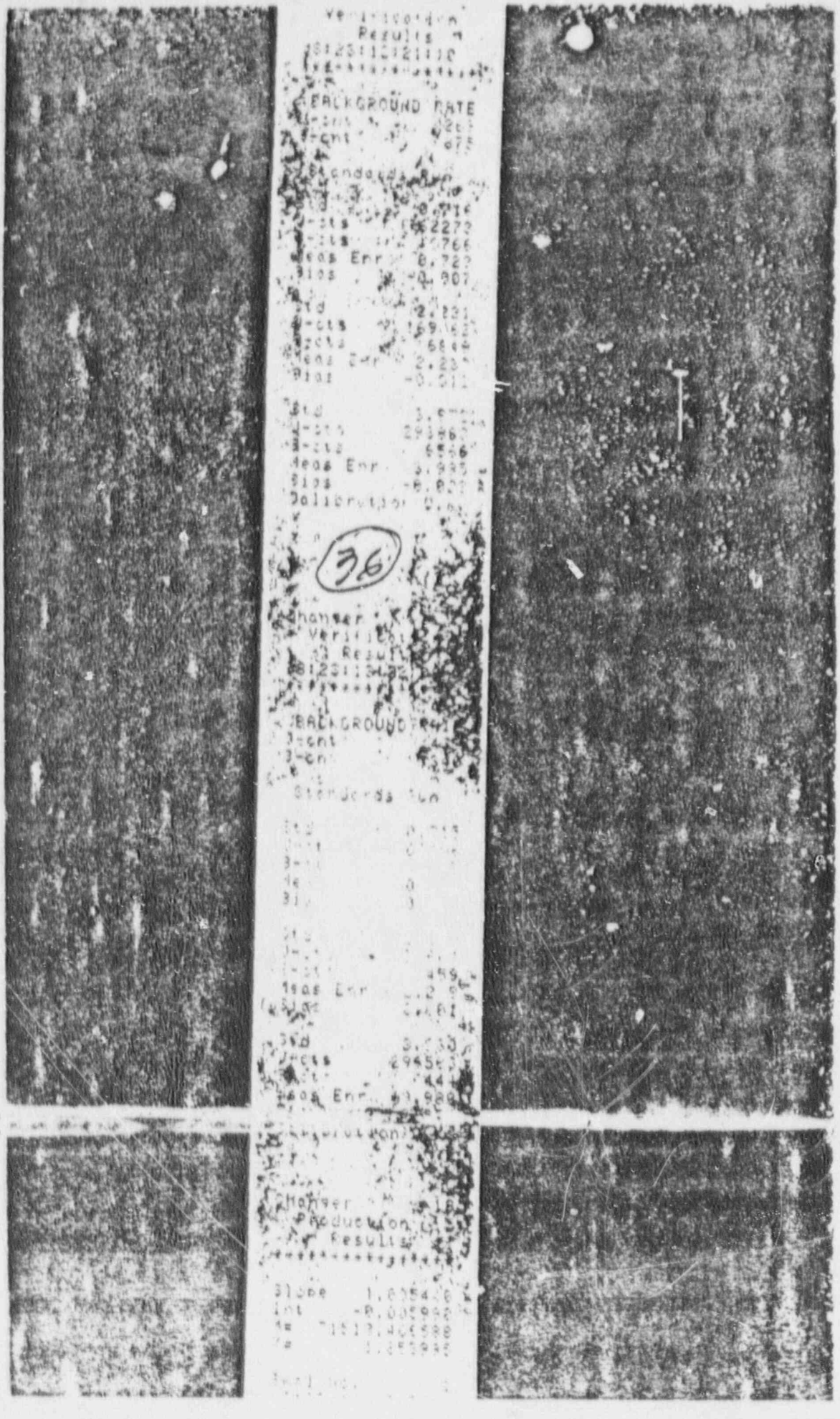


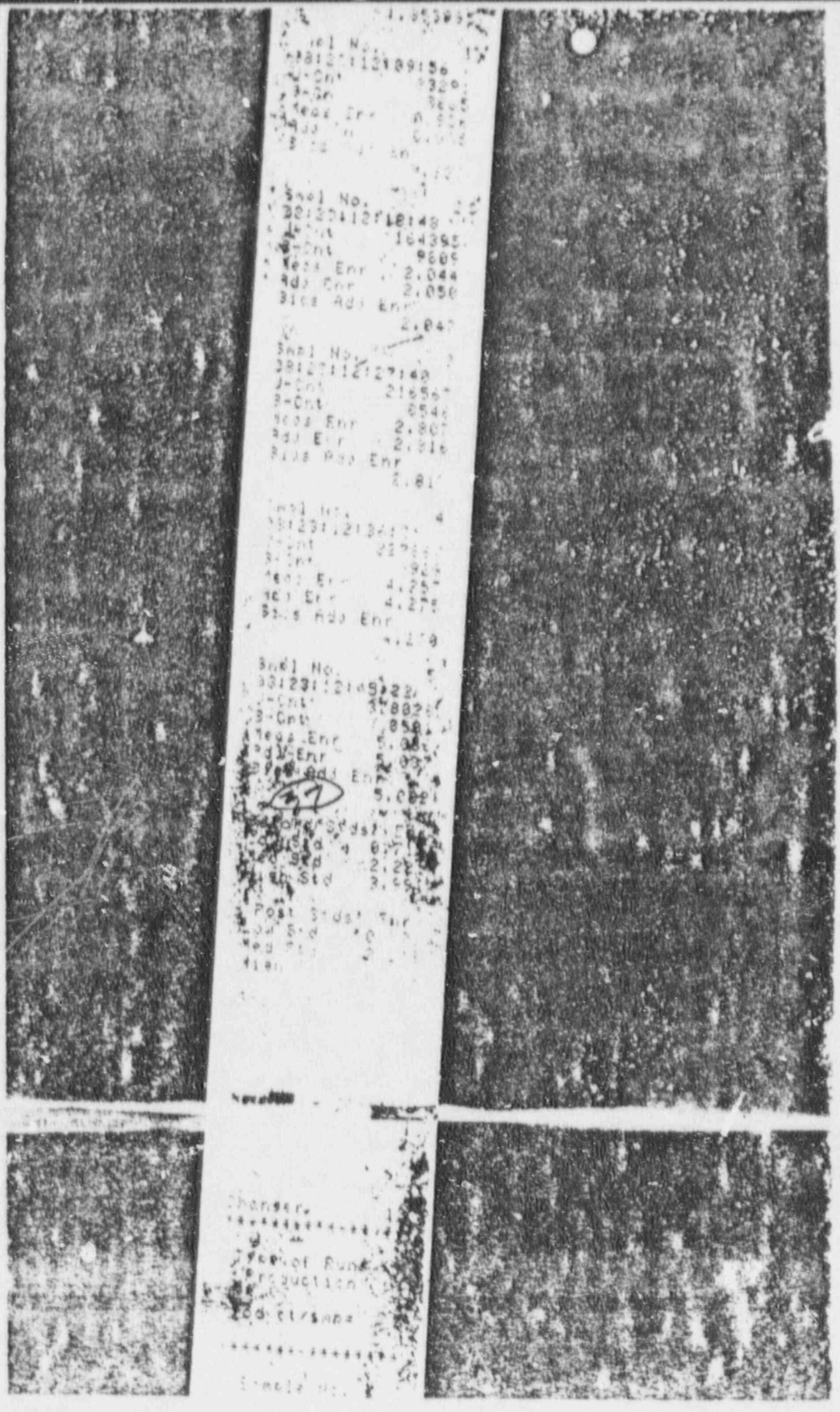


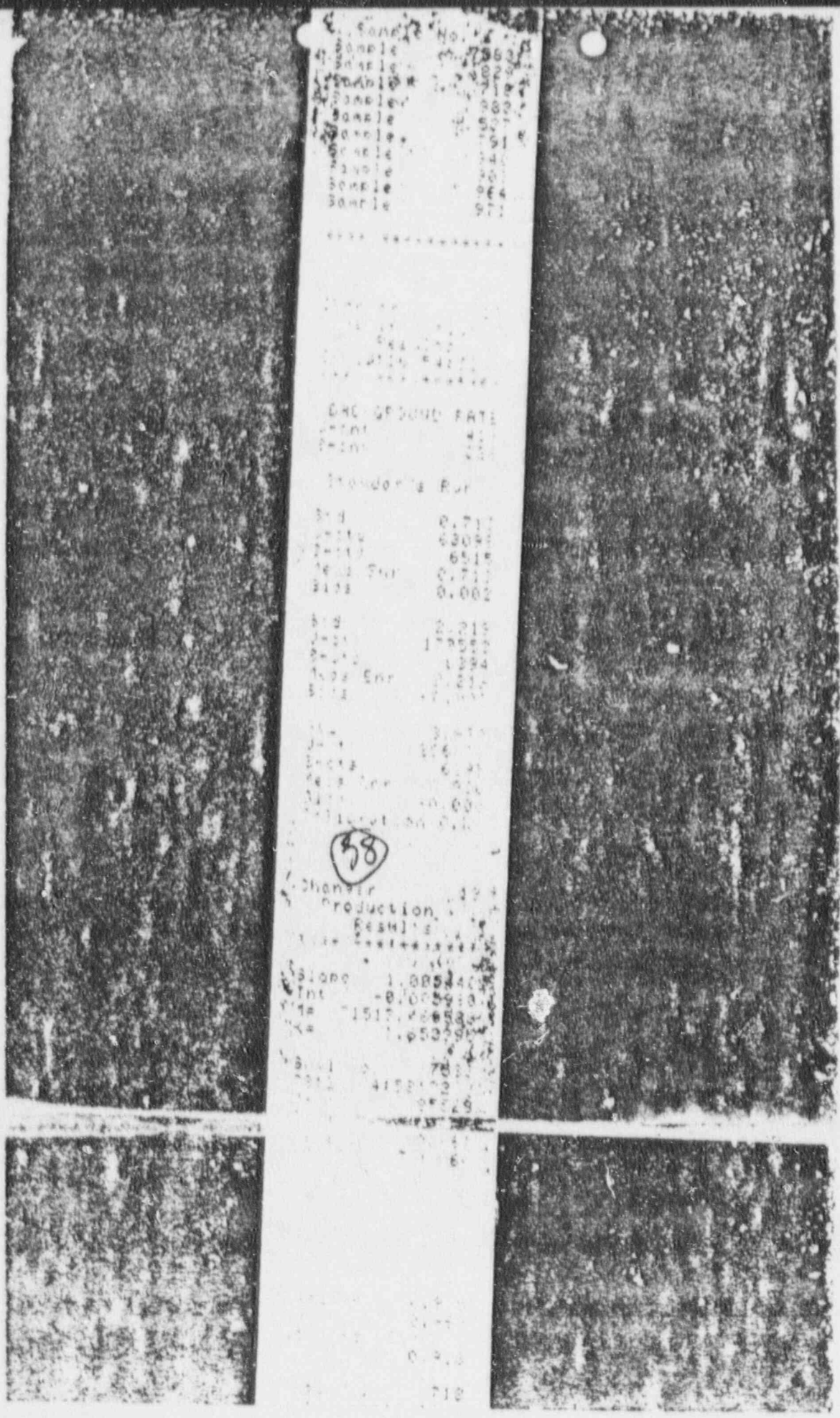


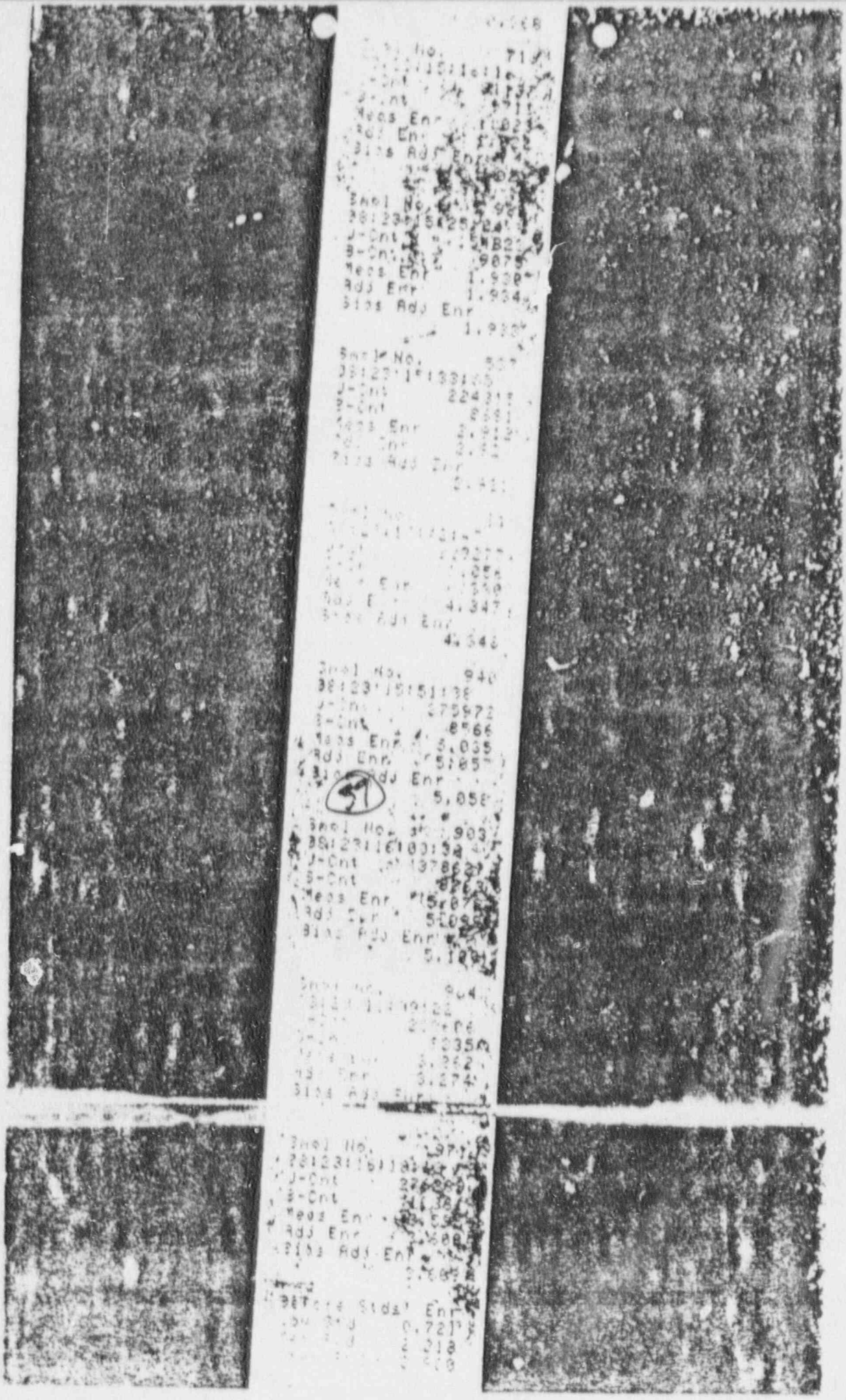












Mixed Std 2.219
High Std

Chinger
****

Type of Runs
Production

Prod Change

****

Sample No.'s
Sample
Sample
Sample
Sample
Sample
Sample
Sample
Sample
Sample
Sample

Press RUN TO EXECUTE

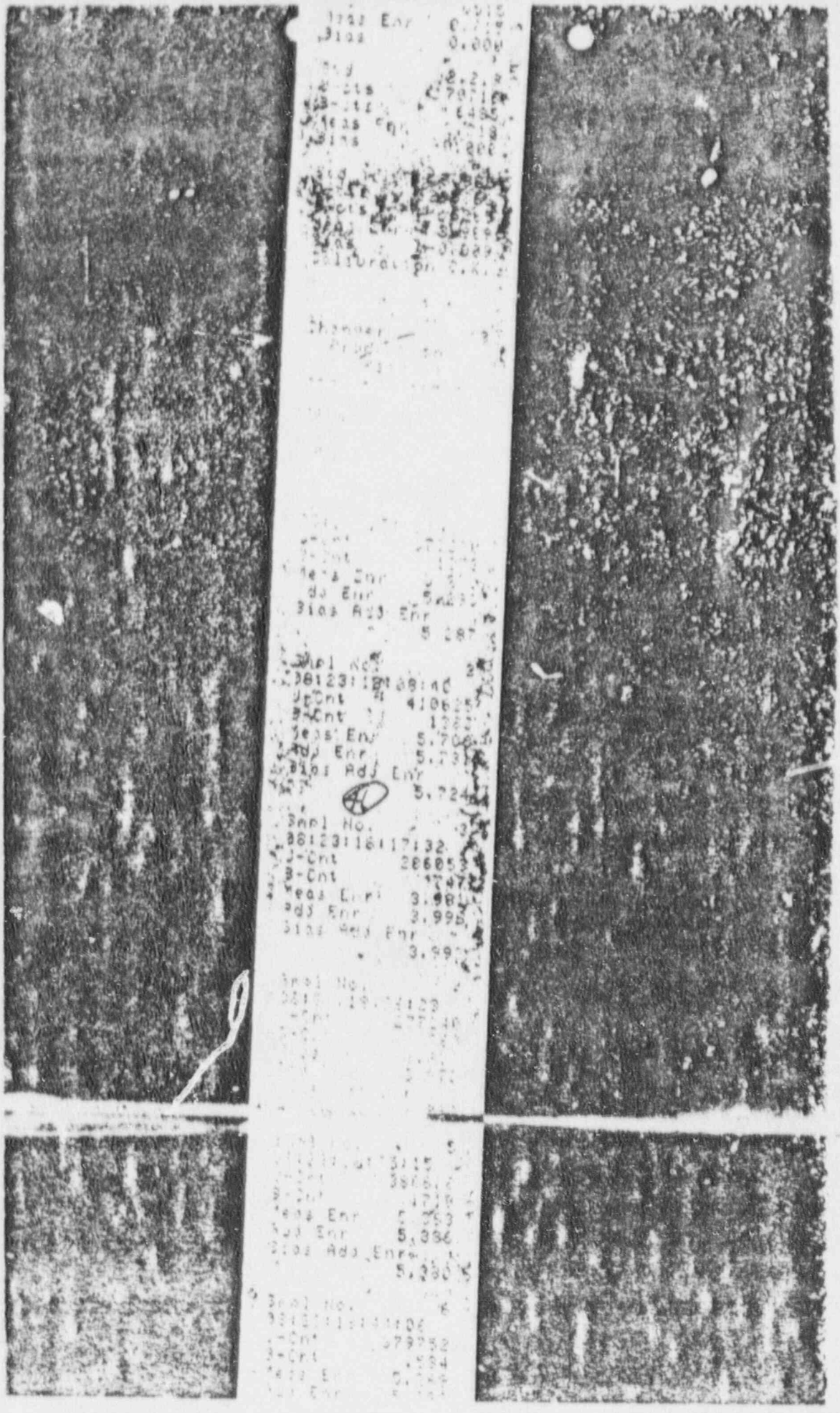
****

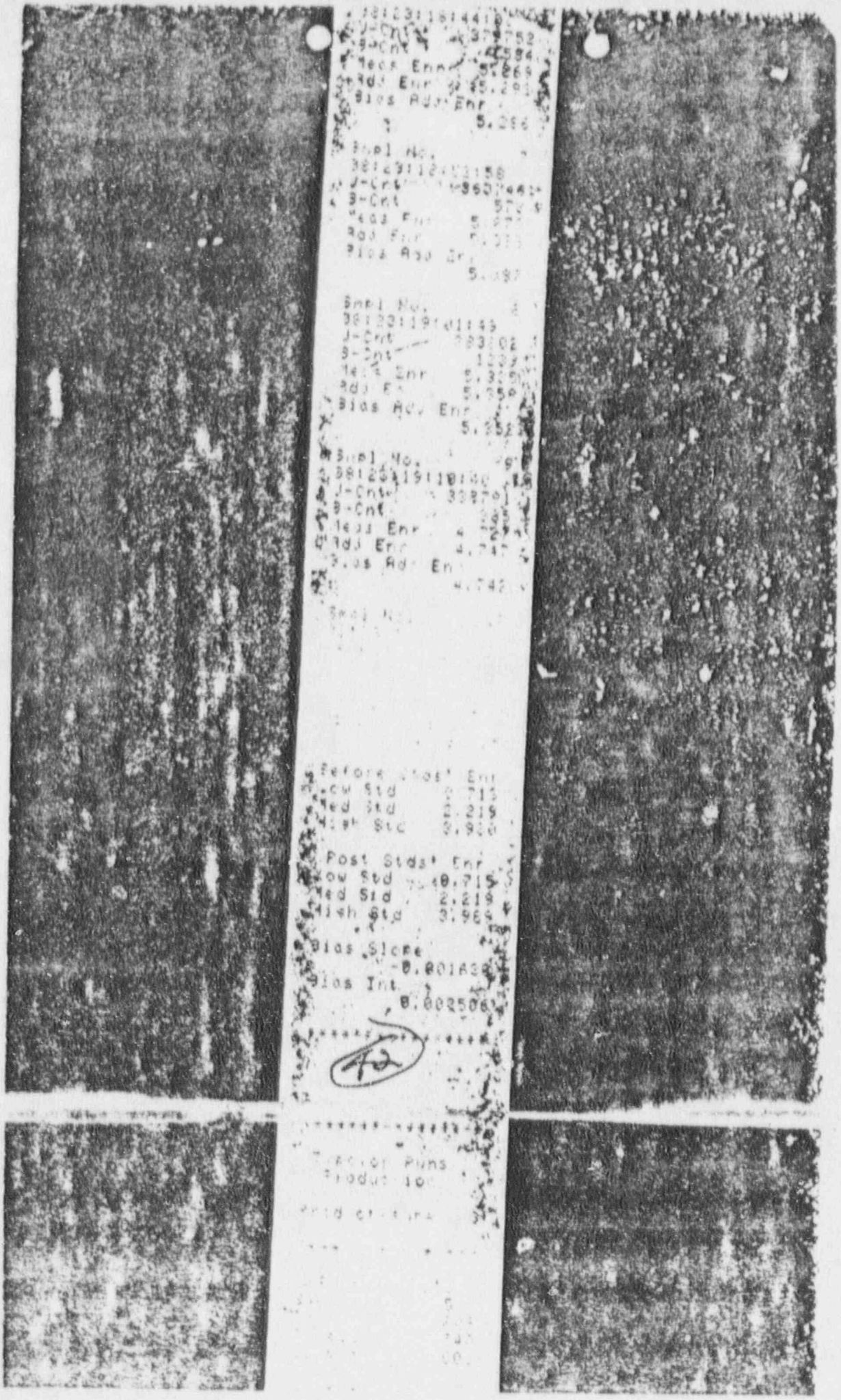
(A0)

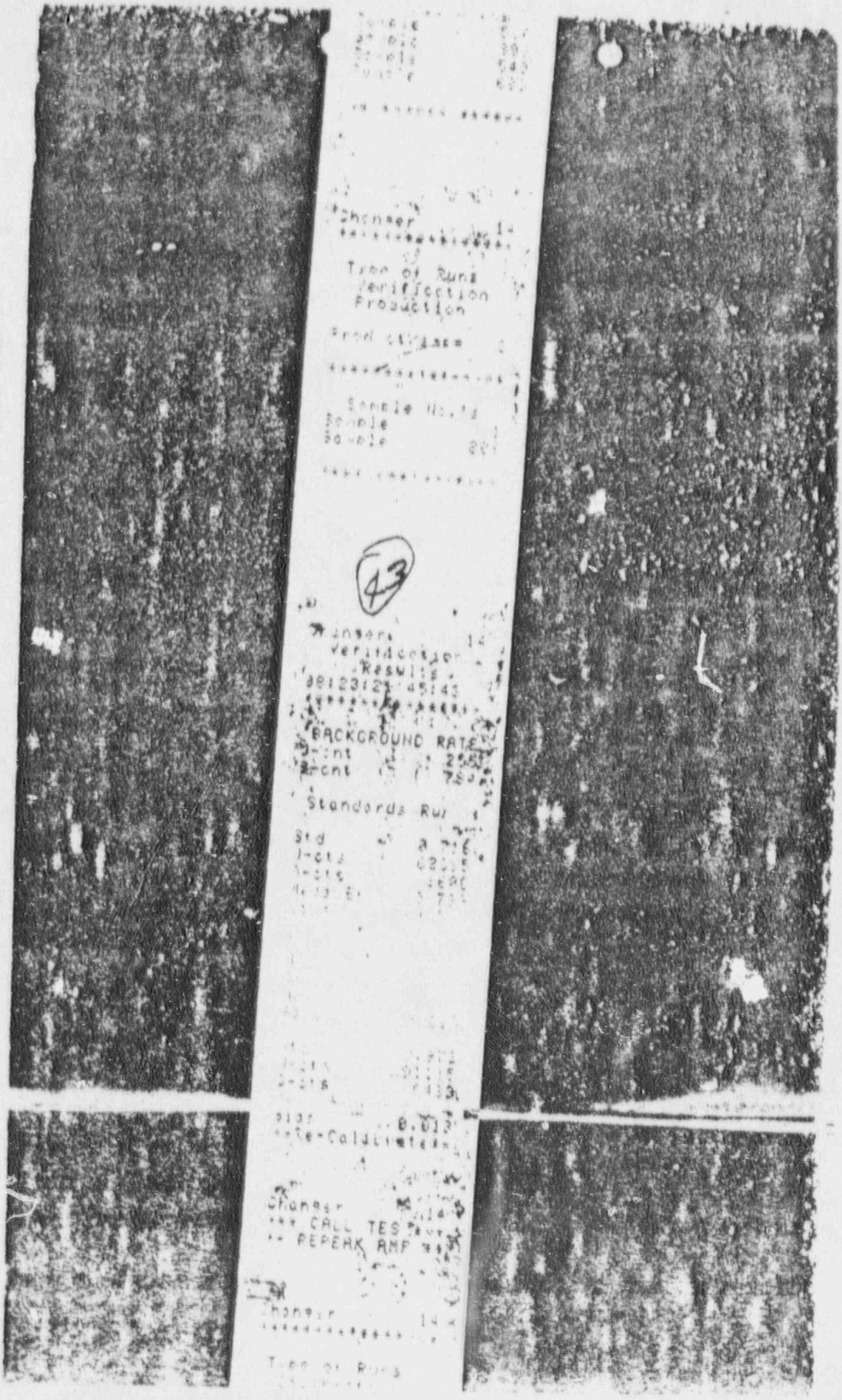
Chinger
Verification
Results
09123111:56in

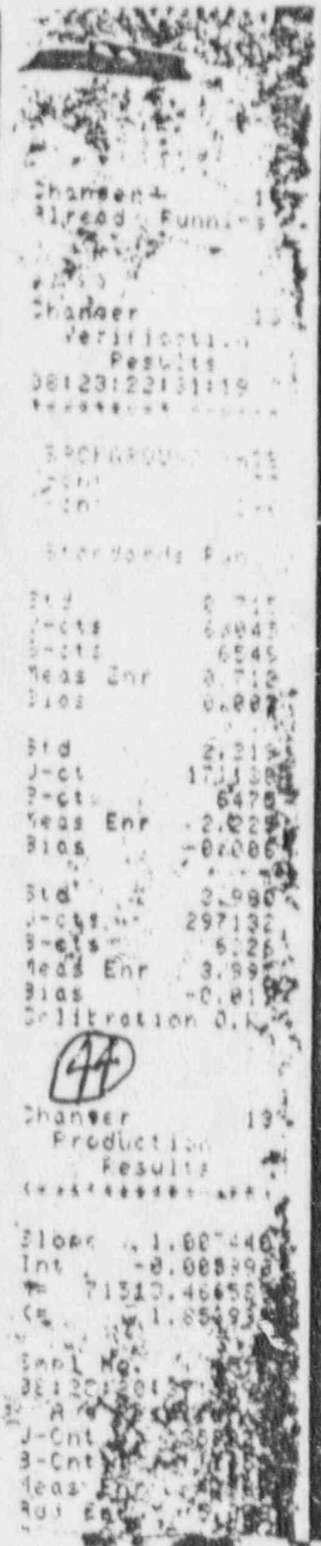
BACKGROUND RATE
A-cnt 479
B-cnt 329

Standards Run









Shaheen A 1
Alfred Funni
Shahaer 1
Verificati
Results
08:23:22:31:19

Std 0.
J-cts 6
B-cts 6
Meas Enr 0.
Bias 0.

Std 2.
J-cts 17
B-cts 6
Meas Enr -2.
Bias -0.

Std 2.
J-cts 297
B-cts 5
Meas Enr 3.
Bias -0.
Calibration 0.

(44)

Shaheer 19
Production
Results

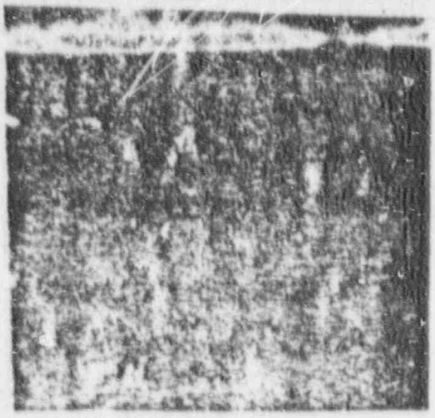
Slope 1.
Int -0.
71 3.
Cs 1.

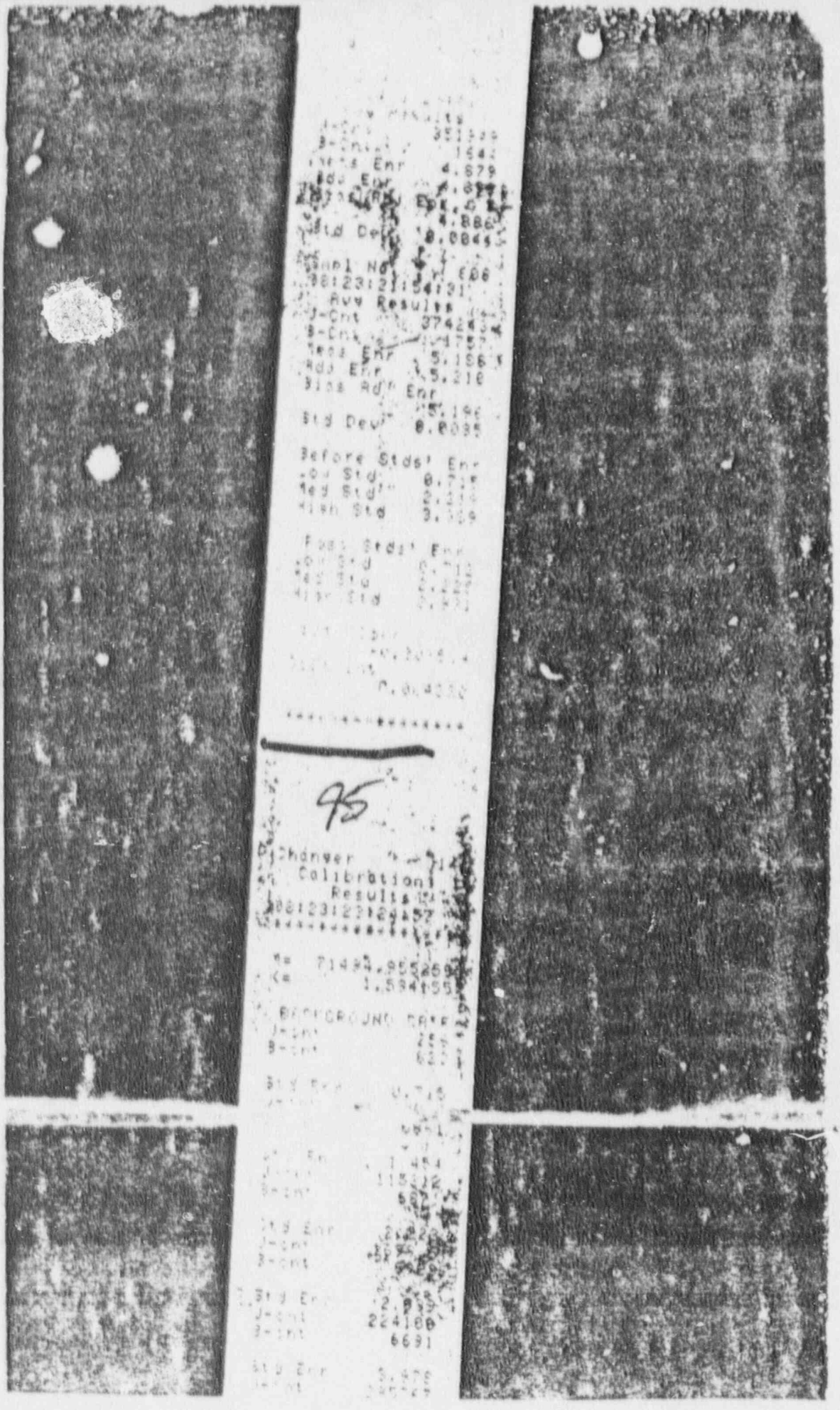
Empl No.
08:20:20:

A
J-Cnt
B-Cnt
Meas
Bia

Std Dev, 0.

Empl No.
08:23:21:





95

GENERAL ELECTRIC

DIAL COMM. X5858 DATE: February 3, 1983 CC: [redacted]

DEPT. WILMINGTON MANUFACTURING DEPARTMENT

ADDRESS: M/C H-96

SUBJECT: RADIATION PROTECTION SUMMARY FOR FUEL FABRICATION OPERATIONS - FW04

[redacted]
M/C H-70

ask NRC why can't raw area be monitored Same as ... Machining in Chemet lab

AIRBORNE PROBLEMS IN THE CERAMIC AREA
FOR FISCAL WEEK FISCAL WEEK 5

NE#	EQUIPMENT OR AREA	PROBABLE CAUSE	DAY SHIFT	SASCONC HIVC
	PELLET PRESS	UNKNOWN	WED DAY	10.1

Surface Contamination Problems

No problems noted during weekly routine contamination surveys.

Criticality Control Problems

No problems noted.

Radiological Control Problems

1/25 Gryd	1A and 1B Pre-ses operating without roughing filters.
1/25 Days	Grinder Opeator cut finger on Grinder wheel, released to Medical.
	Several masks noted improperly stored on equipment in Grinder and Furnace Rooms.
1/26 Days	Grinder Operator cut finger on Grinder, released to Medical.
1/27 Swing	Furnace Operator wearing improper gloves, corrected.

M-5

cc: IWD

February 3, 1983

[redacted]

E. Miscellaneous

1. The following TIAD problems were noted during FW84:

Component	Shift	Date	Comments
Gadolinia Fuel Fab.	Days	1/25	No TIAD received
Gadolinia Fuel Fab.	B	1/26	No TIAD received
Gadolinia Fuel Fab.	B	1/27	No TIAD received
Uranium Fuel Fab.	Z	1/27	Late TIAD
Uranium Fuel Fab.	X	1/28	No TIAD received

Personnel exposures were estimated and entered into appropriate files.

2. All personnel airborne exposures for the Uranium Fuel and Gadolinia Fuel Fab. units were less than 150 μCi-hrs/cc.

[redacted]

Radiation Protection

TRAVELER # 868

OX. TRAY # 8

DISS. TRAY # 8

WHAT TRAY
TRAY # 8
PASS NUMBER
OPERATOR # [redacted]
S-PENTER

WHAT DISS TRAY
DISS TRAY 8
CRUCIBLE #
TARE=
SAMPLE WT.
SAMPLE WT=
IGNITED

SAMPLE #	CONTAINER #	TARE + SOLUTION	TUBE #	ANA #	MEAS. U_{235}	CALC. U_{235}	[illegible]
[illegible]577	3[illegible]0376		[illegible]				
[illegible]580	3[illegible]60335		[illegible]				
[illegible]577	[illegible]0021		[illegible]				
[illegible]74	[illegible]m4551		[illegible]				
[illegible]	[illegible]m459[illegible]		7[illegible]		Boil (Oven		
[illegible]52	[illegible]m[illegible]		[illegible]		~~[illegible]~~		
[illegible]	[illegible]		[illegible]		Boil (Oven		

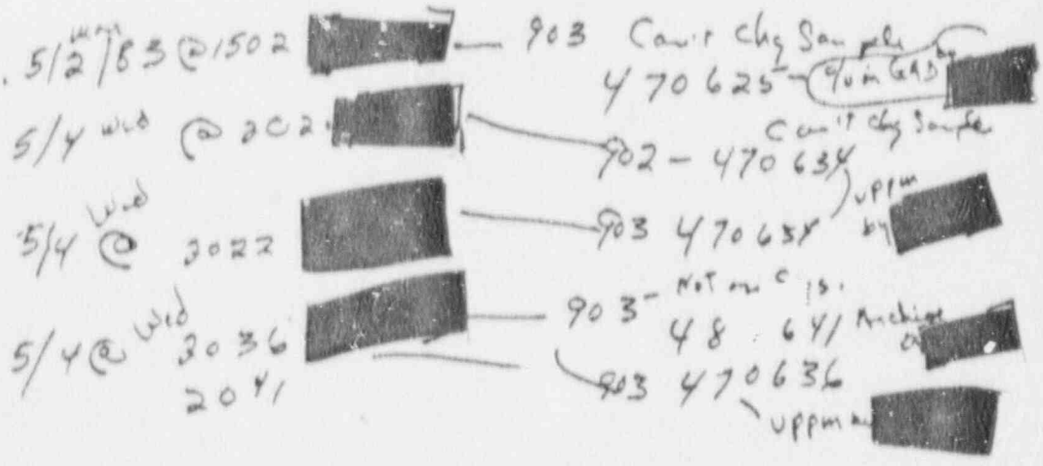
Not Spring

	OX. IN	OX. OUT				
DATE						
TIME				[redacted]		
ANALYST						

B-6

Information in this record was deleted in accordance with the Freedom of Information Act, exemptions 4
FOIA- 87-88

CL-245 (Rev. 1) Ref: SOP 450 Issued: 5/4/82 Approved: [redacted]



~~5/8~~ 7/8
14/15

902
& 903

M-7

May 6-7 1983

May 14-15 June 11-12
21-22 18-19
28-29 25-26
4-5

902 — 903

May 4	470634 (902)		@ 2024
Correct chg	470634 (903)		@ 2022
Nat on LMCS	482641		@ 2036
Correct chg	470636		@ 2041
Nat on LMCS	483059		@ 2242
4/9	903		
Nat on LMCS	717905		@ 0937
" " "	481685 (903)		@ 0942
" " "	468918 "		@ 1439
	468922 "		@ 1424
4/11	" 482360 "		@ 1301
	" 472837 "		@ 1536
	472839 "		@ 1536
4/12 ...	343069 "		@ 2249
	354068 "		@ 1306
	480719 "		@ 0524
	480715 "		@ 0529
	480716 "		@ 0529
	480694 "		@ 0640
4/12	375978-902		@ 0945
	482304		@ 1345
4/13	482129-903		@ 1124
n.r Delta	481718 "		@ 1424
	475824 903		@ 0933
	475825 "		@ 2109

Cam ut Chg May 17	463871	903	[redacted]	@ 0631	Pvol ISO [illegible] [redacted]
	463871	902		@ 0635	
	Tried again 903 by		[redacted]	@ 0637 - 38 - 41	
Commut Chg	463868	903	[redacted]	@ 0643	→ Pvol ISO [illegible] [redacted]
	475127	"		@ 1515	
May 18	345045	"		@ 0946	
May 20	471575	(903)	[redacted]	@ 0631	
May 21	482390	903		@ 1059	← Invalid UNK STD ISO [redacted]
"	" "	903		@ 1111	
May 23	375968	902		@ 0849	
May 30	482374	903		@ 0633	[illegible] [redacted]
June 10	477070	903		@ 1607	
June 15	483292	902		@ 1901	[illegible] [redacted] @ 0949
June 18	699842	902		@ 0715	

TABLE FOR SCP-401

STANDARD VERIFICATION LIMITS (9825A)			
ANALYZER #011	ANALYZER #012	ANALYZER #013	ANALYZER #014
.719 ± .009	.717 ± .012	.714 ± .009	.715 ± .008
2.223 ± .013	2.231 ± .015	2.220 ± .012	2.224 ± .014
3.982 ± .019	3.982 ± .024	3.976 ± .021	3.966 ± .021

REGRESSION MODEL COEFFICENT (HP-80)		
ANALYZER	SLOPE	INTERCEPT
011	1.0003968	-.006642
012	1.005995	-.009013
013	1.003739	-.002508
014	1.005886	-.006204

BIAS ADJUSTMENT FACTOR AND MINIMUM "U" COUNT LIMITS (9825A)			
ANALYZER	SLOPE	INTERCEPT	MINIMUM "U" COUNT
011	1.00593	-.00422	285048
012	1.00906	-.00522	289827
013	1.00574	-.00599	290003
014	1.00569	-.01038	287744

NOTE: [illegible] calibration, the "B" counts for the lowest enrichment [illegible] "B" count greater than the "B" count for the highest enrichment.

[redacted]

M-8

DATE	TIME	EVENT	RESULT	MIN U
6/22/83				
	7:06	CALIB.	OK	314 901
	7:41	CAL. VER	OK	314 108
	10:18	CAL. VER.	FAILED	315887
	12:11	CALIB.	CNT's out RANGE	257916
6/23/83				
	12:53	CALIB.	CNT's out Range	126920
	19:47	CALIB.	" " "	129035
6/24/83				
	1:25	CALIB.	CNT's out Range	287985 *
	2:47	CALIB.	OK ✓	290368 *
	3:23	CALIB VER. 2 G7-218	OK ✓	289491 *
	6:40	CAL. VER. 2 G-218	OK	289540 *
	9:19	CAL VER. 2 G218	OK	289792 *
	12:04	CAL VER 2 - G218	OK	288804 *
	14:46	CAL. VER.	FAILED	287998 288581 * 288106
	1546	CAL	CNT's out Range	287251 *
	BETWEEN	16:57 AND	19:25 MIN U	INPUT
	19:25	CAL	OK	286811
	20:05	CAL VER	OK	285776

CARL

STD DEV
1023.3107

out for 3 data points is 2.36

*****SYSTEM WITHIN CONTROL LIMITS**

288576 - (1023.3108 ~~+~~ 5.775)

283066.3501

283066

[redacted]

6/24/88

Analyzer #8

ENRICHMENT ANALYZER CALIBRATION/VERIFICATION LOG

DATE: 6-21
ANALYZER: ___

TIME	SAMPLES CTD/RLSD		VERIFICATION *				CALIBRATION			
	PROD.	G218	.715 enr	2.223	3.978	REPK'D	3.978 counts	M	X	POS
23: 43 06	1	1	.711	2.222	3.975		314464	75540	2.6201	
00:	1	1								
01: 56	12 / 11	1	.709	2.216	3.957					
02:	1	1								
03:	1	1								
04: 25	1	2 / 2	.710	2.224	3.976					
05:	1	1								
06: 43	16 / 10	1	.715	2.221	3.976					
07:	1	1								
08:	1	1								
09: 11	12 / 12	1	706	2.215	3.961					
10:	1	1								
11:	1	1								
12: 02	12 / 12	1	712	2.219	3.979					
13:	1	1								
14:	1	1								
15:	1	1								
16:	1	1								
17:	1	1								
18:	1	1								
19:	1	1								
20:	1	1								
21:	1	1								
22: 26	1	1	.706	2.224	3.965					

* Circle OUT-OF-LIMIT values.

ENRICHMENT ANALYZER CALIBRATION/VERIFICATION LOG

DATE: 6-22-1
ANALYZER: ___

TIME	SAMPLES CTD/RLSD		VERIFICATION *				CALIBRATION			
	PROD.	C218	.715 enr	2.223	3.978	REPK'D	3.978 counts	M	K	POS
23:	/	/								
00:	/	/								
01: 12	/	/	.713	2.214	3.674	✓				
02: 34	/	/					310456	.74863	2.6227	
03: 37	/	/	.715	2.230	3.969					
04:	/	/								
05: 05	/	/					311315	74798	2.7896	1
06:	/	/								
07: 06/42	/ →	→	.721	2.221	3.968		314501	75864	2.566	
08:	/	/								
09:	/	/								
10: 18	/	210	7.3 ([illegible]	[illegible]	3.990					
11:	/	/								
12: 11	→	→		Cl3 out Ly	(New) Dr. Lyle		[illegible]	[illegible]	[illegible]	
13:	/	/								
14:	/	/								
15:	/	/								
16:	/	/								
17:	/	/								
18:	/	/								
19:	/	/								
20:	/	/								
21:	/	/								
22:	/	/								

Down

* Circle OUT-OF-LIMIT values.

ENRICHMENT ANALYZER CALIBRATION/VERIFICATION LOG

DATE: 6-23-6
ANALYZER: 3

TIME	SAMPLES CTD/RLSD		VERIFICATION *				CALIBRATION			
	PROD.	C218	.715 enr	2.223	3.978	REPR'D	3.978 counts	M	K	POS
23:	/	/								
00:	/	/								
01:	/	/								
02:	/	/								
03:	/	/								
04:	/	/								
05:	/	/								
06:	/	/								
07:	/	/								
08:	/	/								
09:	/	/								
10:	/	/								
11:	/	/								
12:	/	/								
13:	/	/								
14:	/	/								
15:	/	/								
16:	/	/								
17:	/	/								
18:	/	/								
19:	/	/								
20:	/	/								
21:	/	/								
22:	/	/								

* Circle OUT-OF-LIMIT values.

ENRICHMENT ANALYZER CALIBRATION/VERIFICATION LOG

DATE: 6-24-[illegible]
ANALYZER: 3

TIME	SAMPLES CTD/RLSD		VERIFICATION *				CALIBRATION			
	PROD.	G218	.715 enr	2.223	3.978	REPK'D	3.978 counts	M	K	POS.
23:	1	1								
00:	1	1								
01:25	1	1				✓	39785	69741	1.5867	
02:47	1	1					240360	70210	1.6907	
03:33	1	1	.713	2.226	3.967					
04:	1	1								
05:	1	1								
06:40	1	212	.710	2.220	3.974					
07:	1	1								
08:	1	1								
09:19	1	212	.720	2.220	3.973					
10:	1	1								
11:	1	1								
12:04	1	212	.712	2.219	3.959					
13:	1	1								
14:46	1	210	.711	.2216	3.956	No				
15:06	1	1					232751	65958	1.720	
16:	1	1								
17:	1	1	calculated Minimum U.S.							
18:	1	1								
19:35	1	1					28621	6967	1.65	
20:05	1	1	.715	2.226	3.974					
21:	1	1								
22:	1	1								

* Circle OUT-OF-LIMIT values.

ENRICHMENT ANALYZER CALIBRATION/VERIFICATION LOG

DATE: 6-2
ANALYZER: 3

TIME	SAMPLES CTD/RLSD		VERIFICATION *				CALIBRATION			
	PROD.	G218	.715 enr	2.223	3.978	REPK'D	3.978 counts	M	K	POS.
23:26	1	210	706	2 207	3.949	/				
00:41	1	5								
01:44	1	5					256096	68957	1.958	
02:20	1	1	721	2 229	3 954		258612	69775	1.949	
03:	1	1								
04:42	1	212	709	2 222	3.983					
05:	1	1								
06:	1	1								
07:	1	1								
08:	1	1								
09:14	1210	1	.720	2.237	3.986					
10:38	1	1					286846	69134	2.035	
11:14	1	1	.711	2.221	3.958					
12:	1	1								
13:	1	1								
14:12	1210	1	.700	2.212	3.976	Yes YES				
15:31	1	1					285655	69116	1978	
16:23	1	1	.722	2 240	3 977					
17:	1	1								
18:	1	1								
19:	1	1								
20:31	1	213	.713	2221	3 972					
21:55	1	111	.719	2224	3 954					
22:	1	1								

* Circle OUT-OF-LIMIT values.

TABLE FOR SCT-401

STANDARD VERIFICATION LIMITS (9825A)			
ANALYZER #011	ANALYZER #012	ANALYZER #013	ANALYZER #014
.719 ± .009	.217 ± .012	.214 ± .009	.215 ± .008
2.223 ± .013	2.231 ± .015	2.220 ± .012	2.224 ± .014
3.982 ± .019	3.982 ± .024	3.976 ± .021	3.966 ± .021

REGRESSION MODEL COEFFICENT (HP-80)		
ANALYZER	SLOPE	INTERCEPT
011	1.001309	-.003812
012	1.000463	-.003495
013	1.000187	-.001162
014	1.002425	-.004452

BIAS ADJUSTMENT FACTOR AND MINIMUM "U" COUNT LIMITS (9825A)			
ANALYZER	SLOPE	INTERCEPT	MINIMUM "U" COUNT
011	1.00593	-.00422	285048
012	1.00906	-.00522	289827
013	1.00544	-.00559	283066
014	1.00569	-.01038	287744

[redacted]

TABLE FOR SCP-401

STANDARD VERIFICATION LIMITS (9825A)			
ANALYZER #011	ANALYZER #012	ANALYZER #013	ANALYZER #014
.719 ± .009	.717 ± .012	.714 ± .009	.715 ± .008
2.223 ± .013	2.231 ± .015	2.220 ± .012	2.224 ± .014
3.982 ± .019	3.982 ± .024	3.976 ± .021	3.966 ± .021

REGRESSION MODEL COEFFICENT (HP-80)		
ANALYZER	SLOPE	INTERCEPT
011	1.003968	-.006642
012	1.005995	-.009013
013	1.003739	-.002528
014	1.005886	-.006204

BIAS ADJUSTMENT FACTOR AND MINIMUM "U" COUNT LIMITS (9825A)			
ANALYZER	SLOPE	INTERCEPT	MINIMUM "U" COUNT
011	1.00593	-.00422	285048
012	1.00906	-.00522	289827
013	1.00574	-.00599	290003
014	1.00569	-.01038	287744

NOTE: Check the calibration. The "B" counts for the lowest enrichment [illegible] "B" count greater than the "B" count for the highest enrichment.

APPROVED B[illegible]

CHEMET LABORATORY MEASUREMENT CONTROL SYSTEM (LMCS)
TRANSACTION USER INSTRUCTIONS

TRANS.#: 9C3 NAME: UPDATE OF THE SAMPLE AND TEST RECORDS REVISION: 1 DATE: 14-JUL-83

PURPOSE: Update of the Sample and Test records.

TCS ERROR MESSAGES

MESSAGE	CORRECTIVE ACTION
INV CHAR:	
TOO LONG:	
INVALID INPUT:	

FIELD TYPE CODE:

A - ALPHABETIC CHARACTERS ONLY
I - POSITIVE INTEGER
N - POSITIVE OR NEGATIVE INTEGER
R - POSITIVE OR NEGATIVE REAL NUMBER
X - ANYTHING (EXCEPT COMMAS. COMMAS ARE NOT LEGAL INPUT FOR ANY FIELD IN ANY TRANSACTION.)

#	PROMPT	RESPONSE	FIELD TYPE	EXAMPLE	ERROR MESSAGE	CORRECTIVE ACTION
1.			A	TCS	MCR-TASK NOT IN SYSTEM	
2.			I	100	INV T#	
3.			I	32222		
				23145	PAY# NOT ON LMCS	
4.			X	PASS	INVALID PASSWORD	
					UNAUTHORIZED USER	
					ACCESS ERRORS	

CHEMET LABORATORY MEASUREMENT CONTROL SYSTEM (LMCS)
TRANSACTION USER INSTRUCTIONS

TRANS.#: 903 NAME: UPDATE OF THE SAMPLE AND TEST RECORDS REVISION: 1 DATE: 14-JUN-82

#	PROMPT	RESPONSE	FIELD TYPE	EXAMPLE	ERROR MESSAGE	CORRECTIVE ACTION
3.				22		
6.			N	0		
			N	1		
			N	2	CANNOT CHANGE SAMPLE	
			N	3		
			N	4	CANNOT CHANGE SAMPLE	
			N	5	CANNOT CHANGE SAMPLE	
			N	6	SAMPLE IS NOT A COMPOSITE NO UPDATE PERFORMED	
			N	7		

1700H#7600

CHEMET LABORATORY MEASUREMENT CONTROL SYSTEM (LMCS)
TRANSACTION UPDATE INSTRUCTIONS

TRANS.#: 903 NAME: UPDATE OF THE SAMPLE AND TEST RECORDS REVISION: 3 DATE: 14-JUN-82

#	PROMPT	RESPONSE	FIELD TYPE	EXAMPLE	ERROR MESSAGE	CORRECTIVE ACTION
10.						
17			R	.17		
			R	.171		
1..			R	.715		
14.			R	.173		
13.						
6.						
			A		CANNOT CHANGE SAMPLE	
					TOO LONG: -INVALID INPUT	Retype request
7.			I	705		
1.			A			

CHEMET LABORATORY MEASUREMENT CONTROL SYSTEM (LMCS)
TRANSACTION USE INSTRUCTIONS

TRANS.#: 903 NAME: UPDATE OF THE SAMPLE AND TEST RECORDS REVISION: 1 DATE: 14-JUN-82

#	PROMPT	RESPONSE	FIELD TYPE	EXAMPLE	ERROR MESSAGE	CORRECTIVE ACTION

90-20 (KEMR) LABORATORY MEASUREMENT CONTROL SYSTEM (LMCS
TRANSACTION USER INSTRUCTIONS

5.01.002 NAME: UPDATE OF THE SAMPLE AND TEST RECORDS REVISION: 1 DATE: 4-AUG-83

USE: Update of the sample and test records.

CY ERROR MESSAGES

MESSAGE CORRECTIVE ACTION

M CHAR! [redacted]

DO LOWO!

INVALID INPUT!

FIELD NUMBER	FIELD TYPE	EXAMPLE	ERROR MESSAGE	CORRECTIVE ACTION
[redacted]		TCB	PCP-TAG NOT IN SYSTEM	[redacted]
		10C	INV TO	
		32222		
		23145	FAVO NOT ON LMCS	
		PASS	INVALID PASSWORD	
			UNAUTHORIZED USER	
			ACCESS ERROR	

M-10

CHEMET LABORATORY MEASUREMENT CONTROL SYSTEM (LMCS)
TRANSACTION USER INSTRUCTIONS

TRANSACTION CODE: MANUAL UPDATE OF THE SAMPLE AND TEST RECORDS REVISION: 1 DATE: 14-JUN-92

PROMPT	RESPONSE	FIELD TYPE	EXAMPLE	ERROR MESSAGE	CORRECTIVE ACTION
[redacted]					
FUNCTION (S1) >					
				12 SAMPLE NOT ON LMCS	
				CANNOT CHANGE SAMPLE	
				[redacted]	
				[redacted]	
Sample					
				-1	
				0	
				1 CANNOT CHANGE COMPOSITE CONTAINERS	CONTACT LMCS PERSONNEL
				2 CANNOT CHANGE SAMPLE	CONTACT LMCS PERSONNEL
				3 CANNOT CHANGE SAMPLE	CONTACT LMCS PERSONNEL
				4 CANNOT CHANGE SAMPLE	CONTACT LMCS PERSONNEL
				5 CANNOT CHANGE SAMPLE	CONTACT LMCS PERSONNEL
				6 SAMPLE IS NOT A COMPOSITE NO UPDATE PERFORMED	
				7	
CORRECT?				8 NO UPDATE PERFORMED	NONE - CONTINUE WITH NEXT PROMPT

KENEY LABORATORY MEASUREMENT CONTROL SYSTEM (LMCS)
TRANSACTION USER INSTRUCTIONS

TRANS.DIV 002 NAME: UPDATE OF THE SAMPLE AND TEST RECORDS

REVISION: 1 DATE: 10-JUN-92

PROMPT	RESPONSE	FIELD TYPE	EXAMPLE	ERROR MESSAGE	CORRECTIVE ACTION
ENTER SAMPLE NUMBER					
			960		
ENTER TEST NUMBER					
			1142		
ENTER RESULT					
			RESULT = .43		
ENTER UNITS					
	CA			INVALID INPUT (TOO LONG)	RE-ENTER DATA
ENTER DETECTION LIMIT					
	.715			INVALID INPUT (TOO LONG)	RE-ENTER DATA

HEMBT LABORATORY MEASUREMENT CONTROL SYSTEM (LMCS)
TRANSACTION USER INSTRUCTIONS

TRANS.ID: 902 NAME: UPDATE OF THE SAMPLE AND TEST RECIPES REVISION: 1 DATE: 14-JUN-82

PROMPT	RESPONSE	FIELD TYPE	EXAMPLE	ERROR MESSAGE	CORRECTIVE ACTION
				SAMPLE HAS NO SOURCE	NONE - CONTINUE WITH NEXT PROMPT
				CANNOT CHANGE SAMPLE	CONTACT LMCS PERSONNEL
		A	M		
				TOO LONG! -INVALID INPUT	INPUT CORRECTLY
		I	205		
		A	F	TOO LONG! -INVALID INPUT	INPUT CORRECTLY

[illegible] LABORATORY MEASUREMENT CONTROL SYSTEM (LMCS)
TRANSACTION USER INSTRUCTIONS

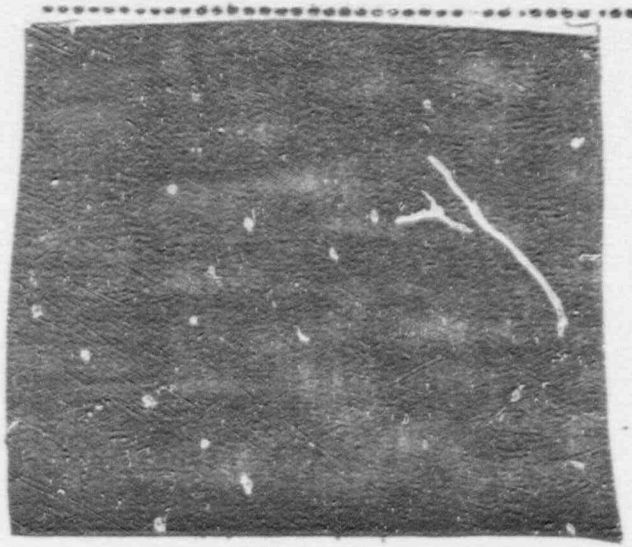
TRANS.01 #02 NAME: UPDATE OF THE SAMPLE AND TEST RECORDS REVISION: 1 DATE: 14-[illegible]-82

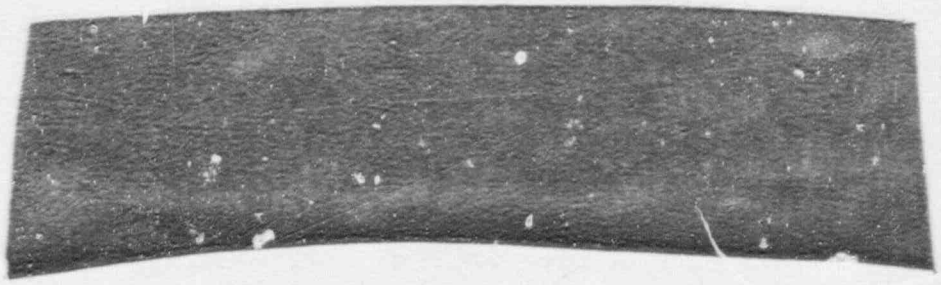
PROMPT	RESPONSE	FIELD TYPE	EXAMPLE	ERROR MESSAGE	CORRECTIVE ACTION
[redacted]		I	4?	[redacted]	
		I	33341		
		I	[illegible]		
		A	[illegible]		
		A	[illegible]		
		A	N?2	INVALID MAIL CODE PLEASE RE-ENTER DATA	[redacted] RE-ENTER MAIL CODE
			[illegible] RETURN		
			02-04-82	INVALID DATE	RE-ENTER DATE SAMPLED

CHEMET LABORATORY MEASUREMENT CONTROL SYSTEM (LMCS)
TRANSACTION USER INSTRUCTIONS

*BANS.01 002 MANUAL UPDATE OF THE SAMPLE AND TEST RECORDS REVISION: 1 DATE: 10-JUN-92

PROMPT	RESPONSE	FIELD TYPE	EXAMPLE	ERROR MESSAGE	CORRECTIVE ACTION
		A	1750	INVALID TIME	RE-ENTER TIME
		A	OAD		
		I	459929		
		I	953		





.720 ± .009	.719 ± .010	.714 ± .010	.715 ± .008
2.224 ± .012	2.232 ± .013	2.222 ± .013	2.223 ± .012
3.540 ± .021	3.582 ± .023	3.528 ± .015	3.545 ± .015

002	1.000665	-.009166
012	1.000227	-.000954
023	.998857	.000915
014	.999207	.001361

001	1.000553	-.000422	2526459
012	1.000966	-.000522	~~2629757~~ 272577
023	1.000544	-.000559	2535556
014	1.000569	-.001038	2615462

On 4/8/83 "chilled water" was down effecting many areas of FM particularly Dye Rm - Temp soared from 68 - 82°. Tells me how one can get accurate Min Volts - When stds were not used - + Temp so high - The old AMA were out of Calib - Some curve!

M-11

TO Isotopic Test Operators

GENERAL ELECTRIC — QUICK LETTER—WHEN REPLY NEEDED

COMPONENT — COMPLETE MAILING ADDRESS

FROM [redacted]

SUBJECT Balance Tapes

It is no longer necessary to keep tapes from balance readings, if the time for each segment of the isotopic analysis is recorded on Traveler.

[redacted] tapes until I.I is Complete

DATE 11-7-83 — PHONE/DIAL COMM

SIGNED [redacted]

REPLY:

Where is traceability of samples if tapes are destroyed and if "input" of data to HOT screws up as scramble! Also if technician has not "signed off" for his work - Who is to say is at fault if "bad" information cannot be traced.

I thought UO_2 was to be traceable on plant rate regardless of what state or area that it was in.

DATE — PHONE/DIAL COMM.

SIGNED

FOIA 87-88

SAMPLE PREPARATION DATA

SAMPLE	TR	INITIAL WEIGHTS OPER	DATE	TARE	IGNITED WEIGHTS OPER	DATE	UO2	SOLUTION WEIGHTS OPER	DATE	SOLUT
525555	9	[redacted]	311	28.7216	[redacted]	311	33.3825	[redacted]	312	59.06
524387	9		311	28.1258		311	33.7535		312	55.67
525553	9		311	26.06[illegible]		311	31.3255		312	57.3
524294	9		311	27.4506		311	32.0926		312	57.6
525556	9		311	28.9347		311	33.5481		312	57.6
524339	9		311	29.3659		311	33.9483		312	58.6
524017	9		311	27.0865		311	31.7646		312	57.4
524018	9		311	28.7634		311	32.4238		312	58.05
524019	9		311	28.5731		311	33.2385		312	59.06
524020	9		311	27.4438		311	32.0074		312	57.48
524021	9		311	27.0745		311	31.7385		312	57.5
524022	9		311	26.4458		311	31.1078		312	57.0

[redacted] ANALYZER #1

DATE: [redacted] TIME: [redacted]

BEFORE STANDARDS		POST STANDARDS		CONSTANTS	
LOW STD	.211	LOW STD	.215	M	61707.461381
MED STD	2.228	MED STD	2.231	r	.9775684
HIGH STD	3.979	HIGH STD	3.979	SLOPE	.999718
				INTER	.007423

SAMPLE	OPER	TUBE	NOM ENR	[illegible]	[illegible]	AVG	SIG	RATIO	U/U	ENR	AVG ENR	SEN Y/N
525555	[redacted]	6466	3.950	4.459	[illegible]	178.0	.1383	2.072	3.906	3.906	NO
524387		6398	3.300	3.887	[illegible]	174.1	.1361	2.239	3.295	3.295	YES
525553		6298	3.950	4.171	[illegible]	175.0	.1391	2.053	3.871	3.871	NO
524294		6295	2.400	2.749	[illegible]	177.1	.1299	2.060	2.421	2.421	YES
525556		6325	3.950	4.224	[illegible]	175.5	.1389	2.249	3.308	3.308	NO
524339		6304	3.300	3.719	[illegible]	175.7	.1390	2.247	3.297	3.297	YES
524017		6360	1.900	1.959	[illegible]	177.5	.1301	2.063	1.722	1.722	YES
524018		6466	1.900	1.948	1.700	178.4	.1305	2.065	1.707	1.707	YES
524019		6371	1.900	1.945	1.704	177.1	.1298	2.064	1.716	1.716	YES
524020		6247	1.900	1.957	1.697	179.9	.1313	2.065	1.704	1.704	YES
524021		6320	1.900	1.933	1.726	177.0	.1297	2.060	1.733	1.733	YES
524022		6351	1.900	1.949	1.707	178.3	.1293	2.060	1.744	1.744	YES

RELEASED TO [redacted] DATE 11-8-83

A-

M-13

Transmission Status
Released by: [illegible]
TIME: 6:35
DATE:83012

mple. Transmited To LMCS

Sample#	Tube	Iso	O/L	Avg Iso	Avg O/L
524387	6398	3.295	[illegible]	[illegible]	[illegible]
524294	6295	2.421	2.060	2.421	2.060
524389	6324	3.297	2.247	3.297	2.247
524017	6360	1.722	2.063	1.722	2.063
524018	6466	1.707	2.065	1.707	2.065
524019	6372	1.716	2.064	1.716	2.064
524020	6347	1.704	2.065	1.704	2.065
524021	6320	1.733	2.061	1.733	2.061
524022	6361	1.744	2.060	1.744	2.060

mples Held For Recount

Sample#	Tube	Iso	O/L	Avg Iso	Avg O/L

mples Withheld

Sample#	Tube	Iso	O/L	Avg Iso	Avg O/L
525555	6485	3.906	2.072	3.906	2.072
525553	6298	3.871	2.053	3.871	2.053
525556	6325	3.908	2.245	3.908	2.245

Should be 3.871

(Do not have legible copy)

GENERAL ELECTRIC

AT-84-208

AT&T: 8*292-6138 DATE: March 15, 1984 COPIES: [redacted]

DEPT: MMD-AT

ADDRESS: K51

SUBJECT: Safety in the Chemet Laboratory

[redacted] Manager
Regulatory Compliance

I toured the Chemet laboratory today to review the general safety of devices as you requested. The review was concentrated on items of non-chemical concern; such as the microwave equipment, radio-frequency equipment, etc., but my general impression was that all safety issues have been given considerable thought. The greatest hazard was the always-present possibility of touching a hot object, just as in a typical kitchen.

The microwave oven is a clean, industrial device with standard effective shielding at all ports. Two different types of microwave detectors are available to provide assurance against leakage of microwave radiation: 1) A go/no-go device with a light emitting diode tuned to signal at levels set by federal regulations and designed to be worn by the operator, and 2) an analog measurement instrument of professional quality. These instruments provide greater safety assurance than is present with normal usage of microwave ovens by the public.

It has been alleged that the oven has leaked microwave radiation in the past and that a screen had been removed from the vent port at the top of the oven. The screens were in place on both ovens when I inspected them. Operation of an oven without the screen in place is dangerous and implicitly prohibited by the Job Hazard Analysis. In such a case, microwave levels would be high near the vent port and would surely trip even the passive type detector. It is also probable that the screen must be removed occasionally for cleaning, in which case the oven should be tagged out of operation until the screen is replaced. Without periodic cleaning of the screen, ventilation would be reduced by salts condensed on the screen. Cleaning without removal would reduce buildup and the instances of removal for cleaning. Cleaning without removal seems to fall in the category of "when visible" and "end of shift" cleanup. It should be made clear that leakage of material through the door does not indicate a microwave leak, but may indicate ventilation weakness caused by poor attention to the cleanliness of the screen. The oven door seal is designed to block microwave radiation while allowing copious airflow. It is conceivalbe that condensed salts on the interior of the door may fall down to the table top while the door is closed, with no microwave leakage. The presence of contamination or inadequate ventilation would both be cured by routine cleanup while awaiting the arrival of ventilation flow monitoring equipment.

M-14

[redacted]

The radio-frequency induction furnace was considered primarily because of the large amounts of mercury used in the adjacent apparatus. The mercury-containing apparatus is in an appropriate stainless steel well with three inch dykes to prevent escape in the event of a spill. Sulfur is on hand for use in the event of a splash over the dyke. The radiation produced by the induction furnace is radio-frequency and is a hazard only to reception of local stations with a low quality receiver.

The nuclear-magnetic-resonance equipment also produces radiation, intermediate in frequency between radio waves and microwaves, but at very low and safe power levels.

In summary, the microwave is the only potential source of dangerous electromagnetic radiation, and that potential is realized only in an equipment failure. The detection equipment available for detecting leaks provides safety assurance beyond the level available to the general public. The equipment condition is good. The job hazard analysis requires testing of the equipment (no interval specification) for leaks and a log shows that the testing is done on a weekly basis. No unacceptable levels were reported in this log. I found no procedure requiring the measurements on a weekly basis, but this is an appropriate interval for a corrosive environment and I recommend that the weekly interval be established in procedure.

[redacted]

Plant Automation

/mat

GENERAL ELECTRIC

STRICTLY PRIVATE

DIAL COMM: 8*292-5637 DATE: March 29, 1984 COPIES: [redacted]

DEPT: WILMINGTON MANUFACTURING DEPARTMENT

ADDRESS: M/C J-26

SUBJECT: CHEMET LAB SAFETY REVIEW

[redacted]
Quality Assurance

Attached are the reports of the team members who revieved safety conditions in the Chemet Laboratory in accordance with your request of 3/13/84. We conclude that the safety conditions in the laboratory are quite adequate for the areas covered in this review.

[redacted]
Regulatory Compliance

/sbm

[redacted]

87-15

16. Todd
x 2797

(A) HP 9887 Password:

(1) - HP 9887 password change restricted to a single authorized password accessor (currently [redacted]) Effective 1/25/84.

(2) - At any time an individual desires to change a password on the HP 9887 all samples with the old password assignment must be cleared from the system. This is most easily accomplished by waiting at least 48 hrs so that all prior old password entries have been cleared. This routing has been available since 1982 when the HP 9887 came on line.

NOTE: Password change restricted to single authorized password accessor for LMCS Effective 3/8/83

(B) LMCS 902/903 Transactions

(1) - These transactions cannot be used to change results of standards (Effective pre-1980)

(2) - The need for restricting access to 902/903 transactions has been re-emphasized to supervisors

(3) - Supervisors have been instructed to not divulge their passwords for any reason

(4) - To minimize intentional falsification, any time a supervisor feels his password may have become known he will change his password accordingly.

(5) - Ultimately LMCS software modifications will be implemented to rigorously control and document 902/903 transactions by others (no schedule at this time)

(C) HP 9887 Pay Number Assignment

(1) - Effective 1/17/84 the transaction transmitting the HP 9887 results to LMCS was modified to record the pay number of the operator releasing the results.

(2) - HP 9887 records document the persons identity performing the key process steps for each sample. No plans exist to transfer this information to LMCS.

M-16

G. TODD
x 2797

(A) HP 9887A Password:

(1) - HP 9887 password change restricted to a single authorized password accessor (currently [redacted]) Effective 3/25/84. METALLURGICAL LAB

(2) - At any time an individual desires to change a password on the HP 9887 all samples with the old password assignment must be cleared from the system. This is most easily accomplished by waiting at least 48 hrs so that all prior old password entries have been cleared. This routing has been available since 1982 when the HP 9887 came on line.

NOTE: Password change restricted to single authorized password accessor for LMCS Effective 3/8/83

(B) LMCS 902/903 Transactions

(1) - These transactions cannot be used to change results of standards (Effective pre-1980)

(2) - The need for restricting access to 902/903 transactions has been re-emphasized to supervisors

(3) - Supervisors have been instructed to not divulge their passwords for any reason

(4) - To minimize intentional falsification, any time a supervisor feels his password may have become known he will change his password accordingly if used interactively

(5) - Ultimately LMCS software modifications will be implemented to rigorously control and document 902/903 transactions by others (no schedule at this time)

(C) HP 9887 Pay Number Assignment

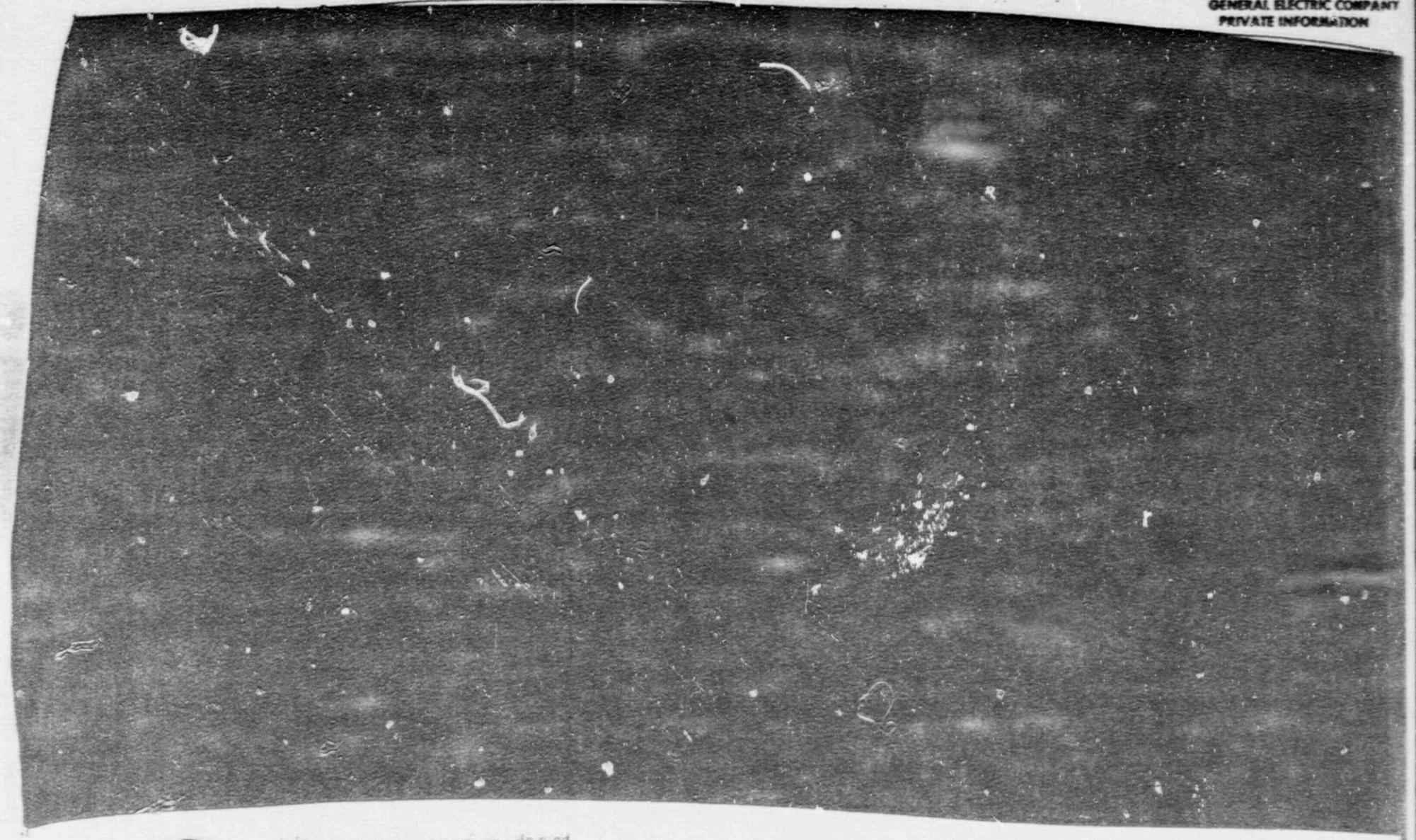
(1) - Effective 1/17/84 the transaction transmitting the HP 9887 results to LMCS was modified to record the pay number of the operator releasing the results.

(2) - HP 9887 records document the persons identity performing the key process steps for each sample. No plans exist to transfer this information to LMCS.

include in software instructions

WILMINGTON MANUFACTURING DEPARTMENT

GENERAL ELECTRIC COMPANY
PRIVATE INFORMATION



LI-M