182411

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N.J. DEP

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6/84

NJDEP File # [illegible]

SAMPLE ANALYSIS REQUEST FORM

SAMPLE LOCATION

NAME OF FACILITY/ COMPANY/PERSON	ASARCO	CODE	MAILING ADDRESS 1160 State St.
SAMPLE LOCATION	Excavation Pond		Perth Amboy NJ 08862

SAMPLE COLLECTOR

SAMPLER(S) Name	R. Gervasio	Agency	DHWM / BSA	Sampler ID #	HS 76
Name	K. Kloo	Agency	DHWM / BSA	Sampler ID #	HS 144

SAMPLE IDENTIFICATION

NJDEP SAMPLE NO.	AR918 - SW 1	SAMPLING DATE	9-18-86	ABSCISSA (Longitude)	
SAMPLE POINT ID	surface water 1	TIME (MIL) SAMPLING BEGAN	1030	ORDINATE (Latitude)	
SAMPLE SOURCE CODE	407	TIME (MIL) SAMPLING FINISHED	1045	ELEVATION	
REFERENCE POINT					

SAMPLING PROCESS

COLLECTION METHOD	Code Grab	Other	SAMPLE TYPE	Code 102	Other
TYPE OF SAMPLER	Code 323	Other Glass Bottle	SAMPLE MATRIX	Code 200	Other
DESCRIPTION	Clear				

FIELD MEASUREMENTS

SAMPLE TEMP.	°C	PARAMETER		PARAMETER		PARAMETER
AIR TEMP.	65-75°F	VALUE		VALUE		VALUE
WEATHER	Sunny					

CHAIN-OF-CUSTODY IMPLEMENTED ☒ YES ☐ NO

PRESERVATION CODE(S) ___ ___ ___ ___ ___

REQUESTED ANALYSIS(ES)

PARAMETERS (by Compound or Group of Compounds)	CONTAINER NUMBER	DETECTION LIMIT (digits/units)	PRECISION & ACCURACY LIMITS	REQUESTED TURNOVER (days)
PP +40	AR918-SW1			

ANALYSIS(ES) AUTHORIZED BY: Al Pleva

TITLE: HSMS I

ANALYZING LABORATORY

CONTRACT LAB NAME	Nancco	PERSON ACCEPTING SAMPLE	S. Hart	TITLE	
LAB ID #	J6-0115-008	LAB CONTROL #		DATE 9/19/86	TIME (MIL)

84

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

NJDEP File # 000002

SAMPLE ANALYSIS REQUEST FORM

SAMPLE LOCATION

NAME OF FACILITY/ COMPANY/PERSON	ASARCO	CODE	MAILING ADDRESS 1160 State St.
SAMPLE LOCATION	Wash Ditch		Perth Amboy NJ 08862

SAMPLE COLLECTOR

SAMPLER(S) Name	R. Gervasio	Agency	DHWM / BSA	Sampler ID #	HS 76
Name	K. Klou	Agency	DHWM / BSA	Sampler ID #	HS 144

SAMPLE IDENTIFICATION

NJDEP SAMPLE NO.	AR918 -SW2	SAMPLING DATE	9-18-86	ABSCISSA (Longitude)	
SAMPLE POINT ID	surface water 2	TIME (MIL) SAMPLING BEGAN	1200	ORDINATE (Latitude)	
SAMPLE SOURCE CODE	407	TIME (MIL) SAMPLING FINISHED	1210	ELEVATION	
REFERENCE POINT					

SAMPLING PROCESS

COLLECTION METHOD	Code Grab	Other	SAMPLE TYPE	Code 102	Other
TYPE OF SAMPLER	Code 323	Other Glass Bottle	SAMPLE MATRIX	Code 200	Other
DESCRIPTION	oily suspended solids				

FIELD MEASUREMENTS

SAMPLE TEMP. °C	PARAMETER	PARAMETER	PARAMETER
AIR TEMP. 65-75° °C	VALUE	VALUE	VALUE
WEATHER Sunny			

CHAIN-OF-CUSTODY IMPLEMENTED ☒ YES ☐ NO

PRESERVATION CODE(S) ___ ___ ___ ___ ___

REQUESTED ANALYSIS(ES)

PARAMETERS (by Compound or Group of Compounds)	CONTAINER NUMBER	DETECTION LIMIT (digits/units)	PRECISION & ACCURACY LIMITS	REQUESTED TURNOVER (days)
PP-40	AR918-SW2			

ANALYSIS(ES) AUTHORIZED BY Al Pleva

TITLE HSMS I

ANALYZING LABORATORY

CONTRACT LAB NAME	Nanco	PERSON ACCEPTING SAMPLE	D. Karl	TITLE	
LAB ID #	J6-0116-008	LAB CONTROL #		DATE 9/19/86	TIME (MIL)

6/84

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

SAMPLE ANALYSIS REQUEST FORM

NJDEP File # 000003

SAMPLE LOCATION

NAME OF FACILITY/ COMPANY/PERSON	ASARCO	CODE	MAILING ADDRESS 1160 State Street
SAMPLE LOCATION	Ditch South Bld K		Perth Amboy NJ 08862

SAMPLE COLLECTOR

SAMPLER(S) Name	R. Gervasi	Agency	DHWM / BSA	Sampler ID #	HS 76
Name	K. Klou	Agency	DHWM / BSA	Sampler ID #	HS 144

SAMPLE IDENTIFICATION

NJDEP SAMPLE NO.	AR 918 - SW3	SAMPLING DATE	9-18-86	ABSCISSA (Longitude)	
SAMPLE POINT ID	surface water 3	TIME (MIL) SAMPLING BEGAN	1205	ORDINATE (Latitude)	
SAMPLE SOURCE CODE	407	TIME (MIL) SAMPLING FINISHED	1217	ELEVATION	
REFERENCE POINT					

SAMPLING PROCESS

COLLECTION METHOD	Code Grab	Other	SAMPLE TYPE	Code 102	Other
TYPE OF SAMPLER	Code 323	Other Glass Bottle	SAMPLE MATRIX	Code 200	Other
DESCRIPTION					

FIELD MEASUREMENTS

SAMPLE TEMP. °C	PARAMETER	PARAMETER	PARAMETER
AIR TEMP. 65-75 °F	VALUE	VALUE	VALUE
WEATHER Sunny			

CHAIN-OF-CUSTODY IMPLEMENTED ☒ YES ☐ NO

PRESERVATION CODE(S) ___ ___ ___ ___ ___

REQUESTED ANALYSIS(ES)

PARAMETERS (by Compound or Group of Compounds)	CONTAINER NUMBER	DETECTION LIMIT (digits/units)	PRECISION & ACCURACY LIMITS	REQUESTED TURNOVER (days)
PP + 40	AR918-SW3			

ANALYSIS(ES) AUTHORIZED BY Al Plevra TITLE HSMS I

ANALYZING LABORATORY

CONTRACT LAB NAME Nanco	PERSON ACCEPTING SAMPLE D. Kak	TITLE	
LAB ID # J6-0117-008	LAB CONTROL #	DATE	TIME (MIL)

6/84

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

SAMPLE ANALYSIS REQUEST FORM

NJDEP File # 000004

SAMPLE LOCATION

NAME OF FACILITY/ COMPANY/PERSON	ASARCO	CODE	MAILING ADDRESS 1160 State St.
SAMPLE LOCATION	Sump Rd P		Perth Amboy NJ 08862

SAMPLE COLLECTOR

SAMPLER(S) Name	R. Gerasic	Agency	DHWM / BSA	Sampler ID #	HS 76
Name	K. Kloo	Agency	DHWM / BSA	Sampler ID #	HS 144

SAMPLE IDENTIFICATION

NJDEP SAMPLE NO.	AR 918 - SW 4	SAMPLING DATE	9-18-86	ABSCISSA (Longitude)	
SAMPLE POINT ID	surface water 4	TIME (MIL) SAMPLING BEGAN	1051	ORDINATE (Latitude)	
SAMPLE SOURCE CODE	407	TIME (MIL) SAMPLING FINISHED	1013	ELEVATION	
REFERENCE POINT					

SAMPLING PROCESS

COLLECTION METHOD	Code Grab	Other	SAMPLE TYPE	Code 102	Other
TYPE OF SAMPLER	Code 323	Other Glass Bottle	SAMPLE MATRIX	Code 200	Other
DESCRIPTION	clear yellowish				

FIELD MEASUREMENTS

SAMPLE TEMP. °C		PARAMETER		PARAMETER	PARAMETER
AIR TEMP. 65-75 °F		VALUE		VALUE	VALUE
WEATHER Sunny					

CHAIN-OF-CUSTODY IMPLEMENTED ☒ YES ☐ NO

PRESERVATION CODE(S) ___ ___ ___ ___ ___

REQUESTED ANALYSIS(ES)

PARAMETERS (by Compound or Group of Compounds)	CONTAINER NUMBER	DETECTION LIMIT (digits/units)	PRECISION & ACCURACY LIMITS	REQUESTED TURNOVER (days)
DP+40	AR918-SW4			

ANALYSIS(ES) AUTHORIZED BY H. Pleva

TITLE HSMS I

ANALYZING LABORATORY

CONTRACT LAB NAME	Nanco	PERSON ACCEPTING SAMPLE	S. Park	TITLE	
LAB ID # J6-0118-008	LAB CONTROL #	DATE 9/19/86		TIME (MIL)	

6/84

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

SAMPLE ANALYSIS REQUEST FORM

NJDEP File # 000005

SAMPLE LOCATION

NAME OF FACILITY/ COMPANY/PERSON	ASARCO	CODE	MAILING ADDRESS 1160 State St.
SAMPLE LOCATION			Perth Amboy NJ 08862

SAMPLE COLLECTOR

SAMPLER(S) Name	R. Gervasio	Agency	DHWM / BSA	Sampler ID #	HS 76
Name	K. Kloo	Agency	DHWM / BSA	Sampler ID #	HS 144

SAMPLE IDENTIFICATION

NJDEP SAMPLE NO.	AR918-GW1	SAMPLING DATE	9-18-86	ABSCISSA (Longitude)	
SAMPLE POINT ID	Groundwater 1	TIME (MIL) SAMPLING BEGAN	1130	ORDINATE (Latitude)	
SAMPLE SOURCE CODE	400	TIME (MIL) SAMPLING FINISHED	1145	ELEVATION	
REFERENCE POINT	30 ft from Ck.				

SAMPLING PROCESS

COLLECTION METHOD	Code Grab	Other	SAMPLE TYPE	Code 101	Other
TYPE OF SAMPLER	Code 314	Other	SAMPLE MATRIX	Code 200	Other
DESCRIPTION	Clear turbid				

FIELD MEASUREMENTS

SAMPLE TEMP.	°C	PARAMETER	PARAMETER	PARAMETER
AIR TEMP.	°C	VALUE	VALUE	VALUE
WEATHER				

CHAIN-OF-CUSTODY IMPLEMENTED ☑ YES ☐ NO

PRESERVATION CODE(S) ___ ___ ___ ___ ___

REQUESTED ANALYSIS(ES)

PARAMETERS (by Compound or Group of Compounds)	CONTAINER NUMBER	DETECTION LIMIT (digits/units)	PRECISION & ACCURACY LIMITS	REQUESTED TURNOVER (days)
PP+40	AR918-GW1			

ANALYSIS(ES) AUTHORIZED BY [illegible] TITLE HSMS I

ANALYZING LABORATORY

CONTRACT LAB NAME Nanco	PERSON ACCEPTING SAMPLE [illegible]	TITLE	
LAB ID # J6-0119-008	LAB CONTROL #	DATE 9/19/86	TIME (MIL)

6/84

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

SAMPLE ANALYSIS REQUEST FORM

NJDEP File # 000006

SAMPLE LOCATION

NAME OF FACILITY/ COMPANY/PERSON	ASARCO	CODE	MAILING ADDRESS 1160 state St
SAMPLE LOCATION	T B		Perth Amboy NJ 08862

SAMPLE COLLECTOR

SAMPLER(S) Name	R. Gervasio	Agency	DHWM / BSA	Sampler ID #	HS 76
Name	K. Kloe	Agency	DHWM / BSA	Sampler ID #	HS 144

SAMPLE IDENTIFICATION

NJDEP SAMPLE NO.	AR 918 - TB	SAMPLING DATE	9-18-86	ABSCISSA (Longitude)	
SAMPLE POINT ID	Trip Blank	TIME (MIL) SAMPLING BEGAN	1000	ORDINATE (Latitude)	
SAMPLE SOURCE CODE	417 Analyte Free Water	TIME (MIL) SAMPLING FINISHED	—	ELEVATION	
REFERENCE POINT					

SAMPLING PROCESS

COLLECTION METHOD	Code Grab	Other		SAMPLE TYPE	Code 108	Other	Trip Blank
TYPE OF SAMPLER	Code	Other		SAMPLE MATRIX	Code 200	Other	
DESCRIPTION							

FIELD MEASUREMENTS

SAMPLE TEMP.	°C	PARAMETER	PARAMETER	PARAMETER
AIR TEMP.	°C	VALUE	VALUE	VALUE
WEATHER				

CHAIN-OF-CUSTODY IMPLEMENTED ☒ YES ☐ NO

PRESERVATION CODE(S) ___ ___ ___ ___ ___

REQUESTED ANALYSIS(ES)

PARAMETERS (by Compound or Group of Compounds)	CONTAINER NUMBER	DETECTION LIMIT (digits/units)	PRECISION & ACCURACY LIMITS	REQUESTED TURNOVER (days)
PP + 40	AR918-TB			

ANALYSIS(ES) AUTHORIZED BY Al Pleva TITLE HSMS I

ANALYZING LABORATORY

CONTRACT LAB NAME	NANCO	PERSON ACCEPTING SAMPLE	S. Kark	TITLE	
LAB ID #	J6-0120-008	LAB CONTROL #		DATE 9/19/86	TIME (MIL)

6/84

NJDEP File # 000007

SAMPLE ANALYSIS REQUEST FORM

SAMPLE LOCATION

NAME OF FACILITY/ COMPANY/PERSON	ASARCO	CODE	MAILING ADDRESS 1160 State St
SAMPLE LOCATION			Perth Amboy NJ 08862

SAMPLE COLLECTOR

SAMPLER(S) Name	R. Gervasic	Agency	DHWM / BSA	Sampler ID #	HS 76
Name	K. Kloo	Agency	DHWM / BSA	Sampler ID #	HS 144

SAMPLE IDENTIFICATION

NJDEP SAMPLE NO.	AR 918 - FB	SAMPLING DATE	9-18-86	ABSCISSA (Longitude)	
SAMPLE POINT ID	Field Blank	TIME (MIL) SAMPLING BEGAN	1105	ORDINATE (Latitude)	
SAMPLE SOURCE CODE	417 Analyte Free Water	TIME (MIL) SAMPLING FINISHED	1115	ELEVATION	
REFERENCE POINT					

SAMPLING PROCESS

COLLECTION METHOD	Code Grab	Other	SAMPLE TYPE	Code 108	Other Field Blank
TYPE OF SAMPLER	Code 314	Other	SAMPLE MATRIX	Code 200	Other
DESCRIPTION					

FIELD MEASUREMENTS

SAMPLE TEMP.	°C	PARAMETER	PARAMETER	PARAMETER	
AIR TEMP.	°C	VALUE	VALUE	VALUE	
WEATHER					

CHAIN-OF-CUSTODY IMPLEMENTED ☒ YES ☐ NO

PRESERVATION CODE(S) ___ ___ ___ ___ ___

REQUESTED ANALYSIS(ES)

PARAMETERS (by Compound or Group of Compounds)	CONTAINER NUMBER	DETECTION LIMIT (digits/units)	PRECISION & ACCURACY LIMITS	REQUESTED TURNOVER (days)
PP + 40	AR918FB			

ANALYSIS(ES) AUTHORIZED BY	Al Plevia	TITLE	HSMS I

ANALYZING LABORATORY

CONTRACT LAB NAME	NanCO	PERSON ACCEPTING SAMPLE	[illegible]	TITLE	
LAB ID #	J6-0121-008	LAB CONTROL #		DATE 9/19/86	TIME (MIL)

6/84

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

NJDEP File # 000008

SAMPLE ANALYSIS REQUEST FORM

SAMPLE LOCATION

NAME OF FACILITY/ COMPANY/PERSON	ASARCO	CODE	MAILING ADDRESS 1160 State Street
SAMPLE LOCATION	Excavation Pond		Perth Amboy NJ 08862

SAMPLE COLLECTOR

SAMPLER(S) Name	R. Gervasio	Agency	DHWM / BSA	Sampler ID #	HS 76
Name	K. Kloo	Agency	DHWM / BSA	Sampler ID #	HS 144

SAMPLE IDENTIFICATION

NJDEP SAMPLE NO.	AR 918 - SED 1	SAMPLING DATE	9-18-86	ABSCISSA (Longitude)	
SAMPLE POINT ID	Sed 1	TIME (MIL) SAMPLING BEGAN	1110	ORDINATE (Latitude)	
SAMPLE SOURCE CODE	405	TIME (MIL) SAMPLING FINISHED	1120	ELEVATION	
REFERENCE POINT					

SAMPLING PROCESS

COLLECTION METHOD	Code Grab	Other	SAMPLE TYPE	Code 105	Other
TYPE OF SAMPLER	Code 323	Other Trowel	SAMPLE MATRIX	Code 205	Other
DESCRIPTION	Silty BIR sandy				

FIELD MEASUREMENTS

SAMPLE TEMP. °C	PARAMETER	PARAMETER	PARAMETER
AIR TEMP. °C	VALUE	VALUE	VALUE
WEATHER			

CHAIN-OF-CUSTODY IMPLEMENTED ☒ YES ☐ NO

PRESERVATION CODE(S) ___ ___ ___ ___ ___

REQUESTED ANALYSIS(ES)

PARAMETERS (by Compound or Group of Compounds)	CONTAINER NUMBER	DETECTION LIMIT (digits/units)	PRECISION & ACCURACY LIMITS	REQUESTED TURNOVER (days)
PP + 40	AR918-SED1			

ANALYSIS(ES) AUTHORIZED BY Al Pleva TITLE HSMS I

ANALYZING LABORATORY

CONTRACT LAB NAME	Nancco	PERSON ACCEPTING SAMPLE	D. Kay	TITLE	
LAB ID #	36-0126-009	LAB CONTROL #		DATE 9/19/86	TIME (MIL)

6/84

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

SAMPLE ANALYSIS REQUEST FORM

NJDEP File # 000009

SAMPLE LOCATION

NAME OF FACILITY/ COMPANY/PERSON	ASARCO	CODE	MAILING ADDRESS 1160 State St.
SAMPLE LOCATION	Wash ditch Bld P		Perth Amboy NJ 08862

SAMPLE COLLECTOR

SAMPLER(S) Name	R. Gervasio	Agency	DHWM / BSA	Sampler ID #	HS 76
Name	K. Kloo	Agency	DHWM / BSA	Sampler ID #	HS 144

SAMPLE IDENTIFICATION

NJDEP SAMPLE NO.	AR918 - SED2	SAMPLING DATE	9-18-86	ABSCISSA (Longitude)	
SAMPLE POINT ID	sed 2	TIME (MIL) SAMPLING BEGAN	1030	ORDINATE (Latitude)	
SAMPLE SOURCE CODE	405	TIME (MIL) SAMPLING FINISHED	1040	ELEVATION	
REFERENCE POINT					

SAMPLING PROCESS

COLLECTION METHOD	Code Grab	Other	SAMPLE TYPE	Code 105	Other
TYPE OF SAMPLER	Code 323	Other Trowel	SAMPLE MATRIX	Code 203	Other
DESCRIPTION	Brn				

FIELD MEASUREMENTS

SAMPLE TEMP. °C	PARAMETER	PARAMETER	PARAMETER
AIR TEMP. °C	VALUE	VALUE	VALUE
WEATHER			

CHAIN-OF-CUSTODY IMPLEMENTED ☒ YES ☐ NO

PRESERVATION CODE(S)

REQUESTED ANALYSIS(ES)

PARAMETERS (by Compound or Group of Compounds)	CONTAINER NUMBER	DETECTION LIMIT (digits/units)	PRECISION & ACCURACY LIMITS	REQUESTED TURNOVER (days)
PP-40	AR918-SED2			

ANALYSIS(ES) AUTHORIZED BY Al Pleva

TITLE HSMS I

ANALYZING LABORATORY

CONTRACT LAB NAME Nanco	PERSON ACCEPTING SAMPLE S. Karr	TITLE	
LAB ID # J6-0127-009	LAB CONTROL #	DATE 9/19/86	TIME (MIL)

6/84

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

SAMPLE ANALYSIS REQUEST FORM

NJDEP File # 000010

SAMPLE LOCATION

NAME OF FACILITY/ COMPANY/PERSON	ASARCO	CODE	MAILING ADDRESS 1160 State Street
SAMPLE LOCATION	transformer Bld P		Perth Amboy NJ 08862

SAMPLE COLLECTOR

SAMPLER(S) Name	R. Gervasio	Agency	DHWM / BSA	Sampler ID #	HS 76
Name	K. Kloc	Agency	DHWM / BSA	Sampler ID #	HS 144

SAMPLE IDENTIFICATION

NJDEP SAMPLE NO.	AR918-S1	SAMPLING DATE	9-18-86	ABSCISSA (Longitude)	
SAMPLE POINT ID	Soil 1	TIME (MIL) SAMPLING BEGAN	1028	ORDINATE (Latitude)	
SAMPLE SOURCE CODE	401	TIME (MIL) SAMPLING FINISHED	1038	ELEVATION	
REFERENCE POINT					

SAMPLING PROCESS

COLLECTION METHOD	Code Grab	Other	SAMPLE TYPE	Code 105	Other
TYPE OF SAMPLER	Code 323	Other Trowel	SAMPLE MATRIX	Code 203	Other
DESCRIPTION	Rm BLR dirt				

FIELD MEASUREMENTS

SAMPLE TEMP. °C	PARAMETER	PARAMETER	PARAMETER
AIR TEMP. °C	VALUE	VALUE	VALUE
WEATHER			

CHAIN-OF-CUSTODY IMPLEMENTED ☒ YES ☐ NO

PRESERVATION CODE(S) ___ ___ ___ ___ ___

REQUESTED ANALYSIS(ES)

PARAMETERS (by Compound or Group of Compounds)	CONTAINER NUMBER	DETECTION LIMIT (digits/units)	PRECISION & ACCURACY LIMITS	REQUESTED TURNOVER (days)
PP+40	AR918-S1			

ANALYSIS(ES) AUTHORIZED BY	Al Pleva	TITLE	HSMS I

ANALYZING LABORATORY

CONTRACT LAB NAME	Nanco	PERSON ACCEPTING SAMPLE	D. Kerr	TITLE	
LAB ID #	J6-0122-009	LAB CONTROL #		DATE 9/19/86	TIME (MIL)

6/84

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

NJDEP File # 000011

SAMPLE ANALYSIS REQUEST FORM

SAMPLE LOCATION

NAME OF FACILITY/ COMPANY/PERSON	ISARCO	CODE	MAILING ADDRESS 1160 State St.
SAMPLE LOCATION	Sand Box Bld P		Perth Amboy NJ 08862

SAMPLE COLLECTOR

SAMPLER(S) Name	R. Gervasio	Agency	DHWM / BSA	Sampler ID #	HS 76
Name	K. Kloo	Agency	DHWM / BSA	Sampler ID #	HS 144

SAMPLE IDENTIFICATION

NJDEP SAMPLE NO.	AR 918 - 52	SAMPLING DATE	9-18-86	ABSCISSA (Longitude)	
SAMPLE POINT ID	Soil 2	TIME (MIL) SAMPLING BEGAN	1043	ORDINATE (Latitude)	
SAMPLE SOURCE CODE	401	TIME (MIL) SAMPLING FINISHED	1048	ELEVATION	
REFERENCE POINT					

SAMPLING PROCESS

COLLECTION METHOD	Code Grab	Other	SAMPLE TYPE	Code 105	Other
TYPE OF SAMPLER	Code 323	Other Trowel	SAMPLE MATRIX	Code 203	Other
DESCRIPTION	dark steel oil odor				

FIELD MEASUREMENTS

SAMPLE TEMP.	°C	PARAMETER	PARAMETER	PARAMETER	
AIR TEMP.	°C	VALUE	VALUE	VALUE	
WEATHER					

CHAIN-OF-CUSTODY IMPLEMENTED	☒ YES ☐ NO
PRESERVATION CODE(S)	

REQUESTED ANALYSIS(ES)

PARAMETERS (by Compound or Group of Compounds)	CONTAINER NUMBER	DETECTION LIMIT (digits/units)	PRECISION & ACCURACY LIMITS	REQUESTED TURNOVER (days)
PP + 40	AR918-52			

ANALYSIS(ES) AUTHORIZED BY	Al Pleva	TITLE	HSMS I

ANALYZING LABORATORY

CONTRACT LAB NAME	NANCO	PERSON ACCEPTING SAMPLE	D. Kadr	TITLE	
LAB ID #	J6-0123-009	LAB CONTROL #		DATE 9/19/86	TIME (MIL)

6/84

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

SAMPLE ANALYSIS REQUEST FORM

NJDEP File # 000012

SAMPLE LOCATION

NAME OF FACILITY/ COMPANY/PERSON	ASARCO	CODE	MAILING ADDRESS 1160 State St.
SAMPLE LOCATION	Old SW Bldg		Perth Amboy NJ 08862

SAMPLE COLLECTOR

SAMPLER(S) Name	R. Gervasio	Agency	DHWM / BSA	Sampler ID #	HS 76
Name	K. Klee	Agency	DHWM / BSA	Sampler ID #	HS 144

SAMPLE IDENTIFICATION

NJDEP SAMPLE NO.	AR918-S3	SAMPLING DATE	9-18-86	ABSCISSA (Longitude)	
SAMPLE POINT ID	Sec. 13	TIME (MIL) SAMPLING BEGAN	1222	ORDINATE (Latitude)	
SAMPLE SOURCE CODE	401	TIME (MIL) SAMPLING FINISHED	1230	ELEVATION	
REFERENCE POINT					

SAMPLING PROCESS

COLLECTION METHOD	Code Grab	Other	SAMPLE TYPE	Code 105	Other
TYPE OF SAMPLER	Code 323	Other Trowel	SAMPLE MATRIX	Code 203	Other
DESCRIPTION	Brn Sand				

FIELD MEASUREMENTS

SAMPLE TEMP. °C	PARAMETER	PARAMETER	PARAMETER
AIR TEMP. °C	VALUE	VALUE	VALUE
WEATHER			

CHAIN-OF-CUSTODY IMPLEMENTED ☒ YES ☐ NO

PRESERVATION CODE(S) ___ ___ ___ ___ ___

REQUESTED ANALYSIS(ES)

PARAMETERS (by Compound or Group of Compounds)	CONTAINER NUMBER	DETECTION LIMIT (digits/units)	PRECISION & ACCURACY LIMITS	REQUESTED TURNOVER (days)
PP+40	AR918-S3			

ANALYSIS(ES) AUTHORIZED BY Al Pleva TITLE HSMS I

ANALYZING LABORATORY

CONTRACT LAB NAME	NancO	PERSON ACCEPTING SAMPLE	S Kane	TITLE	
LAB ID #	J6-0124-009	LAB CONTROL #		DATE 9/19/86	TIME (MIL)

6/84

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

NJDEP File # 000013

SAMPLE ANALYSIS REQUEST FORM

SAMPLE LOCATION

NAME OF FACILITY/ COMPANY/PERSON	ASARCO	CODE	MAILING ADDRESS 1160 State St.
SAMPLE LOCATION	3rd Sump Bld P		Perth Amboy NJ 08862

SAMPLE COLLECTOR

SAMPLER(S) Name	R. Gervasio	Agency	DHWM / BSA	Sampler ID #	HS 76
Name	K. Kloo	Agency	DHWM / BSA	Sampler ID #	HS 144

SAMPLE IDENTIFICATION

NJDEP SAMPLE NO.	AR 918 - S 4	SAMPLING DATE	9-18-86	ABSCISSA (Longitude)	
SAMPLE POINT ID	Sol 4	TIME (MIL) SAMPLING BEGAN	1128	ORDINATE (Latitude)	
SAMPLE SOURCE CODE	401	TIME (MIL) SAMPLING FINISHED	1140	ELEVATION	
REFERENCE POINT					

SAMPLING PROCESS

COLLECTION METHOD	Code Grab	Other	SAMPLE TYPE	Code 105	Other
TYPE OF SAMPLER	Code 323	Other Trowel	SAMPLE MATRIX	Code 203	Other
DESCRIPTION	Sandy only				

FIELD MEASUREMENTS

SAMPLE TEMP. °C	PARAMETER	PARAMETER	PARAMETER
AIR TEMP. 65-75 °C	VALUE	VALUE	VALUE
WEATHER Sunny			

CHAIN-OF-CUSTODY IMPLEMENTED ☒ YES ☐ NO

PRESERVATION CODE(S) ___ ___ ___ ___ ___

REQUESTED ANALYSIS(ES)

PARAMETERS (by Compound or Group of Compounds)	CONTAINER NUMBER	DETECTION LIMIT (digits/units)	PRECISION & ACCURACY LIMITS	REQUESTED TURNOVER (days)
PP-40	AR918-S4			

ANALYSIS(ES) AUTHORIZED BY Al Plevin TITLE HSMS I

ANALYZING LABORATORY

CONTRACT LAB NAME Nanco	PERSON ACCEPTING SAMPLE S. Kar	TITLE	
LAB ID # 56-0125-000	LAB CONTROL #	DATE 9/19/86	TIME (MIL)

Form DWM-026
6/84

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

000014

CHAIN OF CUSTODY RECORD

Use One Form for Each Sample — *Shaded Areas for DEP Field Use Only*

NAME OF UNIT AND ADDRESS: NJDEP / DHWM / BSA 65 Prospect St, Trenton NJ 08618

Name of Person(s) Preparing Container(s) for Sample Shuttle

Name	Title	Agency
Name	Title	Agency

Date above-mentioned Person(s) Placed Container(s) in Sample Shuttle	Military Time	Laboratory Affixed Sample Shuttle Seal No.
___/___/___		

Name of Person(s) Breaking Laboratory Seal on Sample Shuttle and Taking Field Sample

Name	Title
R. Gervasio	Sup. Env. Tech
K. Kloo	HSMS III
D. Van Eck	HSMS IV

Date Laboratory Sample Shuttle Seal No.	Broken	Time (Mil) Seal Broken and Sampling Begun
100294	9/18/86	1030

FIELD SAMPLE NUMBER	CONTAINER NUMBER(S)	VOLUME OF CONTAINERS	DESCRIPTION OF SAMPLE
AR 918 - SW 1	AR 918 - SW 1	1 gal	surface water clear
	AR 918 - SW 1	500 ml	
	AR 918 - SW 1	500 ml	
	AR 918 - SW 1	500 ml	
	AR 918 - SW 1	40 ml	
	AR 918 - SW 1	40 ml	
	AR 918 - SW 1	40 ml	

LAB CONTROL NO. _____

Date Sampling Completed & Field Seal Affixed to Sample Shuttle	Military Time	Field Affixed Sample Shuttle Seal No.
9/18/86	16:00	100293

Laboratory Person Breaking Field Seal on Sample Shuttle & Accepting Responsibility for Sample — Name: D. Kak — Title:

Field Sample Seal No.	Date Broken	Military Time Seal Broken
	___/___/___	

SAMPLE RELINQUISHED BY	SAMPLE RECEIVED BY	DATE	TIME	REASON FOR CHANGE OF CUSTODY
R Gervasio				Deliver to lab

COPIES: Gold - Container/Shuttle Preparation Facility

Form DWM-026
6/84

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

CHAIN OF CUSTODY RECORD

000015

Use One Form for Each Sample — *Shaded Areas for DEP Field Use Only*

NAME OF UNIT AND ADDRESS: NJDEP / DHWM / BSA 65 Prospect St, Trenton NJ 08618

Name of Person(s) Preparing Container(s) for Sample Shuttle

Name	Title	Agency

Date above-mentioned Person(s) Placed Container(s) in Sample Shuttle	Military Time	Laboratory Affixed Sample Shuttle Seal No.
__/__/__		

Name of Person(s) Breaking Laboratory Seal on Sample Shuttle and Taking Field Sample

Name	Title
R. Gervasio	Sup. Env. Tech
K. Kloo	HSMS III
D. VanEck	HSMS IV

Date Laboratory Sample Shuttle Seal No. 100294 Broken 9/18/86

Time (Mil) Seal Broken and Sampling Begun 12:0 ~~100294~~

FIELD SAMPLE NUMBER	CONTAINER NUMBER(S)	VOLUME OF CONTAINERS	DESCRIPTION OF SAMPLE
AR918-SW2	AR918-SW2	1 gal	surface water
	AR918-SW2	500 ml	clear
	AR918-SW2	500 ml	Suspended
	AR918-SW2	500 ml	Solids
	AR918-SW2	40 ml	
	AR918-SW2	40 ml	
	AR918-SW2	40 ml	Oily Sheen

LAB CONTROL NO. _____

Date Sampling Completed & Field Seal Affixed to Sample Shuttle 9/18/86 Military Time 16:00 Field Affixed Sample Shuttle Seal No. 100293

Laboratory Person Breaking Field Seal on Sample Shuttle & Accepting Responsibility for Sample Name D. Kovak Title

Field Sample Seal No. Date Broken __/__/__ Military Time Seal Broken

SAMPLE RELINQUISHED BY	SAMPLE RECEIVED BY	DATE	TIME	REASON FOR CHANGE OF CUSTODY
R. Gervasio				Deliver to lab

COPIES: Gold - Container/Shuttle Preparation Person ... Pink - Field Examiner

Form DWM-026
6/84

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

000016

CHAIN OF CUSTODY RECORD

Use One Form for Each Sample

Shaded Areas for DEP Field Use Only

NAME OF UNIT AND ADDRESS: NJDEP / DHWM / BSA 65 Prospect St. Trenton NJ 08618

Name of Person(s) Preparing Container(s) for Sample Shuttle

Name | Title | Agency

Name | Title | Agency

Date above-mentioned Person(s) Placed Container(s) in Sample Shuttle ___/___/___ | Military Time | Laboratory Affixed Sample Shuttle Seal No.

Name of Person(s) Breaking Laboratory Seal on Sample Shuttle and Taking Field Sample

Name: R. Gervasio Title: Sup. Env. Tech

Name: K. Klee Title: HSMS III

Name: D. VanEck Title: HSMS IV

Date Laboratory Sample Shuttle Seal No. 100292 Broken 9/18/86 | Time (Mil) Seal Broken and Sampling Begun 1205

FIELD SAMPLE NUMBER	CONTAINER NUMBER(S)	VOLUME OF CONTAINERS	DESCRIPTION OF SAMPLE
AR918-SW3	AR918-SW3	1 gal	surface water
	AR918-SW3	500 ml	clear
	AR918-SW3	500 ml	slightly
	AR918-SW3	500 ml	turbid
	AR918-SW3	40 ml	
	AR918-SW3	40 ml	
	AR918-SW3	40 ml	

LAB CONTROL NO. _____

Date Sampling Completed & Field Seal Affixed to Sample Shuttle 9/18/86 | Military Time 16:00 | Field Affixed Sample Shuttle Seal No. 100295

Laboratory Person Breaking Field Seal on Sample Shuttle & Accepting Responsibility for Sample

Name: D. Kouk Title:

Field Sample Seal No. | Date Broken ___/___/___ | Military Time Seal Broken

SAMPLE RELINQUISHED BY	SAMPLE RECEIVED BY	DATE	TIME	REASON FOR CHANGE OF CUSTODY
R. Gervasio				Deliver to lab

COPIES: Gold - Container/Shuttle Preparation ...

m DWM-026
4

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

CHAIN OF CUSTODY RECORD

000017

Use One Form for Each Sample — *Shaded Areas for DEP Field Use Only*

AME OF UNIT ND ADDRESS: NJDEP / DHWM / BSA 65 Prospect St, Trenton NJ 08618

me of Person(s) Preparing Container(s) for Sample Shuttle

me — Title — Agency

me — Title — Agency

te above-mentioned Person(s) ced Container(s) in Sample Shuttle ___/___/___ | Military Time | Laboratory Affixed Sample Shuttle Seal No.

me of Person(s) aking Laboratory Seal Sample Shuttle — Name: R. Gervasio — Title: Sup. Env. Tech

d Taking Field Sample — Name: K. Kloo — Title: HSMS III

Name: D. VanEck — Title: HSMS IV

te L atory nple Shuttle Seal No. 100292 — Broken 9/18/86 — Time (Mil) Seal Broken and Sampling Begun 1005

FIELD SAMPLE NUMBER	CONTAINER NUMBER(S)	VOLUME OF CONTAINERS	DESCRIPTION OF SAMPLE
AR 918 . SW 4	AR918-SW4	1 gal	surface water clear - yellowish
	AR918-SW4	500 ml	
	AR918-SW4	500 ml	
	AR918-SW4	500 ml	
	AR918-SW4	40 ml	
	AR918-SW4	40 ml	
	AR918-SW4	40 ml	

LAB CONTROL NO. _____

e Sampling Completed & Field l Affixed to Sample Shuttle 9/18/86 | Military Time 16:00 | Field Affixed Sample Shuttle Seal No. 100295

oratory Person Breaking Field l on Sample Shuttle & Accepting ponsibility for Sample — Name: S. Hale — Title

id Sample Seal No. | Date Broken ___/___/___ | Military Time Seal Broken

SAMPLE RELINQUISHED BY	SAMPLE RECEIVED BY	DATE	TIME	REASON FOR CHANGE OF CUSTODY
R. Gervasio				Deliver to lab

COPIES: Gold - Container/Shuttle

Form DWM-026
6/84

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

000018

CHAIN OF CUSTODY RECORD

Use One Form for Each Sample — *Shaded Areas for DEP Field Use Only*

NAME OF UNIT AND ADDRESS: NJDEP / DHWM / BSA 65 Prospect St Trenton NJ 08618

Name of Person(s) Preparing Container(s) for Sample Shuttle

Name | Title | Agency

Name | Title | Agency

Date above-mentioned Person(s) Placed Container(s) in Sample Shuttle ___/___/___ | Military Time | Laboratory Affixed Sample Shuttle Seal No.

Name of Person(s) Breaking Laboratory Seal on Sample Shuttle and Taking Field Sample
- Name: R. Gervasio — Title: Sup. Env. Tech
- Name: K. Kloo — Title: HSMS III
- Name: D. Van Eck — Title: HSMS IV

Date Laboratory Sample Shuttle Seal No. 100298 Broken 9/18/86 | Time (Mil) Seal Broken and Sampling Begun 1145

FIELD SAMPLE NUMBER	CONTAINER NUMBER(S)	VOLUME OF CONTAINERS	DESCRIPTION OF SAMPLE
AR918-GW1	AR918-GW1	1 gal	Groundwater Clear to turbid
	AR918-GW1	500 ml	
	AR918-GW1	500 ml	
	AR918-GW1	500 ml	
	AR918-GW1	40 ml	
	AR918-GW1	40 ml	
	AR918-GW1	40 ml	

LAB CONTROL NO. ___

Date Sampling Completed & Field Seal Affixed to Sample Shuttle 9/18/86 | Military Time 16:00 | Field Affixed Sample Shuttle Seal No. 100299

Laboratory Person Breaking Field Seal on Sample Shuttle & Accepting Responsibility for Sample — Name: D. Kor — Title:

Field Sample Seal No. | Date Broken ___/___/___ | Military Time Seal Broken

SAMPLE RELINQUISHED BY	SAMPLE RECEIVED BY	DATE	TIME	REASON FOR CHANGE OF CUSTODY
R. Gervasio				Deliver to lab

Form DWM-026
6/84

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

000019

CHAIN OF CUSTODY RECORD

Use One Form for Each Sample

Shaded Areas for DEP Field Use Only

NAME OF UNIT AND ADDRESS: NJDEP / DHWM / BSA 65 Prospect St, Trenton NJ 08618

Name of Person(s) Preparing Container(s) for Sample Shuttle

Name | Title | Agency

Name | Title | Agency

Date above-mentioned Person(s) Placed Container(s) in Sample Shuttle ___/___/___ | Military Time | Laboratory Affixed Sample Shuttle Seal No.

Name of Person(s) Breaking Laboratory Seal on Sample Shuttle and Taking Field Sample
- Name: R. Gervasio Title: Sup. Env. Tech.
- Name: K. Kloc Title: HSMS III
- Name: D. VanEck Title: HSMS IV

Date Laboratory Sample Shuttle Seal No. 100298 Broken 9/18/86 | Time (Mil) Seal Broken and Sampling Begun 1000

FIELD SAMPLE NUMBER	CONTAINER NUMBER(S)	VOLUME OF CONTAINERS	DESCRIPTION OF SAMPLE
AR918-TB	AR918-TB	1 gallon	Trip Blank
	AR918-TB	500 ml	
	AR918-TB	500 ml	
	AR918-TB	500 ml	
	AR918-TB	40 ml	
	AR918-TB	40 ml	
	AR918-TB	40 ml	

LAB CONTROL NO. _____

Date Sampling Completed & Field Seal Affixed to Sample Shuttle 9/18/86 | Military Time 16:00 | Field Affixed Sample Shuttle Seal No. 100299

Laboratory Person Breaking Field Seal on Sample Shuttle & Accepting Responsibility for Sample: Name D. Kark Title

Field Sample Seal No. | Date Broken ___/___/___ | Military Time Seal Broken

SAMPLE RELINQUISHED BY	SAMPLE RECEIVED BY	DATE	TIME	REASON FOR CHANGE OF CUSTODY
R. Gervasio				Deliver to lab

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000020

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

CHAIN OF CUSTODY RECORD

Use One Form for Each Sample — *Shaded Areas for DEP Field Use Only*

NAME OF UNIT AND ADDRESS: NJDEP / DHWM / BSA 65 Prospect St. Trenton NJ 08618

Name of Person(s) Preparing Container(s) for Sample Shuttle

Name | Title | Agency

Name | Title | Agency

Date above-mentioned Person(s) Placed Container(s) in Sample Shuttle ___/___/___ | Military Time | Laboratory Affixed Sample Shuttle Seal No.

Name of Person(s) Breaking Laboratory Seal on Sample Shuttle and Taking Field Sample

Name: R. Gervasio — Title: Sup. Env. Tech.
Name: K. Kloc — Title: HSMS III
Name: D. Van Eck — Title: HSMS IV

Date Laboratory Sample Shuttle Seal No. 100296 — Broken 9/18/86 — Time (Mil) Seal Broken and Sampling Begun ~~100296~~

FIELD SAMPLE NUMBER	CONTAINER NUMBER(S)	VOLUME OF CONTAINERS	DESCRIPTION OF SAMPLE
AR918-FB	AR918-FB	1 gallon	Field Blank
	AR918-FB	500 ml	
	AR918-FB	500 ml	
	AR918-FB	500 ml	
	AR918-FB	40 ml	
	AR918-FB	40 ml	
	AR918-FB	40 ml	

LAB CONTROL NO. ___

Date Sampling Completed & Field Seal Affixed to Sample Shuttle 9/18/86 | Military Time 16:00 | Field Affixed Sample Shuttle Seal No. 100297

Laboratory Person Breaking Field Seal on Sample Shuttle & Accepting Responsibility for Sample — Name: D. Karr — Title:

Field Sample Seal No. ~~100297~~ | Date Broken ___/___/___ | Military Time Seal Broken

SAMPLE RELINQUISHED BY	SAMPLE RECEIVED BY	DATE	TIME	REASON FOR CHANGE OF CUSTODY
R. Gervasio				Deliver to lab

Form DWM-026
6/84

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

CHAIN OF CUSTODY RECORD

000021

Use One Form for Each Sample | *Shaded Areas for DEP Field Use Only*

NAME OF UNIT AND ADDRESS: NJDEP / DHWM / BSA 65 Prospect St. Trenton NJ 08618

Name of Person(s) Preparing Container(s) for Sample Shuttle

Name	Title	Agency
Name	Title	Agency

Date above-mentioned Person(s) Placed Container(s) in Sample Shuttle	Military Time	Laboratory Affixed Sample Shuttle Seal No.
___/___/___		

Name of Person(s) Breaking Laboratory Seal on Sample Shuttle and Taking Field Sample

Name	Title
R. Gervasio	Sup. Env. Tech.
K. Kloo	HSMS III
D. Van Eck	HSMS IV

Laboratory Sample Shuttle Seal No. 100296 Broken 9/18/86 | Time (Mil) Seal Broken and Sampling Begun ~~100296~~

FIELD SAMPLE NUMBER	CONTAINER NUMBER(S)	VOLUME OF CONTAINERS	DESCRIPTION OF SAMPLE
AR918-FB	AR918-FB	1 gallon	Field Blank
	AR918-FB	500 ml	
	AR918-FB	500 ml	
	AR918-FB	500 ml	
	AR918-FB	40 ml	
	AR918-FB	40 ml	
	AR918-FB	40 ml	

LAB CONTROL NO. _____

Date Sampling Completed & Field Seal Affixed to Sample Shuttle 9/18/86 | Military Time 16:00 | Field Affixed Sample Shuttle Seal No. 1605 100297

Laboratory Person Breaking Field Seal on Sample Shuttle & Accepting Responsibility for Sample — Name: S. Kar — Title:

Field Sample Seal No. ~~100297~~ | Date Broken ___/___/___ | Military Time Seal Broken

SAMPLE RELINQUISHED BY	SAMPLE RECEIVED BY	DATE	TIME	REASON FOR CHANGE OF CUSTODY
R. Gervasio				Deliver to lab

COPIES: Gold - Container/Shuttle Preparation Receipt

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NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

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CHAIN OF CUSTODY RECORD

Use One Form for Each Sample — *Shaded Areas for DEP Field Use Only*

NAME OF UNIT AND ADDRESS: NJDEP / DHWM / BSA 65 Prospect St., Trenton NJ 08618

Name of Person(s) Preparing Container(s) for Sample Shuttle

Name | Title | Agency

Name | Title | Agency

Date above-mentioned Person(s) Placed Container(s) in Sample Shuttle ___/___/___ | Military Time | Laboratory Affixed Sample Shuttle Seal No.

Name of Person(s) Breaking Laboratory Seal on Sample Shuttle and Taking Field Sample
- Name: D Van Eck — Title: HSMS IV
- Name: K. Kloo — Title: HSMS III
- Name: R. Gervasio — Title: Sup. Env. Tech

Date Laboratory Sample Shuttle Seal No. 100300 Broken 9/18/86 | Time (Mil) Seal Broken and Sampling Begun ~~100300~~ 1110

FIELD SAMPLE NUMBER	CONTAINER NUMBER(S)	VOLUME OF CONTAINERS	DESCRIPTION OF SAMPLE
AR918-SED1	AR918-SED1	1 liter	Sediment silty BIR sandy
	AR918-SED1	250 ml	

LAB CONTROL NO. ___

Date Sampling Completed & Field Seal Affixed to Sample Shuttle 9/18/86 | Military Time 16:00 | Field Affixed Sample Shuttle Seal No. 100301

Laboratory Person Breaking Field Seal on Sample Shuttle & Accepting Responsibility for Sample — Name: D. Hover — Title:

Field Sample Seal No. | Date Broken ___/___/___ | Military Time Seal Broken

SAMPLE RELINQUISHED BY	SAMPLE RECEIVED BY	DATE	TIME	REASON FOR CHANGE OF CUSTODY
R. Gervasio				Deliver to Lab

COPIES: Gold - Container/Shuttle Transportation Receipt — Pink - Field Sample Receipt

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NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

CHAIN OF CUSTODY RECORD

000023

Use One Form for Each Sample

Shaded Areas for DEP Field Use Only

NAME OF UNIT AND ADDRESS: NJDEP / DHWM / BSA 65 Prospect St Trenton NJ 08618

Name of Person(s) Preparing Container(s) for Sample Shuttle

Name | Title | Agency

Name | Title | Agency

Date above-mentioned Person(s) Placed Container(s) in Sample Shuttle ___/___/___ | Military Time | Laboratory Affixed Sample Shuttle Seal No.

Name of Person(s) Breaking Laboratory Seal on Sample Shuttle and Taking Field Sample

Name: R. Gervusio Title: Sup. Env Tech

Name: K. Kloo Title: HSMS III

Name: D. Van Eck Title: HSMS IV

Date Laboratory Sample Shuttle Seal No. 100300 Broken 9/18/86 | Time (Mil) Seal Broken and Sampling Begun 1030 ~~100300~~

FIELD SAMPLE NUMBER	CONTAINER NUMBER(S)	VOLUME OF CONTAINERS	DESCRIPTION OF SAMPLE
AR918 - SED 2	AR918 - SED2	1 liter	Sediment
	AR918 - SED2	250 ml	Brn Sed

LAB CONTROL NO. ___

Date Sampling Completed & Field Seal Affixed to Sample Shuttle 9/18/86 | Military Time 16:00 | Field Affixed Sample Shuttle Seal No. 100301

Laboratory Person Breaking Field Seal on Sample Shuttle & Accepting Responsibility for Sample

Name: D. Karl Title:

Field Sample Seal No. | Date Broken ___/___/___ | Military Time Seal Broken

SAMPLE RELINQUISHED BY	SAMPLE RECEIVED BY	DATE	TIME	REASON FOR CHANGE OF CUSTODY
R. Gervusio				Deliver to lab

COPIES: Gold - Container/Shuttle Preparation Receipt Pink - Field Sampler Receipt

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NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

CHAIN OF CUSTODY RECORD

000024

Use One Form for Each Sample — *Shaded Areas for DEP Field Use Only*

NAME OF UNIT AND ADDRESS: NJDEP / DHWM / BSA 65 Prospect St, Trenton NJ 08618

Name of Person(s) Preparing Container(s) for Sample Shuttle

Name	Title	Agency
Name	Title	Agency

Date above-mentioned Person(s) Placed Container(s) in Sample Shuttle	Military Time	Laboratory Affixed Sample Shuttle Seal No.
__/__/__		

Name of Person(s) Breaking Laboratory Seal on Sample Shuttle and Taking Field Sample

Name	Title
R. Gervasio	Sup. Env. Tech
K. Klee	HSMS III
D. Van Eck	HSMS IV

Date Laboratory Sample Shuttle Seal No.	Broken	Time (Mil) Seal Broken and Sampling Begun
100300	9/18/86	1028 ~~100300~~

FIELD SAMPLE NUMBER	CONTAINER NUMBER(S)	VOLUME OF CONTAINERS	DESCRIPTION OF SAMPLE
AR 918 - S 1	AR918 - S1	1 liter	soil
	AR918 - S1	250 ml	Brn Blk clay

LAB CONTROL NO. _____

Date Sampling Completed & Field Seal Affixed to Sample Shuttle	Military Time	Field Affixed Sample Shuttle Seal No.
9/18/86	16:00	100301

Laboratory Person Breaking Field Seal on Sample Shuttle & Accepting Responsibility for Sample — Name: D. Kark — Title:

Field Sample Seal No.	Date Broken	Military Time Seal Broken
	__/__/__	

SAMPLE RELINQUISHED BY	SAMPLE RECEIVED BY	DATE	TIME	REASON FOR CHANGE OF CUSTODY
R. Gervasio				Deliver to lab

Form DWM-026
6/84

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

CHAIN OF CUSTODY RECORD

000025

Use One Form for Each Sample — *Shaded Areas for DEP Field Use Only*

NAME OF UNIT AND ADDRESS: NJDEP / DHWM / BSA 65 Prospect St. Trenton NJ 08618

Name of Person(s) Preparing Container(s) for Sample Shuttle

Name | Title | Agency

Name | Title | Agency

Date above-mentioned Person(s) Placed Container(s) in Sample Shuttle ___/___/___ | Military Time | Laboratory Affixed Sample Shuttle Seal No.

Name of Person(s) Breaking Laboratory Seal on Sample Shuttle and Taking Field Sample
- Name: R Gervasio — Title: Sup. Env. Tech
- Name: K. Kloo — Title: HSMS III
- Name: D. Van Eck — Title: HSMS IV

State Laboratory Sample Shuttle Seal No. 100300 Broken 9/18/86 | Time (Mil) Seal Broken and Sampling Begun 1043 ~~100300~~

FIELD SAMPLE NUMBER	CONTAINER NUMBER(S)	VOLUME OF CONTAINERS	DESCRIPTION OF SAMPLE
AR918-S2	AR918-S2	1 liter	soil
	AR918-S2	250 ml	dark soil
			oil odor

LAB CONTROL NO. ___

Date Sampling Completed & Field Seal Affixed to Sample Shuttle 9/18/86 | Military Time 16:00 | Field Affixed Sample Shuttle Seal No. 100301

Laboratory Person Breaking Field Seal on Sample Shuttle & Accepting Responsibility for Sample — Name: D. Kur — Title:

Field Sample Seal No. | Date Broken ___/___/___ | Military Time Seal Broken

SAMPLE RELINQUISHED BY	SAMPLE RECEIVED BY	DATE	TIME	REASON FOR CHANGE OF CUSTODY
R. Gervasio				Deliver to lab

COPIES:

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NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

000026

CHAIN OF CUSTODY RECORD

Use One Form for Each Sample — *Shaded Areas for DEP Field Use Only*

NAME OF UNIT AND ADDRESS: NJDEP / DHWM / BSA 65 Prospect St. Trenton NJ 08618

Name of Person(s) Preparing Container(s) for Sample Shuttle

Name | Title | Agency

Name | Title | Agency

Date above-mentioned Person(s) Placed Container(s) in Sample Shuttle ___/___/___ | Military Time | Laboratory Affixed Sample Shuttle Seal No.

Name of Person(s) Breaking Laboratory Seal on Sample Shuttle and Taking Field Sample
- Name: R. Gervasio — Title: Sup. Env. Tech
- Name: K. Kloo — Title: HSMS III
- Name: D. Van Eck — Title: HSMS IV

Date Laboratory Sample Shuttle Seal No. 100300 Broken 9/18/86 | Time (Mil) Seal Broken and Sampling Begun 1220 ~~100300~~

FIELD SAMPLE NUMBER	CONTAINER NUMBER(S)	VOLUME OF CONTAINERS	DESCRIPTION OF SAMPLE
AR918-S3	AR918-S3	1 liter	soil
	AR918-S3	250 ml	Brn Sand

LAB CONTROL NO. ___

Date Sampling Completed & Field Seal Affixed to Sample Shuttle 9/18/86 | Military Time 16:00 | Field Affixed Sample Shuttle Seal No. 100301

Laboratory Person Breaking Field Seal on Sample Shuttle & Accepting Responsibility for Sample — Name: Sam Kark — Title: Samp. Cust.

Field Sample Seal No. | Date Broken ___/___/___ | Military Time Seal Broken

SAMPLE RELINQUISHED BY	SAMPLE RECEIVED BY	DATE	TIME	REASON FOR CHANGE OF CUSTODY
R. Gervasio				Deliver to lab

Form DWM-026
6/84

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

CHAIN OF CUSTODY RECORD

000027

Use One Form for Each Sample

Shaded Areas for DEP Field Use Only

NAME OF UNIT AND ADDRESS: NJDEP / DHWM / BSA 65 Prospect St, Trenton NJ 08618

Name of Person(s) Preparing Container(s) for Sample Shuttle

Name	Title	Agency
Name	Title	Agency

Date above-mentioned Person(s) Placed Container(s) in Sample Shuttle ___/___/___ | Military Time | Laboratory Affixed Sample Shuttle Seal No.

Name of Person(s) Breaking Laboratory Seal on Sample Shuttle and Taking Field Sample

Name: R. Gervasio Title: Sup. Env. Tech
Name: K. Kloc Title: HSMS III
Name: D. VanEck Title: HSMS IV

The Laboratory Sample Shuttle Seal No. 100300 Broken 9/18/86 | Time (Mil) Seal Broken and Sampling Begun 1128 ~~100300~~

FIELD SAMPLE NUMBER	CONTAINER NUMBER(S)	VOLUME OF CONTAINERS	DESCRIPTION OF SAMPLE
AR918-S4	AR918-S4	1 liter	soil
	AR918-S4	250 ml	sandy only

LAB CONTROL NO. ___

Date Sampling Completed & Field Seal Affixed to Sample Shuttle 9/18/86 | Military Time 16:00 | Field Affixed Sample Shuttle Seal No. 100301

Laboratory Person Breaking Field Seal on Sample Shuttle & Accepting Responsibility for Sample: Name D. Kovar Title Samp. Cust.

Field Sample Seal No. | Date Broken ___/___/___ | Military Time Seal Broken

SAMPLE RELINQUISHED BY	SAMPLE RECEIVED BY	DATE	TIME	REASON FOR CHANGE OF CUSTODY
R Gervasio				Deliver to Lab

COPIES: Gold - Container/Shuttle Preparation Person ...

MARCO LABS, INC.

Note: This document must be returned to the laboratory for inclusion in the final report. Please read attached instructions and complete sections marked with an *

SAMPLE PACK NO. _____ DATE 9/16 PACKED BY J. Davies (signature)

CHECKED AND SEALED BY _____ SEAL TAG NUMBER 100296

SHIPPED TO NJ DEP Prospect St Trenton NJ. RETURN TAG NUMBER (S) 100297

SHIPPED BY MARCO LABS METHOD OF SHIPMENT Federal Express

BOTTLES INCLUDED	NUMBER	TESTS	*SAMPLER CHECK	PACKER CHECK
1 litre glass with teflon liner		Ext. Organics		
4 Oz. glass preserved with NaOH		Cyanide		
4 Oz. glass preserved with $H_3PO_4/CuSO_4$		Phenol		
8 or 16 Oz. plastic preserved with HNO_3		Metals		
8 or 16 Oz. plastic preserved with H_2SO_4		Nitrogen		
8 Oz. glass with teflon liner		TOC		
40 ml. glass vials		Volatiles		
8 or 16 Oz. plastic (no preservative)		Various		
1 litre glass preserved with HCl		Oil & grease		
8 or 16 Oz. plastic preserved with Zinc Acetate		Sulfide		
4 oz. plastic or glass (sterile)		Bacteria		
1 set field Blank			✓	
2 gal field Blank water			✓	

(1)* OPENED BY (signature) DATE (2) WAS SEAL INTACT YES NO

(3) ORIGINAL SEAL TAG NUMBER (4) REMARKS

(5) CUSTODY RELINQUISHED BY (signature) (6) RECEIVED BY SAMPLER (signature) DATE

(7) PACKED FOR RETURN BY (signature) (8) SEAL TAG NUMBER DATE

(9) SHIPPED BY (10) METHOD OF SHIPMENT

(11) MUST SAMPLES BE RETAINED AFTER COMPLETION OF ANALYSIS? YES NO FOR HOW LONG?

000029

Note: This document must be returned to the laboratory for inclusion in the final report. Please read attached instructions and complete sections marked with an *

SAMPLE PACK NO. _____ DATE 9/16 PACKED BY J. Davies (signature)

CHECKED AND SEALED BY _____ SEAL TAG NUMBER 100298

SHIPPED TO NJ DEP Prospect St Trenton NJ. RETURN TAG NUMBER (S) 100299

SHIPPED BY MARCO LABS METHOD OF SHIPMENT Federal Express

BOTTLES INCLUDED	NUMBER	TESTS	*SAMPLER CHECK	PACKER CHECK
1 ~~litre~~ gal glass with teflon liner	1	Ext.Organics	✓	
4 Oz. glass preserved with NaOH	1	Cyanide	✓	
4 Oz. glass preserved with $H_3PO_4/CuSO_4$	1	Phenol	✓	
8 or 16 Oz. plastic preserved with HNO_3	1	Metals	✓	
8 or 16 Oz. plastic preserved with H_2SO_4		Nitrogen		
8 Oz. glass with teflon liner		TOC		
40 ml. glass vials	3	Volatiles	✓	
8 or 16 Oz. plastic (no preservative)		Various		
1 litre glass preserved with HCl		Oil & grease		
8 or 16 Oz. plastic preserved with Zinc Acetate		Sulfide		
4 oz. plastic or glass (sterile)		Bacteria		
1 full set trip Blank				

(1)* OPENED BY (signature) DATE (2) WAS SEAL INTACT YES NO

(3) ORIGINAL SEAL TAG NUMBER (4) REMARKS

(5) CUSTODY RELINQUISHED BY (signature) (6) RECEIVED BY SAMPLER (signature) DATE

(7) PACKED FOR RETURN BY (signature) (8) SEAL TAG NUMBER DATE

(9) SHIPPED BY (10) METHOD OF SHIPMENT

(11) MUST SAMPLES BE RETAINED AFTER COMPLETION OF ANALYSIS? YES NO FOR HOW LONG?

TELEPHONE

NARCO LABS, INC.

Note: This document must be returned to the laboratory for inclusion in the final report. Please read attached instructions and complete sections marked with an *

SAMPLE PACK NO. _____ DATE 9/16 PACKED BY J. Davies (signature)

CHECKED AND SEALED BY _____ SEAL TAG NUMBER 100294

SHIPPED TO NJ DEP Prospect St Trenton NJ. RETURN TAG NUMBER (S) 100295

SHIPPED BY NARCO LABS METHOD OF SHIPMENT FEDERAL EXPRESS

BOTTLES INCLUDED	NUMBER	TESTS	*SAMPLER CHECK	PACKER CHECK
1 ~~litre~~ gal glass with teflon liner	2	Ext.Organics	✓	
4 Oz. glass preserved with NaOH	2	Cyanide	✓	
4 Oz. glass preserved with $H_3PO_4/CuSO_4$	2	Phenol	✓	
8 or 16 Oz. plastic preserved with HNO_3	2	Metals	✓	
8 or 16 Oz. plastic preserved with H_2SO_4		Nitrogen		
8 Oz. glass with teflon liner		TOC		
40 ml. glass vials	6	Volatiles	✓	
8 or 16 Oz. plastic (no preservative)		Various		
1 litre glass preserved with HCl		Oil & grease		
8 or 16 Oz. plastic preserved with Zinc Acetate		Sulfide		
4 oz. plastic or glass (sterile)		Bacteria		

(1)* OPENED BY (signature) DATE (2) WAS SEAL INTACT YES NO

(3) ORIGINAL SEAL TAG NUMBER (4) REMARKS

(5) CUSTODY RELINQUISHED BY (signature) (6) RECEIVED BY SAMPLER (signature) DATE

(7) PACKED FOR RETURN BY (signature) (8) SEAL TAG NUMBER DATE

(9) SHIPPED BY (10) METHOD OF SHIPMENT

(11) MUST SAMPLES BE RETAINED AFTER COMPLETION OF ANALYSIS? YES NO FOR HOW LONG?

TELEPHONE

2 vols NANCO LABS, INC. SHIPPING REMARKS

Note: This document must be returned to the laboratory for inclusion in the final report. Please read attached instructions and complete sections marked with an *

SAMPLE PACK NO. _____ DATE 9/16 PACKED BY Y. Davros (signature)

CHECKED AND SEALED BY _____ SEAL TAG NUMBER 100292

SHIPPED TO NJ DEP Prospect St Trenton NJ. RETURN TAG NUMBER (S) 100293

SHIPPED BY NANCO LABS METHOD OF SHIPMENT FEDERAL EXPRESS

BOTTLES INCLUDED	NUMBER	TESTS	*SAMPLER CHECK	PACKER CHECK
1 ~~litre~~ gal glass with teflon liner	2	Ext.Organics	✓	
4 Oz. glass preserved with NaOH	2	Cyanide	✓	
4 Oz. glass preserved with $H_3PO_4/CuSO_4$	2	Phenol	✓	
8 or 16 Oz. plastic preserved with HNO_3	2	Metals	✓	
8 or 16 Oz. plastic preserved with H_2SO_4		Nitrogen		
8 Oz. glass with teflon liner		TOC		
40 ml. glass vials	6	Volatiles	✓	
8 or 16 Oz. plastic (no preservative)		Various		
1 litre glass preserved with HCl		Oil & grease		
8 or 16 Oz. plastic preserved with Zinc Acetate		Sulfide		
4 oz. plastic or glass (sterile)		Bacteria		

(1)* OPENED BY (signature) DATE (2) WAS SEAL INTACT YES NO

(3) ORIGINAL SEAL TAG NUMBER (4) REMARKS

(5) CUSTODY RELINQUISHED BY (signature) (6) RECEIVED BY SAMPLER (signature) DATE

(7) PACKED FOR RETURN BY (signature) (8) SEAL TAG NUMBER DATE

(9) SHIPPED BY (10) METHOD OF SHIPMENT

(11) MUST SAMPLES BE RETAINED AFTER COMPLETION OF ANALYSIS? YES NO FOR HOW LONG?

TELEPHONE

000032

Note: This document must be returned to the laboratory for inclusion in the final report. Please read attached instructions and complete sections marked with an *

SAMPLE PACK NO. _____ DATE 9/16 PACKED BY Y. Davies (signature)

CHECKED AND SEALED BY _____ SEAL TAG NUMBER 100300

SHIPPED TO NJ DEP Prospect St Trenton NJ. RETURN TAG NUMBER (S) 100301

SHIPPED BY MARCO LABS METHOD OF SHIPMENT Federal Express

BOTTLES INCLUDED	NUMBER	TESTS	*SAMPLER CHECK	PACKER CHECK
1 litre glass with teflon liner	6	Ext.Organics	✓	
4 Oz. glass preserved with NaOH		Cyanide		
4 Oz. glass preserved with $H_3PO_4/CuSO_4$		Phenol		
8 or 16 Oz. plastic preserved with HNO_3		Metals		
8 or 16 Oz. plastic preserved with H_2SO_4		Nitrogen		
8 Oz. glass with teflon liner		TOC		
40 ml. glass vials	6	Volatiles	✓	
8 or 16 Oz. plastic (no preservative)		Various		
1 litre glass preserved with HCl		Oil & grease		
8 or 16 Oz. plastic preserved with Zinc Acetate		Sulfide		
4 oz. plastic or glass (sterile)		Bacteria		
TRIP BLANK	3	volatiles	✓	

(1)* OPENED BY (signature) DATE (2) WAS SEAL INTACT YES NO

(3) ORIGINAL SEAL TAG NUMBER (4) REMARKS

(5) CUSTODY RELINQUISHED BY (signature) (6) RECEIVED BY SAMPLER (signature) DATE

(7) PACKED FOR RETURN BY (signature) (8) SEAL TAG NUMBER DATE

(9) SHIPPED BY (10) METHOD OF SHIPMENT

(11) MUST SAMPLES BE RETAINED AFTER COMPLETION OF ANALYSIS? YES NO FOR HOW LONG?

NANCO LABS, INC. CHAIN OF CUSTODY RECORD. FIELD SAMPLING side for lab use only

CUSTOMER NAME NJ DEP

ADDRESS Prospect St.

CITY Trenton STATE NJ ZIP

LED BY (SIGNATURE) DATE TIME

CONDITION AND DESCRIPTION OF BOTTLES

WAS SEAL ___YES ___

LING LOCATION	# BOTTLES	DATE	TIME	G	C	CATEGORY	REMARKS
7R918-SW1	7	9/18/86		✓		surface water	J6-0115-008
7R918-SW2	7	9/18/86		✓		surface water	J6-0116-008

SHED BY(SIGNATURE)	DATE	TIME	RECEIVED BY(SIGNATURE)	DATE	TIME	METHOD OF SHIPMENT
	9/18/86	1600	(1)			
SHED BY	DATE	TIME	RECEIVED BY (2)	DATE	TIME	METHOD OF SHIPMENT
SHED BY	DATE	TIME	RECEIVED BY (3)	DATE	TIME	METHOD OF SHIPMENT
SHED BY	DATE	TIME	RECEIVED AT LABORATORY BY S. Kall	DATE 9/19/86	TIME	METHOD OF SHIPMENT

MARCO LABS, INC. CHAIN OF CUSTODY RECORD AND SHIPPING

CUSTOMER NAME NJ DEP

ADDRESS Prospect St.

CITY Trinton STATE NJ ZIP

side for lab use only

CONDITION AND DESCRIPTION OF BOTTLES

WAS SEAL ___ YES ___

LED BY (SIGNATURE) _____ DATE 9/18/86 TIME

LING LOCATION	# BOTTLES	DATE	TIME	G		CATEGORY	REMARKS
4R918 - SW3	7	9/18/86		✓		surface water	J6-0117-008
4R918-SW4	7	9/18/86		✓		surface water	J6-0118-008

ISHED BY(SIGNATURE)	DATE 9/18/86	TIME	RECEIVED BY(SIGNATURE) (1)	DATE	TIME	METHOD OF SHIPMENT
ISHED BY	DATE	TIME	RECEIVED BY (2)	DATE	TIME	METHOD OF SHIPMENT
SHED BY	DATE	TIME	RECEIVED BY (3)	DATE	TIME	METHOD OF SHIPMENT
SHED BY	DATE	TIME	RECEIVED AT LABORATORY BY	DATE	TIME	METHOD OF SHIPMENT

000084

NANCO LABS, INC. CHAIN OF CUSTODY RECORD: FIELD SAMPLING

CUSTOMER NAME NJ DEP

ADDRESS Prospect St.

CITY Trenton STATE NJ ZIP

side for lab use only

CONDITION AND DESCRIPTION OF BOTTLES

WAS SEAL ___YES ___

LED BY (SIGNATURE) _____ DATE 9/18/86 TIME _____

LING LOCATION	# BOTTLES	DATE	TIME	G	C	CATEGORY							REMARKS

ISHED BY(SIGNATURE)	DATE 9/18/86	TIME	RECEIVED BY(SIGNATURE) (1)	DATE	TIME	METHOD OF SHIPMENT
SHED BY	DATE	TIME	RECEIVED BY (2)	DATE	TIME	METHOD OF SHIPMENT
SHED BY	DATE	TIME	RECEIVED BY (3)	DATE	TIME	METHOD OF SHIPMENT
SHED BY	DATE	TIME	RECEIVED AT LABORATORY BY	DATE	TIME	METHOD OF SHIPMENT

000035

NANCO LABS, INC: CHAIN OF CUSTODY RECORD: FIELD SAMPLING

side for lab use only

CUSTOMER NAME NJ DCP

ADDRESS Prospect St.

CITY Trenton STATE NJ ZIP

CONDITION AND DESCRIPTION OF BOTTLES

WAS SEAL ___ YES ___

LED BY (SIGNATURE) _____ DATE 9/18/86 TIME _____

LING LOCATION	# BOTTLES	DATE	TIME	G	C	CATEGORY	REMARKS
Field Blank	seven empty two full	9/18/86	11:05	✓		water; blank	J6 0121-008

SHED BY(SIGNATURE)	DATE	TIME	RECEIVED BY(SIGNATURE)	DATE	TIME	METHOD OF SHIPMENT
	9/18/86	11:05	(1)			
SHED BY	DATE	TIME	RECEIVED BY ✓ (2)	DATE	TIME	METHOD OF SHIPMENT
SHED BY	DATE	TIME	RECEIVED BY (3)	DATE	TIME	METHOD OF SHIPMENT
SHED BY	DATE	TIME	RECEIVED AT LABORATORY BY D. Kar	DATE 9/19	TIME	METHOD OF SHIPMENT

000036

NANCO LABS, INC: CHAIN OF CUSTODY RECORD: FIELD SAMPLING side for lab use only

CUSTOMER NAME NJ DEP

ADDRESS Prospect St.

CITY Trenton STATE NJ ZIP

LED BY (SIGNATURE) DATE 9/18 TIME

CONDITION AND DESCRIPTION OF BOTTLES: J6-0122-009, J6-0128-000

WAS SEAL ___ YES ___

LING LOCATION	# BOTTLES	DATE	TIME	G	C	CATEGORY	REMARKS
AR918-SED1	2	9/18/86		✓		sediment-soil	
AR918-SED2	2	9/18/86		✓		sediment-soil	
AR918-S1	2	9/18/86		✓		soil	
918-S2	2	9/18/86		✓		soil	
AR918-S3	2	9/18/86		✓		soil	
AR918-S4	2	9/18/86		✓		soil	
AR918-TB	3	9/18/86					

SHED BY(SIGNATURE)	DATE	TIME	RECEIVED BY(SIGNATURE)	DATE	TIME	METHOD OF SHIPMENT
	9/18/86	1600	(1)			
SHED BY	DATE	TIME	RECEIVED BY (2)	DATE	TIME	METHOD OF SHIPMENT
SHED BY	DATE	TIME	RECEIVED BY (3)	DATE	TIME	METHOD OF SHIPMENT
SHED BY	DATE	TIME	RECEIVED AT LABORATORY BY D. Rau	DATE 9/19/86	TIME	METHOD OF SHIPMENT

000027

000038

NANCO LABS: LABORATORY CHAIN OF CUSTODY: INORGANICS

NANCO SAMPLE NUMBER(S) J6-0115-008 CUSTOMER NAME NJ DEP

PROJECT ID ASARCO (AR918) CUSTOMER SAMPLE ID SW-1

DATE RECEIVED 9/19/86 TIME 10:30 STORAGE LOCATION AA to JJ

RECEIVED INTO STORAGE DATE/TIME	removed from storage	DATE	TIME	returned to storage	DATE	TIME
J. Karr 9/16/86 10:30am						
METALS: 1 # of bottles:	J. Ranka	9/22	3:15			
CYANIDE: 1 # of bottles:	P. Turner	9/30	12:00	P. Turner	9/30	3:30
PHENOL: 1 # of bottles:	P. Turner P. Turner	9/30 10/17	12:00 9:30	P. Turner P. Turner	9/30 10/17	3:30 3:45
MISC... # of bottles:						

DISPOSAL INSTRUCTIONS: IS SAMPLE TO BE RETAINED? _____ YES _____ NO IF YES, HOW LONG? _____

ARE SAMPLES CONTAMINATED? IF YES, SPECIFY WHICH _____

DISPOSAL INSTRUCTIONS _____

RELEASED FOR DISPOSAL BY: _____ DATE _____ TIME _____

000038

NANCO LABS: LABORATORY CHAIN OF CUSTODY: INORGANICS

NANCO SAMPLE NUMBER(S) J6-0116-008 CUSTOMER NAME NJ DEP

PROJECT ID ASARCO (AR918) CUSTOMER SAMPLE ID SW-2

DATE RECEIVED 9/19/86 TIME 10:30 STORAGE LOCATION AA to JJ

RECEIVED INTO STORAGE DATE/TIME	removed from storage	DATE	TIME	returned to storage	DATE	TIME
J. Karr 9/16/86 10:30am						
METALS: 1 # of bottles:	J. Ranka	9/22	3:15			
CYANIDE: 1 # of bottles:	P. Turner	9/30	12:00	P. Turner	9/30	3:30
PHENOL: 1 # of bottles:	P. Turner P. Turner	9/30 10/17	12:00 9:30	P. Turner P. Turner	9/30 10/17	3:30 3:45
MISC... # of bottles:						

DISPOSAL INSTRUCTIONS: IS SAMPLE TO BE RETAINED? _____ YES _____ NO IF YES, HOW LONG? _____

ARE SAMPLES CONTAMINATED? IF YES, SPECIFY WHICH _____

DISPOSAL INSTRUCTIONS _____

RELEASED FOR DISPOSAL BY: _____ DATE _____ TIME _____

000039

NANCO LABS: LABORATORY CHAIN OF CUSTODY: INORGANICS

NANCO SAMPLE NUMBER(S) J6-0117-008 CUSTOMER NAME NJ DEP

PROJECT ID A Sarco (AR918) CUSTOMER SAMPLE ID SW-3

DATE RECEIVED 9/19/86 TIME 10:30 STORAGE LOCATION AA to JJ

RECEIVED INTO STORAGE DATE/TIME	removed from storage	DATE	TIME	returned to storage	DATE	TIME
J. Karr 9/16/86 10:30am						
METALS: 1 # of bottles:	J. Ranka	9/22	3:15			
CYANIDE: 1 # of bottles:	P. Turner	9/30	12:00	P. Turner	9/30	3:30
PHENOL: 1 # of bottles:	P. Turner P. Turner	9/30 10/17	12:00 9:30	P. Turner P. Turner	9/30 10/17	3:30 3:45
MISC... # of bottles:						

DISPOSAL INSTRUCTIONS: IS SAMPLE TO BE RETAINED? _____ YES _____ NO IF YES, HOW LONG? _____

ARE SAMPLES CONTAMINATED? IF YES, SPECIFY WHICH _____

DISPOSAL INSTRUCTIONS _____

RELEASED FOR DISPOSAL BY: _____ DATE _____ TIME _____

000040

NANCO LABS: LABORATORY CHAIN OF CUSTODY: INORGANICS

NANCO SAMPLE NUMBER(S) J6-0118-008 ; CUSTOMER NAME NJ DEP

PROJECT ID ASARCO (AR918) CUSTOMER SAMPLE ID SW-4

DATE RECEIVED 9/19/86 TIME 10:30 STORAGE LOCATION AA to JJ

RECEIVED INTO STORAGE DATE/TIME	removed from storage	DATE	TIME	returned to storage	DATE	TIME
J. Karr 9/16/86 10:30am						
METALS: 1 # of bottles:	J. Ranka	9/22	3:15			
CYANIDE: 1 # of bottles:	P. Turner	9/30	12:00	P. Turner	9/30	3:30
PHENOL: 1 # of bottles:	P. Turner P. Turner	9/30 10/17	12:00 9:30	P. Turner P. Turner	9/30 10/17	3:30 3:45
MISC... # of bottles:						

DISPOSAL INSTRUCTIONS: IS SAMPLE TO BE RETAINED? _____ YES _____ NO IF YES, HOW LONG? _____

ARE SAMPLES CONTAMINATED? IF YES, SPECIFY WHICH _____

DISPOSAL INSTRUCTIONS _____

RELEASED FOR DISPOSAL BY: _____ DATE _____ TIME _____

000041

NANCO LABS: LABORATORY CHAIN OF CUSTODY: INORGANICS

NANCO SAMPLE NUMBER(S) J6-0119-008 CUSTOMER NAME NJ DEP

PROJECT ID ASARCO (AR918) CUSTOMER SAMPLE ID GW-1

DATE RECEIVED 9/19/86 TIME 10:30 STORAGE LOCATION AA to JJ

RECEIVED INTO STORAGE DATE/TIME	removed from storage	DATE	TIME	returned to storage	DATE	TIME
J. Kaur 9/16/86 10:30am						
METALS: 1 # of bottles:	J. Ranka	9/22	3:15			
CYANIDE: 1 # of bottles:	P. Turner	9/30	12:00	P. Turner	9/30	3:30
PHENOL: 1 # of bottles:	P. Turner P. Turner	9/30 10/17	12:00 9:30	P. Turner P. Turner	9/30 10/17	3:30 3:45
MISC... # of bottles:						

DISPOSAL INSTRUCTIONS: IS SAMPLE TO BE RETAINED? _____ YES _____ NO IF YES, HOW LONG? _____

ARE SAMPLES CONTAMINATED? IF YES, SPECIFY WHICH _____

DISPOSAL INSTRUCTIONS _____

RELEASED FOR DISPOSAL BY: _____ DATE _____ TIME _____

NANCO LABS: LABORATORY CHAIN OF CUSTODY: INORGANICS

NANCO SAMPLE NUMBER(S) J6-0120-008 CUSTOMER NAME NJ DEP

PROJECT ID A Sarco (AR918) CUSTOMER SAMPLE ID Trip Blank

DATE RECEIVED 9/19/86 TIME 10:30 STORAGE LOCATION AA to JJ

RECEIVED INTO STORAGE DATE/TIME	removed from storage	DATE	TIME	returned to storage	DATE	TIME
J. Karr 9/16/86 10:30am						
METALS: 1 # of bottles:	J. Rapska	9/22	3:45			
CYANIDE: 1 # of bottles:	P. Turner	9/30	12:00	P. Turner	9/30	3:30
PHENOL: 1 # of bottles:	P. Turner	9/30	12:00	P. Turner	9/30	3:30
MISC... # of bottles:						

DISPOSAL INSTRUCTIONS: IS SAMPLE TO BE RETAINED? _____ YES _____ NO IF YES, HOW LONG? _____

ARE SAMPLES CONTAMINATED? IF YES, SPECIFY WHICH _____

DISPOSAL INSTRUCTIONS _____

RELEASED FOR DISPOSAL BY: _____ DATE _____ TIME _____

000043

NANCO LABS: LABORATORY CHAIN OF CUSTODY: INORGANICS

NANCO SAMPLE NUMBER(S) J6-0121-008 CUSTOMER NAME NJ DEP

PROJECT ID Asarco (AR918) CUSTOMER SAMPLE ID Field Blank

DATE RECEIVED 9/19/86 TIME 10:30 STORAGE LOCATION AA to JJ

RECEIVED INTO STORAGE DATE/TIME	removed from storage	DATE	TIME	returned to storage	DATE	TIME
S. Kaur 9/16/86 10:30am						
METALS: 1 # of bottles:	J. Ranka	9/22	3:15			
CYANIDE: 1 # of bottles:	P. Turner	9/30	12:00	P. Turner	9/30	3:30
PHENOL: 1 # of bottles:	P. Turner	9/30	12:00	P. Turner	9/30	3:30
MISC... # of bottles:						

DISPOSAL INSTRUCTIONS: IS SAMPLE TO BE RETAINED? _____ YES _____ NO IF YES, HOW LONG? _____

ARE SAMPLES CONTAMINATED? IF YES, SPECIFY WHICH _____

DISPOSAL INSTRUCTIONS _____

RELEASED FOR DISPOSAL BY: _____ DATE _____ TIME _____

000044

NANCO LABS: LABORATORY CHAIN OF CUSTODY: INORGANICS

NANCO SAMPLE NUMBER(S) J6-0122-009 CUSTOMER NAME NJDEP

PROJECT ID Asarco EAR9187 CUSTOMER SAMPLE ID S-1

DATE RECEIVED 9/19/86 TIME 10:30 STORAGE LOCATION AA to JJ

RECEIVED INTO STORAGE DATE/TIME	removed from storage	DATE	TIME	returned to storage	DATE	TIME
D. Kar 9/19/86 10:30						
METALS: # of bottles:	D. Shiler	10/6	9:00	D. Shiler	10/6	5:00
CYANIDE: # of bottles:	P. Turner	10/1	9:00	P. Turner	10/8	4:00
PHENOL: # of bottles:	P. Turner P. Turner	10/1 10/8	9:00 900	P. Turner	10/8	3:00
MISC... 1 liter amber # of bottles:						

DISPOSAL INSTRUCTIONS: IS SAMPLE TO BE RETAINED? _____ YES _____ NO IF YES, HOW LONG? _____

ARE SAMPLES CONTAMINATED? IF YES, SPECIFY WHICH _____

DISPOSAL INSTRUCTIONS _____

RELEASED FOR DISPOSAL BY: _____ DATE _____ TIME _____

000048

NANCO LABS: LABORATORY CHAIN OF CUSTODY: INORGANICS

NANCO SAMPLE NUMBER(S) J6-0123-009 CUSTOMER NAME NJDEP

PROJECT ID Asarco EAR9187 CUSTOMER SAMPLE ID S-2

DATE RECEIVED 9/19/86 TIME 10:30 STORAGE LOCATION AA to JJ

RECEIVED INTO STORAGE DATE/TIME	removed from storage	DATE	TIME	returned to storage	DATE	TIME
D. Kar 9/19/86 10:30						
METALS: # of bottles:	[illegible]	10/6	9:00	[illegible]	10/6	5:00
CYANIDE: # of bottles:	B. Turner	10/1	9:00	B. Turner	10/1	4:00
PHENOL: # of bottles:	B. Turner B. Turner	10/1 10/8	9:00 9:00	B. Turner B. Turner	10/1 10/8	4:00 3:00
MISC... 1 liter amber # of bottles:						

DISPOSAL INSTRUCTIONS: IS SAMPLE TO BE RETAINED? _____ YES _____ NO IF YES, HOW LONG? _____

ARE SAMPLES CONTAMINATED? IF YES, SPECIFY WHICH _____

DISPOSAL INSTRUCTIONS _____

RELEASED FOR DISPOSAL BY: _____ DATE _____ TIME _____

000046

NANCO LABS: LABORATORY CHAIN OF CUSTODY: INORGANICS

NANCO SAMPLE NUMBER(S) J6-0124 -009 CUSTOMER NAME NJ DEP

PROJECT ID Asarco EAR9187 CUSTOMER SAMPLE ID S-3

DATE RECEIVED 9/19/86 TIME 10:30 STORAGE LOCATION AA to JJ

RECEIVED INTO STORAGE DATE/TIME	removed from storage	DATE	TIME	returned to storage	DATE	TIME
D. Kar 9/19/86 10:30						
METALS: # of bottles:	[illegible]	10/6	9:00	[illegible]	10/6	5:00
CYANIDE: # of bottles:	P. Turner	10/1	9:00	B. Turner	10/1	4:00
PHENOL: # of bottles:	P. Turner P. Turner	10/1 10/8	9:00 9:00	B. Turner B. Turner	10/1 10/8	4:00 3:00
MISC... lita amber # of bottles:						

DISPOSAL INSTRUCTIONS: IS SAMPLE TO BE RETAINED? _____ YES _____ NO IF YES, HOW LONG? _____

ARE SAMPLES CONTAMINATED? IF YES, SPECIFY WHICH _____

DISPOSAL INSTRUCTIONS _____

RELEASED FOR DISPOSAL BY: _____ DATE _____ TIME _____

000047

NANCO LABS: LABORATORY CHAIN OF CUSTODY: INORGANICS

NANCO SAMPLE NUMBER(S) J6-0125-009 CUSTOMER NAME NJDEP

PROJECT ID Asarco EAR9187 CUSTOMER SAMPLE ID S-4

DATE RECEIVED 9/19/86 TIME 10:30 STORAGE LOCATION AA to JJ

RECEIVED INTO STORAGE DATE/TIME	removed from storage	DATE	TIME	returned to storage	DATE	TIME
D. Kar 9/19/86 10:30						
METALS:	[illegible]	10/6	9:00	[illegible]	10/6	5:00
# of bottles:						
CYANIDE:	P. Turner	10/1	9:00	P. Turner	10/1	4:00
# of bottles:						
PHENOL:	P. Turner	10/1	9:00	P. Turner	10/1	4:00
# of bottles:	P. Turner	10/8	9:00	P. Turner	10/8	3:00
MISC...						
1 liter amber						
1 # of bottles:						

DISPOSAL INSTRUCTIONS: IS SAMPLE TO BE RETAINED? _____ YES _____ NO IF YES, HOW LONG? _____

ARE SAMPLES CONTAMINATED? IF YES, SPECIFY WHICH _____

DISPOSAL INSTRUCTIONS _____

RELEASED FOR DISPOSAL BY: _____ DATE _____ TIME _____

000048

NANCO LABS: LABORATORY CHAIN OF CUSTODY: INORGANICS

NANCO SAMPLE NUMBER(S) J6-0126-009 CUSTOMER NAME NJ DEP

PROJECT ID Asarco EAR9187 CUSTOMER SAMPLE ID Sed-1

DATE RECEIVED 9/19/86 TIME 10:30 STORAGE LOCATION AA to JJ

RECEIVED INTO STORAGE DATE/TIME	removed from storage	DATE	TIME	returned to storage	DATE	TIME
D. Kar 9/19/86 10:30						
METALS:	[illegible]	10/6	9:00	[illegible]	10/6	5:00
# of bottles:						
CYANIDE:	P. Turner	10/1	9:00	P. Turner	10/1	4:00
# of bottles:						
PHENOL:	P. Turner	10/1	9:00	P. Turner	10/1	4:00
# of bottles:	P. Turner	10/8	9:00	P. Turner	10/8	3:00
MISC...						
1 liter amber						
1 # of bottles:						

DISPOSAL INSTRUCTIONS: IS SAMPLE TO BE RETAINED? _____ YES _____ NO IF YES, HOW LONG? _____

ARE SAMPLES CONTAMINATED? IF YES, SPECIFY WHICH _____

DISPOSAL INSTRUCTIONS _____

RELEASED FOR DISPOSAL BY: _____ DATE _____ TIME _____

000049

NANCO LABS: LABORATORY CHAIN OF CUSTODY: INORGANICS

NANCO SAMPLE NUMBER(S) J6-0127-009 CUSTOMER NAME NJ DEP

PROJECT ID Asarco EAR9187 CUSTOMER SAMPLE ID Sed-2

DATE RECEIVED 9/19/86 TIME 10:30 STORAGE LOCATION AA to JJ

RECEIVED INTO STORAGE DATE/TIME	removed from storage	DATE	TIME	returned to storage	DATE	TIME
D. Kar 9/19/86 10:30						
METALS:	[illegible]	10/6	9:00	[illegible]	10/6	5:00
# of bottles:						
CYANIDE:	P. Turner	10/1	9:00	B. Turner	10/1	4:00
# of bottles:						
PHENOL:	B. Turner	10/1	9:00	B. Turner	10/1	4:00
# of bottles:	P. Turner	10/8	9:00	B. Turner	10/8	3:00
MISC...						
1 liter amber						
1 # of bottles:						

DISPOSAL INSTRUCTIONS: IS SAMPLE TO BE RETAINED? _____ YES _____ NO IF YES, HOW LONG? _____

ARE SAMPLES CONTAMINATED? IF YES, SPECIFY WHICH _____

DISPOSAL INSTRUCTIONS _____

RELEASED FOR DISPOSAL BY: _____ DATE _____ TIME _____

LABORATORY CHRONICLE

DATE

RECEIPT/REFRIGERATION 9-19-86

ORGANICS
EXTRACTION

1. Acids _____
2. Base/Neutrals _____
3. Pesticides/PCBs _____
4. Dioxin _____

ANALYSIS

1. Volatiles _____
2. Acids _____
3. Base/Neutrals _____
4. Pesticides/PCBs _____
5. Dioxin _____

Section Supevisor Review & Approval _____

INORGANICS

ICP - 10-9-86

1. Metals Furnace - 10/10/86, 10/16/86, 10/22/86, 10/28/86, 10/21/86, 10/17/86 10/8/86, 10/13/86, 10/15/86, 10/3/86
2. Cyanides 10/1/86, 10/2/86
3. Phenol 10/9/86, 10/15/86, 10/20/86

OTHER ANALYTES

_____
_____
_____

Section Supervisor Review & Approval Joan Connolly

Quality Control Supervisor Review & Approval Constance H. Reid

If fractions are re-extracted and re-analyzed because initial endeavors did not meet quality control acceptance criteria, include dates for both.

FORM -G5
REVISED [redacted] 8/85

Methodology Summary

METALS:

a. USEPA Contract Laboratory Program Statement of work.

b. Inorganic Analysis Multi-Media and Multi-Concentration (July, 1985)

TOTAL CYANIDE:

40 CFR Part 136, (October, 1984)

TOTAL PHENOL:

40 CFR Part 136, (October, 1984)

CHLORIDE:

40 CFR Part 136, (October, 1984)

PETROLEUM HYDROCARBONS:

EPA - 600 / 4-79-020
Methods for Chemical Analysis of Water & Wastes

PESTICIDES, B/NA, VOA:

a. ESEPA Contract Laboratory Program

b. Statement of Work for Organic Analysis

c. Multi-Media, Multi-Concentration 7/85 Revision

TOC:

Fed Register, (October 1984)

nanco labs, inc.

October 29, 1986

CASE NARRATIVE: **Inorganic Analysis**
FOR: **New Jersey DEP**
REFERENCE: **Asarco Project**

GENERAL PROCEDURES

Used for analysis at Nanco are as follows.

A) Nanco uses dual channel sequential ICP, manufactured by I.L. industries (Plasma 200). The A channel is the air channel and is used for measuring Ca, Mg, Na, K, Ba, Be, Cu, Fe(High conc.), Mn and Ag. The B-channel (the vaccum channel), is used for Al, Sb, Cd, Cr, Co, Fe (low level i.e less than 30,000 ppb), Ni, V and Zn.

The selection of analyte wavelengths is such that the use of interelement correction factor is not required.

B) Furnace AA is used for analysis of Pb, As, Se and Tl. For samples where high concentration of these elements are present i.e greater than 50 ppb, then ICP may be used instead of furnace AA.

C) Mercury is analyzed by Cold Vapor Technique.

D) CN-analysis is carried out using the technicon auto-analyzer in a manner consistant with the protocol.

CASE SPECIFIC

The N.J. DEP Asarco Project samples were received at Nanco Labs on 9/19/86 in good condition. This sample set consisted of 7 waters and 6 soils for priority pollutant metals, cyanide, and phenol analyses.

Sample J6-0115-008 was generally used for quality control purposes for the water group. Sample J6-0122-009 was generally used for QA/QC for the soil group. Exceptions to the above generalities are appropriately footnoted on relavent forms.

Interferences were observed for samples J6-0124-009, J6-0125-009 relative to selenium and arsenic. J6-0126-009 reflected interference relative to selenium only.

ROBINSON LANE, RD 6 WAPPINGERS FALLS, N.Y. 12590 PHONE: 914 221-2486

nanco labs, inc.

October 29, 1986

CASE NARRATIVE: Inorganic Analysis
FOR: New Jersey DEP
REFERENCE: Asarco Project

CASE SPECIFIC

The sample J6-0122-009, chosen for spiking, reflects severe recovery problems for nearly all analyses performed. Laboratory experiments have shown this to be sample specific and not an analytical abnormality.

Serial Dilution on sample J6-0122-008 indicated interference with silver.

Protocol QA/QC was maintained throughout all analyses and specifications met without exception.

Thoses matrix spikes and duplicates which were outside of control limits are flagged on the appropriate forms.

In general this sample set ran smoothly.

Joan M. Connolly

Joan M. Connolly
Inorganics Manager

ROBINSON LANE RD. 6 WAPPINGERS FALLS N.Y. 12590 PHONE

TITLE PAGE

INORGANIC ANALYTICAL DATA REPORT PACKAGE

FOR

NEW JERSEY DEPT. OF ENVIRONMENTAL PROTECTION

FIELD SAMPLE	LABORATORY SAMPLE	SAMPLE LOCATION
SW-1	J6-0115-008	ASARCO
SW-2	J6-0116-008	ASARCO
SW-3	J6-0117-008	ASARCO
SW-4	J6-0118-008	ASARCO
GW-1	J6-0119-008	ASARCO
TRIP BLANK	J6-0120-008	ASARCO
FIELD BLANK	J6-0121-008	ASARCO
S-1	J6-0121-009	ASARCO
S-2	J6-0123-009	ASARCO
S-3	J6-0124-009	ASARCO
S-4	J6-0125-009	ASARCO
SED-1	J6-0126-009	ASARCO
SED-2	J6-0127-009	ASARCO

Lab Name: NANCO LABORATORIES, INC.
Lab Address: Unity Street,
Hopewell Junction, New York

VALUE - IF THE RESULT IS A VALUE GREATER THAN OR EQUAL TO THE INSTRUMENT DETECTION LIMIT BUT LESS THAN THE CONTRACT-REQUIRED DECTECTION LIMIT, THE VALUE IS REPORTED IN BRACKETS (i.e., [10]. THE ANALYTICAL METHOD USED IS INDICATED WITH P (FOR ICP), A (FOR FLAME AA) OR F (FOR FURNACE AA).

U - INDICATES ELEMENT WAS ANALYZED FOR BUT NOT DETECTED. REPORTED WITH THE INSTRUMENT DETECTION LIMIT VALUE (e.g., 10 U).

E - INDICATES A VALUE ESTIMATED OR NOT REPORTED DUE TO THE PRESENCE OF INTERFERENCE.

s - INDICATES A VALUE DETERMINED BY METHOD OF STANDARD ADDITION.

N - INDICATES SPIKE SAMPLE RECOVERY IS NOT WITHIN CONTROL LIMITS.

* - INDICATES DUPLICATE ANALYSIS IS NOT WITHIN CONTROL LIMITS.

+ - INDICATES THE CORRELATION COEFFICIENT FOR METHOD OF STANDARD ADDITION IS LESS THAN 0.995

M - INDICATES DUPLICATE INJECTION RESULTS EXCEEDED CONTROL LIMITS.

COMMENTS :

Analytical Results

INORGANIC ANALYSIS DATA SHEET
FORM I

000057

N.J. DEP SMPL NO. : J6-0115

Lab Name : NANCO LABORATORIES, INC.

Customer: N.J. DEP

Lab Sample ID: J6-0115-008

Lab Receipt Date : 9/19/86

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW ___X___ MEDIUM _____

MATRIX : WATER __X___ SOIL _____ SLUDGE _____OTHER _____

UG/L OR MG/KG DRY WEIGHT (CIRCLE ONE)

1.	ALUMINUM	NR	13.	MAGNESIUM	NR
2.	ANTIMONY	330.0 PN	14.	MANGANESE	NR
3.	ARSENIC	144.0 SFN	15.	MERCURY	0.2 U C.V.
4.	BARIUM	NR	16.	NICKEL	80.0 PN
5.	BERYLLIUM	2.0 UP	17.	POTASSIUM	NR
6.	CADMIUM	23.0 EP*	18.	SELENIUM	1189.0 +FN
7.	CALCIUM	NR	19.	SILVER	20.0 EPN
8.	CHROMIUM	25.0 P*	20.	SODIUM	NR
9.	COBALT	NR	21.	THALLIUM	5.0 UFN
10.	COPPER	53.0 P	22.	VANADIUM	NR
11.	IRON	NR	23.	ZINC	250.0 PN
				PHENOLS	23.0
12.	LEAD	883.0 SN		PRECENT SOLIDS (%)	
	CYANIDE	10.0 U			

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS :

Joan Connolly

LAB MANAGER

INORGANIC ANALYSIS DATA SHEET
FORM I

N.J. DEP SMPL NO. : J6-0116

Lab Name : NANCO LABORATORIES, INC.

Customer: N.J. DEP

Lab Sample ID: J6-0116-008

Lab Receipt Date : 9/19/86

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW ___X___ MEDIUM _____

MATRIX : WATER __X___ SOIL _____ SLUDGE _____OTHER _____

UG/L OR MG/KG DRY WEIGHT (CIRCLE ONE)

1.	ALUMINUM	NR	13.	MAGNESIUM	NR
2.	ANTIMONY	50.0 UPN	14.	MANGANESE	NR
3.	ARSENIC	18.0 +FN	15.	MERCURY	0.2 U C.V.
4.	BARIUM	NR	16.	NICKEL	30.0 UPN
5.	BERYLLIUM	2.0 UP	17.	POTASSIUM	NR
6.	CADMIUM	5.0 UP*	18.	SELENIUM	5.0 UFN
7.	CALCIUM	NR	19.	SILVER	20.0 PN
8.	CHROMIUM	13.0 P*	20.	SODIUM	NR
9.	COBALT	NR	21.	THALLIUM	5.0 UFN
10.	COPPER	162.0 P	22.	VANADIUM	NR
11.	IRON	NR	23.	ZINC	180.0 PN
				PHENOLS	32.0
12.	LEAD	136.0 PN		PRECENT SOLIDS (%)	
	CYANIDE	10.0 U			

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS :

Joan Connolly
LAB MANAGER

INORGANIC ANALYSIS DATA SHEET
FORM I

N.J. DEP SMPL NO. : J6-0117

Lab Name : NANCO LABORATORIES, INC.

Customer: N.J. DEP

Lab Sample ID: J6-0117-008

Lab Receipt Date : 9/19/86

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW ___X___ MEDIUM _____

MATRIX : WATER ___X___ SOIL _____ SLUDGE _____OTHER _____

UG/L OR MG/KG DRY WEIGHT (CIRCLE ONE)

1.	ALUMINUM	NR	13.	MAGNESIUM	NR
2.	ANTIMONY	50.0 UPN	14.	MANGANESE	NR
3.	ARSENIC	97.0 EFN	15.	MERCURY	0.2 U C.V.
4.	BARIUM	NR	16.	NICKEL	1649.0 PN
5.	BERYLLIUM	2.0 UP	17.	POTASSIUM	NR
6.	CADMIUM	61.0 P*	18.	SELENIUM	99.5 EFN
7.	CALCIUM	NR	19.	SILVER	116.0 PN
8.	CHROMIUM	10.0 UP*	20.	SODIUM	NR
9.	COBALT	NR	21.	THALLIUM	5.0 U+FN
10.	COPPER	391.0 P	22.	VANADIUM	NR
11.	IRON	NR	23.	ZINC	2289.0 PN
				PHENOLS	67.0
12.	LEAD	99.5 EFN		PRECENT SOLIDS (%)	
	CYANIDE	10.0 U			

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS :

Joan Connolly
LAB MANAGER

INORGANIC ANALYSIS DATA SHEET
FORM I

N.J. DEP SMPL NO. : J6-0118

Lab Name : NANCO LABORATORIES, INC.

Customer: N.J. DEP

Lab Sample ID: J6-0118-008

Lab Receipt Date : 9/19/86

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW ___X___ MEDIUM _____

MATRIX : WATER __X___ SOIL _____ SLUDGE _____OTHER _____

UG/L OR MG/KG DRY WEIGHT (CIRCLE ONE)

1.	ALUMINUM	NR	13.	MAGNESIUM	NR
2.	ANTIMONY	50.0 UPN	14.	MANGANESE	NR
3.	ARSENIC	5.0 UFN	15.	MERCURY	0.2 U C.V.
4.	BARIUM	NR	16.	NICKEL	30.0 UPN
5.	BERYLLIUM	2.0 UP	17.	POTASSIUM	NR
6.	CADMIUM	5.0 UP*	18.	SELENIUM	5.0 UFN
7.	CALCIUM	NR	19.	SILVER	10.0 UPN
8.	CHROMIUM	10.0 UP*	20.	SODIUM	NR
9.	COBALT	NR	21.	THALLIUM	5.0 UFN
10.	COPPER	135.0 P	22.	VANADIUM	NR
11.	IRON	NR	23.	ZINC	252.0 PN
				PHENOLS	10.0 U
12.	LEAD	142.2 +FN		PRECENT SOLIDS (%)	
	CYANIDE	10.0 U			

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS :

Joan Connolly

LAB MANAGER

INORGANIC ANALYSIS DATA SHEET
FORM I

N.J. DEP SMPL NO. : J6-0119

Lab Name : NANCO LABORATORIES, INC.

Customer: N.J. DEP

Lab Sample ID: J6-0119-008

Lab Receipt Date : 9/19/86

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW __X__ MEDIUM _____

MATRIX : WATER __X__ SOIL _____ SLUDGE _____ OTHER _____

UG/L OR MG/KG DRY WEIGHT (CIRCLE ONE)

1.	ALUMINUM	NR	13.	MAGNESIUM	NR
2.	ANTIMONY	5946.0 PN	14.	MANGANESE	NR
3.	ARSENIC	4285.0 EFN	15.	MERCURY	0.2 U C.V.
4.	BARIUM	NR	16.	NICKEL	30.0 UPN
5.	BERYLLIUM	2.0 UP	17.	POTASSIUM	NR
6.	CADMIUM	5.0 UP*	18.	SELENIUM	27.0 SFN
7.	CALCIUM	NR	19.	SILVER	33.0 PN
8.	CHROMIUM	17.0 P*	20.	SODIUM	NR
9.	COBALT	NR	21.	THALLIUM	5.0 UFN
10.	COPPER	204.0 P	22.	VANADIUM	NR
11.	IRON	NR	23.	ZINC	745.0 PN
				PHENOLS	67.0
12.	LEAD	1742.0 PN	PRECENT SOLIDS (%)		
	CYANIDE	10.0 U			

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS :

Joan Connolly

LAB MANAGER

INORGANIC ANALYSIS DATA SHEET
FORM I

N.J. DEP SMPL NO. : J6-0120

Lab Name : NANCO LABORATORIES, INC.

Customer: N.J. DEP

Lab Sample ID: J6-0120-008

Lab Receipt Date : 9/19/86

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW ___X___ MEDIUM _____

MATRIX : WATER __X____ SOIL _____ SLUDGE _____OTHER _____

UG/L OR MG/KG DRY WEIGHT (CIRCLE ONE)

1.	ALUMINUM	NR	13.	MAGNESIUM	NR
2.	ANTIMONY	50.0 UPN	14.	MANGANESE	NR
3.	ARSENIC	50.0 UFN	15.	MERCURY	0.2 U C.V.
4.	BARIUM	NR	16.	NICKEL	30.0 UPN
5.	BERYLLIUM	2.0 UP	17.	POTASSIUM	NR
6.	CADMIUM	5.0 UP*	18.	SELENIUM	5.0 UFN
7.	CALCIUM	NR	19.	SILVER	10.0 UPN
8.	CHROMIUM	10.0 UP*	20.	SODIUM	NR
9.	COBALT	NR	21.	THALLIUM	5.0 UFN
10.	COPPER	10.0 UP	22.	VANADIUM	NR
11.	IRON	NR	23.	ZINC	33.0 PN
				PHENOLS	10.0 U
12.	LEAD	31.6 SFN		PRECENT SOLIDS (%)	
	CYANIDE	10.0 U			

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS :

Joan Connolly

LAB MANAGER

INORGANIC ANALYSIS DATA SHEET
FORM I

N.J. DEP SMPL NO. : J6-0121

Lab Name : NANCO LABORATORIES, INC.

Customer: N.J. DEP

Lab Sample ID: J6-0121-008

Lab Receipt Date : 9/19/86

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW ___X___ MEDIUM _____

MATRIX : WATER __X___ SOIL _____ SLUDGE _____OTHER _____

UG/L OR MG/KG DRY WEIGHT (CIRCLE ONE)

1.	ALUMINUM	NR	13.	MAGNESIUM	NR
2.	ANTIMONY	50.0 UPN	14.	MANGANESE	NR
3.	ARSENIC	5.0 UFN	15.	MERCURY	0.2 U C.V.
4.	BARIUM	NR	16.	NICKEL	30.0 UPN
5.	BERYLLIUM	2.0 UP	17.	POTASSIUM	NR
6.	CADMIUM	5.0 UP*	18.	SELENIUM	5.0 UFN
7.	CALCIUM	NR	19.	SILVER	10.0 UPN
8.	CHROMIUM	10.0 UP*	20.	SODIUM	NR
9.	COBALT	NR	21.	THALLIUM	5.0 UFN
10.	COPPER	[10.0]P	22.	VANADIUM	NR
11.	IRON	NR	23.	ZINC	[19.0]PN
				PHENOLS	10.0 U
12.	LEAD	50.0 +FN		PRECENT SOLIDS (%)	
	CYANIDE	10.0 U			

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS :

Joan Connolly
LAB MANAGER

INORGANIC ANALYSIS DATA SHEET
FORM I

N.J. DEP SMPL NO. : J6-0122

Lab Name : NANCO LABORATORIES, INC.

Customer: N.J. DEP

Lab Sample ID: J6-0122-009

Lab Receipt Date : 9/19/86

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW ___X___ MEDIUM _____

MATRIX : WATER _____ SOIL ___X___ SLUDGE _____OTHER _____

UG/L OR MG/KG DRY WEIGHT (CIRCLE ONE)

1.	ALUMINUM	NR	13.	MAGNESIUM	NR
2.	ANTIMONY	88.6 PN	14.	MANGANESE	NR
3.	ARSENIC	53.5 SFN	15.	MERCURY	0.1 U C.V.
4.	BARIUM	NR	16.	NICKEL	99.5 PN
5.	BERYLLIUM	0.5 UPN	17.	POTASSIUM	NR
6.	CADMIUM	6.0 PN	18.	SELENIUM	1.2 UFN
7.	CALCIUM	NR	19.	SILVER	11.2 PNE
8.	CHROMIUM	2.3 UPN	20.	SODIUM	NR
9.	COBALT	NR	21.	THALLIUM	1.2 UFN
10.	COPPER	735.1 PN	22.	VANADIUM	NR
11.	IRON	NR	23.	ZINC	322.3 PN
				PHENOLS	0.1 UN
12.	LEAD	1475.3 PN		PRECENT SOLIDS (%)	86.0
	CYANIDE	0.1 UN			

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS :

Joan Connolly
LAB MANAGER

INORGANIC ANALYSIS DATA SHEET
FORM I

N.J. DEP SMPL NO. : J6-0123

Lab Name : NANCO LABORATORIES, INC.

Customer: N.J. DEP

Lab Sample ID: J6-0123-009

Lab Receipt Date : 9/19/86

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW ___X___ MEDIUM _____

MATRIX : WATER _____ SOIL ___X___ SLUDGE _____ OTHER _____

UG/L OR MG/KG DRY WEIGHT (CIRCLE ONE)

1.	ALUMINUM	NR	13.	MAGNESIUM	NR
2.	ANTIMONY	12.8 UPN	14.	MANGANESE	NR
3.	ARSENIC	7.4 SFN	15.	MERCURY	0.1 U C.V.
4.	BARIUM	NR	16.	NICKEL	82.6 PN
5.	BERYLLIUM	0.5 UPN	17.	POTASSIUM	NR
6.	CADMIUM	9.7 PN	18.	SELENIUM	1.3 UFN
7.	CALCIUM	NR	19.	SILVER	66.4 PNE
8.	CHROMIUM	2.6 UPN	20.	SODIUM	NR
9.	COBALT	NR	21.	THALLIUM	1.3 UFN
10.	COPPER	253.3 PN	22.	VANADIUM	NR
11.	IRON	NR	23.	ZINC	494.1 PN
				PHENOLS	1.5 N
12.	LEAD	485.4 PN		PRECENT SOLIDS (%)	78.0
	CYANIDE	0.1 UN			

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS :

Joan Connolly
LAB MANAGER

INORGANIC ANALYSIS DATA SHEET
FORM I

N.J. DEP SMPL NO. : J6-0124

Lab Name : NANCO LABORATORIES, INC.

Customer: N.J. DEP

Lab Sample ID: J6-0124-009

Lab Receipt Date : 9/19/86

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW ___X___ MEDIUM _____

MATRIX : WATER _____ SOIL ___X___ SLUDGE _____OTHER _____

UG/L OR MG/KG DRY WEIGHT (CIRCLE ONE)

1.	ALUMINUM	NR	13.	MAGNESIUM	NR
2.	ANTIMONY	502.1 PN	14.	MANGANESE	NR
3.	ARSENIC	566.7 EFN	15.	MERCURY	0.1 U C.V.
4.	BARIUM	NR	16.	NICKEL	71.5 PN
5.	BERYLLIUM	0.5 UPN	17.	POTASSIUM	NR
6.	CADMIUM	10.0 PN	18.	SELENIUM	134.1 EFN
7.	CALCIUM	NR	19.	SILVER	24.4 PNE
8.	CHROMIUM	2.6 UPN	20.	SODIUM	NR
9.	COBALT	NR	21.	THALLIUM	2.6 UFN
10.	COPPER	780.8 PN	22.	VANADIUM	NR
11.	IRON	NR	23.	ZINC	845.1 PN
				PHENOLS	0.13 N
12.	LEAD	2426.2 PN		PRECENT SOLIDS (%)	78.0
	CYANIDE	0.1 UN			

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS :

Joan Connolly
LAB MANAGER

INORGANIC ANALYSIS DATA SHEET
FORM I

N.J. DEP SMPL NO. : J6-0125

Lab Name : NANCO LABORATORIES, INC.

Customer: N.J. DEP

Lab Sample ID: J6-0125-009

Lab Receipt Date : 9/19/86

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW ___X___ MEDIUM _____

MATRIX : WATER _____ SOIL ___X___ SLUDGE _____OTHER _____

UG/L OR MG/KG DRY WEIGHT (CIRCLE ONE)

1.	ALUMINUM	NR	13.	MAGNESIUM	NR
2.	ANTIMONY	20.0 UPN	14.	MANGANESE	NR
3.	ARSENIC	136.0 EFN	15.	MERCURY	0.2 U C.V.
4.	BARIUM	NR	16.	NICKEL	246.0 PN
5.	BERYLLIUM	0.8 UPN	17.	POTASSIUM	NR
6.	CADMIUM	52.0 PN	18.	SELENIUM	93.2 EFN
7.	CALCIUM	NR	19.	SILVER	118.4 PNE
8.	CHROMIUM	4.0 UPN	20.	SODIUM	NR
9.	COBALT	NR	21.	THALLIUM	4.0 UFN
10.	COPPER	2578.8 PN	22.	VANADIUM	NR
11.	IRON	NR	23.	ZINC	4.0 UPN
				PHENOLS	0.22 N
12.	LEAD	3340.0 PN		PRECENT SOLIDS (%)	50.0
	CYANIDE	0.11 N			

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS :

Joan Connolly

LAB MANAGER

INORGANIC ANALYSIS DATA SHEET
FORM I

N.J. DEP SMPL NO. : J6-0126

Lab Name : NANCO LABORATORIES, INC.

Customer: N.J. DEP

Lab Sample ID: J6-0126-009

Lab Receipt Date : 9/19/86

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW ___X___ MEDIUM _____

MATRIX : WATER _____ SOIL ___X___ SLUDGE _____OTHER _____

UG/L OR MG/KG DRY WEIGHT (CIRCLE ONE)

1.	ALUMINUM	NR	13.	MAGNESIUM	NR
2.	ANTIMONY	935.1 UPN	14.	MANGANESE	NR
3.	ARSENIC	1380.8 SFN	15.	MERCURY	0.1 U C.V.
4.	BARIUM	NR	16.	NICKEL	443.8 PN
5.	BERYLLIUM	0.5 UPN	17.	POTASSIUM	NR
6.	CADMIUM	126.3 PN	18.	SELENIUM	258.1 EFN
7.	CALCIUM	NR	19.	SILVER	2.7 UPNE
8.	CHROMIUM	2.7 UPN	20.	SODIUM	NR
9.	COBALT	NR	21.	THALLIUM	1.6 FN
10.	COPPER	3290.7 PN	22.	VANADIUM	NR
11.	IRON	NR	23.	ZINC	2.7 UPN
				PHENOLS	0.13 N
12.	LEAD	2169.9 PN		PRECENT SOLIDS (%)	73.0
	CYANIDE	0.1 UN			

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS :

Joan Connolly

LAB MANAGER

INORGANIC ANALYSIS DATA SHEET
FORM I

N.J. DEP SMPL NO. : J6-0127

Lab Name : NANCO LABORATORIES, INC.

Customer: N.J. DEP

Lab Sample ID: J6-0127-009

Lab Receipt Date : 9/19/86

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW ___X___ MEDIUM _____

MATRIX : WATER _____ SOIL ___X___ SLUDGE _____ OTHER _____

UG/L OR MG/KG DRY WEIGHT (CIRCLE ONE)

1.	ALUMINUM	NR	13.	MAGNESIUM	NR
2.	ANTIMONY	13.0 UPN	14.	MANGANESE	NR
3.	ARSENIC	5.5 SFN	15.	MERCURY	0.1 U C.V.
4.	BARIUM	NR	16.	NICKEL	10.6 PN
5.	BERYLLIUM	0.5 UPN	17.	POTASSIUM	NR
6.	CADMIUM	1.3 UPN	18.	SELENIUM	1.9 +FN
7.	CALCIUM	NR	19.	SILVER	2.6 UPNE
8.	CHROMIUM	[2.6]PN	20.	SODIUM	NR
9.	COBALT	NR	21.	THALLIUM	1.3 UFN
10.	COPPER	97.1 PN	22.	VANADIUM	NR
11.	IRON	NR	23.	ZINC	49.1 PN
				PHENOLS	0.1 UN
12.	LEAD	40.3 PN		PRECENT SOLIDS (%)	77.0
	CYANIDE	0.1 UN			

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS :

Joan Connolly

LAB MANAGER

QC Data Package

INORGANIC ANALYSIS DATA SHEET
FORM II

Lab Name : NANCO LABORATORIES, INC. Customer: N.J. DEP

QC REPORT 008 & 009

INITIAL & CONTINUING CALIBRATION VERIFICATION

UNITS: ug/L

	1 INITIAL CALIBRATION			2 CONTINUING CALIBRATION					4
	TRUE VALUE	FOUND	% R	TRUE VALUE	FOUND	% R	FOUND	% R	METHOD
1. ALUMINUM									
2. ANTIMONY	807.0	800.0	99	6500.0	6315.0	97	5928.0	91	P
3. ARSENIC	40.9	40.6	99	50.0	51.4	103	45.0	90	F
4. BARIUM									
5. BERYLLIUM	527.0	537.0	102	431.0	412.0	96	399.0	93	P
6. CADMIUM	488.0	515.0	106	5000.0	4912.0	98	4935.0	99	P
7. CALCIUM									
8. CHROMIUM	529.0	541.0	102	5000.0	4993.0	100	5050.0	101	P
9. COBALT									
10. COPPER	524.0	488.0	93	5000.0	5025.0	101	4734.0	95	P
11. IRON									
12. LEAD	5160.0	4676.0	91	5000.0	4927.0	99	5125.0	103	P
13. MAGNESIUM									
14. MANGANESE									
15. MERCURY	5.0	4.98	100	3.0	2.84	95	2.90	97	A
16. NICKEL	495.0	517.0	104	5000.0	5041.0	101	4911.0	98	P
17. POTASSIUM									
18. SELENIUM	86.4	82.4	95	50.0	51.4	103	48.3	97	F
19. SILVER	495.0	463.0	94	6000.0	6077.0	101	5946.0	99	P
20. SODIUM									
21. THALLIUM	6.2	5.9	95	50.0	45.2	90	46.6	93	F
22. VANADIUM									
23. ZINC	3070.0	3012.0	98	5000.0	4861.0	97	4623.0	92	P
24. CYANIDE	248.0	102.0	41	100.0	102.0	102	104.0	104	T

1 = INITIAL CALIBRATION SOURCES :ICV1,ICV2,ICV3,ICV4 2 = CONTINUING CALIBRATION SOURCE BUCK SCIENTIFIC STOCK

3 = CONTROL LIMITS: MERCURY 80-120 OTHER METAL 90-110: CYANIDE 85-115

4 = INDICATE ANALYTICAL METHOD USED : P - ICP: A - FLAME AA: F - FURNACE AA : CV COLD VAPOR

INORGANIC ANALYSIS DATA SHEET
FORM II

Lab Name : NANCO LABORATORIES, INC. Customer: N.J. DEP

QC REPORT 008 & 009

INITIAL & CONTINUING CALIBRATION VERIFICATION

UNITS: ug/L

	1 INITIAL CALIBRATION			3 CONTINUING CALIBRATION					4
	TRUE VALUE	FOUND	% R	TRUE VALUE	FOUND	% R	FOUND	% R	METHOD
1. ALUMINUM									
2. ANTIMONY				6500.0	6060.0	93	6450.0	99	P
3. ARSENIC				50.0	49.1	98	51.4	103	F
4. BARIUM									
5. BERYLLIUM				431.0	404.0	94	430.0	100	P
6. CADMIUM				5000.0	4869.0	97	5052.0	101	P
7. CALCIUM									
8. CHROMIUM				5000.0	4829.0	97	5084.0	102	P
9. COBALT									
10. COPPER				5000.0	4629.0	93	5200.0	104	P
11. IRON									
12. LEAD				5000.0	5286.0	106	5344.0	107	P
13. MAGNESIUM									
14. MANGANESE									
15. MERCURY				3.0	2.88	96	2.79	93	A
16. NICKEL				5000.0	4850.0	97	4984.0	100	P
17. POTASSIUM									
18. SELENIUM				50.0	51.4	103	54.9	110	F
19. SILVER				6000.0	5963.0	99	5864.0	98	P
20. SODIUM									
21. THALLIUM				50.0	45.7	91	50.0	100	F
22. VANADIUM									
23. ZINC				5000.0	4499.0	90	5206.0	104	P
24. CYANIDE				100.0	101.0	101	99.0	99	T

1 = INITIAL CALIBRATION SOURCES :ICV1,ICV2,ICV3,ICV4 2 = CONTINUING CALIBRATION SOURCE BUCK SCIENTIFIC STOCK

3 = CONTROL LIMITS: MERCURY 80-120 OTHER METAL 90-110: CYANIDE 85-115

4 = INDICATE ANALYTICAL METHOD USED : P - ICP: A - FLAME AA: F - FURNACE AA : CV COLD VAPOR

INORGANIC ANALYSIS DATA SHEET
FORM II

Lab Name : NANCO LABORATORIES, INC. Customer: N.J. DEP

QC REPORT 008 & 009

INITIAL & CONTINUING CALIBRATION VERIFICATION

UNITS: ug/L

	1 INITIAL CALIBRATION			5 CONTINUING CALIBRATION			6		4
	TRUE VALUE	FOUND	% R	TRUE VALUE	FOUND	% R	FOUND	% R	METHOD
1. ALUMINUM									
2. ANTIMONY				6500.0	6318.0	97	6506.0	100	P
3. ARSENIC	40.9	43.5	106	50.0	47.5	95	45.8	92	F
4. BARIUM									
5. BERYLLIUM				431.0	391.0	91	420.0	97	P
6. CADMIUM				5000.0	4984.0	100	5158.0	103	P
7. CALCIUM									
8. CHROMIUM				5000.0	5021.0	100	5138.0	103	P
9. COBALT									
10. COPPER				5000.0	4716.0	94	4970.0	99	P
11. IRON									
12. LEAD				5000.0	4984.0	100	5060.0	101	P
13. MAGNESIUM									
14. MANGANESE									
15. MERCURY				3.0	2.73	91	2.68	89	A
16. NICKEL				5000.0	5059.0	101	5086.0	102	P
17. POTASSIUM									
18. SELENIUM				50.0	48.8	98	54.9	110	F
19. SILVER				6000.0	5921.0	99	6240.0	104	P
20. SODIUM									
21. THALLIUM				50.0	52.0	104	47.4	95	F
22. VANADIUM									
23. ZINC				5000.0	4849.0	97	5095.0	102	P
24. CYANIDE				100.0	102.0	102	101.0	101	T

1 = INITIAL CALIBRATION SOURCES :ICV1,ICV2,ICV3,ICV4 2 = CONTINUING CALIBRATION SOURCE BUCK SCIENTIFIC STOCK

3 = CONTROL LIMITS: MERCURY 80-120 OTHER METAL 90-110: CYANIDE 85-115

4 = INDICATE ANALYTICAL METHOD USED : P - ICP: A - FLAME AA: F - FURNACE AA : CV COLD VAPOR

INORGANIC ANALYSIS DATA SHEET
FORM II

000074

Lab Name : NANCO LABORATORIES, INC. Customer: N.J. DEP

QC REPORT 008 & 009

INITIAL & CONTINUING CALIBRATION VERIFICATION

UNITS: ug/L

	1 INITIAL CALIBRATION			7 CONTINUING CALIBRATION			8		4
	TRUE VALUE	FOUND	% R	TRUE VALUE	FOUND	% R	FOUND	% R	METHOD
1. ALUMINUM									
2. ANTIMONY				6500.0	6332.0	97			P
3. ARSENIC	40.9	42.8	105	50.0	52.5	105	54.1	108	F
4. BARIUM									
5. BERYLLIUM				431.0	417.0	97			P
6. CADMIUM				5000.0	5064.0	101			P
7. CALCIUM									
8. CHROMIUM				5000.0	5063.0	101			P
9. COBALT									
10. COPPER				5000.0	4965.0	99			P
11. IRON									
12. LEAD				5000.0	5134.0	103			P
13. MAGNESIUM									
14. MANGANESE									
15. MERCURY									
16. NICKEL				5000.0	5130.0	103			P
17. POTASSIUM									
18. SELENIUM				50.0	48.8	98	45.5	91	F
19. SILVER				6000.0	6105.0	102			P
20. SODIUM									
21. THALLIUM				50.0	50.5	101			F
22. VANADIUM									
23. ZINC				5000.0	4975.0	100			P
24. CYANIDE				100.0	101.0	101	101.0	101	T

1 = INITIAL CALIBRATION SOURCES :ICV1,ICV2,ICV3,ICV4 2 = CONTINUING CALIBRATION SOURCE BUCK SCIENTIFIC STOCK

3 = CONTROL LIMITS: MERCURY 80-120 OTHER METAL 90-110: CYANIDE 85-115

4 = INDICATE ANALYTICAL METHOD USED : P - ICP: A - FLAME AA: F - FURNACE AA : CV COLD VAPOR

INORGANIC ANALYSIS DATA SHEET
FORM II

000075

Lab Name : NANCO LABORATORIES, INC. Customer: N.J. DEP

QC REPORT 008 & 009

INITIAL & CONTINUING CALIBRATION VERIFICATION

UNITS: ug/L

	1 INITIAL CALIBRATION			2 CONTINUING CALIBRATION					
	TRUE VALUE	FOUND	% R	TRUE VALUE	FOUND	% R	FOUND	% R	4 METHOD
1. ALUMINUM									
2. ANTIMONY									
3. ARSENIC				50.0	50.5	101	48.0	96	F
4. BARIUM									
5. BERYLLIUM									
6. CADMIUM									
7. CALCIUM									
8. CHROMIUM									
9. COBALT									
10. COPPER									
11. IRON									
12. LEAD	91.7	96.2	105	50.0	53.4	107	46.7	44	F
13. MAGNESIUM									
14. MANGANESE									
15. MERCURY									
16. NICKEL									
17. POTASSIUM									
18. SELENIUM	86.4	90.3	105	50.0	53.5	107	47.0	94	F
19. SILVER									
20. SODIUM									
21. THALLIUM	95.2	102.4	108	50.0	51.0	102	47.0	94	F
22. VANADIUM									
23. ZINC									
24. CYANIDE				100.0	101.0	101	101.0	101	T

1 = INITIAL CALIBRATION SOURCES :ICV1,ICV2,ICV3,ICV4 2 = CONTINUING CALIBRATION SOURCE BUCK SCIENTIFIC STOCK

3 = CONTROL LIMITS: MERCURY 80-120 OTHER METAL 90-110: CYANIDE 85-115

4 = INDICATE ANALYTICAL METHOD USED : P - ICP: A - FLAME AA: F - FURNACE AA : CV COLD VAPOR

INORGANIC ANALYSIS DATA SHEET
FORM II

000076

Lab Name : NANCO LABORATORIES, INC. Customer: N.J. DEP

QC REPORT 008 & 009

INITIAL & CONTINUING CALIBRATION VERIFICATION

UNITS: ug/L

	1 INITIAL CALIBRATION			2 CONTINUING CALIBRATION					
	TRUE VALUE	FOUND	% R	TRUE VALUE	FOUND	% R	FOUND	% R	4 METHOD
1. ALUMINUM									
2. ANTIMONY									
3. ARSENIC				50.0	45.0	90			F
4. BARIUM									
5. BERYLLIUM									
6. CADMIUM									
7. CALCIUM									
8. CHROMIUM									
9. COBALT									
10. COPPER									
11. IRON									
12. LEAD				50.0	52.4	105	46.7	45	F
13. MAGNESIUM									
14. MANGANESE									
15. MERCURY									
16. NICKEL									
17. POTASSIUM									
18. SELENIUM				50.0	46.5	93			F
19. SILVER									
20. SODIUM									
21. THALLIUM				50.0	45.6	91			F
22. VANADIUM									
23. ZINC									
24. CYANIDE				100.0	99.0	99	101.0	101	T

1 = INITIAL CALIBRATION SOURCES :ICV1,ICV2,ICV3,ICV4 2 = CONTINUING CALIBRATION SOURCE BUCK SCIENTIFIC STOCK

3 = CONTROL LIMITS: MERCURY 80-120 OTHER METAL 90-110: CYANIDE 85-115

4 = INDICATE ANALYTICAL METHOD USED : P - ICP: A - FLAME AA: F - FURNACE AA : CV COLD VAPOR

INORGANIC ANALYSIS DATA SHEET
FORM II

Lab Name : NANCO LABORATORIES, INC. Customer: N.J. DEP

QC REPORT 008 & 009

INITIAL & CONTINUING CALIBRATION VERIFICATION

UNITS: ug/L

	1 INITIAL CALIBRATION			2 CONTINUING CALIBRATION					
	TRUE VALUE	FOUND	% R	TRUE VALUE	FOUND	% R	FOUND	% R	4 METHOD
1. ALUMINUM									
2. ANTIMONY									
3. ARSENIC									
4. BARIUM									
5. BERYLLIUM									
6. CADMIUM									
7. CALCIUM									
8. CHROMIUM									
9. COBALT									
10. COPPER									
11. IRON									
12. LEAD	91.7	88.2	96	50.0	54.7	109	48.8	45	F
13. MAGNESIUM									
14. MANGANESE									
15. MERCURY									
16. NICKEL									
17. POTASSIUM									
18. SELENIUM									
19. SILVER									
20. SODIUM									
21. THALLIUM									
22. VANADIUM									
23. ZINC									
24. CYANIDE				100.0	101.0	101	101.0	101	T

1 = INITIAL CALIBRATION SOURCES :ICV1,ICV2,ICV3,ICV4 2 = CONTINUING CALIBRATION SOURCE BUCK SCIENTIFIC STOCK

3 = CONTROL LIMITS: MERCURY 80-120 OTHER METAL 90-110: CYANIDE 85-115

4 = INDICATE ANALYTICAL METHOD USED : P - ICP: A - FLAME AA: F - FURNACE AA : CV COLD VAPOR

INORGANIC ANALYSIS DATA SHEET
FORM II

Lab Name : NANCO LABORATORIES, INC. Customer: N.J. DEP

QC REPORT 008 & 009

INITIAL & CONTINUING CALIBRATION VERIFICATION

UNITS: ug/L

	1 INITIAL CALIBRATION			2 CONTINUING CALIBRATION					
	TRUE VALUE	FOUND	% R	TRUE VALUE	FOUND	% R	FOUND	% R	4 METHOD
1. ALUMINUM									
2. ANTIMONY									
3. ARSENIC									
4. BARIUM									
5. BERYLLIUM									
6. CADMIUM									
7. CALCIUM									
8. CHROMIUM									
9. COBALT									
10. COPPER									
11. IRON									
12. LEAD				50.0	50.1	100	50.6	101	F
13. MAGNESIUM									
14. MANGANESE									
15. MERCURY									
16. NICKEL									
17. POTASSIUM									
18. SELENIUM									
19. SILVER									
20. SODIUM									
21. THALLIUM									
22. VANADIUM									
23. ZINC									
24. CYANIDE				100.0	101.0	101	101.0	101	T

1 = INITIAL CALIBRATION SOURCES :ICV1,ICV2,ICV3,ICV4 2 = CONTINUING CALIBRATION SOURCE BUCK SCIENTIFIC STOCK

3 = CONTROL LIMITS: MERCURY 80-120 OTHER METAL 90-110: CYANIDE 85-115

4 = INDICATE ANALYTICAL METHOD USED : P - ICP: A - FLAME AA: F - FURNACE AA : CV COLD VAPOR

INORGANIC ANALYSIS DATA SHEET
FORM II

000079

Lab Name : NANCO LABORATORIES, INC. Customer: N.J. DEP

QC REPORT 008 & 009

INITIAL & CONTINUING CALIBRATION VERIFICATION

UNITS: ug/L

	INITIAL CALIBRATION 1			CONTINUING CALIBRATION 2					
	TRUE VALUE	FOUND	% R	TRUE VALUE	FOUND	% R	FOUND	% R	4 METHOD
1. ALUMINUM									
2. ANTIMONY									
3. ARSENIC									
4. BARIUM									
5. BERYLLIUM									
6. CADMIUM									
7. CALCIUM									
8. CHROMIUM									
9. COBALT									
10. COPPER									
11. IRON									
12. LEAD				50.0	52.3	105			F
13. MAGNESIUM									
14. MANGANESE									
15. MERCURY									
16. NICKEL									
17. POTASSIUM									
18. SELENIUM									
19. SILVER									
20. SODIUM									
21. THALLIUM									
22. VANADIUM									
23. ZINC									
24. CYANIDE				100.0	99.0	99	100.0	100	T

1 = INITIAL CALIBRATION SOURCES :ICV1,ICV2,ICV3,ICV4 2 = CONTINUING CALIBRATION SOURCE BUCK SCIENTIFIC STOCK

3 = CONTROL LIMITS: MERCURY 80-120 OTHER METAL 90-110: CYANIDE 85-115

4 = INDICATE ANALYTICAL METHOD USED : P - ICP: A - FLAME AA: F - FURNACE AA : CV COLD VAPOR

INORGANIC ANALYSIS DATA SHEET
FORM II

000080

Lab Name : NANCO LABORATORIES, INC. Customer: N.J. DEP

QC REPORT 008 & 009

INITIAL & CONTINUING CALIBRATION VERIFICATION

UNITS: ug/L

	1 INITIAL CALIBRATION			2 CONTINUING CALIBRATION					
	TRUE VALUE	FOUND	% R	TRUE VALUE	FOUND	% R	FOUND	% R	4 METHOD
1. ALUMINUM									
2. ANTIMONY									
3. ARSENIC									
4. BARIUM									
5. BERYLLIUM									
6. CADMIUM									
7. CALCIUM									
8. CHROMIUM									
9. COBALT									
10. COPPER									
11. IRON									
12. LEAD	91.7	91.5	100	50.0	51.7	103	51.0	102	F
13. MAGNESIUM									
14. MANGANESE									
15. MERCURY									
16. NICKEL									
17. POTASSIUM									
18. SELENIUM									
19. SILVER									
20. SODIUM									
21. THALLIUM									
22. VANADIUM									
23. ZINC									
24. CYANIDE				100.0	101.0	101			T

1 = INITIAL CALIBRATION SOURCES :ICV1,ICV2,ICV3,ICV4 2 = CONTINUING CALIBRATION SOURCE BUCK SCIENTIFIC STOCK

3 = CONTROL LIMITS: MERCURY 80-120 OTHER METAL 90-110: CYANIDE 85-115

4 = INDICATE ANALYTICAL METHOD USED : P - ICP: A - FLAME AA: F - FURNACE AA : CV COLD VAPOR

INORGANIC ANALYSIS DATA SHEET
FORM III

Lab Name : NANCO LABORATORIES, INC. Customer: N.J. DEP

Q.C. REPORT NO.: 008 & 009

BLANKS

UNITS ug/L

	INITIAL CALIBRATION BLANK VALUE	CONTINUING CALIBRATION BLANK VALUE 1	2	3	4	PREPARATION BLANK MATRIX: L.W. (008)	MATRIX: SOIL (009)
1. ALUMINUM							
2. ANTIMONY	50 U	50 U	50 U	50 U	50 U	50 U	50 U
3. ARSENIC	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4. BARIUM							
5. BERYLLIUM	2 U	2 U	2 U	2 U	2 U	2 U	2 U
6. CADMIUM	5 U	5 U	5 U	5 U	5 U	5 U	5 U
7. CALCIUM							
8. CHROMIUM	10 U	10 U	10 U	10 U	10 U	10 U	10 U
9. COBALT							
10. COPPER	10 U	10 U	[17]	10 U	10 U	10 U	10 U
11. IRON							
12. LEAD	50 U	50 U	50 U	50 U	50 U	50 U	50 U
13. MAGNESIUM							
14. MANGANESE							
15. MERCURY	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
16. NICKEL	30 U	30 U	30 U	30 U	30 U	30 U	30 U
17. POTASSIUM							
18. SELENIUM	5 U	5 U	5 U	5 U	5 U	5 U	
19. SILVER	10 U	10 U	10 U	10 U	10 U	10 U	10 U
20. SODIUM							
21. THALLIUM	5 U	5 U	5 U	5 U	5 U		
22. VANADIUM							
23. ZINC	10 U	10 U	[12]	10 U	10 U	10 U	10 U
24. CYANIDE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
25. PHENOL						10 U	10 U

INORGANIC ANALYSIS DATA SHEET
FORM III

Lab Name : NANCO LABORATORIES, INC. Customer: N.J. DEP

Q.C. REPORT NO.: 008 & 009

BLANKS

UNITS ug/L

	INITIAL CALIBRATION BLANK VALUE	CONTINUING CALIBRATION BLANK VALUE 5	6	7	8	PREPARATION BLANK MATRIX:	MATRIX:
1. ALUMINUM							
2. ANTIMONY		50 U	50 U				
3. ARSENIC		5 U	5 U	5 U	5 U		
4. BARIUM							
5. BERYLLIUM		2 U	2 U				
6. CADMIUM		5 U	5 U				
7. CALCIUM							
8. CHROMIUM		10 U	10 U				
9. COBALT							
10. COPPER		10 U	10 U				
11. IRON							
12. LEAD		50 U	50 U	5 U	5 U		
13. MAGNESIUM							
14. MANGANESE							
15. MERCURY		0.2 U	0.20 U				
16. NICKEL		30 U	30 U				
17. POTASSIUM							
18. SELENIUM		5 U	5 U	5 U	5 U		
19. SILVER		10 U	10 U				
20. SODIUM							
21. THALLIUM		5 U	5 U	5 U	5 U		
22. VANADIUM							
23. ZINC		10 U	10 U				
24. CYANIDE		10 U	10 U	10 U	10 U		
25. PHENOL							

INORGANIC ANALYSIS DATA SHEET
FORM III

000083

Lab Name : NANCO LABORATORIES, INC. Customer: N.J. DEP

Q.C. REPORT NO.: 008 & 009

BLANKS

UNITS ug/L

	INITIAL CALIBRATION BLANK VALUE	CONTINUING CALIBRATION BLANK VALUE 1	2	3	4	PREPARATION BLANK MATRIX: WATER	MATRIX:
1. ALUMINUM							
2. ANTIMONY							
3. ARSENIC	5U	5 U	5 U	5 U	5 U	5U	
4. BARIUM							
5. BERYLLIUM							
6. CADMIUM							
7. CALCIUM							
8. CHROMIUM							
9. COBALT							
10. COPPER							
11. IRON							
12. LEAD	5U	5 U	5 U	5 U	5 U	5U	
13. MAGNESIUM							
14. MANGANESE							
15. MERCURY							
16. NICKEL							
17. POTASSIUM							
18. SELENIUM	5U	5 U	5 U	5 U	5 U	5U	
19. SILVER							
20. SODIUM							
21. THALLIUM	5U	5 U	5 U	5 U	5 U	5U	
22. VANADIUM							
23. ZINC							
24. CYANIDE	10U	10 U	10 U	10 U	10 U	10U	
25. PHENOL							

INORGANIC ANALYSIS DATA SHEET
FORM III

Lab Name : NANCO LABORATORIES, INC. Customer: N.J. DEP

Q.C. REPORT NO.: 008 & 009

BLANKS

UNITS ug/L

	INITIAL CALIBRATION BLANK VALUE	CONTINUING CALIBRATION BLANK VALUE 5	6	7	8	PREPARATION BLANK MATRIX:	MATRIX:
1. ALUMINUM							
2. ANTIMONY							
3. ARSENIC							
4. BARIUM							
5. BERYLLIUM							
6. CADMIUM							
7. CALCIUM							
8. CHROMIUM							
9. COBALT							
10. COPPER							
11. IRON							
12. LEAD		5 U	5 U	5 U	5 U		
13. MAGNESIUM							
14. MANGANESE							
15. MERCURY							
16. NICKEL							
17. POTASSIUM							
18. SELENIUM							
19. SILVER							
20. SODIUM							
21. THALLIUM							
22. VANADIUM							
23. ZINC							
24. CYANIDE		10 U	10 U	10 U	10 U		
25. PHENOL							

INORGANIC ANALYSIS DATA SHEET
FORM III

000085

Lab Name : NANCO LABORATORIES, INC. Customer: N.J. DEP

Q.C. REPORT NO.: 008 & 009

BLANKS

UNITS ug/L

	INITIAL CALIBRATION BLANK VALUE	CONTINUING CALIBRATION BLANK VALUE 1	2	3	4	PREPARATION BLANK MATRIX: WATER	MATRIX:
1. ALUMINUM							
2. ANTIMONY							
3. ARSENIC							
4. BARIUM							
5. BERYLLIUM							
6. CADMIUM							
7. CALCIUM							
8. CHROMIUM							
9. COBALT							
10. COPPER							
11. IRON							
12. LEAD	5U	5 U	5 U	5 U	5 U	5U	
13. MAGNESIUM							
14. MANGANESE							
15. MERCURY							
16. NICKEL							
17. POTASSIUM							
18. SELENIUM							
19. SILVER							
20. SODIUM							
21. THALLIUM							
22. VANADIUM							
23. ZINC							
24. CYANIDE	10U	10 U	10 U	10 U	10 U	10U	
25. PHENOL							

INORGANIC ANALYSIS DATA SHEET
FORM IV
ICP INTERFERENCE CHECK SAMPLE

Lab Name : NANCO LABORATORIES, INC.

Customer: N.J. DEP

QC REPORT NO. : 008 & 009

Check Sample I.D. : ICS

PAGE 1 OF 1

Check Sample Source : N.J. DEP

UNITS: UG/L

	2	INITIAL		FINAL	
	TRUE	OBSERVED	% R	OBSERVED	% R
1. ALUMINUM	503000.0	434000.0	86.3	550000.0	109.3
2. ANTIMONY	NP	ND		ND	
3. ARSENIC	NP	NR		NR	
4. BARIUM	472.0	492.0	104.2	496.0	105.1
5. BERYLLIUM	456.0	468.0	102.6	477.0	104.6
6. CADMIUM	964.0	890.0	92.3	905.0	93.9
7. CALCIUM	499000.0	461500.0	92.5	486000.0	97.4
8. CHROMIUM	985.0	1008.0	102.3	1033.0	104.9
9. COBALT	478.0	489.0	102.3	505.0	105.6
10.COPPER	509.0	533.0	104.7	528.0	103.7
11.IRON	198000.0	193000.0	97.5	194900.0	98.4
12.LEAD	4630.0	4859.0	104.9	4995.0	107.9
13.MAGNESIUM	497000.0	487200.0	98.0	498900.0	100.4
14.MANGANESE	522.0	505.0	96.7	507.0	97.1
15.MERCURY	NP	NR		NR	
16.NICKEL	913.0	974.0	106.7	1006.0	110.2
17.POTASSIUM	NP				
18.SELENIUM	NP	NR		NR	
19.SILVER	986.0	998.0	101.2	1142.0	115.8
20.SODIUM	NP	ND		ND	
21.THALLIUM*	1090.0	NR		NR	
22.VANADIUM	471.0	461.0	97.9	496.0	105.3
23.ZINC	948.0	969.0	102.2	1000.0	105.5

2 = TRUE VALUE OF EPA ICP INTERFERENCE CHECK SAMPLE OR CONTRACTOR

NR = NOT REPORTED.
NP= NOT PRESENT
ND= NOT DETECTED
*= ANALYZED BY AA ONLY

INORGANIC ANALYSIS DATA SHEET
FORM V
SAMPLE SPIKE RECOVERY

000087

Lab Name : NANCO LABORATORIES, INC.

Customer: N.J. DEP

QC REPORT NO. : 008

DATE: 10/18/86

SAMPLE ID : J6-0117

UNITS: ug/L

	CONTROL LIMIT % R	SPIKED SAMPLE RESULTS (SSR)	SAMPLE RESULTS (SR)	SPIKE ADDED (SA)	1 % R
1. ALUMINUM	75-125	NR	NR	NR	NR
2. ANTIMONY	75-125	679.0	50 U	500.0	135.8 N
3. ARSENIC	75-125	82.8+	97.0E	20.0	0.0 N
4. BARIUM	75-125	NR	NR	NR	NR
5. BERYLLIUM	75-125	40.0	2 U	50.0	80.0
6. CADMIUM	75-125	99.0	61.0	50.0	76.0
7. CALCIUM	75-125	NR	NR	NR	NR
8. CHROMIUM	75-125	193.0	10 U	200.0	96.5
9. COBALT	75-125	NR	NR	NR	NR
10. COPPER	75-125	635.0	391.0	250.0	97.6
11. IRON	75-125	NR	NR	NR	NR
12. LEAD	75-125	101.4	99.5E	20.0	507.0 N
13. MAGNESIUM	75-125	NR	NR	NR	NR
14. MANGANESE	75-125	NR	NR	NR	NR
15. MERCURY	75-125	1.09	.2 U	1.0	109.0
16. NICKEL	75-125	1923.0	1649.0	400.0	68.5 N
17. POTASSIUM	75-125	NR	NR	NR	NR
18. SELENIUM	75-125	645.0	650.0	10.0	-50.0 N
19. SILVER	75-125	73.0	116.0	50.0	-86.0 N
20. SODIUM	75-125	NR	NR	NR	NR
21. THALLIUM	75-125	13.0	5 U	50.0	26.0 N
22. VANADIUM	75-125	NR	NR	NR	NR
23. ZINC	75-125	2327.0	2289.0	200.0	19.0 N
24. CYANIDE	75-125	NR	NR	NR	NR
25. PHENOL	75-125	NR	NR	NR	NR

* = RUN ON SAMPLE J6-0115-008

NR = NOT REQUIRED

INORGANIC ANALYSIS DATA SHEET
FORM V
SAMPLE SPIKE RECOVERY

Lab Name : NANCO LABORATORIES, INC.

Customer: N.J. DEP

QC REPORT NO. : 009

DATE: 10/18/86

SAMPLE ID : J6-0122SPK

UNITS: ug/L

	CONTROL LIMIT % R	SPIKED SAMPLE RESULTS (SSR)	SAMPLE RESULTS (SR)	SPIKE ADDED (SA)	1 % R
1. ALUMINUM	75-125	NR	NR	NR	NR
2. ANTIMONY	75-125	125.0	381.0	500.0	-51.2 N
3. ARSENIC	75-125	67.5	5 U	20.0	337.5 N
4. BARIUM	75-125	NR	NR	NR	NR
5. BERYLLIUM	75-125	41.0	0.0	50.0	82.0
6. CADMIUM	75-125	52.0	26.0	50.0	52.0 N
7. CALCIUM	75-125	NR	NR	NR	NR
8. CHROMIUM	75-125	125.0	10 U	200.0	62.5N
9. COBALT	75-125	NR	NR	NR	NR
10. COPPER	75-125	2537.0	3161.0	250.0	-249.6 N
11. IRON	75-125	NR	NR	NR	NR
12. LEAD	75-125	5977.0	6344.0	500.0	-73.4 N
13. MAGNESIUM	75-125	NR	NR	NR	NR
14. MANGANESE	75-125	NR	NR	NR	NR
15. MERCURY	75-125	1.02	.2 U	1.0	102.0
16. NICKEL	75-125	661.0	428.0	500.0	46.6 N
17. POTASSIUM	75-125	NR	NR	NR	NR
18. SELENIUM	75-125	13.8	5 U	10.0	138.0 N
19. SILVER	75-125	10 U	48.0	50.0	-96.0 N
20. SODIUM	75-125	NR	NR	NR	NR
21. THALLIUM	75-125	26.3	5 U	50.0	52.6 N
22. VANADIUM	75-125	NR	NR	NR	NR
23. ZINC	75-125	1504.0	1386.0	500.0	23.6 N
24. CYANIDE	75-125	10.0	10 U	100.0	10.0 N
25. PHENOL		22	10 U	100.0	22.0 N

NR = NOT REQUIRED

INORGANIC ANALYSIS DATA SHEET
FORM VI
DUPLICATES

Lab Name : NANCO LABORATORIES, INC. Customer: N.J. DEP

QC REPORT NO.: 008

SAMPLE ID : J6-0115

UNITS : UG/L

	1 CONTROL LIMIT	SAMPLE RESULTS (S)	SAMPLE DUPLICATES RESULTS (D)	2 RPD
1. ALUMINUM		NR	NR	NR
2. ANTIMONY		330.0	291.0	12.6
3. ARSENIC		219.0	204.0	7.1
4. BARIUM		NR	NR	NR
5. BERYLLIUM		2 U	2 U	NC
6. CADMIUM		23.0	11.0	70.6 *
7. CALCIUM		NR	NR	NR
8. CHROMIUM		25.0	15.0	50.0 *
9. COBALT		NR	NR	NR
10. COPPER	+ OR - 25	53.0	41.0	25.5
11. IRON		NR	NR	NR
12. LEAD		62.9	60.7	3.6
13. MAGNESIUM		NR	NR	NR
14. MANGANESE		NR	NR	NR
15. MERCURY		0.2 U	0.2 U	NC
16. NICKEL		80.0	78.0	2.5
17. POTASSIUM		NR	NR	NR
18. SELENIUM		1000.0	957.0	4.4
19. SILVER		20.0	20.0	0.0
20. SODIUM		NR	NR	NR
21. THALLIUM		5 U	5 U	NC
22. VANADIUM		NR	NR	NR
23. ZINC		250.0	239.0	4.5
24. CYANIDE		10 U	10 U	NC
25. PHENOL*		67	76	12.6

1 = TO BE ADDED AT A LATER DATE NC = NON CALCULABLE RPD DUE TO VALUE(S) LESS THAN CRDL

* = RUN ON SAMPLE J6-0117-008

INORGANIC ANALYSIS DATA SHEET
FORM VI
DUPLICATES

Lab Name : NANCO LABORATORIES, INC.

Customer: N.J. DEP

QC REPORT NO.: 009

SAMPLE ID : J6-0122

UNITS : UG/L

	1 CONTROL LIMIT	SAMPLE RESULTS (S)	SAMPLE DUPLICATES RESULTS (D)	2 RPD
1. ALUMINUM		NR	NR	NR
2. ANTIMONY		381.0	374.0	1.9
3. ARSENIC		5 U	5 U	NC
4. BARIUM		NR	NR	NR
5. BERYLLIUM		2 U	2 U	NC
6. CADMIUM		26.0	27.0	3.8
7. CALCIUM		NR	NR	NR
8. CHROMIUM		10 U	10 U	NC
9. COBALT		NR	NR	NR
10. COPPER	+ OR - 25	3161.0	3209.0	1.5
11. IRON		NR	NR	NR
12. LEAD		6344.0	6202.0	2.3
13. MAGNESIUM		NR	NR	NR
14. MANGANESE		NR	NR	NR
15. MERCURY		0.2 U	0.2 U	NC
16. NICKEL		428.0	421.0	1.6
17. POTASSIUM		NR	NR	NR
18. SELENIUM		50 U	50 U	NC
19. SILVER		48.0	10 U	NC
20. SODIUM		NR	NR	NR
21. THALLIUM		10 U	10 U	NC
22. VANADIUM		NR	NR	NR
23. ZINC		1386.0	1370.0	1.2
24. CYANIDE		10 U	10 U	NC
25. PHENOL		10 U	10 U	NC

1 = TO BE ADDED AT A LATER DATE NC = NON CALCULABLE RPD DUE TO VALUE(S) LESS THAN CRDL

INORGANIC ANALYSIS DATA SHEET

FORM VII

INSTRUMENT DETECTION LIMITS AND LABORATORY CONTROL SAMPLE

Lab Name : NANCO LABORATORIES, INC. Customer: N.J. DEP

QC REPORT NO. : 008

	REQUIRED DETECTION LIMITS (CRDL) UG/L	INSTRUMENT DETECTION LIMITS (IDL) UG/L ICP: 1	FURNACE 1	LAB CONTROL SAMPLE UG/L OR MG/KG DRY WEIGHT (CIRCLE ONE) TRUE	FOUND	% R
1. ALUMINUM	200	NR	NR	NR	NR	NR
2. ANTIMONY	60	50 U	NR	807	694	86
3. ARSENIC	10	50	5 U	40.9	32.5	79
4. BARIUM	200	NR	NR	NR	NR	NR
5. BERYLLIUM	5	2 U	NR	100	81	81
6. CADMIUM	5	5 U	NR	1000.0	964.0	96
7. CALCIUM	5000	NR	NR	NR	NR	NR
8. CHROMIUM	10	10 U	NR	1000.0	986.0	99
9. COBALT	50	NR	NR	NR	NR	NR
10. COPPER	25	10 U	NR	1000	965	97
11. IRON	100	NR	NR	NR	NR	NR
12. LEAD	5	60	5 U	91.7	90.4	99
13. MAGNESIUM	5000	NR	NR	NR	NR	NR
14. MANGANESE	15	NR	NR	NR	NR	NR
15. MERCURY	0.2	NR	NR			
16. NICKEL	40	30 U	NR	1000.0	987.0	99
17. POTASSIUM	5000	NR	NR	NR	NR	NR
18. SELENIUM	5	NR	NR	86.4	84.0	97
19. SILVER	10	10 U	NR	1000	1049	NR
20. SODIUM	5000	NR	NR	NR	NR	NR
21. THALLIUM	10	NR	5 U	6.2	6.3	101
22. VANADIUM	50	NR	NR	NR	NR	NR
23. ZINC	20	10 U	NR	1000	939.0	94

NR = NOT REQUIRED

INORGANIC ANALYSIS DATA SHEET
FORM VII
INSTRUMENT DETECTION LIMITS AND LABORATORY CONTROL SAMPLE

Lab Name : NANCO LABORATORIES, INC. Customer : N.J.DEP

QC REPORT 008

	REQUIRED DETECTION LIMITS (CRDL) UG/L	INSTRUMENT DETECTION LIMITS (IDL) UG/L FURNACE: 2	Flame AA: 1	LAB CONTROL SAMPLE UG/L OR MG/KG DRY WEIGHT (CIRCLE ONE) TRUE	FOUND	% R
1. ALUMINUM	200	NR	NR	NR	NR	NR
2. ANTIMONY	60	NR	NR	NR	NR	NR
3. ARSENIC	10	NR	NR	NR	NR	NR
4. BARIUM	200	NR	NR	NR	NR	NR
5. BERYLLIUM	5	NR	NR	NR	NR	NR
6. CADMIUM	5	NR	NR	NR	NR	NR
7. CALCIUM	5000	NR	NR	NR	NR	NR
8. CHROMIUM	10	NR	NR	NR	NR	NR
9. COBALT	50	NR	NR	NR	NR	NR
10. COPPER	25	NR	NR	NR	NR	NR
11. IRON	100	NR	NR	NR	NR	NR
12. LEAD	5	NR	NR	NR	NR	NR
13. MAGNESIUM	5000	NR	NR	NR	NR	NR
14. MANGANESE	15	NR	NR	NR	NR	NR
15. MERCURY	0.2	NR	0.20	5.0	5.1	101.2
16. NICKEL	40	NR	NR	NR	NR	NR
17. POTASSIUM	5000	NR	NR	NR	NR	NR
18. SELENIUM	5	5	NR	86.4	84.0	97.2
19. SILVER	10	NR	NR	NR	NR	NR
20. SODIUM	5000	NR	NR	NR	NR	NR
21. THALLIUM	10	NR	NR	NR	NR	NR
22. VANADIUM	50	NR	NR	NR	NR	NR
23. ZINC	20	NR	NR	NR	NR	NR
24. CYANIDE	10	NR	NR	NR	NR	NR

NR = NOT REQUIRED

INORGANIC ANALYSIS DATA SHEET
FORM VII
INSTRUMENT DETECTION LIMITS AND LABORATORY CONTROL SAMPLE

Lab Name : NANCO LABORATORIES, INC. Customer : N.J.DEP

QC REPORT 008

	REQUIRED DETECTION LIMITS (CRDL) UG/L	INSTRUMENT DETECTION LIMITS (IDL) UG/L CYANIDE		LAB CONTROL SAMPLE UG/L OR MG/KG DRY WEIGHT (CIRCLE ONE)		
				TRUE	FOUND	% R
1. ALUMINUM	200	NR	NR	NR	NR	NR
2. ANTIMONY	60	NR	NR	NR	NR	NR
3. ARSENIC	10	NR	NR	NR	NR	NR
4. BARIUM	200	NR	NR	NR	NR	NR
5. BERYLLIUM	5	NR	NR	NR	NR	NR
6. CADMIUM	5	NR	NR	NR	NR	NR
7. CALCIUM	5000	NR	NR	NR	NR	NR
8. CHROMIUM	10	NR	NR	NR	NR	NR
9. COBALT	50	NR	NR	NR	NR	NR
10. COPPER	25	NR	NR	NR	NR	NR
11. IRON	100	NR	NR	NR	NR	NR
12. LEAD	5	NR	NR	NR	NR	NR
13. MAGNESIUM	5000	NR	NR	NR	NR	NR
14. MANGANESE	15	NR	NR	NR	NR	NR
15. MERCURY	0.2	NR	NR	NR	NR	NR
16. NICKEL	40	NR	NR	NR	NR	NR
17. POTASSIUM	5000	NR	NR	NR	NR	NR
18. SELENIUM	5	NR	NR	NR	NR	NR
19. SILVER	10	NR	NR	NR	NR	NR
20. SODIUM	5000	NR	NR	NR	NR	NR
21. THALLIUM	10	NR	NR	NR	NR	NR
22. VANADIUM	50	NR	NR	NR	NR	NR
23. ZINC	20	NR	NR	NR	NR	NR
24. CYANIDE	10	NR	NR	224	248.0	110.7

NR = NOT REQUIRED

INORGANIC ANALYSIS DATA SHEET

FORM VII

INSTRUMENT DETECTION LIMITS AND LABORATORY CONTROL SAMPLE

Lab Name : NANCO LABORATORIES, INC. Customer: N.J. DEP

QC REPORT NO. : 009

	REQUIRED DETECTION LIMITS (CRDL) UG/L	INSTRUMENT DETECTION LIMITS (IDL) UG/L ICP: 1	FURNACE 1	LAB CONTROL SAMPLE UG/L OR MG/KG DRY WEIGHT (CIRCLE ONE) TRUE	FOUND	% R
1. ALUMINUM	200	NR	NR	NR	NR	NR
2. ANTIMONY	60	50 U	NR	<20	10 U	NA
3. ARSENIC	10	50	5 U	680.0	680.0	100
4. BARIUM	200	NR	NR	NR	NR	NR
5. BERYLLIUM	5	2 U	NR	.4 U	.4 U	NA
6. CADMIUM	5	5 U	NR	1 U	1 U	NA
7. CALCIUM	5000	NR	NR	NR	NR	NR
8. CHROMIUM	10	10 U	NR	16.7	3.8	23
9. COBALT	50	NR	NR	NR	NR	NR
10. COPPER	25	10 U	NR	265	236	89
11. IRON	100	NR	NR	NR	NR	NR
12. LEAD	5	60	5 U	5820.0	5520.0	95
13. MAGNESIUM	5000	NR	NR	NR	NR	NR
14. MANGANESE	15	NR	NR	NR	NR	NR
15. MERCURY	0.2	NR	NR	NR	NR	NR
16. NICKEL	40	30 U	NR	22.4	17.8	79
17. POTASSIUM	5000	NR	NR	NR	NR	NR
18. SELENIUM	5	NR	NR	NR	NR	NR
19. SILVER	10	10 U	NR	2 U	7.40	NR
20. SODIUM	5000	NR	NR	NR	NR	NR
21. THALLIUM	10	NR	5 U	3.8	2.5	66
22. VANADIUM	50	NR	NR	NR	NR	NR
23. ZINC	20	10 U	NR	425	368.0	87

NR = NOT REQUIRED

INORGANIC ANALYSIS DATA SHEET
FORM VII
INSTRUMENT DETECTION LIMITS AND LABORATORY CONTROL SAMPLE

Lab Name : NANCO LABORATORIES, INC. Customer : N.J.DEP

QC REPORT 009

	REQUIRED DETECTION LIMITS (CRDL) UG/L	INSTRUMENT DETECTION LIMITS (IDL) UG/L FURNACE: 2		LAB CONTROL SAMPLE UG/L OR MG/KG DRY WEIGHT (CIRCLE ONE) TRUE	FOUND	% R
1. ALUMINUM	200	NR	NR	NR	NR	NR
2. ANTIMONY	60	NR	NR	NR	NR	NR
3. ARSENIC	10	NR	NR	NR	NR	NR
4. BARIUM	200	NR	NR	NR	NR	NR
5. BERYLLIUM	5	NR	NR	NR	NR	NR
6. CADMIUM	5	NR	NR	NR	NR	NR
7. CALCIUM	5000	NR	NR	NR	NR	NR
8. CHROMIUM	10	NR	NR	NR	NR	NR
9. COBALT	50	NR	NR	NR	NR	NR
10. COPPER	25	NR	NR	NR	NR	NR
11. IRON	100	NR	NR	NR	NR	NR
12. LEAD	5	NR	NR	NR	NR	NR
13. MAGNESIUM	5000	NR	NR	NR	NR	NR
14. MANGANESE	15	NR	NR	NR	NR	NR
15. MERCURY	0.2	NR	NR	NR	NR	NR
16. NICKEL	40	NR	NR	NR	NR	NR
17. POTASSIUM	5000	NR	NR	NR	NR	NR
18. SELENIUM	5	5	NR	1 U	1 U	NR
19. SILVER	10	NR	NR	NR	NR	NR
20. SODIUM	5000	NR	NR	NR	NR	NR
21. THALLIUM	10	NR	NR	NR	NR	NR
22. VANADIUM	50	NR	NR	NR	NR	NR
23. ZINC	20	NR	NR	NR	NR	NR
24. CYANIDE	10	NR	NR	NR	NR	NR

NR = NOT REQUIRED

INORGANIC ANALYSIS DATA SHEET
FORM VII
INSTRUMENT DETECTION LIMITS AND LABORATORY CONTROL SAMPLE

Lab Name : NANCO LABORATORIES, INC. Customer : N.J.DEP

QC REPORT 009

	REQUIRED DETECTION LIMITS (CRDL) UG/L	INSTRUMENT DETECTION LIMITS (IDL) UG/L		LAB CONTROL SAMPLE UG/L OR MG/KG DRY WEIGHT (CIRCLE ONE)		
		CYANIDE	Flame AA: 1	TRUE	FOUND	% R
1. ALUMINUM	200	NR	NR	NR	NR	NR
2. ANTIMONY	60	NR	NR	NR	NR	NR
3. ARSENIC	10	NR	NR	NR	NR	NR
4. BARIUM	200	NR	NR	NR	NR	NR
5. BERYLLIUM	5	NR	NR	NR	NR	NR
6. CADMIUM	5	NR	NR	NR	NR	NR
7. CALCIUM	5000	NR	NR	NR	NR	NR
8. CHROMIUM	10	NR	NR	NR	NR	NR
9. COBALT	50	NR	NR	NR	NR	NR
10. COPPER	25	NR	NR	NR	NR	NR
11. IRON	100	NR	NR	NR	NR	NR
12. LEAD	5	NR	NR	NR	NR	NR
13. MAGNESIUM	5000	NR	NR	NR	NR	NR
14. MANGANESE	15	NR	NR	NR	NR	NR
15. MERCURY	0.2	NR	0.20	5.0	5.1	101.2
16. NICKEL	40	NR	NR	NR	NR	NR
17. POTASSIUM	5000	NR	NR	NR	NR	NR
18. SELENIUM	5	NR	NR	NR	NR	NR
19. SILVER	10	NR	NR	NR	NR	NR
20. SODIUM	5000	NR	NR	NR	NR	NR
21. THALLIUM	10	NR	NR	NR	NR	NR
22. VANADIUM	50	NR	NR	NR	NR	NR
23. ZINC	20	NR	NR	NR	NR	NR
24. CYANIDE	10	NR	NR	224	195.0	87.1

NR = NOT REQUIRED

INORGANIC ANALYSIS DATA SHEET
FORM VIII
STANDARD ADDITION RESULTS

Lab Name : NANCO LABORATORIES, INC.

Customer Name: N.J. DEP

QC BATCH 008, 009

UNITS: UG/L

EPA SAMPLE #	ELEMENT	1 MATRIX	0 ADD ABS	1 ADD CON.	1 ADD ABS	2 ADD CON.	2 ADD ABS	3 ADD CON.	3 ADD ABS	FINAL 3 CON.	R
1. J6-0119 (1:10)	SE	WATER	0.014	40	0.153	70	0.250	100	0.364	2.7	0.999
2. J6-0127	SE	SOIL	0.014	40	0.063	70	0.120	100	0.155	7.2	0.993 +
3. J6-0125 (1:10)	SE	SOIL	0.001	40	0.032	70	0.086	100	0.127	-6.5	0.979 +
4. J6-0115 (1:10)	SE	WATER	0.173	40	0.207	70	0.258	100	0.299	118.9	0.984 +
5. J6-0115-DUP (1:10)	SE	WATER	0.145	40	0.206	70	0.237	100	0.268	115.2	0.992 +
6. J6-0117 (1:10)	SE	WATER	0.115	40	0.149	70	0.198	100	0.218	97.0	0.982 +
7. J6-0117-MSPK (1:10)	SE	WATER	0.101	40	0.131	70	0.187	100	0.199	82.8	0.960 +
8. J6-0124 (1:10)	SE	SOIL	0.077	40	0.110	70	0.131	100	0.186	59.4	0.958 +
9. J6-0126 (1:10)	SE	SOIL	0.252	40	0.304	70	0.368	100	0.449	107.1	0.976 +
10. J6-LCS (86-4)	SE	WATER	0.283	40	0.408	70	0.505	100	0.588	82.6	1.000
11. J6-LCS (0)	SE	SOIL	-0.001	40	0.121	70	0.213	100	0.345	-3.6	0.990 +
12. J6-0115 (1:10)	AS	WATER	0.029	40	0.090	70	0.152	100	0.199	14.4	0.997
13. J6-0122 (1:10)	AS	SOIL	0.041	40	0.119	70	0.172	100	0.221	23.0	0.999
14. J6-0126 (1:10)	AS	SOIL	0.100	40	0.162	70	0.223	100	0.278	50.4	0.997
15. J6-0117 (1:5)	PB	WATER	0.050	40	0.199	70	0.280	100	0.358	17.8	0.995
16 J6-0121	PB	WATER	0.327	40	0.616	70	0.743	100	0.862	55.0	0.988 +
17. J6-0118	PB	WATER	0.449	40	0.583	70	0.681	100	0.711	142.2	0.973 +
18. J6-0120	PB	WATER	0.195	40	0.450	70	0.632	100	0.746	31.6	0.995
19. J6-0117-MSPK	PB	WATER	0.721	40	0.816	70	0.883	100	0.948	262.3	1.000
20. J6-0117 (1:5)	TL	WATER	0.002	40	0.047	70	0.145	100	0.163	-5.1	0.950 +
21. J6-0117-DUP (1:5)	TL	WATER	0.003	40	0.049	70	0.101	100	0.148	-1.9	0.993 +
22. J6-0116 (1:10)	AS	WATER	0.014	40	0.077	70	0.191	100	0.194	1.8	0.931 +
23. J6-0123 (1:10)	AS	SOIL	0.013	40	0.106	70	0.159	100	0.253	2.9	0.991 +
24. J6-0127 (1:10)	AS	SOIL	0.007	40	0.076	70	0.127	100	0.189	2.1	0.998
25. J6-LCS (40.9)	AS	SOIL	0.070	40	0.093	70	0.137	100	0.200	35.3	0.942 +
26. J6-0122-DUP (1:25)	AS	SOIL	0.007	40	0.073	70	0.080	100	0.130	6.8	0.959 +
27. J6-0122-SPK (1:25)	AS	SOIL	-0.011	40	0.048	70	0.080	100	0.132	2.7	0.980 +
28. J6-0115	PB	WATER	0.178	40	0.268	70	0.317	100	0.372	88.3	0.997
29. LCS (009)	AS	SOIL	-0.002	40	0.065	70	0.070	100	0.115	3.4	0.953 +

INORGANIC ANALYSIS DATA SHEET
FORM IX
ICP SERIAL DILUTIONS

Lab Name : NANCO LABORATORIES, INC.

Customer: N.J. DEP

QC REPORT NO. : 008

N.J. DEP SAMPLE NO: J6-0115

LAB SAMPLE ID: J6-0115-008

UNITS: UG/L

MATRIX: WATER

	INITIAL SAMPLE CONCENTRATION	SERIAL DILUTION RESULTS	2 RPD
1. ALUMINUM	NR	NR	NR
2. ANTIMONY	330	50U	NR
3. ARSENIC	NA	NA	NA
4. BARIUM	NR	NR	NR
5. BERYLLIUM	2U	2U	NR
6. CADMIUM	23	5U	NR
7. CALCIUM	NR	NR	NR
8. CHROMIUM	25	10U	NR
9. COBALT	NR	NR	NR
10. COPPER	53	10U	NR
11. IRON	NR	NR	NR
12. LEAD	62	NR	NR
13. MAGNESIUM	NR	NR	NR
14. MANGANESE	NR	NR	NR
15. MERCURY	NA	NA	NA
16. NICKEL	80	10U	NR
17. POTASSIUM	NR	NR	NR
18. SELENIUM	NA	NA	NA
19. SILVER	20	10U	NR
20. SODIUM	NR	NR	NR
21. THALLIUM	NA	NA	NA
22. VANADIUM	NR	NR	NR
23. ZINC	250	272	8.80

NR - NOT REQUIRED, INITIAL SAMPLE CONCENTRATION LESS THAN 10 TIMES IDL

NA - NOT APPLICABLE, ANALYTE NOT DETERMINED BY ICP

INORGANIC ANALYSIS DATA SHEET
FORM IX
ICP SERIAL DILUTIONS

Lab Name : NANCO LABORATORIES, INC.

Customer: N.J. DEP

QC REPORT NO. : 009

N.J. DEP SAMPLE NO: J6-0122

LAB SAMPLE ID: J6-0122-009

UNITS: MG/KG

MATRIX: SOIL

	INITIAL SAMPLE CONCENTRATION	SERIAL DILUTION RESULTS	2 RPD
1. ALUMINUM	NR	NR	NR
2. ANTIMONY	381	50U	NR
3. ARSENIC	NA	NA	NA
4. BARIUM	NR	NR	NR
5. BERYLLIUM	2U	2U	NR
6. CADMIUM	26	20	NR
7. CALCIUM	NR	NR	NR
8. CHROMIUM	10U	10U	NR
9. COBALT	NR	NR	NR
10. COPPER	3161	3200	1.23
11. IRON	NR	NR	NR
12. LEAD	6344	6120	3.53
13. MAGNESIUM	NR	NR	NR
14. MANGANESE	NR	NR	NR
15. MERCURY	NA	NA	NA
16. NICKEL	428	412	3.74
17. POTASSIUM	NR	NR	NR
18. SELENIUM	NA	NA	NA
19. SILVER	48	604	1158.33 E
20. SODIUM	NR	NR	NR
21. THALLIUM	NA	NA	NA
22. VANADIUM	NR	NR	NR
23. ZINC	1386	1372	1.01

NR - NOT REQUIRED, INITIAL SAMPLE CONCENTRATION LESS THAN 10 TIMES IDL

NA - NOT APPLICABLE, ANALYTE NOT DETERMIND BY ICP

INORGANIC ANALYSIS DATA SHEET
FORM X
HOLDING TIMES

Lab Name : NANCO LABORATORIES, INC. Customer: N.J. DEP

QC REPORT NO. : 008 & 009

EPA SAMPLE NO.	MATRIX	DATE RECEIVED	MERCURY PREP DATE	MERCURY HOLDING TIME (DAYS) **	CN PREP DATE	CN HOLDING TIME DAYS **
J6-0115	L.W.	9/19/86	9/29/86	10	9/30/86	11
J6-0116	L.W.	9/19/86	9/29/86	10	9/30/86	11
J6-0117	L.W.	9/19/86	9/29/86	10	9/30/86	11
J6-0118	L.W.	9/19/86	9/29/86	10	9/30/86	11
J6-0119	L.W.	9/19/86	9/29/86	10	9/30/86	11
J6-0120	L.W.	9/19/86	9/29/86	10	9/30/86	11
J6-0121	L.W.	9/19/86	9/29/86	10	9/30/86	11
J6-0122	L.S.	9/19/86	9/29/86	10	10/01/86	12
J6-0123	L.S.	9/19/86	9/29/86	10	10/01/86	12
J6-0124	L.S.	9/19/86	9/29/86	10	10/01/86	12
J6-0125	L.S.	9/19/86	9/29/86	10	10/01/86	12
J6-0126	L.S.	9/19/86	9/29/86	10	10/01/86	12
J6-0127	L.S.	9/19/86	9/29/86	10	10/01/86	12

** = HOLDING TIME IS DEFINED AS NUMBER OF DAYS BETWEEN THE DATE RECEIVED AND THE SAMPLE PREPARATION DATE.

Form XI (Quarterly)

INSTRUMENT DETECTION LIMITS

LAB NAME NANCO LABS INC. DATE 7/24/86

(ICP)/Flame AA (Circle One) Model Number Allied Analytical Plasma 200 Furnace AA Number

Element	Wavelength (nm)	CRDL (ug/L)	IDL (ug/L)	Element	Wavelength (nm)	CRDL (ug/L)	IDL (ug/L)
1. Aluminum	167.08	200	100	13. Magnesium	279.08	5000	1000
2. Antimony	206.83	60	50	14. Manganese	257.61	15	10
3. Arsenic	193.70	10	50	15. Mercury	—	0.2	—
4. Barium	493.41	200	50	16. Nickel	231.6	40	30
5. Beryllium	313.04	5	2	17. Potassium	766.49	5000	1000
6. Cadmium	214.44	5	5	18. Selenium	196.03	5	75
7. Calcium	317.93	5000	1000	19. Silver	328.07	10	10
8. Chromium	205.55	10	10	20. Sodium	589.59	5000	1000
9. Cobalt	238.89	50	10	21. Thallium	—	10	—
10. Copper	324.75	25	10	22. Vanadium	292.40	50	40
11. Iron	234.35	100	40	23. Zinc	213.86	20	10
12. Lead	220.35	5	60				

Footnotes:
- Indicate the instrument for which the IDL applies with a "P" (for ICP), an "A" (for Flame AA), or an "F" (for Furnace AA) behind the IDL value.
- Indicate elements commonly run with background correction (AA) with a "B" behind the analytical wavelength.
- If more than one ICP/Flame or Furnace AA is used, submit separate Forms XI-XIII for each instrument.

COMMENTS: The IDL's Given above all apply to ICP. The IDL's for As, Se, Pb are above the CRDL's. In all case the actual IDL's have been rounded to a convienent (for data reporting) number. The actual IDL's are always lower.

Lab Manager A Kgaard

Form XI (Quarterly)
INSTRUMENT DETECTION LIMITS

LAB NAME NANCO LABS INC. DATE 7/24/86

ICP/~~Flame AA~~ C.V. (Circle One) Model Number Sepectra 30 VARIAN Furnace AA Number

Element	Wavelength (nm)	CRDL (ug/L)	IDL (ug/L)	Element	Wavelength (nm)	CRDL (ug/L)	IDL (ug/L)
1. Aluminum		200		13. Magnesium		5000	
2. Antimony		60		14. Manganese		15	
3. Arsenic		10		15. Mercury	253.7	0.2	0.2
4. Barium		200		16. Nickel		40	
5. Beryllium		5		17. Potassium		5000	
6. Cadmium		5		18. Selenium		5	
7. Calcium		5000		19. Silver		10	
8. Chromium		10		20. Sodium		5000	
9. Cobalt		50		21. Thallium		10	
10. Copper		25		22. Vanadium		50	
11. Iron		100		23. Zinc		20	
12. Lead		5					

Footnotes:
- Indicate the instrument for which the IDL applies with a "P" (for ICP), an "A" (for Flame AA), or an "F" (for Furnace AA) behind the IDL value.
- Indicate elements commonly run with background correction (AA) with a "B" behind the analytical wavelength.
- If more than one ICP/Flame or Furnace AA is used, submit separate Forms XI-XIII for each instrument.

COMMENTS: Mercury IDL is determined via Cold Vapor procedure using Varian Sepcta AA 30.

Lab Manager [signature]

Form XI (Quarterly)
INSTRUMENT DETECTION LIMITS

LAB NAME NANCO LABS INC. DATE 7/24/86

ICP/Flame AA (Circle One) Model Number _____ Furnace AA Number ~~AA-1~~ AKG F-1 | Var Sep AA

Element	Wavelength (nm)	CRDL (ug/L)	IDL (ug/L)	Element	Wavelength (nm)	CRDL (ug/L)	IDL (ug/L)
1. Aluminum		200		13. Magnesium		5000	
2. Antimony		60		14. Manganese		15	
3. Arsenic	193.7	10	5	15. Mercury		0.2	
4. Barium		200		16. Nickel		40	
5. Beryllium		5		17. Potassium		5000	
6. Cadmium		5		18. Selenium		5	
7. Calcium		5000		19. Silver		10	
8. Chromium		10		20. Sodium		5000	
9. Cobalt		50		21. Thallium	276.8	10	5
10. Copper		25		22. Vanadium		50	
11. Iron		100		23. Zinc		20	
12. Lead	283.3	5	5				

Footnotes:
- Indicate the instrument for which the IDL applies with a "P" (for ICP), an "A" (for Flame AA), or an "F" (for Furnace AA) behind the IDL value.
- Indicate elements commonly run with background correction (AA) with a "B" behind the analytical wavelength.
- If more than one ICP/Flame or Furnace AA is used, submit separate Forms XI-XIII for each instrument.

COMMENTS: NANCO uses two AA's (Furnaces). F-1 is generally used for As, Pb and Tl.

Lab Manager [signature]

Form XI (Quarterly)
INSTRUMENT DETECTION LIMITS

LAB NAME _____ DATE 7/24/86

ICP/Flame AA (Circle One) Model Number _____ Furnace AA Number ~~AA~~ F-2 / VARI Seph AA-

Element	Wavelength (nm)	CRDL (ug/L)	IDL (ug/L)	Element	Wavelength (nm)	CRDL (ug/L)	IDL (ug/L)
1. Aluminum		200		13. Magnesium		5000	
2. Antimony		60		14. Manganese		15	
3. Arsenic		10		15. Mercury		0.2	
4. Barium		200		16. Nickel		40	
5. Beryllium		5		17. Potassium		5000	
6. Cadmium		5		18. Selenium	196.0	5	5
7. Calcium		5000		19. Silver		10	
8. Chromium		10		20. Sodium		5000	
9. Cobalt		50		21. Thallium		10	
0. Coppe		25		22. Vanadium		50	
11. Iron		100		23. Zinc		20	
12. Lead		5					

Footnotes:
- Indicate the instrument for which the IDL applies with a "P" (for ICP), an "A" (for Flame AA), or an "F" (for Furnace AA) behind the IDL value.
- Indicate elements commonly run with background correction (AA) with a "B" behind the analytical wavelength.
- If more than one ICP/Flame or Furnace AA is used, submit separate Forms XI-XIII for each instrument.

COMMENTS: Nanco uses two AA's, F-2 is generally used for Se

Lab Manager [signature]

INORGANIC ANALYSIS DATA SHEET
FORM XII (QUARTERLY)
ICP INTERELEMENT CORRECTION FACTORS

Lab Name : NANCO LABORATORIES, INC. Customer: N.J. DEP

ICP Model Number : IL PLASMA 200

QC REPORT NO. : 008 & 009

		INTERELEMENT CORRECTION FACTORS FOR							
ANALYTE	ANALYTE WAVELENGHT (NM)								
1 ANTIMONY	206.83								
2 ARSENIC	NA								
3 BARIUM	493.41								
4 BERYLLIUM	313.04								
5 CADMIUM	214.44								
6 CHROMIUM	205.55								
7 COBALT	228.61								
8 COPPER	324.75								
9 LEAD	220.35								
10 MANGANESE	257.61								
11 MERCURY	NA								
12 NICKEL	231.60								
13 POTASSIUM	766.49								
14 SELENIUM	NA								
15 SILVER	328.07								
16 SODIUM	589.59								
17 THALLIUM	NA								
18 VANADIUM	292.40								
19 ZINC	213.86								

NA

COMMENTS: NO CORRECTION REQUIRED. ICP IS A SEQUENTIAL INSTRUMENT
WITH INTERNAL BACKGROUND CORRECTION.

INORGANIC ANALYSIS DATA SHEET
FORM XIII (QUARTERLY)
ICP LIMEAR RANGES

Lab Name : NANCO LABORATORIES, INC. Customer: N.J. DEP

QC REPORT 008, 009

ICP MODEL NUMBER IL PLASMA 200

ANALYTE	INTEGRATION TIME (SECONDS)	CONCENTRATION UG/L	ANALYTE	INTEGRATION TIME (SECONDS)	CONCENTRATION UG/L
1. ALUMINUM	1	35,000	13. MAGNESIUM	1	500,000
2. ANTIMONY	1	10,000	14. MANGANESE	1	10,000
3. ARSENIC	NA	NA	15. MERCURY	NA	NA
4. BARIUM	1	10,000	16. NICKEL	1	10,000
5. BERYLLIUM	1	1,000	17. POTASSIUM	3	100
6. CADMIUM	1	10,000	18. SELENIUM	NA	NA
7. CALCIUM	1	500,000	19. SILVER	5	1,000
8. CHROMIUM	2	10,000	20. SODIUM	1	100,000
9. COBALT	1	10,000	21. THALLIUM	NA	NA
10. COPPER	2	10,000	22. VANADIUM	1	10,000
11. IRON	1	30,000	23. ZINC	2	10,000
12. LEAD	1	10,000			

FOOTNOTES : * INDICATE THE ELEMENTS NOT ANALZED BY ICP WITH THE NOTATION "NA".

COMMENT: FE IS ANALYZED TWICE,i.e.A CHAN. & B.CHAN AT SAME WAVE LENGTH(234.35),A.CHAN IS LINEAR TO 500 PPM,B.CHAN TO ONL

COMMENTS :

ICP
Raw
Data

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SAMPLE	OPERATOR	PWR	TIME	NAME
CAL	MSHIELDS	3	09:52	CONTRACT

000108

EL NM CH SEC
AL 167.08 B 1.0

2

000109

B#	INTENSITY	RAW-CONC	CONC
99	1	0.00d	0.00
1	455149	30.00	30.00

0 0 x 0 x2

EL NM CH SEC
SB 206.83 B 1.0

3

B#	INTENSITY	RAW-CONC	CONC
99	29	0d	0
1	24265	10000	10000

0 0 x 0 x2

000110

EL NM CH SEC
BA 493.41 A 1.0

4

B#	INTENSITY	RAW-CONC	CONC
99	-47	0	0
1	649056	10000	10000

0 0 x 0 x2

000111

EL NM CH SEC
BE 313.04 A 1.0

5

000112

B#	INTENSITY	RAW-CONC	CONC
99	395	0	0
1	69213	1000	999
2	7776	107	99

0 -74 x 73 x2

EL NM CH SEC
CD 214.44 B 1.0

6

000113

B#	INTENSITY	RAW-CONC	CONC
99	26	0	0
1	325877	10000	10000

0 0 x 0 x2

EL NM CH SEC
CA 317.93 A 1.0

7

B#	INTENSITY	RAW-CONC	CONC
99	2	0.0d	0.0
1	441095	500.0	500.0

0 0 x 0 x2

000114

EL

NM CH SEC
CR 205.55 B 2.0

8

000115

B#	INTENSITY	RAW-CONC	CONC
99	-12	0	0
1	300616	10000	10000

0 0 x 0 x2

EL. NM CH SEC
CO 228.61 B 1.0

9

B#	INTENSITY	RAW-CONC	CONC
99	-28	0	0
1	196571	10000	10000

0 0 x 0 x2

000116

EL NM CH SEC
CU 324.75 A 2.0

10

B#	INTENSITY	RAW-CONC	CONC
99	95	0d	0
1	71092	10000	10000

0 0 x 0 x2

000117

EL NM CH SEC
FE 234.35 B 1.0

B#	INTENSITY	RAW-CONC	CONC
99	283	0	0
1	343351	30000	30000

0 0 x 0 x2

11

000118

EL NM CH SEC
MG 279.08 A 1.0

12

B#	INTENSITY	RAW-CONC	CONC
99	10	0.0d	0.0
1	128632	500.0	500.0

0 0 x 0 x2

000119

EL NM CH SEC
MN 257.61 A 1.0

13

B#	INTENSITY	RAW-CONC	CONC
99	22	0d	0
1	76217	10000	10000

0 0 x 0 x2

000120

EL NM CH SEC
NI 231.60 B 1.0

14

B#	INTENSITY	RAW-CONC	CONC
99	131	0	0
1	116794	10000	10000

0 0 x 0 x2

000121

EL NM CH SEC
K 766.49 A 3.0

15

000122

B#	INTENSITY	RAW-CONC	CONC
99	58	0.0	0.0
26	125468	100.0	99.9
9	42183	33.5	39.9

0 291 x -292 x2

EL NM CH SEC
AG 328.07 A 5.0

16

000123

B#	INTENSITY	RAW-CONC	CONC
99	-299	0d	0
4	88587	10000	10000

0 0 x 0 x2

EL NM CH SEC
NA 589.59 A 2.0

17

B#	INTENSITY	RAW-CONC	CONC
99	1646	0.0	0.0
26	1148779	100.0	99.9
9	390783	33.9	39.9

000124

0 271 x -272 x2

EL

NM CH SEC
V 292.40 B 1.0

18

B#	INTENSITY	RAW-CONC	CONC
99	-14	0d	0
1	77260	10000	10000

0 0 x 0 x2

000125

EL NM CH SEC
ZN 213.86 B 2.0

19

B#	INTENSITY	RAW-CONC	CONC
99	6414	0	0
1	1230831	10000	10000

000126

0 0 x 0 x2

EL. NM CH SEC
FE 234.35 A 1.0

20

000127

B#	INTENSITY	RAW-CONC	CONC
99	23	0.0d	0.0
7	87983	500.0	500.0

0 0 x 0 x2

EL NM CH SEC
PB 220.35 B 1.0

21

B#	INTENSITY	RAW-CONC	CONC
99	23	0d	0
20	23482	10000	10000

0 0 x 0 x2

000128

22

000129

EL	NM	C	INTENSITY	CONC
FE	234.35	A	397	2.1
AL	167.08	B	30386	2.00
FE	234.35	A	389	2.0
AL	167.08	B	30480	2.00
CR	205.55	B	16516	549
BA	493.41	A	134005	2065
CR	205.55	B	16045	533
BA	493.41	A	133122	2051
SB	206.83	B	5	-10
MN	257.61	A	4015	523
SB	206.83	B	10	-8
MN	257.61	A	4048	528
ZN	213.86	B	373222	2995
MG	279.08	A	6406	24.8
ZN	213.86	B	377460	3030
MG	279.08	A	6413	24.8
CD	214.44	B	16925	518
NA	589.59	A	503774	50.3
CD	214.44	B	16762	513
NA	589.59	A	491437	49.2
PB	220.35	B	10981	4671
BE	313.04	A	43954	614
PB	220.35	B	11007	4682
BE	313.04	A	44033	616
CO	228.61	B	10057	512
CA	317.93	A	44147	50.0
CO	228.61	B	10284	524
CA	317.93	A	45068	51.0
NI	231.60	B	6255	524
CU	324.75	A	3613	495
NI	231.60	B	6100	511
CU	324.75	A	3517	481
FE	234.35	B	24093	2081
AG	328.07	A	3518	429
FE	234.35	B	24086	2080
AG	328.07	A	3124	384
V	292.40	B	3975	516
K	766.49	A	56406	52.0
V	292.40	B	3930	510
K	766.49	A	56470	52.0

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23

000130

SAMPLE	OPERATOR	PWR	TIME	NAME
1	MSHIELDS	3	10:00	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	2.00	PPM	0.000	0.00	1.0
SB	206.83	B	-9	PPB	1.4	15.55	1.0
BA	493.41	A	2058	PPB	9.8	0.47	1.0
BE	313.04	A	615	PPB	1.4	0.22	1.0
CD	214.44	B	515	PPB	3.6	0.69	1.0
CA	317.93	A	50.5	PPM	0.70	1.38	1.0
CR	205.55	B	541	PPB	11.3	2.08	2.0
CO	228.61	B	518	PPB	8.4	1.62	1.0
CU	324.75	A	488	PPB	9.8	2.00	2.0
FE	234.35	B	2080	PPB	1.0	0.04	1.0
MG	279.08	A	24.8	PPM	0.00	0.00	1.0
MN	257.61	A	525	PPB	3.6	0.68	1.0
NI	231.60	B	517	PPB	9.2	1.77	1.0
K	766.49	A	52.0	PPM	0.00	0.00	3.0
AG	328.07	A	406	PPB	31.8	7.83	5.0
NA	589.59	A	49.7	PPM	0.78	1.56	2.0
V	292.40	B	513	PPB	4.2	0.81	1.0
ZN	213.86	B	3012	PPB	24.7	0.82	2.0
FE	234.35	A	2.0	PPM	0.10	5.00	1.0
PB	220.35	B	4676	PPB	7.8	0.16	1.0

EPA ICV-1 OK BE& AG& SB BELOW

EL

NM C	INTENSITY	CONC
BE 313.04 A	44699	536
BE 313.04 A	44842	538

24

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
BE	313.04	A	537	PPB	1.4	0.26	1.0

000131

EPA ICV-1 BE OK

EL	NM	C	INTENSITY	CONC
AG	328.07	A	3149	465
AG	328.07	A	3132	462

25

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AG	328.07	A	463	PPB	2.2	0.47	5.0

000132

EPA ICV-1 OK AG

EL	NM C	INTENSITY	CONC
SB	206.83 B	1511	794
SB	206.83 B	1535	807

26

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
SB	206.83	B	800	PPB	9.2	1.15	1.0

000133

EPA ICV-3 OK SB

27

000134

EL	NM	C	INTENSITY	CONC
FE	234.35	A	12	-0.1
AL	167.08	B	4	0.00
FE	234.35	A	8	-0.1
AL	167.08	B	10	0.00
CR	205.55	B	117	4
BA	493.41	A	-95	-1
CR	205.55	B	-30	-2
BA	493.41	A	-51	-1
SB	206.83	B	84	29
MN	257.61	A	38	2
SB	206.83	B	15	-8
MN	257.61	A	-11	-5
ZN	213.86	B	6736	2
MG	279.08	A	15	0.0
ZN	213.86	B	6450	0
MG	279.08	A	26	0.0
CD	214.44	B	48	0
NA	589.59	A	1076	-0.2
CD	214.44	B	-19	-2
NA	589.59	A	1103	-0.2
PB	220.35	B	-16	-17
BE	313.04	A	361	-1
PB	220.35	B	85	26
BE	313.04	A	393	-1
CO	228.61	B	104	6
CA	317.93	A	15	0.0
CO	228.61	B	-17	0
CA	317.93	A	15	0.0
NI	231.60	B	2	-12
CU	324.75	A	42	-8
NI	231.60	B	71	-6
CU	324.75	A	115	2
FE	234.35	B	-45	-30
AG	328.07	A	-454	-22
FE	234.35	B	-48	-30
AG	328.07	A	-542	-33
V	292.40	B	13	3
K	766.49	A	96	0.0
V	292.40	B	38	6
K	766.49	A	54	-0.2

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28

SAMPLE	OPERATOR	PWR	TIME	NAME
2	MSHIELDS	3	10:15	CONTRACT

000135

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	0.00d	PPM	0.000	0.00	1.0
SB	206.83	B	10d	PPB	26.1	261.00	1.0
BA	493.41	A	-1d	PPB	0.0	0.00	1.0
BE	313.04	A	-1	PPB	0.0	0.00	1.0
CD	214.44	B	-1d	PPB	1.4	140.00	1.0
CA	317.93	A	0.0d	PPM	0.00	0.00	1.0
CR	205.55	B	1d	PPB	4.2	420.00	2.0
CO	228.61	B	3	PPB	4.2	140.00	1.0
CU	324.75	A	-3d	PPB	7.0	233.33	2.0
FE	234.35	B	-30	PPB	0.0	0.00	1.0
MG	279.08	A	0.0d	PPM	0.00	0.00	1.0
MN	257.61	A	-2d	PPB	5.0	250.00	1.0
NI	231.60	B	-9	PPB	4.2	46.66	1.0
K	766.49	A	-0.1d	PPM	0.14	140.00	3.0
AG	328.07	A	-28	PPB	7.8	27.85	5.0
NA	589.59	A	-0.2	PPM	0.00	0.00	2.0
V	292.40	B	4d	PPB	2.2	55.00	1.0
ZN	213.86	B	1	PPB	1.4	140.00	2.0
FE	234.35	A	-0.1d	PPM	0.00	0.00	1.0
PB	220.35	B	4	PPB	30.4	760.00	1.0

CAL-BLK

29

000136

EL	NM	C	INTENSITY	CONC
FE	234.35	A	2721	15.3
AL	167.08	B	226630	14.93
FE	234.35	A	2769	15.5
AL	167.08	B	228298	15.04
CR	205.55	B	151370	5035
BA	493.41	A	323957	4991
CR	205.55	B	148889	4952
BA	493.41	A	325798	5019
SB	206.83	B	11718	6269
MN	257.61	A	38529	5053
SB	206.83	B	11888	6361
MN	257.61	A	38752	5082
ZN	213.86	B	601895	4863
MG	279.08	A	64182	249.4
ZN	213.86	B	601572	4860
MG	279.08	A	64665	251.3
CD	214.44	B	161313	4949
NA	589.59	A	634034	61.7
CD	214.44	B	158893	4875
NA	589.59	A	627036	61.1
PB	220.35	B	10332	4394
BE	313.04	A	35079	414
PB	220.35	B	10265	4365
BE	313.04	A	34759	411
CO	228.61	B	97312	4951
CA	317.93	A	213302	241.7
CO	228.61	B	96854	4927
CA	317.93	A	209977	238.0
NI	231.60	B	59502	5088
CU	324.75	A	35859	5037
NI	231.60	B	58406	4995
CU	324.75	A	35701	5014
FE	234.35	B	172049	15020
AG	328.07	A	-353	-8
FE	234.35	B	169534	14800
AG	328.07	A	-377	-11
V	292.40	B	38481	4981
K	766.49	A	67235	60.6
V	292.40	B	37246	4821
K	766.49	A	67389	60.7

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000137

SAMPLE	OPERATOR	PWR	TIME	NAME
3	MSHIELDS	3	10:22	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	14.98	PPM	0.078	0.52	1.0
SB	206.83	B	6315	PPB	65.0	1.02	1.0
BA	493.41	A	5005	PPB	19.7	0.39	1.0
BE	313.04	A	412	PPB	2.2	0.53	1.0
CD	214.44	B	4912	PPB	52.3	1.06	1.0
CA	317.93	A	239.8	PPM	2.61	1.08	1.0
CR	205.55	B	4993	PPB	58.6	1.17	2.0
CO	228.61	B	4939	PPB	16.9	0.34	1.0
CU	324.75	A	5025	PPB	16.2	0.32	2.0
FE	234.35	B	14910	PPB	155.5	1.04	1.0
MG	279.08	A	250.3	PPM	1.34	0.53	1.0
MN	257.61	A	5067	PPB	20.5	0.40	1.0
NI	231.60	B	5041	PPB	65.7	1.30	1.0
K	766.49	A	60.6	PPM	0.10	0.16	3.0
AG	328.07	A	-10d	PPB	2.2	22.00	5.0
NA	589.59	A	61.4	PPM	0.42	0.68	2.0
V	292.40	B	4901	PPB	113.1	2.30	1.0
ZN	213.86	B	4861	PPB	2.2	0.04	2.0
FE	234.35	A	15.4	PPM	0.14	0.90	1.0
PB	220.35	B	4379	PPB	20.5	0.46	1.0

CONT-CAL AL&FE 15000PPB MG&CA 250PPM NA&K 60PPM SB 6500PPB THE R
EST 5000PPB

CONT-CAL BE 431PPB

EL	NM C	INTENSITY	CONC
PB	220.35 B	11688	4972
PB	220.35 B	11478	4882

31

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
PB	220.35	B	4927	PPB	63.6	1.29	1.0

000138

CONT-CAL PB 5000PPB OK

EL	NM	C	INTENSITY	CONC
AG	328.07	A	44558	6055
AG	328.07	A	44892	6100

32

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AG	328.07	A	6077	PPB	31.8	0.52	5.0

000139

CONT-CAL AG 6000PPB OK

33

000140

EL	NM	C	INTENSITY	CONC
FE	234.35	A	15	-0.1
AL	167.08	B	49	0.00
FE	234.35	A	-3	-0.2
AL	167.08	B	44	0.00
CR	205.55	B	422	14
BA	493.41	A	31	0
CR	205.55	B	369	12
BA	493.41	A	11	0
SB	206.83	B	10	-11
MN	257.61	A	271	32
SB	206.83	B	16	-7
MN	257.61	A	263	31
ZN	213.86	B	10891	36
MG	279.08	A	20	0.0
ZN	213.86	B	10946	36
MG	279.08	A	5	-0.1
CD	214.44	B	326	8
NA	589.59	A	1317	-0.2
CD	214.44	B	247	6
NA	589.59	A	1114	-0.2
PB	220.35	B	101	33
BE	313.04	A	887	5
PB	220.35	B	-12	-15
BE	313.04	A	891	5
CO	228.61	B	1863	96
CA	317.93	A	8	0.0
CO	228.61	B	1919	98
CA	317.93	A	-20	-0.1
NI	231.60	B	1068	80
CU	324.75	A	296	28
NI	231.60	B	1101	82
CU	324.75	A	345	34
FE	234.35	B	176	-10
AG	328.07	A	-402	-15
FE	234.35	B	154	-13
AG	328.07	A	-360	-9
V	292.40	B	677	89
K	766.49	A	-17	-0.2
V	292.40	B	650	85
K	766.49	A	-38	-0.2

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SAMPLE	OPERATOR	PWR	TIME	NAME
4	MSHIELDS	3	10:35	CONTRACT

000141

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	0.00d	PPM	0.000	0.00	1.0
SB	206.83	B	-9d	PPB	2.8	31.11	1.0
BA	493.41	A	0d	PPB	0.0	0.00	1.0
BE	313.04	A	5	PPB	0.0	0.00	1.0
CD	214.44	B	7	PPB	1.4	20.00	1.0
CA	317.93	A	-0.1d	PPM	0.10	100.00	1.0
CR	205.55	B	13	PPB	1.4	10.76	2.0
CO	228.61	B	97	PPB	1.4	1.44	1.0
CU	324.75	A	31d	PPB	4.2	13.54	2.0
FE	234.35	B	-12	PPB	2.2	18.33	1.0
MG	279.08	A	-0.1d	PPM	0.10	100.00	1.0
MN	257.61	A	31d	PPB	1.0	3.22	1.0
NI	231.60	B	81	PPB	1.4	1.72	1.0
K	766.49	A	-0.2	PPM	0.00	0.00	3.0
AG	328.07	A	-12d	PPB	4.2	35.00	5.0
NA	589.59	A	-0.2	PPM	0.00	0.00	2.0
V	292.40	B	87	PPB	2.8	3.21	1.0
ZN	213.86	B	36	PPB	0.0	0.00	2.0
FE	234.35	A	-0.2d	PPM	0.10	50.00	1.0
PB	220.35	B	9d	PPB	33.9	376.66	1.0

LINEAR RANGE

35

000142

EL	NM	C	INTENSITY	CONC
FE	234.35	A	33827	192.1
AL	167.08	B	944934	62.28
FE	234.35	A	34169	194.0
AL	167.08	B	944968	62.28
CR	205.55	B	30567	1017
BA	493.41	A	32109	494
CR	205.55	B	30079	1000
BA	493.41	A	31787	490
SB	206.83	B	-943	-522
MN	257.61	A	3873	505
SB	206.83	B	-809	-450
MN	257.61	A	3870	505
ZN	213.86	B	124970	968
MG	279.08	A	124837	485.2
ZN	213.86	B	125264	970
MG	279.08	A	125896	489.3
CD	214.44	B	29754	912
NA	589.59	A	5976	0.3
CD	214.44	B	28345	868
NA	589.59	A	6006	0.3
PB	220.35	B	11275	4796
BE	313.04	A	39353	468
PB	220.35	B	11570	4922
BE	313.04	A	39420	469
CO	228.61	B	9520	485
CA	317.93	A	408627	463.2
CO	228.61	B	9684	494
CA	317.93	A	405637	459.8
NI	231.60	B	11551	978
CU	324.75	A	3899	535
NI	231.60	B	11463	971
CU	324.75	A	3880	532
AG	328.07	A	7109	1000
FE	234.35	B	871885	76220
AG	328.07	A	7095	997
FE	234.35	B	871637	76198
V	292.40	B	3542	460
K	766.49	A	1157	1.0
V	292.40	B	3568	463
K	766.49	A	1251	1.1

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36

SAMPLE	OPERATOR	PWR	TIME	NAME
5	MSHIELDS	3	10:41	CONTRACT

000143

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	OV FLOW	PPM	0.000	0.00	1.0
SB	206.83	B	-486d	PPB	50.9	10.47	1.0
BA	493.41	A	492	PPB	2.8	0.56	1.0
BE	313.04	A	468	PPB	1.0	0.21	1.0
CD	214.44	B	890	PPB	31.1	3.49	1.0
CA	317.93	A	461.5	PPM	2.40	0.52	1.0
CR	205.55	B	1008	PPB	12.0	1.19	2.0
CO	228.61	B	489	PPB	6.4	1.30	1.0
CU	324.75	A	533	PPB	2.2	0.41	2.0
FE	234.35	B	OV FLOW	PPB	15.5	0.02	1.0
MG	279.08	A	487.2	PPM	2.90	0.59	1.0
MN	257.61	A	505	PPB	0.0	0.00	1.0
NI	231.60	B	974	PPB	5.0	0.51	1.0
K	766.49	A	1.0	PPM	0.10	10.00	3.0
AG	328.07	A	998	PPB	2.2	0.22	5.0
NA	589.59	A	0.3	PPM	0.00	0.00	2.0
V	292.40	B	461	PPB	2.2	0.47	1.0
ZN	213.86	B	969	PPB	1.4	0.14	2.0
FE	234.35	A	193.0	PPM	1.34	0.69	1.0
PB	220.35	B	4859	PPB	89.0	1.83	1.0

INTERFERNCE CHECK SAMPLE OK

EL	NM	C	INTENSITY	CONC
AL	167.08	B	65939	4.34
AL	167.08	B	65945	4.34

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EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	4.34	PPM	0.000	0.00	1.0

000144

INTERFERNCE CHECK SAMPLE 1-100 OK

000145

EL	NM	C	INTENSITY	CONC
FE	234.35	A	9110	51.6
AL	167.08	B	898799	59.24
FE	234.35	A	9152	51.8
AL	167.08	B	902606	59.49
CR	205.55	B	648	21
BA	493.41	A	114255	1760
CR	205.55	B	678	22
BA	493.41	A	112246	1729
SB	206.83	B	-336	-196
MN	257.61	A	995509	130654
SB	206.83	B	-279	-166
MN	257.61	A	995555	130660
ZN	213.86	B	209479	1658
MG	279.08	A	15785	61.3
ZN	213.86	B	210446	1666
MG	279.08	A	15830	61.4
CD	214.44	B	-216	-8
NA	589.59	A	162002	17.1
CD	214.44	B	-197	-7
NA	589.59	A	158394	16.7
PB	220.35	B	47726	20334
BE	313.04	A	393	-1
PB	220.35	B	47437	20211
BE	313.04	A	371	-1
CO	228.61	B	522	27
CA	317.93	A	35005	39.6
CO	228.61	B	589	31
CA	317.93	A	35762	40.5
NI	231.60	B	823	59
CU	324.75	A	8371	1165
NI	231.60	B	910	66
CU	324.75	A	8325	1158
AG	328.07	A	606	122
FE	234.35	B	558259	48793
AG	328.07	A	608	122
FE	234.35	B	564264	49318
V	292.40	B	355	47
K	766.49	A	42769	40.4
V	292.40	B	367	49
K	766.49	A	42800	40.4

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000146

SAMPLE	OPERATOR	PWR	TIME	NAME
7	MSHIELDS	3	10:59	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	59.36x	PPM	0.176	0.29	1.0
SB	206.83	B	-181d	PPB	21.2	11.71	1.0
BA	493.41	A	1744	PPB	21.9	1.25	1.0
BE	313.04	A	-1	PPB	0.0	0.00	1.0
CD	214.44	B	-8d	PPB	1.0	12.50	1.0
CA	317.93	A	40.0	PPM	0.64	1.60	1.0
CR	205.55	B	21	PPB	1.0	4.76	2.0
CO	228.61	B	29	PPB	2.8	9.65	1.0
CU	324.75	A	1161	PPB	5.0	0.43	2.0
FE	234.35	B	49055x	PPB	371.2	0.75	1.0
MG	279.08	A	61.3	PPM	0.10	0.16	1.0
MN	257.61	A	OV FLOW	PPB	4.2	0.00	1.0
NI	231.60	B	62	PPB	5.0	8.06	1.0
K	766.49	A	40.4	PPM	0.00	0.00	3.0
AG	328.07	A	122	PPB	0.0	0.00	5.0
NA	589.59	A	16.9	PPM	0.28	1.65	2.0
V	292.40	B	48	PPB	1.4	2.91	1.0
ZN	213.86	B	1662	PPB	5.6	0.33	2.0
FE	234.35	A	51.7	PPM	0.14	0.27	1.0
PB	220.35	B	20272x	PPB	86.9	0.42	1.0

LCS SOIL 510

EL	NM	C	INTENSITY	CONC
PB	220.35	B	608	249
PB	220.35	B	690	284

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
PB	220.35	B	266	PPB	24.7	9.28	1.0

LCS SOIL 510 PB 1-100

41

000148

EL	NM C	INTENSITY	CONC
MN 257.61	A	40111	5261
MN 257.61	A	39724	5210

EL	NM CH	CONC	UNIT	SD	RSD	SEC
MN 257.61	A	5235	PPB	36.0	0.68	1.0

LCS SOIL MN OK 1-100

42

000149

EL	NM	C	INTENSITY	CONC
AL	167.08	B	96033	6.32
AL	167.08	B	97428	6.42

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	6.37	PPM	0.070	1.09	1.0

LCS SOIL 1-10 AL OK

49

000150

EL	NM	C	INTENSITY	CONC
FE	234.35	A	585	3.1
AL	167.08	B	45366	2.98
FE	234.35	A	595	3.2
AL	167.08	B	46449	3.06
CR	205.55	B	29578	984
BA	493.41	A	65191	1004
CR	205.55	B	29739	989
BA	493.41	A	65964	1016
SB	206.83	B	2426	1285
MN	257.61	A	8240	1078
SB	206.83	B	2267	1200
MN	257.61	A	7663	1002
ZN	213.86	B	122852	950
MG	279.08	A	13101	50.8
ZN	213.86	B	120254	929
MG	279.08	A	12730	49.4
CD	214.44	B	31476	964
NA	589.59	A	86748	9.2
CD	214.44	B	31499	965
NA	589.59	A	86339	9.1
PB	220.35	B	2052	864
BE	313.04	A	7483	81
PB	220.35	B	2175	917
BE	313.04	A	7469	81
CO	228.61	B	19320	983
CA	317.93	A	42982	48.7
CO	228.61	B	19524	994
CA	317.93	A	43128	48.8
NI	231.60	B	11719	993
CU	324.75	A	6949	965
NI	231.60	B	11591	982
CU	324.75	A	6956	966
FE	234.35	B	33834	2932
AG	328.07	A	-320	-4
FE	234.35	B	33818	2931
AG	328.07	A	-430	-18
V	292.40	B	7425	962
K	766.49	A	9707	9.6
V	292.40	B	7437	963
K	766.49	A	9543	9.5

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5D

000151

SAMPLE	OPERATOR	PWR	TIME	NAME
10	MSHIELDS	3	11:22	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	3.02	PPM	0.056	1.85	1.0
SB	206.83	B	1242	PPB	60.1	4.83	1.0
BA	493.41	A	1010	PPB	8.4	0.83	1.0
BE	313.04	A	81	PPB	0.0	0.00	1.0
CD	214.44	B	964	PPB	1.0	0.10	1.0
CA	317.93	A	48.7	PPM	0.10	0.20	1.0
CR	205.55	B	986	PPB	3.6	0.36	2.0
CO	228.61	B	988	PPB	7.8	0.78	1.0
CU	324.75	A	965	PPB	1.0	0.10	2.0
FE	234.35	B	2931	PPB	1.0	0.03	1.0
MG	279.08	A	50.1	PPM	0.98	1.95	1.0
MN	257.61	A	1040	PPB	53.7	5.16	1.0
NI	231.60	B	987	PPB	7.8	0.79	1.0
K	766.49	A	9.5	PPM	0.10	1.05	3.0
AG	328.07	A	-11d	PPB	9.8	89.09	5.0
NA	589.59	A	9.1	PPM	0.10	1.09	2.0
V	292.40	B	962	PPB	0	0.10	1.0
ZN	213.86	B	939	PPB	.8	1.57	2.0
FE	234.35	A	3.1	PPM	10	3.22	1.0
PB	220.35	B	890	PPB	.4	4.20	1.0

LCS DEP ~~007~~ 008 JC Buck solution

43

EL	NM C	INTENSITY	CONC
SB	206.83 B	1299	681
SB	206.83 B	1348	707

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
SB	206.83	B	694	PPB	18.3	2.63	1.0

000152

LCS SB OK

LCS SB 510 OK & DEP 008 ICV - 3

45

000153

EL	NM	C	INTENSITY	CONC
AG	328.07	A	7284	1023
AG	328.07	A	7671	1075

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AG	328.07	A	1049	PPB	36.7	3.49	5.0

LCS DEP 008 AG OK

51

000154

EL	NM	C	INTENSITY	CONC
FE	234.35	A	11091	54.1
AL	167.08	B	1005555	60.57
FE	234.35	A	11101	54.2
AL	167.08	B	1005464	60.56
CR	205.55	B	695	21
BA	493.41	A	128613	1793
CR	205.55	B	588	17
BA	493.41	A	128608	1793
SB	206.83	B	-235	-118
MN	257.61	A	990980	112892
SB	206.83	B	-268	-135
MN	257.61	A	991099	112906
ZN	213.86	B	240022	1835
MG	279.08	A	17788	63.2
ZN	213.86	B	241447	1846
MG	279.08	A	17853	63.5
CD	214.44	B	-220	-8
NA	589.59	A	160894	16.5
CD	214.44	B	-93	-4
NA	589.59	A	162934	16.7
PB	220.35	B	55423	22035
BE	313.04	A	368	0
PB	220.35	B	55691	22141
BE	313.04	A	415	1
CO	228.61	B	680	28
CA	317.93	A	45447	43.5
CO	228.61	B	576	23
CA	317.93	A	44954	43.0
NI	231.60	B	1102	86
CU	324.75	A	9174	1190
NI	231.60	B	1184	93
CU	324.75	A	8986	1166
AG	328.07	A	216	35
FE	234.35	B	664706	53449
AG	328.07	A	259	40
FE	234.35	B	669272	53815
V	292.40	B	437	61
K	766.49	A	42278	40.1
V	292.40	B	451	63
K	766.49	A	42469	40.3

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SAMPLE	OPERATOR	PWR	TIME	NAME
10	MSHIELDS	3	11:26	CONTRACT

000155

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	OV FLOW	PPM	0.010	0.01	1.0
SB	206.83	B	-127d	PPB	12.0	9.44	1.0
BA	493.41	A	1793	PPB	0.0	0.00	1.0
BE	313.04	A	0d	PPB	1.0	0.00	1.0
CD	214.44	B	-6d	PPB	2.8	46.66	1.0
CA	317.93	A	43.2	PPM	0.36	0.83	1.0
CR	205.55	B	19	PPB	2.8	14.73	2.0
CO	228.61	B	25	PPB	3.6	14.40	1.0
CU	324.75	A	1178	PPB	16.9	1.43	2.0
FE	234.35	B	53632x	PPB	258.8	0.48	1.0
MG	279.08	A	63.3	PPM	0.22	0.34	1.0
MN	257.61	A	OV FLOW	PPB	9.8	0.00	1.0
NI	231.60	B	89	PPB	5.0	5.61	1.0
K	766.49	A	40.2	PPM	0.14	0.34	3.0
AG	328.07	A	37	PPB	3.6	9.72	5.0
NA	589.59	A	16.6	PPM	0.14	0.84	2.0
V	292.40	B	62	PPB	1.4	2.25	1.0
ZN	213.86	B	1840	PPB	7.8	0.42	2.0
FE	234.35	A	54.1	PPM	0.10	0.18	1.0
PB	220.35	B	22088x	PPB	74.9	0.33	1.0

LCS 009 OK

EL	NM	C	INTENSITY	CONC
BA	493.41	A	130114	1814
BA	493.41	A	131044	1827

53

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
BA	493.41	A	1820	PPB	9.2	0.50	1.0

000156

LCS BA SOIL OK

EL	NM	C	INTENSITY	CONC
AL	167.08	B	124973	7.52
AL	167.08	B	124417	7.49

54

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	7.50	PPM	0.022	0.29	1.0

000157

LCS 1-10 AL SOIL OK

EL

NM	C	INTENSITY	CONC
MN 257.61	A	49522	5640
MN 257.61	A	48929	5573

55

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
MN	257.61	A	5606	PPB	47.3	0.84	1.0

000158

LCS 1-100 MN SOIL

EL	NM C	INTENSITY	CONC
PB	220.35 B	771	287
PB	220.35 B	718	266

56

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
PB	220.35	B	276	PPB	14.8	5.36	1.0

000159

LCS EPA 1-100 PB

EL	NM C	INTENSITY	CONC	
AG	328.07 A	7185	1010	
AG	328.07 A	7785	1091	

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EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AG	328.07	A	1050	PPB	57.2	5.44	5.0

000160

LCS DEP 009

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000161

EL	NM	C	INTENSITY	CONC
FE	234.35	A	2	-0.2
AL	167.08	B	17	0.00
FE	234.35	A	24	0.0
AL	167.08	B	13	0.00
CR	205.55	B	-16	-1
BA	493.41	A	-194	-3
CR	205.55	B	2	0
BA	493.41	A	-188	-3
SB	206.83	B	12	-10
MN	257.61	A	6	-3
SB	206.83	B	80	27
MN	257.61	A	3	-3
ZN	213.86	B	5771	-6
MG	279.08	A	-8	-0.1
ZN	213.86	B	4644	-15
MG	279.08	A	2	-0.1
CD	214.44	B	63	0
NA	589.59	A	1176	-0.2
CD	214.44	B	-5	-1
NA	589.59	A	1217	-0.2
PB	220.35	B	105	34
BE	313.04	A	215	-3
PB	220.35	B	-2	-11
BE	313.04	A	222	-3
CO	228.61	B	-51	-2
CA	317.93	A	-35	-0.1
CO	228.61	B	9	1
CA	317.93	A	-2	-0.1
NI	231.60	B	88	-4
CU	324.75	A	69	-4
NI	231.60	B	29	-9
CU	324.75	A	14	-12
FE	234.35	B	110	-16
AG	328.07	A	-480	-25
FE	234.35	B	182	-10
AG	328.07	A	-449	-21
V	292.40	B	-39	-4
K	766.49	A	81	0.0
V	292.40	B	-43	-5
K	766.49	A	62	0.0

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000162

SAMPLE	OPERATOR	PWR	TIME	NAME
11	MSHIELDS	3	11:28	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	0.00d	PPM	0.000	0.00	1.0
SB	206.83	B	8d	PPB	26.1	326.25	1.0
BA	493.41	A	-3	PPB	0.0	0.00	1.0
BE	313.04	A	-3	PPB	0.0	0.00	1.0
CD	214.44	B	-1	PPB	1.0	100.00	1.0
CA	317.93	A	-0.1d	PPM	0.00	0.00	1.0
CR	205.55	B	-1	PPB	1.0	100.00	2.0
CO	228.61	B	-1	PPB	2.2	220.00	1.0
CU	324.75	A	-8d	PPB	5.6	70.00	2.0
FE	234.35	B	-13	PPB	4.2	32.30	1.0
MG	279.08	A	-0.1d	PPM	0.00	0.00	1.0
MN	257.61	A	-3d	PPB	0.0	0.00	1.0
NI	231.60	B	-7d	PPB	3.6	51.42	1.0
K	766.49	A	0.0d	PPM	0.00	0.00	3.0
AG	328.07	A	-23d	PPB	2.8	12.17	5.0
NA	589.59	A	-0.2	PPM	0.00	0.00	2.0
V	292.40	B	-5d	PPB	1.0	20.00	1.0
ZN	213.86	B	-11	PPB	6.4	58.18	2.0
FE	234.35	A	-0.1d	PPM	0.14	140.00	1.0
PB	220.35	B	11	PPB	31.8	289.09	1.0

PREP-BLK 511

EL	NM C	INTENSITY	CONC	
PB	220.35 B		27	1
PB	220.35 B		86	26

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
PB	220.35	B	13d	PPB	17.6	135.38	1.0

PREP-BLK 511 PB

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000163

61

000164

EL	NM	C	INTENSITY	CONC	
FE	234.35	A	18	-0.1	
AL	167.08	B	-4	-0.01	
FE	234.35	A	-4	-0.2	
AL	167.08	B	13	0.00	
CR	205.55	B	-5	0	
BA	493.41	A	18	0	
CR	205.55	B	46	1	
BA	493.41	A	-99	-1	
SB	206.83	B	35	3	
MN	257.61	A	61	4	
SB	206.83	B	-9	-21	
MN	257.61	A	-2	-4	
ZN	213.86	B	5039	-12	
MG	279.08	A	-4	-0.1	
ZN	213.86	B	4865	-14	
MG	279.08	A	19	0.0	
CD	214.44	B	36	0	
NA	589.59	A	1319	-0.2	
CD	214.44	B	-37	-2	
NA	589.59	A	896	-0.2	
PB	220.35	B	63	17	
BE	313.04	A	180	-3	
PB	220.35	B	31	3	
BE	313.04	A	205	-3	
CO	228.61	B	34	2	
CA	317.93	A	-25	-0.1	
CO	228.61	B	-9	0	
CA	317.93	A	-59	-0.1	
NI	231.60	B	87	-4	
CU	324.75	A	42	-8	
NI	231.60	B	136	0	
CU	324.75	A	68	-4	
FE	234.35	B	213	-7	
AG	328.07	A	-584	-39	
FE	234.35	B	129	-14	
AG	328.07	A	-506	-29	
V	292.40	B	-27	-3	
K	766.49	A	-11	-0.2	
V	292.40	B	-48	-5	
K	766.49	A	75	0.0	

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000165

SAMPLE	OPERATOR	PWR	TIME	NAME
12	MSHIELDS	3	11:35	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	-0.01d	PPM	0.010	100.00	1.0
SB	206.83	B	-9d	PPB	16.9	187.77	1.0
BA	493.41	A	-1	PPB	1.0	100.00	1.0
BE	313.04	A	-3	PPB	0.0	0.00	1.0
CD	214.44	B	-1d	PPB	1.4	140.00	1.0
CA	317.93	A	-0.1d	PPM	0.00	0.00	1.0
CR	205.55	B	0d	PPB	1.0	0.00	2.0
CO	228.61	B	1d	PPB	1.4	140.00	1.0
CU	324.75	A	-6d	PPB	2.8	46.66	2.0
FE	234.35	B	-11	PPB	5.0	45.45	1.0
MG	279.08	A	-0.1d	PPM	0.10	100.00	1.0
MN	257.61	A	0d	PPB	5.6	0.00	1.0
NI	231.60	B	-2d	PPB	2.8	140.00	1.0
K	766.49	A	-0.1d	PPM	0.14	140.00	3.0
AG	328.07	A	-34d	PPB	7.0	20.58	5.0
NA	589.59	A	-0.2	PPM	0.00	0.00	2.0
V	292.40	B	-4d	PPB	1.4	35.00	1.0
ZN	213.86	B	-13	PPB	1.4	10.76	2.0
FE	234.35	A	-0.2d	PPM	0.10	50.00	1.0
PB	220.35	B	10	PPB	9.8	98.00	1.0

PREP-BLK DEP 008

EL	NM	C	INTENSITY	CONC	
PB	220.35	B		-100	-53
PB	220.35	B		-20	-19

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EL	NM	CH	CONC	UNIT	SD	RSD	SEC
PB	220.35	B	-36	PPB	24.0	66.66	1.0

000166

PREP-BLK DEP 008

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000167

EL	NM	C	INTENSITY	CONC	
FE	234.35	A	-2	-0.2	
AL	167.08	B	-4	-0.01	
FE	234.35	A	11	-0.1	
AL	167.08	B	13	0.00	
CR	205.55	B	-44	-2	
BA	493.41	A	-48	-1	
CR	205.55	B	-19	-1	
BA	493.41	A	-37	0	
SB	206.83	B	-13	-23	
MN	257.61	A	54	4	
SB	206.83	B	6	-13	
MN	257.61	A	28	0	
ZN	213.86	B	10104	29	
MG	279.08	A	11	0.0	
ZN	213.86	B	9305	23	
MG	279.08	A	5	-0.1	
CD	214.44	B	-55	-3	
NA	589.59	A	661	-0.2	
CD	214.44	B	34	0	
NA	589.59	A	769	-0.2	
PB	220.35	B	115	39	
BE	313.04	A	432	0	
PB	220.35	B	178	66	
BE	313.04	A	374	-1	
CO	228.61	B	-27	0	
CA	317.93	A	-65	-0.1	
CO	228.61	B	86	5	
CA	317.93	A	-47	-0.1	
NI	231.60	B	-114	-22	
CU	324.75	A	43	-8	
NI	231.60	B	126	-1	
CU	324.75	A	66	-5	
FE	234.35	B	383	8	
AG	328.07	A	-243	7	
FE	234.35	B	260	-3	
AG	328.07	A	-411	-16	
V	292.40	B	-9	0	
K	766.49	A	-13	-0.2	
V	292.40	B	-2	1	
K	766.49	A	-16	-0.2	

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000168

SAMPLE	OPERATOR	PWR	TIME	NAME
13	MSHIELDS	3	11:44	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	-0.01d	PPM	0.010	100.00	1.0
SB	206.83	B	-18d	PPB	7.0	38.88	1.0
BA	493.41	A	-1	PPB	1.0	100.00	1.0
BE	313.04	A	-1d	PPB	1.0	100.00	1.0
CD	214.44	B	-2d	PPB	2.2	110.00	1.0
CA	317.93	A	-0.1d	PPM	0.00	0.00	1.0
CR	205.55	B	-2	PPB	1.0	50.00	2.0
CO	228.61	B	2	PPB	3.6	180.00	1.0
CU	324.75	A	-7d	PPB	2.2	31.42	2.0
FE	234.35	B	2	PPB	7.8	390.00	1.0
MG	279.08	A	-0.1d	PPM	0.10	100.00	1.0
MN	257.61	A	2d	PPB	2.8	140.00	1.0
NI	231.60	B	-12	PPB	14.8	123.33	1.0
K	766.49	A	-0.2	PPM	0.00	0.00	3.0
AG	328.07	A	-5	PPB	16.2	324.00	5.0
NA	589.59	A	-0.2	PPM	0.00	0.00	2.0
V	292.40	B	0d	PPB	1.0	0.00	1.0
ZN	213.86	B	26	PPB	4.2	16.15	2.0
FE	234.35	A	-0.2d	PPM	0.10	50.00	1.0
PB	220.35	B	52	PPB	19.1	36.73	1.0

PREP-BLK DEP 009

EL	NM C	INTENSITY	CONC
ZN	213.86 B	3065	-28
ZN	213.86 B	2869	-30

66

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
ZN	213.86	B	-29	PPB	1.4	4.82	2.0

000169

PREP-BLK DEP 009

EL	NM C	INTENSITY	CONC	
PB	220.35 B		44	8
PB	220.35 B		30	2

67

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
PB	220.35	B	5d	PPB	4.2	84.00	1.0

000170

PREP-BLK 009

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000171

EL	NM	C	INTENSITY		CONC	
	FE	234.35	A		8	-0.1
	AL	167.08	B		9	0.00
	FE	234.35	A		10	-0.1
	AL	167.08	B		12	0.00
	CR	205.55	B		68	2
	BA	493.41	A		90	1
	CR	205.55	B		89	3
	BA	493.41	A		4	0
	SB	206.83	B		62	17
	MN	257.61	A		6	-3
	SB	206.83	B		48	10
	MN	257.61	A		493	61
	ZN	213.86	B		3571	-24
	MG	279.08	A		8	-0.1
	ZN	213.86	B		3847	-22
	MG	279.08	A		-4	-0.1
	CD	214.44	B		-12	-2
	NA	589.59	A		713	-0.2
	CD	214.44	B		-47	-3
	NA	589.59	A		649	-0.2
	PB	220.35	B		26	1
	BE	313.04	A		422	0
	PB	220.35	B		25	0
	BE	313.04	A		386	-1
	CO	228.61	B		78	5
	CA	317.93	A		-66	-0.1
	CO	228.61	B		31	2
	CA	317.93	A		-45	-0.1
	NI	231.60	B		99	-3
	CU	324.75	A		85	-2
	NI	231.60	B		154	1
	CU	324.75	A		87	-2
	FE	234.35	B		243	-5
	AG	328.07	A		-425	-18
	FE	234.35	B		118	-16
	AG	328.07	A		-487	-26
	V	292.40	B		-52	-6
	K	766.49	A		77	0.0
	V	292.40	B		-45	-5
	K	766.49	A		74	0.0

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000172

SAMPLE	OPERATOR	PWR	TIME	NAME
14	MSHIELDS	3	11:53	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	0.00d	PPM	0.000	0.00	1.0
SB	206.83	B	13d	PPB	5.0	38.46	1.0
BA	493.41	A	0	PPB	1.0	0.00	1.0
BE	313.04	A	-1	PPB	1.0	100.00	1.0
CD	214.44	B	-3	PPB	1.0	33.33	1.0
CA	317.93	A	-0.1d	PPM	0.00	0.00	1.0
CR	205.55	B	2d	PPB	1.0	50.00	2.0
CO	228.61	B	3	PPB	2.2	73.33	1.0
CU	324.75	A	-2d	PPB	0.0	0.00	2.0
FE	234.35	B	-11	PPB	7.8	70.90	1.0
MG	279.08	A	-0.1d	PPM	0.00	0.00	1.0
MN	257.61	A	29d	PPB	45.2	155.86	1.0
NI	231.60	B	-1	PPB	2.8	280.00	1.0
K	766.49	A	0.0d	PPM	0.00	0.00	3.0
AG	328.07	A	-22d	PPB	5.6	25.45	5.0
NA	589.59	A	-0.2	PPM	0.00	0.00	2.0
V	292.40	B	-6d	PPB	1.0	16.66	1.0
ZN	213.86	B	-23	PPB	1.4	6.08	2.0
FE	234.35	A	-0.1d	PPM	0.00	0.00	1.0
PB	220.35	B	0d	PPB	1.0	0.00	1.0

CAL-BLK

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000173

EL	NM	C	INTENSITY	CONC
FE	234.35	A	2575	14.5
AL	167.08	B	205809	13.56
FE	234.35	A	2568	14.4
AL	167.08	B	213116	14.04
CR	205.55	B	134477	4473
BA	493.41	A	302261	4657
CR	205.55	B	134789	4484
BA	493.41	A	297872	4589
SB	206.83	B	11096	5936
MN	257.61	A	38484	5047
SB	206.83	B	11067	5920
MN	257.61	A	37087	4864
ZN	213.86	B	573170	4628
MG	279.08	A	61276	238.1
ZN	213.86	B	571889	4618
MG	279.08	A	61145	237.6
CD	214.44	B	163402	5013
NA	589.59	A	541292	53.7
CD	214.44	B	158359	4858
NA	589.59	A	539295	53.4
PB	220.35	B	9882	4202
BE	313.04	A	33784	399
PB	220.35	B	10298	4379
BE	313.04	A	33831	399
CO	228.61	B	95555	4861
CA	317.93	A	221616	251.1
CO	228.61	B	96011	4884
CA	317.93	A	222340	252.0
NI	231.60	B	57660	4931
CU	324.75	A	33766	4742
NI	231.60	B	57210	4892
CU	324.75	A	33652	4726
FE	234.35	B	171878	15004
AG	328.07	A	-409	-16
FE	234.35	B	169859	14828
AG	328.07	A	-338	-6
V	292.40	B	38245	4950
K	766.49	A	57258	52.7
V	292.40	B	37873	4902
K	766.49	A	57586	52.9

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SAMPLE	OPERATOR	PWR	TIME	NAME
15	MSHIELDS	3	11:59	CONTRACT

000174

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	13.80	PPM	0.339	2.45	1.0
SB	206.83	B	5928	PPB	11.3	0.19	1.0
BA	493.41	A	4623	PPB	48.0	1.03	1.0
BE	313.04	A	399	PPB	0.0	0.00	1.0
CD	214.44	B	4935	PPB	109.6	2.22	1.0
CA	317.93	A	251.5	PPM	0.64	0.25	1.0
CR	205.55	B	4478	PPB	7.8	0.17	2.0
CO	228.61	B	4872	PPB	16.2	0.33	1.0
CU	324.75	A	4734	PPB	11.3	0.23	2.0
FE	234.35	B	14916	PPB	124.4	0.83	1.0
MG	279.08	A	237.8	PPM	0.36	0.15	1.0
MN	257.61	A	4955	PPB	129.4	2.61	1.0
NI	231.60	B	4911	PPB	27.5	0.55	1.0
K	766.49	A	52.8	PPM	0.14	0.26	3.0
AG	328.07	A	-11	PPB	7.0	63.63	5.0
NA	589.59	A	53.5	PPM	0.22	0.41	2.0
V	292.40	B	4926	PPB	33.9	0.68	1.0
ZN	213.86	B	4623	PPB	7.0	0.15	2.0
FE	234.35	A	14.4	PPM	0.10	0.69	1.0
PB	220.35	B	4290	PPB	125.1	2.91	1.0

CONT-CAL OK

EL	NM C	INTENSITY	CONC
CR	205.55 B	151196	5029
CR	205.55 B	152464	5071

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EL	NM	CH	CONC	UNIT	SD	RSD	SEC
CR	205.55	B	5050	PPB	29.6	0.58	2.0

000175

CONT-CAL CR OK

EL	NM	C	INTENSITY	CONC
NA	589.59	A	527946	59.8
NA	589.59	A	530159	60.0

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EL	NM	CH	CONC	UNIT	SD	RSD	SEC
NA	589.59	A	59.9	PPM	0.14	0.23	2.0

000176

CONT-CAL OK

EL	NM	C	INTENSITY	CONC	
K	766.49	A	56657	59.4	
K	766.49	A	56311	59.1	

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EL	NM	CH	CONC	UNIT	SD	RSD	SEC
K	766.49	A	59.2	PPM	0.22	0.37	3.0

000177

CONT-CAL K OK

EL	NM	C	INTENSITY	CONC
PB	220.35	B	12052	5127
PB	220.35	B	12044	5124

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
PB	220.35	B	5125	PPB	2.2	0.04	1.0

CONT-CAL PB OK

EL	NM	C	INTENSITY	CONC
AG	328.07	A	43761	5948
AG	328.07	A	43744	5945

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000179

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AG	328.07	A	5946	PPB	2.2	0.03	5.0

CONT-CAL AG OK

EL	NM	C	INTENSITY	CONC
FE	234.35	A	16272	92.3
AL	167.08	B	985382	64.95
FE	234.35	A	16169	91.7
AL	167.08	B	994525	65.55
CR	205.55	B	2314	77
BA	493.41	A	22032	339
CR	205.55	B	2377	79
BA	493.41	A	22132	341
SB	206.83	B	-496	-282
MN	257.61	A	14206	1861
SB	206.83	B	-536	-304
MN	257.61	A	14066	1843
ZN	213.86	B	27399	170
MG	279.08	A	6025	23.3
ZN	213.86	B	27158	169
MG	279.08	A	6136	23.8
CD	214.44	B	-460	-16
NA	589.59	A	11924	1.2
CD	214.44	B	-362	-13
NA	589.59	A	11621	1.2
PB	220.35	B	468	189
BE	313.04	A	569	1
PB	220.35	B	339	134
BE	313.04	A	500	0
CO	228.61	B	793	41
CA	317.93	A	137680	156.0
CO	228.61	B	697	36
CA	317.93	A	134731	152.7
NI	231.60	B	844	61
CU	324.75	A	596	70
NI	231.60	B	767	54
CU	324.75	A	642	76
AG	328.07	A	-574	-38
FE	234.35	B	940856	82251
AG	328.07	A	-651	-48
FE	234.35	B	940931	82258
V	292.40	B	968	126
K	766.49	A	10083	11.3
V	292.40	B	984	128
K	766.49	A	10285	11.5

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SAMPLE	OPERATOR	PWR	TIME	NAME
16	MSHIELDS	3	12:13	CONTRACT

000181

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	OV FLOW	PPM	0.424	0.64	1.0
SB	206.83	B	-293d	PPB	15.5	5.29	1.0
BA	493.41	A	340	PPB	1.4	0.41	1.0
BE	313.04	A	0	PPB	1.0	0.00	1.0
CD	214.44	B	-15d	PPB	2.2	14.66	1.0
CA	317.93	A	154.3	PPM	2.33	1.51	1.0
CR	205.55	B	78	PPB	1.4	1.79	2.0
CO	228.61	B	38	PPB	3.6	9.47	1.0
CU	324.75	A	73	PPB	4.2	5.75	2.0
FE	234.35	B	OV FLOW	PPB	5.0	0.00	1.0
MG	279.08	A	23.5	PPM	0.36	1.53	1.0
MN	257.61	A	1852	PPB	12.7	0.68	1.0
NI	231.60	B	57	PPB	5.0	8.77	1.0
K	766.49	A	11.4	PPM	0.14	1.22	3.0
AG	328.07	A	-43d	PPB	7.0	16.27	5.0
NA	589.59	A	1.2	PPM	0.00	0.00	2.0
V	292.40	B	127	PPB	1.4	1.10	1.0
ZN	213.86	B	169	PPB	1.0	0.59	2.0
FE	234.35	A	92.0	PPM	0.42	0.45	1.0
PB	220.35	B	161d	PPB	38.8	24.09	1.0

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EL	NM	C	INTENSITY	CONC
AL	167.08	B	118324	7.79
AL	167.08	B	120141	7.91

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EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	7.85	PPM	0.084	1.07	1.0

000182

AL 1-10

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000183

EL	NM	C	INTENSITY	CONC
FE	234.35	A	4433	25.0
AL	167.08	B	268635	17.70
FE	234.35	A	4526	25.5
AL	167.08	B	275887	18.18
CR	205.55	B	467	15
BA	493.41	A	5688	88
CR	205.55	B	537	18
BA	493.41	A	5761	89
SB	206.83	B	-106	-73
MN	257.61	A	3853	502
SB	206.83	B	-110	-75
MN	257.61	A	3734	487
ZN	213.86	B	16455	81
MG	279.08	A	1576	6.0
ZN	213.86	B	16131	78
MG	279.08	A	1546	5.9
CD	214.44	B	-212	-8
NA	589.59	A	3282	0.1
CD	214.44	B	-145	-6
NA	589.59	A	3225	0.1
PB	220.35	B	99	32
BE	313.04	A	296	-2
PB	220.35	B	99	32
BE	313.04	A	293	-2
CO	228.61	B	132	8
CA	317.93	A	35363	40.0
CO	228.61	B	105	6
CA	317.93	A	35042	39.7
NI	231.60	B	302	14
CU	324.75	A	121	3
NI	231.60	B	250	9
CU	324.75	A	105	1
FE	234.35	B	257480	22490
AG	328.07	A	-510	-29
FE	234.35	B	254817	22258
AG	328.07	A	-540	-33
V	292.40	B	84	12
K	766.49	A	2076	2.2
V	292.40	B	23	4
K	766.49	A	2074	2.2

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000184

SAMPLE	OPERATOR	PWR	TIME	NAME
17	MSHIELDS	3	12:26	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	17.94	PPM	0.339	1.88	1.0
SB	206.83	B	-74d	PPB	1.4	1.89	1.0
BA	493.41	A	88	PPB	1.0	1.13	1.0
BE	313.04	A	-2	PPB	0.0	0.00	1.0
CD	214.44	B	-7	PPB	1.4	20.00	1.0
CA	317.93	A	39.8	PPM	0.22	0.55	1.0
CR	205.55	B	16	PPB	2.2	13.75	2.0
CO	228.61	B	7	PPB	1.4	20.00	1.0
CU	324.75	A	2d	PPB	1.4	70.00	2.0
FE	234.35	B	22374	PPB	164.0	0.73	1.0
MG	279.08	A	5.9	PPM	0.10	1.69	1.0
MN	257.61	A	494	PPB	10.6	2.14	1.0
NI	231.60	B	11	PPB	3.6	32.72	1.0
K	766.49	A	2.2	PPM	0.00	0.00	3.0
AG	328.07	A	-31d	PPB	2.8	9.03	5.0
NA	589.59	A	0.1	PPM	0.00	0.00	2.0
V	292.40	B	8d	PPB	5.6	70.00	1.0
ZN	213.86	B	79	PPB	2.2	2.78	2.0
FE	234.35	A	25.2	PPM	0.36	1.42	1.0
PB	220.35	B	32d	PPB	0.0	0.00	1.0

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000185

EL	NM	C	INTENSITY	CONC
FE	234.35	A	10371	58.8
AL	167.08	B	708719	46.71
FE	234.35	A	10403	59.0
AL	167.08	B	714112	47.06
CR	205.55	B	1634	54
BA	493.41	A	35935	554
CR	205.55	B	1655	55
BA	493.41	A	35744	551
SB	206.83	B	-226	-137
MN	257.61	A	6284	821
SB	206.83	B	-249	-150
MN	257.61	A	6150	804
ZN	213.86	B	22791	133
MG	279.08	A	4020	15.5
ZN	213.86	B	22581	131
MG	279.08	A	4001	15.5
CD	214.44	B	-988	-32
NA	589.59	A	8827	0.8
CD	214.44	B	-991	-32
NA	589.59	A	8787	0.8
PB	220.35	B	389	156
BE	313.04	A	546	0
PB	220.35	B	443	179
BE	313.04	A	552	0
CO	228.61	B	563	29
CA	317.93	A	67042	75.9
CO	228.61	B	522	27
CA	317.93	A	63802	72.3
NI	231.60	B	872	63
CU	324.75	A	465	51
NI	231.60	B	830	59
CU	324.75	A	517	59
AG	328.07	A	-481	-25
FE	234.35	B	637651	55736
AG	328.07	A	-505	-29
FE	234.35	B	639716	55917
V	292.40	B	706	93
K	766.49	A	6650	7.4
V	292.40	B	666	88
K	766.49	A	6709	7.5

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000186

SAMPLE	OPERATOR	PWR	TIME	NAME
18	MSHIELDS	3	12:35	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	46.88x	PPM	0.247	0.52	1.0
SB	206.83	B	-144d	PPB	9.2	6.38	1.0
BA	493.41	A	552	PPB	2.2	0.39	1.0
BE	313.04	A	0	PPB	0.0	0.00	1.0
CD	214.44	B	-32	PPB	0.0	0.00	1.0
CA	317.93	A	74.1	PPM	2.54	3.42	1.0
CR	205.55	B	54	PPB	1.0	1.85	2.0
CO	228.61	B	28	PPB	1.4	5.00	1.0
CU	324.75	A	55	PPB	5.6	10.18	2.0
FE	234.35	B	55826x	PPB	127.9	0.22	1.0
MG	279.08	A	15.5	PPM	0.00	0.00	1.0
MN	257.61	A	812	PPB	12.0	1.47	1.0
NI	231.60	B	61	PPB	2.8	4.59	1.0
K	766.49	A	7.4	PPM	0.10	1.35	3.0
AG	328.07	A	-27	PPB	2.8	10.37	5.0
NA	589.59	A	0.8	PPM	0.00	0.00	2.0
V	292.40	B	90	PPB	3.6	4.00	1.0
ZN	213.86	B	132	PPB	1.4	1.06	2.0
FE	234.35	A	58.9	PPM	0.14	0.23	1.0
PB	220.35	B	167d	PPB	16.2	9.70	1.0

MFD 688 510

EL	NM	C	INTENSITY	CONC
AL	167.08	B	81409	5.36
AL	167.08	B	81624	5.37

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EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	5.36	PPM	0.010	0.18	1.0

000187

MFD 688 510 1-10 AL

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000188

EL	NM	C	INTENSITY	CONC
FE	234.35	A	10393	58.9
AL	167.08	B	712955	46.99
FE	234.35	A	10419	59.0
AL	167.08	B	719157	47.40
CR	205.55	B	1411	46
BA	493.41	A	35486	547
CR	205.55	B	1403	46
BA	493.41	A	35186	542
SB	206.83	B	-329	-193
MN	257.61	A	6430	841
SB	206.83	B	-409	-235
MN	257.61	A	6388	835
ZN	213.86	B	22081	127
MG	279.08	A	4005	15.5
ZN	213.86	B	22049	127
MG	279.08	A	3991	15.4
CD	214.44	B	-603	-20
NA	589.59	A	8817	0.8
CD	214.44	B	-483	-16
NA	589.59	A	8569	0.7
PB	220.35	B	384	153
BE	313.04	A	395	0
PB	220.35	B	349	138
BE	313.04	A	394	-1
CO	228.61	B	472	25
CA	317.93	A	65835	74.6
CO	228.61	B	344	18
CA	317.93	A	65001	73.6
NI	231.60	B	679	46
CU	324.75	A	439	48
NI	231.60	B	831	60
CU	324.75	A	501	56
AG	328.07	A	-433	-19
FE	234.35	B	640211	55960
AG	328.07	A	-448	-21
FE	234.35	B	638586	55817
V	292.40	B	674	89
K	766.49	A	6579	7.4
V	292.40	B	679	89
K	766.49	A	6486	7.3

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SAMPLE	OPERATOR	PWR	TIME	NAME
19	MSHIELDS	3	12:47	CONTRACT

000189

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	47.19x	PPM	0.290	0.61	1.0
SB	206.83	B	-214d	PPB	29.6	13.83	1.0
BA	493.41	A	544	PPB	3.6	0.66	1.0
BE	313.04	A	-1	PPB	1.0	100.00	1.0
CD	214.44	B	-18	PPB	2.8	15.55	1.0
CA	317.93	A	74.1	PPM	0.70	0.94	1.0
CR	205.55	B	46	PPB	0.0	0.00	2.0
CO	228.61	B	21	PPB	5.0	23.80	1.0
CU	324.75	A	52	PPB	5.6	10.76	2.0
FE	234.35	B	55888x	PPB	101.1	0.18	1.0
MG	279.08	A	15.4	PPM	0.10	0.64	1.0
MN	257.61	A	838	PPB	4.2	0.50	1.0
NI	231.60	B	53	PPB	9.8	18.49	1.0
K	766.49	A	7.3	PPM	0.10	1.36	3.0
AG	328.07	A	-20	PPB	1.4	7.00	5.0
NA	589.59	A	0.7	PPM	0.10	14.28	2.0
V	292.40	B	89	PPB	0.0	0.00	1.0
ZN	213.86	B	127	PPB	0.0	0.00	2.0
FE	234.35	A	58.9	PPM	0.10	0.16	1.0
PB	220.35	B	145d	PPB	10.6	7.31	1.0

MFD 688-510 DUP

EL	NM	C	INTENSITY	CONC
AL	167.08	B	76827	5.06
AL	167.08	B	76982	5.07

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	5.06	PPM	0.010	0.19	1.0

MFD 688-510 AL 1-10

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000191

EL	NM	C	INTENSITY	CONC
FE	234.35	A	11751	66.6
AL	167.08	B	758163	49.97
FE	234.35	A	11619	65.9
AL	167.08	B	758231	49.97
CR	205.55	B	6316	210
BA	493.41	A	76163	1173
CR	205.55	B	6260	208
BA	493.41	A	76075	1172
SB	206.83	B	15	-8
MN	257.61	A	11784	1543
SB	206.83	B	-30	-32
MN	257.61	A	11641	1524
ZN	213.86	B	60472	441
MG	279.08	A	4422	17.1
ZN	213.86	B	60110	438
MG	279.08	A	4504	17.4
CD	214.44	B	1006	29
NA	589.59	A	8084	0.7
CD	214.44	B	969	28
NA	589.59	A	8161	0.7
PB	220.35	B	938	390
BE	313.04	A	4013	41
PB	220.35	B	995	414
BE	313.04	A	4043	41
CO	228.61	B	7661	391
CA	317.93	A	87861	99.5
CO	228.61	B	7734	394
CA	317.93	A	87090	98.7
NI	231.60	B	5138	428
CU	324.75	A	1651	219
NI	231.60	B	5259	439
CU	324.75	A	1661	220
AG	328.07	A	-570	-37
FE	234.35	B	680238	59461
AG	328.07	A	-698	-55
FE	234.35	B	676678	59149
V	292.40	B	3392	440
K	766.49	A	7935	8.8
V	292.40	B	3417	443
K	766.49	A	8016	9.0

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000192

SAMPLE	OPERATOR	PWR	TIME	NAME
20	MSHIELDS	3	12:55	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	49.97x	PPM	0.000	0.00	1.0
SB	206.83	B	-20	PPB	16.9	84.50	1.0
BA	493.41	A	1172	PPB	1.0	0.08	1.0
BE	313.04	A	41	PPB	0.0	0.00	1.0
CD	214.44	B	28	PPB	1.0	3.57	1.0
CA	317.93	A	99.1	PPM	0.56	0.56	1.0
CR	205.55	B	209	PPB	1.4	0.66	2.0
CO	228.61	B	392	PPB	2.2	0.56	1.0
CU	324.75	A	219	PPB	1.0	0.45	2.0
FE	234.35	B	59305x	PPB	220.6	0.37	1.0
MG	279.08	A	17.2	PPM	0.22	1.27	1.0
MN	257.61	A	1533	PPB	13.4	0.87	1.0
NI	231.60	B	433	PPB	7.8	1.80	1.0
K	766.49	A	8.9	PPM	0.14	1.57	3.0
AG	328.07	A	-46d	PPB	12.7	27.60	5.0
NA	589.59	A	0.7	PPM	0.00	0.00	2.0
V	292.40	B	441	PPB	2.2	0.49	1.0
ZN	213.86	B	439	PPB	2.2	0.50	2.0
FE	234.35	A	66.2	PPM	0.50	0.75	1.0
PB	220.35	B	402	PPB	16.9	4.20	1.0

MFD 688 510 SPK

EL	NM	C	INTENSITY	CONC
SB	206.83	B	37	4
SB	206.83	B	-21	-27

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
SB	206.83	B	-12d	PPB	21.9	182.50	1.0

EL	NM	C	INTENSITY	CONC
AG	328.07	A	-584	-39
AG	328.07	A	-942	-87

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AG	328.07	A	-63d	PPB	33.9	53.80	5.0

MFD 688 SPK AG

91

000194

EL	NM	C	INTENSITY	CONC
AL	167.08	B	73515	4.84
AL	167.08	B	73024	4.81

92

000195

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	4.82	PPM	0.022	0.45	1.0

MFD .688 1-10 AL SPK

93

000196

EL	NM	C	INTENSITY	CONC
FE	234.35	A	9751	55.2
AL	167.08	B	1004904	66.23
FE	234.35	A	9672	54.8
AL	167.08	B	1004827	66.23
CR	205.55	B	1999	66
BA	493.41	A	33685	519
CR	205.55	B	1981	65
BA	493.41	A	33397	515
SB	206.83	B	-277	-165
MN	257.61	A	1232	158
SB	206.83	B	-302	-178
MN	257.61	A	1134	145
ZN	213.86	B	16861	85
MG	279.08	A	2651	10.2
ZN	213.86	B	16830	84
MG	279.08	A	2682	10.3
CD	214.44	B	-526	-18
NA	589.59	A	8543	0.7
CD	214.44	B	-424	-15
NA	589.59	A	8558	0.7
PB	220.35	B	527	214
BE	313.04	A	666	2
PB	220.35	B	434	175
BE	313.04	A	713	2
CO	228.61	B	140	8
CA	317.93	A	19817	22.4
CO	228.61	B	220	12
CA	317.93	A	19317	21.8
NI	231.60	B	246	9
CU	324.75	A	1580	209
NI	231.60	B	428	25
CU	324.75	A	1548	204
AG	328.07	A	-68	30
FE	234.35	B	589958	51565
AG	328.07	A	-108	25
FE	234.35	B	589855	51557
V	292.40	B	911	119
K	766.49	A	3194	3.6
V	292.40	B	857	112
K	766.49	A	3394	3.7

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SAMPLE	OPERATOR	PWR	TIME	NAME
21	MSHIELDS	3	13:06	CONTRACT

000197

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	OV FLOW	PPM	0.000	0.00	1.0
SB	206.83	B	-172d	PPB	9.2	5.34	1.0
BA	493.41	A	517	PPB	2.8	0.54	1.0
BE	313.04	A	2	PPB	0.0	0.00	1.0
CD	214.44	B	-17d	PPB	2.2	12.94	1.0
CA	317.93	A	22.1	PPM	0.42	1.90	1.0
CR	205.55	B	65	PPB	1.0	1.53	2.0
CO	228.61	B	10	PPB	2.8	28.00	1.0
CU	324.75	A	206	PPB	3.6	1.74	2.0
FE	234.35	B	51561x	PPB	5.6	0.01	1.0
MG	279.08	A	10.2	PPM	0.10	0.98	1.0
MN	257.61	A	151	PPB	9.2	6.09	1.0
NI	231.60	B	17	PPB	11.3	66.47	1.0
K	766.49	A	3.6	PPM	0.10	2.77	3.0
AG	328.07	A	27	PPB	3.6	13.33	5.0
NA	589.59	A	0.7	PPM	0.00	0.00	2.0
V	292.40	B	115	PPB	5.0	4.34	1.0
ZN	213.86	B	84	PPB	1.0	1.19	2.0
FE	234.35	A	55.0	PPM	0.28	0.50	1.0
PB	220.35	B	194d	PPB	27.5	14.17	1.0

MFD 689

EL	NM	C	INTENSITY	CONC
AL	167.08	B	133320	8.78
AL	167.08	B	129644	8.54

95

000198

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	8.66	PPM	0.169	1.95	1.0

MFD 689 AL 1-10

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000199

EL	NM	C	INTENSITY	CONC
FE	234.35	A	8805	49.9
AL	167.08	B	1005694	66.28
FE	234.35	A	8972	50.8
AL	167.08	B	1005809	66.29
CR	205.55	B	1776	59
BA	493.41	A	27901	430
CR	205.55	B	1939	64
BA	493.41	A	28023	432
SB	206.83	B	-297	-175
MN	257.61	A	1865	241
SB	206.83	B	-343	-200
MN	257.61	A	1828	236
ZN	213.86	B	18894	101
MG	279.08	A	2409	9.3
ZN	213.86	B	18990	102
MG	279.08	A	2405	9.2
CD	214.44	B	-528	-18
NA	589.59	A	6980	0.6
CD	214.44	B	-534	-18
NA	589.59	A	6929	0.6
PB	220.35	B	3385	1433
BE	313.04	A	539	0
PB	220.35	B	3615	1531
BE	313.04	A	509	0
CO	228.61	B	152	8
CA	317.93	A	17594	19.9
CO	228.61	B	206	11
CA	317.93	A	17296	19.5
NI	231.60	B	391	22
CU	324.75	A	1666	220
NI	231.60	B	289	13
CU	324.75	A	1679	223
AG	328.07	A	732	138
FE	234.35	B	544498	47590
AG	328.07	A	769	144
FE	234.35	B	544913	47626
V	292.40	B	806	106
K	766.49	A	3755	4.2
V	292.40	B	785	103
K	766.49	A	3641	4.1

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000200

SAMPLE	OPERATOR	PWR	TIME	NAME
22	MSHIELDS	3	13:14	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	OV FLOW	PPM	0.010	0.01	1.0
SB	206.83	B	-188d	PPB	17.6	9.36	1.0
BA	493.41	A	431	PPB	1.4	0.32	1.0
BE	313.04	A	0	PPB	0.0	0.00	1.0
CD	214.44	B	-18d	PPB	0.0	0.00	1.0
CA	317.93	A	19.7	PPM	0.28	1.42	1.0
CR	205.55	B	61	PPB	3.6	5.90	2.0
CO	228.61	B	9	PPB	2.2	24.44	1.0
CU	324.75	A	221	PPB	2.2	0.99	2.0
FE	234.35	B	47608x	PPB	25.4	0.05	1.0
MG	279.08	A	9.2	PPM	0.10	1.08	1.0
MN	257.61	A	238	PPB	3.6	1.51	1.0
NI	231.60	B	17	PPB	6.4	37.64	1.0
K	766.49	A	4.1	PPM	0.10	2.43	3.0
AG	328.07	A	141	PPB	4.2	2.97	5.0
NA	589.59	A	0.6	PPM	0.00	0.00	2.0
V	292.40	B	104	PPB	2.2	2.11	1.0
ZN	213.86	B	101	PPB	1.0	0.99	2.0
FE	234.35	A	50.3	PPM	0.64	1.27	1.0
PB	220.35	B	1482	PPB	69.2	4.66	1.0

MFD 690

98

000201

EL	NM	C	INTENSITY	CONC
AL	167.08	B	120816	7.96
AL	167.08	B	122064	8.04

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	8.00	PPM	0.056	0.70	1.0

MFD 690 AL 1-10

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000202

EL	NM	C	INTENSITY	CONC
FE	234.35	A	7807	44.2
AL	167.08	B	935665	61.67
FE	234.35	A	7698	43.6
AL	167.08	B	922620	60.81
CR	205.55	B	1679	55
BA	493.41	A	23539	363
CR	205.55	B	1666	55
BA	493.41	A	23575	363
SB	206.83	B	-174	-109
MN	257.61	A	1945	251
SB	206.83	B	-239	-144
MN	257.61	A	1936	250
ZN	213.86	B	16914	85
MG	279.08	A	2211	8.5
ZN	213.86	B	17070	86
MG	279.08	A	2163	8.3
CD	214.44	B	-448	-15
NA	589.59	A	15460	1.5
CD	214.44	B	-496	-17
NA	589.59	A	15674	1.7
PB	220.35	B	451	182
BE	313.04	A	473	0
PB	220.35	B	363	144
BE	313.04	A	440	0
CO	228.61	B	159	9
CA	317.93	A	15653	17.7
CO	228.61	B	232	13
CA	317.93	A	15309	17.3
NI	231.60	B	320	16
CU	324.75	A	1365	178
NI	231.60	B	381	21
CU	324.75	A	1361	178
AG	328.07	A	-461	-23
FE	234.35	B	463396	40498
AG	328.07	A	-410	-16
FE	234.35	B	461965	40373
V	292.40	B	782	103
K	766.49	A	3031	3.3
V	292.40	B	714	94
K	766.49	A	3026	3.3

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000203

SAMPLE	OPERATOR	PWR	TIME	NAME
23	MSHIELDS	3	13:21	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	61.24x	PPM	0.608	0.99	1.0
SB	206.83	B	-127d	PPB	24.7	19.44	1.0
BA	493.41	A	363	PPB	0.0	0.00	1.0
BE	313.04	A	0	PPB	0.0	0.00	1.0
CD	214.44	B	-16d	PPB	1.4	8.75	1.0
CA	317.93	A	17.5	PPM	0.28	1.60	1.0
CR	205.55	B	55	PPB	0.0	0.00	2.0
CO	228.61	B	11d	PPB	2.8	25.45	1.0
CU	324.75	A	178	PPB	0.0	0.00	2.0
FE	234.35	B	40435x	PPB	88.3	0.21	1.0
MG	279.08	A	8.4	PPM	0.14	1.66	1.0
MN	257.61	A	250	PPB	1.0	0.40	1.0
NI	231.60	B	18	PPB	3.6	20.00	1.0
K	766.49	A	3.3	PPM	0.00	0.00	3.0
AG	328.07	A	-20d	PPB	5.0	25.00	5.0
NA	589.59	A	1.6	PPM	0.14	8.75	2.0
V	292.40	B	98	PPB	6.4	6.53	1.0
ZN	213.86	B	85	PPB	1.0	1.17	2.0
FE	234.35	A	43.9	PPM	0.42	0.95	1.0
PB	220.35	B	163d	PPB	26.8	16.44	1.0

MFD 691

EL	NM	C	INTENSITY	CONC
AL	167.08	B	101010	6.65
AL	167.08	B	102934	6.78

101

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	6.71	PPM	0.092	1.37	1.0

000204

MFD 691 AL 1-10

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000205

EL	NM	C	INTENSITY	CONC
FE	234.35	A	9338	52.9
AL	167.08	B	953401	62.84
FE	234.35	A	9063	51.3
AL	167.08	B	945748	62.33
CR	205.55	B	1750	58
BA	493.41	A	31493	485
CR	205.55	B	1646	54
BA	493.41	A	31084	479
SB	206.83	B	171	76
MN	257.61	A	2808	365
SB	206.83	B	44	8
MN	257.61	A	2784	362
ZN	213.86	B	21441	122
MG	279.08	A	2536	9.8
ZN	213.86	B	21459	122
MG	279.08	A	2620	10.1
CD	214.44	B	-969	-31
NA	589.59	A	11030	1.1
CD	214.44	B	-1021	-33
NA	589.59	A	11016	1.1
PB	220.35	B	436	176
BE	313.04	A	628	1
PB	220.35	B	463	187
BE	313.04	A	619	1
CO	228.61	B	259	14
CA	317.93	A	22059	24.9
CO	228.61	B	293	16
CA	317.93	A	21252	24.0
NI	231.60	B	350	18
CU	324.75	A	1842	245
NI	231.60	B	413	24
CU	324.75	A	1834	244
AG	328.07	A	361	89
FE	234.35	B	573547	50131
AG	328.07	A	275	77
FE	234.35	B	557175	48698
V	292.40	B	874	114
K	766.49	A	3194	3.6
V	292.40	B	824	108
K	766.49	A	3271	3.6

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000206

SAMPLE	OPERATOR	PWR	TIME	NAME
24	MSHIELDS	3	13:29	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	62.58x	PPM	0.360	0.57	1.0
SB	206.83	B	42	PPB	48.0	114.28	1.0
BA	493.41	A	482	PPB	4.2	0.87	1.0
BE	313.04	A	1	PPB	0.0	0.00	1.0
CD	214.44	B	-32	PPB	1.4	4.37	1.0
CA	317.93	A	24.4	PPM	0.64	2.62	1.0
CR	205.55	B	56	PPB	2.8	5.00	2.0
CO	228.61	B	15	PPB	1.4	9.33	1.0
CU	324.75	A	244	PPB	1.0	0.40	2.0
FE	234.35	B	49414x	PPB	1013.2	2.05	1.0
MG	279.08	A	9.9	PPM	0.22	2.22	1.0
MN	257.61	A	363	PPB	2.2	0.60	1.0
NI	231.60	B	21	PPB	4.2	20.00	1.0
K	766.49	A	3.6	PPM	0.00	0.00	3.0
AG	328.07	A	83	PPB	8.4	10.12	5.0
NA	589.59	A	1.1	PPM	0.00	0.00	2.0
V	292.40	B	111	PPB	4.2	3.78	1.0
ZN	213.86	B	122	PPB	0.0	0.00	2.0
FE	234.35	A	52.1	PPM	1.13	2.16	1.0
PB	220.35	B	181d	PPB	7.8	4.30	1.0

MFD 692

EL	NM C	INTENSITY	CONC	
AL	167.08 B	92072	6.06	
AL	167.08 B	87402	5.76	

104

000207

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	5.91	PPM	0.212	3.58	1.0

MFD 692 1-10 AL

105

000208

EL.	NM	C	INTENSITY	CONC
FE	234.35	A	9050	51.2
AL	167.08	B	992974	65.45
FE	234.35	A	9050	51.2
AL	167.08	B	1001553	66.01
CR	205.55	B	1779	59
BA	493.41	A	30639	472
CR	205.55	B	1902	63
BA	493.41	A	30282	466
SB	206.83	B	-256	-153
MN	257.61	A	2596	337
SB	206.83	B	-362	-210
MN	257.61	A	2560	332
ZN	213.86	B	16419	81
MG	279.08	A	2513	9.7
ZN	213.86	B	16435	81
MG	279.08	A	2548	9.8
CD	214.44	B	-388	-13
NA	589.59	A	19823	2.2
CD	214.44	B	-339	-12
NA	589.59	A	19746	2.2
PB	220.35	B	489	198
BE	313.04	A	574	1
PB	220.35	B	348	138
BE	313.04	A	569	1
CO	228.61	B	219	12
CA	317.93	A	18285	20.7
CO	228.61	B	187	10
CA	317.93	A	17947	20.3
NI	231.60	B	402	22
CU	324.75	A	1457	191
NI	231.60	B	255	10
CU	324.75	A	1401	183
AG	328.07	A	63	48
FE	234.35	B	532623	46552
AG	328.07	A	38	45
FE	234.35	B	531617	46464
V	292.40	B	794	104
K	766.49	A	3280	3.6
V	292.40	B	796	104
K	766.49	A	3196	3.6

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SAMPLE	OPERATOR	PWR	TIME	NAME
25	MSHIELDS	3	13:38	CONTRACT

106
000209

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	OV FLOW	PPM	0.395	0.60	1.0
SB	206.83	B	-182d	PPB	40.3	22.14	1.0
BA	493.41	A	469	PPB	4.2	0.89	1.0
BE	313.04	A	1	PPB	0.0	0.00	1.0
CD	214.44	B	-13d	PPB	1.0	7.69	1.0
CA	317.93	A	20.5	PPM	0.28	1.36	1.0
CR	205.55	B	61	PPB	2.8	4.59	2.0
CO	228.61	B	11	PPB	1.4	12.72	1.0
CU	324.75	A	187	PPB	5.6	2.99	2.0
FE	234.35	B	46508x	PPB	62.2	0.13	1.0
MG	279.08	A	9.7	PPM	0.10	1.03	1.0
MN	257.61	A	334	PPB	3.6	1.07	1.0
NI	231.60	B	16	PPB	8.4	52.50	1.0
K	766.49	A	3.6	PPM	0.00	0.00	3.0
AG	328.07	A	46	PPB	2.2	4.78	5.0
NA	589.59	A	2.2	PPM	0.00	0.00	2.0
V	292.40	B	104	PPB	0.0	0.00	1.0
ZN	213.86	B	81	PPB	0.0	0.00	2.0
FE	234.35	A	51.2	PPM	0.00	0.00	1.0
PB	220.35	B	168d	PPB	42.4	25.23	1.0

MFD 693

EL	NM	C	INTENSITY	CONC
AL	167.08	B	108865	7.17
AL	167.08	B	109688	7.22

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000210

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	7.19	PPM	0.036	0.50	1.0

MFD 693 1-10 AL

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000211

EL	NM	C	INTENSITY	CONC
FE	234.35	A	5	-0.2
AL	167.08	B	110	0.00
FE	234.35	A	29	0.0
AL	167.08	B	112	0.00
CR	205.55	B	-97	-4
BA	493.41	A	-151	-2
CR	205.55	B	14	0
BA	493.41	A	-29	0
SB	206.83	B	40	5
MN	257.61	A	-16	-6
SB	206.83	B	-43	-39
MN	257.61	A	21	-1
ZN	213.86	B	8359	15
MG	279.08	A	39	0.1
ZN	213.86	B	7781	10
MG	279.08	A	-5	-0.1
CD	214.44	B	-37	-2
NA	589.59	A	1400	-0.2
CD	214.44	B	3	-1
NA	589.59	A	1363	-0.2
PB	220.35	B	81	24
BE	313.04	A	393	-1
PB	220.35	B	37	5
BE	313.04	A	393	-1
CO	228.61	B	63	4
CA	317.93	A	-24	-0.1
CO	228.61	B	-135	-6
CA	317.93	A	-54	-0.1
NI	231.60	B	36	-9
CU	324.75	A	229	18
NI	231.60	B	-43	-16
CU	324.75	A	215	16
FE	234.35	B	120	-16
AG	328.07	A	-416	-17
FE	234.35	B	42	-23
AG	328.07	A	-505	-29
V	292.40	B	-41	-4
K	766.49	A	40	-0.2
V	292.40	B	-47	-5
K	766.49	A	174	0.1

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SAMPLE	OPERATOR	PWR	TIME	NAME
26	MSHIELDS	3	13:45	CONTRACT

000212

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	0.00d	PPM	0.000	0.00	1.0
SB	206.83	B	-17d	PPB	31.1	182.94	1.0
BA	493.41	A	-1	PPB	1.4	140.00	1.0
BE	313.04	A	-1d	PPB	0.0	0.00	1.0
CD	214.44	B	-2	PPB	1.0	50.00	1.0
CA	317.93	A	-0.1d	PPM	0.00	0.00	1.0
CR	205.55	B	-2	PPB	2.8	140.00	2.0
CO	228.61	B	-1d	PPB	7.0	700.00	1.0
CU	324.75	A	17	PPB	1.4	8.23	2.0
FE	234.35	B	-20	PPB	5.0	25.00	1.0
MG	279.08	A	0.0d	PPM	0.14	0.00	1.0
MN	257.61	A	-4d	PPB	3.6	90.00	1.0
NI	231.60	B	-13	PPB	5.0	38.46	1.0
K	766.49	A	-0.1d	PPM	0.22	220.00	3.0
AG	328.07	A	-23d	PPB	8.4	36.52	5.0
NA	589.59	A	-0.2	PPM	0.00	0.00	2.0
V	292.40	B	-5d	PPB	1.0	20.00	1.0
ZN	213.86	B	12	PPB	3.6	30.00	2.0
FE	234.35	A	-0.1d	PPM	0.14	140.00	1.0
PB	220.35	B	14	PPB	13.4	95.71	1.0

CAL-BLK

EL	NM	C	INTENSITY	CONC	
PB	220.35	B		58	14
PB	220.35	B		21	-1

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
PB	220.35	B	6d	PPB	10.6	176.66	1.0

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000213

CAL-BLK

EL

NM	C	INTENSITY	CONC	
FE	234.35	A	2780	15.6
AL	167.08	B	218326	14.39
FE	234.35	A	2797	15.7
AL	167.08	B	219342	14.45
CR	205.55	B	146369	4868
BA	493.41	A	306680	4725
CR	205.55	B	144016	4790
BA	493.41	A	299990	4622
SB	206.83	B	10758	5754
MN	257.61	A	39119	5131
SB	206.83	B	10735	5742
MN	257.61	A	38037	4988
ZN	213.86	B	555180	4481
MG	279.08	A	60740	236.0
ZN	213.86	B	559731	4518
MG	279.08	A	61185	237.8
CD	214.44	B	158341	4858
NA	589.59	A	516898	58.7
CD	214.44	B	159050	4880
NA	589.59	A	522881	59.3
PB	220.35	B	9927	4221
BE	313.04	A	34134	402
PB	220.35	B	10135	4310
BE	313.04	A	34413	407
CO	228.61	B	93701	4767
CA	317.93	A	228913	259.4
CO	228.61	B	93824	4773
CA	317.93	A	227046	257.3
NI	231.60	B	56852	4861
CU	324.75	A	33065	4643
NI	231.60	B	56605	4840
CU	324.75	A	32873	4616
FE	234.35	B	168065	14671
AG	328.07	A	-432	-19
FE	234.35	B	163306	14254
AG	328.07	A	-405	-15
V	292.40	B	36142	4679
K	766.49	A	54955	57.8
V	292.40	B	35480	4593
K	766.49	A	53523	56.4

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000314

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SAMPLE	OPERATOR	PWR	TIME	NAME
27	MSHIELDS	3	13:54	CONTRACT

000315

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	14.42	PPM	0.042	0.29	1.0
SB	206.83	B	5748	PPB	8.4	0.14	1.0
BA	493.41	A	4673	PPB	72.8	1.55	1.0
BE	313.04	A	404	PPB	3.6	0.89	1.0
CD	214.44	B	4869	PPB	15.5	0.31	1.0
CA	317.93	A	258.3	PPM	1.48	0.57	1.0
CR	205.55	B	4829	PPB	55.1	1.14	2.0
CO	228.61	B	4770	PPB	4.2	0.08	1.0
CU	324.75	A	4629	PPB	19.1	0.41	2.0
FE	234.35	B	14462	PPB	294.8	2.03	1.0
MG	279.08	A	236.9	PPM	1.27	0.53	1.0
MN	257.61	A	5059	PPB	101.1	1.99	1.0
NI	231.60	B	4850	PPB	14.3	0.30	1.0
K	766.49	A	57.1	PPM	0.98	1.71	3.0
AG	328.07	A	-17d	PPB	2.8	16.47	5.0
NA	589.59	A	59.0	PPM	0.42	0.71	2.0
V	292.40	B	4636	PPB	60.8	1.31	1.0
ZN	213.86	B	4499	PPB	26.1	0.58	2.0
FE	234.35	A	15.6	PPM	0.10	0.64	1.0
PB	220.35	B	4265	PPB	62.9	1.47	1.0

CONT-CAL

EL	NM	C	INTENSITY	CONC
SB	206.83	B	9852	6079
SB	206.83	B	9792	6042

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000216

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
SB	206.83	B	6060	PPB	26.1	0.43	1.0

CONT-CAL OK

EL	NM	C	INTENSITY	CONC
PB	220.35	B	10403	5309
PB	220.35	B	10314	5264

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000317

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
PB	220.35	B	5286	PPB	31.8	0.60	1.0

CONT-CAL OK

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000218

EL	NM	C	INTENSITY	CONC
AG	328.07	A	43873	5963
AG	328.07	A	43872	5963

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AG	328.07	A	5963	PPB	0.0	0.00	5.0

CONT-CAL AG OK

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000219

EL	NM	C	INTENSITY	CONC
FE	234.35	A	13331	75.6
AL	167.08	B	969491	63.90
FE	234.35	A	13528	76.7
AL	167.08	B	988825	65.17
CR	205.55	B	1918	63
BA	493.41	A	32065	494
CR	205.55	B	1798	60
BA	493.41	A	32164	495
SB	206.83	B	-348	-234
MN	257.61	A	7391	967
SB	206.83	B	-420	-278
MN	257.61	A	7116	930
ZN	213.86	B	20679	116
MG	279.08	A	2437	9.4
ZN	213.86	B	20571	115
MG	279.08	A	2466	9.5
CD	214.44	B	-438	-15
NA	589.59	A	10808	1.1
CD	214.44	B	-458	-16
NA	589.59	A	10854	1.1
PB	220.35	B	589	289
BE	313.04	A	646	2
PB	220.35	B	449	217
BE	313.04	A	693	2
CO	228.61	B	459	24
CA	317.93	A	18005	20.4
CO	228.61	B	322	17
CA	317.93	A	17331	19.6
NI	231.60	B	430	25
CU	324.75	A	1200	155
NI	231.60	B	483	30
CU	324.75	A	1302	169
AG	328.07	A	-169	17
FE	234.35	B	788133	68896
AG	328.07	A	-173	16
FE	234.35	B	792218	69252
V	292.40	B	1155	151
K	766.49	A	3791	4.2
V	292.40	B	1164	152
K	766.49	A	3718	4.1

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000220

SAMPLE	OPERATOR	PWR	TIME	NAME
28	MSHIELDS	3	14:07	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	64.53x	PPM	0.898	1.39	1.0
SB	206.83	B	-256d	PPB	31.1	12.14	1.0
BA	493.41	A	494	PPB	1.0	0.20	1.0
BE	313.04	A	2	PPB	0.0	0.00	1.0
CD	214.44	B	-16	PPB	1.0	6.25	1.0
CA	317.93	A	20.0	PPM	0.56	2.80	1.0
CR	205.55	B	61	PPB	2.2	3.60	2.0
CO	228.61	B	20	PPB	5.0	25.00	1.0
CU	324.75	A	162	PPB	9.8	6.04	2.0
FE	234.35	B	69074x	PPB	251.7	0.36	1.0
MG	279.08	A	9.4	PPM	0.10	1.06	1.0
MN	257.61	A	948	PPB	26.1	2.75	1.0
NI	231.60	B	27	PPB	3.6	13.33	1.0
K	766.49	A	4.1	PPM	0.10	2.43	3.0
AG	328.07	A	16	PPB	1.0	6.25	5.0
NA	589.59	A	1.1	PPM	0.0	0.00	2.0
V	292.40	B	151	PPB	0	0.66	1.0
ZN	213.86	B	115	PPB	0	0.86	2.0
FE	234.35	A	76.1	PPM	8	1.02	1.0
PB	220.35	B	253d	PPB	9	20.11	1.0

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000221

EL	NM	C	INTENSITY	CONC
AL	167.08	B	142805	9.41
AL	167.08	B	132040	8.70

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	9.05	PPM	0.502	5.54	1.0

MFD 694 1-10 AL

000222 19

EL	NM	C	INTENSITY	CONC
FE	234.35	A	8615	48.8
AL	167.08	B	862291	56.83
FE	234.35	A	8517	48.2
AL	167.08	B	857078	56.49
CR	205.55	B	1611	53
BA	493.41	A	28517	439
CR	205.55	B	1587	52
BA	493.41	A	28185	434
SB	206.83	B	-293	-200
MN	257.61	A	3360	437
SB	206.83	B	-207	-147
MN	257.61	A	3285	427
ZN	213.86	B	21536	123
MG	279.08	A	2130	8.2
ZN	213.86	B	21820	125
MG	279.08	A	2288	8.8
CD	214.44	B	-161	-6
NA	589.59	A	21648	2.4
CD	214.44	B	-237	-9
NA	589.59	A	22360	2.4
PB	220.35	B	443	214
BE	313.04	A	484	0
PB	220.35	B	164	72
BE	313.04	A	448	0
CO	228.61	B	603	31
CA	317.93	A	14741	16.7
CO	228.61	B	348	19
CA	317.93	A	14186	16.0
NI	231.60	B	386	21
CU	324.75	A	1272	165
NI	231.60	B	330	16
CU	324.75	A	1223	158
AG	328.07	A	228	70
FE	234.35	B	493929	43167
AG	328.07	A	243	72
FE	234.35	B	492445	43039
V	292.40	B	807	106
K	766.49	A	3763	4.2
V	292.40	B	787	103
K	766.49	A	3920	4.3

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000223

SAMPLE	OPERATOR	PWR	TIME	NAME
29	MSHIELDS	3	14:15	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	56.66x	PPM	0.240	0.42	1.0
SB	206.83	B	-174d	PPB	37.4	21.49	1.0
BA	493.41	A	436	PPB	3.6	0.82	1.0
BE	313.04	A	0	PPB	0.0	0.00	1.0
CD	214.44	B	-8d	PPB	2.2	27.50	1.0
CA	317.93	A	16.3	PPM	0.50	3.06	1.0
CR	205.55	B	52	PPB	1.0	1.92	2.0
CO	228.61	B	25	PPB	8.4	33.60	1.0
CU	324.75	A	161	PPB	5.0	3.10	2.0
FE	234.35	B	43103x	PPB	90.5	0.20	1.0
MG	279.08	A	8.5	PPM	0.42	4.94	1.0
MN	257.61	A	432	PPB	7.0	1.62	1.0
NI	231.60	B	18	PPB	3.6	20.00	1.0
K	766.49	A	4.2	PPM	0.10	2.38	3.0
AG	328.07	A	71	PPB	1.4	1.97	5.0
NA	589.59	A	2.4	PPM	0.00	0.00	2.0
V	292.40	B	104	PPB	2.2	2.11	1.0
ZN	213.86	B	124	PPB	1.4	1.12	2.0
FE	234.35	A	48.5	PPM	0.42	0.86	1.0
PB	220.35	B	143d	PPB	100.4	70.20	1.0

MFD 695

EL	NM	C	INTENSITY	CONC
AL	167.08	B	105544	6.95
AL	167.08	B	103599	6.82

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EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	6.88	PPM	0.092	1.33	1.0

000224

MFD 696 1-10 AL

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000225

EL	NM	C	INTENSITY	CONC
FE	234.35	A	8804	49.9
AL	167.08	B	851542	56.12
FE	234.35	A	8897	50.4
AL	167.08	B	861813	56.80
CR	205.55	B	1841	61
BA	493.41	A	30797	474
CR	205.55	B	1747	58
BA	493.41	A	30419	469
SB	206.83	B	-226	-158
MN	257.61	A	2935	382
SB	206.83	B	-198	-141
MN	257.61	A	2887	375
ZN	213.86	B	18567	98
MG	279.08	A	2503	9.6
ZN	213.86	B	18618	99
MG	279.08	A	2468	9.5
CD	214.44	B	-228	-8
NA	589.59	A	13418	1.3
CD	214.44	B	-257	-9
NA	589.59	A	13487	1.3
PB	220.35	B	404	194
BE	313.04	A	569	1
PB	220.35	B	581	285
BE	313.04	A	522	0
CO	228.61	B	211	11
CA	317.93	A	18065	20.4
CO	228.61	B	176	10
CA	317.93	A	17520	19.8
NI	231.60	B	537	34
CU	324.75	A	1540	203
NI	231.60	B	380	21
CU	324.75	A	1552	205
AG	328.07	A	89	52
FE	234.35	B	512761	44814
AG	328.07	A	101	54
FE	234.35	B	526908	46052
V	292.40	B	855	112
K	766.49	A	4034	4.4
V	292.40	B	776	101
K	766.49	A	4141	4.5

SAMPLE	OPERATOR	PWR	TIME	NAME
30	MSHIELDS	3	14:25	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	56.46x	PPM	0.480	0.85	1.0
SB	206.83	B	-150d	PPB	12.0	8.00	1.0
BA	493.41	A	471	PPB	3.6	0.76	1.0
BE	313.04	A	0	PPB	1.0	0.00	1.0
CD	214.44	B	-9d	PPB	1.0	11.11	1.0
CA	317.93	A	20.1	PPM	0.42	2.08	1.0
CR	205.55	B	59	PPB	2.2	3.72	2.0
CO	228.61	B	10	PPB	1.0	10.00	1.0
CU	324.75	A	204	PPB	1.4	0.68	2.0
FE	234.35	B	45433x	PPB	875.3	1.92	1.0
MG	279.08	A	9.5	PPM	0.10	1.05	1.0
MN	257.61	A	378	PPB	5.0	1.32	1.0
NI	231.60	B	27	PPB	9.2	34.07	1.0
K	766.49	A	4.4	PPM	0.10	2.27	3.0
AG	328.07	A	53	PPB	1.4	2.64	5.0
NA	589.59	A	1.3	PPM	0.00	0.00	2.0
V	292.40	B	106	PPB	7.8	7.35	1.0
ZN	213.86	B	98	PPB	1.0	1.02	2.0
FE	234.35	A	50.1	PPM	0.36	0.71	1.0
PB	220.35	B	239d	PPB	64.3	26.90	1.0

MFD 696

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000227

EL	NM	C	INTENSITY	CONC
AL	167.08	B	98513	6.49
AL	167.08	B	97300	6.41

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	6.45	PPM	0.056	0.86	1.0

MFD 696 AL 1-10

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000228

EL	NM	C	INTENSITY	CONC
FE	234.35	A	51	0.1
AL	167.08	B	2177	0.14
FE	234.35	A	47	0.1
AL	167.08	B	2143	0.14
CR	205.55	B	254	8
BA	493.41	A	217	3
CR	205.55	B	323	10
BA	493.41	A	277	4
SB	206.83	B	12	-11
MN	257.61	A	19	-1
SB	206.83	B	-18	-30
MN	257.61	A	25	0
ZN	213.86	B	7467	8
MG	279.08	A	32	0.0
ZN	213.86	B	7630	9
MG	279.08	A	38	0.1
CD	214.44	B	32	0
NA	589.59	A	5399	0.3
CD	214.44	B	34	0
NA	589.59	A	5669	0.4
PB	220.35	B	17	-4
BE	313.04	A	262	-2
PB	220.35	B	128	53
BE	313.04	A	244	-2
CO	228.61	B	194	10
CA	317.93	A	656	0.7
CO	228.61	B	60	4
CA	317.93	A	599	0.6
NI	231.60	B	65	-6
CU	324.75	A	324	32
NI	231.60	B	108	-3
CU	324.75	A	331	33
FE	234.35	B	1994	148
AG	328.07	A	-403	-15
FE	234.35	B	1769	128
AG	328.07	A	-361	-9
V	292.40	B	9	2
K	766.49	A	130	0.0
V	292.40	B	-45	-5
K	766.49	A	88	0.0

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SAMPLE	OPERATOR	PWR	TIME	NAME
35	MSHIELDS	3	15:01	CONTRACT

000329

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	45.37x	PPM	0.233	0.51	1.0
SB	206.83	B	-196d	PPB	13.4	6.83	1.0
BA	493.41	A	521	PPB	3.6	0.69	1.0
BE	313.04	A	0	PPB	0.0	0.00	1.0
CD	214.44	B	-6d	PPB	1.0	16.66	1.0
CA	317.93	A	20.7	PPM	0.42	2.02	1.0
CR	205.55	B	45	PPB	2.8	6.22	2.0
CO	228.61	B	21	PPB	1.4	6.66	1.0
CU	324.75	A	301	PPB	4.2	1.39	2.0
FE	234.35	B	44698x	PPB	139.3	0.31	1.0
MG	279.08	A	8.7	PPM	0.22	2.52	1.0
MN	257.61	A	745	PPB	7.8	1.04	1.0
NI	231.60	B	17	PPB	8.4	49.41	1.0
K	766.49	A	3.2	PPM	0.10	3.12	3.0
AG	328.07	A	-17d	PPB	5.0	29.41	5.0
NA	589.59	A	0.6	PPM	0.00	0.00	2.0
V	292.40	B	115	PPB	8.4	7.30	1.0
ZN	213.86	B	79	PPB	0.0	0.00	2.0
FE	234.35	A	50.7	PPM	0.14	0.27	1.0
PB	220.35	B	179d	PPB	31.8	17.76	1.0

MFD 697

EL	NM	C	INTENSITY	CONC
AL	167.08	B	72378	4.77
AL	167.08	B	72847	4.80

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EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	4.78	PPM	0.022	0.46	1.0

000030

MFD 697 AL 1-10

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000031

EL	NM	C	INTENSITY	CONC
FE	234.35	A	94	0.4
AL	167.08	B	1711	-0.03
FE	234.35	A	76	0.3
AL	167.08	B	1640	-0.04
CR	205.55	B	494	21
BA	493.41	A	3138	49
CR	205.55	B	710	29
BA	493.41	A	3082	48
SB	206.83	B	629	347
MN	257.61	A	388	49
SB	206.83	B	570	313
MN	257.61	A	352	44
ZN	213.86	B	32252	245
MG	279.08	A	4295	16.9
ZN	213.86	B	33450	256
MG	279.08	A	4571	17.9
CD	214.44	B	827	24
NA	589.59	A	1989868	178.1
CD	214.44	B	771	22
NA	589.59	A	1989935	178.1
PB	220.35	B	253	61
BE	313.04	A	232	0
PB	220.35	B	260	64
BE	313.04	A	247	0
CO	228.61	B	202	6
CA	317.93	A	82705	88.6
CO	228.61	B	229	8
CA	317.93	A	80388	86.1
NI	231.60	B	1298	83
CU	324.75	A	577	58
NI	231.60	B	1236	77
CU	324.75	A	507	48
FE	234.35	B	8953	744
AG	328.07	A	203	24
FE	234.35	B	4481	340
AG	328.07	A	136	16
V	292.40	B	46	10
K	766.49	A	18499	22.8
V	292.40	B	91	17
K	766.49	A	18190	22.4

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SAMPLE	OPERATOR	PWR	TIME	NAME
31	MSHIELDS	3	14:33	CONTRACT

000232

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	0.14	PPM	0.000	0.00	1.0
SB	206.83	B	-21d	PPB	13.4	63.80	1.0
BA	493.41	A	3	PPB	1.0	33.33	1.0
BE	313.04	A	-2	PPB	0.0	0.00	1.0
CD	214.44	B	0d	PPB	0.0	0.00	1.0
CA	317.93	A	0.6	PPM	0.10	16.66	1.0
CR	205.55	B	9d	PPB	1.4	15.55	2.0
CO	228.61	B	7d	PPB	4.2	60.00	1.0
CU	324.75	A	32	PPB	1.0	3.12	2.0
FE	234.35	B	138	PPB	14.1	10.21	1.0
MG	279.08	A	0.0d	PPM	0.10	0.00	1.0
MN	257.61	A	-1d	PPB	1.0	100.00	1.0
NI	231.60	B	-5	PPB	2.2	44.00	1.0
K	766.49	A	0.0d	PPM	0.00	0.00	3.0
AG	328.07	A	-12	PPB	4.2	35.00	5.0
NA	589.59	A	0.3	PPM	0.10	33.33	2.0
V	292.40	B	-2d	PPB	5.0	250.00	1.0
ZN	213.86	B	8	PPB	1.0	12.50	2.0
FE	234.35	A	0.1d	PPM	0.00	0.00	1.0
PB	220.35	B	24d	PPB	40.3	167.91	1.0

MFD 698

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000333

EL	NM	C	INTENSITY	CONC
FE	234.35	A	30	0.0
AL	167.08	B	2048	0.13
FE	234.35	A	19	-0.1
AL	167.08	B	2034	0.13
CR	205.55	B	201	6
BA	493.41	A	171	2
CR	205.55	B	212	7
BA	493.41	A	257	4
SB	206.83	B	9	-13
MN	257.61	A	35	1
SB	206.83	B	25	-3
MN	257.61	A	33	1
ZN	213.86	B	9694	26
MG	279.08	A	55	0.1
ZN	213.86	B	9758	27
MG	279.08	A	40	0.1
CD	214.44	B	10	-1
NA	589.59	A	5469	0.3
CD	214.44	B	-24	-2
NA	589.59	A	5652	0.4
PB	220.35	B	70	24
BE	313.04	A	420	0
PB	220.35	B	108	43
BE	313.04	A	386	-1
CO	228.61	B	84	5
CA	317.93	A	630	0.7
CO	228.61	B	40	3
CA	317.93	A	609	0.6
NI	231.60	B	141	0
CU	324.75	A	279	25
NI	231.60	B	78	-5
CU	324.75	A	281	25
FE	234.35	B	1686	121
AG	328.07	A	-330	-5
FE	234.35	B	1609	114
AG	328.07	A	-441	-20
V	292.40	B	0	1
K	766.49	A	134	0.0
V	292.40	B	108	15
K	766.49	A	-16	-0.2

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SAMPLE	OPERATOR	PWR	TIME	NAME
32	MSHIELDS	3	14:40	CONTRACT

000334

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	0.13	PPM	0.000	0.00	1.0
SB	206.83	B	-8d	PPB	7.0	87.50	1.0
BA	493.41	A	3	PPB	1.4	46.66	1.0
BE	313.04	A	-1	PPB	1.0	100.00	1.0
CD	214.44	B	-2d	PPB	1.0	50.00	1.0
CA	317.93	A	0.6	PPM	0.10	16.66	1.0
CR	205.55	B	6	PPB	1.0	16.66	2.0
CO	228.61	B	4d	PPB	1.4	35.00	1.0
CU	324.75	A	25d	PPB	0.0	0.00	2.0
FE	234.35	B	117	PPB	5.0	4.27	1.0
MG	279.08	A	0.1d	PPM	0.00	0.00	1.0
MN	257.61	A	1d	PPB	0.0	0.00	1.0
NI	231.60	B	-3	PPB	3.6	120.00	1.0
K	766.49	A	-0.1	PPM	0.14	140.00	3.0
AG	328.07	A	-13d	PPB	10.6	81.53	5.0
NA	589.59	A	0.3	PPM	0.10	33.33	2.0
V	292.40	B	8d	PPB	9.8	122.50	1.0
ZN	213.86	B	26	PPB	1.0	3.84	2.0
FE	234.35	A	-0.1d	PPM	0.10	100.00	1.0
PB	220.35	B	33	PPB	13.4	40.60	1.0

MFD 698 DUP

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000235

EL	NM	C	INTENSITY	CONC
FE	234.35	A	30	0.0
AL	167.08	B	92	0.00
FE	234.35	A	12	-0.1
AL	167.08	B	74	0.00
CR	205.55	B	-47	-2
BA	493.41	A	-108	-1
CR	205.55	B	60	2
BA	493.41	A	137	2
SB	206.83	B	23	-4
MN	257.61	A	14	-2
SB	206.83	B	-22	-32
MN	257.61	A	-12	-5
ZN	213.86	B	11688	42
MG	279.08	A	14	0.0
ZN	213.86	B	11717	42
MG	279.08	A	38	0.1
CD	214.44	B	192	4
NA	589.59	A	2324	0.0
CD	214.44	B	55	0
NA	589.59	A	2166	0.0
PB	220.35	B	112	45
BE	313.04	A	217	-3
PB	220.35	B	167	73
BE	313.04	A	202	-3
CO	228.61	B	-107	-5
CA	317.93	A	24	0.0
CO	228.61	B	12	2
CA	317.93	A	54	0.0
NI	231.60	B	128	-1
CU	324.75	A	158	8
NI	231.60	B	204	6
CU	324.75	A	130	4
FE	234.35	B	230	-6
AG	328.07	A	-326	-4
FE	234.35	B	331	4
AG	328.07	A	-341	-6
V	292.40	B	14	3
K	766.49	A	78	0.0
V	292.40	B	-3	1
K	766.49	A	82	0.0

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000236

SAMPLE	OPERATOR	PWR	TIME	NAME
33	MSHIELDS	3	14:47	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	0.00d	PPM	0.000	0.00	1.0
SB	206.83	B	-18d	PPB	19.7	109.44	1.0
BA	493.41	A	0	PPB	2.2	0.00	1.0
BE	313.04	A	-3	PPB	0.0	0.00	1.0
CD	214.44	B	2d	PPB	2.8	140.00	1.0
CA	317.93	A	0.0d	PPM	0.00	0.00	1.0
CR	205.55	B	0	PPB	2.8	0.00	2.0
CO	228.61	B	-2	PPB	5.0	250.00	1.0
CU	324.75	A	6d	PPB	2.8	46.66	2.0
FE	234.35	B	-1	PPB	7.0	700.00	1.0
MG	279.08	A	0.0d	PPM	0.10	0.00	1.0
MN	257.61	A	-4d	PPB	2.2	55.00	1.0
NI	231.60	B	2	PPB	5.0	250.00	1.0
K	766.49	A	0.0d	PPM	0.00	0.00	3.0
AG	328.07	A	-5d	PPB	1.4	28.00	5.0
NA	589.59	A	0.0	PPM	0.00	0.00	2.0
V	292.40	B	2d	PPB	1.4	70.00	1.0
ZN	213.86	B	42	PPB	0.0	0.00	2.0
FE	234.35	A	-0.1d	PPM	0.10	100.00	1.0
PB	220.35	B	59	PPB	19.7	33.38	1.0

MFD 698 SERIAL DIL 1-4

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000237

EL	NM	C	INTENSITY	CONC
FE	234.35	A	183	0.9
AL	167.08	B	28302	1.86
FE	234.35	A	180	0.8
AL	167.08	B	27504	1.81
CR	205.55	B	5698	189
BA	493.41	A	109989	1694
CR	205.55	B	5603	186
BA	493.41	A	110844	1708
SB	206.83	B	1019	612
MN	257.61	A	1564	202
SB	206.83	B	966	579
MN	257.61	A	1505	194
ZN	213.86	B	25670	156
MG	279.08	A	6	-0.1
ZN	213.86	B	25958	159
MG	279.08	A	16	0.0
CD	214.44	B	1490	44
NA	589.59	A	4442	0.2
CD	214.44	B	1497	44
NA	589.59	A	4360	0.2
PB	220.35	B	1026	513
BE	313.04	A	3806	38
PB	220.35	B	1162	582
BE	313.04	A	3824	38
CO	228.61	B	8940	456
CA	317.93	A	523	0.5
CO	228.61	B	8658	441
CA	317.93	A	504	0.5
NI	231.60	B	4529	376
CU	324.75	A	1634	216
NI	231.60	B	4413	366
CU	324.75	A	1638	216
FE	234.35	B	11614	990
AG	328.07	A	-322	-4
FE	234.35	B	11395	971
AG	328.07	A	-333	-5
V	292.40	B	3310	430
K	766.49	A	96	0.0
V	292.40	B	3294	428
K	766.49	A	140	0.0

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SAMPLE	OPERATOR	PWR	TIME	NAME
34	MSHIELDS	3	14:53	CONTRACT

000238

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	1.83	PPM	0.036	1.96	1.0
SB	206.83	B	595	PPB	23.3	3.91	1.0
BA	493.41	A	1701	PPB	9.8	0.57	1.0
BE	313.04	A	38	PPB	0.0	0.00	1.0
CD	214.44	B	44	PPB	0.0	0.00	1.0
CA	317.93	A	0.5	PPM	0.00	0.00	1.0
CR	205.55	B	187	PPB	2.2	1.17	2.0
CO	228.61	B	448	PPB	10.6	2.36	1.0
CU	324.75	A	216	PPB	0.0	0.00	2.0
FE	234.35	B	980	PPB	13.4	1.36	1.0
MG	279.08	A	-0.1d	PPM	0.10	100.00	1.0
MN	257.61	A	198	PPB	5.6	2.82	1.0
NI	231.60	B	371	PPB	7.0	1.88	1.0
K	766.49	A	0.0d	PPM	0.00	0.00	3.0
AG	328.07	A	-5d	PPB	1.0	20.00	5.0
NA	589.59	A	0.2	PPM	0.00	0.00	2.0
V	292.40	B	429	PPB	1.4	0.32	1.0
ZN	213.86	B	157	PPB	2.2	1.40	2.0
FE	234.35	A	0.8d	PPM	0.10	12.50	1.0
PB	220.35	B	547	PPB	48.7	8.90	1.0

MFD 698SPK.

EL	NM	C	INTENSITY	CONC
AG	328.07	A	-157	18
AG	328.07	A	-116	24

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EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AG	328.07	A	21	PPB	4.2	20.00	5.0

000039

MFD 698SPK AG

000240

EL.	NM	C	INTENSITY	CONC
FE	234.35	A	8931	50.6
AL	167.08	B	685957	45.21
FE	234.35	A	8975	50.8
AL	167.08	B	690923	45.54
CR	205.55	B	1293	43
BA	493.41	A	33661	519
CR	205.55	B	1439	47
BA	493.41	A	34007	524
SB	206.83	B	-302	-205
MN	257.61	A	5748	751
SB	206.83	B	-270	-186
MN	257.61	A	5668	740
ZN	213.86	B	16267	79
MG	279.08	A	2309	8.9
ZN	213.86	B	16255	79
MG	279.08	A	2248	8.6
CD	214.44	B	-112	-5
NA	589.59	A	7024	0.6
CD	214.44	B	-143	-6
NA	589.59	A	7044	0.6
PB	220.35	B	418	202
BE	313.04	A	442	0
PB	220.35	B	331	157
BE	313.04	A	412	0
CO	228.61	B	375	20
CA	317.93	A	18079	20.4
CO	228.61	B	423	22
CA	317.93	A	18543	21.0
NI	231.60	B	408	23
CU	324.75	A	2212	298
NI	231.60	B	264	11
CU	324.75	A	2256	304
AG	328.07	A	-445	-20
FE	234.35	B	510312	44600
AG	328.07	A	-389	-13
FE	234.35	B	512568	44797
V	292.40	B	836	109
K	766.49	A	2961	3.2
V	292.40	B	925	121
K	766.49	A	3009	3.3

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SAMPLE	OPERATOR	PWR	TIME	NAME
36	MSHIELDS	3	15:09	CONTRACT

000241

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	-0.04	PPM	0.010	25.00	1.0
SB	206.83	B	330	PPB	24.0	7.27	1.0
BA	493.41	A	48	PPB	1.0	2.08	1.0
BE	313.04	A	0	PPB	0.0	0.00	1.0
CD	214.44	B	23	PPB	1.4	6.08	1.0
CA	317.93	A	87.3	PPM	1.76	2.01	1.0
CR	205.55	B	25	PPB	5.6	22.40	2.0
CO	228.61	B	7	PPB	1.4	20.00	1.0
CU	324.75	A	53	PPB	7.0	13.20	2.0
FE	234.35	B	542	PPB	285.6	52.69	1.0
MG	279.08	A	17.4	PPM	0.70	4.02	1.0
MN	257.61	A	46	PPB	3.6	7.82	1.0
NI	231.60	B	80	PPB	4.2	5.25	1.0
K	766.49	A	22.6	PPM	0.28	1.23	3.0
AG	328.07	A	20	PPB	5.6	28.00	5.0
NA	589.59	A	OV FLOW	PPM	0.00	0.00	2.0
V	292.40	B	13d	PPB	5.0	38.46	1.0
ZN	213.86	B	250	PPB	7.8	3.12	2.0
FE	234.35	A	0.3d	PPM	0.10	33.33	1.0
PB	220.35	B	62	PPB	2.2	3.54	1.0

J6-0115

000242

EL	NM	C	INTENSITY	CONC
NA	589.59	A	188261	24.0
NA	589.59	A	189850	24.3

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
NA	589.59	A	24.1	PPM	0.22	0.91	2.0

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000343

EL	NM	C	INTENSITY	CONC
FE	234.35	A	37670	205.7
AL	167.08	B	944141	108.11
FE	234.35	A	37168	203.0
AL	167.08	B	943737	108.06
CR	205.55	B	30361	1053
BA	493.41	A	33261	525
CR	205.55	B	30490	1057
BA	493.41	A	34062	538
SB	206.83	B	-887	-533
MN	257.61	A	4288	549
SB	206.83	B	-846	-509
MN	257.61	A	4232	542
ZN	213.86	B	118628	1041
MG	279.08	A	134615	529.3
ZN	213.86	B	118572	1041
MG	279.08	A	133499	525.0
CD	214.44	B	29378	916
NA	589.59	A	5677	0.1
CD	214.44	B	29092	907
NA	589.59	A	5475	0.1
PB	220.35	B	11628	5278
BE	313.04	A	42080	503
PB	220.35	B	11707	5315
BE	313.04	A	42480	508
CO	228.61	B	9708	510
CA	317.93	A	466160	499.5
CO	228.61	B	9752	512
CA	317.93	A	460264	493.2
NI	231.60	B	11582	985
CU	324.75	A	4319	601
NI	231.60	B	11846	1008
CU	324.75	A	4353	605
AG	328.07	A	9151	1112
FE	234.35	B	861486	77970
AG	328.07	A	8939	1086
FE	234.35	B	864344	78229
V	292.40	B	3671	500
K	766.49	A	1237	1.3
V	292.40	B	3741	509
K	766.49	A	1224	1.3

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000344

SAMPLE	OPERATOR	PWR	TIME	NAME
37	MSHIELDS	3	15:17	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	OV FLOW	PPM	0.036	0.03	1.0
SB	206.83	B	-521d	PPB	16.9	3.24	1.0
BA	493.41	A	531	PPB	9.2	1.73	1.0
BE	313.04	A	505	PPB	3.6	0.71	1.0
CD	214.44	B	911	PPB	6.4	0.70	1.0
CA	317.93	A	496.3	PPM	4.45	0.89	1.0
CR	205.55	B	1055	PPB	2.8	0.26	2.0
CO	228.61	B	511	PPB	1.4	0.27	1.0
CU	324.75	A	603	PPB	2.8	0.46	2.0
FE	234.35	B	OV FLOW	PPB	183.1	0.23	1.0
MG	279.08	A	527.1	PPM	3.04	0.57	1.0
MN	257.61	A	545	PPB	5.0	0.91	1.0
NI	231.60	B	996	PPB	16.2	1.62	1.0
K	766.49	A	1.3	PPM	0.00	0.00	3.0
AG	328.07	A	1099	PPB	18.3	1.66	5.0
NA	589.59	A	0.1	PPM	0.00	0.00	2.0
V	292.40	B	504	PPB	6.4	1.26	1.0
ZN	213.86	B	1041	PPB	0.0	0.00	2.0
FE	234.35	A	204.3	PPM	1.91	0.93	1.0
PB	220.35	B	5296	PPB	26.1	0.49	1.0

INTERFERNCE CHECK SAMPLE

EL	NM	C	INTENSITY	CONC
AL	167.08	B	39966	4.36
AL	167.08	B	40308	4.40

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EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	4.38	PPM	0.028	0.63	1.0

000245

AL 1-100 INTERFERNCE CHECK SAMPLE

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000246

EL	NM	C	INTENSITY	CONC
FE	234.35	A	7	0.0
AL	167.08	B	69	-0.22
FE	234.35	A	0	-0.1
AL	167.08	B	62	-0.22
CR	205.55	B	53	6
BA	493.41	A	85	1
CR	205.55	B	67	6
BA	493.41	A	-24	-1
SB	206.83	B	-57	-51
MN	257.61	A	-2	-1
SB	206.83	B	-13	-25
MN	257.61	A	21	2
ZN	213.86	B	5865	2
MG	279.08	A	-3	0.0
ZN	213.86	B	5907	2
MG	279.08	A	-22	-0.1
CD	214.44	B	38	-1
NA	589.59	A	391	-0.5
CD	214.44	B	129	2
NA	589.59	A	153	-0.5
PB	220.35	B	-51	-79
BE	313.04	A	226	0
PB	220.35	B	-56	-81
BE	313.04	A	187	-1
CO	228.61	B	-8	-5
CA	317.93	A	6	0.0
CO	228.61	B	-124	-11
CA	317.93	A	-8	0.0
NI	231.60	B	83	-24
CU	324.75	A	76	-14
NI	231.60	B	215	-12
CU	324.75	A	163	-2
FE	234.35	B	1162	39
AG	328.07	A	-343	-42
FE	234.35	B	292	-40
AG	328.07	A	-336	-41
V	292.40	B	-39	-1
K	766.49	A	38	-0.2
V	292.40	B	-58	-4
K	766.49	A	21	-0.2

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000247

SAMPLE	OPERATOR	PWR	TIME	NAME
38	MSHIELDS	3	15:27	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	-0.22d	PPM	0.000	0.00	1.0
SB	206.83	B	-38d	PPB	18.3	48.15	1.0
BA	493.41	A	0	PPB	1.4	0.00	1.0
BE	313.04	A	-1	PPB	1.0	100.00	1.0
CD	214.44	B	0d	PPB	2.2	0.00	1.0
CA	317.93	A	0.0d	PPM	0.00	0.00	1.0
CR	205.55	B	6d	PPB	0.0	0.00	2.0
CO	228.61	B	-8	PPB	4.2	52.50	1.0
CU	324.75	A	-8d	PPB	8.4	105.00	2.0
FE	234.35	B	-1d	PPB	55.8	5580.00	1.0
MG	279.08	A	-0.1d	PPM	0.10	100.00	1.0
MN	257.61	A	0d	PPB	2.2	0.00	1.0
NI	231.60	B	-18	PPB	8.4	46.66	1.0
K	766.49	A	-0.2d	PPM	0.00	0.00	3.0
AG	328.07	A	-42d	PPB	1.0	2.38	5.0
NA	589.59	A	-0.5	PPM	0.00	0.00	2.0
V	292.40	B	-3d	PPB	2.2	73.33	1.0
ZN	213.86	B	2	PPB	0.0	0.00	2.0
FE	234.35	A	-0.1d	PPM	0.10	100.00	1.0
PB	220.35	B	-80	PPB	1.4	1.75	1.0

CAL-BLK

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000248

EL	NM	C	INTENSITY	CONC
FE	234.35	A	2891	15.7
AL	167.08	B	216067	24.57
FE	234.35	A	2938	16.0
AL	167.08	B	220314	25.05
CR	205.55	B	146778	5073
BA	493.41	A	338871	5357
CR	205.55	B	147438	5096
BA	493.41	A	331325	5238
SB	206.83	B	11115	6434
MN	257.61	A	40807	5236
SB	206.83	B	11170	6466
MN	257.61	A	40515	5198
ZN	213.86	B	568940	5192
MG	279.08	A	65622	258.0
ZN	213.86	B	572071	5221
MG	279.08	A	65424	257.2
CD	214.44	B	160515	5015
NA	589.59	A	615915	74.1
CD	214.44	B	162879	5089
NA	589.59	A	595952	72.0
PB	220.35	B	9991	4527
BE	313.04	A	36423	431
PB	220.35	B	10198	4622
BE	313.04	A	36263	429
CO	228.61	B	95078	5034
CA	317.93	A	236047	252.9
CO	228.61	B	96269	5096
CA	317.93	A	235714	252.6
NI	231.60	B	57352	4997
CU	324.75	A	35838	5168
NI	231.60	B	57046	4971
CU	324.75	A	36281	5233
FE	234.35	B	164815	14863
AG	328.07	A	-491	-60
FE	234.35	B	164637	14847
AG	328.07	A	-507	-62
V	292.40	B	37388	5048
K	766.49	A	64171	73.3
V	292.40	B	36049	4868
K	766.49	A	63868	72.9

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000249

SAMPLE	OPERATOR	PWR	TIME	NAME
39	MSHIELDS	3	15:33	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	24.81	PPM	0.339	1.36	1.0
SB	206.83	B	6450	PPB	22.6	0.35	1.0
BA	493.41	A	5297	PPB	84.1	1.58	1.0
BE	313.04	A	430	PPB	1.4	0.32	1.0
CD	214.44	B	5052	PPB	52.3	1.03	1.0
CA	317.93	A	252.7	PPM	0.22	0.08	1.0
CR	205.55	B	5084	PPB	16.2	0.31	2.0
CO	228.61	B	5065	PPB	43.8	0.86	1.0
CU	324.75	A	5200	PPB	45.9	0.88	2.0
FE	234.35	B	14855	PPB	11.3	0.07	1.0
MG	279.08	A	257.6	PPM	0.56	0.21	1.0
MN	257.61	A	5217	PPB	26.8	0.51	1.0
NI	231.60	B	4984	PPB	18.3	0.36	1.0
K	766.49	A	73.1	PPM	0.28	0.38	3.0
AG	328.07	A	-61d	PPB	1.4	2.29	5.0
NA	589.59	A	73.0	PPM	1.48	2.02	2.0
V	292.40	B	4958	PPB	127.2	2.56	1.0
ZN	213.86	B	5206	PPB	20.5	0.39	2.0
FE	234.35	A	15.8	PPM	0.22	1.39	1.0
PB	220.35	B	4574	PPB	67.1	1.46	1.0

CONT-CAL OK AL &K & NA BELOW

147

EL	NM	C	INTENSITY	CONC
NA	589.59	A	609963	64.1
NA	589.59	A	589199	62.2

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
NA	589.59	A	63.1	PPM	1.34	2.12	2.0

000250

CONT-CAL OK NA

148

000251

EL	NM	C	INTENSITY	CONC
K	766.49	A	65403	65.1
K	766.49	A	64205	64.1

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
K	766.49	A	64.6	PPM	0.70	1.08	3.0

CONT-CAL K OK

EL	NM	C	INTENSITY	CONC
AL	167.08	B	219109	15.52
AL	167.08	B	227675	16.14

149

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	15.83	PPM	0.438	2.76	1.0

000252

CONT-CAL OK AL

EL	NM	C	INTENSITY	CONC
AG	328.07	A	48398	5886
AG	328.07	A	48038	5842

150

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AG	328.07	A	5864	PPB	31.1	0.53	5.0

000353

CONT-CAL AG

151

000254

EL	NM	C	INTENSITY	CONC
PB	220.35	B	11832	5372
PB	220.35	B	11711	5316

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
PB	220.35	B	5344	PPB	39.5	0.73	1.0

CONT-CAL OK

152

000355

NM		C	INTENSITY	CONC
FE	234.35	A	78	0.3
AL	167.08	B	4968	0.19
FE	234.35	A	83	0.4
AL	167.08	B	5564	0.23
CR	205.55	B	387	17
BA	493.41	A	2831	44
CR	205.55	B	304	14
BA	493.41	A	2784	44
SB	206.83	B	566	311
MN	257.61	A	379	48
SB	206.83	B	500	272
MN	257.61	A	360	45
ZN	213.86	B	31799	241
MG	279.08	A	4269	16.8
ZN	213.86	B	31483	238
MG	279.08	A	4253	16.7
CD	214.44	B	375	10
NA	589.59	A	1989473	147.5
CD	214.44	B	483	13
NA	589.59	A	1989633	147.5
PB	220.35	B	48	-34
BE	313.04	A	212	-1
PB	220.35	B	47	-34
BE	313.04	A	176	-1
CO	228.61	B	111	2
CA	317.93	A	82591	88.5
CO	228.61	B	-22	-6
CA	317.93	A	81923	87.7
NI	231.60	B	1208	75
CU	324.75	A	481	44
NI	231.60	B	1277	81
CU	324.75	A	445	39
FE	234.35	B	3328	236
AG	328.07	A	125	15
FE	234.35	B	3556	256
AG	328.07	A	215	25
V	292.40	B	57	12
K	766.49	A	17155	18.6
V	292.40	B	10	5
K	766.49	A	17534	19.1

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000256

SAMPLE	OPERATOR	PWR	TIME	NAME
40	MSHIELDS	3	15:49	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	0.21	PPM	0.028	13.33	1.0
SB	206.83	B	291	PPB	27.5	9.45	1.0
BA	493.41	A	44	PPB	0.0	0.00	1.0
BE	313.04	A	-1	PPB	0.0	0.00	1.0
CD	214.44	B	11	PPB	2.2	20.00	1.0
CA	317.93	A	88.1	PPM	0.56	0.63	1.0
CR	205.55	B	15	PPB	2.2	14.66	2.0
CO	228.61	B	-2	PPB	5.6	280.00	1.0
CU	324.75	A	41	PPB	3.6	8.78	2.0
FE	234.35	B	246	PPB	14.1	5.73	1.0
MG	279.08	A	16.7	PPM	0.10	0.59	1.0
MN	257.61	A	46	PPB	2.2	4.78	1.0
NI	231.60	B	78	PPB	4.2	5.38	1.0
K	766.49	A	18.8	PPM	0.36	1.91	3.0
AG	328.07	A	20	PPB	7.0	35.00	5.0
NA	589.59	A	OV FLOW	PPM	0.00	0.00	2.0
V	292.40	B	8d	PPB	5.0	62.50	1.0
ZN	213.86	B	239	PPB	2.2	0.92	2.0
FE	234.35	A	0.3d	PPM	0.10	33.33	1.0
PB	220.35	B	-34	PPB	0.0	0.00	1.0

J6-0115 DUP

154

EL	NM	C	INTENSITY	CONC
NA	589.59	A	189481	21.3
NA	589.59	A	188600	21.2

000357

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
NA	589.59	A	21.2	PPM	0.10	0.47	2.0

MEMO
J6-0115 NA 1-10

155

000358

EL	NM	C	INTENSITY	CONC
FE	234.35	A	44	0.1
AL	167.08	B	437	-0.14
FE	234.35	A	16	0.0
AL	167.08	B	537	-0.13
CR	205.55	B	144	9
BA	493.41	A	983	15
CR	205.55	B	89	7
BA	493.41	A	875	13
SB	206.83	B	213	106
MN	257.61	A	77	9
SB	206.83	B	181	87
MN	257.61	A	86	10
ZN	213.86	B	13038	68
MG	279.08	A	1188	4.6
ZN	213.86	B	13086	69
MG	279.08	A	1155	4.5
CD	214.44	B	387	10
NA	589.59	A	563044	59.8
CD	214.44	B	347	9
NA	589.59	A	582085	61.6
PB	220.35	B	97	-11
BE	313.04	A	247	0
PB	220.35	B	90	-14
BE	313.04	A	314	0
CO	228.61	B	-25	-6
CA	317.93	A	21939	23.5
CO	228.61	B	3	-4
CA	317.93	A	21444	22.9
NI	231.60	B	277	-6
CU	324.75	A	150	-4
NI	231.60	B	358	1
CU	324.75	A	143	-5
FE	234.35	B	790	5
AG	328.07	A	-393	-49
FE	234.35	B	805	7
AG	328.07	A	-422	-52
V	292.40	B	4	5
K	766.49	A	3841	4.1
V	292.40	B	30	8
K	766.49	A	3689	3.9

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SAMPLE	OPERATOR	PWR	TIME	NAME
41	MSHIELDS	3	15:57	CONTRACT

000259

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	-0.14	PPM	0.010	7.14	1.0
SB	206.83	B	96d	PPB	13.4	13.95	1.0
BA	493.41	A	14	PPB	1.4	10.00	1.0
BE	313.04	A	0d	PPB	0.0	0.00	1.0
CD	214.44	B	9	PPB	1.0	11.11	1.0
CA	317.93	A	23.2	PPM	0.42	1.81	1.0
CR	205.55	B	8d	PPB	1.4	17.50	2.0
CO	228.61	B	-5	PPB	1.4	28.00	1.0
CU	324.75	A	-5d	PPB	1.0	20.00	2.0
FE	234.35	B	6	PPB	1.4	23.33	1.0
MG	279.08	A	4.5	PPM	0.10	2.22	1.0
MN	257.61	A	9d	PPB	1.0	11.11	1.0
NI	231.60	B	-3	PPB	5.0	166.66	1.0
K	766.49	A	4.0	PPM	0.14	3.50	3.0
AG	328.07	A	-51d	PPB	2.2	4.31	5.0
NA	589.59	A	60.7	PPM	1.27	2.09	2.0
V	292.40	B	6	PPB	2.2	36.66	1.0
ZN	213.86	B	68	PPB	1.0	1.47	2.0
FE	234.35	A	0.0d	PPM	0.10	0.00	1.0
PB	220.35	B	-13d	PPB	2.2	16.92	1.0

J6-0115 SERIAL DIL

000260

EL	NM	C	INTENSITY	CONC
FE	234.35	A	836	4.5
AL	167.08	B	109577	7.68
FE	234.35	A	816	4.4
AL	167.08	B	111676	7.83
CR	205.55	B	266	13
BA	493.41	A	3994	63
CR	205.55	B	294	14
BA	493.41	A	4100	64
SB	206.83	B	-15	-27
MN	257.61	A	1219	156
SB	206.83	B	3	-16
MN	257.61	A	1222	156
ZN	213.86	B	25102	179
MG	279.08	A	650	2.5
ZN	213.86	B	25230	181
MG	279.08	A	636	2.5
CD	214.44	B	132	2
NA	589.59	A	232537	26.1
CD	214.44	B	121	2
NA	589.59	A	230845	25.9
PB	220.35	B	310	87
BE	313.04	A	271	0
PB	220.35	B	526	186
BE	313.04	A	268	0
CO	228.61	B	22	-3
CA	317.93	A	19145	20.5
CO	228.61	B	-57	-7
CA	317.93	A	18349	19.6
NI	231.60	B	384	3
CU	324.75	A	1307	164
NI	231.60	B	501	13
CU	324.75	A	1278	160
FE	234.35	B	46983	4190
AG	328.07	A	152	18
FE	234.35	B	46848	4178
AG	328.07	A	184	22
V	292.40	B	32	9
K	766.49	A	2393	2.4
V	292.40	B	14	6
K	766.49	A	2369	2.4

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SAMPLE	OPERATOR	PWR	TIME	NAME
42	MSHIELDS	3	16:03	CONTRACT

000261

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	7.75	PPM	0.106	1.36	1.0
SB	206.83	B	-22d	PPB	7.8	35.45	1.0
BA	493.41	A	63	PPB	1.0	1.58	1.0
BE	313.04	A	0d	PPB	0.0	0.00	1.0
CD	214.44	B	2	PPB	0.0	0.00	1.0
CA	317.93	A	20.0	PPM	0.64	3.20	1.0
CR	205.55	B	13	PPB	1.0	7.69	2.0
CO	228.61	B	-5	PPB	2.8	56.00	1.0
CU	324.75	A	162	PPB	2.8	1.72	2.0
FE	234.35	B	4184	PPB	8.4	0.20	1.0
MG	279.08	A	2.5	PPM	0.00	0.00	1.0
MN	257.61	A	156	PPB	0.0	0.00	1.0
NI	231.60	B	8	PPB	7.0	87.50	1.0
K	766.49	A	2.4	PPM	0.00	0.00	3.0
AG	328.07	A	20	PPB	2.8	14.00	5.0
NA	589.59	A	26.0	PPM	0.14	0.53	2.0
V	292.40	B	7d	PPB	2.2	31.42	1.0
ZN	213.86	B	180	PPB	1.4	0.77	2.0
FE	234.35	A	4.4	PPM	0.10	2.27	1.0
PB	220.35	B	136	PPB	70.0	51.47	1.0

J6-0116

EL	NM	C	INTENSITY	CONC
FE	234.35	A	258	1.3
AL	167.08	B	1573	-0.06
FE	234.35	A	232	1.2
AL	167.08	B	1524	-0.06
CR	205.55	B	70	7
BA	493.41	A	1958	30
CR	205.55	B	152	9
BA	493.41	A	1942	30
SB	206.83	B	214	106
MN	257.61	A	2831	362
SB	206.83	B	148	68
MN	257.61	A	2736	350
ZN	213.86	B	256773	2315
MG	279.08	A	160058	629.4
ZN	213.86	B	251185	2263
MG	279.08	A	155764	612.5
CD	214.44	B	2018	61
NA	589.59	A	1324472	118.2
CD	214.44	B	2041	62
NA	589.59	A	1347500	119.6
PB	220.35	B	257	62
BE	313.04	A	270	0
PB	220.35	B	59	-28
BE	313.04	A	263	0
CO	228.61	B	2026	103
CA	317.93	A	219784	235.5
CO	228.61	B	1699	84
CA	317.93	A	220252	236.0
NI	231.60	B	19306	1662
CU	324.75	A	2885	393
NI	231.60	B	19021	1637
CU	324.75	A	2862	389
FE	234.35	B	18904	1646
AG	328.07	A	998	121
FE	234.35	B	19000	1655
AG	328.07	A	921	111
V	292.40	B	-107	-10
K	766.49	A	389579	112.4
V	292.40	B	-36	0
K	766.49	A	387041	113.8

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000363

SAMPLE	OPERATOR	PWR	TIME	NAME
43	MSHIELDS	3	16:10	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	-0.06	PPM	0.000	0.00	1.0
SB	206.83	B	87d	PPB	26.8	30.80	1.0
BA	493.41	A	30	PPB	0.0	0.00	1.0
BE	313.04	A	0d	PPB	0.0	0.00	1.0
CD	214.44	B	61	PPB	1.0	1.63	1.0
CA	317.93	A	235.7	PPM	0.36	0.15	1.0
CR	205.55	B	8d	PPB	1.4	17.50	2.0
CO	228.61	B	94	PPB	12.0	12.76	1.0
CU	324.75	A	391	PPB	2.8	0.71	2.0
FE	234.35	B	1650	PPB	6.4	0.38	1.0
MG	279.08	A	620.9x	PPM	11.95	1.92	1.0
MN	257.61	A	356	PPB	8.4	2.35	1.0
NI	231.60	B	1649	PPB	17.6	1.06	1.0
K	766.49	A	OVRANGE	PPM	0.98	0.86	3.0
AG	328.07	A	116	PPB	7.0	6.03	5.0
NA	589.59	A	OV FLOW	PPM	0.98	0.82	2.0
V	292.40	B	-5	PPB	7.0	140.00	1.0
ZN	213.86	B	2289	PPB	36.7	1.60	2.0
FE	234.35	A	1.2	PPM	0.10	8.33	1.0
PB	220.35	B	17d	PPB	63.6	374.11	1.0

J6-117

EL	NM	C	INTENSITY	CONC
MG	279.08	A	16458	64.7
MG	279.08	A	16378	64.4

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
MG	279.08	A	64.5	PPM	0.22	0.34	1.0

J6-0117 1-10 MG

162

000365

EL	NM	C	INTENSITY	CONC	
K	766.49	A	31012	33.0	
K	766.49	A	30290	32.4	

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
K	766.49	A	32.7	PPM	0.42	1.28	3.0

J6-0117 K 1-10 ms [illegible]

EL	NM	C	INTENSITY	CONC
NA	589.59	A	1944692	146.3
NA	589.59	A	1943142	146.1

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
NA	589.59	A	OV FLOW	PPM	0.14	0.09	2.0

J6-0117 NA 1-10

164

000367

EL	NM	C	INTENSITY	CONC
NA	589.59	A	1993325	147.6
NA	589.59	A	1993393	147.6

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
NA	589.59	A	OV FLOW	PPM	0.00	0.00	2.0

J6-0117 NA 1-25

EL	NM	C	INTENSITY	CONC
NA	589.59	A	436492	47.5
NA	589.59	A	424586	46.2

165

000268

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
NA	589.59	A	46.8	PPM	0.92	1.96	2.0

J6-0117 1-100

EL	NM	C	INTENSITY	CONC
FE	234.35	A	498	2.6
AL	167.08	B	25304	1.64
FE	234.35	A	494	2.6
AL	167.08	B	25745	1.67
CR	205.55	B	5376	190
BA	493.41	A	127228	2011
CR	205.55	B	5569	196
BA	493.41	A	126044	1992
SB	206.83	B	1150	650
MN	257.61	A	4279	548
SB	206.83	B	1252	709
MN	257.61	A	4318	553
ZN	213.86	B	256204	2310
MG	279.08	A	152267	598.8
ZN	213.86	B	259971	2344
MG	279.08	A	155308	610.7
CD	214.44	B	3260	100
NA	589.59	A	1109876	104.3
CD	214.44	B	3213	98
NA	589.59	A	1176303	108.9
PB	220.35	B	1140	467
BE	313.04	A	3817	40
PB	220.35	B	952	381
BE	313.04	A	3802	40
CO	228.61	B	10193	536
CA	317.93	A	215015	230.4
CO	228.61	B	10233	538
CA	317.93	A	212203	227.4
NI	231.60	B	22273	1922
CU	324.75	A	4545	633
NI	231.60	B	22295	1924
CU	324.75	A	4572	637
FE	234.35	B	27858	2458
AG	328.07	A	664	80
FE	234.35	B	28339	2501
AG	328.07	A	548	66
V	292.40	B	3284	447
K	766.49	A	379840	117.8
V	292.40	B	3261	444
K	766.49	A	390652	111.7

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164

000270

SAMPLE	OPERATOR	PWR	TIME	NAME
44	MSHIELDS	3	16:25	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	1.65	PPM	0.022	1.33	1.0
SB	206.83	B	679	PPB	41.7	6.14	1.0
BA	493.41	A	2001	PPB	13.4	0.66	1.0
BE	313.04	A	40	PPB	0.0	0.00	1.0
CD	214.44	B	99	PPB	1.4	1.41	1.0
CA	317.93	A	228.9	PPM	2.12	0.92	1.0
CR	205.55	B	193	PPB	4.2	2.17	2.0
CO	228.61	B	537	PPB	1.4	0.26	1.0
CU	324.75	A	635	PPB	2.8	0.44	2.0
FE	234.35	B	2479	PPB	30.4	1.22	1.0
MG	279.08	A	604.7	PPM	8.41	1.39	1.0
MN	257.61	A	550	PPB	3.6	0.65	1.0
NI	231.60	B	1923	PPB	1.4	0.07	1.0
K	766.49	A	OVRANGE	PPM	4.31	3.75	3.0
AG	328.07	A	73	PPB	9.8	13.42	5.0
NA	589.59	A	OV FLOW	PPM	3.25	3.04	2.0
V	292.40	B	445	PPB	2.2	0.49	1.0
ZN	213.86	B	2327	PPB	24.0	1.03	2.0
FE	234.35	A	2.6	PPM	0.00	0.00	1.0
PB	220.35	B	424	PPB	60.8	14.33	1.0

J6-0117SPK

EL	NM	C	INTENSITY	CONC	
K	766.49	A	31154	33.1	
K	766.49	A	31118	33.1	

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
K	766.49	A	33.1	PPM	0.00	0.00	3.0

J6-0117 SPK 1-10

EL	NM	C	INTENSITY	CONC
NA	589.59	A	422202	46.0
NA	589.59	A	427519	46.6

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
NA	589.59	A	46.3	PPM	0.42	0.90	2.0

J6-0117SPK K 1-100

EL

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NM		C	INTENSITY	CONC
FE	234.35	A	478	2.5
AL	167.08	B	1864	-0.04
FE	234.35	A	558	3.0
AL	167.08	B	1848	-0.04
CR	205.55	B	299	14
BA	493.41	A	5206	82
CR	205.55	B	172	10
BA	493.41	A	5114	80
SB	206.83	B	83	30
MN	257.61	A	585	74
SB	206.83	B	49	11
MN	257.61	A	574	73
ZN	213.86	B	32842	251
MG	279.08	A	1208	4.7
ZN	213.86	B	33081	253
MG	279.08	A	1391	5.4
CD	214.44	B	109	1
NA	589.59	A	83979	9.3
CD	214.44	B	194	4
NA	589.59	A	65814	7.2
PB	220.35	B	217	44
BE	313.04	A	244	0
PB	220.35	B	228	49
BE	313.04	A	216	-1
CO	228.61	B	-58	-7
CA	317.93	A	50211	53.8
CO	228.61	B	35	-3
CA	317.93	A	50158	53.7
NI	231.60	B	257	-8
CU	324.75	A	1066	129
NI	231.60	B	309	-4
CU	324.75	A	1148	141
FE	234.35	B	28603	2524
AG	328.07	A	-166	-21
FE	234.35	B	28404	2507
AG	328.07	A	-197	-25
V	292.40	B	-48	-2
K	766.49	A	3417	3.6
V	292.40	B	52	11
K	766.49	A	3359	3.5

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000274

SAMPLE	OPERATOR	PWR	TIME	NAME
45	MSHIELDS	3	16:34	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	-0.04	PPM	0.000	0.00	1.0
SB	206.83	B	20d	PPB	13.4	67.00	1.0
BA	493.41	A	81	PPB	1.4	1.72	1.0
BE	313.04	A	-1	PPB	1.0	100.00	1.0
CD	214.44	B	2	PPB	2.2	110.00	1.0
CA	317.93	A	53.7	PPM	0.10	0.18	1.0
CR	205.55	B	12d	PPB	2.8	23.33	2.0
CO	228.61	B	-5	PPB	2.8	56.00	1.0
CU	324.75	A	135	PPB	8.4	6.22	2.0
FE	234.35	B	2515	PPB	12.0	0.47	1.0
MG	279.08	A	5.0	PPM	0.50	10.00	1.0
MN	257.61	A	73	PPB	1.0	1.36	1.0
NI	231.60	B	-6d	PPB	2.8	46.66	1.0
K	766.49	A	3.5	PPM	0.10	2.85	3.0
AG	328.07	A	-23	PPB	2.8	12.17	5.0
NA	589.59	A	8.2	PPM	1.48	18.04	2.0
V	292.40	B	4d	PPB	9.2	230.00	1.0
ZN	213.86	B	252	PPB	1.4	0.55	2.0
FE	234.35	A	2.7	PPM	0.36	13.33	1.0
PB	220.35	B	46	PPB	3.6	7.82	1.0

J6-0118

EL	NM C	INTENSITY	CONC	
AG	328.07 A	-119	-15	
AG	328.07 A	26	2	

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EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AG	328.07	A	-7	PPB	12.0	171.42	5.0

000275

J6-0118SPK AG

EL	NM	C	INTENSITY	CONC
FE	234.35	A	1550	8.4
AL	167.08	B	69086	4.78
FE	234.35	A	1508	8.1
AL	167.08	B	69621	4.82
CR	205.55	B	366	17
BA	493.41	A	73301	1158
CR	205.55	B	416	18
BA	493.41	A	72551	1146
SB	206.83	B	10222	5916
MN	257.61	A	619	79
SB	206.83	B	10327	5977
MN	257.61	A	666	85
ZN	213.86	B	86333	743
MG	279.08	A	2989	11.7
ZN	213.86	B	86804	748
MG	279.08	A	3060	12.0
CD	214.44	B	-175	-8
NA	589.59	A	1732184	138.5
CD	214.44	B	-21	-3
NA	589.59	A	1744049	139.1
PB	220.35	B	3891	1729
BE	313.04	A	292	0
PB	220.35	B	3949	1756
BE	313.04	A	308	0
CO	228.61	B	347	14
CA	317.93	A	193346	207.2
CO	228.61	B	362	15
CA	317.93	A	184520	197.7
NI	231.60	B	388	3
CU	324.75	A	1597	206
NI	231.60	B	423	6
CU	324.75	A	1572	202
FE	234.35	B	84293	7569
AG	328.07	A	-192	-24
FE	234.35	B	84356	7575
AG	328.07	A	753	91
V	292.40	B	20	7
K	766.49	A	194553	139.1
V	292.40	B	195	31
K	766.49	A	200890	140.9

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000377

SAMPLE	OPERATOR	PWR	TIME	NAME
46	MSHIELDS	3	16:43	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	4.80	PPM	0.028	0.58	1.0
SB	206.83	B	5946	PPB	43.1	0.72	1.0
BA	493.41	A	1152	PPB	8.4	0.72	1.0
BE	313.04	A	0d	PPB	0.0	0.00	1.0
CD	214.44	B	-6d	PPB	3.6	60.00	1.0
CA	317.93	A	202.4	PPM	6.71	3.31	1.0
CR	205.55	B	17	PPB	1.0	5.88	2.0
CO	228.61	B	14	PPB	1.0	7.14	1.0
CU	324.75	A	204	PPB	2.8	1.37	2.0
FE	234.35	B	7572	PPB	4.2	0.05	1.0
MG	279.08	A	11.8	PPM	0.22	1.86	1.0
MN	257.61	A	82	PPB	4.2	5.12	1.0
NI	231.60	B	4	PPB	2.2	55.00	1.0
K	766.49	A	OVRANGE	PPM	1.27	0.90	3.0
AG	328.07	A	33	PPB	81.3	246.36	5.0
NA	589.59	A	OV FLOW	PPM	0.42	0.30	2.0
V	292.40	B	19d	PPB	16.9	88.94	1.0
ZN	213.86	B	745	PPB	3.6	0.48	2.0
FE	234.35	A	8.2	PPM	0.22	2.68	1.0
PB	220.35	B	1742	PPB	19.1	1.09	1.0

J6-0119

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EL	NM	C	INTENSITY	CONC	
K	766.49	A	13567	14.8	
K	766.49	A	13495	14.7	

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
K	766.49	A	14.7	PPM	0.10	0.68	3.0

000378

J6-0119 K 1-10

NA 589.59 A 1917778 145.3
NA 589.59 A 1930653 145.7

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
NA	589.59	A	OV FLOW	PPM	0.28	0.19	2.0

J6-119 1-10 NA

NA 589.59 A 126087 14.2
NA 589.59 A 134395 15.1

000280

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
NA	589.59	A	14.6	PPM	0.64	4.38	2.0

J6-0119 NA 1-100

FE	234.35	A	4	-0.1
AL	167.08	B	337	-0.15
FE	234.35	A	38	0.1
AL	167.08	B	292	-0.15
CR	205.55	B	72	7
BA	493.41	A	-52	-2
CR	205.55	B	121	8
BA	493.41	A	30	0
SB	206.83	B	33	1
MN	257.61	A	0	-1
SB	206.83	B	-5	-21
MN	257.61	A	32	3
ZN	213.86	B	9461	35
MG	279.08	A	114	0.4
ZN	213.86	B	9027	21
MG	279.08	A	11	0.0
CD	214.44	B	35	-2
NA	589.59	A	5192	0.1
CD	214.44	B	-16	-3
NA	589.59	A	5069	0.0
PB	220.35	B	100	-10
BE	313.04	A	239	0
PB	220.35	B	83	-17
BE	313.04	A	240	0
CO	228.61	B	-8	-5
CA	317.93	A	483	0.5
CO	228.61	B	-16	-5
CA	317.93	A	492	0.5
NI	231.60	B	21	-29
CU	324.75	A	177	0
NI	231.60	B	195	-14
CU	324.75	A	205	4
FE	234.35	B	904	15
AG	328.07	A	-416	-51
FE	234.35	B	784	5
AG	328.07	A	-405	-50
V	292.40	B	-30	0
K	766.49	A	309	0.1
V	292.40	B	-11	3
K	766.49	A	306	0.1

SAMPLE	OPERATOR	PWR	TIME	NAME
47	MSHIELDS	3	16:55	CONTRACT

000382

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	-0.15	PPM	0.000	0.00	1.0
SB	206.83	B	-10d	PPB	15.5	155.00	1.0
BA	493.41	A	-1	PPB	1.4	140.00	1.0
BE	313.04	A	0d	PPB	0.0	0.00	1.0
CD	214.44	B	-3d	PPB	1.0	33.33	1.0
CA	317.93	A	0.5	PPM	0.00	0.00	1.0
CR	205.55	B	7d	PPB	1.0	14.28	2.0
CO	228.61	B	-5	PPB	0.0	0.00	1.0
CU	324.75	A	2d	PPB	2.8	140.00	2.0
FE	234.35	B	10	PPB	7.0	70.00	1.0
MG	279.08	A	0.2d	PPM	0.28	140.00	1.0
MN	257.61	A	1d	PPB	2.8	280.00	1.0
NI	231.60	B	-22	PPB	10.6	48.18	1.0
K	766.49	A	0.1	PPM	0.00	0.00	3.0
AG	328.07	A	-51d	PPB	1.0	1.96	5.0
NA	589.59	A	0.0	PPM	0.10	0.00	2.0
V	292.40	B	1d	PPB	2.2	220.00	1.0
ZN	213.86	B	33	PPB	2.8	8.48	2.0
FE	234.35	A	0.0d	PPM	0.14	0.00	1.0
PB	220.35	B	-14d	PPB	5.0	35.71	1.0

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FE	234.35	A	26	0.1
AL	167.08	B	402	-0.14
FE	234.35	A	8	0.0
AL	167.08	B	467	-0.14
CR	205.55	B	229	12
BA	493.41	A	209	3
CR	205.55	B	199	11
BA	493.41	A	356	5
SB	206.83	B	21	-6
MN	257.61	A	36	4
SB	206.83	B	106	44
MN	257.61	A	4	0
ZN	213.86	B	7869	20
MG	279.08	A	52	0.2
ZN	213.86	B	7682	19
MG	279.08	A	44	0.1
CD	214.44	B	66	0
NA	589.59	A	8622	0.5
CD	214.44	B	-14	-3
NA	589.59	A	5963	0.1
PB	220.35	B	37	-39
BE	313.04	A	208	-1
PB	220.35	B	51	-32
BE	313.04	A	246	0
CO	228.61	B	110	2
CA	317.93	A	420	0.4
CO	228.61	B	-42	-6
CA	317.93	A	533	0.5
NI	231.60	B	138	-19
CU	324.75	A	261	12
NI	231.60	B	98	-22
CU	324.75	A	241	9
FE	234.35	B	867	13
AG	328.07	A	-368	-45
FE	234.35	B	916	17
AG	328.07	A	-333	-41
V	292.40	B	-34	0
K	766.49	A	71	0.0
V	292.40	B	-87	-8
K	766.49	A	162	0.0

SAMPLE	OPERATOR	PWR	TIME	NAME
48	MSHIELDS	3	17:01	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	-0.14	PPM	0.000	0.00	1.0
SB	206.83	B	19	PPB	35.3	185.78	1.0
BA	493.41	A	4	PPB	1.4	35.00	1.0
BE	313.04	A	-1	PPB	1.0	100.00	1.0
CD	214.44	B	-2d	PPB	2.2	110.00	1.0
CA	317.93	A	0.4	PPM	0.10	25.00	1.0
CR	205.55	B	11d	PPB	1.0	9.09	2.0
CO	228.61	B	-2d	PPB	5.6	280.00	1.0
CU	324.75	A	10	PPB	2.2	22.00	2.0
FE	234.35	B	15	PPB	2.8	18.66	1.0
MG	279.08	A	0.1d	PPM	0.10	100.00	1.0
MN	257.61	A	2d	PPB	2.8	140.00	1.0
NI	231.60	B	-21	PPB	2.2	10.47	1.0
K	766.49	A	0.0	PPM	0.00	0.00	3.0
AG	328.07	A	-43d	PPB	2.8	6.51	5.0
NA	589.59	A	0.3	PPM	0.28	93.33	2.0
V	292.40	B	-4d	PPB	5.6	140.00	1.0
ZN	213.86	B	19	PPB	1.0	5.26	2.0
FE	234.35	A	0.0d	PPM	0.10	0.00	1.0
PB	220.35	B	-36d	PPB	5.0	13.88	1.0

J6-0121

FE	234.35	A	19	0.0
AL	167.08	B	-9	-0.01
FE	234.35	A	-6	-0.1
AL	167.08	B	21	0.00
CR	205.55	B	156	4
BA	493.41	A	-18	-1
CR	205.55	B	-66	-3
BA	493.41	A	-101	-3
SB	206.83	B	-51	-23
MN	257.61	A	28	2
SB	206.83	B	-41	-18
MN	257.61	A	-9	-2
ZN	213.86	B	1917	-11
MG	279.08	A	13	0.0
ZN	213.86	B	1879	-12
MG	279.08	A	-24	-0.1
CD	214.44	B	41	0
NA	589.59	A	2303	-0.2
CD	214.44	B	6	-2
NA	589.59	A	2495	0.0
PB	220.35	B	54	1
BE	313.04	A	291	0
PB	220.35	B	45	-2
BE	313.04	A	307	0
CO	228.61	B	-24	-5
CA	317.93	A	-18	-0.1
CO	228.61	B	21	-2
CA	317.93	A	-21	-0.1
NI	231.60	B	18	0
CU	324.75	A	71	2
NI	231.60	B	27	0
CU	324.75	A	33	-3
FE	234.35	B	88	0
AG	328.07	A	-475	-42
FE	234.35	B	176	7
AG	328.07	A	-547	-50
V	292.40	B	-24	3
K	766.49	A	76	0.0
V	292.40	B	0	6
K	766.49	A	-19	-0.2

SAMPLE	OPERATOR	PWR	TIME	NAME
49	MSHIELDS	3	17:07	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	-0.01d	PPM	0.010	100.00	1.0
SB	206.83	B	-21d	PPB	3.6	17.14	1.0
BA	493.41	A	-2d	PPB	1.4	70.00	1.0
BE	313.04	A	0d	PPB	0.0	0.00	1.0
CD	214.44	B	-1d	PPB	1.4	140.00	1.0
CA	317.93	A	-0.1d	PPM	0.00	0.00	1.0
CR	205.55	B	0	PPB	5.0	0.00	2.0
CO	228.61	B	-4	PPB	2.2	55.00	1.0
CU	324.75	A	-1d	PPB	3.6	360.00	2.0
FE	234.35	B	3	PPB	5.0	166.66	1.0
MG	279.08	A	-0.1d	PPM	0.10	100.00	1.0
MN	257.61	A	0d	PPB	2.8	0.00	1.0
NI	231.60	B	0	PPB	0.0	0.00	1.0
K	766.49	A	-0.1d	PPM	0.14	140.00	3.0
AG	328.07	A	-46d	PPB	5.6	12.17	5.0
NA	589.59	A	-0.1	PPM	0.14	140.00	2.0
V	292.40	B	4d	PPB	2.2	55.00	1.0
ZN	213.86	B	-12	PPB	1.0	8.33	2.0
FE	234.35	A	-0.1	PPM	0.10	100.00	1.0
PB	220.35	B	-1d	PPB	2.2	220.00	1.0

CAL-BLK

FE	234.35	A	3054	14.9
AL	167.08	B	247756	14.92
FE	234.35	A	3064	14.9
AL	167.08	B	249337	15.01
CR	205.55	B	163431	5008
BA	493.41	A	342232	4773
CR	205.55	B	164295	5035
BA	493.41	A	337038	4701
SB	206.83	B	12227	6311
MN	257.61	A	43101	4909
SB	206.83	B	12255	6325
MN	257.61	A	42353	4823
ZN	213.86	B	629424	4856
MG	279.08	A	66408	236.1
ZN	213.86	B	627767	4843
MG	279.08	A	66205	235.4
CD	214.44	B	179713	4979
NA	589.59	A	576869	55.7
CD	214.44	B	180075	4989
NA	589.59	A	567967	54.9
PB	220.35	B	11229	4448
BE	313.04	A	37171	389
PB	220.35	B	11228	4448
BE	313.04	A	37556	393
CO	228.61	B	104430	4881
CA	317.93	A	247132	237.0
CO	228.61	B	105620	4937
CA	317.93	A	251433	241.1
NI	231.60	B	63648	5077
CU	324.75	A	36124	4709
NI	231.60	B	63187	5041
CU	324.75	A	36237	4724
FE	234.35	B	183307	14734
AG	328.07	A	-519	-47
FE	234.35	B	187868	15101
AG	328.07	A	-440	-38
V	292.40	B	40065	5069
K	766.49	A	60991	55.9
V	292.40	B	40291	5098
K	766.49	A	60503	55.5

000387

FE	234.35	A	3054	14.9
AL	167.08	B	247756	14.92
FE	234.35	A	3064	14.9
AL	167.08	B	249337	15.01
CR	205.55	B	163431	5008
BA	493.41	A	342232	4773
CR	205.55	B	164295	5035
BA	493.41	A	337038	4701
SB	206.83	B	12227	6311
MN	257.61	A	43101	4909
SB	206.83	B	12255	6325
MN	257.61	A	42353	4823
ZN	213.86	B	629424	4856
MG	279.08	A	66408	236.1
ZN	213.86	B	627767	4843
MG	279.08	A	66205	235.4
CD	214.44	B	179713	4979
NA	589.59	A	576869	55.7
CD	214.44	B	180075	4989
NA	589.59	A	567967	54.9
PB	220.35	B	11229	4448
BE	313.04	A	37171	389
PB	220.35	B	11228	4448
BE	313.04	A	37556	393
CO	228.61	B	104430	4881
CA	317.93	A	247132	237.0
CO	228.61	B	105620	4937
CA	317.93	A	251433	241.1
NI	231.60	B	63648	5077
CU	324.75	A	36124	4709
NI	231.60	B	63187	5041
CU	324.75	A	36237	4724
FE	234.35	B	183307	14734
AG	328.07	A	-519	-47
FE	234.35	B	187868	15101
AG	328.07	A	-440	-38
V	292.40	B	40065	5069
K	766.49	A	60991	55.9
V	292.40	B	40291	5098
K	766.49	A	60503	55.5

000387

SAMPLE	OPERATOR	PWR	TIME	NAME
50	MSHIELDS	3	17:17	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	14.96	PPM	0.064	0.42	1.0
SB	206.83	B	6318	PPB	9.8	0.15	1.0
BA	493.41	A	4737	PPB	50.9	1.07	1.0
BE	313.04	A	391	PPB	2.8	0.71	1.0
CD	214.44	B	4984	PPB	7.0	0.14	1.0
CA	317.93	A	239.0	PPM	2.90	1.21	1.0
CR	205.55	B	5021	PPB	19.1	0.38	2.0
CO	228.61	B	4909	PPB	39.5	0.80	1.0
CU	324.75	A	4716	PPB	10.6	0.22	2.0
FE	234.35	B	14917	PPB	259.5	1.73	1.0
MG	279.08	A	235.7	PPM	0.50	0.21	1.0
MN	257.61	A	4866	PPB	60.8	1.24	1.0
NI	231.60	B	5059	PPB	25.4	0.50	1.0
K	766.49	A	55.7	PPM	0.28	0.50	3.0
AG	328.07	A	-43d	PPB	6.4	14.88	5.0
NA	589.59	A	55.3	PPM	0.56	1.01	2.0
V	292.40	B	5083	PPB	20.5	0.40	1.0
ZN	213.86	B	4849	PPB	9.2	0.18	2.0
FE	234.35	A	14.9	PPM	0.00	0.00	1.0
PB	220.35	B	4448	PPB	0.0	0.00	1.0

CONT-CAL OK

186

NM C	INTENSITY	CONC
AG 328.07 A	48696	5931
AG 328.07 A	48528	5911

EL	NM-CH	CONC	UNIT	SD	RSD	SEC
AG	328.07 A	5921	PPB	14.1	0.23	5.0

000289

CONT-CAL-AG OK

EL	NM C	INTENSITY	CONC
	PB 220.35 B	12687	5029
	PB 220.35 B	12463	4939

EL	NM CH	CONC	UNIT	SD	RSD	SEC
PB	220.35 B	4984	PPB	63.6	1.27	1.0

000290

CONT-CAL PB OK

188

000291

EL	NM	C	INTENSITY	CONC
FE	234.35	A	9772	47.7
AL	167.08	B	311971	18.79
FE	234.35	A	9945	48.5
AL	167.08	B	313378	18.87
CR	205.55	B	-1362	-43
BA	493.41	A	14071	195
CR	205.55	B	-1377	-43
BA	493.41	A	13728	191
SB	206.83	B	674	351
MN	257.61	A	3587	407
SB	206.83	B	790	411
MN	257.61	A	3625	411
ZN	213.86	B	181138	1379
MG	279.08	A	604	2.1
ZN	213.86	B	182907	1393
MG	279.08	A	575	2.0
CD	214.44	B	1060	27
NA	589.59	A	-124	-0.4
CD	214.44	B	974	25
NA	589.59	A	-159	-0.4
PB	220.35	B	15699	6227
BE	313.04	A	329	0
PB	220.35	B	16286	6461
BE	313.04	A	335	0
CO	228.61	B	1139	50
CA	317.93	A	3908	3.6
CO	228.61	B	1281	57
CA	317.93	A	3960	3.7
NI	231.60	B	5385	428
CU	324.75	A	24376	3175
NI	231.60	B	5391	429
CU	324.75	A	24156	3147
AG	328.07	A	279	46
FE	234.35	B	614802	49435
AG	328.07	A	323	51
FE	234.35	B	616257	49553
V	292.40	B	622	84
K	766.49	A	924	0.7
V	292.40	B	602	82
K	766.49	A	942	0.7

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189

SAMPLE	OPERATOR	PWR	TIME	NAME
51	MSHIELDS	3	17:27	CONTRACT

000292

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	18.83	PPM	0.056	0.29	1.0
SB	206.83	B	381	PPB	42.4	11.12	1.0
BA	493.41	A	193	PPB	2.8	1.45	1.0
BE	313.04	A	0	PPB	0.0	0.00	1.0
CD	214.44	B	26	PPB	1.4	5.38	1.0
GA	317.93	A	3.6	PPM	0.10	2.77	1.0
CR	205.55	B	-43d	PPB	0.0	0.00	2.0
CO	228.61	B	53	PPB	5.0	9.43	1.0
CU	324.75	A	3161	PPB	19.7	0.62	2.0
FE	234.35	B	49494x	PPB	83.4	0.16	1.0
MG	279.08	A	2.0	PPM	0.10	5.00	1.0
MN	257.61	A	409	PPB	2.8	0.68	1.0
NI	231.60	B	428	PPB	1.0	0.23	1.0
K	766.49	A	0.7	PPM	0.00	0.00	3.0
AG	328.07	A	48	PPB	3.6	7.50	5.0
NA	589.59	A	-0.4d	PPM	0.00	0.00	2.0
V	292.40	B	83	PPB	1.4	1.68	1.0
ZN	213.86	B	1386	PPB	9.8	0.70	2.0
FE	234.35	A	48.1	PPM	0.56	1.16	1.0
PB	220.35	B	6344	PPB	165.4	2.60	1.0

J6-0122

EL	NM	C	INTENSITY	CONC
FE	234.35	A	10055	49.1
AL	167.08	B	309591	18.64
FE	234.35	A	10024	48.9
AL	167.08	B	311265	18.75
CR	205.55	B	-1338	-42
BA	493.41	A	13888	193
CR	205.55	B	-1325	-42
BA	493.41	A	14221	197
SB	206.83	B	767	399
MN	257.61	A	3799	431
SB	206.83	B	-673	350
MN	257.61	A	3692	419
ZN	213.86	B	179215	1364
MG	279.08	A	611	2.1
ZN	213.86	B	180958	1377
MG	279.08	A	672	2.3
CD	214.44	B	1063	27
NA	589.59	A	-342	-0.4
CD	214.44	B	1096	28
NA	589.59	A	-443	-0.4
PB	220.35	B	15775	6257
BE	313.04	A	360	0
PB	220.35	B	15498	6147
BE	313.04	A	362	0
CO	228.61	B	1215	53
CA	317.93	A	4009	3.7
CO	228.61	B	1214	53
CA	317.93	A	3960	3.7
NI	231.60	B	5285	420
CU	324.75	A	24693	3217
NI	231.60	B	5316	422
CU	324.75	A	24574	3201
AG	328.07	A	-515	-51
FE	234.35	B	599080	48171
AG	328.07	A	-446	-42
FE	234.35	B	592642	47653
V	292.40	B	544	75
K	766.49	A	43	-0.2
V	292.40	B	968	128
K	766.49	A	306	0.1

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191

SAMPLE	OPERATOR	PWR	TIME	NAME
52	MSHIELDS	3	17:34	CONTRACT

000294

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	18.69	PPM	0.078	0.41	1.0
SB	206.83	B	374	PPB	34.6	9.25	1.0
BA	493.41	A	195	PPB	2.8	1.43	1.0
BE	313.04	A	0	PPB	0.0	0.00	1.0
CD	214.44	B	27	PPB	1.0	3.70	1.0
GA	317.93	A	3.7	PPM	0.00	0.00	1.0
CR	205.55	B	-42d	PPB	0.0	0.00	2.0
CO	228.61	B	53	PPB	0.0	0.00	1.0
CU	324.75	A	3209	PPB	11.3	0.35	2.0
FE	234.35	B	47912x	PPB	366.2	0.76	1.0
MG	279.08	A	2.2	PPM	0.14	6.36	1.0
MN	257.61	A	425	PPB	8.4	1.97	1.0
NI	231.60	B	421	PPB	1.4	0.33	1.0
K	766.49	A	-0.1d	PPM	0.22	220.00	3.0
AG	328.07	A	-47d	PPB	6.4	13.61	5.0
NA	589.59	A	-0.4d	PPM	0.00	0.00	2.0
V	292.40	B	101	PPB	37.4	37.02	1.0
ZN	213.86	B	1370	PPB	9.2	0.67	2.0
FE	234.35	A	49.0	PPM	0.14	0.28	1.0
PB	220.35	B	6202	PPB	77.7	1.25	1.0

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192

000295

EL	NM	C	INTENSITY	CONC
FE	234.35	A	2680	13.0
AL	167.08	B	82328	4.95
FE	234.35	A	2669	13.0
AL	167.08	B	81369	4.90
CR	205.55	B	-297	-10
BA	493.41	A	3366	46
CR	205.55	B	-444	-15
BA	493.41	A	3457	47
SB	206.83	B	110	60
MN	257.61	A	925	104
SB	206.83	B	93	-51
MN	257.61	A	973	109
ZN	213.86	B	47705	344
MG	279.08	A	17	0.0
ZN	213.86	B	47446	342
MG	279.08	A	26	0.0
CD	214.44	B	271	6
NA	589.59	A	-362	-0.4
CD	214.44	B	230	4
NA	589.59	A	-586	-0.4
PB	220.35	B	3905	1534
BE	313.04	A	138	-1
PB	220.35	B	3888	1527
BE	313.04	A	147	-1
CO	228.61	B	256	8
CA	317.93	A	-207	-0.3
CO	228.61	B	249	8
CA	317.93	A	-207	-0.3
NI	231.60	B	1226	96
CU	324.75	A	-1157	-159
NI	231.60	B	1394	110
CU	324.75	A	-1221	-167
FE	234.35	B	148531	11938
AG	328.07	A	1157	153
FE	234.35	B	150997	12136
AG	328.07	A	1126	149
V	292.40	B	74	15
K	766.49	A	-25	-0.2
V	292.40	B	83	17
K	766.49	A	-32	-0.2

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193

SAMPLE	OPERATOR	PWR	TIME	NAME
53	MSHIELDS	3	17:40	CONTRACT

000296

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	4.92	PPM	0.036	0.73	1.0
SB	206.83	B	55d	PPB	6.4	11.63	1.0
BA	493.41	A	46	PPB	1.0	2.17	1.0
BE	313.04	A	-1d	PPB	0.0	0.00	1.0
CD	214.44	B	5	PPB	1.4	28.00	1.0
CA	317.93	A	-0.3d	PPM	0.00	0.00	1.0
CR	205.55	B	-13d	PPB	3.6	27.69	2.0
CO	228.61	B	8	PPB	0.0	0.00	1.0
CU	324.75	A	-163d	PPB	5.6	3.43	2.0
FE	234.35	B	12037	PPB	140.0	1.16	1.0
MG	279.08	A	-0.0d	PPM	0.00	0.00	1.0
MN	257.61	A	106	PPB	3.6	3.39	1.0
NI	231.60	B	103	PPB	9.8	9.51	1.0
K	766.49	A	-0.2d	PPM	0.00	0.00	3.0
AG	328.07	A	151	PPB	2.8	1.85	5.0
NA	589.59	A	-0.4d	PPM	0.00	0.00	2.0
V	292.40	B	16d	PPB	1.4	8.75	1.0
ZN	213.86	B	343	PPB	1.4	0.40	2.0
FE	234.35	A	13.0	PPM	0.00	0.00	1.0
PB	220.35	B	1530	PPB	5.0	0.32	1.0

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194

CU 324.75 A	6196	802
CU 324.75 A	6168	798

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
CU	324.75	A	800	PPB	2.8	0.35	2.0

000297

J6-0122 SERIAL 1-4 CU OK

000298

EL	NM	C	INTENSITY	CONC
FE	234.35	A	5005	44.7
AL	167.08	B	251143	16.31
FE	234.35	A	4980	44.5
AL	167.08	B	252409	16.40
CR	205.55	B	3137	127
BA	493.41	A	44156	587
CR	205.55	B	3031	123
BA	493.41	A	44891	597
SB	206.83	B	246	128
MN	257.61	A	5324	733
SB	206.83	B	235	123
MN	257.61	A	5221	719
ZN	213.86	B	180614	1505
MG	279.08	A	660	2.3
ZN	213.86	B	180402	1503
MG	279.08	A	636	2.3
CD	214.44	B	1439	53
NA	589.59	A	1627	0.1
CD	214.44	B	1410	52
NA	589.59	A	1722	0.2
PB	220.35	B	12596	5868
BE	313.04	A	4242	41
PB	220.35	B	13061	6087
BE	313.04	A	4296	42
CO	228.61	B	7856	434
CA	317.93	A	2540	4.0
CO	228.61	B	7862	435
CA	317.93	A	2417	3.8
NI	231.60	B	8005	659
CU	324.75	A	21241	2519
NI	231.60	B	8057	664
CU	324.75	A	21548	2556
AG	328.07	A	-214	28
FE	234.35	B	388287	39575
AG	328.07	A	-337	14
FE	234.35	B	373110	38026
V	292.40	B	3694	487
K	766.49	A	1206	0.6
V	292.40	B	3843	506
K	766.49	A	1152	0.6

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000299

SAMPLE	OPERATOR	PWR	TIME	NAME
122	MICHAEL	3	17:57	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	16.35	PPM	0.064	0.39	1.0
SB	206.83	B	125	PPB	3.6	2.88	1.0
BA	493.41	A	592	PPB	7.0	1.18	1.0
BE	313.04	A	41	PPB	1.0	2.43	1.0
CD	214.44	B	52	PPB	1.0	1.92	1.0
CA	317.93	A	3.9	PPM	0.14	3.58	1.0
CR	205.55	B	125	PPB	2.8	2.24	2.0
CO	228.61	B	434	PPB	1.0	0.23	1.0
CU	324.75	A	2537	PPB	26.1	1.02	2.0
FE	234.35	B	38800x	PPB	1095.3	2.82	1.0
MG	279.08	A	2.3	PPM	0.00	0.00	1.0
MN	257.61	A	726	PPB	9.8	1.34	1.0
NI	231.60	B	661	PPB	3.6	0.54	1.0
K	766.49	A	0.6	PPM	0.00	0.00	3.0
AG	328.07	A	21d	PPB	9.8	46.66	5.0
NA	589.59	A	0.1	PPM	0.10	100.00	1.0
V	292.40	B	496	PPB	13.4	2.70	1.0
ZN	213.86	B	1504	PPB	1.4	0.09	2.0
FE	234.35	A	44.6	PPM	0.14	0.31	1.0
PB	220.35	B	5977	PPB	154.8	2.58	1.0

J2-0112SPK

000300

EL	NM	C	INTENSITY	CONC
FE	234.35	A	84191	411.3
AL	167.08	B	204593	12.32
FE	234.35	A	83743	409.2
AL	167.08	B	205535	12.38
CR	205.55	B	7818	239
BA	493.41	A	42424	591
CR	205.55	B	7812	238
BA	493.41	A	43279	603
SB	206.83	B	-1038	-532
MN	257.61	A	21091	2401
SB	206.83	B	-999	-512
MN	257.61	A	20730	2360
ZN	213.86	B	252124	1929
MG	279.08	A	-2980	10.5
ZN	213.86	B	251696	1926
MG	279.08	A	2961	10.5
CD	214.44	B	1518	40
NA	589.59	A	-2802	-0.7
CD	214.44	B	1390	37
NA	589.59	A	-2952	-0.7
PB	220.35	B	4899	1929
BE	313.04	A	53	-2
PB	220.35	B	4719	1858
BE	313.04	A	40	-3
CO	228.61	B	929	40
CA	317.93	A	-10208	-9.9
CO	228.61	B	758	32
CA	317.93	A	-10032	-9.8
NI	231.60	B	3948	313
CU	324.75	A	7644	991
NI	231.60	B	4176	331
CU	324.75	A	7611	986
AG	328.07	A	2064	263
FE	234.35	B	739465	59460
AG	328.07	A	2004	256
FE	234.35	B	738077	59348
V	292.40	B	552	76
K	766.49	A	-384	-0.6
V	292.40	B	538	74
K	766.49	A	-490	-0.7

SAMPLE	OPERATOR	PWR	TIME	NAME
55	MSHIELDS	3	17:59	CONTRACT

000301

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	12.35	PPM	0.042	0.34	1.0
SB	206.83	B	-522d	PPB	14.1	2.70	1.0
BA	493.41	A	597	PPB	8.4	1.40	1.0
BE	313.04	A	-3d	PPB	1.0	33.33	1.0
CD	214.44	B	38	PPB	2.2	5.78	1.0
CA	317.93	A	-9.9d	PPM	0.10	1.01	1.0
CR	205.55	B	238d	PPB	1.0	0.42	2.0
CO	228.61	B	36	PPB	5.6	15.55	1.0
CU	324.75	A	988	PPB	3.6	0.36	2.0
FE	234.35	B	OV FLOW	PPB	79.1	0.13	1.0
MG	279.08	A	10.5	PPM	0.00	0.00	1.0
MN	257.61	A	2380	PPB	29.0	1.21	1.0
NI	231.60	B	322	PPB	12.7	3.94	1.0
K	766.49	A	-0.7	PPM	0.10	14.28	3.0
AG	328.07	A	259	PPB	5.0	1.93	5.0
NA	589.59	A	-0.7d	PPM	0.00	0.00	2.0
V	292.40	B	75	PPB	1.4	1.86	1.0
ZN	213.86	B	1927	PPB	2.2	0.11	2.0
FE	234.35	A	410.2	PPM	1.48	0.36	1.0
PB	220.35	B	1893	PPB	50.2	2.65	1.0

J6-0123

EL	NM C	INTENSITY	CONC	
	CR 205.55 B	10804	330	
	CR 205.55 B	11102	339	

200

000302

EL	NM CH	CONC	UNIT	SD	RSD	SEC
CR	205.55 B	334	PPB	6.4	1.91	2.0

J6-0123 CR

201

000303

EL	NM	C	INTENSITY	CONC
FE	234.35	A	10737	52.4
AL	167.08	B	110972	6.68
FE	234.35	A	10888	53.1
AL	167.08	B	111780	6.73
CR	205.55	B	79	1
BA	493.41	A	17159	238
CR	205.55	B	139	3
BA	493.41	A	17125	238
SB	206.83	B	3753	1939
MN	257.61	A	3372	383
SB	206.83	B	3827	1977
MN	257.61	A	3424	389
ZN	213.86	B	426447	3282
MG	279.08	A	538	1.9
ZN	213.86	B	430273	3311
MG	279.08	A	556	1.9
CD	214.44	B	1494	.39
NA	589.59	A	-2405	-0.7
CD	214.44	B	1464	.39
NA	589.59	A	-2021	-0.5
PB	220.35	B	23929	9502
BE	313.04	A	51	-2
PB	220.35	B	23727	9422
BE	313.04	A	101	-2
CO	228.61	B	296	10
CA	317.93	A	-4595	-4.5
CO	228.61	B	255	8
CA	317.93	A	-4869	-4.8
NI	231.60	B	3453	274
CU	324.75	A	23372	3044
NI	231.60	B	3588	285
CU	324.75	A	23386	3046
AG	328.07	A	621	88
FE	234.35	B	627529	50458
AG	328.07	A	743	102
FE	234.35	B	615764	49513
V	292.40	B	774	104
K	766.49	A	-157	-0.3
V	292.40	B	751	101
K	766.49	A	-164	-0.3

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202

SAMPLE	OPERATOR	PWR	TIME	NAME
56	MSHIELDS	3	18:10	CONTRACT

000304

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	6.70	PPM	0.036	0.53	1.0
SB	206.83	B	1958	PPB	26.8	1.36	1.0
BA	493.41	A	238	PPB	0.0	0.00	1.0
BE	313.04	A	-2d	PPB	0.0	0.00	1.0
CD	214.44	B	39	PPB	0.0	0.00	1.0
CA	317.93	A	4.7d	PPM	0.22	4.68	1.0
CR	205.55	B	2	PPB	1.4	70.00	2.0
CO	228.61	B	9	PPB	1.4	15.55	1.0
CU	324.75	A	3045	PPB	1.4	0.04	2.0
FE	234.35	B	49985x	PPB	668.2	1.33	1.0
MG	279.08	A	1.9	PPM	0.00	0.00	1.0
MN	257.61	A	386	PPB	4.2	1.08	1.0
NI	231.60	B	279	PPB	7.8	2.79	1.0
K	766.49	A	-0.3d	PPM	0.00	0.00	3.0
AG	328.07	A	95	PPB	9.8	10.31	5.0
NA	589.59	A	-0.6d	PPM	0.14	23.33	2.0
V	292.40	B	102	PPB	2.2	2.15	1.0
ZN	213.86	B	3296	PPB	20.5	0.62	2.0
FE	234.35	A	52.7	PPM	0.50	0.94	1.0
PB	220.35	B	9462	PPB	56.5	0.59	1.0

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203

000305

EL	NM	C	INTENSITY	CONC
FE	234.35	A	126158	616.4
AL	167.08	B	222142	13.38
FE	234.35	A	121774	595.0
AL	167.08	B	218209	13.14
CR	205.55	B	619	18
BA	493.41	A	28919	402
CR	205.55	B	865	25
BA	493.41	A	29175	406
SB	206.83	B	-38	-16
MN	257.61	A	23164	2637
SB	206.83	B	-116	-57
MN	257.61	A	22688	2583
MG	279.08	A	1033	3.6
ZN	213.86	B	1991465	15421
MG	279.08	A	1075	3.8
ZN	213.86	B	1991823	15424
CD	214.44	B	4722	129
NA	589.59	A	-2820	-0.7
CD	214.44	B	4782	131
NA	589.59	A	-3175	-0.7
PB	220.35	B	21144	8394
BE	313.04	A	69	-2
PB	220.35	B	20925	8307
BE	313.04	A	51	-2
CO	228.61	B	1616	72
CA	317.93	A	-8706	-8.5
CO	228.61	B	1859	84
CA	317.93	A	-9011	-8.8
NI	231.60	B	7835	624
CU	324.75	A	49256	6424
NI	231.60	B	7626	607
CU	324.75	A	49608	6470
AG	328.07	A	2344	297
FE	234.35	B	611294	49154
AG	328.07	A	2336	296
FE	234.35	B	609501	49008
V	292.40	B	1479	193
K	766.49	A	-269	-0.4
V	292.40	B	1409	184
K	766.49	A	-189	-0.3

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204

SAMPLE	OPERATOR	PWR	TIME	NAME
57	MSHIELDS	3	18:17	CONTRACT

000306

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	13.26	PPM	0.169	1.27	1.0
SB	206.83	B	-37d	PPB	29.0	78.37	1.0
BA	493.41	A	404	PPB	2.8	0.69	1.0
BE	313.04	A	-2d	PPB	0.0	0.00	1.0
CD	214.44	B	130	PPB	1.4	1.07	1.0
CA	317.93	A	8.7d	PPM	0.22	2.52	1.0
CR	205.55	B	21d	PPB	5.0	23.80	2.0
CO	228.61	B	78	PPB	8.4	10.76	1.0
CU	324.75	A	6447	PPB	32.5	0.50	2.0
FE	234.35	B	OV FLOW	PPB	103.2	0.21	1.0
MG	279.08	A	3.7	PPM	0.14	3.78	1.0
MN	257.61	A	2610	PPB	38.1	1.45	1.0
NI	231.60	B	615	PPB	12.0	1.95	1.0
K	766.49	A	-0.4d	PPM	0.10	25.00	3.0
AG	328.07	A	296	PPB	1.0	0.33	5.0
NA	589.59	A	-0.7d	PPM	0.00	0.00	2.0
V	292.40	B	188	PPB	6.4	3.40	1.0
ZN	213.86	B	OV FLOW	PPB	2.2	0.01	2.0
FE	234.35	A	605.7	PPM	15.13	2.49	1.0
PB	220.35	B	8350	PPB	61.5	0.73	1.0

J6-0125

EL	NM C	INTENSITY	CONC
ZN	213.86 B	266129	2038
ZN	213.86 B	264715	2027

205

000307

EL	NM CH	CONC	UNIT	SD	RSD	SEC
ZN	213.86 B	2032	PPB	7.8	0.38	2.0

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206

000308

EL.	NM	C	INTENSITY	CONC	
	FE	234.35	A	19735	96.4
	AL	167.08	B	275016	16.56
	FE	234.35	A	19808	96.7
	AL	167.08	B	278022	16.74
	CR	205.55	B	-77479	-2375
	BA	493.41	A	32175	448
	CR	205.55	B	-80010	-2453
	BA	493.41	A	31914	444
	MN	257.61	A	7771	884
	SB	206.83	B	59312	30602
	MN	257.61	A	7727	879
	SB	206.83	B	59862	30886
	MG	279.08	A	3213	11.4
	ZN	213.86	B	1807384	13993
	MG	279.08	A	3193	11.3
	ZN	213.86	B	1806966	13990
	CD	214.44	B	16547	457
	NA	589.59	A	-5521	-0.9
	CD	214.44	B	16879	466
	NA	589.59	A	-5152	-0.9
	PB	220.35	B	182698	72681
	BE	313.04	A	84	-2
	PB	220.35	B	182102	72444
	BE	313.04	A	78	-2
	CO	228.61	B	523	21
	CA	317.93	A	-80128	-77.0
	CO	228.61	B	370	14
	CA	317.93	A	-83870	-80.6
	NI	231.60	B	20289	1618
	CU	324.75	A	882441	115212
	NI	231.60	B	20363	1623
	CU	324.75	A	870524	113656
	AG	328.07	A	-1307	-147
	FE	234.35	B	925693	74437
	AG	328.07	A	-1341	-151
	FE	234.35	B	925550	74426
	V	292.40	B	886	118
	K	766.49	A	-79	-0.3
	V	292.40	B	964	128
	K	766.49	A	-107	-0.3

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207

SAMPLE	OPERATOR	PWR	TIME	NAME
58	MSHIELDS	3	18:26	CONTRACT

000309

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	16.65	PPM	0.127	0.76	1.0
SB	206.83	B	30744x	PPB	200.8	0.65	1.0
BA	493.41	A	446	PPB	2.8	0.62	1.0
BE	313.04	A	-2d	PPB	0.0	0.00	1.0
CD	214.44	B	461	PPB	6.4	1.38	1.0
CA	317.93	A	-78.8d	PPM	2.54	3.22	1.0
CR	205.55	B	-2414d	PPB	55.1	2.28	2.0
CO	228.61	B	17	PPB	5.0	29.41	1.0
CU	324.75	A	114434x	PPB	1100.2	0.96	2.0
FE	234.35	B	OV FLOW	PPB	7.8	0.01	1.0
MG	279.08	A	11.3	PPM	0.10	0.88	1.0
MN	257.61	A	881	PPB	3.6	0.40	1.0
NI	231.60	B	1620	PPB	3.6	0.22	1.0
K	766.49	A	-0.3d	PPM	0.00	0.00	3.0
AG	328.07	A	-149d	PPB	2.8	1.87	5.0
NA	589.59	A	-0.9d	PPM	0.00	0.00	2.0
V	292.40	B	123	PPB	7.0	5.69	1.0
ZN	213.86	B	OV FLOW	PPB	2.2	0.01	2.0
FE	234.35	A	96.5	PPM	0.22	0.22	1.0
PB	220.35	B	72562x	PPB	167.5	0.23	1.0

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208

000310

EL	NM	C	INTENSITY	CONC
FE	234.35	A	2319	11.3
AL	167.08	B	31853	1.91
FE	234.35	A	2379	11.6
AL	167.08	B	32134	1.93
CR	205.55	B	-9509	-292
BA	493.41	A	3306	45
CR	205.55	B	-9318	-286
BA	493.41	A	3398	46
SB	206.83	B	6658	3438
MN	257.61	A	904	102
SB	206.83	B	6563	3389
MN	257.61	A	864	97
ZN	213.86	B	895145	6917
MG	279.08	A	325	1.1
ZN	213.86	B	886074	6847
MG	279.08	A	346	1.2
CD	214.44	B	1894	50
NA	589.59	A	-878	-0.4
CD	214.44	B	1831	49
NA	589.59	A	-866	-0.4
PB	220.35	B	20166	8005
BE	313.04	A	107	-2
PB	220.35	B	19740	7835
BE	313.04	A	133	-2
CO	228.61	B	72	0
CA	317.93	A	-4665	-4.6
CO	228.61	B	120	2
CA	317.93	A	-4758	-4.7
NI	231.60	B	2274	180
CU	324.75	A	91692	11965
NI	231.60	B	2269	180
CU	324.75	A	92405	12058
FE	234.35	B	119707	9619
AG	328.07	A	400	61
FE	234.35	B	119686	9618
AG	328.07	A	347	54
V	292.40	B	59	14
K	766.49	A	30	-0.2
V	292.40	B	8	7
K	766.49	A	56	0.0

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209

SAMPLE	OPERATOR	PWR	TIME	NAME
59	MSHIELDS	3	18:33	CONTRACT

000311

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	1.92	PPM	0.014	0.72	1.0
SB	206.83	B	3413	PPB	34.6	1.01	1.0
BA	493.41	A	45	PPB	1.0	2.22	1.0
BE	313.04	A	-2d	PPB	0.0	0.00	1.0
CD	214.44	B	49	PPB	1.0	2.04	1.0
CA	317.93	A	-4.7d	PPM	0.10	2.12	1.0
CR	205.55	B	-289d	PPB	4.2	1.45	2.0
CO	228.61	B	1	PPB	1.4	140.00	1.0
CU	324.75	A	12011	PPB	65.7	0.54	2.0
FE	234.35	B	9618	PPB	1.0	0.01	1.0
MG	279.08	A	1.1	PPM	0.10	9.09	1.0
MN	257.61	A	99	PPB	3.6	3.63	1.0
NI	231.60	B	180	PPB	0.0	0.00	1.0
K	766.49	A	-0.1d	PPM	0.14	140.00	3.0
AG	328.07	A	57	PPB	5.0	8.77	5.0
NA	589.59	A	-0.4d	PPM	0.00	0.00	2.0
V	292.40	B	10d	PPB	5.0	50.00	1.0
ZN	213.86	B	6882	PPB	49.4	0.71	2.0
FE	234.35	A	11.4	PPM	0.22	1.92	1.0
PB	220.35	B	7920	PPB	120.2	1.51	1.0

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210

000312

EL	NM	C	INTENSITY	CONC
FE	234.35	A	2235	10.9
AL	167.08	B	42036	2.53
FE	234.35	A	2178	10.6
AL	167.08	B	42264	2.54
CR	205.55	B	361	10
BA	493.41	A	1855	25
CR	205.55	B	359	10
BA	493.41	A	1752	23
SB	206.83	B	25	16
MN	257.61	A	759	85
SB	206.83	B	62	35
MN	257.61	A	817	92
ZN	213.86	B	27660	188
MG	279.08	A	6	0.0
ZN	213.86	B	27967	191
MG	279.08	A	43	0.1
CD	214.44	B	42	0
NA	589.59	A	-826	-0.4
CD	214.44	B	-1	-2
NA	589.59	A	-654	-0.4
PB	220.35	B	451	159
BE	313.04	A	335	0
PB	220.35	B	431	152
BE	313.04	A	304	0
CO	228.61	B	96	1
CA	317.93	A	-337	-0.4
CO	228.61	B	198	6
CA	317.93	A	-334	-0.4
NI	231.60	B	464	35
CU	324.75	A	2884	369
NI	231.60	B	628	48
CU	324.75	A	2958	379
FE	234.35	B	120829	9709
AG	328.07	A	-305	-25
FE	234.35	B	122825	9870
AG	328.07	A	-297	-24
V	292.40	B	183	29
K	766.49	A	-90	-0.3
V	292.40	B	137	23
K	766.49	A	58	0.0

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211

000313

SAMPLE	OPERATOR	PWR	TIME	NAME
60	MSHIELDS	3	18:40	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	2.53	PPM	0.010	0.39	1.0
SB	206.83	B	25d	PPB	13.4	53.60	1.0
BA	493.41	A	24	PPB	1.4	5.83	1.0
BE	313.04	A	0	PPB	0.0	0.00	1.0
CD	214.44	B	-1	PPB	1.4	140.00	1.0
CA	317.93	A	-0.4d	PPM	0.00	0.00	1.0
CR	205.55	B	10	PPB	0.0	0.00	2.0
CO	228.61	B	3	PPB	3.6	120.00	1.0
CU	324.75	A	374	PPB	7.0	1.87	2.0
FE	234.35	B	9789	PPB	113.8	1.16	1.0
MG	279.08	A	0.0d	PPM	0.10	0.00	1.0
MN	257.61	A	88	PPB	5.0	5.68	1.0
NI	231.60	B	41	PPB	9.2	22.43	1.0
K	766.49	A	-0.2	PPM	0.22	110.00	3.0
AG	328.07	A	-25d	PPB	1.0	4.00	5.0
NA	589.59	A	-0.4d	PPM	0.00	0.00	2.0
V	292.40	B	26d	PPB	4.2	16.15	1.0
ZN	213.86	B	189	PPB	2.2	1.16	2.0
FE	234.35	A	10.7	PPM	0.22	2.05	1.0
PB	220.35	B	155	PPB	5.0	3.22	1.0

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212

000314

EL	NM	C	INTENSITY	CONC	
	FE	234.35	A	26	0.1
	AL	167.08	B	13	0.00
	FE	234.35	A	3	0.0
	AL	167.08	B	-2	0.00
	CR	205.55	B	28	0
	BA	493.41	A	-17	-1
	CR	205.55	B	15	0
	BA	493.41	A	-36	-2
	SB	206.83	B	-15	-5
	MN	257.61	A	-12	-3
	SB	206.83	B	9	-8
	MN	257.61	A	17	0
	ZN	213.86	B	1437	-15
	MG	279.08	A	6	0.0
	ZN	213.86	B	1479	-15
	MG	279.08	A	-8	-0.1
	CD	214.44	B	-54	-3
	NA	589.59	A	-683	-0.4
	CD	214.44	B	47	0
	NA	589.59	A	-622	-0.4
	PB	220.35	B	30	-8
	BE	313.04	A	332	0
	PB	220.35	B	170	48
	BE	313.04	A	338	0
	CO	228.61	B	-25	-5
	CA	317.93	A	-9	-0.1
	CO	228.61	B	-93	-8
	CA	317.93	A	-4	-0.1
	NI	231.60	B	100	6
	CU	324.75	A	80	3
	NI	231.60	B	107	7
	CU	324.75	A	79	3
	FE	234.35	B	89	0
	AG	328.07	A	-174	-9
	FE	234.35	B	35	-4
	AG	328.07	A	-250	-18
	V	292.40	B	-15	4
	K	766.49	A	-3	-0.2
	V	292.40	B	-46	0
	K	766.49	A	4	-0.2

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213

SAMPLE	OPERATOR	PWR	TIME	NAME
61	MSHIELDS	3	18:46	CONTRACT

000315

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	0.00d	PPM	0.000	0.00	1.0
SB	206.83	B	1d	PPB	9.2	920.00	1.0
BA	493.41	A	-2	PPB	1.0	50.00	1.0
BE	313.04	A	0	PPB	0.0	0.00	1.0
CD	214.44	B	-2d	PPB	2.2	110.00	1.0
CA	317.93	A	-0.1d	PPM	0.00	0.00	1.0
CR	205.55	B	0d	PPB	0.0	0.00	2.0
CO	228.61	B	-7	PPB	2.2	31.42	1.0
CU	324.75	A	3d	PPB	0.0	0.00	2.0
FE	234.35	B	-2	PPB	2.8	140.00	1.0
MG	279.08	A	-0.1d	PPM	0.10	100.00	1.0
MN	257.61	A	-2d	PPB	2.2	110.00	1.0
NI	231.60	B	6d	PPB	1.0	16.66	1.0
K	766.49	A	-0.2d	PPM	0.00	0.00	3.0
AG	328.07	A	-14d	PPB	6.4	45.71	5.0
NA	589.59	A	-0.4d	PPM	0.00	0.00	2.0
V	292.40	B	2d	PPB	2.8	140.00	1.0
ZN	213.86	B	-15	PPB	0.0	0.00	2.0
FE	234.35	A	0.0d	PPM	0.10	0.00	1.0
PB	220.35	B	20d	PPB	39.5	197.50	1.0

CAL-BLK

214
000316

EL	NM	C	INTENSITY	CONC
FE	234.35	A	3261	16.0
AL	167.08	B	243964	15.70
FE	234.35	A	3188	15.6
AL	167.08	B	243380	15.66
CR	205.55	B	154346	5147
BA	493.41	A	330807	5018
CR	205.55	B	153805	5129
BA	493.41	A	327114	4962
SB	206.83	B	11365	6541
MN	257.61	A	46087	5274
SB	206.83	B	11244	6471
MN	257.61	A	45177	5169
ZN	213.86	B	579957	5092
MG	279.08	A	66880	252.5
ZN	213.86	B	580678	5099
MG	279.08	A	67228	253.8
CD	214.44	B	176117	5185
NA	589.59	A	499264	58.2
CD	214.44	B	174296	5132
NA	589.59	A	512275	59.5
PB	220.35	B	10320	4257
BE	313.04	A	37834	418
PB	220.35	B	10550	4353
BE	313.04	A	38165	422
CO	228.61	B	98661	5021
CA	317.93	A	269865	249.7
CO	228.61	B	100269	5103
CA	317.93	A	273745	253.3
NI	231.60	B	59644	5104
CU	324.75	A	35337	4991
NI	231.60	B	59240	5069
CU	324.75	A	35038	4949
FE	234.35	B	174188	15362
AG	328.07	A	731	123
FE	234.35	B	171146	15093
AG	328.07	A	796	130
V	292.40	B	36931	4991
K	766.49	A	50914	60.9
V	292.40	B	36154	4885
K	766.49	A	51219	61.2

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215

SAMPLE	OPERATOR	PWR	TIME	NAME
62	MSHIELDS	3	18:52	CONTRACT

000317

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	15.68	PPM	0.028	0.17	1.0
SB	206.83	B	6506	PPB	49.4	0.75	1.0
BA	493.41	A	4990	PPB	39.5	0.79	1.0
BE	313.04	A	420	PPB	2.8	0.66	1.0
CD	214.44	B	5158	PPB	37.4	0.72	1.0
CA	317.93	A	251.5	PPM	2.54	1.00	1.0
CR	205.55	B	5138	PPB	12.7	0.24	2.0
CO	228.61	B	5062	PPB	57.9	1.14	1.0
CU	324.75	A	4970	PPB	29.6	0.59	2.0
FE	234.35	B	15227	PPB	190.2	1.24	1.0
MG	279.08	A	253.1	PPM	0.92	0.36	1.0
MN	257.61	A	5221	PPB	74.2	1.42	1.0
NI	231.60	B	5086	PPB	24.7	0.48	1.0
K	766.49	A	61.0	PPM	0.22	0.36	3.0
AG	328.07	A	126	PPB	5.0	3.96	5.0
NA	589.59	A	58.8	PPM	0.92	1.56	2.0
V	292.40	B	4938	PPB	74.9	1.51	1.0
ZN	213.86	B	5095	PPB	5.0	0.09	2.0
FE	234.35	A	15.8	PPM	0.28	1.77	1.0
PB	220.35	B	4305	PPB	67.8	1.57	1.0

CONT-CAL

EL	NM C	INTENSITY	CONC
PB	220.35 B	12318	5091
PB	220.35 B	12268	5070

216

000318

EL	NM-CH	CONC	UNIT	SD	RSD	SEC
PB	220.35 B	5080	PPB	14.8	0.29	1.0

CONT-CAL PB OK

217

000319

EL	NM	C	INTENSITY	CONC
AG	328.07	A	52968	6232
AG	328.07	A	53131	6252

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AG	328.07	A	6242	PPB	14.1	0.22	5.0

CONT-CAL AG OK

218

000320

EL	NM	C	INTENSITY	CONC
FE	234.35	A	2	-0.1
AL	167.08	B	127	0.00
FE	234.35	A	18	0.0
AL	167.08	B	113	0.00
CR	205.55	B	403	12
BA	493.41	A	-109	-3
CR	205.55	B	349	11
BA	493.41	A	-195	-4
SB	206.83	B	99	30
MN	257.61	A	315	34
SB	206.83	B	-46	-54
MN	257.61	A	311	34
ZN	213.86	B	12840	90
MG	279.08	A	24	0.0
ZN	213.86	B	13489	95
MG	279.08	A	48	0.0
CD	214.44	B	406	13
NA	589.59	A	1321	0.0
CD	214.44	B	412	13
NA	589.59	A	1101	0.0
PB	220.35	B	-81	-87
BE	313.04	A	1006	7
PB	220.35	B	151	10
BE	313.04	A	928	6
CO	228.61	B	2152	108
CA	317.93	A	4	0.0
CO	228.61	B	2197	110
CA	317.93	A	2	0.0
NI	231.60	B	1116	88
CU	324.75	A	334	34
NI	231.60	B	1055	83
CU	324.75	A	321	32
FE	234.35	B	152	-6
AG	328.07	A	-327	-1
FE	234.35	B	44	-16
AG	328.07	A	-379	-8
V	292.40	B	744	101
K	766.49	A	-27	-0.2
V	292.40	B	725	98
K	766.49	A	53	0.0

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019

000321

SAMPLE	OPERATOR	PWR	TIME	NAME
63	MSHIELDS	3	19:01	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	0.00d	PPM	0.000	0.00	1.0
SB	206.83	B	-12d	PPB	59.3	494.16	1.0
BA	493.41	A	-4	PPB	1.0	25.00	1.0
BE	313.04	A	6	PPB	1.0	16.66	1.0
CD	214.44	B	13	PPB	0.0	0.00	1.0
CA	317.93	A	0.0d	PPM	0.00	0.00	1.0
CR	205.55	B	11	PPB	1.0	9.09	2.0
CO	228.61	B	109	PPB	1.4	1.28	1.0
CU	324.75	A	33	PPB	1.4	4.24	2.0
FE	234.35	B	-11	PPB	7.0	63.63	1.0
MG	279.08	A	0.0d	PPM	0.00	0.00	1.0
MN	257.61	A	34	PPB	0.0	0.00	1.0
NI	231.60	B	85	PPB	3.6	4.23	1.0
K	766.49	A	-0.1d	PPM	0.14	140.00	3.0
AG	328.07	A	-5d	PPB	5.0	100.00	5.0
NA	589.59	A	0.0	PPM	0.00	0.00	2.0
V	292.40	B	99	PPB	2.2	2.22	1.0
ZN	213.86	B	92	PPB	3.6	3.91	2.0
FE	234.35	A	-0.1d	PPM	0.10	100.00	1.0
PB	220.35	B	-39d	PPB	68.5	175.64	1.0

LINEAR RANGE

220

000322

EL	NM	C	INTENSITY	CONC
FE	234.35	A	39661	196.0
AL	167.08	B	885156	56.98
FE	234.35	A	39230	193.9
AL	167.08	B	884037	56.91
CR	205.55	B	30861	1028
BA	493.41	A	32830	497
CR	205.55	B	31145	1038
BA	493.41	A	32756	496
SB	206.83	B	-1188	-714
MN	257.61	A	4454	508
SB	206.83	B	-1122	-676
MN	257.61	A	4441	506
ZN	213.86	B	115648	997
MG	279.08	A	132262	499.5
ZN	213.86	B	116299	1003
MG	279.08	A	131925	498.3
CD	214.44	B	30710	905
NA	589.59	A	5169	0.3
CD	214.44	B	30737	906
NA	589.59	A	5195	0.3
PB	220.35	B	11930	4929
BE	313.04	A	42835	477
PB	220.35	B	12247	5062
BE	313.04	A	42824	477
CO	228.61	B	9921	504
CA	317.93	A	525151	486.0
CO	228.61	B	9974	506
CA	317.93	A	525281	486.1
NI	231.60	B	11857	1008
CU	324.75	A	3823	528
NI	231.60	B	11806	1004
CU	324.75	A	3820	528
AG	328.07	A	9465	1144
FE	234.35	B	864211	76296
AG	328.07	A	9428	1140
FE	234.35	B	863573	76239
V	292.40	B	3819	516
K	766.49	A	761	0.9
V	292.40	B	3525	476
K	766.49	A	787	0.9

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221

SAMPLE	OPERATOR	PWR	TIME	NAME
64	MSHIELDS	3	19:07	CONTRACT

000323

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	OV FLOW	PPM	0.050	0.08	1.0
SB	206.83	B	-695d	PPB	26.8	3.85	1.0
BA	493.41	A	496	PPB	1.0	0.20	1.0
BE	313.04	A	477	PPB	0.0	0.00	1.0
CD	214.44	B	905	PPB	1.0	0.11	1.0
CA	317.93	A	486.0	PPM	0.10	0.02	1.0
CR	205.55	B	1033	PPB	7.0	0.67	2.0
CO	228.61	B	505	PPB	1.4	0.27	1.0
CU	324.75	A	528	PPB	0.0	0.00	2.0
FE	234.35	B	OV FLOW	PPB	40.3	0.05	1.0
MG	279.08	A	498.9	PPM	0.84	0.16	1.0
MN	257.61	A	507	PPB	1.4	0.27	1.0
NI	231.60	B	1006	PPB	2.8	0.27	1.0
K	766.49	A	0.9d	PPM	0.00	0.00	3.0
AG	328.07	A	1142	PPB	[illegible].8	0.24	5.0
NA	589.59	A	0.3	PPM	0.00	0.00	2.0
V	292.40	B	496	PPB	[illegible]8.2	5.68	1.0
ZN	213.86	B	1000	PPB	4.2	0.42	2.0
FE	234.35	A	194.9	PPM	.48	0.75	1.0
PB	220.35	B	4995	PPB	4.0	1.88	1.0

INTERFERNCE CHECK OK

EL	NM	C	INTENSITY	CONC
AL	167.08	B	84786	5.45
AL	167.08	B	86383	5.56

222

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	5.50	PPM	0.078	1.41	1.0

000324

INTERFERNCE CHECK SAMPLE 1-100 AL OK

223

000325

FE	234.35	A	9	-0.1
AL	167.08	B	163	0.01
FE	234.35	A	-18	-0.2
AL	167.08	B	135	0.00
CR	205.55	B	51	1
BA	493.41	A	63	0
CR	205.55	B	64	1
BA	493.41	A	30	-1
SB	206.83	B	-34	-47
MN	257.61	A	-9	-3
SB	206.83	B	102	32
MN	257.61	A	19	0
ZN	213.86	B	4201	14
MG	279.08	A	12	-0.1
ZN	213.86	B	4140	13
MG	279.08	A	-34	-0.3
CD	214.44	B	-112	-2
NA	589.59	A	587	-0.2
CD	214.44	B	-35	0
NA	589.59	A	623	-0.2
PB	220.35	B	58	-29
BE	313.04	A	337	0
PB	220.35	B	47	-33
BE	313.04	A	337	0
CO	228.61	B	20	0
CA	317.93	A	8	0.0
CO	228.61	B	54	1
CA	317.93	A	27	0.0
NI	231.60	B	-6	-8
CU	324.75	A	60	-5
NI	231.60	B	74	-1
CU	324.75	A	41	-8
FE	234.35	B	85	-12
AG	328.07	A	106	49
FE	234.35	B	30	-16
AG	328.07	A	267	68
V	292.40	B	-53	-7
K	766.49	A	-13	-0.2
V	292.40	B	-116	-16
K	766.49	A	-34	-0.2

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224
000326

SAMPLE	OPERATOR	PWR	TIME	NAME
65	MSHIELDS	3	19:16	CONTRACT

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	0.00d	PPM	0.010	0.00	1.0
SB	206.83	B	-8d	PPB	55.8	697.50	1.0
BA	493.41	A	-1	PPB	1.0	100.00	1.0
BE	313.04	A	0	PPB	0.0	0.00	1.0
CD	214.44	B	-1	PPB	1.4	140.00	1.0
CA	317.93	A	0.0d	PPM	0.00	0.00	1.0
CR	205.55	B	1	PPB	0.0	0.00	2.0
CO	228.61	B	0d	PPB	1.0	0.00	1.0
CU	324.75	A	-7d	PPB	2.2	31.42	2.0
FE	234.35	B	-14	PPB	2.8	20.00	1.0
MG	279.08	A	-0.2d	PPM	0.14	70.00	1.0
MN	257.61	A	-2d	PPB	2.2	110.00	1.0
NI	231.60	B	-5	PPB	5.0	100.00	1.0
K	766.49	A	-0.2d	PPM	0.00	0.00	3.0
AG	328.07	A	58	PPB	13.4	23.10	5.0
NA	589.59	A	-0.2	PPM	0.00	0.00	2.0
V	292.40	B	-12d	PPB	.4	53.33	1.0
ZN	213.86	B	13	PPB	.0	7.69	2.0
FE	234.35	A	-0.2d	PPM	10	50.00	1.0
PB	220.35	B	-31	PPB	.8	9.03	1.0

CAL-BLK

EL	NM C	INTENSITY	CONC	
	AG 328.07 A		-374	-7
	AG 328.07 A		-284	4

225

EL	NM CH	CONC	UNIT	SD	RSD	SEC
AG	328.07 A	-2d	PPB	7.8	390.00	5.0

000327

CAL-BLK

226

000328

EL	NM	C	INTENSITY	CONC
FE	234.35	A	3196	15.7
AL	167.08	B	239824	15.43
FE	234.35	A	3192	15.7
AL	167.08	B	243194	15.65
CR	205.55	B	151454	5051
BA	493.41	A	325307	4934
CR	205.55	B	152206	5076
BA	493.41	A	326909	4959
SB	206.83	B	10990	6324
MN	257.61	A	44403	5081
SB	206.83	B	11017	6340
MN	257.61	A	43890	5022
ZN	213.86	B	565534	4965
MG	279.08	A	64625	244.0
ZN	213.86	B	567740	4985
MG	279.08	A	65606	247.7
CD	214.44	B	171693	5055
NA	589.59	A	506021	58.9
CD	214.44	B	172301	5073
NA	589.59	A	507394	59.0
PB	220.35	B	10455	4313
BE	313.04	A	37906	419
PB	220.35	B	10390	4286
BE	313.04	A	37608	416
CO	228.61	B	98683	5023
CA	317.93	A	269133	249.1
CO	228.61	B	98158	4996
CA	317.93	A	265606	245.8
NI	231.60	B	59913	5127
CU	324.75	A	35485	5012
NI	231.60	B	59994	5134
CU	324.75	A	34818	4918
FE	234.35	B	170827	15065
AG	328.07	A	-454	-16
FE	234.35	B	172209	15188
AG	328.07	A	-453	-16
V	292.40	B	36426	4922
K	766.49	A	50859	60.8
V	292.40	B	35932	4856
K	766.49	A	51221	61.2

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227

SAMPLE	OPERATOR	PWR	TIME	NAME
66	MSHIELDS	3	19:30	CONTRACT

000329

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AL	167.08	B	15.54	PPM	0.155	0.99	1.0
SB	206.83	B	6332	PPB	11.3	0.17	1.0
BA	493.41	A	4946	PPB	17.6	0.35	1.0
BE	313.04	A	417	PPB	2.2	0.52	1.0
CD	214.44	B	5064	PPB	12.7	0.25	1.0
CA	317.93	A	247.4	PPM	2.33	0.94	1.0
CR	205.55	B	5063	PPB	17.6	0.34	2.0
CO	228.61	B	5009	PPB	19.1	0.38	1.0
CU	324.75	A	4965	PPB	66.4	1.33	2.0
FE	234.35	B	15126	PPB	86.9	0.57	1.0
MG	279.08	A	245.8	PPM	2.61	1.06	1.0
MN	257.61	A	5051	PPB	41.7	0.82	1.0
NI	231.60	B	5130	PPB	5.0	0.09	1.0
K	766.49	A	61.0	PPM	0.28	0.45	3.0
AG	328.07	A	-16d	PPB	0.0	0.00	5.0
NA	589.59	A	58.9	PPM	0.10	0.16	2.0
V	292.40	B	4889	PPB	46.6	0.95	1.0
ZN	213.86	B	4975	PPB	14.1	0.28	2.0
FE	234.35	A	15.7	PPM	0.00	0.00	1.0
PB	220.35	B	4299	PPB	19.1	0.44	1.0

CONT-CAL

EL	NM	C	INTENSITY	CONC
AG	328.07	A	51656	6079
AG	328.07	A	52100	6131

228

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
AG	328.07	A	6105	PPB	36.7	0.60	5.0

000330

CONT-CAL OK

EL	NM	C	INTENSITY	CONC
PB	220.35	B	12253	5064
PB	220.35	B	12589	5204

229

EL	NM	CH	CONC	UNIT	SD	RSD	SEC
PB	220.35	B	5134	PPB	98.9	1.92	1.0

000331

CONT-CAL OK

Furnace Raw Data

A

000333

Varian SpectrAA System Report

Nanco Lab's, Inc., Unity st. & rt. 376, Hopewell Jct., N.Y. 12533

METALS REPORT

OPERATOR V SILVESTRI
DATE 10/10/86
BATCH

PROGRAM 26 As AUTO

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	PEAK HEIGHT
LAMP POSITION	3
LAMP CURRENT (mA)	10
SLIT WIDTH (nm)	0.5
SLIT HEIGHT	NORMAL
WAVELENGTH (nm)	193.7
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
DELAY TIME (sec)	0
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	2
BACKGROUND CORRECTION	ON

FURNACE PARAMETERS

STEP NO.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
1	75	5.0	3.0	NORMAL	NO
2	90	40.0	3.0	NORMAL	NO
3	125	50.0	3.0	NORMAL	NO
4	800	5.0	3.0	NORMAL	NO
5	800	10.0	3.0	NORMAL	NO
6	800	2.0	0.0	NORMAL	NO
7	2500	0.9	0.0	NORMAL	YES
8	2500	2.0	0.0	NORMAL	YES
9	2500	2.0	3.0	NORMAL	NO

SAMPLER PARAMETERS

VOLUMES (uL)

SOLUTION	BLANK	MODIFIER

STANDARD 4	20	0	10	
SAMPLE	20	0	10	

000334

RECALIBRATION RATE 0
RESLOPE RATE 0

MULTIPLE INJECT NO HOT INJECT NO PRE INJECT NO

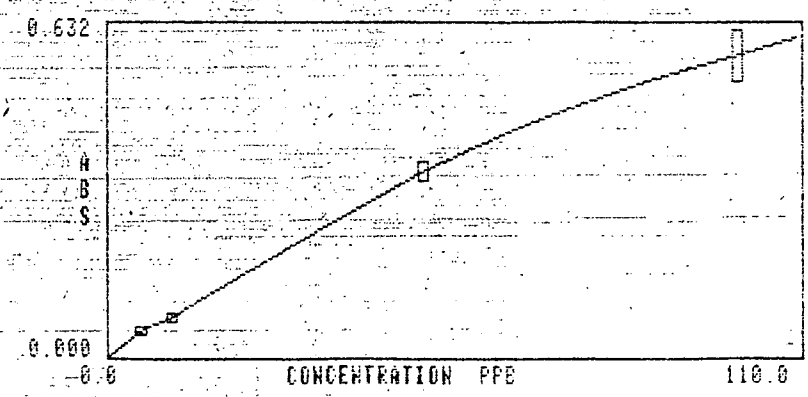
CONDITIONS FOR As :

Maximum Ash Temperature : 800 C
Recommended Atomize Temperature : 2500 C

Response with Argon :
10 microlitres of 40 micrograms/litre gives about 0.2 ABS.

Chemical modifier : 20 microlitres of 50 milligram/litre Ni.
Absorbance without modifier is 30% of absorbance with modifier.
Maximum ash temperature without modifier is 300 C.
MAIN STD : 100PPB
MSPK: 20PPB(WATER), 40PPB(SEDIMENT)
ASPK: 20PPB

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.046	0.048	0.044
STANDARD 1	5.0	1.9	0.050	0.051	0.050
STANDARD 2	10.0	1.8	0.077	0.078	0.076
STANDARD 3	50.0	3.6	0.354	0.363	0.345
STANDARD 4	100.0	7.7	0.574	0.543	0.606



BLANK	-1.7	93.9	-0.017	-0.006	-0.029
BLANK	0.0		-0.009	-0.009	-0.009
BLANK	0.0		-0.002	-0.006	-0.009
BLANK	0.0		0.003	0.001	0.006
BLANK	0.0		0.003	0.008	-0.002
BLANK	0.0		0.022	0.031	0.012
C CAL	51.4	8.6	0.362	0.340	0.384
BLANK	0.0		0.003	-0.010	0.016
LCS	32.5	6.3	0.238	0.228	0.249

80 } 6

SAMPLE	CONC PPB	%RSD	MEAN ABS.	READINGS	
0115	OVER	8.5	0.949	1.006	0.892
0115 DUP	OVER	9.3	0.919	0.973	0.866
0116	21.0	5.7	0.158	0.152	0.164
0117	93.3B	9.0	0.552B	0.517B	0.587B
0117 MSPK	OVER	15.6	0.714	0.793B	0.635B
0118	2.0	17.2	0.021	0.023	0.019
0119	OVER	1.0	0.962	0.969	0.955
0120	7.5	32.3	0.065	0.080	0.050
0121	2.3	26.3	0.023	0.027	0.019
BLK	-1.8	80.4	-0.018	-0.008	-0.028
BLANK	-0.0		-0.027	-0.036	-0.018
C CAL	~~44.7~~ 45.0	6.1	0.320	0.334	0.306
BLANK	0.0		0.008	-0.002	0.017
0122	OVER	5.2	0.639	0.662	0.616
0122 DUP	OVER	1.1	0.671	0.666	0.676
0122 MSPK	OVER	6.2	0.750	0.716	0.783
0123	25.1	0.1	0.187	0.187	0.187
0124	OVER	13.9	1.190	1.073	1.307
0125	OVER	3.8	0.857	0.834	0.880
0126	OVER	5.4	1.154	1.110	1.199
0127	46.1	12.7	0.342	0.373	0.311
SOIL LCS	OVER	9.8	1.241	1.156	1.327
P BLANK	4.2	35.0	0.043	0.053	0.032
C BLK	2.4	99.9	0.025	0.005	0.044
BLANK	0.0		0.024	0.044	0.005
BLANK	0.0		-0.000	-0.013	0.013
BLANK	0.0		-0.022	-0.010	-0.035
BLANK	0.0		0.013	0.012	0.014
BLANK	-0.0		-0.021	-0.021	-0.020
BLANK	0.0		0.015	0.016	0.014
BLANK	0.0		-0.014	-0.017	-0.011
BLANK	0.0		0.003	-0.011	0.017
BLANK	0.0		-0.018	-0.020	-0.015
C CAL	49.1	12.5	0.349	0.318	0.380
698	0.1	99.9	0.001	-0.004	0.007
698 DUP	-0.2	53.1	-0.002	-0.001	-0.003
698 MSPK	8.7	38.2	0.071	0.091	0.052
BLANK	0.0		0.003	0.008	-0.002
BLANK	0.0		0.022	0.031	0.012
C CAL	51.4	8.6	0.362	0.340	0.384

Varian SpectrAA System Report

Nanco Labs, Inc., Unity st.& rt. 376, Hopewell Jct., N.Y. 12533
METALS REPORT

OPERATOR E TOMPKINS
DATE 10/16/86
BATCH

PROGRAM 26 As AUTO

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	PEAK HEIGHT
LAMP POSITION	2
LAMP CURRENT (mA)	10
SLIT WIDTH (nm)	0.5
SLIT HEIGHT	NORMAL
WAVELENGTH (nm)	193.7
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	2
BACKGROUND CORRECTION	ON

FURNACE PARAMETERS

STEP NO.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
1	75	5.0	3.0	NORMAL	NO
2	90	40.0	3.0	NORMAL	NO
3	125	50.0	3.0	NORMAL	NO
4	600	5.0	3.0	NORMAL	NO
5	650	10.0	3.0	NORMAL	NO
6	650	2.0	0.0	NORMAL	NO
7	2500	1.0	0.0	NORMAL	YES
8	2500	2.0	0.0	NORMAL	YES
9	2600	2.0	3.0	NORMAL	NO

SAMPLER PARAMETERS
VOLUMES (uL)

	SOLUTION	BLANK	MODIFIER
BLANK	--	20	10
STANDARD 1	2	18	10
STANDARD 2	10	10	10
STANDARD 3	20	0	10
SAMPLE	20	0	10

RECALIBRATION RATE 0
RESLOPE RATE 0

000337

MULTIPLE INJECT NO HOT INJECT NO PRE INJECT NO

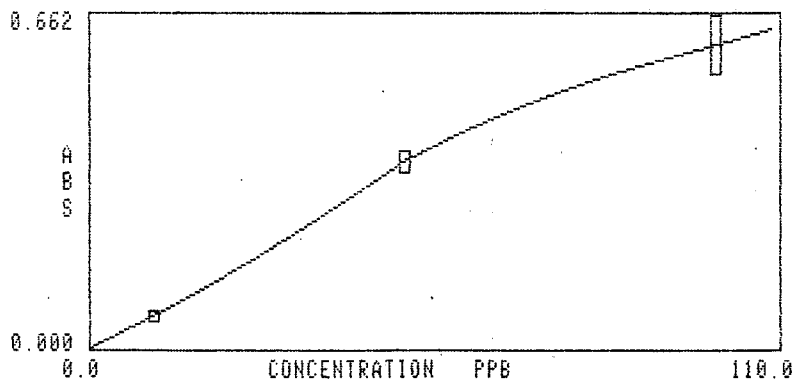
CONDITIONS FOR As :

Maximum Ash Temperature : 800 C
Recommended Atomize Temperature : 2500 C

Response with Argon :
10 microlitres of 40 micrograms/litre gives about 0.2 ABS.

Chemical modifier : 20 microlitres of 50 milligram/litre Ni.
Absorbance without modifier is 30% of absorbance with modifier.
Maximum ash temperature without modifier is 300 C.

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.052	0.049	0.054
STANDARD 1	10.0	7.8	0.065	0.061	0.068
STANDARD 2	50.0	4.4	0.369	0.357	0.380
STANDARD 3	100.0	9.1	0.601	0.563	0.640



BLANK	0.0		-0.005	-0.005	-0.005	
EPA 40.9	43.5	3.1	0.314	0.321	0.307	
BLK	0.9	63.0	0.006	0.003	0.008	
CAL 50	47.5	2.6	0.347	0.353	0.340	
116 ASPK 117%	44.3	1.3	0.320	0.317	0.323	MSA
123 ASPK 130%	51.1	4.5	0.376	0.364	0.388	MSA

I20 1:5 ASPK	20.5	0.5	0.137	0.137	0.136 183% 50u
C BLK	1.7	10.6	0.011	0.012	0.010
C CAL 50	45.8	2.4	0.333	0.338	0.327

000338

000532

Varian SpectrAA System Report

Nanco Labs, Inc., Unity st.& rt. 376, Hopewell Jct., N.Y. 12533
METALS REPORT

OPERATOR E TOMPKINS
DATE 10/16/86
BATCH

PROGRAM 26 As AUTO

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	PEAK HEIGHT
LAMP POSITION	2
LAMP CURRENT (mA)	10
SLIT WIDTH (nm)	0.5
SLIT HEIGHT	NORMAL
WAVELENGTH (nm)	193.7
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	2
BACKGROUND CORRECTION	ON

FURNACE PARAMETERS

STEP NO.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
1	75	5.0	3.0	NORMAL	NO
2	90	40.0	3.0	NORMAL	NO
3	125	50.0	3.0	NORMAL	NO
4	600	5.0	3.0	NORMAL	NO
5	650	10.0	3.0	NORMAL	NO

8	2500	2.0	0.0	NORMAL	YES
9	2600	2.0	3.0	NORMAL	NO

000340

SAMPLER PARAMETERS
VOLUMES (uL)

	SOLUTION	BLANK	MODIFIER
BLANK	--	20	10
STANDARD 1	2	18	10
STANDARD 2	10	10	10
STANDARD 3	20	0	10
SAMPLE	20	0	10

RECALIBRATION RATE 0
RESLOPE RATE 0

MULTIPLE INJECT NO HOT INJECT NO PRE INJECT NO

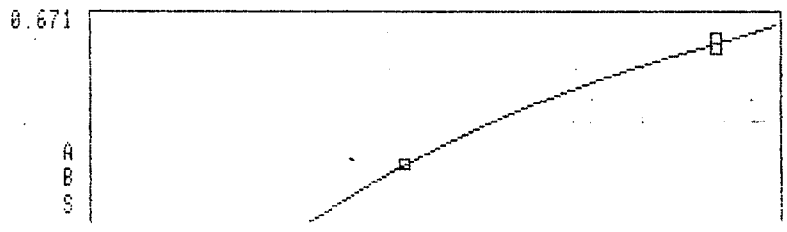
CONDITIONS FOR As

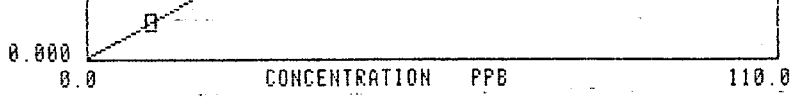
Maximum Ash Temperature : 800 C
Recommended Atomize Temperature : 2500 C

Response with Argon :
10 microlitres of 40 micrograms/litre gives about 0.2 ABS.

Chemical modifier : 20 microlitres of 50 milligram/litre Ni.
Absorbance without modifier is 30% of absorbance with modifier.
Maximum ash temperature without modifier is 300 C.

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.035	0.033	0.037
STANDARD 1	10.0	13.4	0.068	0.062	0.074
STANDARD 2	50.0	0.8	0.360	0.362	0.358
STANDARD 3	100.0	2.8	0.610	0.622	0.598





000341

BLANK	0.0		0.007	0.004	0.011
BLANK	0.0		-0.011	-0.006	-0.016
EPA 40.9	42.8	1.0	0.305	0.303	0.307
C BLK	1.4	15.8	0.009	0.010	0.008
C CAL 50	52.5	3.8	0.377	0.387	0.367
LCS-SOIL	OVER	5.4	1.308	1.358	1.259
688 1:10	14.8	18.8	0.101	0.115	0.088
~~689 1:10~~	~~8.3~~	~~26.6~~	~~0.056~~	~~0.067~~	~~0.046~~
BLANK	0.0		0.021	0.026	0.016
~~689 1:10~~	~~2.1~~	~~35.1~~	~~0.014~~	~~0.011~~	~~0.018~~
697 1:10	5.0	32.0	0.034	0.042	0.026
BLANK	0.0		0.001	0.003	0.005
697 1:10	5.7	30.7	0.039	0.047	0.031
688 DASPK	21.8	2.6	0.151	0.148	0.154

— MSA 100uE, 150E JC

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
689 DASPK	27.5	7.8	0.192	0.203	0.181
697 DASPK 78%	21.2	10.5	0.147	0.136	0.158
C BLK	-1.2	40.9	-0.008	-0.010	-0.006
C CAL	54.1	2.0	0.387	0.381	0.392

— MSA 100u JC

BLANK	0.0		-0.013	-0.004	-0.023
1:10 0115	21.9	3.6	0.152	0.156	0.148
1:10 0115DUP	20.4	3.1	0.140	0.137	0.144
1:10 0116	2.7	16.8	0.018	0.016	0.021
1:10 0117	9.7	18.9	0.066	0.057	0.075
0118	7.1	14.1	0.049	0.053	0.044

000342

BLANK	0.0		0.018	0.029	0.007	
BLANK	0.0		-0.001	-0.001	-0.002	
1:50 0119	85.7	3.4	0.554	0.541	0.567	
0120	2.3	44.4	0.015	0.020	0.011	
0121	2.0	59.9	0.014	0.008	0.020	
1:10 0122	17.7	6.0	0.122	0.117	0.127	
1:10 0123	4.3	1.6	0.029	0.029	0.029	
BLK	1.2	99.9	0.008	0.022	-0.006	
C CAL	50.5	4.0	0.364	0.354	0.374	
BLANK	0.0		-0.003	-0.001	-0.005	
1:25 0124	88.5	0.9	0.566	0.562	0.569	
1:10 0125	34.3	8.9	0.241	0.256	0.226	
BLANK	0.0		0.015	0.009	0.021	
BLANK	0.0		-0.018	-0.019	-0.016	
BLANK	0.0		0.012	0.002	0.022	
1:100 0126	33.2	12.3	0.233	0.253	0.213	
1:10 0127	1.2	99.9	0.008	-0.007	0.023	
ASPKdil0115	32.5 53%	9.6	0.228	0.213	0.244	MSA
ASPKdil0116	13.5 68%	25.7	0.092	0.109	0.075	100u
ASPKdil0117	16.9	0.8	0.116	0.117	0.115	~~100uE~~ 97E
ASPK 0118	17.2 86%	9.6	0.118	0.126	0.110	5u 4285
ASPKdil0119	85.6	8.3	0.553	0.521	0.586	~~100uE 500uE~~ JC
ASPK 0120	14.3 34%	17.8	0.098	0.111	0.086	1:5
BLK	-2.8	10.5	-0.019	-0.017	-0.020	
~~C CAL~~	~~44.1~~	~~4.5~~	~~0.315~~	~~0.325~~	~~0.305~~	JC
BLANK	0.0		-0.023	-0.021	-0.026	
BLANK	0.0		-0.004	-0.003	-0.004	
BLANK	0.0		0.009	0.012	-0.005	
BLANK	0.0		0.005	0.011	-0.001	
C CAL	48.0	0.6	0.345	0.347	0.344	
ASPK 0121	13.2 66%	22.5	0.090	0.076	0.105	5u
ASPKdil0122	31.0 67%	8.1	0.217	0.230	0.205	MSA
ASPKdil0123	15.1 76%	34.6	0.103	0.129	0.078	100u
ASPKdil0124	84.4	3.4	0.548	0.535	0.561	~~250uE~~ 2210E JC
ASPKdil0125	37.8	2.7	0.267	0.273	0.262	~~100uE~~, 340E
ASPKdil0126	47.8 73%	5.2	0.343	0.331	0.356	MSA
ASPKdil0127	19.8 99%	2.1	0.136	0.134	0.138	100u
BLK	0.4	92.2	0.003	0.001	0.005	
BLANK	0.0		0.013	0.009	0.018	
C CAL	~~44.9~~ 45.0	2.1	0.321	0.326	0.317	
0122 DUP1:10	17.0 34%	2.8	0.117	0.119	0.114	
0122 DUPASPK	23.8	2.4	0.165	0.168	0.162	100uE, 170E
0125 DUPASPK	22.2	0.6	0.154	0.153	0.154	

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.007	0.004	0.011
BLANK	0.0		-0.011	-0.006	-0.016
BLANK	0.0		0.013	0.009	0.018

Varian SpectrAA System Report

Nanco Labs, Inc., Unity st.& rt. 376, Hopewell Jct., N.Y. 12533
METALS REPORT

OPERATOR E TOMPKINS
DATE 10/16/86
BATCH

PROGRAM 24 As PLATFORM-LMS-MSA

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	STANDARD ADDITIONS
MEASUREMENT MODE	PEAK HEIGHT
LAMP POSITION	2
LAMP CURRENT (mA)	10
SLIT WIDTH (nm)	0.5
SLIT HEIGHT	NORMAL
WAVELENGTH (nm)	193.7
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	2
BACKGROUND CORRECTION	ON

FURNACE PARAMETERS

STEP NO.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
1	95	5.0	3.0	NORMAL	NO
2	150	30.0	3.0	NORMAL	NO
3	300	30.0	3.0	NORMAL	NO
4	600	5.0	3.0	NORMAL	NO
5	600	15.0	3.0	NORMAL	NO
6	600	2.0	0.0	NORMAL	NO
7	2200	0.8	0.0	NORMAL	YES
8	2200	2.0	0.0	NORMAL	YES
9	2200	2.0	3.0	NORMAL	NO

SAMPLER PARAMETERS
VOLUMES (uL)

	STANDARD	SAMPLE	BLANK	MODIFIER
BLANK	--	--	20	10
ADDITION 1	4	10	6	10
ADDITION 2	7	10	3	10
ADDITION 3	10	10	0	10
SAMPLE	--	10	0	10

MULTIPLE INJECT NO HOT INJECT NO PRE INJECT NO

000344

CONDITIONS FOR As :

Maximum Ash Temperature : 800 C
Recommended Atomize Temperature : 2500 C

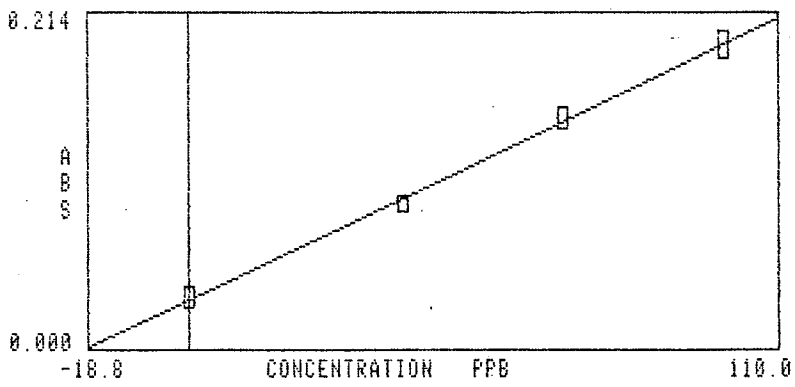
Response with Argon :
10 microlitres of 40 micrograms/litre gives about 0.2 ABS.

Chemical modifier : 20 microlitres of 50 milligram/litre Ni.
Absorbance without modifier is 30% of absorbance with modifier.
Maximum ash temperature without modifier is 300 C.

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS		
BLANK	0.0		0.050	0.045	MM	0.054
ADDITION 1	40.0	4.3	0.093	0.095		0.090
ADDITION 2	70.0	3.4	0.148	0.144		0.152
ADDITION 3	100.0	3.7	0.194	0.189		0.199
~~0122 1:10~~	~~18.8~~ MM	16.1	0.032	0.036		0.029

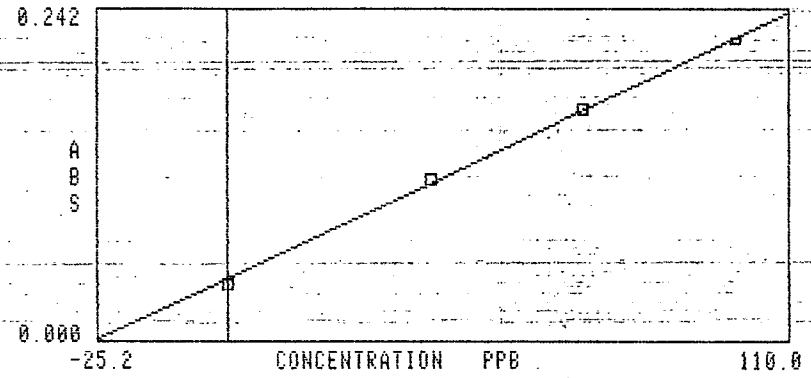
0115 1:10 14.4

R = .9975



BLANK	0.0		-0.010	-0.010	MM	-0.010
ADDITION 1	40.0	1.3	0.120	0.121		0.119
ADDITION 2	70.0	1.4	0.171	0.169		0.172
ADDITION 3	100.0	0.4	0.220	0.220		0.221
~~0124 1:100~~	~~25.2~~ MM	4.2	0.042	0.043		0.041

0117.2 23.0 .9995



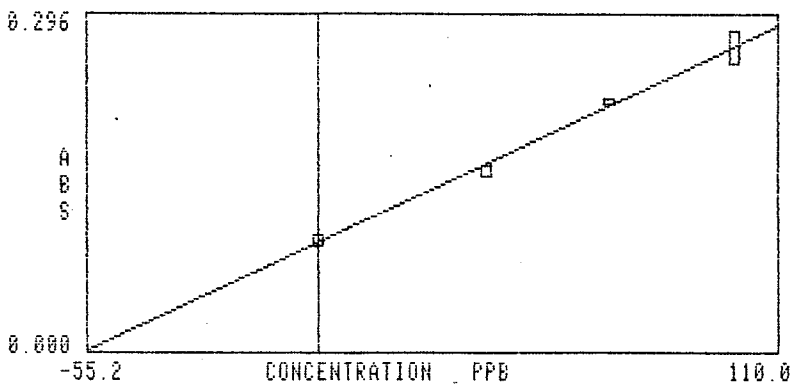
SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
BLANK	0.0		-0.004	0.000	-0.008
ADDITION 1	40.0	2.0	0.160	0.162	0.158
ADDITION 2	70.0	0.4	0.223	0.223	0.224
ADDITION 3	100.0	4.8	0.269	0.278	0.260
~~4~~	~~55.2~~	3.0	0.098	0.100	0.096

MM

0126 ~~55.2~~ MM VDC

1:100 50.4

R=.9975



Varian SpectrAA System Report

Nanco Labs, Inc., Unity st.& rt. 376, Hopewell Jct., N.Y. 12533

METALS REEORT

OPERATOR BOB WENZOWITZ
DATE 10/22/86
BATCH

PROGRAM 22 As PLATFORM-LMS-MSA

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	STANDARD ADDITIONS
MEASUREMENT MODE	PEAK HEIGHT
LAMP POSITION	1
LAMP CURRENT (mA)	10
SLIT WIDTH (nm)	0.5
SLIT HEIGHT	NORMAL
WAVELENGTH (nm)	193.7
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	2
BACKGROUND CORRECTION	ON

FURNACE PARAMETERS

STEP NO.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
1	95	5.0	3.0	NORMAL	NO
2	150	30.0	3.0	NORMAL	NO
3	300	30.0	3.0	NORMAL	NO
4	600	5.0	3.0	NORMAL	NO
5	600	15.0	3.0	NORMAL	NO
6	600	2.0	0.0	NORMAL	NO
7	2200	0.8	0.0	NORMAL	YES
8	2200	2.0	0.0	NORMAL	YES
9	2200	2.0	3.0	NORMAL	NO

000347

VOLUMES (uL)

	STANDARD	SAMPLE	BLANK	MODIFIER
BLANK	---	---	20	10
ADDITION 1	4	10	6	10
ADDITION 2	7	10	3	10
ADDITION 3	10	10	0	10
SAMPLE	---	20	0	10

RECALIBRATION RATE 1

MULTIPLE INJECT NO HOT INJECT NO PRE INJECT NO

CONDITIONS FOR As :

Maximum Ash Temperature : 800 C
Recommended Atomize Temperature : 2500 C

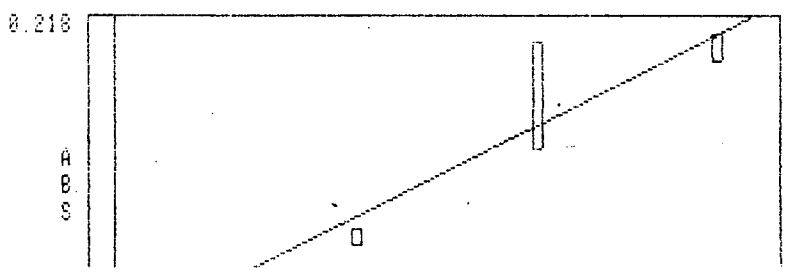
Response with Argon :
10 microlitres of 40 micrograms/litre gives about 0.2 ABS.

Chemical modifier : 20 microlitres of 50 milligram/litre Ni.
Absorbance without modifier is 30% of absorbance with modifier.
Maximum ash temperature without modifier is 300 C.

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.031	0.033	0.029
SDDITION 1	40.0	3.3	0.108	0.106	0.111
ADDITION 2	70.0	5.0	0.158	0.152	0.163
ADDITION 3	100.0	29.4	0.271	0.327	0.215
BLANK	0.0		0.002	0.001	0.003
ADDITION 1	40.0	4.9	0.074	0.077	0.072
ADDITION 2	70.0	19.6	0.168	0.191	0.145
ADDITION 3	100.0	3.5	0.198	0.194	0.203
~~123~~ 116(1:10)	~~3.9~~ ~~0.9~~ 1.8 MM	66.6	0.010	0.014	0.005

okay MM

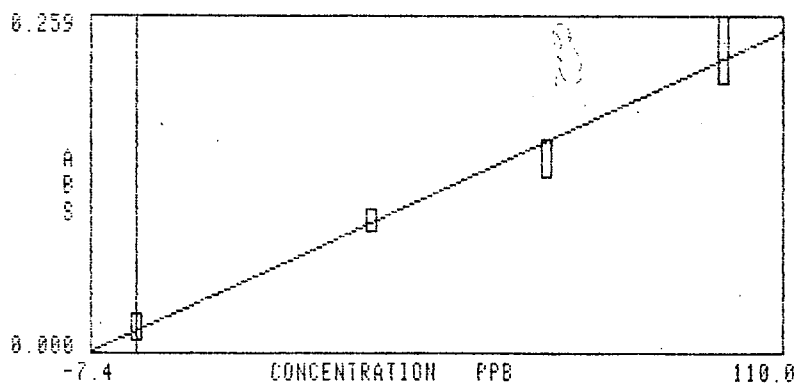
R = ~~.995~~ .931+



BLANK	0.0		-0.001	-0.002	0.000
ADDITION 1	40.0	5.1	0.102	0.106	0.098
ADDITION 2	70.0	9.0	0.150	0.159	0.140
ADDITION 3	100.0	10.9	0.235	0.253	0.217
~~127~~	~~7.4~~ mm	44.8	0.018	0.013	0.024

123 1:10 2.9

R = .991+



SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
BLANK	0.0		-0.002	-0.001	-0.004
ADDITION 1	40.0	4.3	0.078	0.076	0.081
ADDITION 2	70.0	5.1	0.123	0.127	0.118
ADDITION 3	100.0	4.3	0.183	0.189	0.178
~~LCS 40.7~~	~~3.8~~ mm	2.8	0.007	0.007	0.007

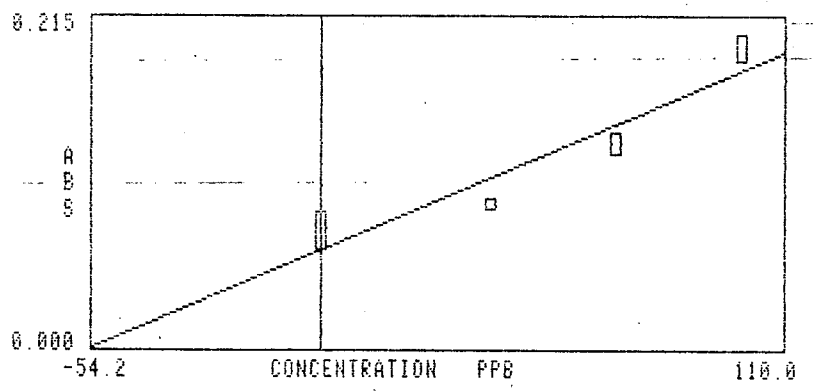
127 1:10 2.7

R = .9985

BLANK	0.0		0.006	0.002	0.010
ADDITION 1	40.0	2.0	0.094	0.095	0.093
ADDITION 2	70.0	3.5	0.134	0.130	0.137
ADDITION 3	100.0	3.3	0.195	0.191	0.200
~~431~~	~~54.2~~	~~12.7~~	~~0.077~~	~~0.084~~	0.070
LCS (40.9)	~~49.2~~ mm 35.3		0.070	mm	

✓ PZG

R = .942+



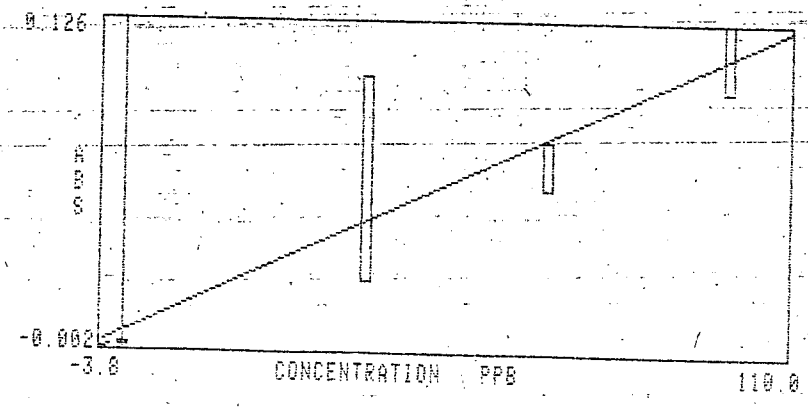
LCS
4/4

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
ADDITION 1	40.0	70.5	-0.010	-0.015	-0.005

BLANK	0.0		-0.003	0.008	-0.014
ADDITION 1	40.0	60.6	-0.065	0.037	0.092
ADDITION 2	70.0	12.4	-0.070	0.064	0.076
ADDITION 3	100.0	12.2	0.115	0.125	0.105
~~36~~ 34	~~3.8~~	99.9	-0.002	-0.005	-0.000

Soil LCS 1:1000 3.4 JC using mean abs. JC

3400ppb



BLANK	0.0		-0.007	-0.014	-0.001
ADDITION 1	40.0	39.5	0.049	0.035	0.062
ADDITION 2	70.0	43.5	0.108	0.075	0.142
ADDITION 3	100.0	3.7	0.217	0.211	0.223

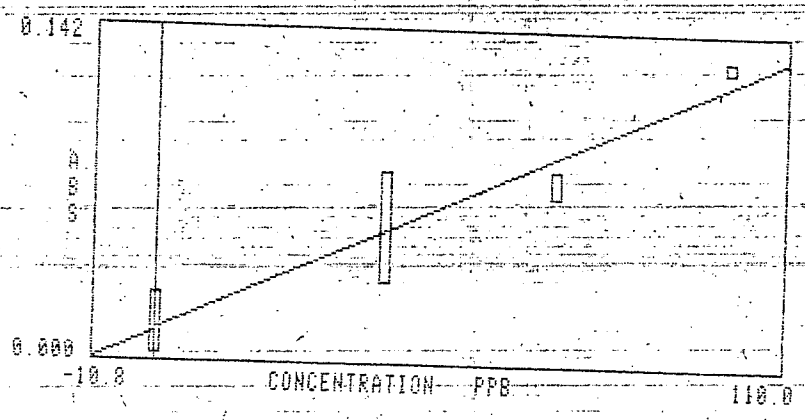
BLANK	0.0		-0.004	-0.000	-0.008
ADDITION 1	40.0	40.3	0.057	0.041	0.073
ADDITION 2	70.0	6.6	0.076	0.073	0.080
ADDITION 3	100.0	1.2	0.129	0.128	0.130
~~36~~	~~10.8~~ 6.8	76.4	0.015	0.023	0.007

MK MK

35 0122 Dup 1:25

R=.959+

As
000351

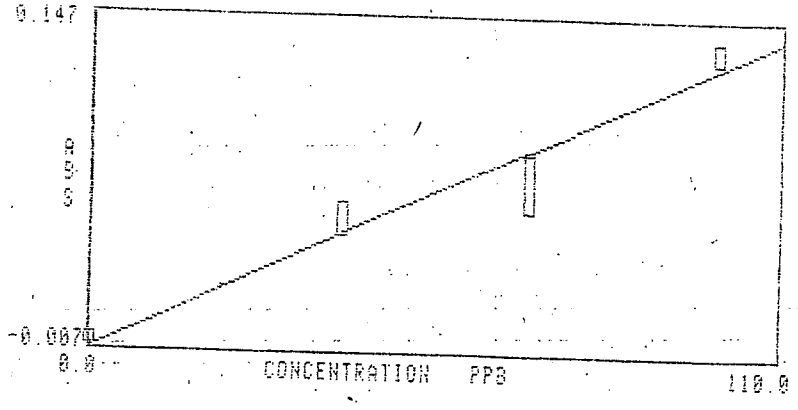


SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS		
BLANK	0.0		0.013	0.004		0.022
ADDITION 1	40.0	12.3	0.053	0.058	MPM	0.048
ADDITION 2	70.0	18.5	0.070	0.064		0.080
ADDITION 3	100.0	2.6	0.134	0.137		0.132
[illegible]	-5.5 MPM	92.6	-0.007	-0.002		-0.011

2.7
25
67.5 ppb

0122 spk 1:25 2:7

R = .980+



Varian SpectrAA System Report

Nanco Labs, Inc., Unity st.& rt. 376, Hopewell Jct., N.Y. 12533
METALS REPORT

OPERATOR BOB WENZOWITZ
DATE 10/28/86
BATCH

PROGRAM 22 Pb PLATFORM-LMS-MSA

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	STANDARD ADDITIONS
MEASUREMENT MODE	PEAK HEIGHT
LAMP POSITION	1
LAMP CURRENT (mA)	5
SLIT WIDTH (nm)	0.5
SLIT HEIGHT	NORMAL
WAVELENGTH (nm)	283.3
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	2
BACKGROUND CORRECTION	ON

FURNACE PARAMETERS

STEP NO.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
1	95	5.0	3.0	NORMAL	NO
2	150	30.0	3.0	NORMAL	NO
3	300	30.0	3.0	NORMAL	NO
4	600	5.0	3.0	NORMAL	NO
5	600	15.0	3.0	NORMAL	NO
6	600	2.0	0.0	NORMAL	NO
7	2200	0.8	0.0	NORMAL	YES
8	2200	2.0	0.0	NORMAL	YES
9	2200	2.0	3.0	NORMAL	NO

SAMPLER PARAMETERS
VOLUMES (uL)

ADDITION 1	4	10	6	10
ADDITION 2	7	10	3	10
ADDITION 3	10	10	0	10
SAMPLE	—	10	0	10

000353

RECALIBRATION RATE 1

MULTIPLE INJECT NO HOT INJECT NO PRE INJECT NO

CONDITIONS FOR Pb :

Maximum Ash Temperature : 400 C
Recommended Atomize Temperature : 2000 C

Response with Argon :
10 microlitres of 30 micrograms/litre gives about 0.2 ABS.

217.0 nm wavelength gives twice the absorbance, but 283.3 nm is recommended because background absorbance and baseline noise are lower.

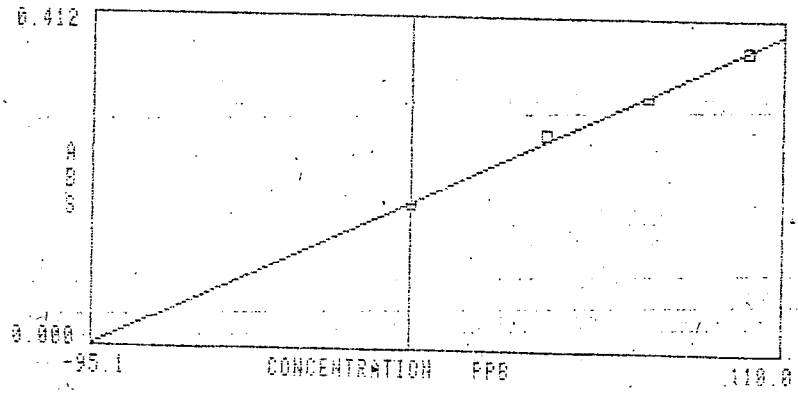
SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.017	0.020	0.014
ADDITION 1	40.0	0.8	0.269	0.268	0.271
ADDITION 2	70.0	0.4	0.316	0.317	0.316
ADDITION 3	100.0	1.1	0.375	0.372	0.377
[illegible]	~~95.1~~ 88.3	0.8	0.179	0.178	0.180

MM

MM

0115-08

R = .997 S



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000354

Varian SpectrAA System Report

Nanco Labs, Inc., Unity st.& rt. 376, Hopewell Jct., N.Y. 12533

METALS REPORT

OPERATOR R. WENZOWITZ
DATE 10/10/86
BATCH 008-009

PROGRAM 10 Pb AUTOMIX

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	PEAK HEIGHT
LAMP POSITION	1
LAMP CURRENT (mA)	10
SLIT WIDTH (nm)	0.5
SLIT HEIGHT	NORMAL
WAVELENGTH (nm)	283.3
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	2
BACKGROUND CORRECTION	OFF

FURNACE PARAMETERS

STEP NO.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
1	75	5.0	3.0	NORMAL	NO
2	90	30.0	3.0	NORMAL	NO
3	125	30.0	3.0	NORMAL	NO
4	400	5.0	3.0	NORMAL	NO
5	400	10.0	3.0	NORMAL	NO
6	400	2.0	0.0	NORMAL	NO
7	2000	0.8	0.0	NORMAL	YES
8	2000	2.0	0.0	NORMAL	YES
9	2000	2.0	3.0	NORMAL	NO

SAMPLER PARAMETERS
VOLUMES (uL)

	SOLUTION	BLANK	MODIFIER
BLANK	--	20	15
STANDARD 1	1	19	15
STANDARD 2	2	18	15
STANDARD 3	10	10	15
STANDARD 4	20	0	15
SAMPLE	20	0	15

RECALIBRATION RATE 0
RESLOPE RATE 0

MULTIPLE INJECT NO HOT INJECT NO PRE INJECT NO

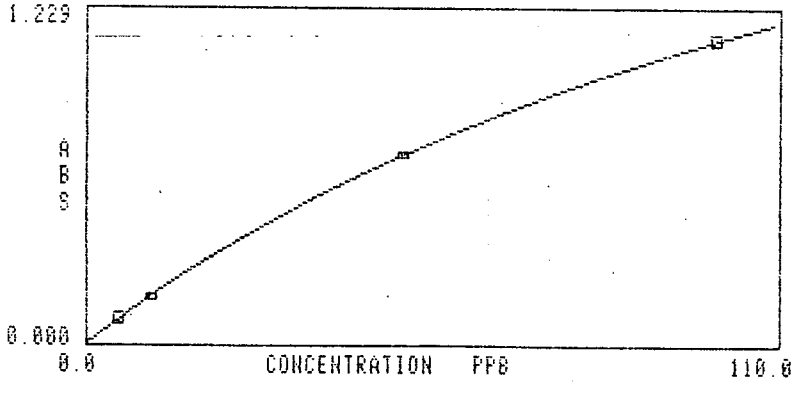
CONDITIONS FOR Pb :

000355

Maximum Ash Temperature : 400 C
Recommended Atomize Temperature : 2000 C

Response with Argon :
10 microlitres of 30 micrograms/litre gives about 0.2 ABS.
217.0NM WAVELENGTH GIVES TWICE THE ABSORBANCE,BUT 283.3NM IS RECOMMENDED BECAUSE BACKGROUND ABSORBANCE & BASELINE NOISE ARE ARE LOWER
STD A: 5MLS STOCK(1000PPM) DILUTED TO 500MLS
STD B: 10MLS STD A " " 100MLS
50PPB: 5MLS STD B " " 100MLS
200PPB: 2MLS STD A " " 100MLS
SPK 10PPB: 0.5MLS 200PPB DILUTED TO 10MLS WITH SAMPLE

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.084	0.091	0.076
BLANK	0.0		0.004	0.007	-0.000
STANDARD 1	5.0	13.8	0.084	0.076	0.093
STANDARD 2	10.0	1.7	0.172	0.174	0.170
STANDARD 3	50.0	0.2	0.690	0.691	0.689
STANDARD 4	100.0	1.2	1.117	1.127	1.107



EPA 91.7	96.2	0.9	1.090	1.098	1.083
C BLK	1.7	9.2	0.029	0.031	0.027
C CAL 50	53.4	2.3	0.726	0.714	0.737
LCS 91.7	90.4	0.6	1.048	1.052	1.043
J6 0115	62.9	3.8	0.818	0.796	0.840
J6 0115 DUP	60.7	5.3	0.797	0.767	0.826
J6 0116	OVER	7.4	1.193	1.131	1.256 ICP
J6 0117	78.0	15.6	0.950	0.845	1.055
P-BLK 115-21	1.2	99.9	0.021	-0.002	0.044
J6 0118	44.0	3.2	0.626	0.640	0.612
J6 0119	OVER	9.8	3.600	3.848A	3.351A ICP

EPA	96.2	0.9	1.090	1.098	1.083
C BLK	1.7	9.2	0.029	0.031	0.027
C CAL 50	53.4	2.3	0.726	0.714	0.737
LCS 008	90.4	0.6	1.048	1.052	1.043
J6 0115	62.9	3.8	0.818	0.796	0.840
J6 0115 DUP	60.7	5.3	0.797	0.767	0.826
J6 0116	OVER	7.4	1.193	1.131	1.256
J6 0117	78.0	15.6	0.950	0.845	1.055
P-BLK 115-21	1.2	99.9	0.021	-0.002	0.044
J6 0118	44.0	3.2	0.626	0.640	0.612
J6 0119	OVER	9.8	3.600	3.848A	3.351A

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
008 J6 0120	7.0	4.2	0.119	0.116	0.123
J6 0121	18.5	0.7	0.303	0.301	0.304
C BLK	-0.3	55.1	-0.005	-0.003	-0.007
C CAL 50	46.7	0.9	0.655	0.651	0.660
J6 0117 MSPK	101.4	2.4	1.127	1.107	1.146
698-511	8.4	32.5	0.143	0.110	0.176
BLANK	0.0		-0.001	-0.003	0.001
698-511	16.1	3.2	0.267	0.273	0.261
698 MSPK	36.0	0.2	0.534	0.534	0.533
698 DUP	16.9	13.3	0.279	0.253	0.305
SLCS 504	OVER	0.0	4.000	4.000A	4.000A
J6 0122	OVER	1.0	3.226	3.248A	3.204A
J6 0123	OVER	1.3	2.751	2.776A	2.727A
J6 0124	OVER	1.8	3.274	3.233A	3.315A
J6 0125	OVER	3.2	3.024	2.955A	3.093A
P-BLK 122-27	1.2	83.6	0.020	0.031	0.008
C BLK	-0.3	8.9	-0.005	-0.005	-0.005
BLANK	0.0		-0.020	-0.020	-0.020
BLANK	0.0		-0.008	-0.006	-0.011
BLANK	0.0		-0.000	0.000	-0.001
BLANK	0.0		0.001	0.003	-0.001
BLANK	0.0		-0.008	-0.007	-0.008
BLANK	0.0		0.001	0.002	-0.001
BLANK	0.0		-0.001	0.005	-0.007
C CAL 50	52.4	5.3	0.715	0.742	0.688
J6 0126	OVER	0.0	4.000	4.000A	4.000A
J6 122 DUP	OVER	1.0	3.047	3.026A	3.069A
J6 MSPK 122	OVER	2.5	3.162	3.218A	3.106A
66 0127	OVER	1.8	1.763	1.740	1.786
BLANK	0.0		0.006	0.007	0.004
116 1:10	2.7	14.0	0.046	0.051	0.041
119 1:10	47.6	10.1	0.666	0.618	0.713
SLCS504 1:10	OVER	3.5	2.803	2.734A	2.872A
122 1:10	OVER	12.4	2.192	2.383A	2.000
123 1:10	OVER	2.0	1.230	1.212	1.247
124 1:10	OVER	3.3	2.728	2.664A	2.793A
C BLK	0.4	61.4	0.006	0.009	0.003
BLANK	0.0		-0.004	-0.005	-0.003
BLANK	0.0		-0.005	-0.005	-0.005
C CAL 50	46.7	0.9	0.655	0.651	0.660

Varian SpectrAA System Report

Nanco Labs, Inc., Unity st. & rt. 376, Hopewell Jct., N.Y. 12533

METALS REPORT

OPERATOR P GUPTE/VICTOR S
DATE 10/16/86
BATCH

PROGRAM 22 Pb PLATFORM-LMS-MSA

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	STANDARD ADDITIONS
MEASUREMENT MODE	PEAK HEIGHT
LAMP POSITION	1
LAMP CURRENT (mA)	5
SLIT WIDTH (nm)	0.5
SLIT HEIGHT	NORMAL
WAVELENGTH (nm)	283.3
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	2
BACKGROUND CORRECTION	OFF

FURNACE PARAMETERS

STEP NO.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
1	95	5.0	3.0	NORMAL	NO
2	150	30.0	3.0	NORMAL	NO
3	300	30.0	3.0	NORMAL	NO
4	600	5.0	3.0	NORMAL	NO
5	600	15.0	3.0	NORMAL	NO
6	600	2.0	0.0	NORMAL	NO
7	2200	0.8	0.0	NORMAL	YES
8	2200	2.0	0.0	NORMAL	YES
9	2200	2.0	3.0	NORMAL	NO

SAMPLER PARAMETERS
VOLUMES (uL)

	STANDARD	SAMPLE	BLANK	MODIFIER
BLANK	--	--	20	10
ADDITION 1	4	10	6	10
ADDITION 2	7	10	3	10
ADDITION 3	10	10	0	10
SAMPLE	--	10	0	10

MULTIPLE INJECT NO HOT INJECT NO PRE INJECT NO

CONDITIONS FOR Pb :

Maximum Ash Temperature : 400 C
Recommended Atomize Temperature : 2000 C

Response with Argon :
10 microlitres of 30 micrograms/litre gives about 0.2 ABS.

217.0 nm wavelength gives twice the absorbance,
but 283.3 nm is recommended because background absorbance
and baseline noise are lower.

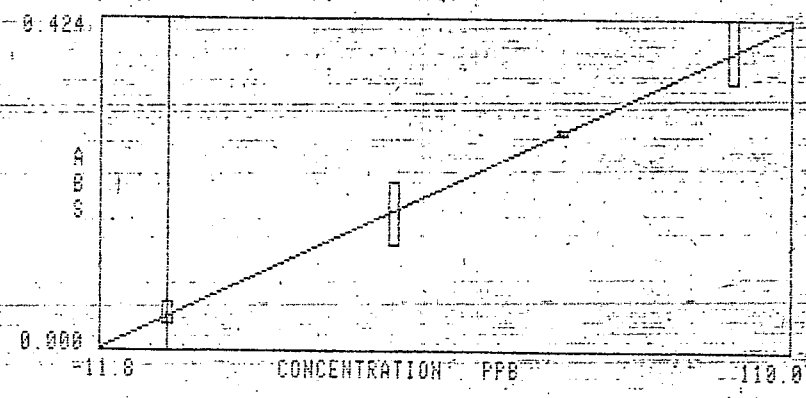
SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.170	0.276	0.063
ADDITION 1	40.0	13.3	0.376	0.341	0.412
ADDITION 2	70.0	4.0	0.685	0.665	0.704
ADDITION 3	100.0	10.6	0.811	0.750	0.872

BLANK	0.0		0.011	0.018	0.004
ADDITION 1	40.0	21.0	0.173	0.199	0.148
ADDITION 2	70.0	0.6	0.281	0.280	0.282
ADDITION 3	100.0	9.9	0.385	0.358	0.412
~~0121~~ 0117	~~11.8~~ 17.8	23.7	0.043	0.050	0.036

MM

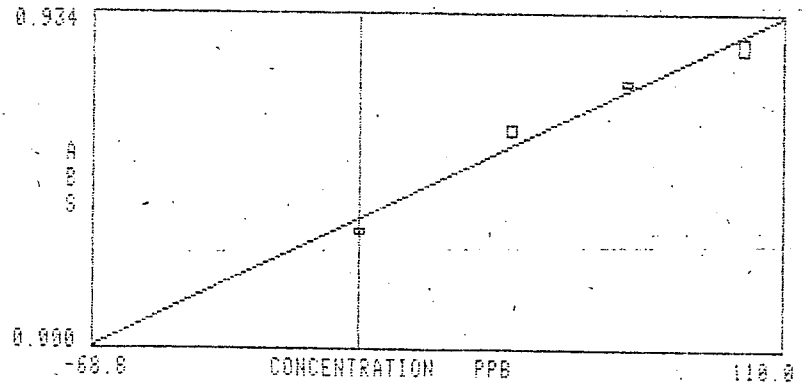
1.5

R = .995 S



SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS		
BLANK	0.0		0.002	0.004	-0.000	
SDDITION 1	40.0	1.2	0.611	0.616	0.606	MM
ADDITION 2	70.0	0.1	0.744	0.743	0.744	
ADDITION 3	100.0 MM	2.2	0.849	0.862	0.836	
~~0112~~	~~49.8~~	0.1	0.327	0.327	0.327	
0121	55.0					

R=.988+



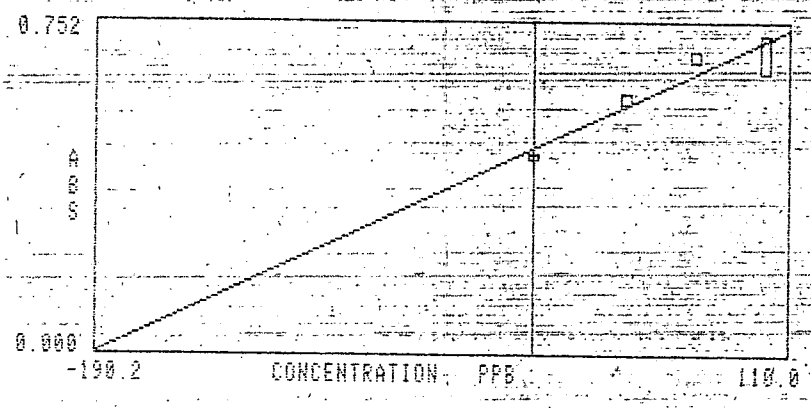
BLANK 0.0 0.007 0.004 MM 0.009

000360

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS		
ADDITION 2	70.0	0.7	0.677	0.674		0.681
ADDITION 3	100.0	5.5	0.684	0.657		0.711
~~0.20~~ 0.118	~~190.2~~ 142.2	0.4	0.450	0.451		0.449

mk

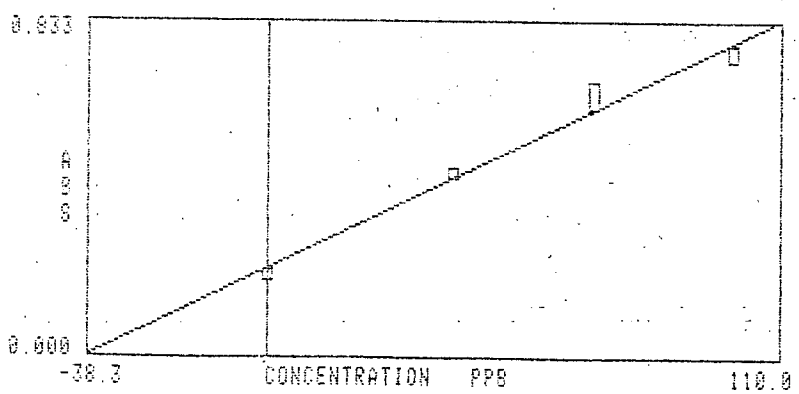
R = .973+



BLANK	0.0		-0.001	-0.002	0.001
ADDITION 1	40.0	1.8	0.455	0.461	0.450
ADDITION 2	70.0	3.9	0.650	0.668	0.632
ADDITION 3	100.0	2.1	0.758	0.769	0.746
~~0.117 MSPK~~ 0120	~~38.3~~ 31.6	4.1	0.201	0.207	0.195

mk

R = .9955



000361

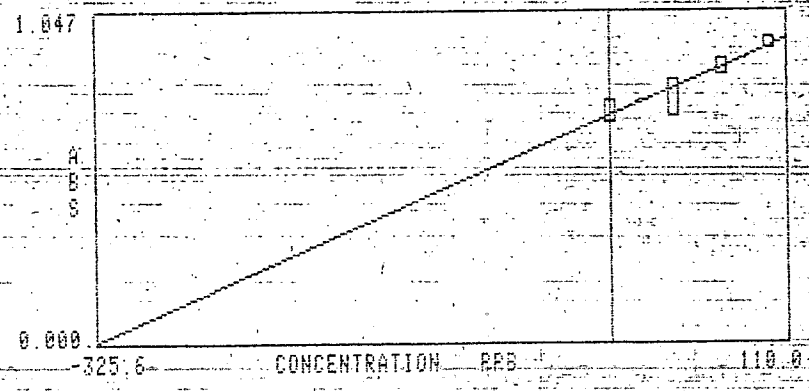
SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.000	0.000	0.001
ADDITION 1	40.0	6.6	0.779	0.816	0.743
ADDITION 2	70.0	1.5	0.874	0.883	0.865
ADDITION 3	100.0	0.5	0.951	0.948	0.955
	325.6	3.0	0.736	0.721	0.752

mm

mm

0117 msplc

R=1.000S



	0.0		0.020	0.008	0.031
CAL 50	52.1	2.4	0.598	0.588	0.608
CS SOIL 513	OVER	22.8	1.921	2.231	1.610
LANK	0.0		0.016	0.017	0.016
28 1:5	8.4	9.5	0.146	0.156	0.137
29 1:5	3.6	1.7	0.059	0.060	0.059
28 dilASPK	10.6	6.1	0.187	0.195	0.179

000352

AMPLE	CONC PPB	%RSD	MEAN ABS	READINGS		
28dilASPK	6.6	5.9	0.111	0.106	0.116	
BLANK 512	-0.6	99.9	-0.009	0.010	-0.029	
LANK	0.0		0.044	0.094	-0.006	
CS SOIL 512	OVER	4.2	1.168	1.203	1.134	
07 (100)	20.6	0.1	0.321	0.321	0.322	
07 DUP	7.0	9.4	0.120	0.112	0.128	
07 MSPK	17.2	2.2	0.280	0.284	0.275	EPA
BLK	-2.0	48.9	-0.033	-0.021	-0.044	
CAL	55.1	4.2	0.615	0.634	0.597	
7 ASPK	18.5	3.0	0.296	0.290	0.302	
7DUPASPK	10.3	12.8	0.183	0.199	0.166	
5 1:5	1.9	19.9	0.031	0.035	0.026	
ANK	0.0		-0.027	-0.027	-0.026	DEP
PK115 1:5	11.5	10.3	0.200	0.215	0.186	
7	19.5	3.2	0.308	0.301	0.315	
5452	21.6	8.6	0.334	0.354	0.314	
5453	23.8	3.3	0.359	0.367	0.350	
5454	17.9	4.5	0.288	0.297	0.279	
5453DUP	20.6	1.6	0.322	0.325	0.318	
5454MSPK	37.9	12.4	0.495	0.452	0.539	
K	0.7	58.0	0.012	0.007	0.016	
ANK	0.0		0.008	0.016	0.000	
CAL	45.9	6.4	0.558	0.583	0.532	

Varian SpectrAA System Report.

Nanco Labs, Inc., Unity st.& rt. 376, Hopewell Jct., N.Y. 12533

METALS REPORT

OPERATOR EILEEN T.
DATE 10/21/86
BATCH

PROGRAM 10 Pb AUTOMIX

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	PEAK HEIGHT
LAMP POSITION	1
LAMP CURRENT (mA)	5
SLIT WIDTH (nm)	0.5
SLIT HEIGHT	NORMAL
WAVELENGTH (nm)	283.3
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
DELAY TIME (sec)	0
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	2
BACKGROUND CORRECTION	ON

FURNACE PARAMETERS

STEP NO.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
1	75	5.0	3.0	NORMAL	NO
2	90	30.0	3.0	NORMAL	NO
3	125	30.0	3.0	NORMAL	NO
4	400	5.0	3.0	NORMAL	NO
5	400	10.0	3.0	NORMAL	NO
6	400	2.0	0.0	NORMAL	NO
7	2000	0.8	0.0	NORMAL	YES
8	2000	2.0	0.0	NORMAL	YES
9	2000	2.0	3.0	NORMAL	NO

SAMPLER PARAMETERS
VOLUMES (uL)

	SOLUTION	BLANK	MODIFIER
BLANK	--	20	15
STANDARD 1	1	19	15
STANDARD 2			

STANDARD 4	20	0	15	
SAMPLE	20	0	15	

000364

RECALIBRATION RATE 0
RESLOPE RATE 0

MULTIPLE INJECT NO HOT INJECT NO PRE INJECT NO

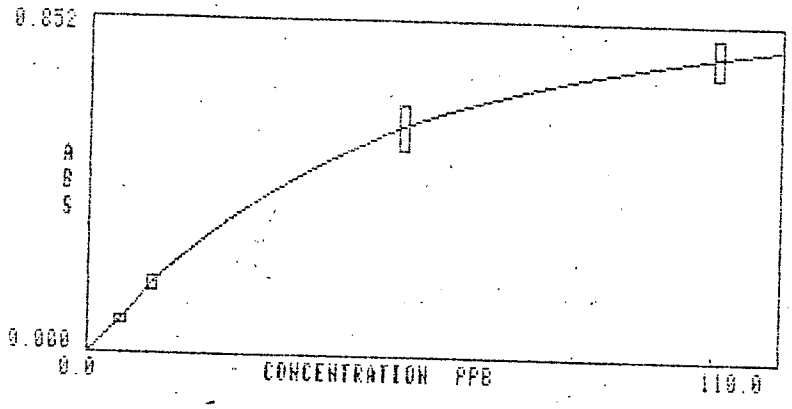
CONDITIONS FOR Pb :

Maximum Ash Temperature : 400 C
Recommended Atomize Temperature : 2000 C

Response with Argon :
10 microlitres of 30 micrograms/litre gives about 0.2 ABS.
217.0NM WAVELENGTH GIVES TWICE THE ABSORBANCE,BUT 283.3NM IS RECOMMENDED BECAUSE BACKGROUND ABSORBANCE & BASELINE NOISE ARE ARE LOWER

STD A: 5MLS STOCK(1000PPM) DILUTED TO 500MLS
STD B: 10MLS STD A " " 100MLS
50PPB: 5MLS STD B " " 100MLS
200PPB: 2MLS STD A " " 100MLS
SPK 10PPB: 0.5MLS 200PPB DILUTED TO 10MLS WITH SAMPLE

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
BLANK	0.0		-0.039	0.024	-0.102
STANDARD 1	5.0	5.3	0.083	0.080	0.086
STANDARD 2	10.0	7.0	0.178	0.169	0.186
STANDARD 3	50.0	8.6	0.586	0.622	0.551
STANDARD 4	100.0	5.6	0.775	0.806	0.744



BLANK	0.0	0.203	0.211	0.195
BLANK	0.0	0.018	0.017	0.019
BLANK	[illegible]			

000365

Varian SpectrAA System Reports

Nanco Labs, Inc., Unity st.& rt. 376, Hopewell Jct., N.Y. 12533
METALS REPORT

OPERATOR P GUPTE/VICTOR S
DATE ~~10/16/86~~ 10/17/86
BATCH

PROGRAM 10 Pb AUTOMIX

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	PEAK HEIGHT
LAMP POSITION	1
LAMP CURRENT (mA)	10
SLIT WIDTH (nm)	0.5
SLIT HEIGHT	NORMAL
WAVELENGTH (nm)	283.3
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
DELAY TIME (sec)	0
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	2
BACKGROUND CORRECTION	OFF

FURNACE PARAMETERS

STEP NO.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
1	75	5.0	3.0	NORMAL	NO
2	90	30.0	3.0	NORMAL	NO
3	125	30.0	3.0	NORMAL	NO
4	600	5.0	3.0	NORMAL	NO
5	600	10.0	3.0	NORMAL	NO
6	600	2.0	0.0	NORMAL	NO
7	2650	1.1	0.0	NORMAL	YES
8	2650	2.0	0.0	NORMAL	YES
9	2650	2.0	3.0	NORMAL	NO

SAMPLER PARAMETERS
VOLUMES (uL)

	SOLUTION	BLANK	MODIFIER
BLANK	--	20	10
STANDARD 1	1	19	10
STANDARD 2	5	15	10
STANDARD 3	10	10	10
STANDARD 4	20	0	--

RECALIBRATION RATE 0
RESLOPE RATE 0

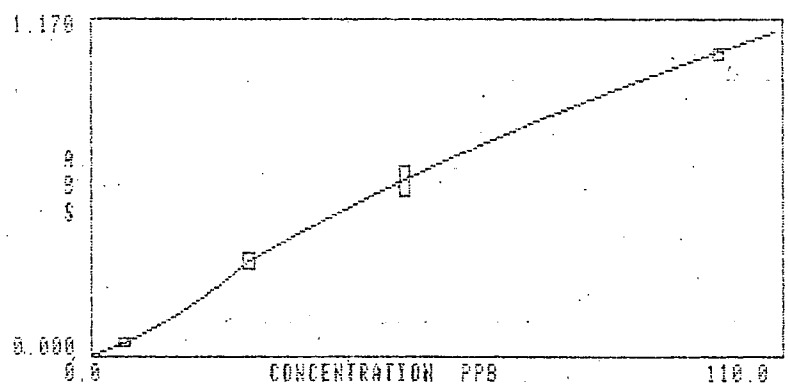
MULTIPLE INJECT NO HOT INJECT NO PRE INJECT NO

CONDITIONS FOR Pb :

Maximum Ash Temperature : 400 C
Recommended Atomize Temperature : 2000 C

Response with Argon :
10 microlitres of 30 micrograms/litre gives about 0.2 ABS.
217.0NM WAVELENGTH GIVES TWICE THE ABSORBANCE,BUT 283.3NM IS
RECOMMENDED BECAUSE BACKGROUND ABSORBANCE & BASELINE NOISE ARE
ARE LOWER
STD A: 5MLS STOCK(1000PPM) DILUTED TO 500MLS
STD-B: 10MLS STD-A " " 100MLS
MSPK: 20PPB(WATER), 50PPB (SEDIMENT)
ASPK: 10PPB
ASPK10PPB: 0.5MLS 200PPB DILUTED TO 10MLS WITH SAMPLE

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
BLANK	0.0		-0.025	-0.028	-0.022
STANDARD 1	5.0	5.2	0.048	0.046	0.050
STANDARD 2	25.0	4.5	0.335	0.324	0.346
STANDARD 3	50.0	7.3	0.615	0.647	0.584
STANDARD 4	100.0	0.8	1.063	1.057	1.069



000367

EPA 91.7	88.2	0.8	0.968	0.973	0.963	
BLK	-5.4	8.1	-0.052	-0.049	-0.055	
C CAL 50	54.7	2.7	0.663	0.651	0.676	
ASPK 117 <40%	61.3	6.7	0.728	0.693	0.762	1:5
ASPK 118 167%	60.7	1.4	0.722	0.729	0.715	MSA
ASPK 120	20.1	6.2	0.245	0.234	0.256	
ASPK 121	16.6	4.1	0.191	0.197	0.186	
BLK	-6.2	4.1	-0.060	-0.058	-0.061	
C CAL 50	48.8	3.2	0.603	0.617	0.589	

BLANK	0.0		0.139	0.086	0.191	
WW 5656	-7.1	1.2	-0.068	-0.067	-0.068	
WW 5657	-11.9	4.0	-0.114	-0.117	-0.110	
WW 5658	-7.1	13.5	-0.068	-0.074	-0.061	
WW 5659	-4.8	7.1	-0.046	-0.048	-0.043	
WW 5660	-1.4	99.9	-0.013	-0.024	-0.003	
BLK	-11.3	0.2	-0.108	-0.108	-0.108	
C CAL 50	50.1	0.8	0.616	0.613	0.620	
WW 5661	21.3	0.6	0.267	0.265	0.268	
WW 5662	4.9	12.4	0.046	0.042	0.051	
WW 5663	11.8	8.7	0.125	0.118	0.133	
WW 5664	93.2	2.0	1.009	1.023	0.995	
WW 5665	8.5	99.3	0.086	0.146	0.026	
WW 5666	5.1	1.5	0.049	0.049	0.050	
5457	-11.5	1.3	-0.110	-0.111	-0.109	
5702	-14.1	26.3	-0.135	-0.160	-0.110	
5446	-14.5	25.6	-0.139	-0.114	-0.164	
~~5457~~ C. Blk	-11.7	0.8	-0.112	-0.111	-0.113	[illegible]
~~BLK~~ C. Cal 50	50.6	0.7	0.621	0.618	0.624	[illegible]

BLANK	0.0		-0.117	-0.118	-0.115	
C CAL	0.8	30.7	0.007	0.009	0.006	
117 1:5	19.9	6.8	0.242	0.230	0.254	9
121 1:5	13.0	3.5	0.141	0.137	0.144	
ASPKdil117 <40%	19.0	6.8	0.228	0.239	0.217	99.5 MSA E SADC
ASPKdil121 43%	17.3	9.6	0.201	0.187	0.214	MSA
BLK	-0.4	37.3	-0.004	-0.005	-0.003	
~~C CAL~~	~~65.4~~	~~7.4~~	~~0.767~~	~~0.808~~	~~0.727~~	PG

000368

BLANK	0.0		-0.000	0.001	-0.002
BLANK	0.0		-0.003	-0.004	-0.003
C CAL 50	52.3	1.5	0.639	0.646	0.632
BLANK	0.0		0.004	0.006	0.003
5663DUP	20.1	8.0	0.245	0.231	0.259
5663MSPK	31.4	8.3	0.411	0.387	0.435
BLANK	0.0		0.001	0.001	0.001
BLANK	0.0		-0.005	-0.008	-0.001
WW 5628	13.1	14.6	0.142	0.127	0.156
WW 5453	19.8	0.2	0.241	0.241	0.241
WW 5627	34.0	7.7	0.441	0.417	0.465
WW 5669	40.3	5.7	0.513	0.492	0.533
5670	18.1	15.3	0.214	0.237	0.191
5671	37.9	15.8	0.486	0.541	0.432
5672	-3.7	13.2	-0.036	-0.039	-0.033
BLANK	0.0		0.002	-0.005	-0.001
SP 5610	8.0	4.3	0.080	0.078	0.083
GW 4150	0.7	25.4	0.007	0.008	0.005
GW 4151	2.0	13.5	0.019	0.021	0.018
WW4464	2.2	4.1	0.021	0.022	0.021
WW 4463	3.3	1.2	0.031	0.031	0.032
WW 4462	10.8	1.4	0.112	0.114	0.111
WW 4458	14.6	0.7	0.163	0.163	0.162
WW 4460	13.0	5.8	0.140	0.146	0.135
WW 4460 DUP	10.5	0.4	0.109	0.108	0.109
4460 ASPK	15.4	2.3	0.173	0.170	0.176
WW 4461	3.0	3.2	0.028	0.028	0.029

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
WW 4457	4.3	22.0	0.041	0.034	0.047
WW 4459	-0.9	17.8	-0.009	-0.008	-0.010
DW 5625	5.0	2.3	0.048	0.049	0.047
DW 5689	-3.4	7.2	-0.033	-0.031	-0.034
SP 5631	1.4	41.9	0.013	0.017	0.009
BLANK	0.0		-0.017	-0.015	-0.018
DW 5689 DUP	-2.8	7.0	-0.027	-0.028	-0.026
5689 ASPK	1.7	67.9	0.016	0.009	0.024

BLANK	0.0		0.004	0.007	0.001
5454	17.0	9.8	0.196	0.210	0.183
5454 DUP	17.5	9.4	0.204	0.191	0.218
5454 ASPK	22.3	2.3	0.283	0.288	0.279
5457	5.3	0.9	0.051	0.050	0.051
5460	11.5	64.5	0.121	0.177	0.066
5461	20.8	0.8	0.257	0.258	0.255
5446	5.0	22.5	0.048	0.040	0.056

BLANK	0.0		-0.007	-0.012	-0.001
4090	OVER	1.0	1.164	1.156	1.172
4090 DUP	OVER	0.7	1.179	1.185	1.173
4090 ASPK	101.9	2.6	1.078	1.098	1.058
4093	OVER	1.4	1.847	1.829	1.865
BLANK	0.0		-0.009	-0.012	-0.005
4096	108.5	2.8	1.128	1.150	1.105
4089	OVER	7.5	2.349	2.225A	2.473A
4083 DUP	17.4	13.4	0.202	0.221	0.183
4083 SPK	16.2	1.6	0.185	0.182	0.187
4035	0.2	99.9	0.002	0.006	-0.001
4085	52.4	4.7	0.640	0.619	0.661
4086	14.0	18.2	0.154	0.174	0.134
4095	7.3	32.7	0.072	0.089	0.056
4094	-2.8	12.8	-0.027	-0.029	-0.024
4087	OVER	14.0	1.253	1.377	1.129
4088	OVER	0.0	4.000	4.000A	4.000A
4084	64.7	9.8	0.761	0.708	0.813
CW 4158	-1.2	25.0	-0.011	-0.009	-0.013
ES 4083	8.7	2.0	0.088	0.087	0.089
4037	-2.3	7.7	-0.022	-0.024	-0.021
4092	50.4	4.7	0.620	0.599	0.640
4091	-1.9	11.9	-0.018	-0.017	-0.020
GW 4036	-2.6	10.4	-0.025	-0.023	-0.027
GW 4034	2.3	6.4	0.022	0.023	0.021
4034 DUP	-2.8	32.2	0.026	0.020	0.032
4034 ASPK	5.3	10.7	0.051	0.047	0.054

Varian Spectraa System Report

Nanco Labs, Inc., Unity st.& rt. 376, Hopewell Jct., N.Y. 12533

METALS REPORT

OPERATOR BOB W
DATE 10/21/86
BATCH

PROGRAM 10 Pb AUTOMIX

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	PEAK HEIGHT
LAMP POSITION	1
LAMP CURRENT (mA)	10
SLIT WIDTH (nm)	0.5
SLIT HEIGHT	NORMAL
WAVELENGTH (nm)	283.3
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	2
BACKGROUND CORRECTION	OFF

FURNACE PARAMETERS

STEP	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
1	75	5.0	3.0	NORMAL	NO
2	90	30.0	3.0	NORMAL	NO
3	135	30.0	3.0	NORMAL	NO
4	400	5.0	3.0	NORMAL	NO
5	600	10.0	3.0	NORMAL	NO
6	400	2.0	0.0	NORMAL	NO
7	2650	1.1	0.0	NORMAL	NO
8	2650	2.0	0.0	NORMAL	YES
9	2650	2.0	3.0	NORMAL	YES
					NO

SAMPLER PARAMETERS
VOLUMES (uL)

	SOLUTION	BLANK	MODIFIER
BLANK			

STANDARD 3	10	10	10
STANDARD 4	20	0	10
SAMPLE	20	0	10

000371

RECALIBRATION RATE 0
RCBLOPE RATE 0

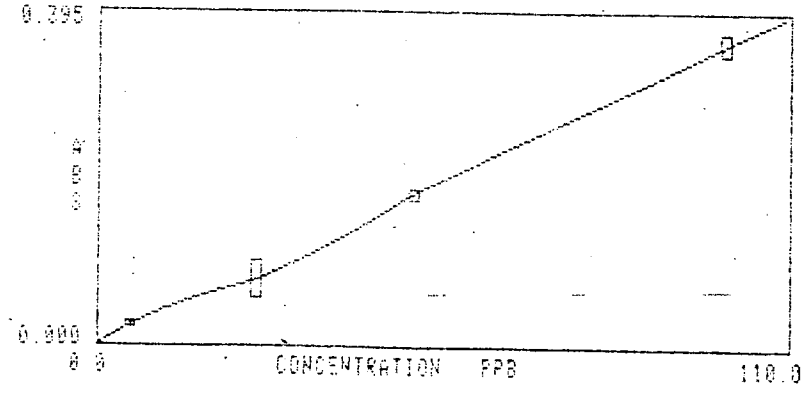
MULTIPLE INJECT NO HOT INJECT NO PRE INJECT NO

CONDITIONS FOR Pb :

Minimum Ash Temperature : 400 C
Recommended Atomize Temperature : 2000 C

Response with Argon :
10 microlitres of 30 micrograms/litre gives about 0.2 ABS.
217.0NM WAVELENGTH GIVES TWICE THE ABSORBANCE, BUT 283.3NM IS RECOMMENDED BECAUSE BACKGROUND ABSORBANCE & BASELINE NOISE ARE ARE LOWER
STD A: 5MLS STOCK(1000PPM) DILUTED TO 500MLS
STD B: 10MLS STD A " " 100MLS
MSPK: 20PPB(WATER), 50PPB (SEDIMENT)
ASPK: 10PPB
ASPK10PPB: 0.5MLS 200PPB DILUTED TO 10MLS WITH SAMPLE

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.052	0.089	0.016
BLANK	0.0		0.001	0.000	0.002
STANDARD 1	5.0	1.2	0.021	0.021	0.022
STANDARD 2	25.0	23.3	0.075	0.089	0.063
STANDARD 3	50.0	1.5	0.180	0.182	0.178
STANDARD 4	100.0	3.0	0.359	0.352	0.367



000372

EPA 91.7 JC	91.5	0.1	0.329	0.329	0.329
BLK	1.5	13.2	0.006	0.006	0.[illegible]
C CAL 50	51.7	0.9	0.186	0.187	0.185
696	OVER	1.2	0.464	0.450	0.478
697	90.3	4.8	0.334	0.327	0.302
696 1:5	35.9	0.6	0.117	0.116	0.117
697 1:5	25.6	3.1	0.079	0.[illegible]79	0.080
ASPKd11696	49.7	0.6	0.178	0.179	0.178
ASPKd11697	40.9	1.4	0.137	0.139	0.136
BLANK	0.0		0.000	-0.002	0.002
115 1:5	18.5	1.0	0.062	0.061	0.062

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
115 1:5ASPK	37.3	23.8	0.122	0.143	0.102
BLK	-0.7	56.2	-0.003	-0.004	-0.002
BLANK	0.0		-0.002	-0.001	-0.002
C CAL (50)	51.0	0.2	0.183	0.184	0.183
BLANK	0.0		0.000	-0.002	0.003
4571	1.1	8.2	0.005	0.004	0.005
4572	0.7	7.3	0.003	0.003	0.003
4973	51.2	0.2	0.184	0.184	0.184
5046	2.0	16.9	0.009	0.010	0.008
5047	3.4	8.6	0.014	0.015	0.014
5051	5.2	37.6	0.022	0.016	0.028
5052	27.7	2.8	0.085	0.087	0.083
5053	37.7	0.8	0.124	0.125	0.123
5110	46.1	3.0	0.161	0.158	0.165
5111	43.1	1.4	0.1[illegible]	0.149	0.146
5116	47.6	5.6	0.168	0.161	0.175
5165	101.5	16.8	0.364	0.408	0.321
5260	49.3	21.2	0.176	0.203	0.150
5297	41.1	2.1	0.136	0.136	0.140
5373	0.7	20.5	0.003	0.002	0.003
5432	28.2	1.4	0.087	0.088	0.086
5433	11.8	8.0	0.044	0.042	0.047
5434	7.9	5.9	0.032	0.030	0.033
5435	3.5	31.3	0.015	0.018	0.012
5436	17.2	6.9	0.059	0.061	0.056
5452	41.3	17.6	0.139	0.122	0.157
5467	1.2	13.7	0.005	0.005	0.006
5673	61.5	1.0	0.221	0.219	0.223
5674	60.1	2.2	0.216	0.219	0.213

from 10/10/86

..5 33.1 31.7
ND 91.7 ~~96~~ 99
31.7 20 92

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000373.

Varian SpectrAA System Report.

Nanco Labs, Inc., Unity st.& rt. 376, Hopewell Jct., N.Y. 12533
METALS REPORT

OPERATOR ~~P GUPTE~~ Victor S.
DATE 10/8/86
BATCH

PROGRAM 13 Se AUTOMIX

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	PEAK HEIGHT
LAMP POSITION	3
LAMP CURRENT (mA)	10
SLIT WIDTH (nm)	1.0
SLIT HEIGHT	NORMAL
WAVELENGTH (nm)	196.0
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
DELAY TIME (sec)	0
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	2
BACKGROUND CORRECTION	ON

FURNACE PARAMETERS

STEP NO.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
1	75	5.0	3.0	NORMAL	NO
2	90	40.0	3.0	NORMAL	NO
3	125	50.0	3.0	NORMAL	NO
4	800	5.0	3.0	NORMAL	NO
5	800	10.0	3.0	NORMAL	NO
6	800	2.0	0.0	NORMAL	NO
7	[illegible]	[illegible]			

TEP O.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS	COMMAND
1	75	5.0	3.0	NORMAL	NO
2	90	40.0	3.0	NORMAL	NO
3	125	50.0	3.0	NORMAL	NO
4	800	5.0	3.0	NORMAL	NO
5	800	10.0	3.0	NORMAL	NO
6	800	2.0	0.0	NORMAL	NO
7	2500	0.9	0.0	NORMAL	YES
8	2500	2.0	0.0	NORMAL	YES
9	2500	2.0	3.0	NORMAL	NO

000374

SAMPLER PARAMETERS
VOLUMES (uL)

	SOLUTION	BLANK	MODIFIER
BLANK	--	20	10
STANDARD 1	1	19	10
STANDARD 2	2	18	10
STANDARD 3	10	10	10
STANDARD 4	20	0	10
SAMPLE	20	0	10

RECALIBRATION RATE 0
RESLOPE RATE 0

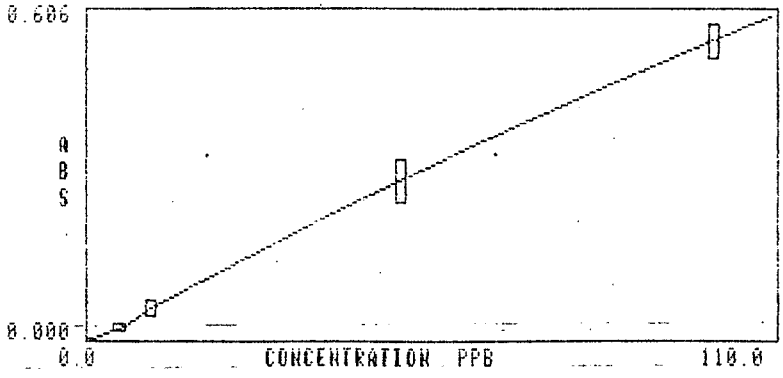
MULTIPLE INJECT NO HOT INJECT NO PRE INJECT NO

NO PLATFORM
CONDITIONS FOR Se :

Maximum Ash Temperature : 700 C
Recommended Atomize Temperature : 2400 C

Response with Argon :
10 microlitres of 100 micrograms/litre gives about 0.2 ABS.
CHEMICAL MODIFIER: 20UL OF 50 MG/L NI
ABSORBANCE WITHOUT MODIFIER IS 50% OF ABSORBANCE WITH MODIFIER
MAXIMUM ASH TEMPERATURE WITHOUT MODIFIER IS 300 C
MAIN STD: 100PPB
STD A : 5MLS STOCK(1000PPM) DILUTED TO 500MLS
100PPB: 5MLS STD A " " 500MLS
200PPB: 2MLS STD A " " 100MLS
SPIKE 10PPB: 0.5MLS 200PPB " " 10MLS WITH SAMPLE

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
BLANK	0.0		-0.003	-0.006	0.000
STANDARD 1	5.0	9.1	0.023	0.025	0.022
STANDARD 2	10.0	16.7	0.062	0.055	0.069
STANDARD 3	50.0	11.7	0.292	0.268	0.316
STANDARD 4	100.0	5.0	0.551	0.532	0.571



BLANK	0.0		-0.012	-0.009	-0.015
LFB 86.4	82.4	6.0	0.462	0.443	0.482
BLK	2.8	11.2	0.013	0.014	0.012
C CAL 50	51.4	0.1	0.299	0.300	0.299
LCS 86.4 (008)	84.0	0.9	0.471	0.474	0.468
NJ1 10:250	OVER	2.0	1.085	1.101	1.070
NJ1 10:250	OVER	1.2	1.096	1.105	1.087
NJ1 10:250	OVER	1.1	1.075	1.067	1.084
NJ1 5:500	97.0	1.6	0.536	0.530	0.542
NJ1 5:500	91.9	0.1	0.511	0.511	0.510
NJ1 5:500	89.9	1.4	0.501	0.505	0.496

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
NJ2 10:250	OVER	2.7	0.863	0.880	0.846
NJ2 10:250	OVER	2.3	0.850	0.864	0.836
BLANK	0.0		0.017	0.017	0.017
NJ2 10:250	OVER	2.5	0.824	0.838	0.809
BLANK	0.0		-0.017	-0.010	-0.023
C BLK	1.5	35.3	0.007	0.009	0.005
C CAL 50	48.3	1.0	0.283	0.285	0.281
BLANK	0.0		0.029	0.019	0.040
NJ2 5:500	48.0	1.1	0.281	0.279	0.283
NJ2 5:500	47.2	1.7	0.276	0.280	0.273
NJ2 5:500	42.9	2.0	0.253	0.249	0.256
BLANK	0.0		-0.026	-0.024	-0.027
BLANK	0.0		0.004	0.003	0.004
BLANK	0.0		-0.006	-0.007	-0.006
NJ1 1:10 OVR	22.5	3.2	0.137	0.140	0.134
NJ1 1:10 OVR	23.7	3.6	0.144	0.140	0.148
NJI 1:10 OVR	26.4	1.5	0.159	0.161	0.158
NJ2 1;10 OVR	12.2	1.7	0.076	0.075	0.076
NJ2 1:10 OVR	13.7	0.6	0.084	0.085	0.084
NJ2 1;10 OVR	12.6	3.2	0.078	0.080	0.076
C BLK	0.4	99.9	0.002	-0.000	0.004
BLANK	0.0		-0.006	-0.005	-0.007
BLANK	0.0		0.005	0.004	0.006
BLANK	0.0		-0.005	-0.002	-0.008
BLANK	0.0		0.008	0.006	0.009

LANK	0.0		0.019	0.021	0.016	
6 0115	OVER	7.8	1.356	1.431	1.281	
6 [redacted]5DUP	OVER	0.2	1.277	1.275	1.279	
6 0116	3.9	88.5	0.018	0.029	0.007	
6 0117	OVER	3.6	1.037	1.010B	1.064	
6 0117SPK	OVER	17.8	1.269	1.429B	1.109	
6 0118	6.2	30.9	0.031	0.038	0.024	
LANK	0.0		0.003	0.007	-0.001	
6 0118	4.0	0.3	0.019	0.019	0.019	
6 0119	41.3	6.6	0.244	0.256	0.233	
6 0120	0.4	99.9	0.002	-0.001	0.005	
6 0121	-2.3	44.8	-0.011	-0.007	-0.014	
BLK	0.6	4.0	0.003	0.003	0.003	
LK	-0.4	99.9	-0.002	0.002	-0.006	
CAL 50	51.4	15.7	0.299	0.266	0.332	
SPK 0115	OVER	2.0	1.282	1.300	1.263	
SPK 0116 162%	16.2	24.5	0.100	0.117	0.082	OK 5u
LANK	0.0		0.009	0.013	0.004	
SPK 0116	11.5	0.5	0.071	0.071	0.071	
SPK 0117	OVER	3.0	1.101	1.078	1.124	
SPK 0118 92%	15.4	3.7	0.095	0.097	0.092	ok 5u
SPK 0119 47%	46.0	8.7	0.270	0.287	0.253	MSA
SPK 0120 86%	8.6	14.3	0.049	0.044	0.054	ok 5u
SPK 0121 95%	9.5	7.9	0.057	0.060	0.054	ok 5u
6 0122	8.5	25.4	0.048	0.056	0.039	
LANK	0.0		0.014	0.018	0.010	
6 0122 Dup	8.2	22.4	0.045	0.053	0.038	
6 [redacted]23	-4.6	6.2	-0.021	-0.022	-0.020	
6 [redacted]24	OVER	4.1	1.234	1.198	1.270	
LK	0.3	97.4	0.001	0.000	0.002	
CAL 50	54.9	1.2	0.318	0.316	0.321	
6 0125	69.5	0.9	0.396	0.398	0.393	
6 0126	OVER	4.2	0.696	0.717	0.676	
6 0127	7.9	12.6	0.043	0.047	0.039	
SPK 0122 92%	17.4	1.0	0.107	0.106	0.107	5u
SPK 0123 87%	8.7	29.2	0.049	0.039	0.060	5u
SPK 0124	OVER	2.4	1.151	1.132	1.170	
SPK 0125 <40%	69.0	1.9	0.393	0.398	0.388	dilute
SPK 0126	OVER	6.8	0.703	0.669	0.737	
SPK 0127 69%	14.8	0.7	0.091	0.091	0.092	MSA
LK	-4.7	25.1	-0.022	-0.018	-0.026	
CAL 50	48.8	4.1	0.285	0.277	0.294	
LANK	0.0		-0.010	-0.017	-0.003	
P BLK511	1.9	32.5	0.009	0.011	0.007	
698	1.4	79.9	0.006	0.011	0.002	
698DUP	2.5	61.5	0.012	0.017	0.007	
698SPK	8.9	14.4	0.052	0.057	0.046	

000377

J6 0122	8.2	22.4	0.045	0.053	0.038
J6 0123	-4.6	6.2	-0.021	-0.022	-0.020
J6 0124	OVER	4.1	1.234	1.198	1.270
BLK	0.3	97.4	0.001	0.000	0.002
C CAL 50	54.9	1.2	0.318	0.316	0.321
J6 0125	69.5	0.9	0.396	0.398	0.393
J6 0126	OVER	4.2	0.696	0.717	0.676
J6 0127	7.9	12.6	0.043	0.047	0.039
ASPK 0122	17.4	1.0	0.107	0.106	0.107
ASPK 0123	8.7	29.2	0.049	0.039	0.060
ASPK 0124	OVER	2.4	1.151	1.132	1.170
ASPK 0125	69.0	1.9	0.393	0.398	0.388
ASPK 0126	OVER	6.8	0.703	0.669	0.737
ASPK 0127	14.8	-0.7	0.091	0.091	0.092
BLK	-4.7	25.1	-0.022	-0.018	-0.026
C CAL 50	48.8	4.1	0.285	0.277	0.294
BLANK	0.0		-0.010	-0.017	-0.003
P BLK511	1.9	32.5	0.009	0.011	0.007
698	1.4	99.9	0.006	0.011	0.002
69[illegible]UP	2.5	61.5	0.012	0.017	0.007
698ASPK	8.9	14.4	0.052	0.057	0.046
698ASPK	12.9	12.4	0.080	0.073	0.087 OK
698DUASPK	13.6	3.5	0.084	0.086	0.082 OK
BLK	1.8	13.9	0.008	0.008	0.009
C CAL 50	48.0	0.4	0.281	0.280	0.282
ASPK0115DUP	OVER	5.9	1.191	1.241	1.142
ASPK 0122DUP	28.0	11.3	0.169	0.182	0.155 MSA
MSPK0122	13.8	26.1	0.085	0.101	0.070
0122DUP	11.6	15.0	0.072	0.079	0.064
BLK	-0.3	99.9	-0.001	0.001	-0.003
C CAL 50	45.5	3.3	0.267	0.273	0.261
42	0.2	99.9	0.001	-0.001	0.003
43	-0.7	99.9	-0.003	-0.006	-0.000
44	-0.4	99.9	-0.002	-0.008	0.005

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
45	-3.6	27.8	-0.017	-0.020	-0.013

C

000378

Varian SpectrAA System Report

Nanco Labs, Inc., Unity st.& rt. 376, Hopewell Jct., N.Y. 12533
METALS REPORT

OPERATOR V SILVESTRI
DATE 10/13/86
BATCH

PROGRAM 13 Se AUTOMIX

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	PEAK HEIGHT
LAMP POSITION	1
LAMP CURRENT (mA)	10
SLIT WIDTH (nm)	1.0
SLIT HEIGHT	NORMAL
WAVELENGTH (nm)	196.0
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0

BACKGROUND CORRECTION ON

000379

FURNACE PARAMETERS

STEP NO.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
1	75	5.0	3.0	NORMAL	NO
2	90	40.0	3.0	NORMAL	NO
3	125	50.0	3.0	NORMAL	NO
4	800	5.0	3.0	NORMAL	NO
5	800	10.0	3.0	NORMAL	NO
6	800	2.0	0.0	NORMAL	NO
7	2500	0.9	0.0	NORMAL	YES
8	2500	2.0	0.0	NORMAL	YES
9	2500	2.0	3.0	NORMAL	NO

SAMPLER PARAMETERS

	VOLUMES (uL) SOLUTION	BLANK	MODIFIER
BLANK	--	20	10
STANDARD 1	1	19	10
STANDARD 2	2	18	10
STANDARD 3	10	10	10
STANDARD 4	20	0	10
SAMPLE	20	0	10

RECALIBRATION RATE 0
RESLOPE RATE 0

MULTIPLE INJECT NO HOT INJECT NO PRE INJECT NO

NO PLATFORM
CONDITIONS FOR Se :

Maximum Ash Temperature : 700 C
Recommended Atomize Temperature : 2400 C

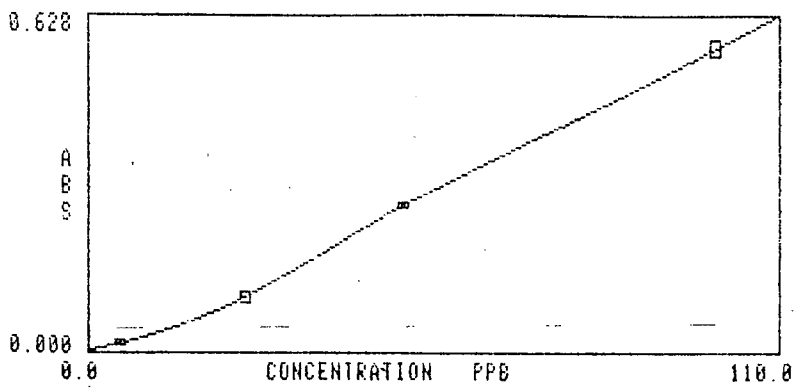
Response with Argon :
10 microlitres of 100 micrograms/litre gives about 0.2 ABS.
CHEMICAL MODIFIER: 20UL OF 50 MG/L NI
aBSORBANCE WITHOUT MODIFIER IS 50% OF ABSORBANCE WITH MODIFIER
mAXIMUM ASH TEMPERATURE WITHOUT MODIFIER IS 300 C
MAIN STD: 100PPB
STD A : 5MLS STOCK(1000PPM) DILUTED TO 500MLS
100PPB: 5MLS STD A " " 500MLS
200PPB: 2MLS STD A " " 100MLS
SPIKE 10PPB: 0.5MLS 200PPB " " 10MLS WITH SAMPLE

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.077	0.065	0.089
BLANK	0.0		-0.023	-0.028	-0.019

STANDARD 2	10.0	[illegible]	0.066	0.034	0.097
STANDARD 3	50.0	8.1	0.345	0.325	0.365
BLANK	0.0		0.023	0.023	0.023

000860

BLANK	0.0		0.012	0.025	-0.000
STANDARD 1	5.0	20.4	0.014	0.012	0.016
STANDARD 2	10.0	2.5	0.027	0.027	0.026
STANDARD 3	50.0	21.0	0.238	0.273	0.203
BLANK	0.0		-0.002	-0.003	-0.006
STANDARD 1	5.0	2.1	0.016	0.016	0.017
STANDARD 2	10.0	98.0	0.018	0.030	0.005
BLANK	0.0		0.012	0.012	0.013
BLANK	0.0		0.007	0.010	0.003
STANDARD 1	5.0	21.8	0.015	0.018	0.013
STANDARD 2	10.0	6.8	0.028	0.030	0.027
STANDARD 3	50.0	0.5	0.249	0.248	0.250
BLANK	0.0		0.020	0.019	0.020
STANDARD 1	5.0	13.9	0.014	0.015	0.013
STANDARD 2	25.0	4.6	0.103	0.099	0.106
STANDARD 3	50.0	0.5	0.278	0.277	0.279
STANDARD 4	100.0	1.7	0.571	0.564	0.578



000381

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS		
EPA 86.4	90.3	4.8	0.513	0.530	0.495	
BLANK	0.0		0.029	0.031	0.027	
BLK	-4.1	16.7	-0.011	-0.010	-0.013	
BLANK	0.0		-0.003	-0.005	-0.002	
BLANK	0.0		-0.001	-0.004	0.003	
BLANK	0.0		-0.002	-0.005	0.002	
BLANK	0.0		-0.001	-0.006	-0.004	
C CAL	53.5	23.9	0.298	0.248	0.348	
1:10 0115	100.0	0.8	0.571	0.574	0.568	
1:10 0115DUP	95.7	0.4	0.545	0.544	0.547	
1:10 0117	65.0	0.6	0.364	0.366	0.363	
1:10 0117MSP	64.5	0.8	0.361	0.363	0.360	
1:10 0124	52.3	4.2	0.291	0.282	0.300	
1:10 0125	23.3	7.2	0.092	0.097	0.087	
1:10 0126	94.2	1.2	0.536	0.532	0.541	
BLANK	0.0		0.070	0.063	0.078	
BLK	-3.8	4.8	-0.011	-0.010	-0.011	
C CAL 50	47.0	0.2	0.257	0.256	0.257	
ASPKdil0115	64.9	0.1	0.364	0.363	0.364	
ASPKdil0115D	64.4	0.6	0.361	0.362	0.359	
ASPKdil0117	41.0	1.8	0.213	0.216	0.210	
ASPKdil0124<40%	33.4	1.0	0.157	0.156	0.159	523E
ASPKdil0125<40%	8.5	24.0	0.025	0.030	0.021	233E
ASPKdil0126<40%	55.0	0.6	0.307	0.305	0.308	942E
LCS 510	4.3	61.5	0.012	0.017	0.007	
BLK	-1.0	99.9	-0.003	0.000	-0.006	
BLANK	0.0		-0.015	-0.014	-0.016	
BLANK	0.0		-0.006	-0.003	-0.009	
BLANK	0.0		-0.045	-0.090	-0.000	
BLANK	0.0		0.003	-0.004	0.010	
C CAL 50	46.5	10.0	0.253	0.235	0.271	
BLANK	0.0		-0.015	-0.026	-0.005	
GW 4537	-30.3	1.3	-0.085	-0.086	-0.084	
GW 4557	-53.3	0.9	-0.150	-0.150	-0.149	
GW 4558	-38.1	0.1	-0.107	-0.107	-0.107	

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
GW 4559	-31.2	1.8	-0.088	-0.087	-0.089
GW 4560	-39.9	0.0	-0.112	-0.112	-0.112
DW 4570	-34.1	0.6	-0.096	-0.096	-0.095
DW 4571	-32.7	0.7	-0.092	-0.092	-0.091
DW 4572	-32.3	2.2	-0.091	-0.092	-0.089
DW 4573	-31.9	0.7	-0.089	-0.089	-0.090
DW 4574	-31.1	2.1	-0.087	-0.086	-0.088
SW 4713	-45.9	4.8	-0.129	-0.133	-0.125
SW 4714	-45.0	0.3	-0.126	-0.126	-0.126
GW 4766	-38.9	2.1	-0.109	-0.111	-0.107
DW 4964	-32.3	0.6	-0.091	-0.091	-0.090
	-10.8	84.9	-0.030	-0.049	-0.012
DW 4966	-41.8	2.0	-0.117	-0.116	-0.119
	-19.8	46.0	-0.056	-0.038	-0.074
DW 4968	-33.6	1.3	-0.094	-0.095	-0.094
GW 4511	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

000382

EK	1.0	99.9	-0.003	0.000	-0.006
LANK	0.0		-0.015	-0.014	-0.016
LANK	0.0		-0.006	-0.003	-0.009
LANK	0.0		-0.045	-0.090	-0.000
LANK	0.0		0.003	-0.004	0.010
CAL	46.5	10.0	0.253	0.235	0.271
LANK	0.0		-0.015	-0.026	-0.005
W 4537	-30.3	1.3	-0.085	-0.086	-0.084
W 4557	-53.3	0.9	-0.150	-0.150	-0.149
W 4558	-38.1	0.1	-0.107	-0.107	-0.107

SAMPLE	CONC PPB	%RSD	MEAN ABS		READINGS
W 4559	-31.2	1.8	-0.088	-0.087	-0.089
W 4560	-39.9	0.0	-0.112	-0.112	-0.112
W 4570	-34.1	0.6	-0.096	-0.096	-0.095
W 4571	-32.7	0.7	-0.092	-0.092	-0.091
W 4572	-32.3	2.2	-0.091	-0.092	-0.089
W 4573	-31.9	0.7	-0.089	-0.089	-0.090
W 4574	-31.1	2.1	-0.087	-0.086	-0.088
W 4713	-45.9	4.8	-0.129	-0.133	-0.125
W 4714	-45.0	0.3	-0.126	-0.126	-0.126
W 4766	-38.9	2.1	-0.109	-0.111	-0.107
W 4964	-32.3	0.6	-0.091	-0.091	-0.090
	-10.8	84.9	-0.030	-0.049	-0.012
W 4966	-41.8	2.0	-0.117	-0.116	-0.119
	-19.8	46.0	-0.056	-0.038	-0.074
W 4968	-33.6	1.3	-0.094	-0.095	-0.094
W 4511	-44.1	1.5	-0.124	-0.125	-0.123
W 4512	-41.6	1.0	-0.117	-0.116	-0.118
W 4537	-33.6	0.9	-0.094	-0.095	-0.094
4972	-34.7	1.4	-0.097	-0.096	-0.098
4972	-37.9	1.0	-0.106	-0.107	-0.106
45	-15.3	14.1	-0.043	-0.047	-0.039

Varian SpectrAA System Report

Nanco Labs, Inc., Unity st.& rt. 376, Hopewell Jct., N.Y. 12533

METALS REPORT

OPERATOR V SILVESTRI
DATE 10/13/86
BATCH

PROGRAM 24 Se PLATFORM-LMS-MSA

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	STANDARD ADDITIONS
MEASUREMENT MODE	PEAK HEIGHT
LAMP POSITION	3
LAMP CURRENT (mA)	5
SLIT WIDTH (nm)	1.0
SLIT HEIGHT	NORMAL
WAVELENGTH (nm)	196.0
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	2
BACKGROUND CORRECTION	ON

FURNACE PARAMETERS

STEP NO.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
1	95	5.0	3.0	NORMAL	NO
2	150	30.0	3.0	NORMAL	NO
3	300	30.0	3.0	NORMAL	NO
4	600	5.0	3.0	NORMAL	NO
5	600	15.0	3.0	NORMAL	NO
6	600	2.0	0.0	NORMAL	NO
7	2200	0.8	0.0	NORMAL	YES
8	2200	2.0	0.0	NORMAL	YES
9	2200	2.0	3.0	NORMAL	NO

000384

VOLUMES (uL)

	STANDARD	SAMPLE	BLANK	MODIFIER
BLANK	--	--	20	0
ADDITION 1	4	10	6	0
ADDITION 2	7	10	3	0
ADDITION 3	10	10	0	0
SAMPLE	--	10	0	0

RECALIBRATION RATE 1

MULTIPLE INJECT NO HOT INJECT NO PRE INJECT NO

CONDITIONS FOR Se :

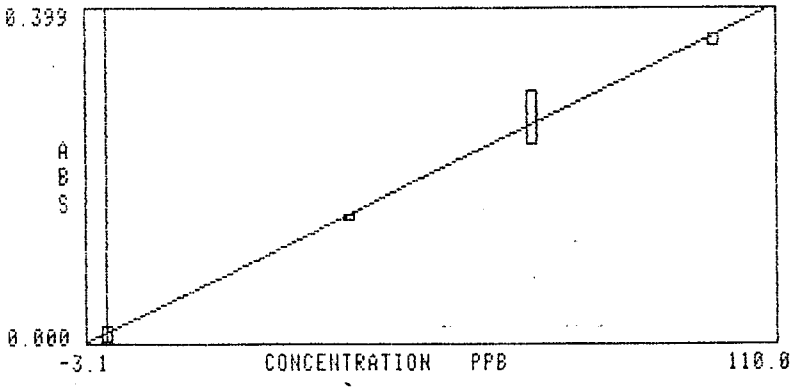
Maximum Ash Temperature : 700 C
Recommended Atomize Temperature : 2400 C

Response with Argon :
10 microlitres of 100 micrograms/litre gives about 0.2 ABS.

Chemical modifier : 20 microlitres of 50 milligram/litre Ni.
Absorbance without modifier is 50% of absorbance with modifier.
Maximum ash temperature without modifier is 300 C.

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS		
BLANK	0.0		0.037	0.034	0.040	
SDDITION 1	40.0	0.2	0.152	0.153	0.152	MK
ADDITION 2	70.0	10.9	0.271	0.250	0.292	
ADDITION 3	100.0 MK	0.5	0.363	0.364	0.361	
~~0127~~	~~3.1~~	77.4	0.009	0.014	0.004	
1 0119 (1:10)	2.7					

R=.9995

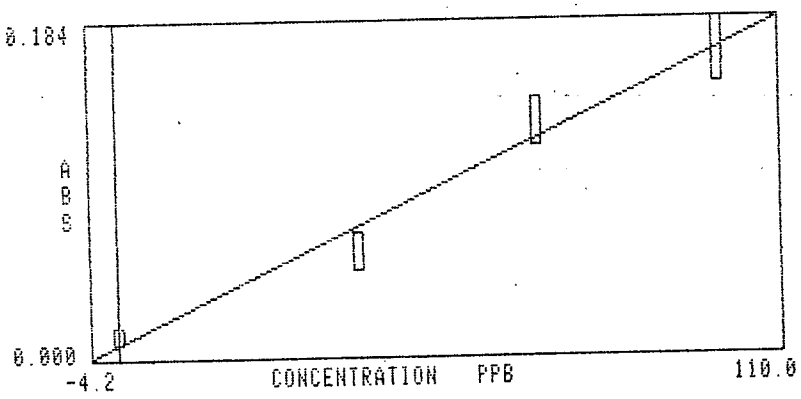


BLANK	0.0		0.000	-0.001	0.002
ADDITION 1	40.0	14.5	0.057	-0.063	0.051
ADDITION 2	70.0	9.4	0.129	0.120	0.137
ADDITION 3	100.0	10.2	0.167	0.155	0.179
~~0125 1:10~~	~~4.2~~ 7.2	19.9	0.012	0.014	0.011

0127

R=.993+

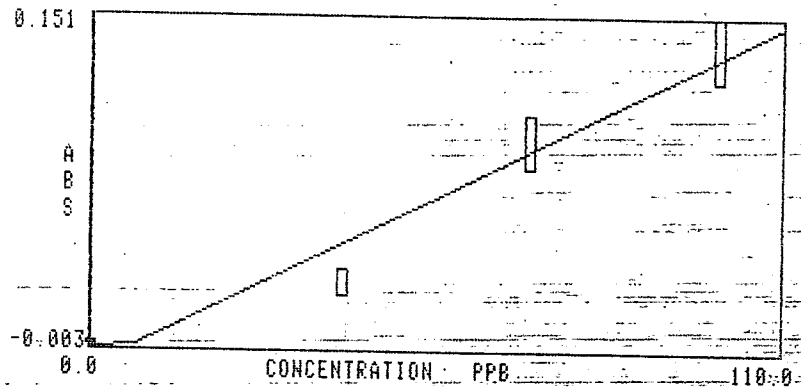
000385



SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
BLANK	0.0		-0.004	-0.007	-0.002
ADDITION 1	40.0	17.8	0.028	0.025	0.032
ADDITION 2	70.0	12.0	0.094	0.101	0.086
ADDITION 3	100.0	9.9	0.137	0.147	0.127
~~0115 1:10~~	~~-8.4~~ -6.5	99.9	-0.003	-0.007	0.001

0125(1:10)

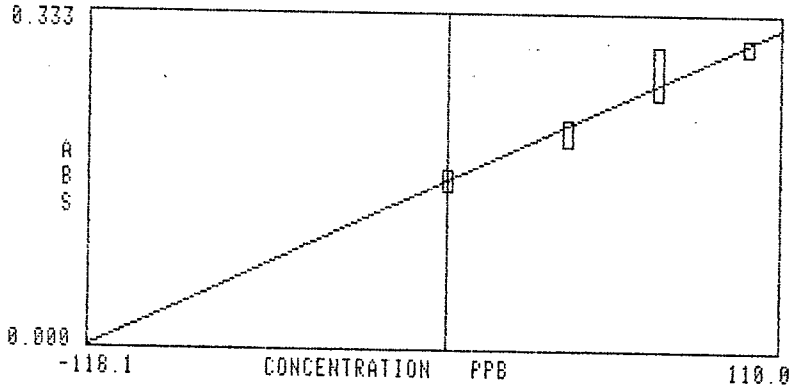
.979+



000386

BLANK	0.0		0.006	0.004	0.008
ADDITION 1	40.0	5.6	0.215	0.207	0.224
ADDITION 2	70.0	8.9	0.275	0.258	0.292
ADDITION 3	100.0	1.8	0.302	0.299	0.306
4 ~~0115DUP1:10~~	~~118.1~~	4.5	0.167	0.173	0.162
0115 (1:10)	118.9				

R = .984+



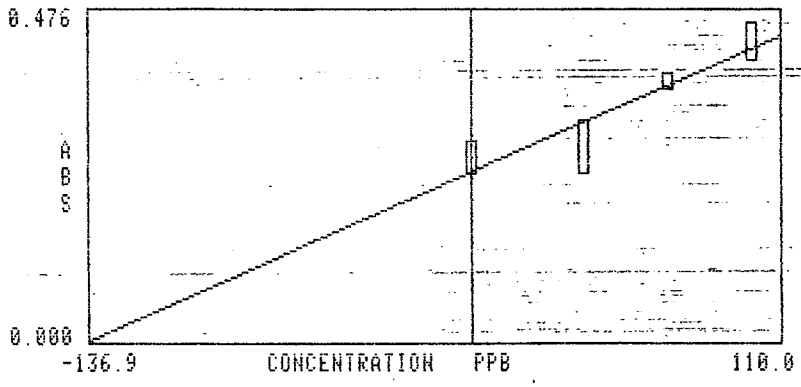
000587

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.001	0.005	-0.004
ADDITION 1	40.0	27.1	0.130	0.105	0.154
ADDITION 2	70.0	7.2	0.186	0.177	0.196
ADDITION 3	100.0	4.1	0.224	0.218	0.231
BLANK	0.0		0.003	0.011	-0.005
ADDITION 1	40.0	12.9	0.279	0.253	0.304
ADDITION 2	70.0	2.4	0.375	0.381	0.368
ADDITION 3	100.0	5.2	0.433	0.417	-0.449
~~10~~ 9	~~136.9~~ 107.1	6.5	0.264	0.277	0.252

0126 (1:10)

MM

R = .9767



BLANK	0.0		0.007	0.014	0.001
ADDITION 1	40.0	19.7	0.496	0.427	0.565
BLANK	0.0		0.005	-0.002	0.013
ADDITION 1	40.0	5.4	0.393	0.408	~~0.378~~

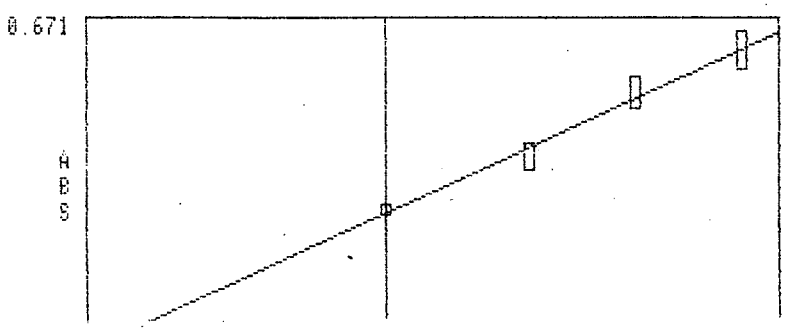
MM

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
ADDITION 2	70.0	5.6	0.526	0.505	~~0.546~~
ADDITION 3	100.0	5.2	0.610	0.588	~~0.633~~
~~11~~ 10	~~84.0~~ 82.6	2.3	0.287	0.283	~~0.292~~

LCS (86-4)

MM

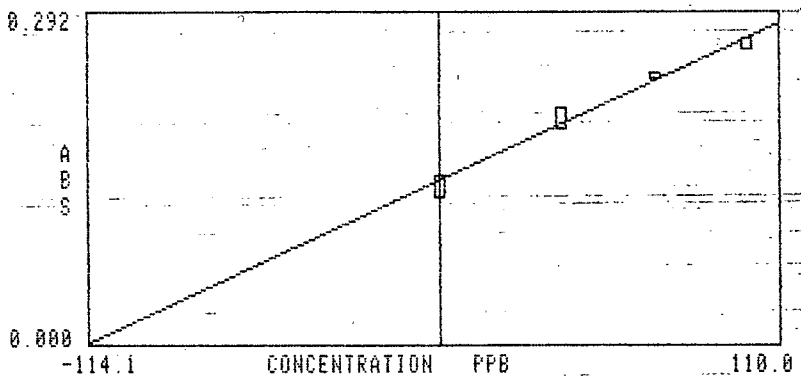
R = 1.000 S



000388

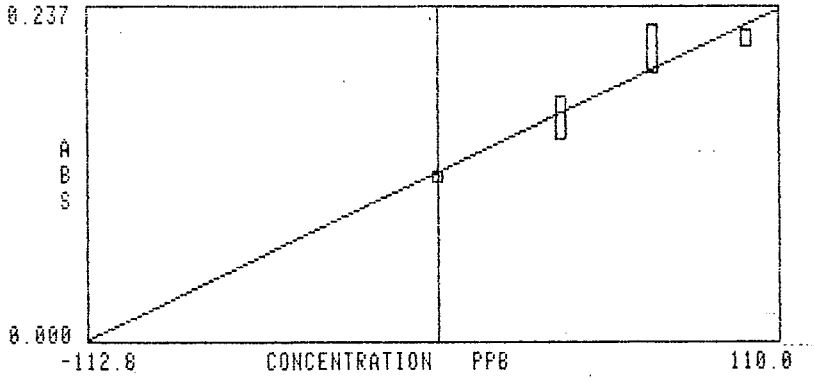
SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS		
BLANK	0.0		0.015	0.015	0.014	
ADDITION 1	40.0	3.2	0.201	0.206	0.197	MM
ADDITION 2	70.0	0.2	0.237	0.237	0.237	
ADDITION 3	100.0 MM	1.1	0.265	0.268	0.263	
~~0117 1:10~~	~~114.1~~	5.7	0.139	0.145	0.134	
0115-DUP (1:10)	115.2					

R = .992+



BLANK	0.0		-0.006	-0.006	-0.005
ADDITION 1	40.0	8.7	0.159	0.169	0.149
ADDITION 2	70.0	7.5	0.209	0.220	0.198
ADDITION 3	100.0 MM	1.7	0.215	0.213	0.218
~~0117MSPK1:10~~	~~112.8~~	2.1	0.116	0.118	0.115
0117 (1:10)	97.0				

R = .982+

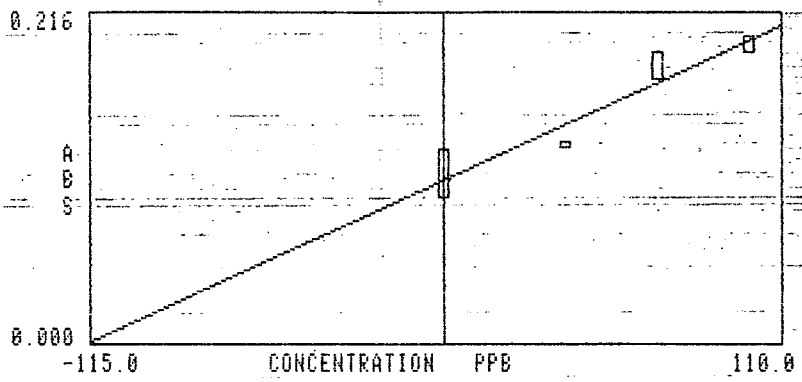


000339

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.001	0.000	0.002
ADDITION 1	40.0	0.0	0.131	0.131	0.131
ADDITION 2	70.0	3.7	0.183	0.178	0.187
ADDITION 3	100.0	1.4	0.197	0.195	0.199
7 ~~0124 1:10~~	~~115.0~~ 82.8 mm	12.0	0.111	0.120	0.101

0117 MSPK (1:10)

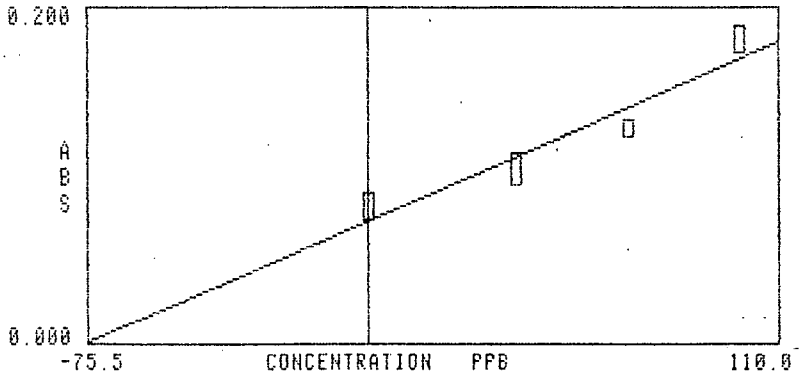
R = .960+



BLANK	0.0		0.003	0.007	0.000
ADDITION 1	40.0	7.1	0.104	0.099	0.110
ADDITION 2	70.0	2.3	0.129	0.127	0.131
ADDITION 3	100.0	3.3	0.182	0.178	0.186
5 ~~0126 1:10~~	~~75.5~~ 59.4 mm	7.1	0.082	0.086	0.077

0124 (1:10)

R = .958+

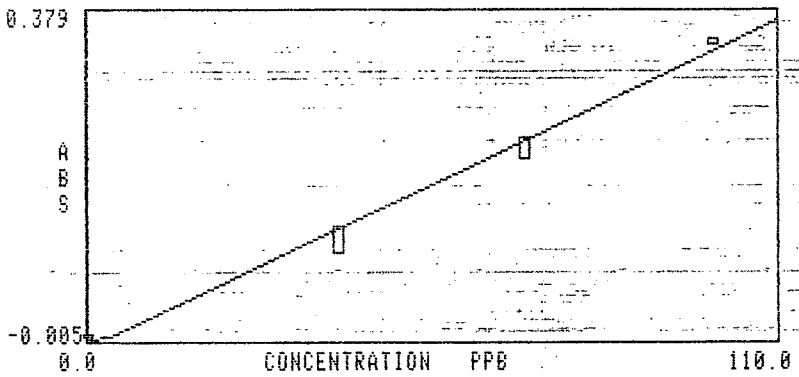


000390

BLANK	0.0		0.011	0.013	0.008
BLANK	0.0		-0.003	0.003	-0.010
ADDITION 1	40.0	11.5	0.112	0.103	0.121
ADDITION 2	70.0	4.7	0.220	0.228	0.213
ADDITION 3	100.0	0.2	0.345	0.344	0.345
±CS (-0)	-4.3 -3.6	99.9	-0.005	-0.009	-0.001

mk

R = .990+



MSA

A

Varian SpectrAA System Report

Nanco Labs, Inc., Unity st.& rt. 376, Hopewell Jct., N.Y. 12533

METALS REPORT

000391

OPERATOR V.S
DATE ~~10/7/86~~ 10/8/86 pG
BATCH

PROGRAM 3 T1 AUTOMIX

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	PEAK AREA
LAMP POSITION	7
LAMP CURRENT (mA)	10
SLIT WIDTH (nm)	0.5
SLIT HEIGHT	NORMAL
WAVELENGTH (nm)	276.8
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	2
BACKGROUND CORRECTION	ON

FURNACE PARAMETERS

STEP NO.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
1	75	5.0	3.0	NORMAL	NO
2	90	5.0	3.0	NORMAL	NO
3	125	10.0	3.0	NORMAL	NO
4	400	5.0	3.0	NORMAL	NO
5	400	10.0	3.0	NORMAL	NO
6	400	10.0	3.0	NORMAL	NO
7	2400	1.5	0.0	NORMAL	YES
8	2400	2.0	0.0	NORMAL	YES
9	2400	1.0	3.0	NORMAL	NO

SAMPLER PARAMETERS
VOLUMES (uL)

	SOLUTION	DILUENT	MODIFIER
BLANK	--	20	0
STANDARD 1	1	18	0
STANDARD 2	2	18	0
STANDARD 3	10	10	0
STANDARD 4	20	0	0
SAMPLE	20	0	0

RECALIBRATION RATE 0
RESLOPE RATE 0

MULTIPLE INJECT NO HOT INJECT NO PRE INJECT NO

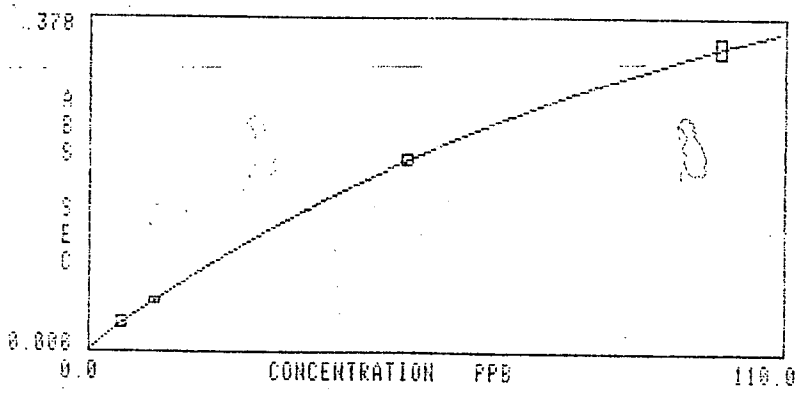
[illegible] temperature : 2200 C

Response with Argon :
10 microlitres of 100 micrograms/litre gives about 0.2 ABS.

000392

MAIN STD: 100PPB TL
STD A: 5MLS STOCK(1000PPM) DILUTED TO 500MLS
STD B: 5 MLS STD A " " 500MLS
400PPB: 4MLS STD A " " 100MLS
SPIKE 20PPB: 0.5MLS 400PPB " " 10MLS WITH SAMPLE

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.009	0.008	0.010
STANDARD 1	5.0	99.9	0.001	-0.000	0.003
STANDARD 2	10.0	11.8	0.007	0.007	0.006
BLANK	0.0		-0.010	-0.011	-0.009
BLANK	0.0		-0.002	0.004	-0.008
BLANK	0.0		0.011	0.011	0.010
BLANK	0.0		-0.027	-0.026	-0.027
STANDARD 1	5.0	13.3	0.029	0.032	0.026
STANDARD 2	10.0	1.0	0.054	0.054	0.053
STANDARD 3	50.0	1.9	0.212	0.215	0.209
STANDARD 4	100.0	2.5	0.344	0.338	0.350



~~SPA~~	~~5.4~~	~~14.8~~	~~0.031~~	~~0.035~~	~~0.028~~
BLANK	0.0		0.005	0.004	0.007
BLANK	0.0		-0.003	-0.003	-0.003
BLANK	0.0		-0.004	-0.003	-0.005
~~SPA~~	~~5.8~~	~~2.0~~	~~0.032~~	~~0.033~~	~~0.032~~
BLANK	0.0		0.015	0.019	0.012

PG

PG

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS

000893

BLANK	0.0		0.003	0.005	0.005
EPA 6.23	5.9	0.8	0.034	0.034	0.034 - PG
C BLK	0.9	4.1	0.005	0.005	0.005
~~C CAL~~	~~44.3~~	~~4.2~~	~~0.194~~	~~0.200~~	~~0.188~~ PG
BLANK	0.0		-0.006	-0.004	-0.008
BLANK	0.0		-0.002	-0.003	-0.000
BLANK	0.0		0.002	0.004	-0.000
BLANK	0.0		-0.006	-0.005	-0.008
C CAL 50	45.2	1.8	0.197	0.199	0.194
LCS 6.3(008)	6.3	4.4	0.036	0.035	0.037
NJ3 10:250	OVER	0.7	0.515	0.517	0.512
NJ310:250	OVER	2.1	0.549	0.557	0.541
NJ3 10:250	OVER	0.9	0.574	0.570	0.577
NJ3 5:500	53.5	2.7	0.223	0.219	0.227
NJ3 5:500	52.9	0.1	0.221	0.221	0.222
BLANK	0.0		0.003	0.004	0.003
[illegible]3 5:500	52.6	0.8	0.220	0.221	0.219
NJ4 10:250	52.8	1.4	0.221	0.219	0.223
NJ4 10:250	60.9	0.8	0.245	0.247	0.244
NJ4 10:250	61.3	0.3	0.247	0.246	0.247
C BLK	0.8	22.0	0.005	0.004	0.006
C CAL 50	46.6	0.7	0.201	0.200	0.202
NJ4 5:500	16.2	5.1	0.083	0.087	0.080
NJ4 5:500	14.7	3.1	0.077	0.078	0.075
NJ4 5:500	14.5	3.5	0.076	0.078	0.074
BLANK	0.0		0.016	0.016	0.016
NJ31:5,5:500	8.7	4.8	0.048	0.046	0.049
NJ31:5,5:500	9.1	2.3	0.049	0.049	0.050
NJ31:5,5:500	8.7	0.0	0.048	0.048	0.048
BLANK	0.0		-0.012	-0.011	-0.012
NJ41:5,10:25	10.3	4.5	0.055	0.054	0.057
NJ41:5,10:25	10.8	6.2	0.058	0.055	0.060
NJ41;5,10;25	10.6	2.9	0.057	0.055	0.058
25	0.4	99.9	0.002	0.000	0.004
C BLK	0.6	67.2	0.004	0.002	0.005
BLANK	0.0		0.005	0.009	0.001
C CAL 50	45.7	0.2	0.198	0.198	0.199
BLANK	0.0		-0.004	-0.004	-0.003
P BLANK	-0.0	99.9	-0.000	0.000	-0.001
0115	-0.9	0.0	-0.005	-0.005	-0.005
0115 DUP	-0.7	3.9	-0.004	-0.004	-0.004
[illegible]16	-0.2	99.9	-0.001	-0.003	0.001
[illegible]17	-22.9B	15.2	-0.134B	-0.148B	-0.119B
0118	0.0	99.9	0.000	0.002	-0.001
BLANK	0.0		0.008B	0.006	0.008
0117 MSPK	-4.6B	69.6	-0.027B	-0.040B	-0.014B
0119	0.8	34.9	0.004	0.006	0.003
0120	-0.3	99.9	-0.002	0.001	-0.004
0121	-0.7	25.7	-0.005	0.004	-0.006
C BLK	-1.0	27.1	-0.006	-0.005	-0.007
C CAL 50	50.0	1.1	0.217	0.214	0.210
BLANK	0.0		-0.005	-0.004	-0.006
117LSPKL:5	2.6	6.3	0.015	0.014	0.016
115 ASPK 100%	19.9	0.7	0.100	0.101	0.100 5u
115ASPKDUP 99%	19.8	2.3	0.100	0.099	0.101 5u
116 ASPK 103%	20.6	1.3	0.103	0.102	0.104 5u
117 ASPK	-3.8B	99.9	-0.022B	0.030B	-0.004B
118 ASPK 102%	20.4	1.5	0.102	0.101	0.104 5u

000394

BLANK	[illegible]		0.0[illegible]	[illegible]	0.008
0117 MSPK	4.6B	69.6	-0.027B	-0.040B	-0.014B
0119	0.8	34.9	0.004	0.006	0.003
0120	-0.3	99.9	-0.002	0.001	-0.004
0121	-0.9	25.7	-0.005	-0.004	-0.006
C BLK	-1.0	27.1	-0.006	0.005	-0.007
✓C CAL 50	50.0	1.1	0.212	0.214	0.210
BLANK	0.0		-0.005	-0.004	-0.006
117MSPK1:5	3.6	6.3	0.015	0.014	0.016
115 ASPK	19.9	0.7	0.100	0.101	0.100
115ASPKDUP	19.8	2.3	0.100	0.098	0.101
116 ASPK	20.6	1.3	0.103	0.102	0.104
117 ASPK	-3.8B	99.9	-0.022B	-0.040B	-0.004B
118 ASPK	20.4	1.6	0.102	0.101	0.104

SAMPLE	CONC PPB	%RSD	MEAN ABS		READINGS	
119 ASPK 81%	16.1	0.3	0.083	0.083	0.083	5u (50% rule)
120 ASPK 99%	19.8	2.4	0.100	0.101	0.098	5u
121 ASPK 101%	20.2	5.3	0.102	0.098	0.106	5u
0122	5.3	5.0	0.030	0.032	0.029	
C BLK	0.6	40.1	0.003	0.003	0.004	
✓C CAL 50	52.0	1.8	0.219	0.221	0.216	
0122 DUP	4.5	5.8	0.026	0.027	0.025	
0122 MSPK	26.3	0.3	0.128	0.127	0.128	
0123	1.0	41.9	0.006	0.007	0.004	
0124	1.9	53.1	0.011	0.015	0.007	
0125	2.2	34.2	0.013	0.010	0.016	
0126	5.7	2.3	0.033	0.032	0.033	
0127	-1.7	0.0	-0.010	-0.010	-0.010	
0122 ASPK ~~100%~~	20.0 75%	0.4	0.101	0.101	0.100	~~0.0~~ (50% rule) 10u
0122DUPASPK 140%	33.0	2.0	0.154	0.151	0.156	10u (50% rule)
0123 ASPK 100%	20.0	5.3	0.101	0.097	0.104	~~10u~~ 5u
C BLK	0.9	65.6	0.005	0.008	0.003	
✓C CAL 50	47.4	1.5	0.204	0.202	0.206	
0124 ASPK 117%	23.4	0.0	0.115	0.115	0.115	10u (50% rule)
0125 ASPK 117%	25.4	0.2	0.124	0.124	0.124	10u
0126 ASPK 110%	27.9	1.9	0.134	0.136	0.132	5.7
[illegible]27 ASPK 109%	21.8	5.2	0.109	0.105	0.113	5u
[illegible]98	1.4	1.8	0.008	0.008	0.008	
698 DUP	1.3	2.6	0.007	0.007	0.007	
698 MSPK	43.8	2.0	0.192	0.195	0.189	
698 ASPK	21.8	4.3	0.109	0.112	0.105	
698DUPASPK	22.1	0.2	0.110	0.110	0.110	
C BLK	2.3	1.6	0.013	0.013	0.014	
✓C CAL 50	50.5	1.6	0.214	0.216	0.211	
4766	1.4	9.0	0.008	0.008	0.007	
4553	1.9	8.1	0.011	0.011	0.012	
4557	1.5	17.0	0.009	0.008	0.010	
4557	1.8	17.2	0.011	0.012	0.009	
4560	2.0	0.5	0.011	0.011	0.011	
BLANK	0.0		0.002	0.002	0.002	
4976	-0.3	99.9	-0.002	-0.003	-0.000	
4977	-0.1	99.9	-0.000	0.001	-0.002	
4978	5.4	7.8	0.031	0.033	0.030	
4979	-0.5	80.3	-0.003	-0.004	-0.001	
4980	-1.0	36.9	-0.006	-0.007	-0.004	
4980 DUP	-1.1	[illegible]	[illegible]	[illegible]	[illegible]	

000895

Varian SpectrAA System Report

Anco Labs, Inc., Unity St.& rt. 376, Hopewell Jct., N.Y. 12533
METAL REPORT

OPERATOR E TOMPKINS
DATE 10/15/86
BATCH

PROGRAM 3 T1 AUTOMIX

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	PEAK AREA
LAMP POSITION	7
LAMP CURRENT (mA)	10
SLIT WIDTH (nm)	0.5
SLIT HEIGHT	NORMAL
WAVELENGTH (nm)	276.8
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	2
BACKGROUND CORRECTION	ON

FURNACE PARAMETERS

STEP	TEMPERATURE	TIME	GAS FLOW	GAS TYPE	READ

5	400	10.0	3.0	NORMAL	NO
6	400	10.0	3.0	NORMAL	NO
7	2400	1.5	0.0	NORMAL	YES
8	2400	2.0	0.0	NORMAL	YES
9	2400	1.0	3.0	NORMAL	NO

000396

SAMPLER PARAMETERS
VOLUMES (uL)

	SOLUTION	BLANK	MODIFIER
BLANK		20	0
STANDARD 1	1	19	0
STANDARD 2	2	18	0
STANDARD 3	10	10	0
STANDARD 4	20	0	0
SAMPLE	20	0	0

RECALIBRATION RATE 0
RESLOPE RATE 0

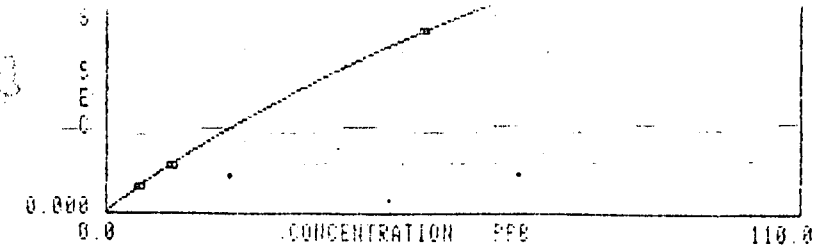
MULTIPLE INJECT NO HOT INJECT NO PRE-INJECT NO

CONDITIONS FOR T1 :

Maximum-Ash Temperature : 400 C
Recommended Atomize Temperature : 2200 C

Response with Argon :
10 microlitres of 100 micrograms/litre gives about 0.2 ABS.
MAIN STD: 100PPB TL
STD A: 5MLS STOCK(1000PPM) DILUTED TO 500MLS
STD B: 5 MLS STD A " " 500MLS
[illegible]PPB: 4MLS STD A " 100MLS
SPIKE 20PPB: 0.5MLS 400PPB " " 10MLS WITH SAMPLE

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.055	0.053	0.058
BLANK	0.0		-0.017	-0.019	-0.014
STANDARD 1	5.0	4.9	0.031	0.032	0.030
STANDARD 2	10.0	2.3	0.057	0.058	0.057
STANDARD 3	50.0	0.1	0.223	0.223	0.223
STANDARD 4	100.0	1.4	0.377	0.381	0.373



000397

EPA 95.2	102.4	1.9	0.383	0.388	0.378
BLK	-0.6	99.9	-0.004	-0.008	0.000
C CAL 50	51.0	1.9	0.226	0.223	0.229
LCS DEP	99.6	0.6	0.376	0.377	0.374
LCS SOIL DEP	12.3	11.3	0.069	0.075	0.064
45[illegible]	-0.4	99.9	-0.003	-0.009	0.003
45[illegible]	1.9	6.4	0.012	0.011	0.012
4559	1.5	13.9	0.010	0.010	0.009
4560	1.2	21.5	0.007	0.006	0.008
4560DUP	1.5	0.7	0.009	0.009	0.009
4511	1.2	8.3	0.007	0.006	0.007

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
4512	2.0	13.0	0.013	0.014	0.011
BLANK	0.0		0.009	0.002	0.016
ASPK 4511	20.2	4.2	0.108	0.105	0.111
BLK	1.2	34.1	0.008	0.010	0.006
C CAL	47.0	0.3	0.213	0.213	0.214
4533	-0.2	99.9	-0.001	-0.004	0.002
4037	-0.1	54.2	-0.001	-0.000	-0.001
5097	-0.6	44.8	-0.003	-0.005	-0.002
5098	-0.9	3.8	-0.006	-0.006	-0.006
5099	-1.2	26.0	-0.007	-0.006	-0.009
5100	-3.0	41.2	-0.018	-0.024	-0.013
5101	-2.6	8.4	-0.016	-0.015	-0.017
5[illegible]	-2.8	5.9	-0.017	-0.017	-0.018
5103	-2.9	5.9	-0.018	-0.019	-0.017
5104	-1.7	21.4	-0.011	-0.009	-0.012
5104DUP	-2.3	8.4	-0.014	-0.015	-0.013
ASPK 5104	16.9	1.8	0.092	0.091	0.094
BLK	-1.4	9.3	-0.008	-0.009	-0.008
C.CAL	45.6	1.4	0.209	0.207	0.211

BLANK	0.0		-0.016	-0.017	-0.016
5220	0.7	99.9	0.004	0.011	-0.002
5221	-0.1	9.6	-0.001	-0.001	-0.001
5222	-0.2	99.9	-0.001	0.002	-0.005
5223	-0.5	57.7	-0.003	-0.002	-0.004
5224	-0.1	99.9	-0.001	-0.000	-0.001

000593

BLANK	0.0		0.060	0.059	0.061
5260	0.3	99.9	0.002	0.000	0.003
5261	0.2	29.4	0.002	0.001	0.002
5297	0.1	99.9	-0.001	0.003	-0.003
5165	0.7	99.9	0.005	0.001	0.008
4766	3.6	17.2	0.025	0.020	0.025
BLANK	0.0		-0.006	-0.003	-0.008
5104MSPK	43.6	0.7	0.202	0.203	0.203

5102	-2.8	[illegible]	[illegible]	[illegible]	[illegible]
5103	-2.9	5.9	-0.018	-0.019	-0.017
5104	-1.7	21.4	-0.011	-0.009	-0.012
5104DUP	-2.3	8.4	-0.014	-0.015	-0.013

Varian SpectrAA System Report

Nanco Labs, Inc., Unity st.& rt. 376, Hopewell Jct., N.Y. 12533
METALS REPORT

OPERATOR P GUPTE/VICTOR S
DATE 10/16/86
BATCH

PROGRAM 22 T1 PLATFORM-LMS-MSA

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	STANDARD ADDITIONS
MEASUREMENT MODE	PEAK HEIGHT
LAMP POSITION	3
LAMP CURRENT (mA)	10
SLIT WIDTH (nm)	0.5
SLIT HEIGHT	NORMAL
WAVELENGTH (nm)	276.8
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	2
BACKGROUND CORRECTION	ON

FURNACE PARAMETERS

STEP NO.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
1	95	5.0	3.0	NORMAL	NO
2	150	30.0	3.0	NORMAL	NO
3	300	30.0	3.0	NORMAL	NO
4	600	5.0	3.0	NORMAL	NO
5	600	15.0	3.0	NORMAL	NO
6	600	2.0	0.0	NORMAL	NO
7	2200	0.8	0.0	NORMAL	YES
8	2200	2.0	0.0	NORMAL	YES
9	2200	2.0	3.0	NORMAL	NO

SAMPLER PARAMETERS
VOLUMES (uL)

	STANDARD	SAMPLE	BLANK	MODIFIER
BLANK	--	--	20	0
ADDITION 1	4	10	6	0
ADDITION 2	7	10	3	0
ADDITION 3	10	10	0	0
SAMPLE	--	20	0	0

RECALIBRATION RATE 1

MULTIPLE INJECT NO HOT INJECT NO PRE INJECT NO

000400

CONDITIONS FOR Tl :

Maximum Ash Temperature : 400 C
Recommended Atomize Temperature : 2200 C

Response with Argon :
10 microlitres of 100 micrograms/litre gives about 0.2 ABS.

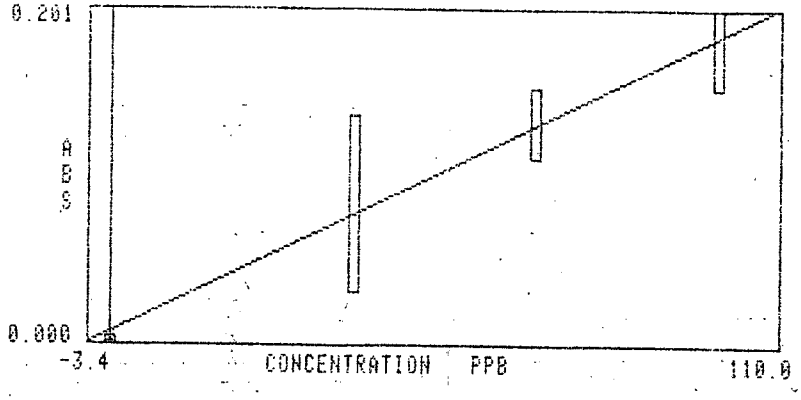
SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.008	0.009	0.007
SDDITION 1	40.0	99.9	-0.000	-0.000	0.000
BLANK	0.0		-0.001	0.000	-0.002
BLANK	0.0		0.003B	-0.000	0.007
BLANK	0.0		-0.003	-0.003	-0.003
ADDITION 1	40.0	62.3	0.084	0.121	0.047
ADDITION 2	70.0	14.5	0.132	0.118	0.145
ADDITION 3	100.0	14.9	0.182	0.201	0.163
~~0117 DUP1:10~~	~~3.4~~ -5.1	0.0	0.002	0.002	0.002

mk

0117
1:5

R = .950+

000401

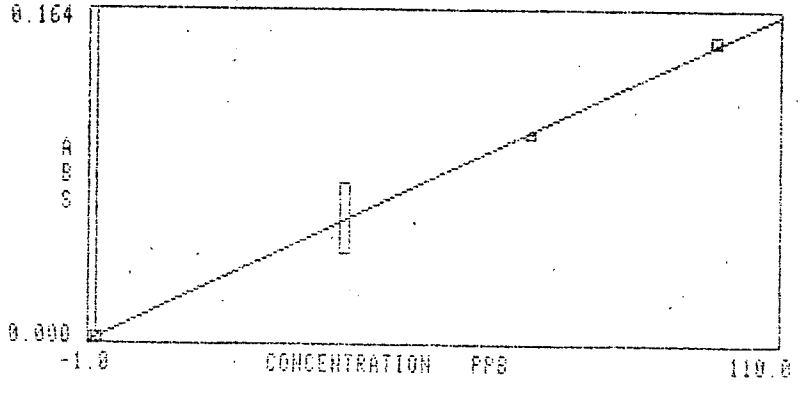


SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.001	0.001	0.002
ADDITION 1	40.0	26.8	0.060	0.049	0.072
ADDITION 2	70.0	0.2	0.101	0.101	0.101
ADDITION 3	100.0	0.6	0.149	0.148	0.149
~~0117MSPKI;IO~~	~~1.0~~	99.9	0.002	0.003	0.000

MM

0117 Dup.
1:5

R = .993+



BLANK	0.0		0.003	0.004	0.002
ADDITION 1	40.0	11.0	0.081	0.075	0.087

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS	
ADDITION 2	70.0	17.3	0.161	0.141	0.181
ADDITION 3	100.0	6.7	0.141	0.134	0.147

Varian SpectrAA System Report

NANCO LABS, INC., Unity St. & Rt. 376, Hopewell Junction, NY 12533
Metals Report-Atomic Absorption;direct aspiration

OPERATOR MICHAEL SHIELDS
DATE 10/3/86
BATCH

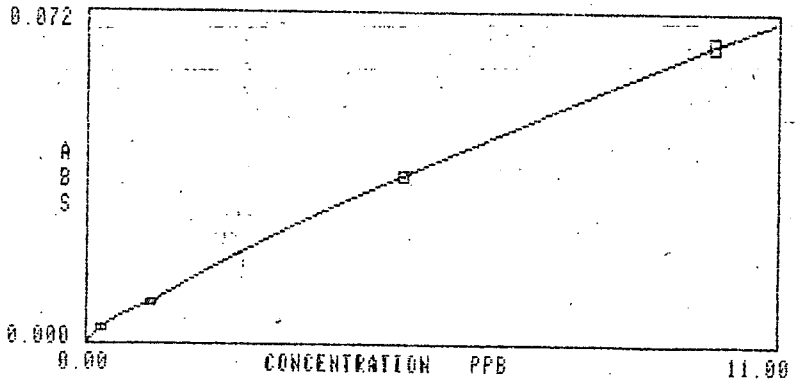
PROGRAM 4 Hg VGA-76

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	INTEGRATION
LAMP POSITION	2
LAMP CURRENT (mA)	7
SLIT WIDTH (nm)	0.5
SLIT HEIGHT	NORMAL
WAVELENGTH (nm)	253.7
FLAME	AIR ONLY
SAMPLE INTRODUCTION	MANUAL
DELAY TIME	90
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	5.0
REPLICATES	3
BACKGROUND CORRECTION	OFF

CONDITIONS FOR Hg

WAVELENGTH	SLIT WIDTH	CONC FOR 0.2 ABS	RELATIVE LAMP INTENSITY
nm	nm	mg/L	
253.7	0.5	70.0	

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS		
LANK	0.00		0.001	0.001	0.001	0.001
TANDARD 1	0.20	6.3	0.003	0.003	0.003	0.003
TANDARD 2	1.00	2.3	0.009	0.009	0.009	0.009
TANDARD 3	5.00	2.3	0.037	0.037	0.036	0.039
TANDARD 4	10.00	1.5	0.066	0.066	0.066	0.065



SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS		
EPA 5.0	4.98	3.1	0.037	0.037	0.036	0.038
CAL-BLK	0.02	0.0	0.000	0.000	0.000	0.000
CONT-CAL	3.39	0.6	0.027	0.026	0.027	0.027
PREP-BLK	0.03	36.3	0.000	0.001	0.000	0.000
LCS DEP 007	5.06	0.3	0.037	0.037	0.037	0.037
LCS DEP 008	5.04	1.6	0.037	0.038	0.037	0.037
LCS 009	5.09	1.1	0.037	0.037	0.037	0.038
LCSEW	5.07	1.2	0.037	0.037	0.037	0.037
PREP-BLK008	0.06	31.6	0.001	0.001	0.001	0.001
PREP-BLK 009	0.07	9.2	0.001	0.001	0.001	0.001
PREP-BLK EW	0.06	11.1	0.001	0.001	0.001	0.001
CAL-BLK	0.06	14.2	0.001	0.001	0.001	0.001
CONT-CAL	3.46	0.9	0.027	0.027	0.027	0.027
J6 100	0.15	8.2	0.002	0.002	0.002	0.002
J6 100DUP	0.15	0.0	0.002	0.002	0.002	0.002
J6 100SPK	1.12	1.9	0.010	0.010	0.010	0.010
J6 101	0.15	4.2	0.002	0.002	0.002	0.002
J6 102	0.16	5.7	0.002	0.002	0.002	0.002
J6 103	0.17	2.6	0.002	0.002	0.002	0.002
J6 104	0.15	3.0	0.002	0.002	0.002	0.002
J6 105	0.17	0.0	0.002	0.002	0.002	0.002
J6 106	0.17	4.5	0.002	0.002	0.002	0.002
CAL-BLK	0.06	0.0	0.001	0.001	0.001	0.001
CONT-CAL	3.12	0.0	0.025	0.025	0.025	0.025
J6 107	0.13	11.4	0.002	0.002	0.002	0.002
J6 108	0.12	8.1	0.002	0.002	0.002	0.002
J6 109	0.11	0.0	0.002	0.002	0.001	0.002
J6 110	0.11	7.3	0.001	0.001	0.002	0.001
J6 111	0.11	0.0	0.001	0.001	0.002	0.001
J6 112	0.10	6.1	0.001	0.001	0.001	0.001
J6 113	0.04	0.0	0.001	0.001	0.001	0.001
J6 114	0.04	27.4	0.001	0.001	0.001	0.000
J6 115	0.04	37.9	[illegible]	[illegible]	[illegible]	[illegible]

SAMPLE	CONC PPB	%RSD	MEAN ABS	READINGS		
CONT-CAL	3.02	3.0	0.024	0.024	0.025	0.023
J6 115SPK	1.09	2.1	0.009	0.009	0.010	0.009
J6 116	0.03	22.6	0.000	0.000	0.001	0.000
J6 117	0.05	12.9	0.001	0.001	0.001	0.001
J6 118	0.04	0.0	0.000	0.001	0.000	0.001
J6 119	0.04	11.8	0.001	0.000	0.001	0.001
J6 120	0.04	22.4	0.001	0.000	0.001	0.001
J6 121	0.04	0.0	0.001	0.001	0.001	0.001
J6 122	0.04	24.8	0.001	0.000	0.001	0.001
J6 122 DUP	0.03	0.0	0.000	0.001	0.000	0.000
CAL-BLK	0.04	27.0	0.001	0.001	0.000	0.001
C[illegible]-CAL	2.95	1.5	0.024	0.024	0.023	0.024
J6 123	0.04	32.1	0.001	0.001	0.001	0.000
J6 123SPK	1.08	0.7	0.009	0.009	0.009	0.009
J6 124	0.00	99.9	0.000	-0.000	0.000	0.000
J6 125	0.01	0.0	0.000	0.000	0.000	0.000
J6 126	0.01	57.1	0.000	0.000	0.000	0.000
J6 127	0.01	81.3	0.000	0.000	0.000	0.000
EW 5135	0.09	4.9	0.001	0.001	0.001	0.001
EW 5135DUP	0.09	9.0	0.001	0.001	0.001	0.001
EW 5135SPK	1.01	2.5	0.009	0.009	0.009	0.009
CAL-BLK	0.02	38.1	0.000	0.000	0.000	0.000
CONT-CAL	2.89	1.4	0.023	0.023	0.023	0.024
EW 5136	0.04	36.1	0.001	0.001	0.000	0.001
EW 5137	0.04	19.0	0.001	0.001	0.001	0.000
EW 5138	0.06	0.0	0.001	0.001	0.001	0.001
W 5139	0.08	9.3	0.001	0.001	0.001	0.001
CAL-BLK	0.02	18.5	0.000	0.000	0.000	0.000
CONT-CAL	2.87	2.3	0.023	0.023	0.022	0.024
RESLOPE	5.00	1.2	0.036	0.036	0.036	
4923	0.05	0.0	0.001	0.001	0.001	
4923DUP	0.04	0.0	0.000	0.001	0.000	
4923SPK	1.08	2.6	0.009	0.009	0.009	
4926	0.09	25.2	0.001	0.001	0.001	
4927	0.04	0.0	0.000	0.000	0.000	
4928	0.05	0.0	0.001	0.001	0.001	
4929	0.05	0.0	0.001	0.001	0.001	
4930	0.05	28.7	0.001	0.001	0.001	
4931	0.04	47.7	0.001	0.001	0.000	
4932	0.04	0.0	0.001	0.001	0.001	
4933	0.06	35.9	0.001	0.001	0.001	
4934	0.07	6.6	0.001	0.001	0.001	
4935	0.05	9.1	0.001	0.001	0.001	
49~~35DUP~~24	0.07	0.0	0.001	0.001	0.001	
49~~35SPK~~25	0.04	0.0	0.001	0.001	0.001	

Phenol & Cyanide Raw Data

EW 4991 → 35002

000406

PHENOLS 10-9-86

CONCENTRATION MG/L
STANDARDS
ANALYST:

GRAPH: F10
PRINT: ALT-P

U SAMPLES

PEAK HEIGHT	CONC.
0.25	10
10	100
15.75	150
21.5	200
32.5	300

SUM Y:	80
SUM X:	760
SUM XY:	17415
SUM YY:	1866.625
SLOPE :	8.95802258
INTERCEPT:	8.67163861
DATA PTS.	5
DIL. FAC.	1

0.0625	2.5
100	1000
248.0625	2362.5
462.25	4300
1056.25	9750

PEAK HEIGHT	CONC
0.25	10
10	100
15.75	150
21.5	200
32.5	300

{Goto}A2*{Up}*/PPR(?)***0

10.9111442
98.2518644
149.760494
201.269124
299.807372

PEAK HEIGHT	CONC UC	SAMPLE #	DILU.FA	CRR.CONC.	
10.25	100.49	STD 100	1.000	100.491	100%
7.75	78.10	EPA	1.000	78.096	115%
14.5	138.56	PROF 1	2.000	277.126	
6.5	66.90	PROF 2	10.000	668.988	
0.5	13.15	W 5165	1.000	13.151	
0	8.67	W 5260	1.000	8.672	
0	8.67	W 5261	1.000	8.672	
0	8.67	W 5297	1.000	8.672	
0	8.67	W 5432	1.000	8.672	
0	8.67	W 5433	1.000	8.672	
0	8.67	W 5434	1.000	8.672	
0	8.67	W 5435	1.000	8.672	
0	8.67	W 5436	1.000	8.672	
0	8.67	W 5445	1.000	8.672	
0	8.67	W 5631	1.000	8.672	
0	8.67	W 5655	1.000	8.672	
16.5	156.48	W 5669	1.000	156.479	
11	107.21	W 5670	1.000	107.210	
0.5	13.15	W 5671	1.000	13.151	
1.5	22.11	W 5672	1.000	22.109	
8.25	82.58	W 5601	1.000	82.575	
7	71.38	W 5603	1.000	71.378	
11	107.21	W 5165 SPK	1.000	107.210	94%
0	8.67	W 5457	1.000	8.672	
10.5	102.73	STD 100	1.000	102.731	103%
8	80.34	EPA	1.000	80.336	117%
0	8.67	DIG BLK	1.000	8.672	
9	89.29	DIG STD	1.000	89.294	89%
0	8.67	EW 4991	1.000	8.672	
0	8.67	EW 4991 DUP	1.000	8.672	
9.5	93.77	EW4991 SPK	1.000	93.773	85%
0	8.67	EW4992	1.000	8.672	
1.25	19.87	EW 4993	1.000	19.869	
0	8.67	EW 4994	1.000	8.672	
10.5	102.73	STD 100	1.000	102.731	103%
0	8.67	EW 4995	1.000	8.672	
0	8.67	EW 4996	1.000	8.672	
10	98.25	EW 4998	1.000	98.252	
0	8.67	EW 4999	1.000	8.672	
0	8.67	EW 5000	1.000	8.672	
0	8.67	EW 5001	1.000	8.672	
23	214.71	EW 5002	1.000	214.706	
0	8.67	EW 5003	1.000	8.672	
10.25	100.49	STD 100	1.000	100.491	
0	8.67	EW 5004	1.000	8.672	
11	107.21	EW 5002	2.000	214.420	
0	8.67	DIG BLK	1.000	8.672	
9	89.29	DIG STD	1.000	89.294	89%
0	8.67	J6-122-009	1.000	8.672	
1.5	22.11	J6-122-009 SPK	1.000	22.109	
0	8.67	J6-122-009 DUP	1.000	8.672	
10.5	102.73	STD 100	1.000	102.731	

J-6 Batch 009 CN+ D OK

000407

0.0625	2.5
100	1000
248.0625	2362.5
462.25	4300
1056.25	9750

ug/l

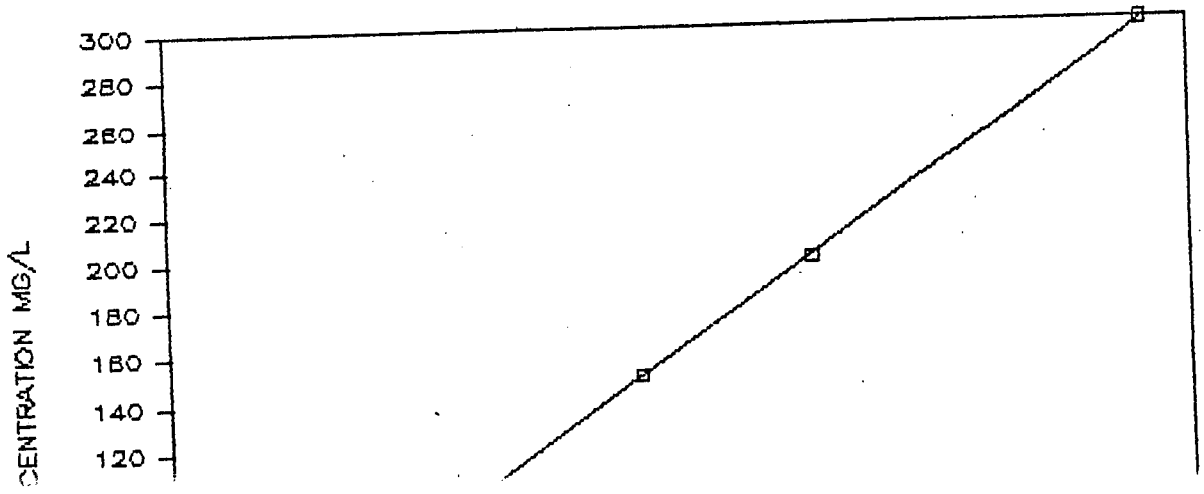
PEAK HEIGHT	CONC
0.25	10
10	100
15.75	150
21.5	200
32.5	300

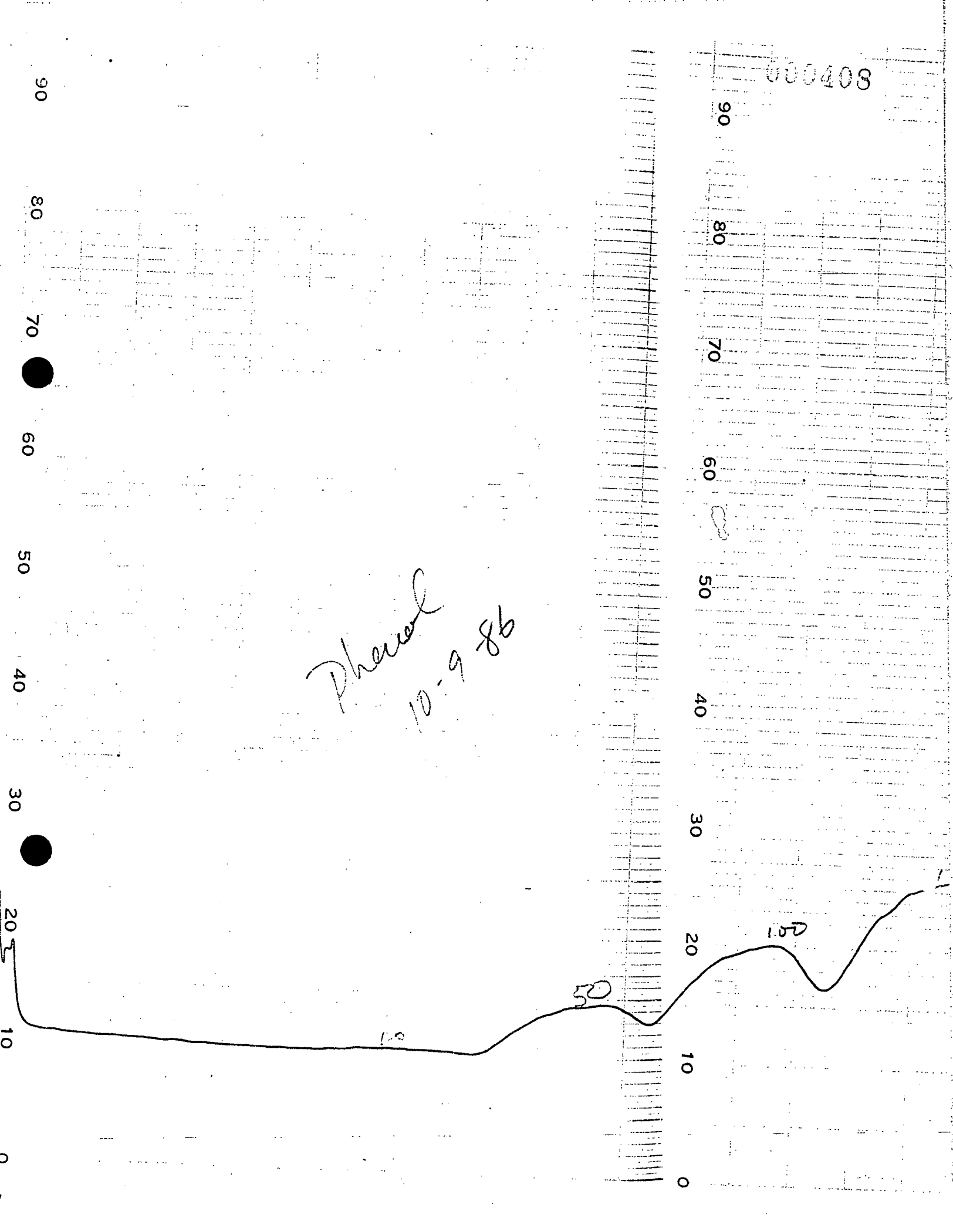
{Goto}A2~{Up}~/PPR(?)~~~0

10.9111442
98.2518644
149.760494
201.269124
299.807372

8.25	82.58 W 5601	1.000	82.575
7	71.38 W 5603	1.000	71.378
11	107.21 W 5165 SPK	1.000	107.210 94%
0	8.67 W 5457	1.000	8.672
10.5	102.73 STD 100	1.000	102.731 103%
8	80.34 EPA	1.000	80.336 117%
0	8.67 DIG BLK	1.000	8.672
9	89.29 DIG STD	1.000	89.294 89%
0	8.67 EW 4991	1.000	8.672
0	8.67 EW 4991 DUP	1.000	8.672
9.5	93.77 EW4991 SPK	1.000	93.773 85%
0	8.67 EW4992	1.000	8.672
1.25	19.87 EW 4993	1.000	19.869
0	8.67 EW 4994	1.000	8.672
10.5	102.73 STD 100	1.000	102.731 103%
0	8.67 EW 4995	1.000	8.672
0	8.67 EW 4996	1.000	8.672
10	98.25 EW 4998	1.000	98.252
0	8.67 EW 4999	1.000	8.672
0	8.67 EW 5000	1.000	8.672
0	8.67 EW 5001	1.000	8.672
23	214.71 EW 5002	1.000	214.706
0	8.67 EW 5003	1.000	8.672
10.25	100.49 STD 100	1.000	100.491
0	8.67 EW 5004	1.000	8.672
11	107.21 EW 5002	2.000	214.420
0	8.67 DIG BLK	1.000	8.672
9	89.29 DIG STD	1.000	89.294 89%
0	8.67 J6-122-009	1.000	8.672
1.5	22.11 J6-122-009 SPK	1.000	22.109
0	8.67 J6-122-009 DUP	1.000	8.672
10.5	102.73 STD 100	1.000	102.731
16	152.00 J6-123-009	1.000	152.000
0.5	13.15 J6-124-009	1.000	13.151
1.5	22.11 J6-125-009	1.000	22.109
0.5	13.15 J6-126-009	1.000	13.151
0	8.67 J6-127-009	1.000	8.672
8	80.34 J6-123-009	2.000	160.672 analytical repeat
10.25	100.49 STD 100	1.000	100.491
	8.67	1.000	8.672
	8.67	1.000	8.672

PHENOLS 10-9-86

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Pharol
10-9-86
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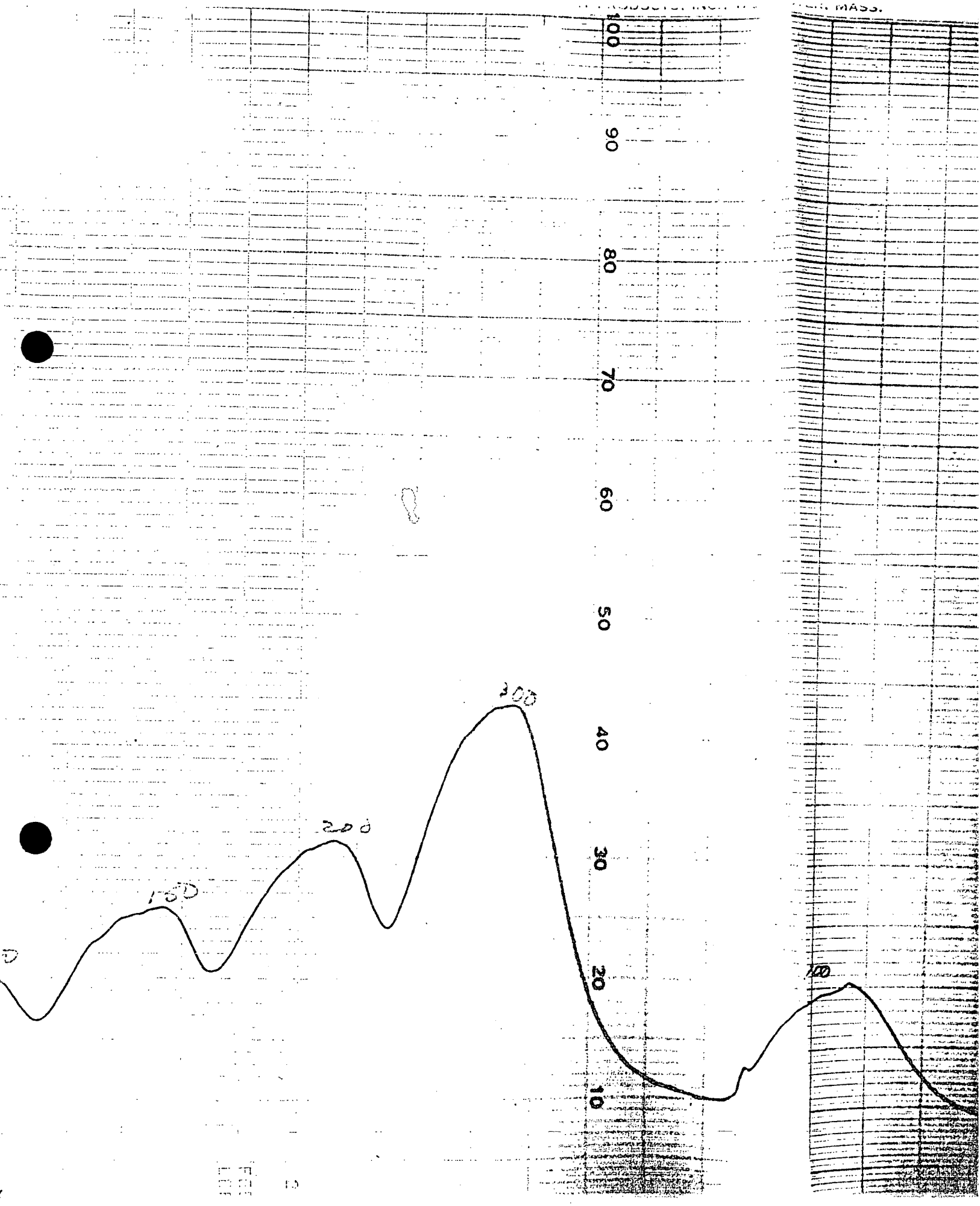
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300
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150
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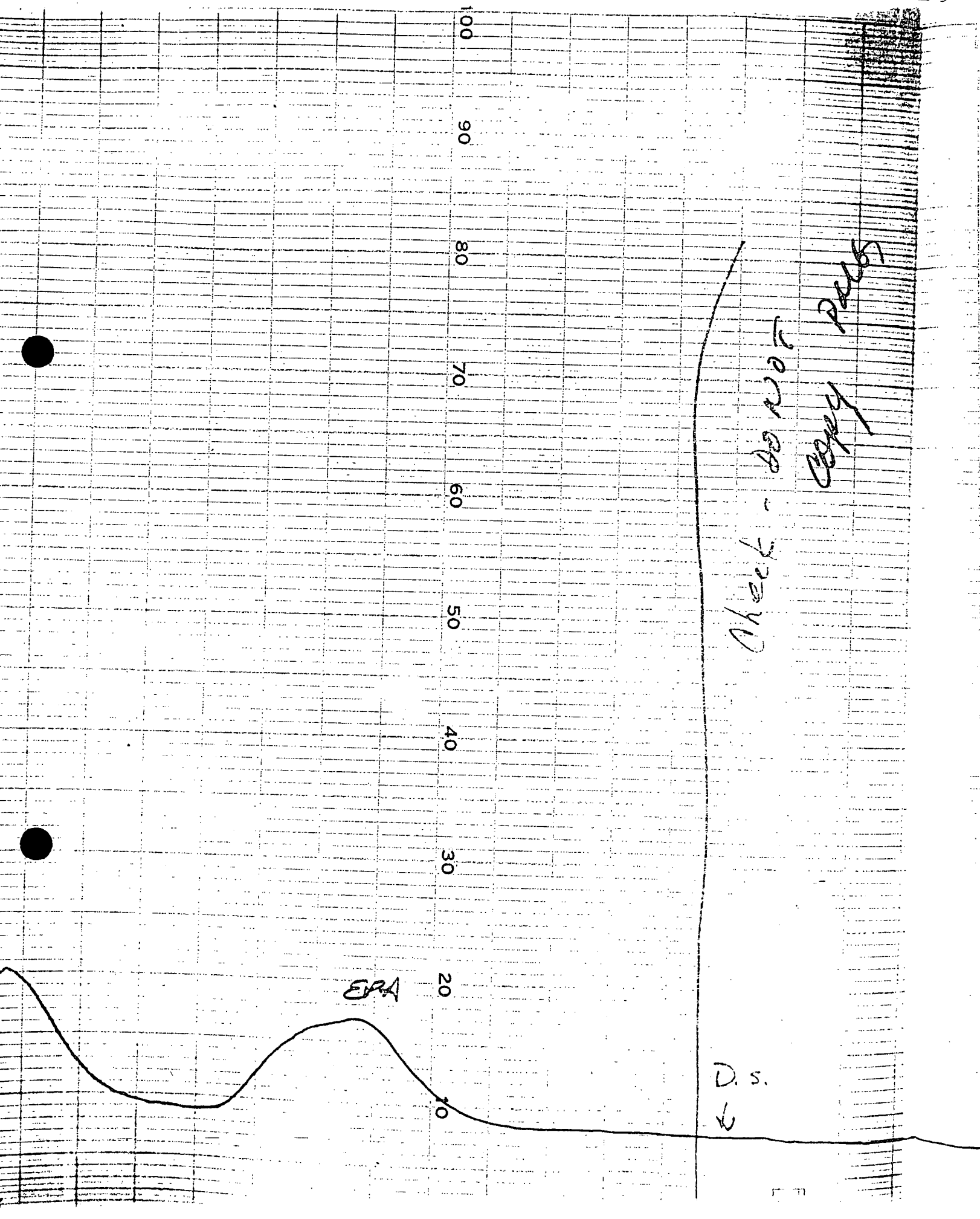
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80
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60
50
40
30
20
10
EPA
D.S.
Check - do not copy pads

100
90
80
70
60
50
40
30
20
10

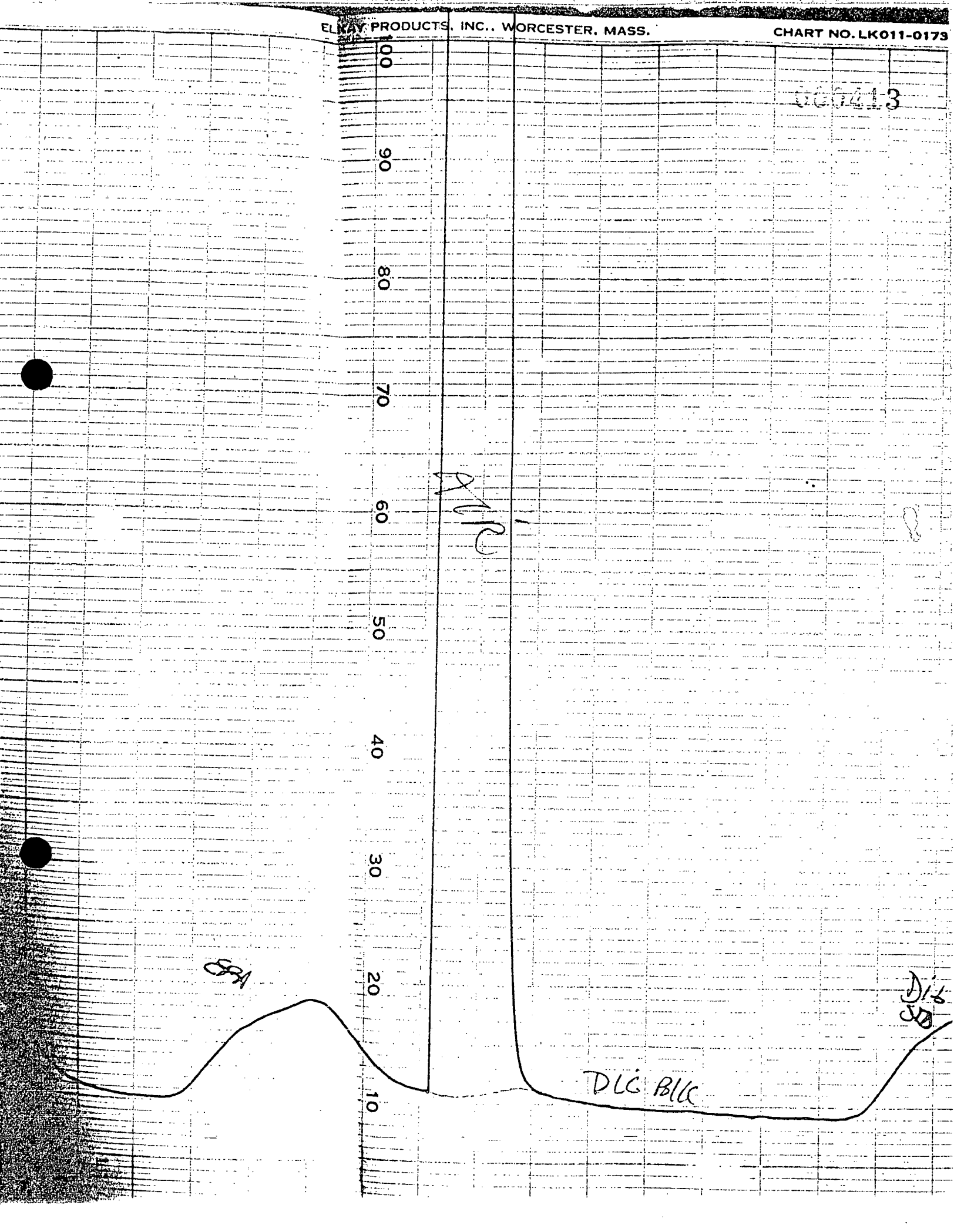
PRODUCTS, INC., WORCESTER, MASS. CHART NO. LK011-0173 A.R.2 PRINTED IN U.S.A. 66

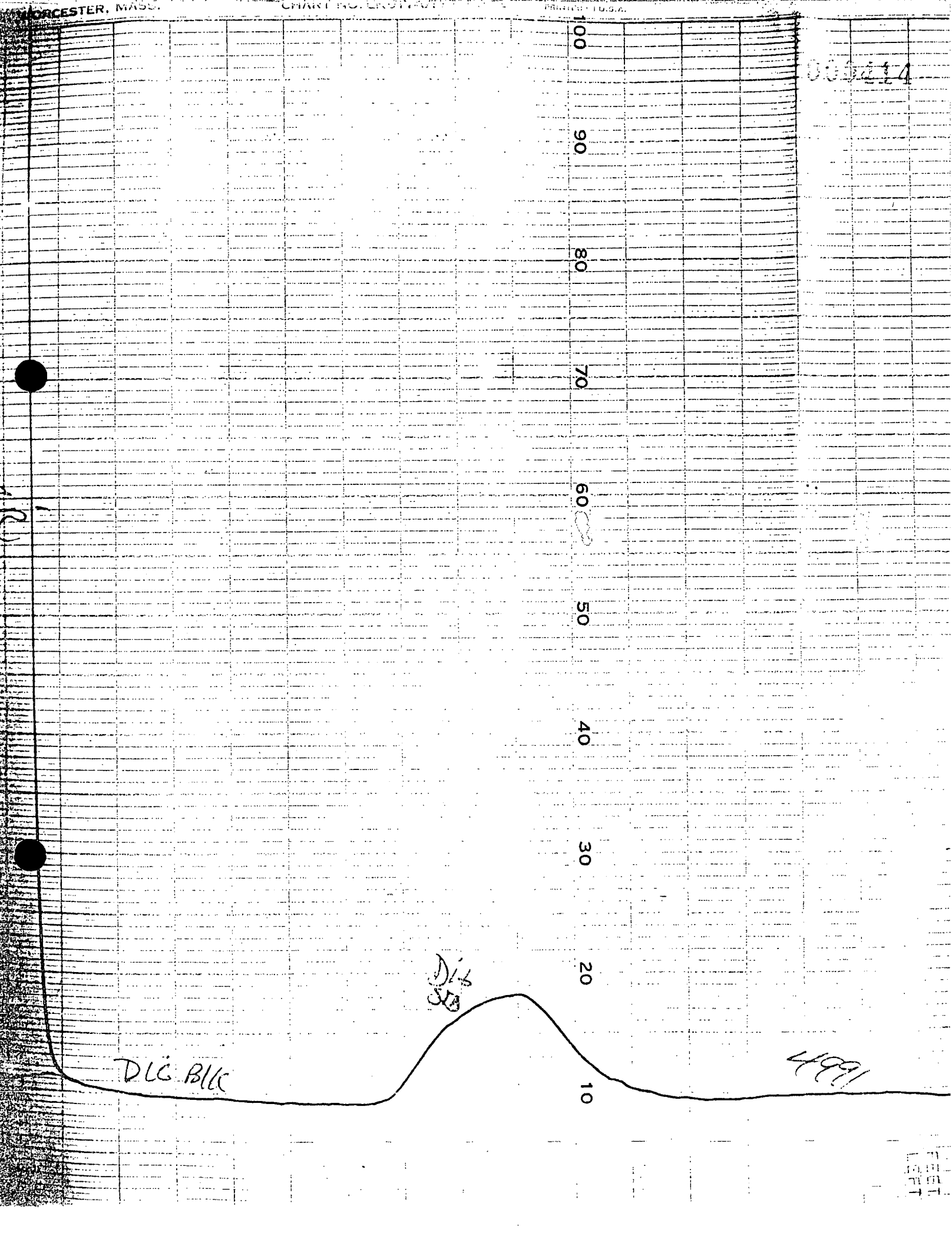
000412

Run
10-9-86
Change continued
of paper
PMG

STD
100

ELKAY PRODUCTS, INC., WORCESTER, MASS. CHART NO. LK011-0173




WORCESTER, MASS.
CHART NO.
PRINTED IN U.S.A.
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70
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30
20
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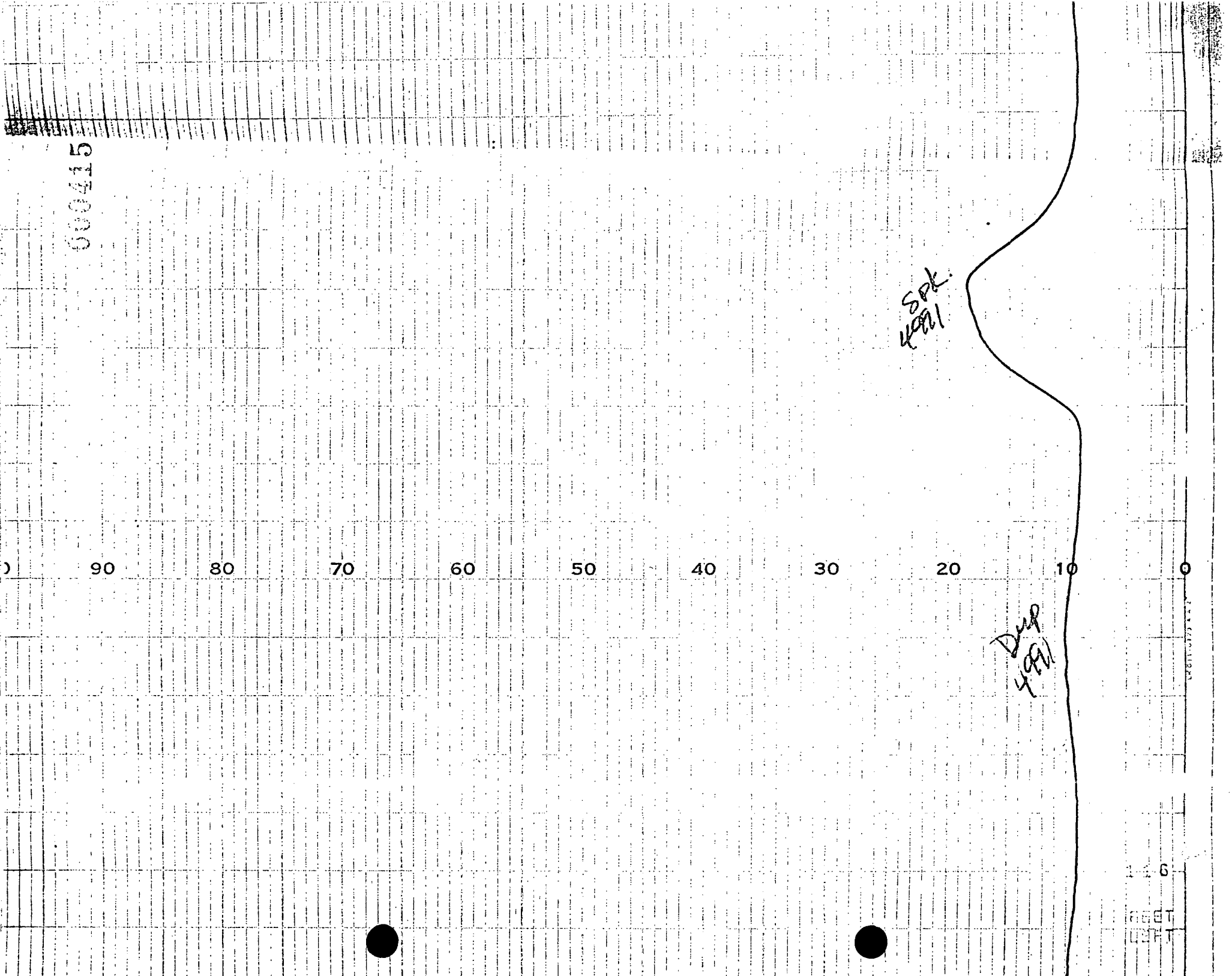
DLC Blk
4991
FEET
LEFT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10
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Spk.
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Dup
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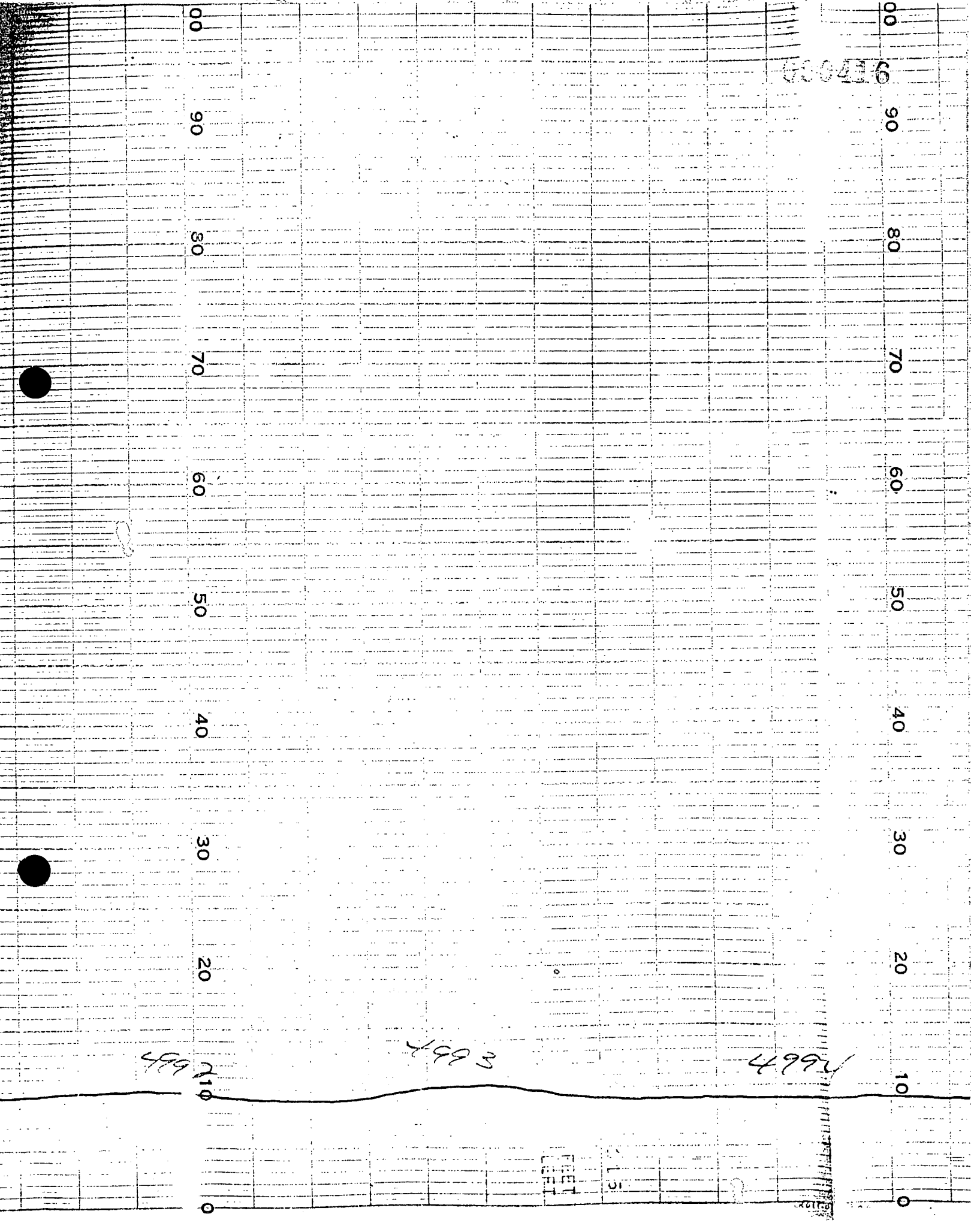
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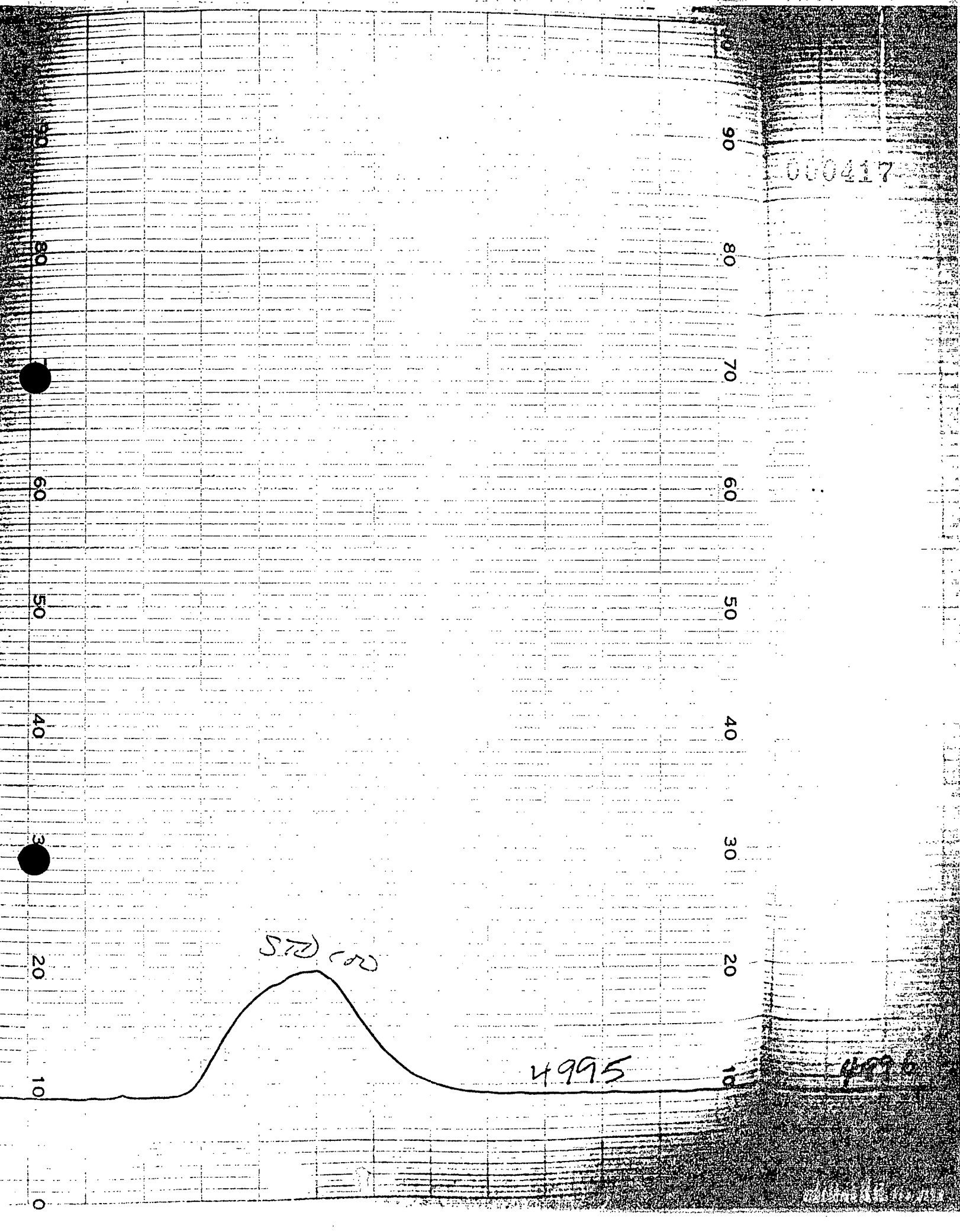
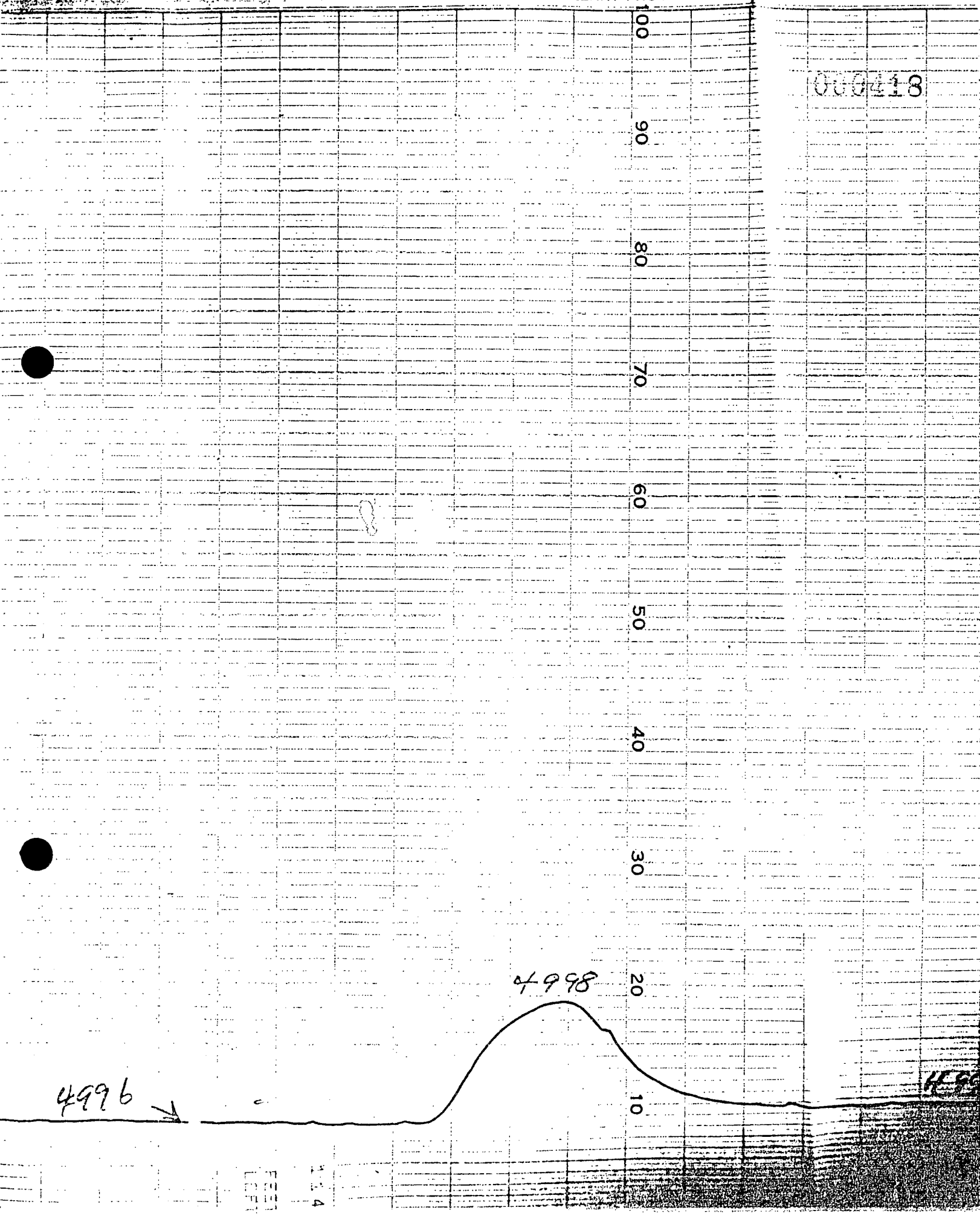

000417
STD (10)
4995
4996

ELKAY PRODUCTS, INC., WORCESTER, MASS.

000418



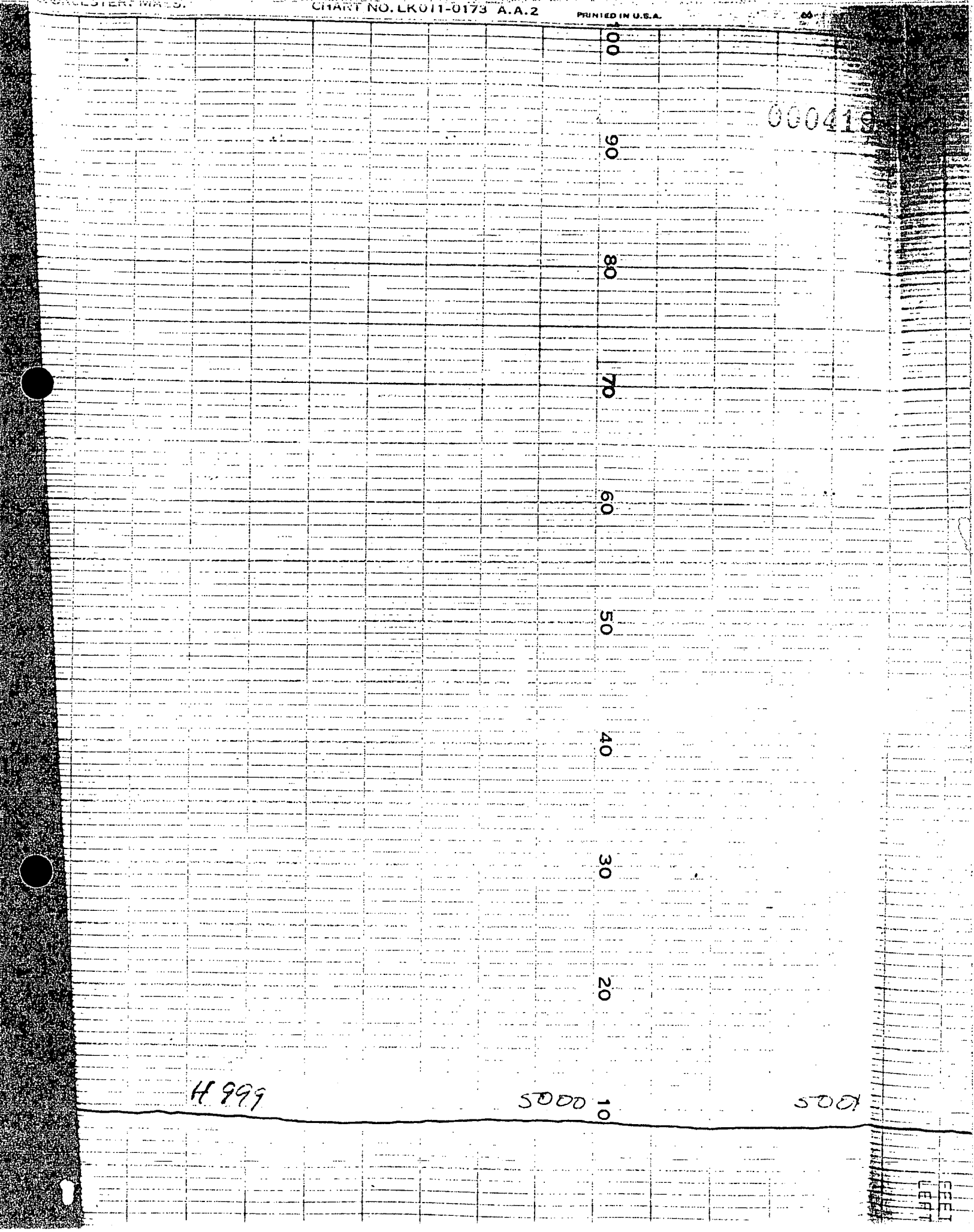


CHART NO. LK011-0173 A.A.2
PRINTED IN U.S.A.
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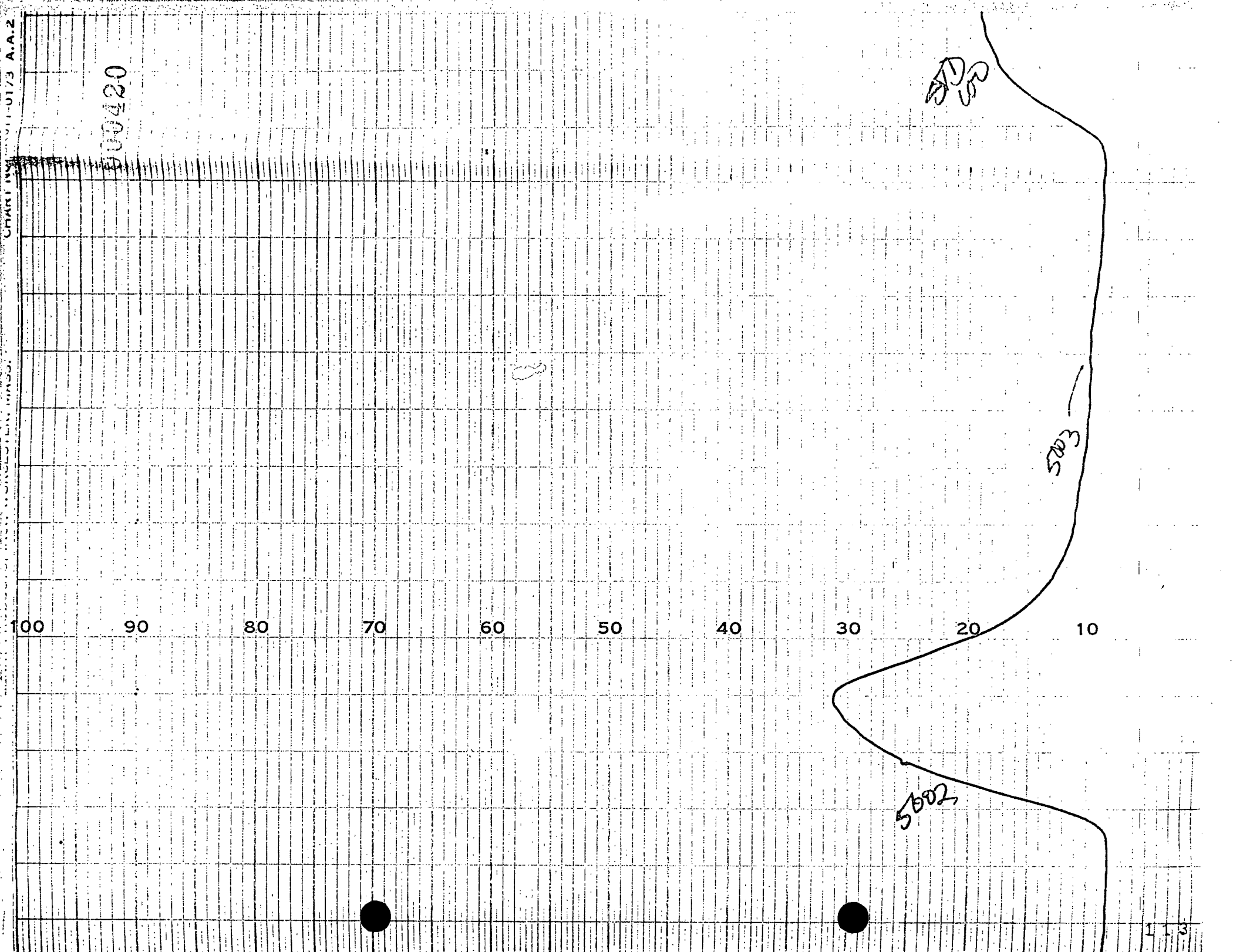
20
10
H 999
5000
500
FEET
LEFT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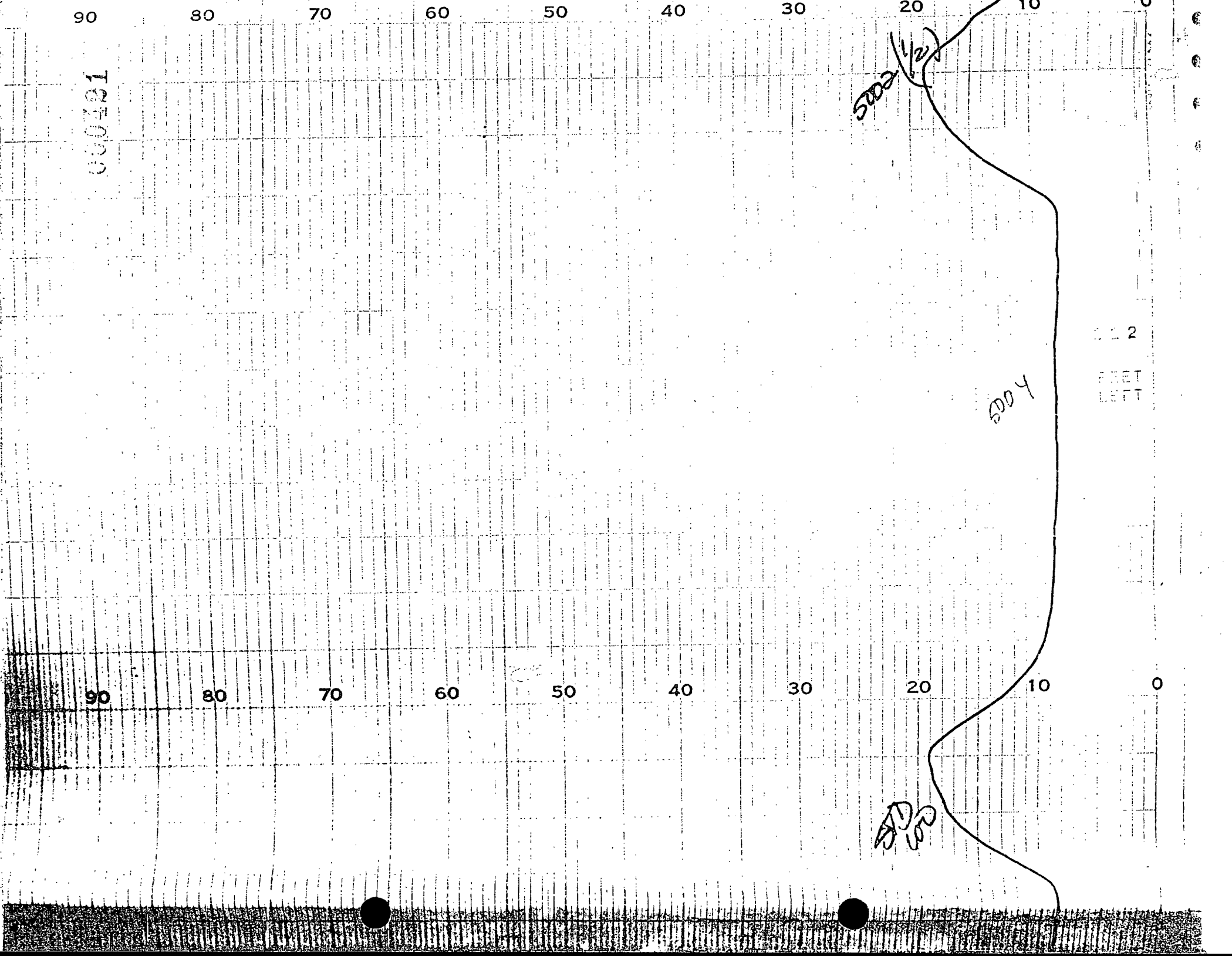
5003
5002



90
80
70
60
50
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30
20
10
0
5002 (1/2)
5004
2
FEET
LEFT

CYANIDE (EPA)10-1-86

EW 5124 →
5131

000422

GRAPH: F10
PRINT: ALT-P

CONCENTRATION MG/L
STANDARDS
ANALYST:

PEAK HEIGHT	CONC.
2.5	10
16	50
33.5	100
49.5	150
65.5	200

SUM Y: 167
SUM X: 510
SUM XY: 24700
SUM YY: 8125

SLOPE : 3.00957914

INTERCEPT: 1.48005653

DATA PTS. 5

DIL. FAC. 1

PEAK HEIGHT	CONC
6.25	25
256	800
1122.25	3350
2450.25	7425
4290.25	13100

PEAK HEIGHT	CONC
2.5	10
16	50
33.5	100
49.5	150
65.5	200

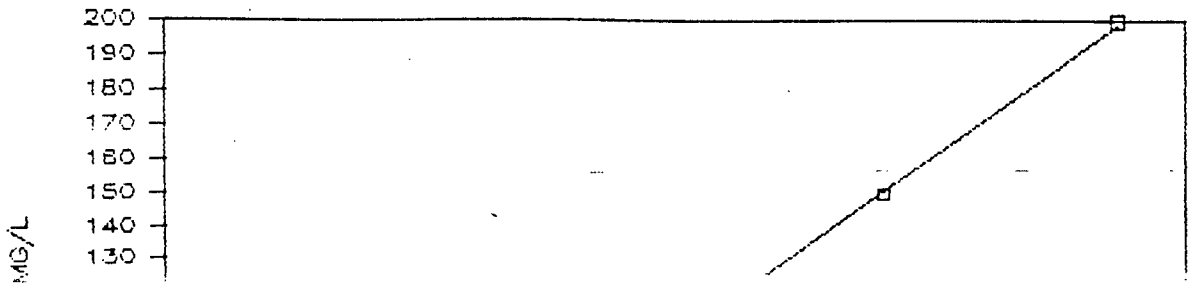
(Goto)A2*(Up)*/PPR(?)***0

2.00400439
99.6333228
102.300957
150.454224
198.607490

SAMPLES

PEAK HEIGHT	CONC UC	SAMPLE #	DILU.FA	CRR.CONC.	
33.5	102.30	STD 100	1.000	102.301	102%
0	1.48	BLK	1.000	1.480	
82	248.27	DIG EPA (224 ppb)	1.000	248.266	110%
0	1.48	DIG BLK	1.000	1.480	
26	79.73	DIG STD	1.000	79.729	80%
0	1.48	J6-99-006 DUP	1.000	1.480	
0	1.48	DIG BLK	1.000	1.480	
82	248.27	DIG EPA	1.000	248.266	110%
0	1.48	EW5124	1.000	1.480	
0	1.48	EW5125	1.000	1.480	
0	1.48	EW5126	1.000	1.480	
0	1.48	EW5127	1.000	1.480	
33.5	102.30	STD 100	1.000	102.301	102%
0	1.48	BLK	1.000	1.480	
0	1.48	EW5128	1.000	1.480	
0	1.48	EW5129	1.000	1.480	
0	1.48	EW 5130	1.000	1.480	
0	1.48	EW 5131	1.000	1.480	
34	103.81	STD 100	1.000	103.806	104%
0	1.48	BLK	1.000	1.480	
0	1.48	DIG BLK	1.000	1.480	
82	248.27	DIG EPA	1.000	248.266	110%
0	1.48	J6-115-008	1.000	1.480	
0	1.48	J6-115-008 DUP	1.000	1.480	
12.5	39.10	J6-115-008 SPK	1.000	39.100	38%
0	1.48	J6-116-008	1.000	1.480	
34	103.81	STD 100	1.000	103.806	104%
0	1.48	BLK	1.000	1.480	
0	1.48	J6-117-008	1.000	1.480	
0	1.48	J6-118-008	1.000	1.480	
0	1.48	J60119-008	1.000	1.480	
0	1.48	J6-120-008	1.000	1.480	
33	100.80	STD 100	1.000	100.796	101%
0	1.48	BLK	1.000	1.480	
0	1.48	J6-121-008	1.000	1.480	
3	10.51	J6-122-008	1.000	10.509	
0	1.48	EW 4926	1.000	1.480	
32.5	99.29	STD 100	1.000	99.291	99%
0	1.48	BLK	1.000	1.480	
	1.48		1.000	1.480	
	1.48		1.000	1.480	

CYANIDE (EPA)10-1-86



(3)

PHENOLS 10-15-86

GRAPH: F10
PRINT: ALT-P

CONCENTRATION MG/L
STANDARDS
ANALYST:

PEAK HEIGHT	CONC.
0.5	10
10	100
16	150
21.5	200
32.5	300

SUM Y:	80.5
SUM X:	760
SUM XY:	17455
SUM YY:	1874.75
SLOPE :	9.01848971
INTERCEPT:	6.80231553
DATA PTS.	5
DIL. FAC.	1

0.25	5
100	1000
256	2400
462.25	4300
1056.25	9750

PEAK HEIGHT	CONC
0.5	10
10	100
16	150
21.5	200
32.5	300

(Goto)A2*(Up)*/PPR(?)***0

11.3115603
96.9872127
151.098151
200.699844
299.903231

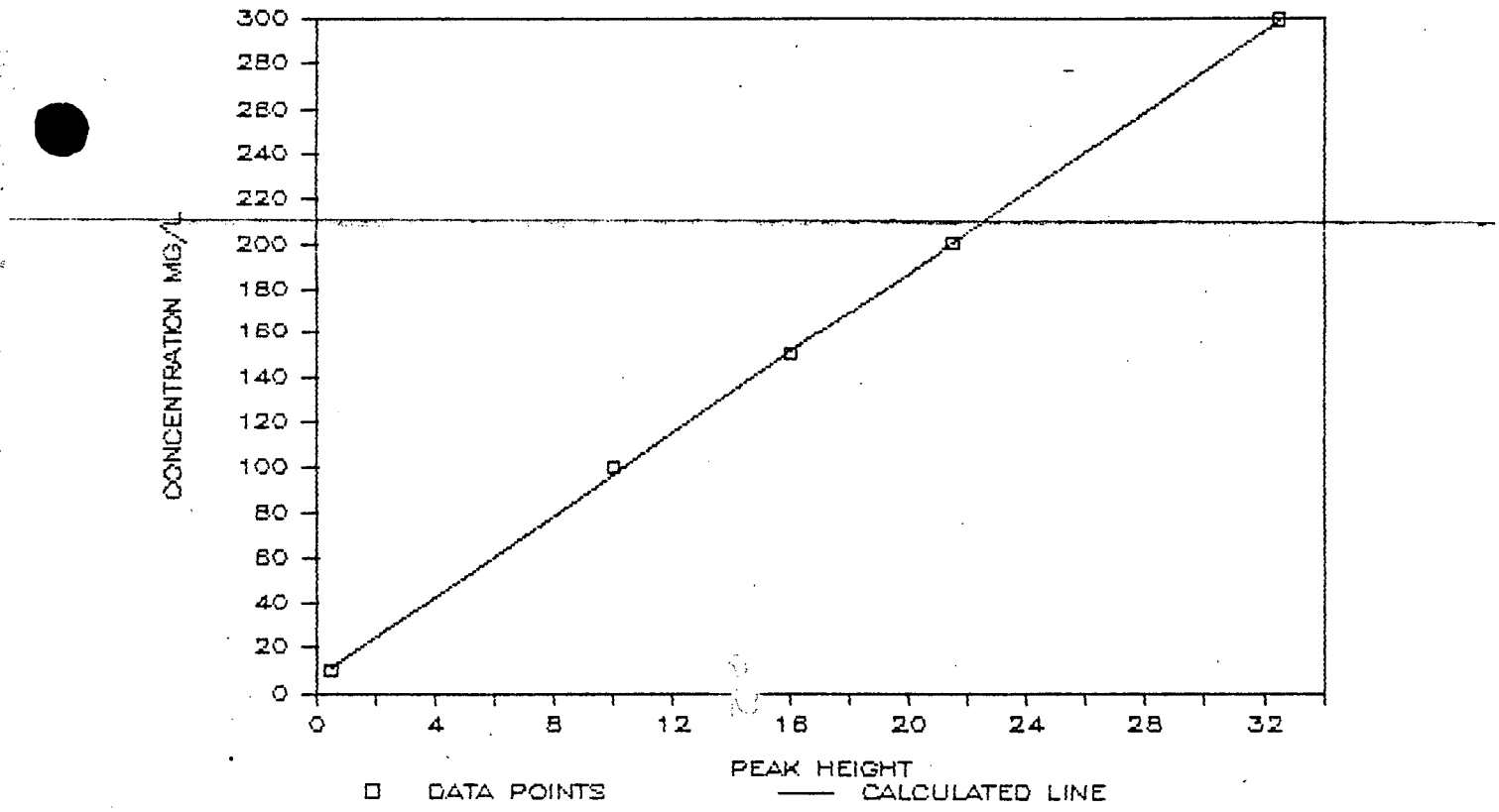
SAMPLES

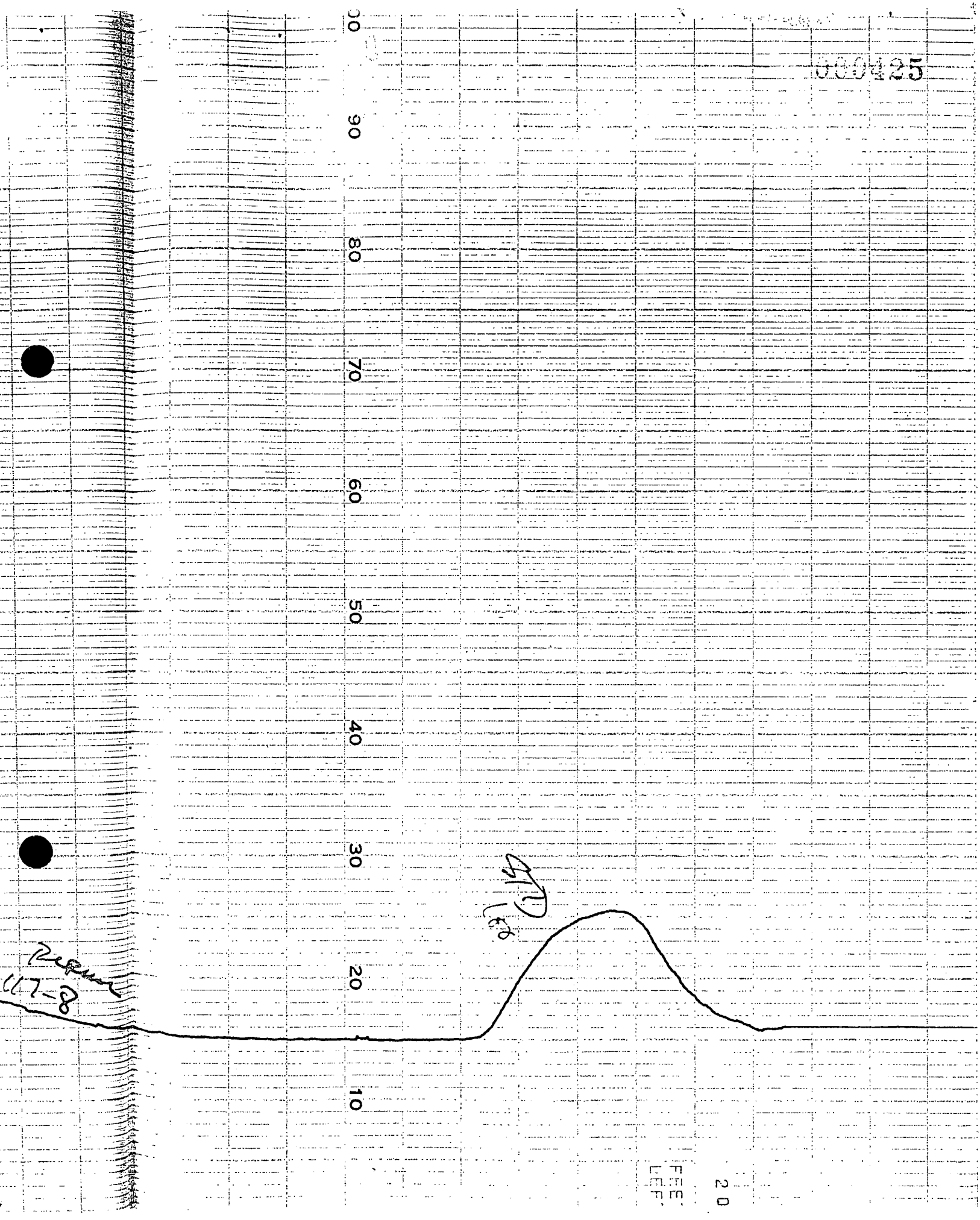
PEAK HEIGHT	CONC UC	SAMPLE #	DILU.FA	CRR.CONC.	
10	96.99	STD 100	1.000	96.987	97%
7.75	76.70	EPA (68 ppb)	1.000	76.696	113%
0	6.80	DIG BLK	1.000	6.802	
0	6.80	DIG STD	1.000	6.802	
0	6.80	EW 5135	1.000	6.802	
0	6.80	EW5135 DUP	1.000	6.802	
0	6.80	EW5135 SPK	1.000	6.802	
10.25	99.24	STD 100	1.000	99.242	99%
7.5	74.44	W 5709	1.000	74.441	
11	106.01	W 5710	1.000	106.006	
13	124.04	W 5720	1.000	124.043	
11	106.01	W 5721	1.000	106.006	
10	96.99	STD 100	1.000	96.987	97%
10.5	101.50	STD 100	1.000	101.496	101%
7.5	74.44	EPA	1.000	74.441	109%
0	6.80	BLK	1.000	6.802	
10.5	101.50	STD 100	1.000	101.496	101%
2	24.84	W 5135	1.000	24.839	
2	24.84	W 5135 DUP	1.000	24.839	
13	124.04	W 5135 SPK	1.000	124.043	100%
0	6.80	W 5136	1.000	6.802	
10.5	101.50	STD 100	1.000	101.496	
0	6.80	W 5137	1.000	6.802	
2.25	27.09	W 5138	1.000	27.094	
2.5	29.35	W 5139	1.000	29.349	
10.5	101.50	STD 100	1.000	101.496	
0	6.80	BLK	1.000	6.802	
10.5	101.50	STD 100	1.000	101.496	
~~11.5~~	~~110.51~~	~~J6-115-008~~	~~1.000~~	~~110.515~~	MM
8	78.95	J6-115-008 DUP	1.000	78.950	
11.5	110.51	J6-115-008 SPK	1.000	110.515	
~~9.5~~	~~92.48~~	~~J6-116-008~~	~~1.000~~	~~92.478~~	MM
10.5	101.50	STD 100	1.000	101.496	
~~3.5~~	~~38.37~~	~~J6-117-008~~	~~1.000~~	~~38.367~~	MM
~~0.5~~	~~11.31~~	~~J6-118-008~~	~~1.000~~	~~11.312~~	MM
~~13~~	~~124.04~~	~~J6-119-008~~	~~1.000~~	~~124.043~~	MM
0	6.80	J6-120-008	1.000	6.802	
0	6.80	J6-121-008	1.000	6.802	
10.5	101.50	STD 100	1.000	101.496	
	6.80		1.000	6.802	
	6.80		1.000	6.802	

	3.5	38.37	J6-117-008	1.000	38.367
{Goto}A2^{Up}^/PPR(?)***0	0.5	11.31	J6-118-008	1.000	11.312
	13	124.04	J6-119-008	1.000	124.043
11.3115603	0	6.80	J6-120-008	1.000	6.802
96.9872127	0	6.80	J6-121-008	1.000	6.802
151.098151	10.5	101.50	STD 100	1.000	101.496
200.699844		6.80		1.000	6.802
299.903231		6.80		1.000	6.802

000424

PHENOLS 10-15-86




000425
90
80
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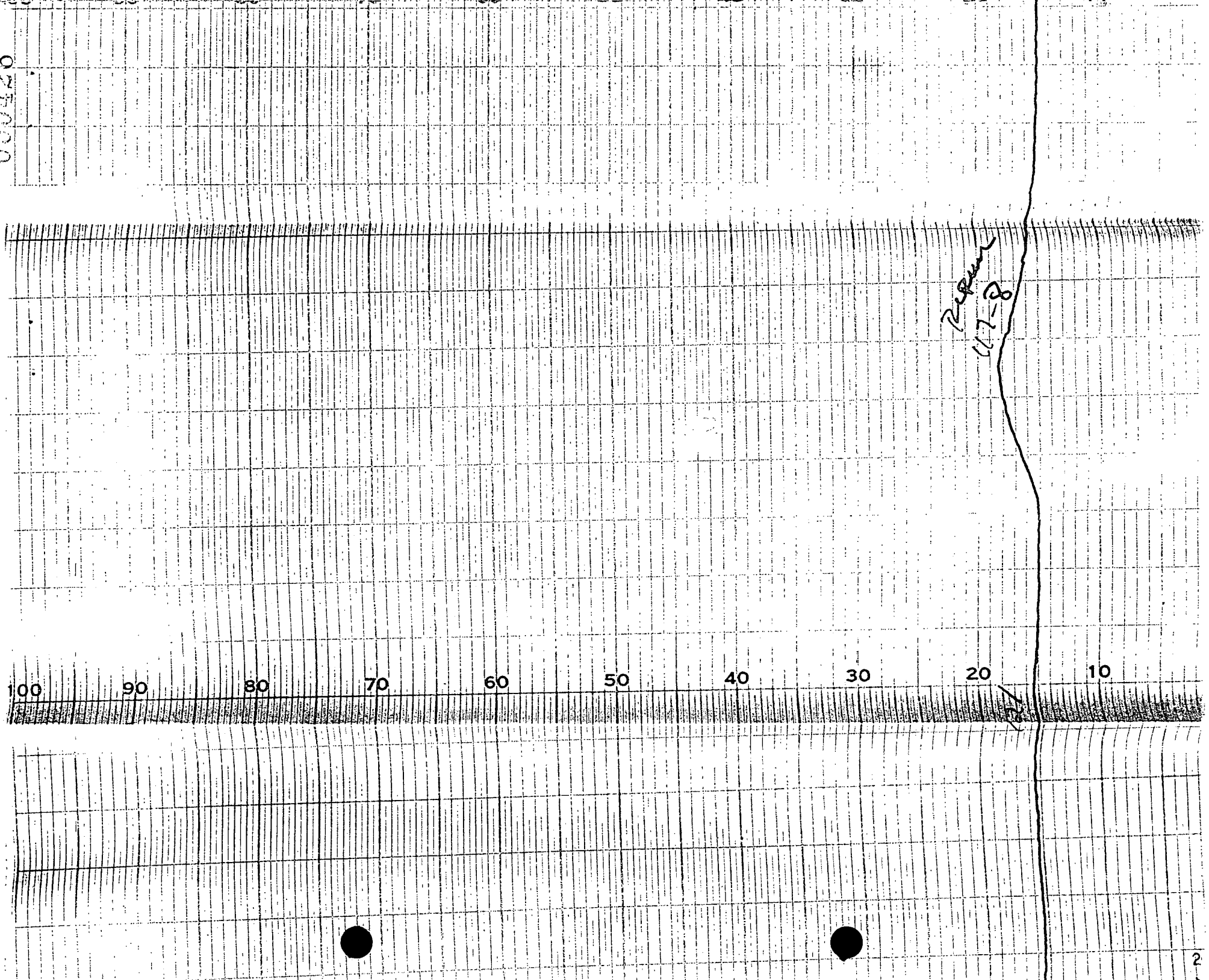
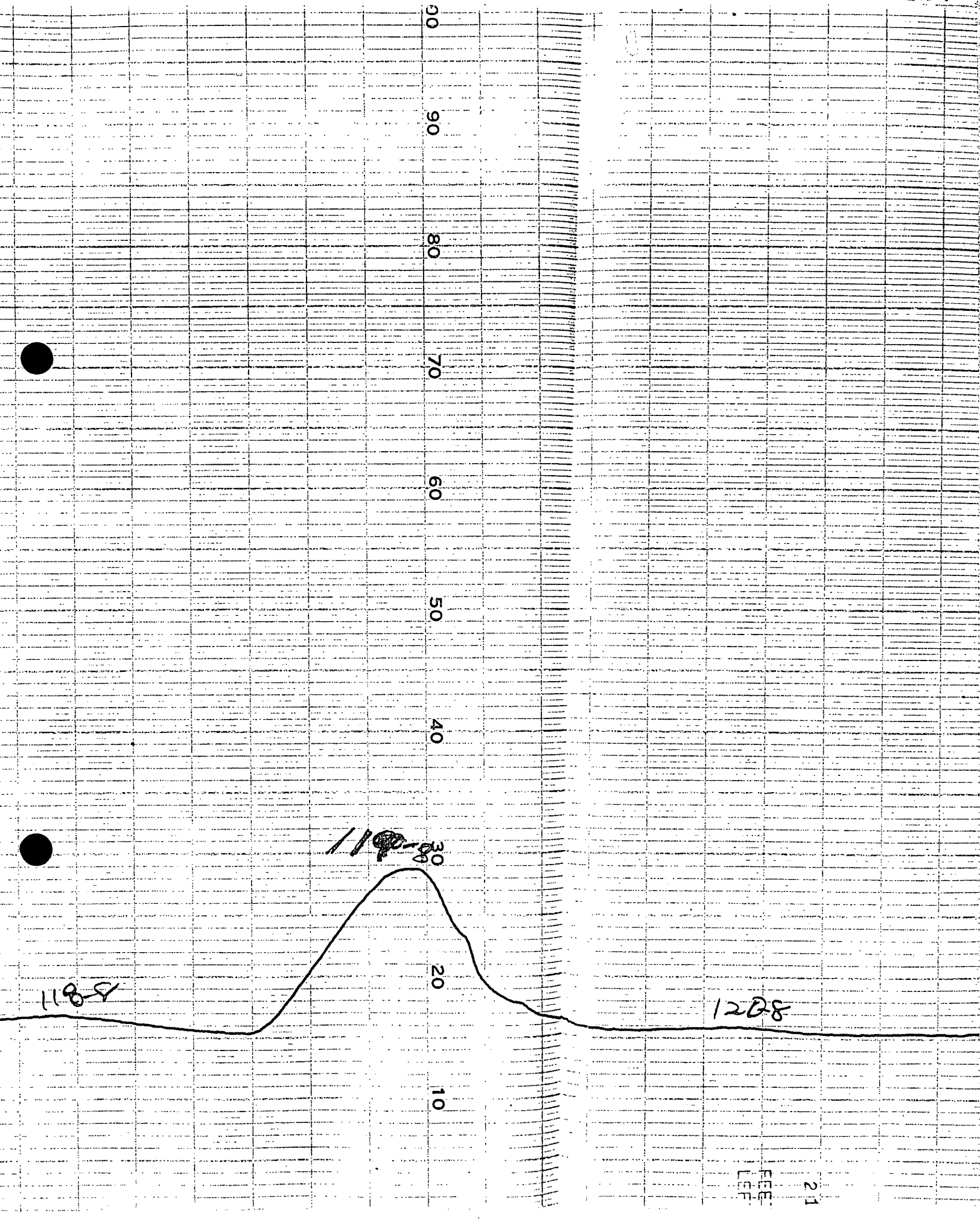
60
50
40
30
20
10
Repeat
117-8
STD
LEG
FEE
LEF
20

000426




90
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70
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40
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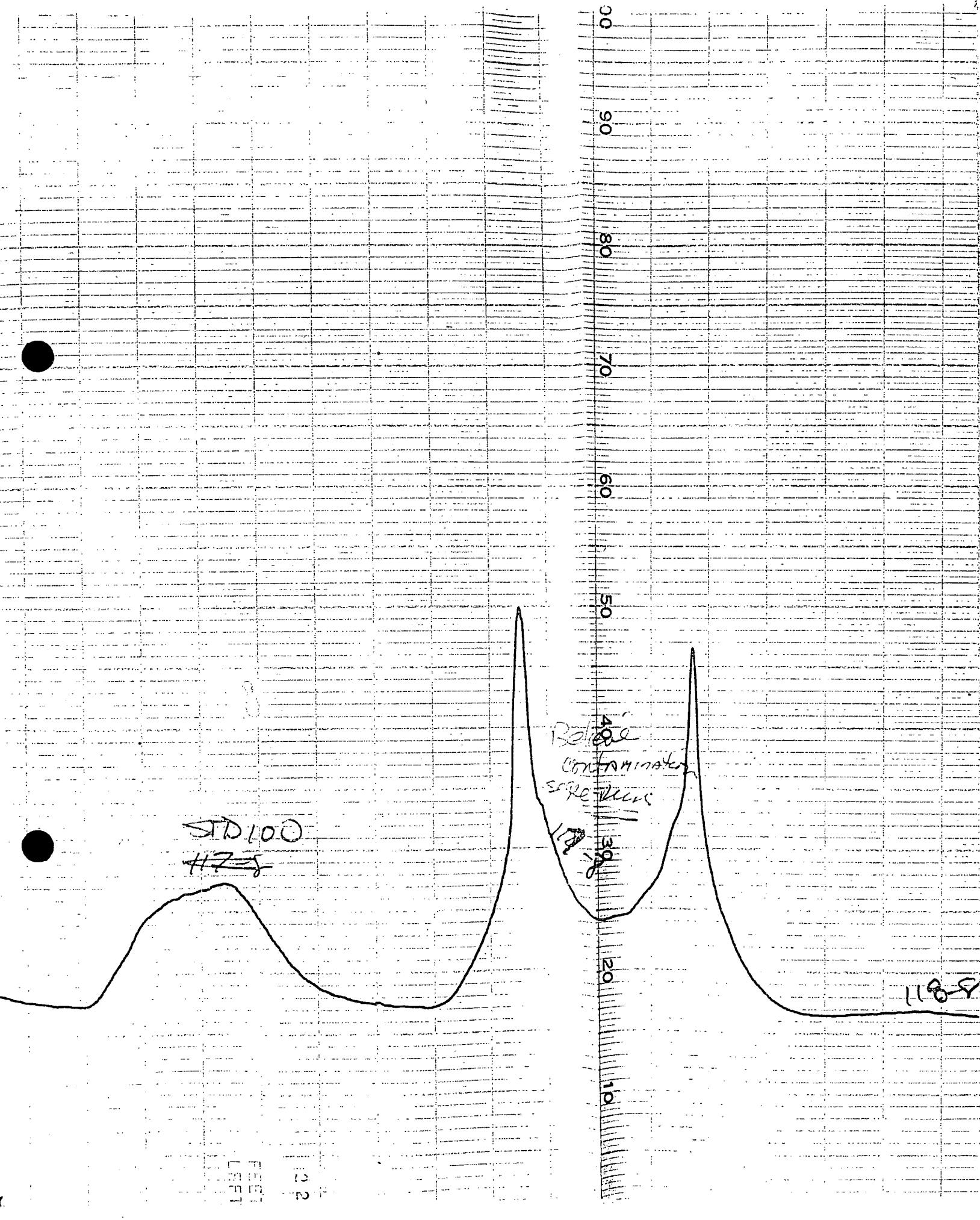
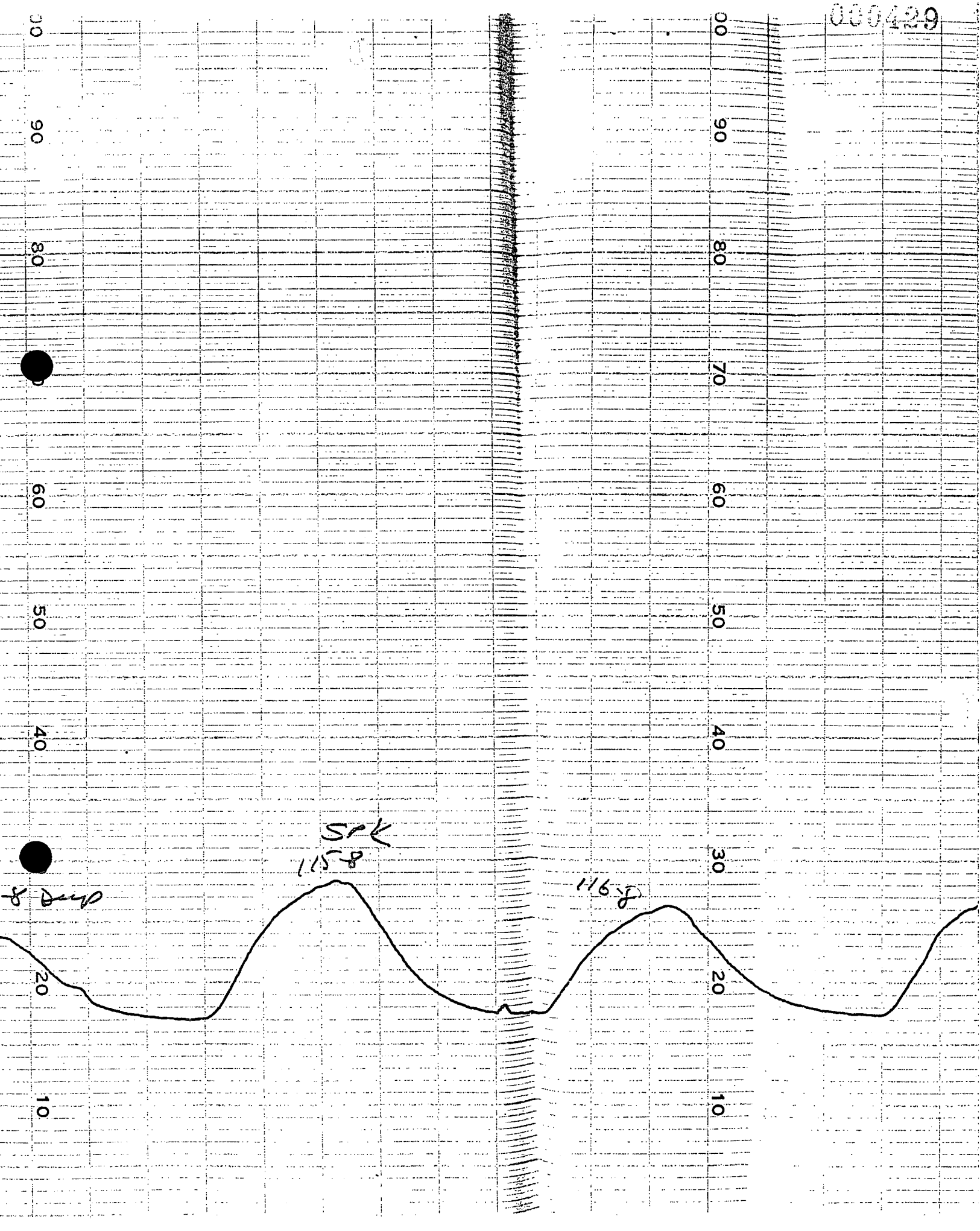
20
10
1188
1208


STD100
~~117~~
Believe
contamination
118-8
90
80
70
60
50
40
30
20
10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SPK
115-8
116-8
8 Dup
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70
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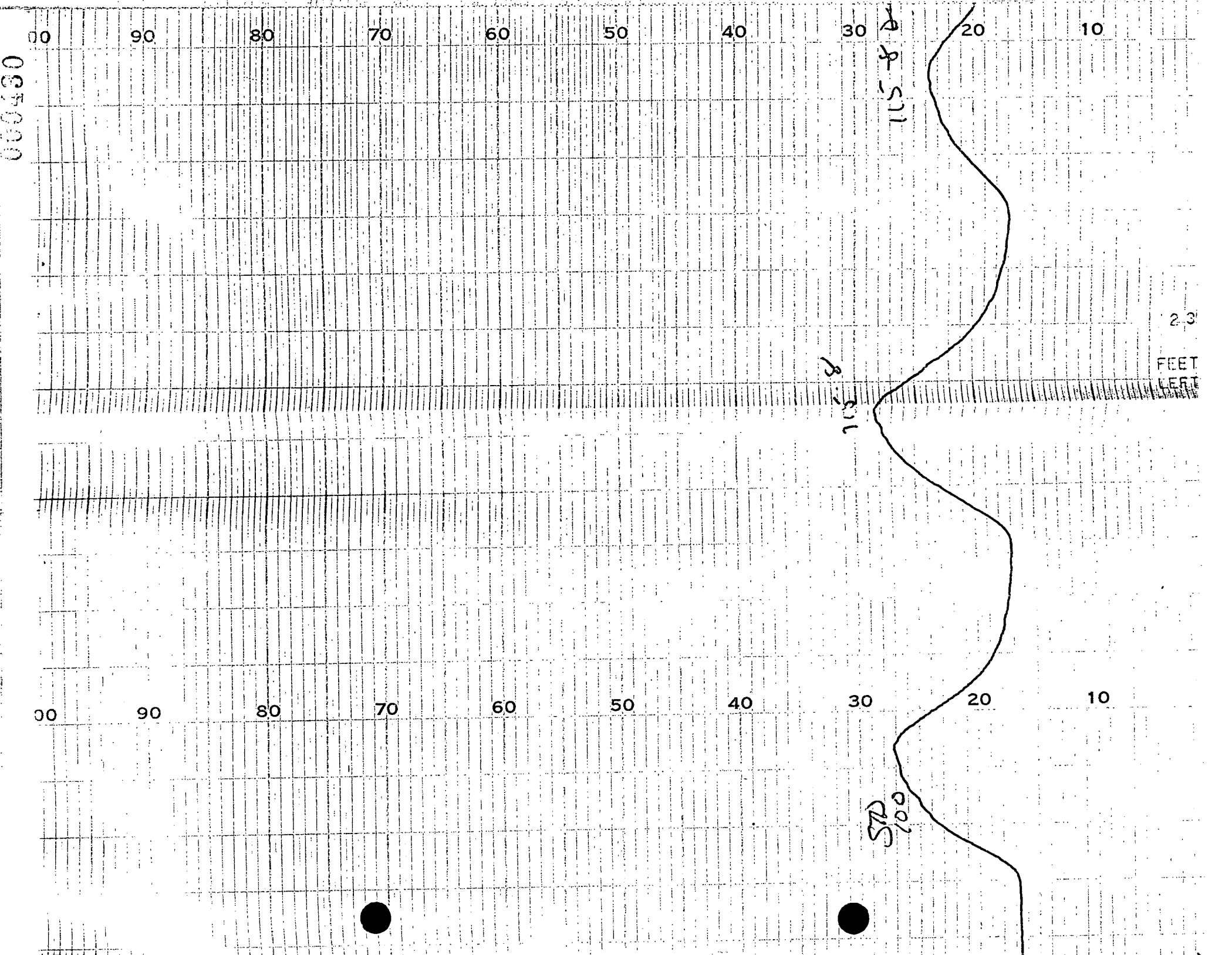
50
40
30
20
10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FEET
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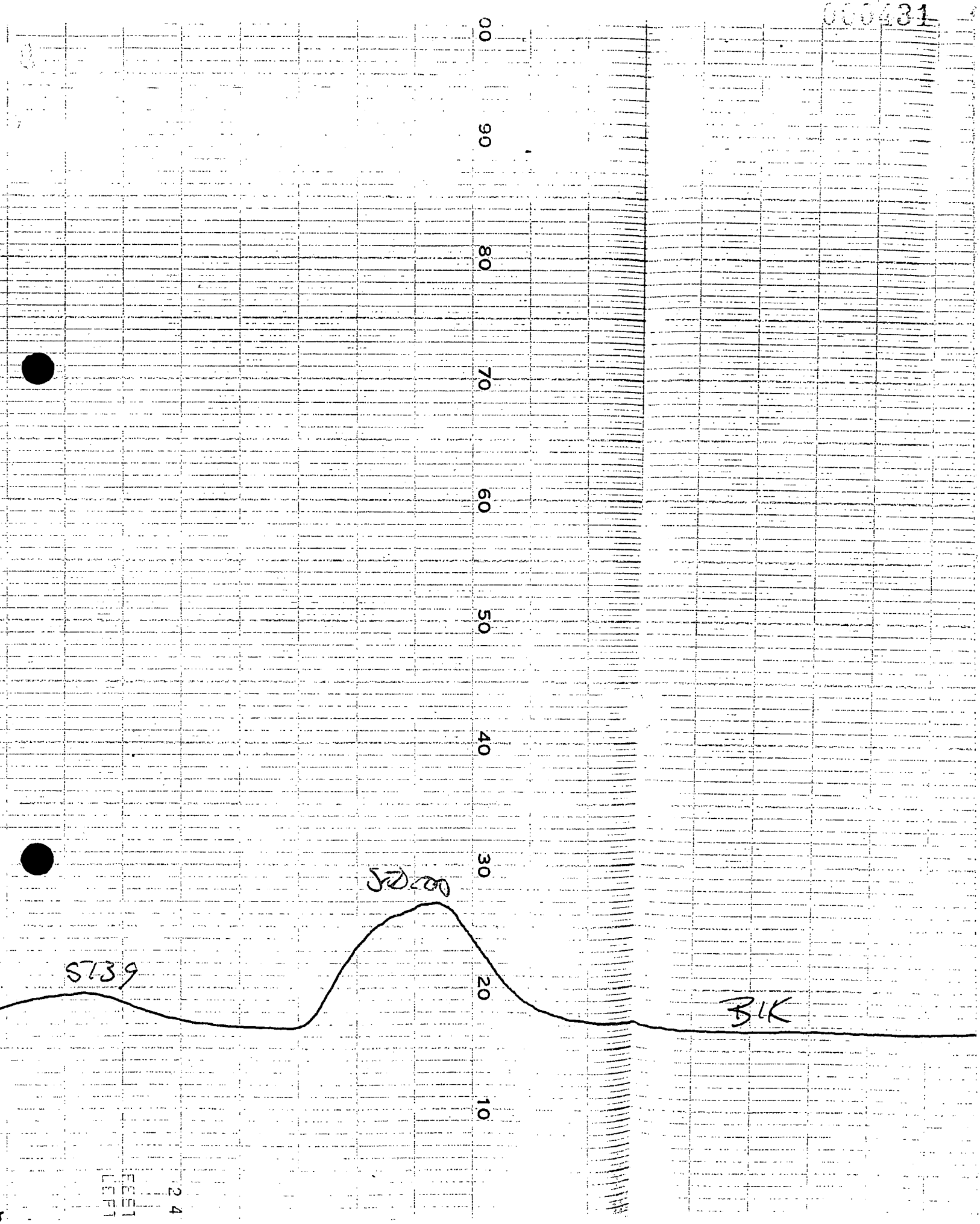
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80
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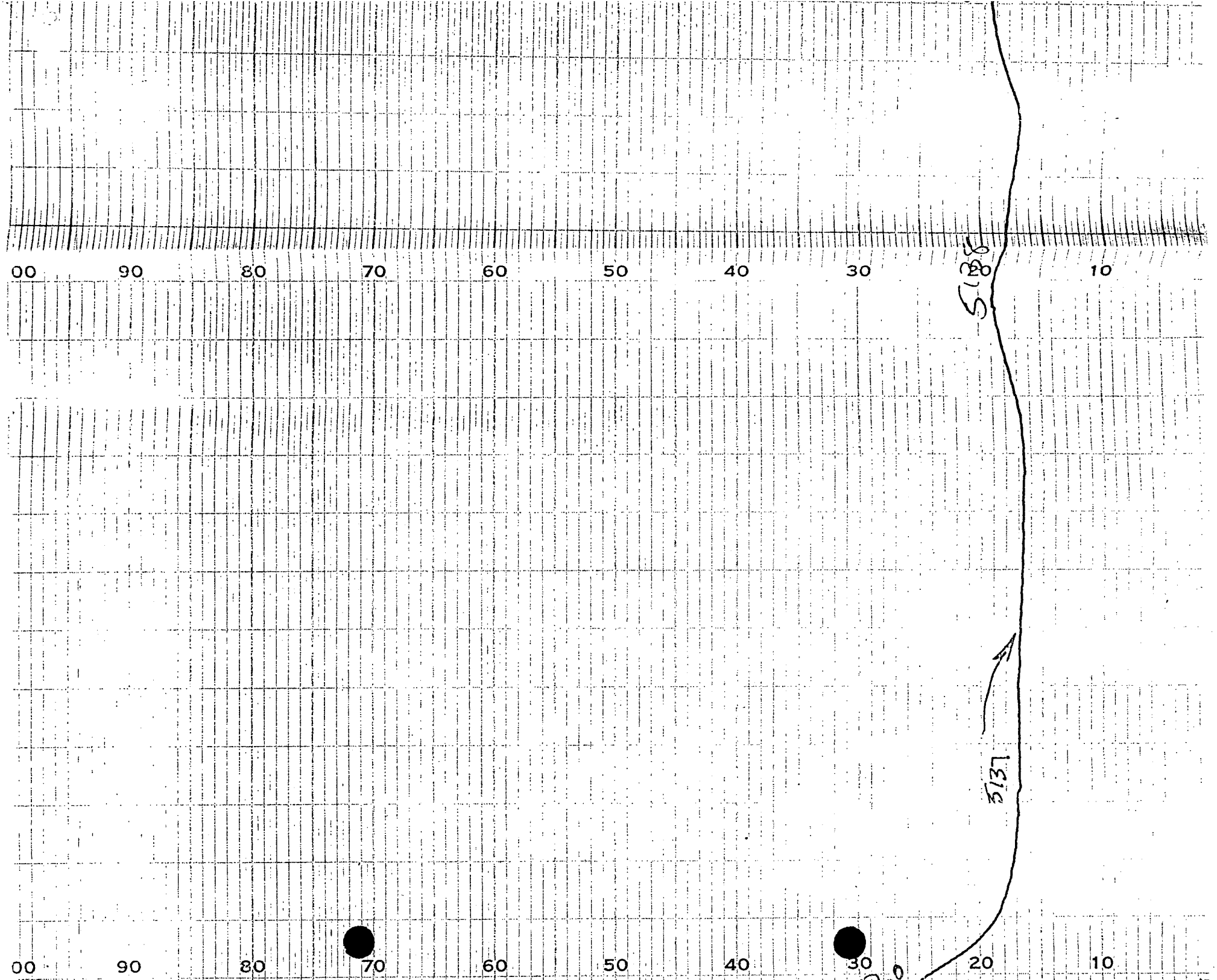
30
20
10
5739
5D200
BIK


00
90
80
70
60
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40
30
20
10
5/38
5/37
00
90
80
70
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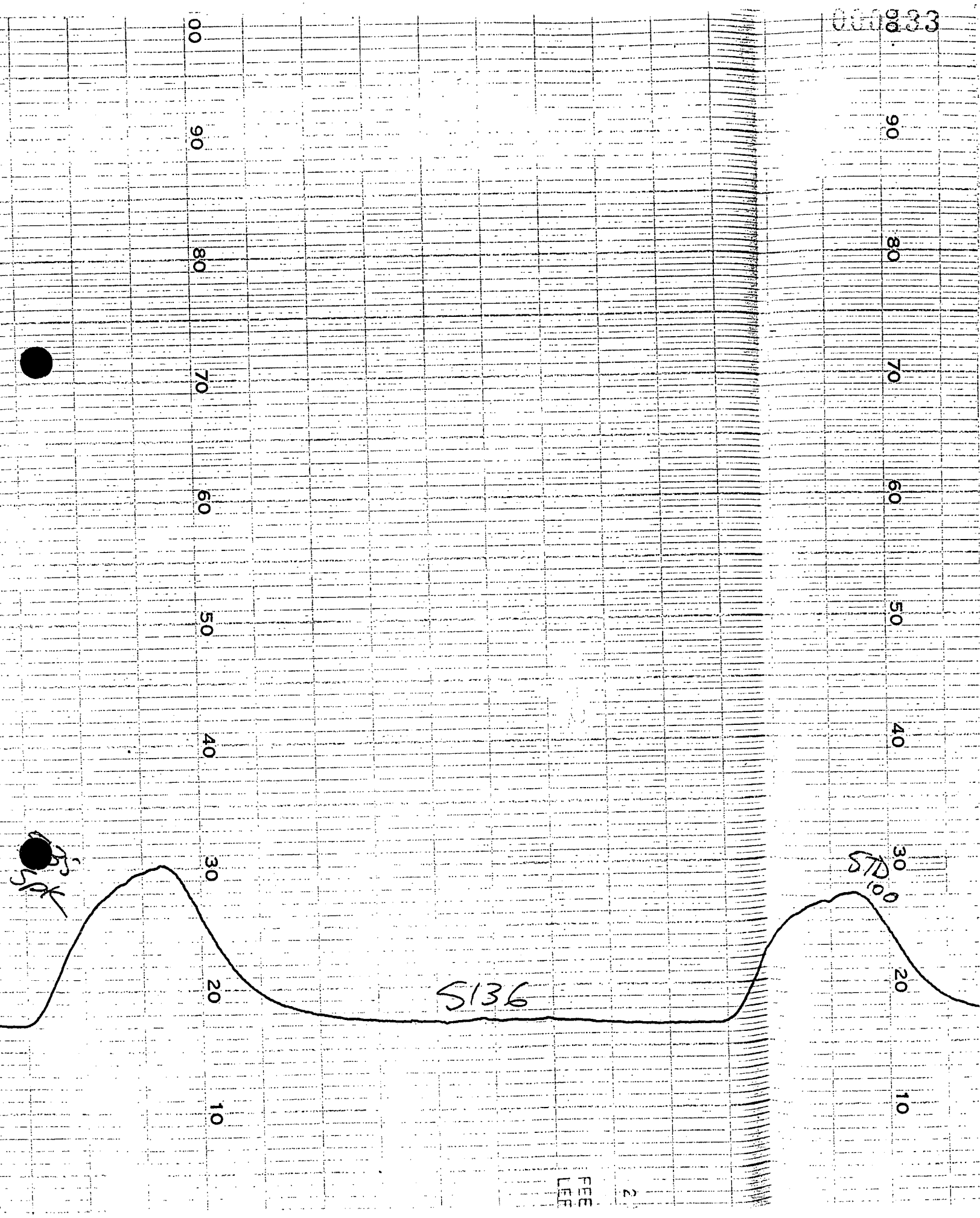
40
30
20
10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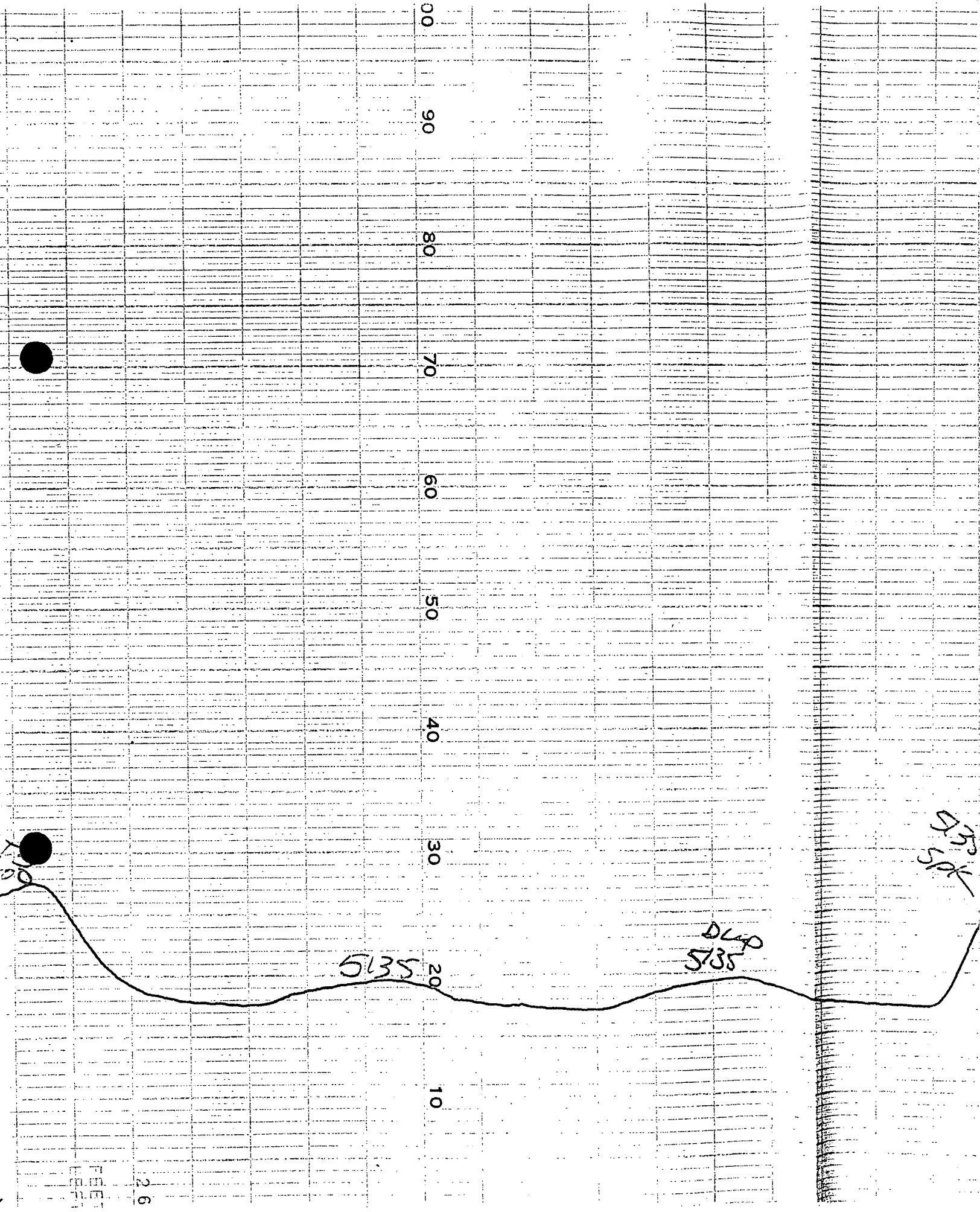
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80
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60
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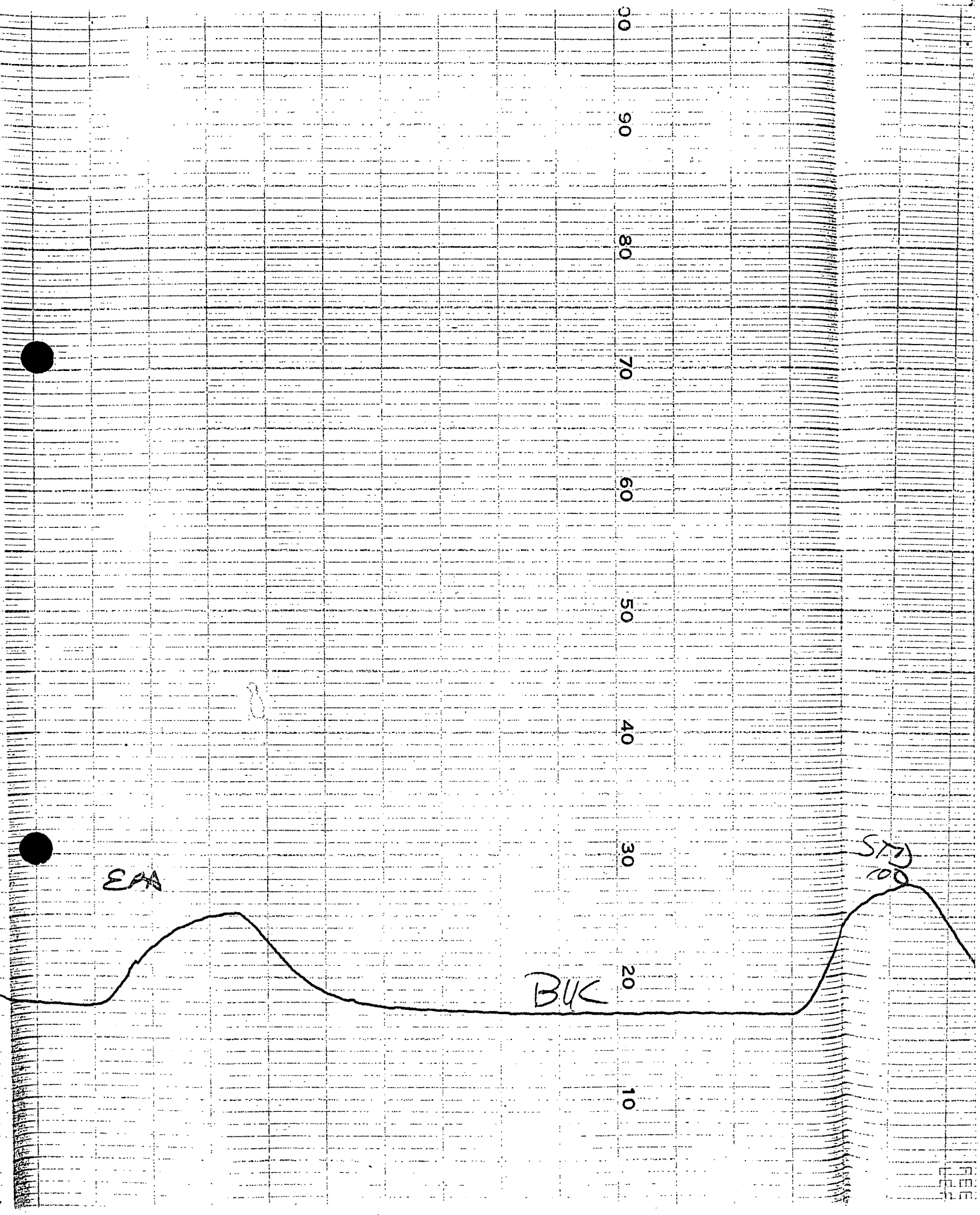
40
30
20
10
5135
DLup
5135
5135
SPK



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STD
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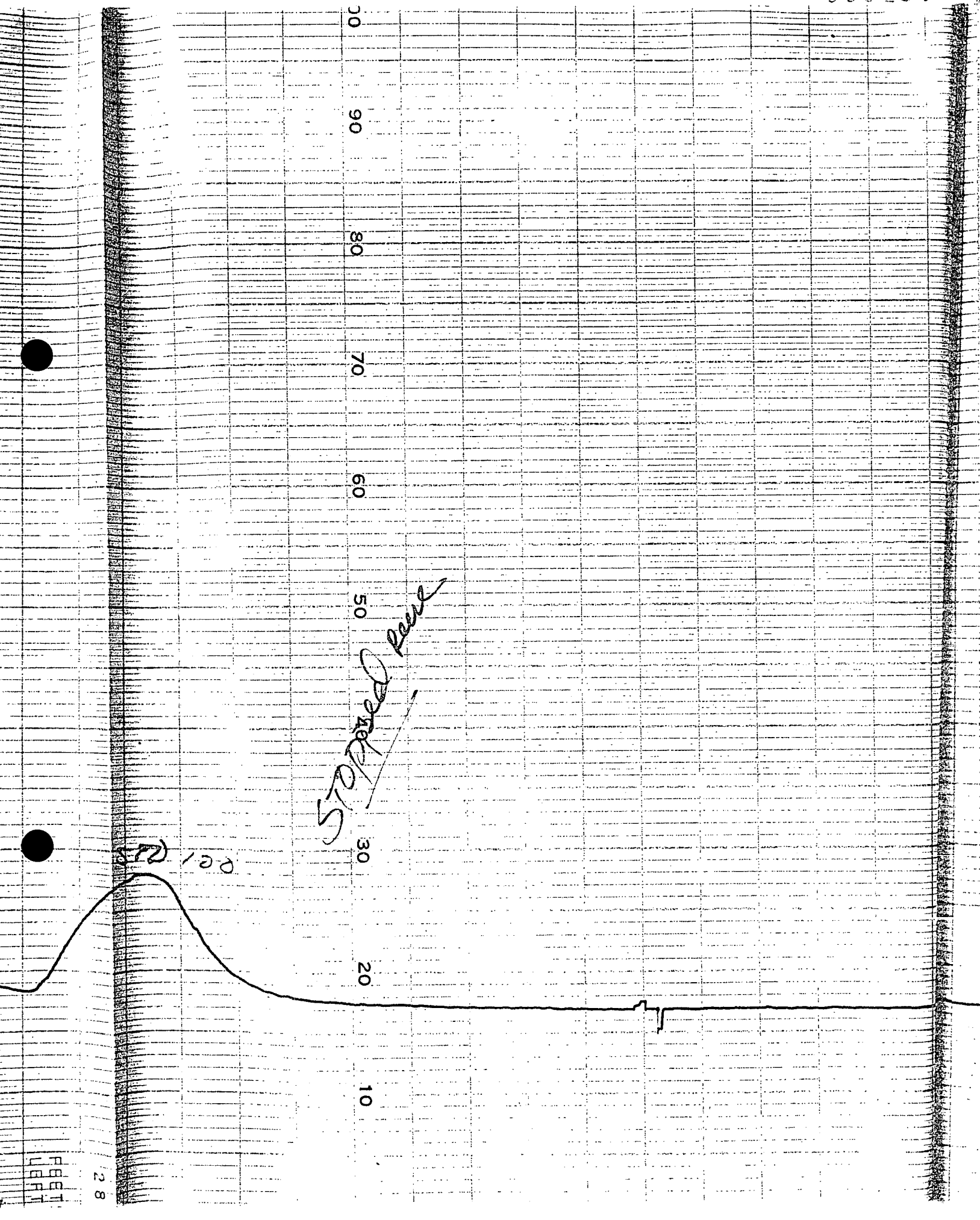
BUK

000436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60
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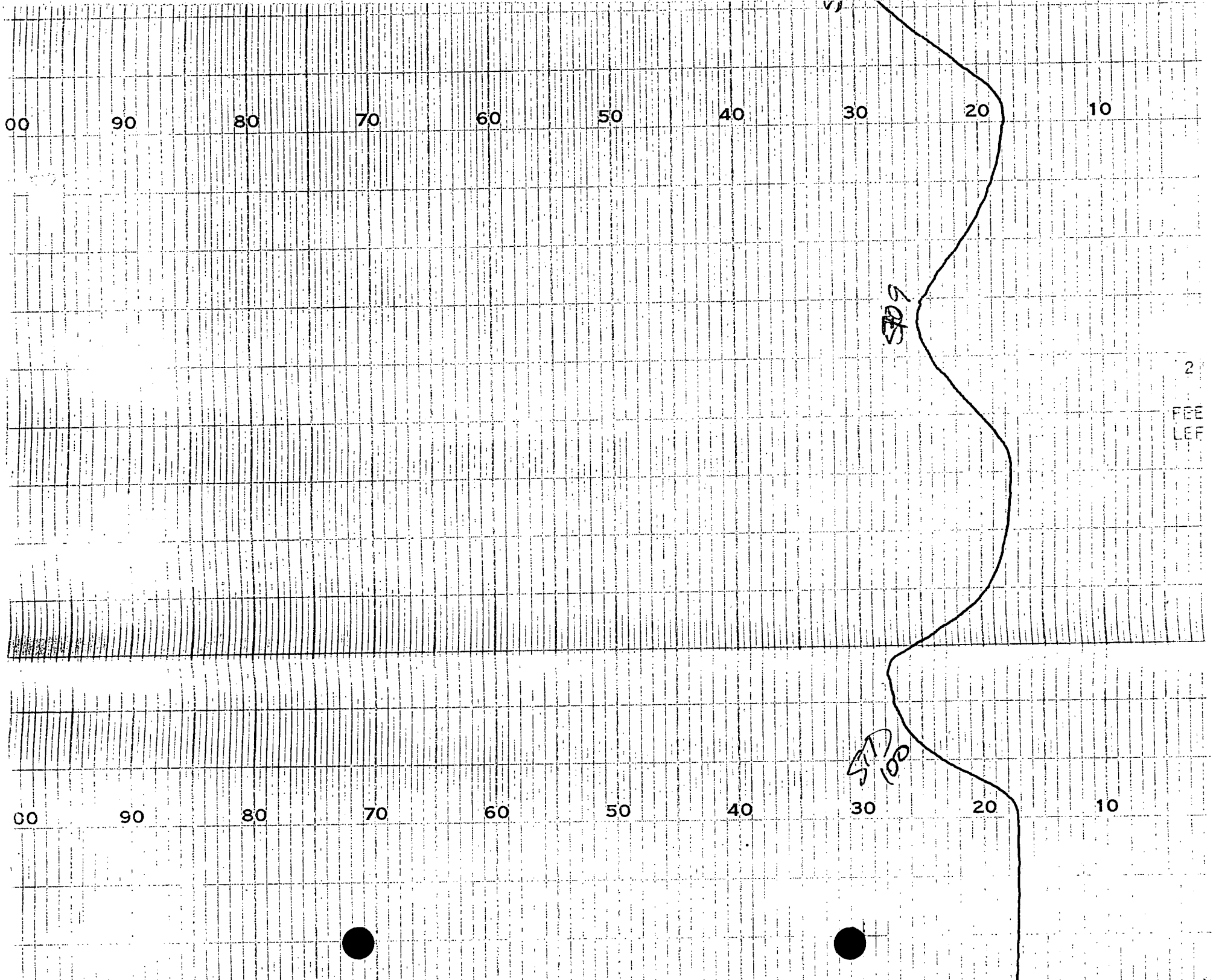
30
20
10
FEET
LEFT
28

000433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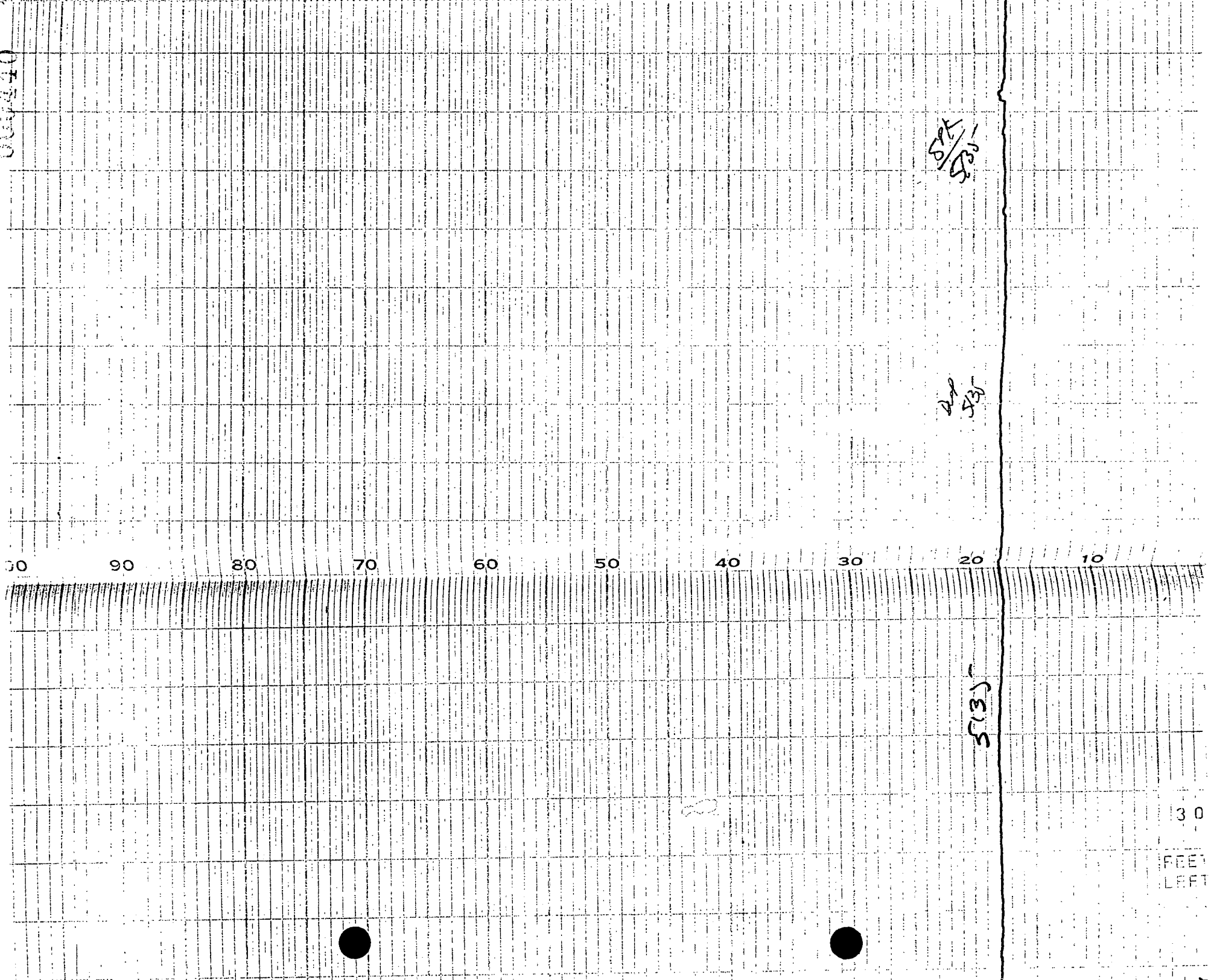
00 90 80 70 60 50 40 30 20 10
2
FEE
LEF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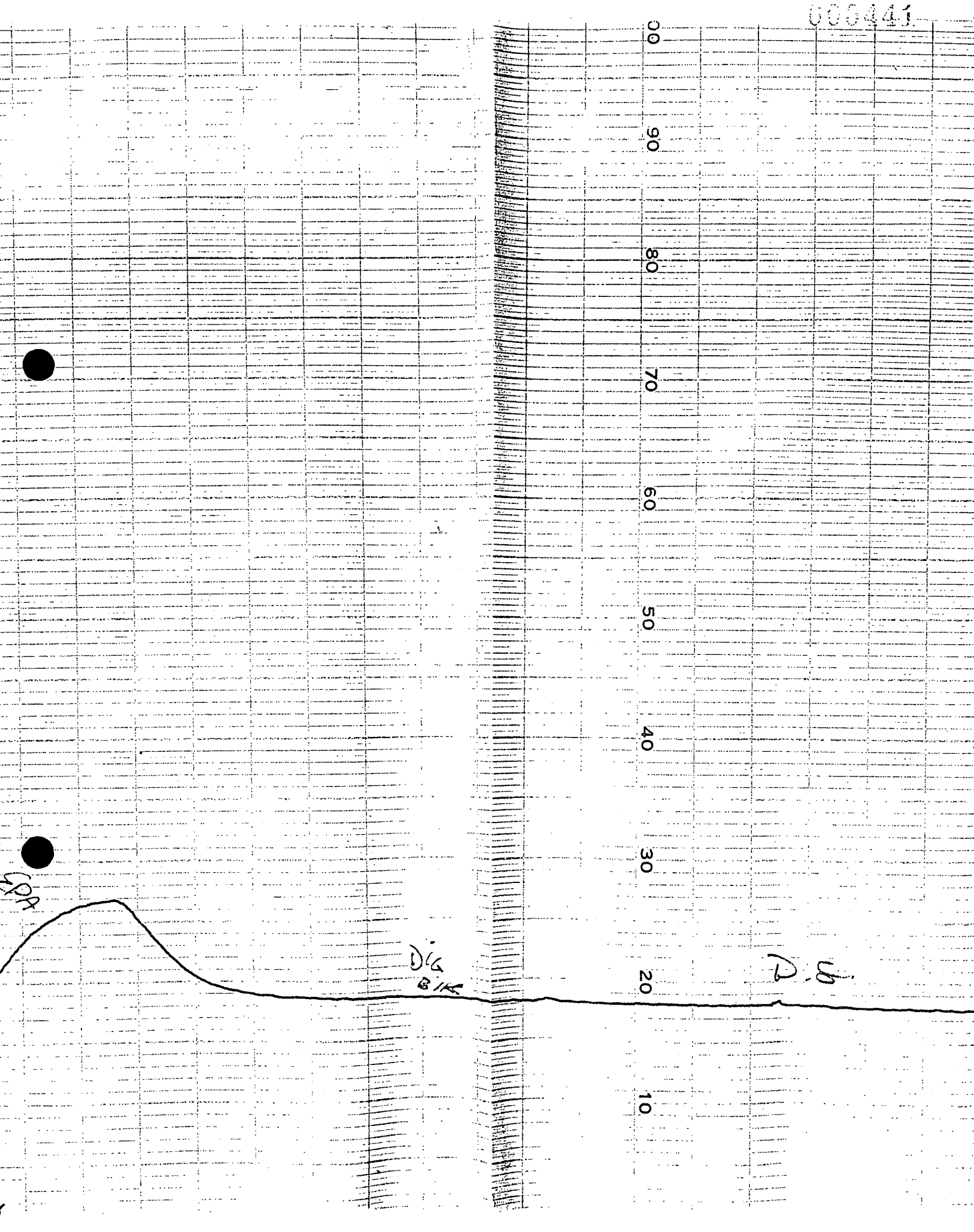
FEET
LEFT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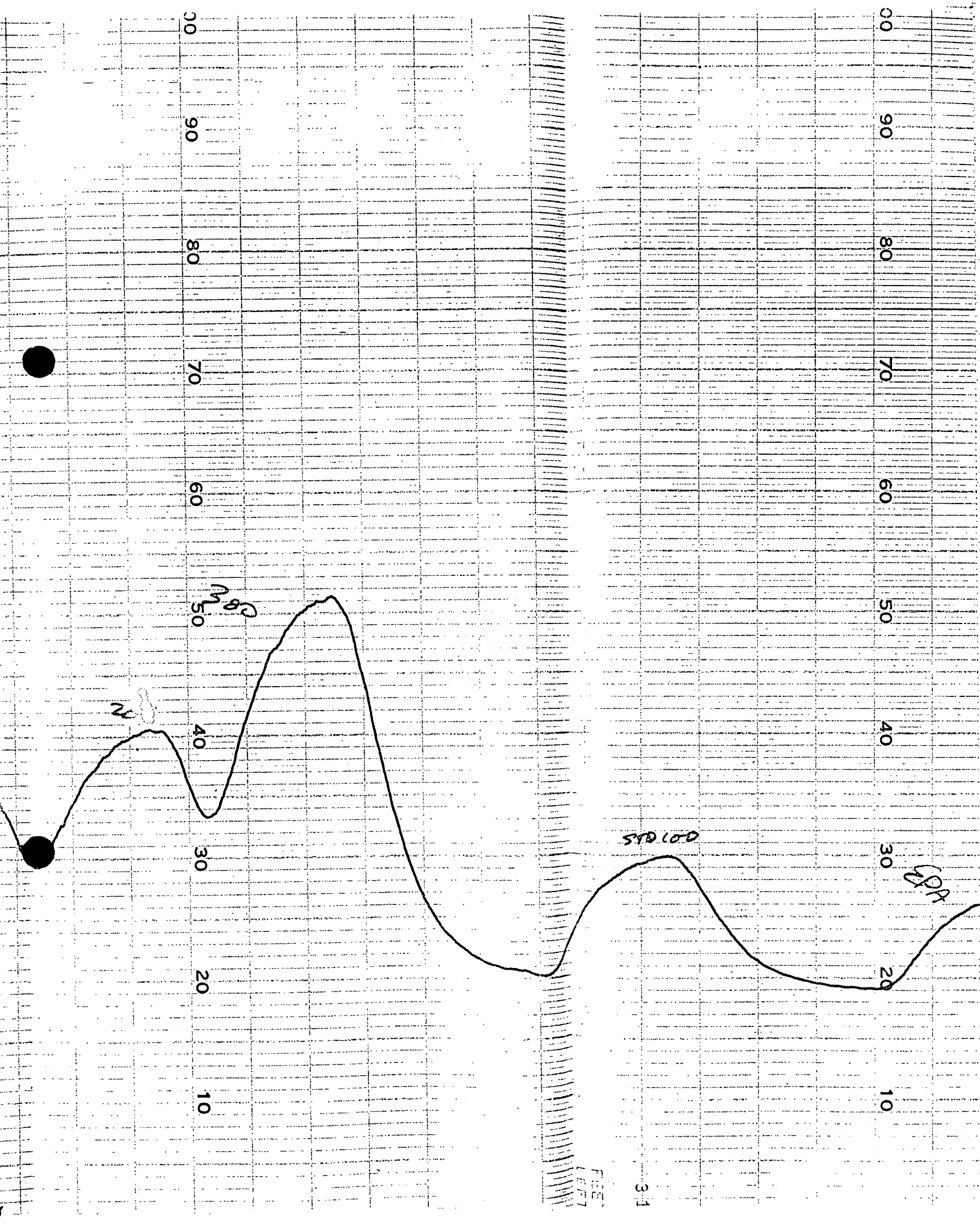
D.E.



00
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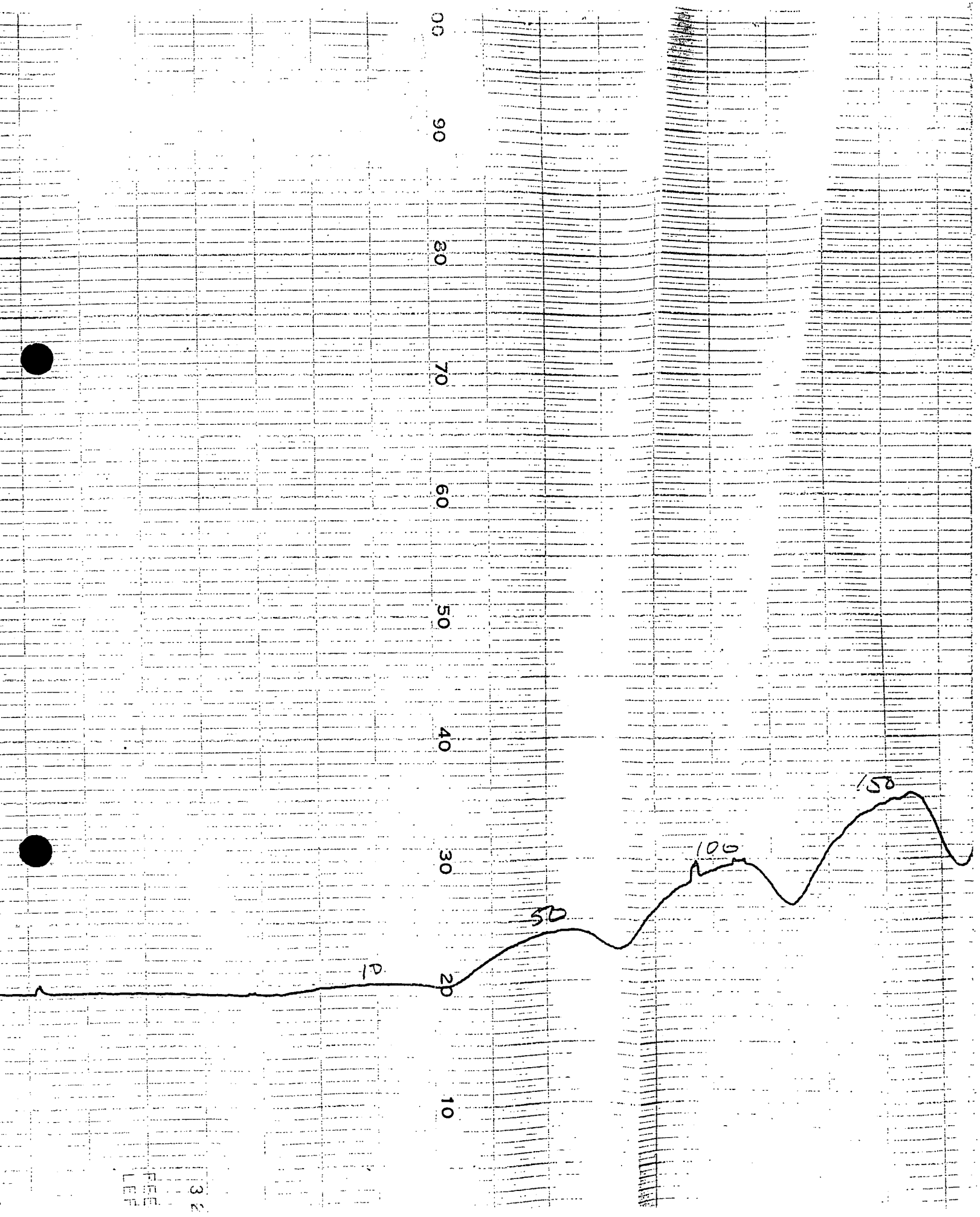
STD LOD
EPA


00
90
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30
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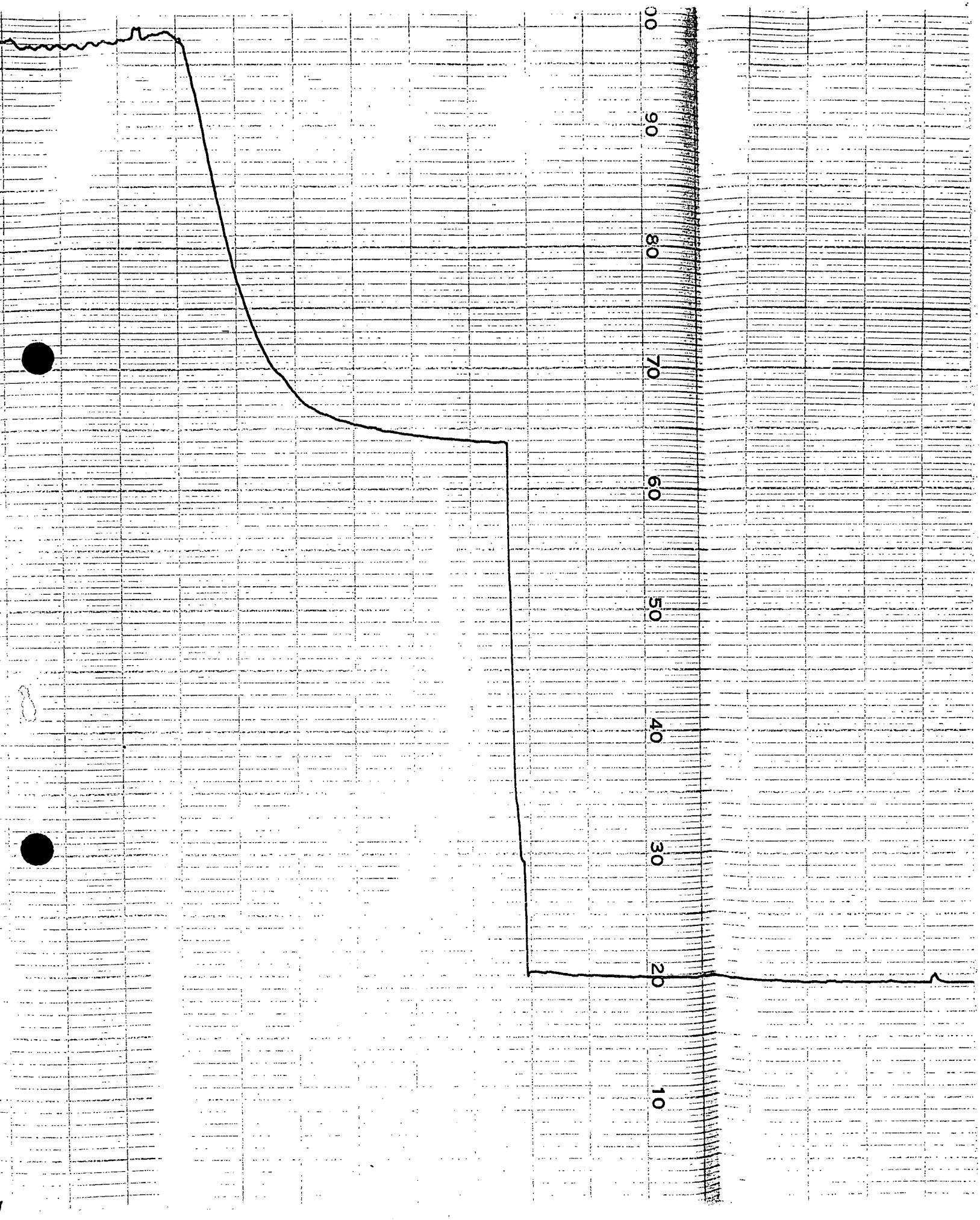
10
10
50
100
150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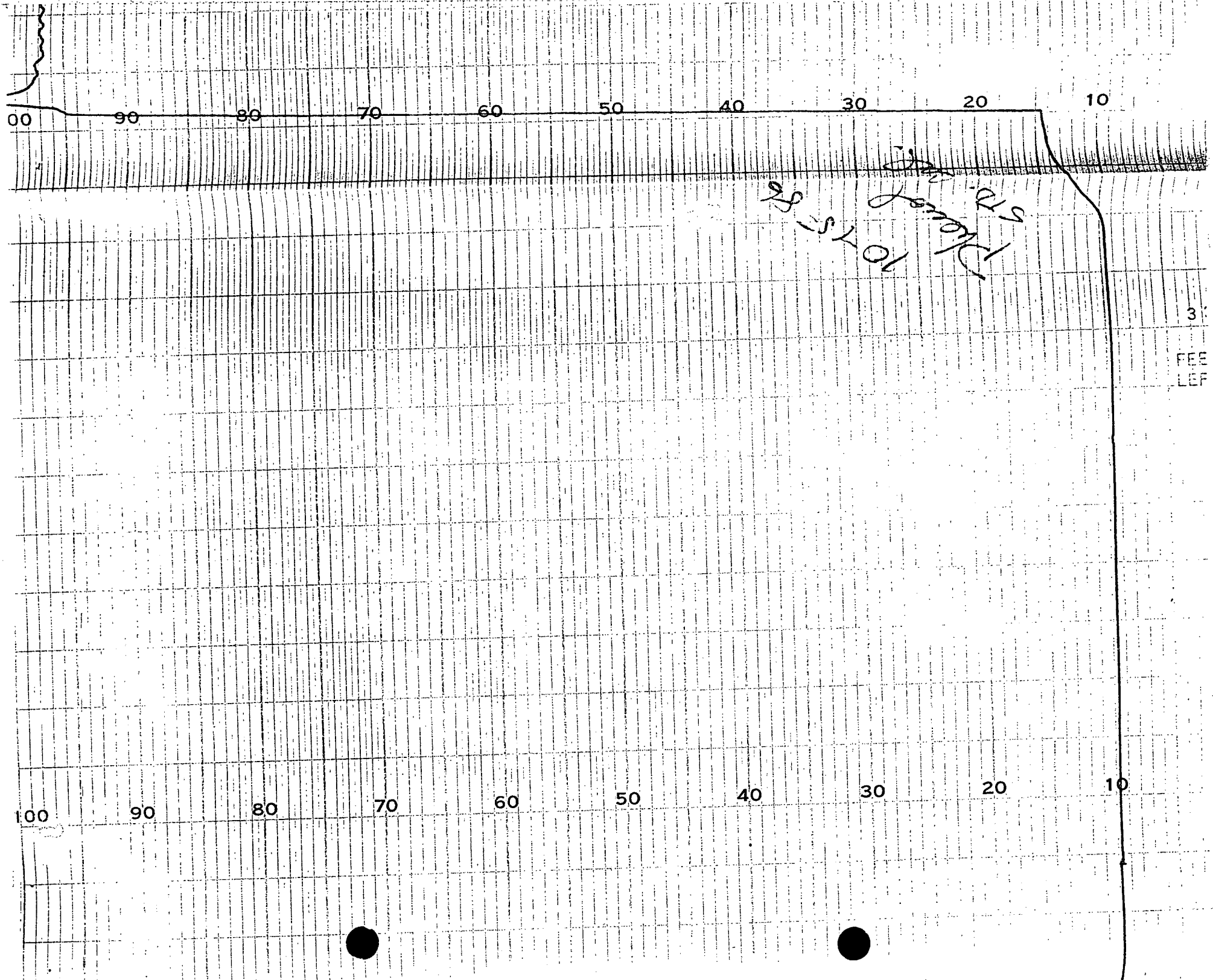
100
90
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100
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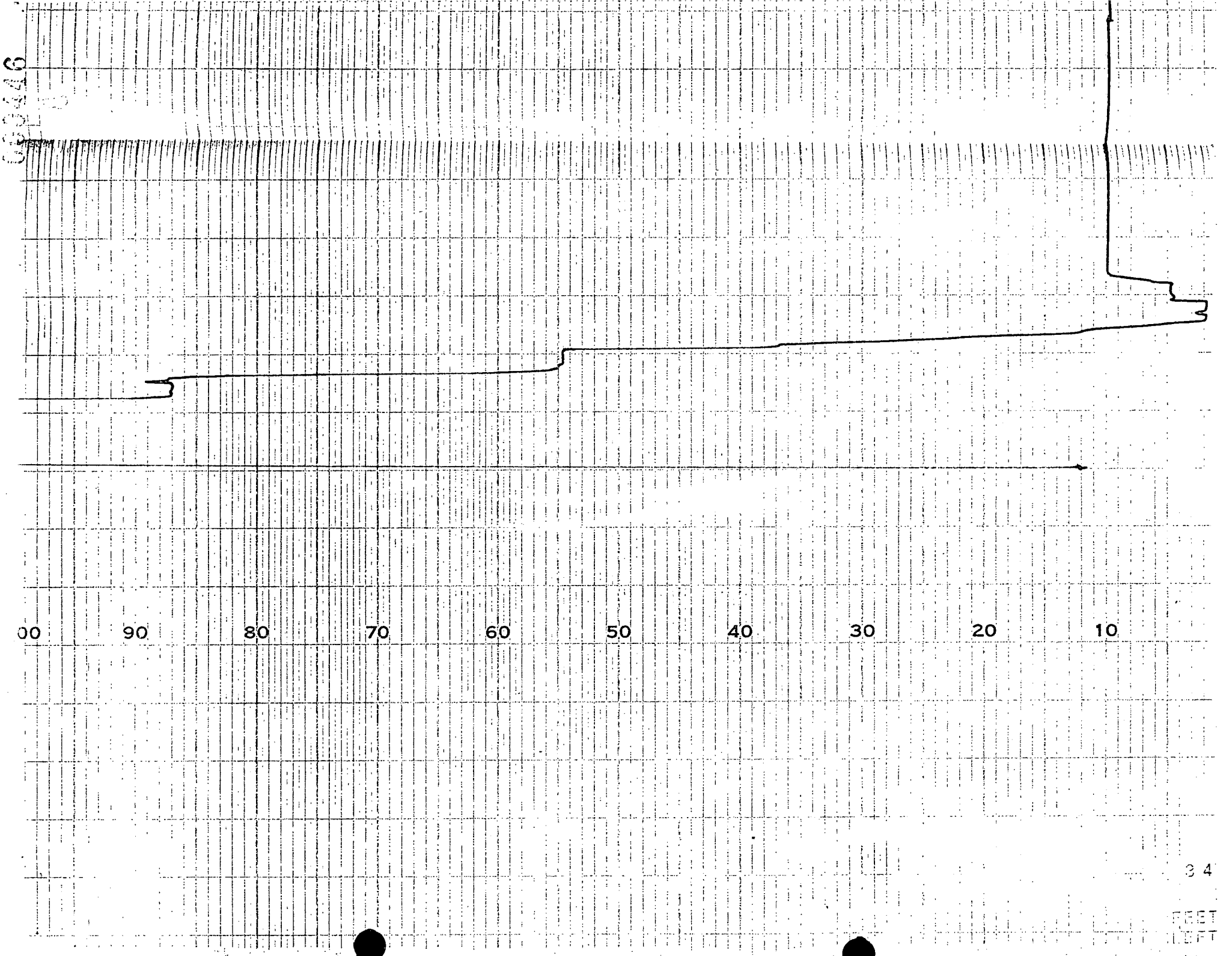
20
10
3
FEE
LEF


00
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3 4
FEET
LEFT

PHENOLS 10-20-86

GRAPH: F10
PRINT: ALT-P

CONCENTRATION MG/L
STANDARDS
ANALYST:

PEAK HEIGHT	CONC.
0.75	10
10.75	100
16.25	150
22	200
34	300

SUM Y:	83.75
SUM X:	760
SUM XY:	18120
SUM YY:	2020.1875
SLOPE :	8.73051224
INTERCEPT:	5.76391982
DATA PTS.	5
DIL. FAC.	1

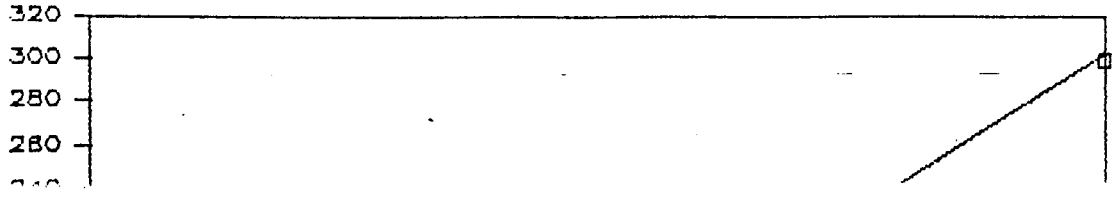
PEAK HEIGHT	CONC
0.5625	7.5
115.5625	1075
264.0625	2437.5
484	4400
1156	10200

PEAK HEIGHT	CONC
0.75	10
10.75	100
16.25	150

SAMPLES

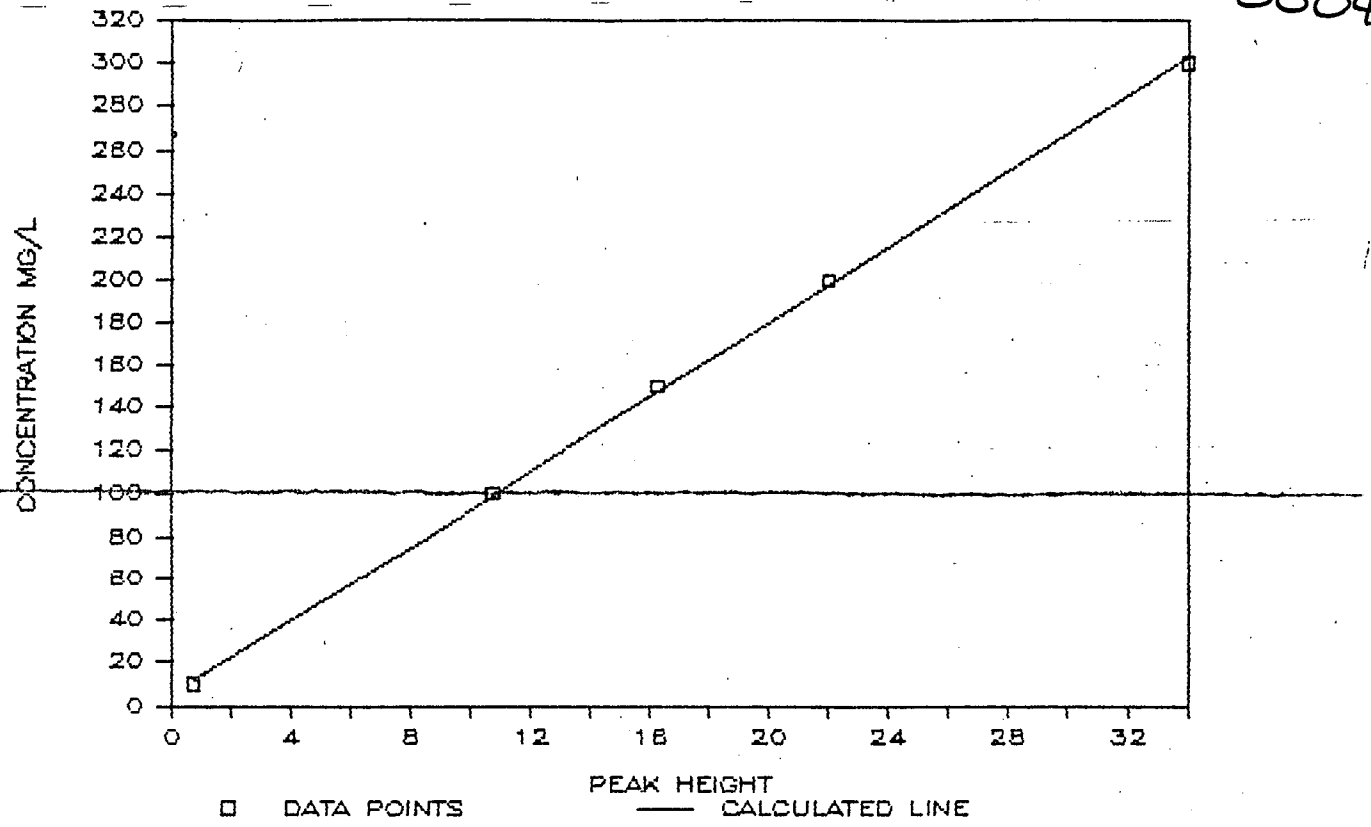
PEAK HEIGHT	CONC UC	SAMPLE #	DILU.FA	CRR.CONC.	
10.5	97.43	STD 100	1.000	97.434	97%
6.5	62.51	EPA (68 ppb)	1.000	62.512	92%
0	5.76	DIG BLK	1.000	5.764	
10	93.07	DIG STD	1.000	93.069	93%
2	23.22	J6-115-008	1.000	23.225	
3	31.96	J6-116-008	1.000	31.955	
7	66.88	J6-117-008	1.000	66.878	
8	75.61	J6-117-008 DUP	1.000	75.608	
10	93.07	STD 100	1.000	93.069	
20.5	184.74	J6-117-008 SPK	1.000	184.739	110%
0	5.76	J6-118-008	1.000	5.764	
7	66.88	J6-119-008	1.000	66.878	
2	23.22	J6-115-008 RERUN	1.000	23.225	
10	93.07	STD 100	1.000	93.069	93%
0	5.76	W 5696	1.000	5.764	
0	5.76	W 5696 DUP	1.000	5.764	
0	5.76	W 5696 SPK	1.000	5.764	0%
10.5	97.43	STD 100	1.000	97.434	97%
10.25	95.25	STD 100	1.000	95.252	95%
7.25	69.06	EPA (68 ppb)	1.000	69.060	101%
0	5.76	DIG BLK	1.000	5.764	
11.5	106.16	DIG STD	1.000	106.165	106%
0	5.76	W 5135	1.000	5.764	
0	5.76	W 5135 DUP	1.000	5.764	
12	110.53	W 5135 SPK	1.000	110.530	104%
7	66.88	W 5138	1.000	66.878	
3.5	36.32	W 5139	1.000	36.321	
10.25	95.25	STD 100	1.000	95.252	95%
10.5	97.43	DIG STD (CHECK)	1.000	97.434	97%
	5.76		1.000	5.764	
	5.76		1.000	5.764	

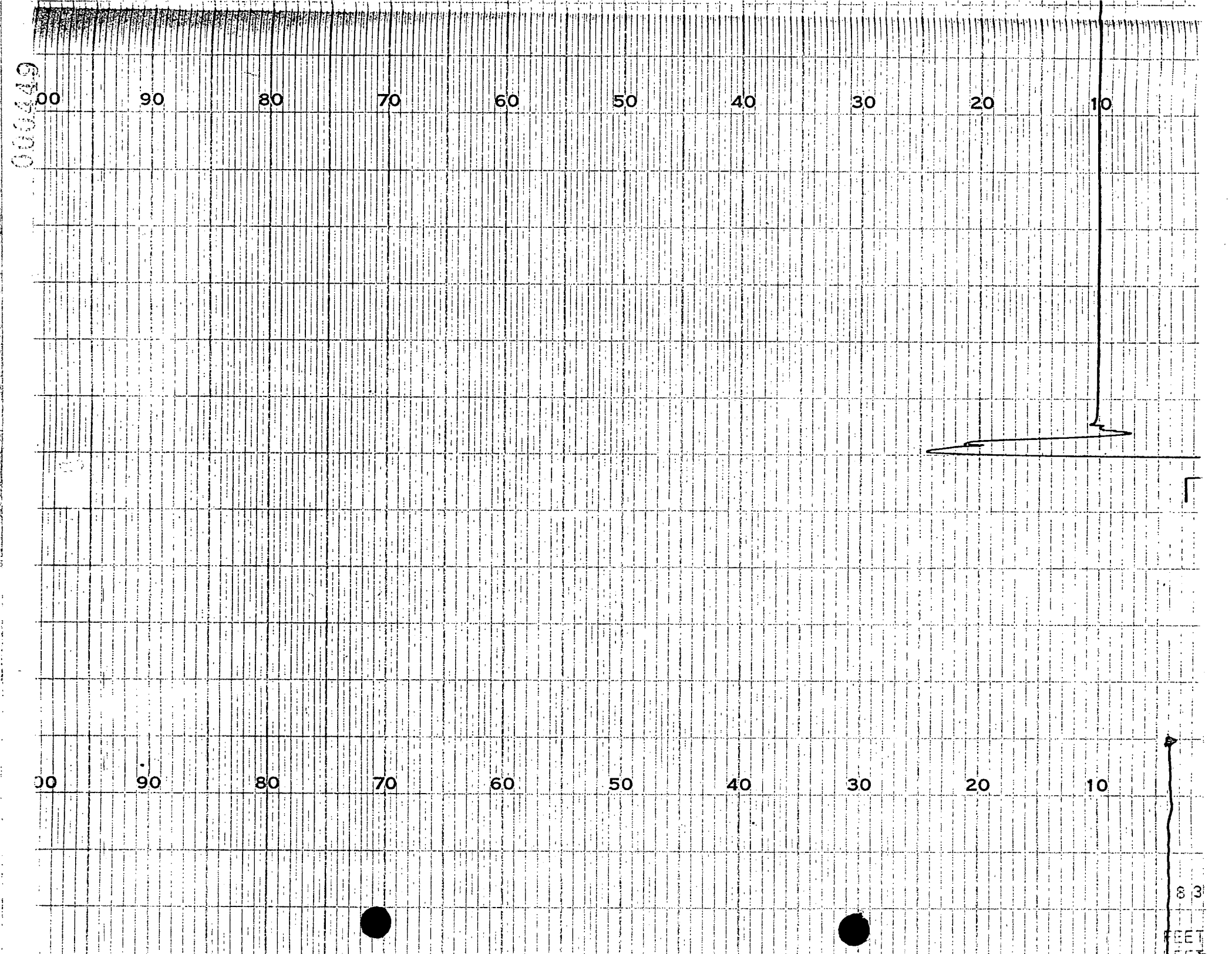
PHENOLS 10-20-86



PHENOLS 10-20-86

000448

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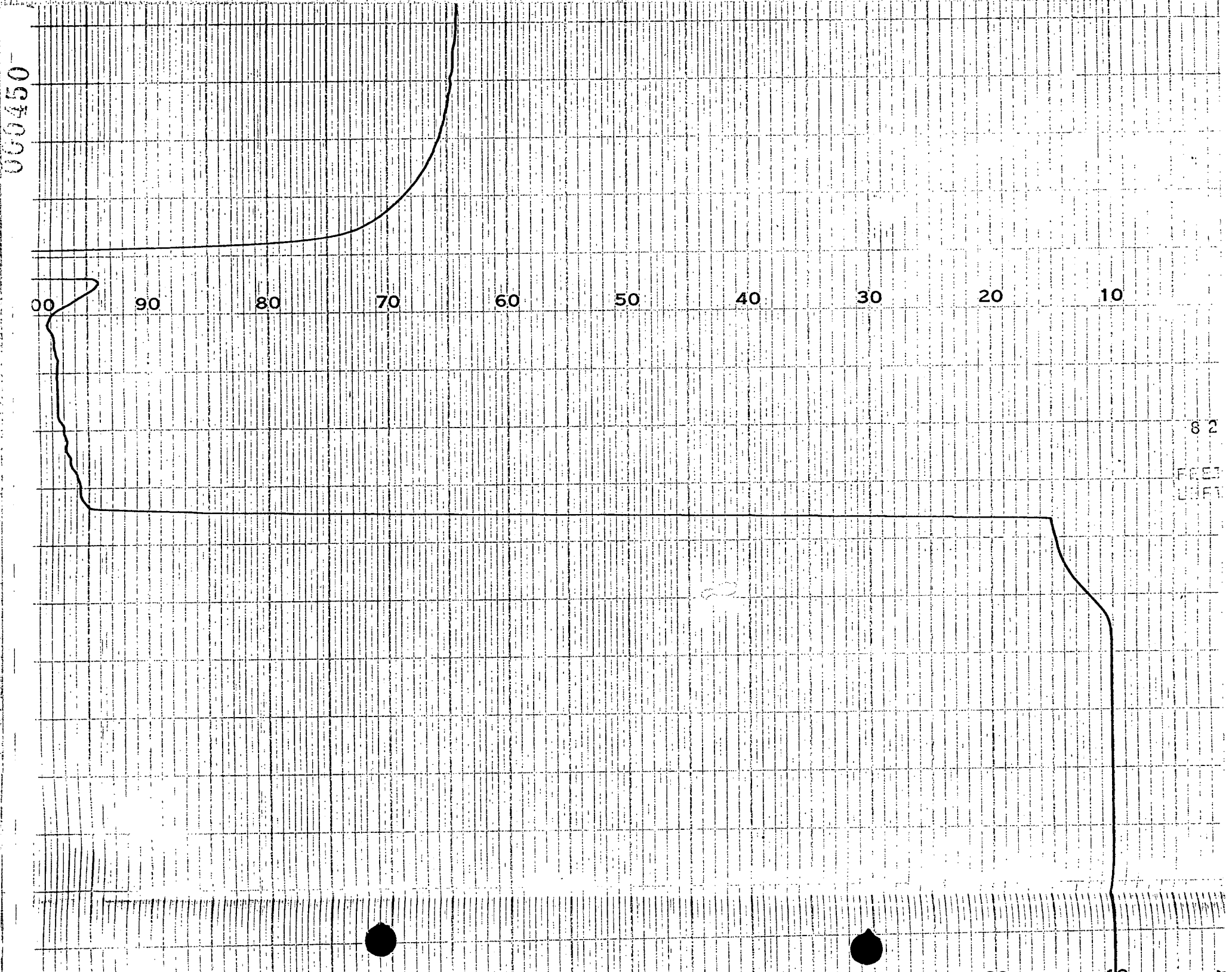
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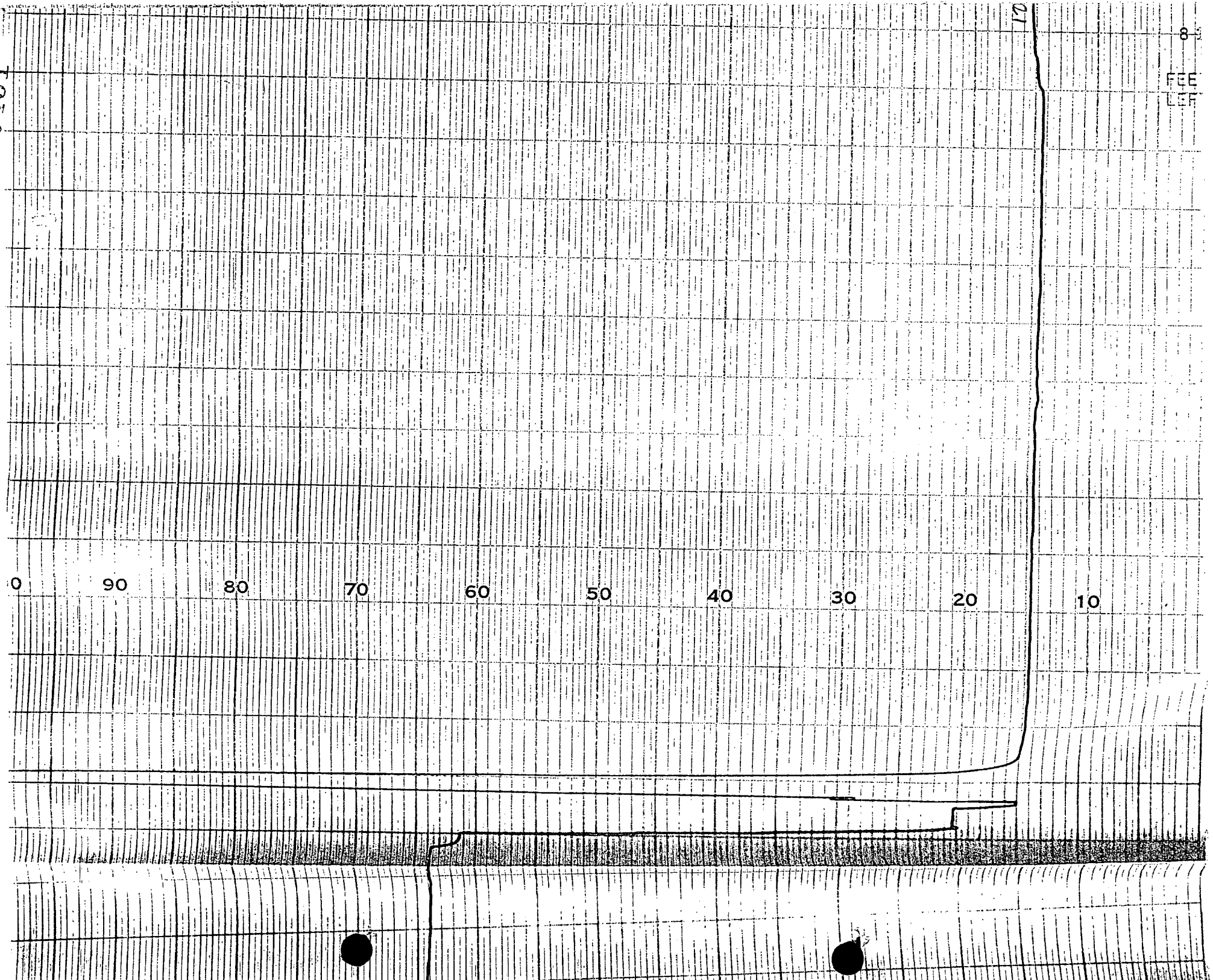
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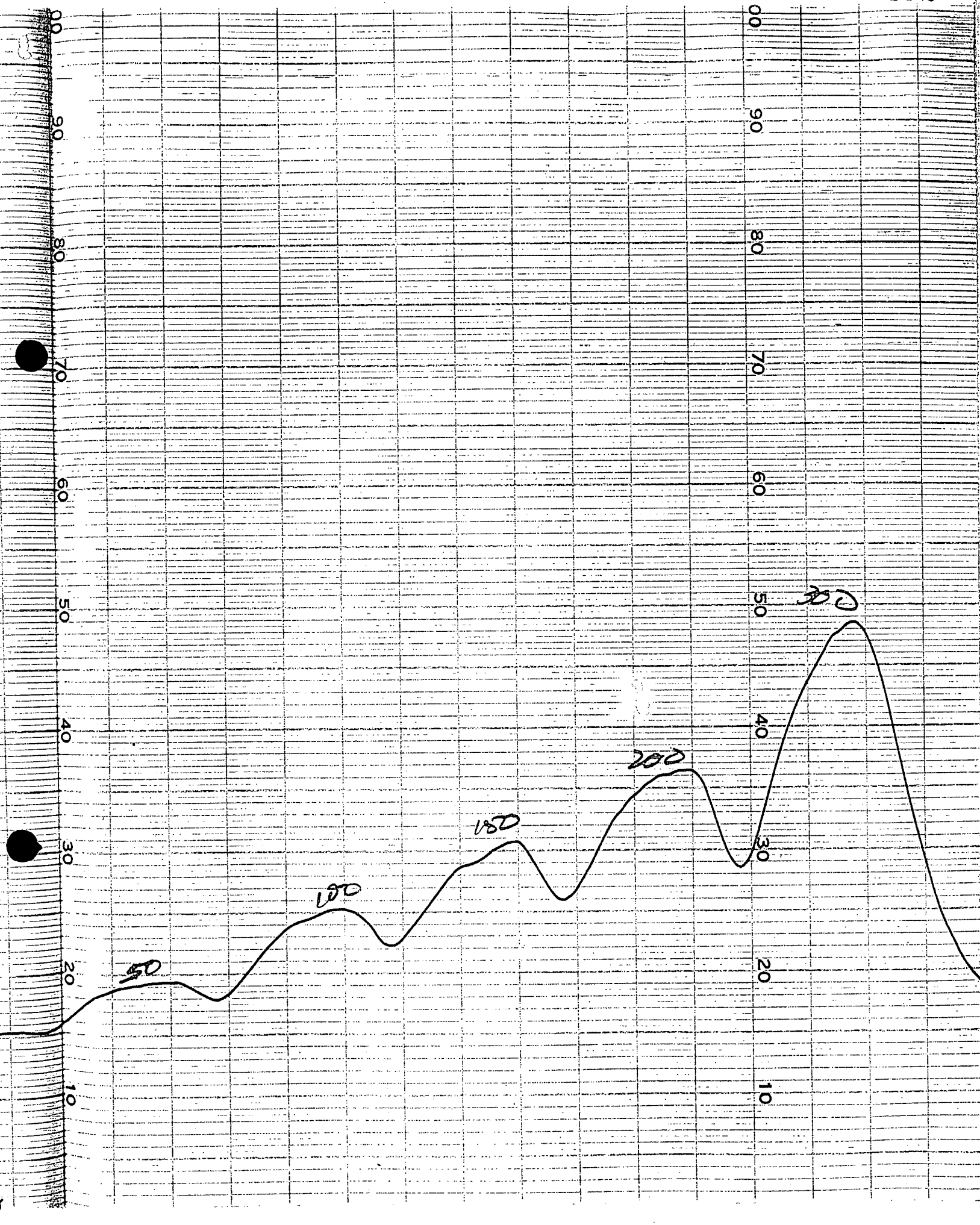
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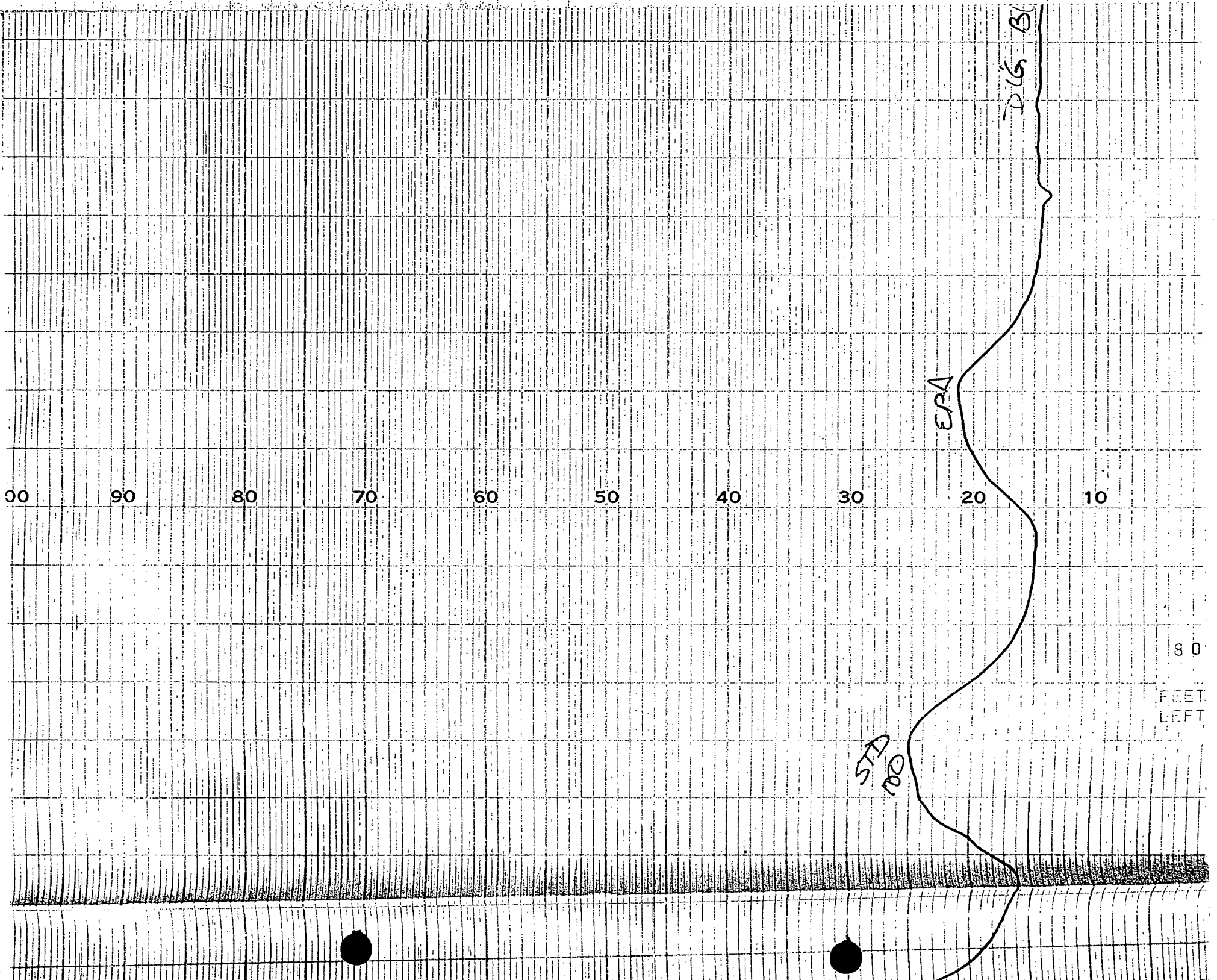
DIG B
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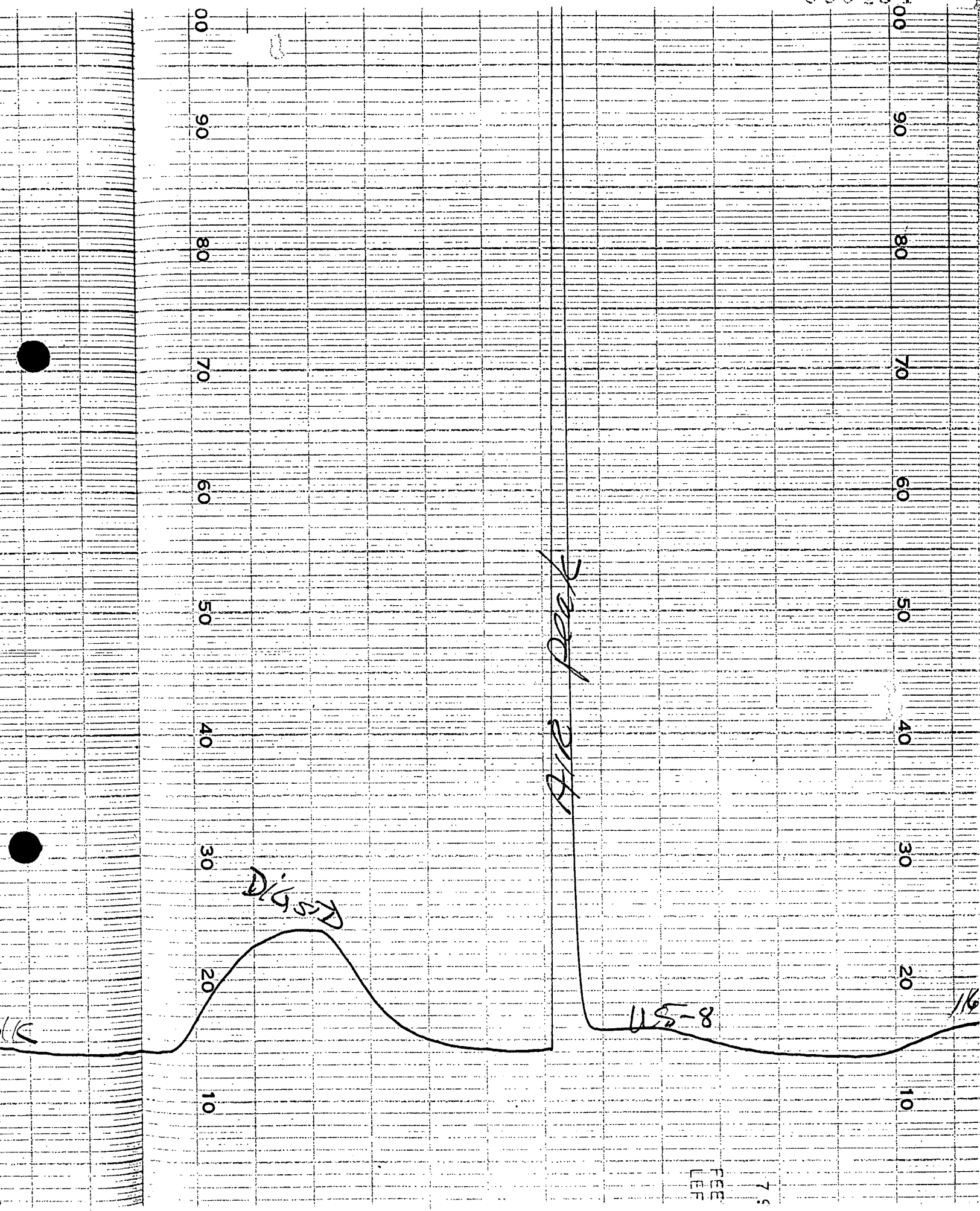
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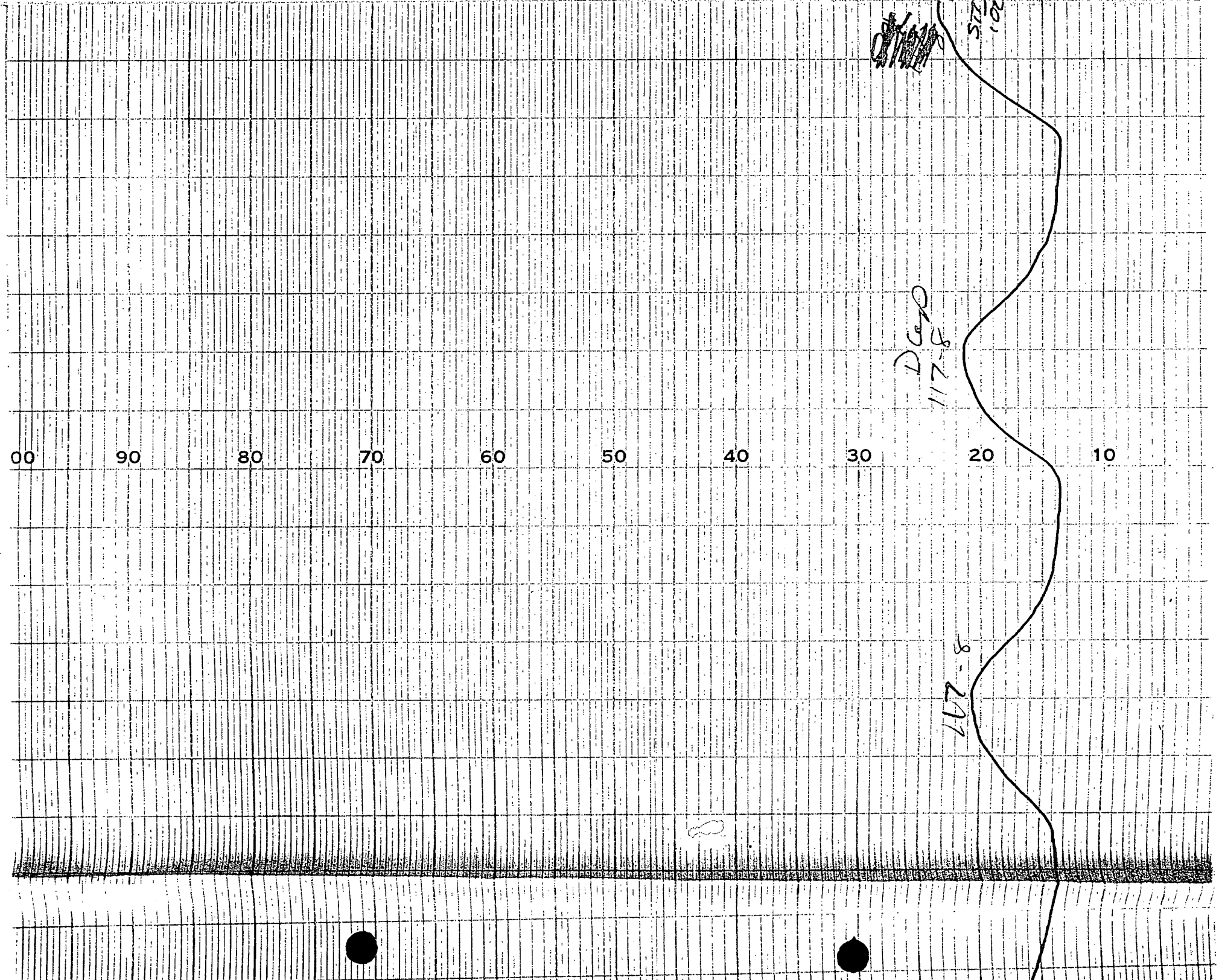
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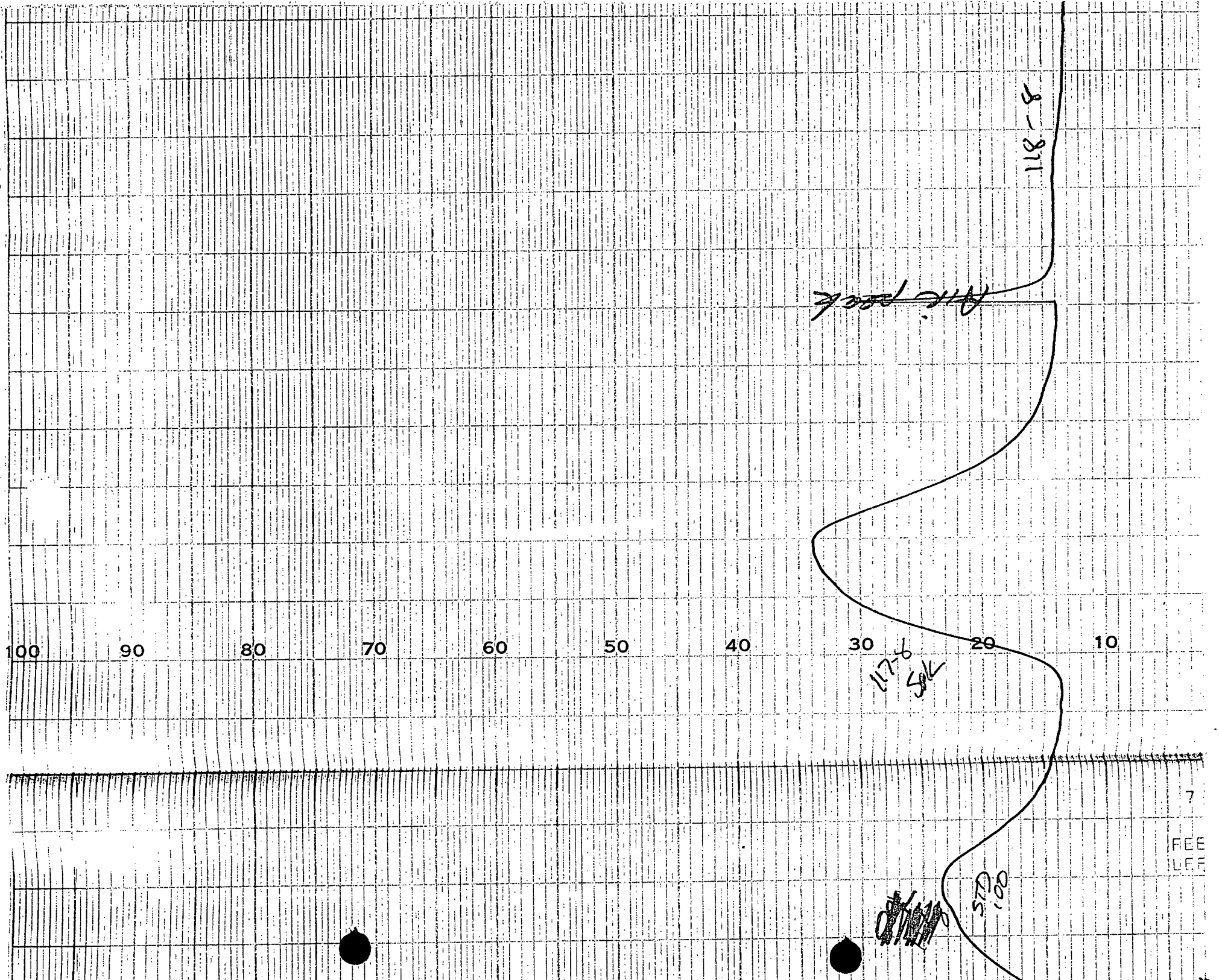

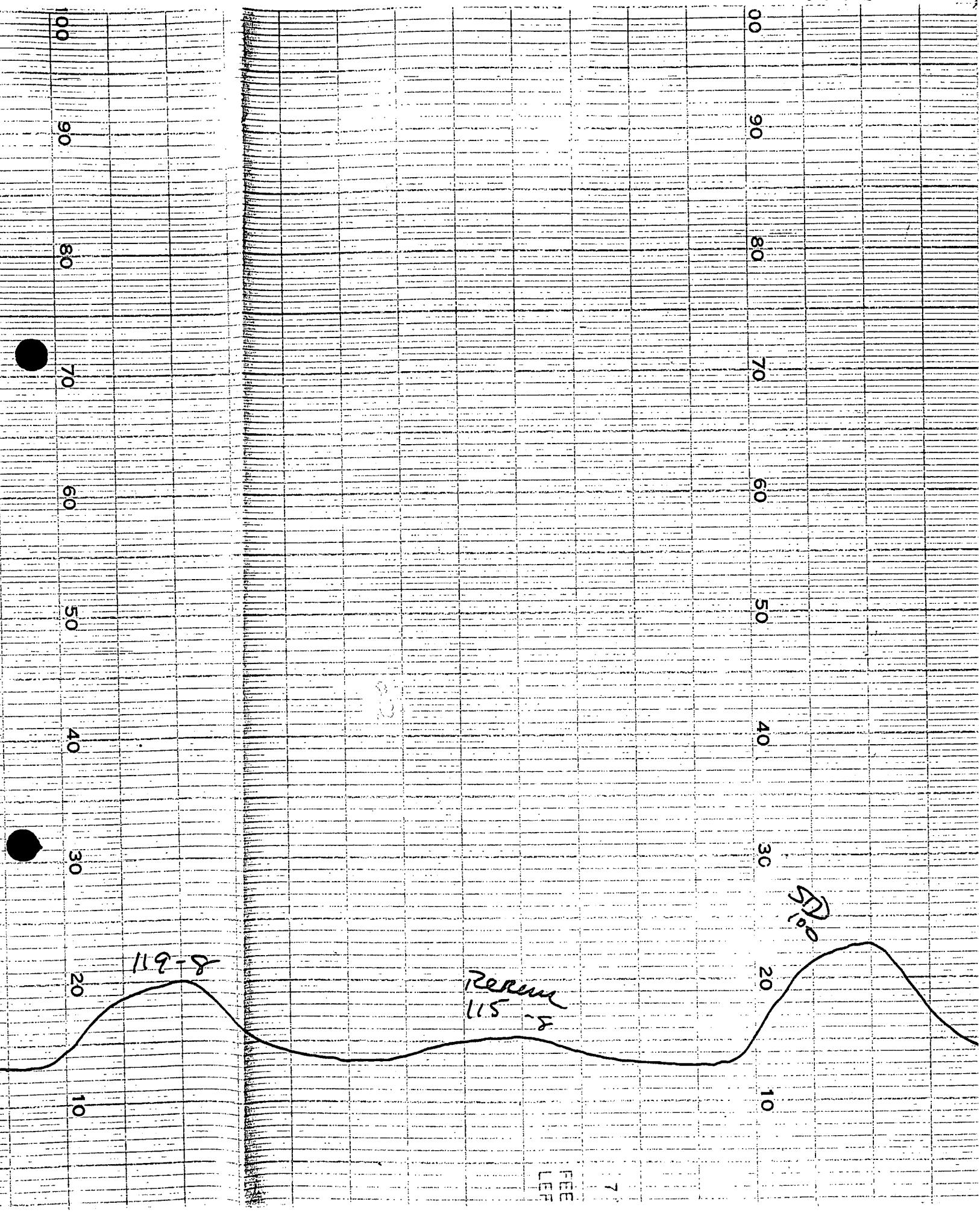
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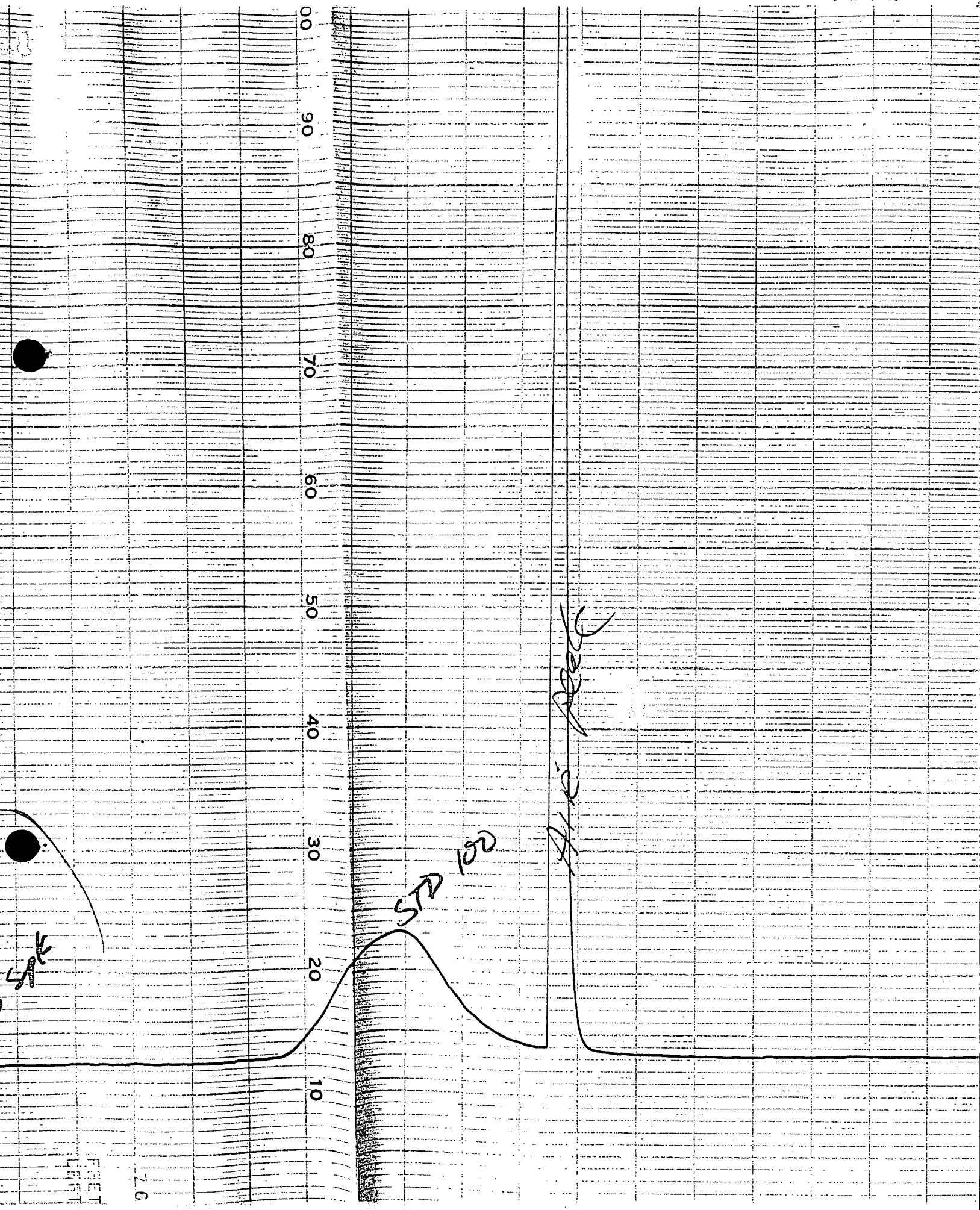
5696
5696 Deep
5696 Shallow
old method
by Dist.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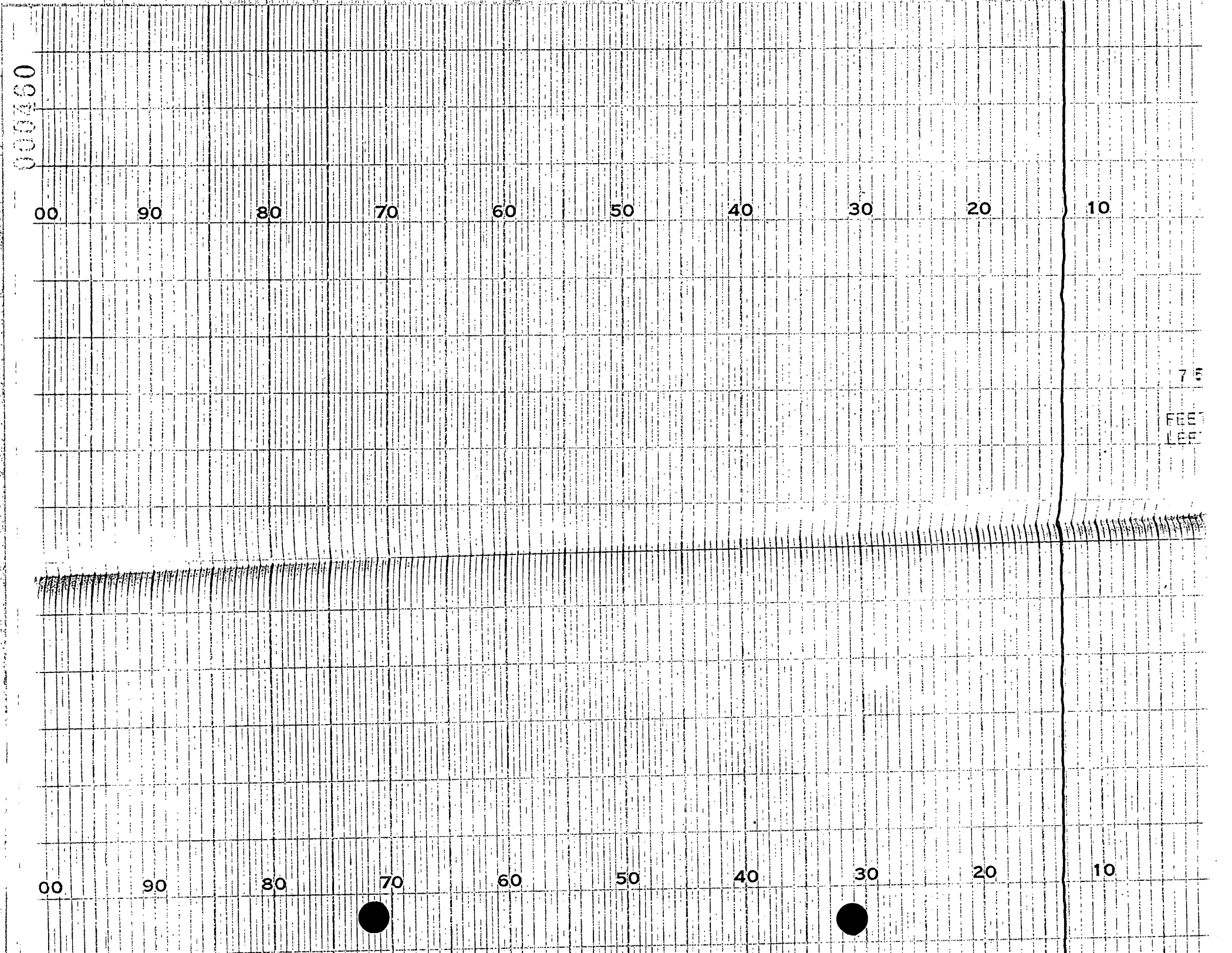
STD 100
Air Peak
SPK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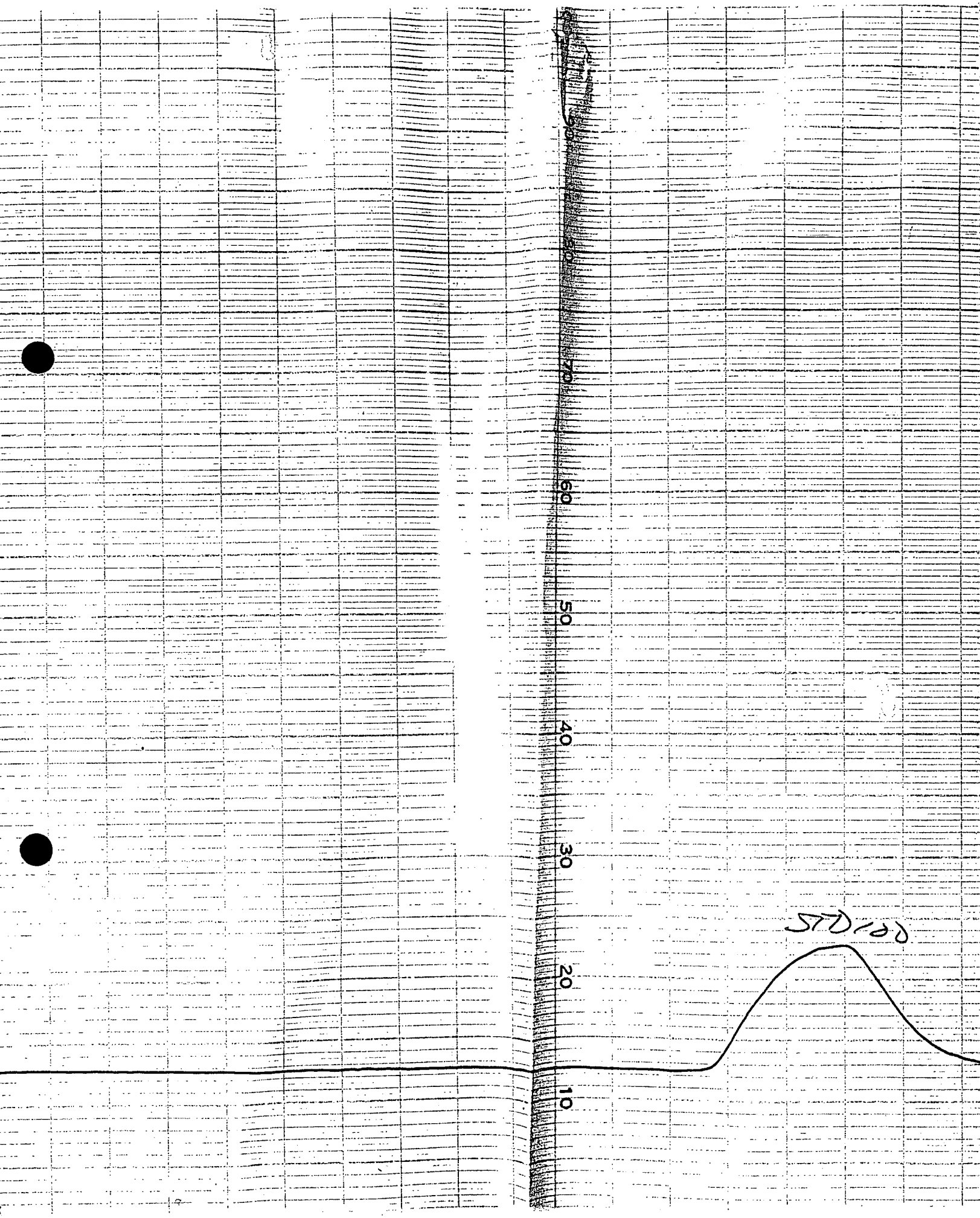
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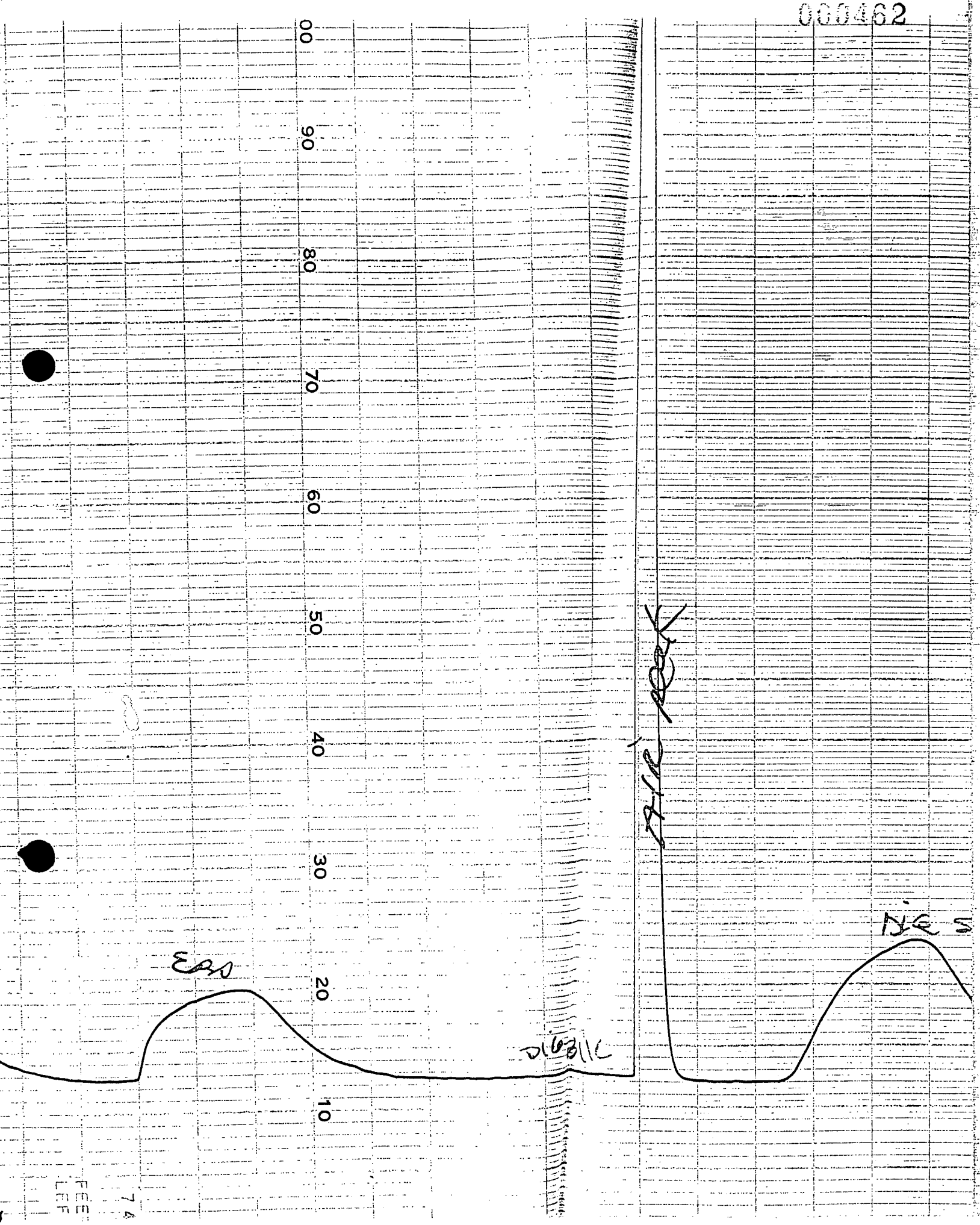
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Air peak
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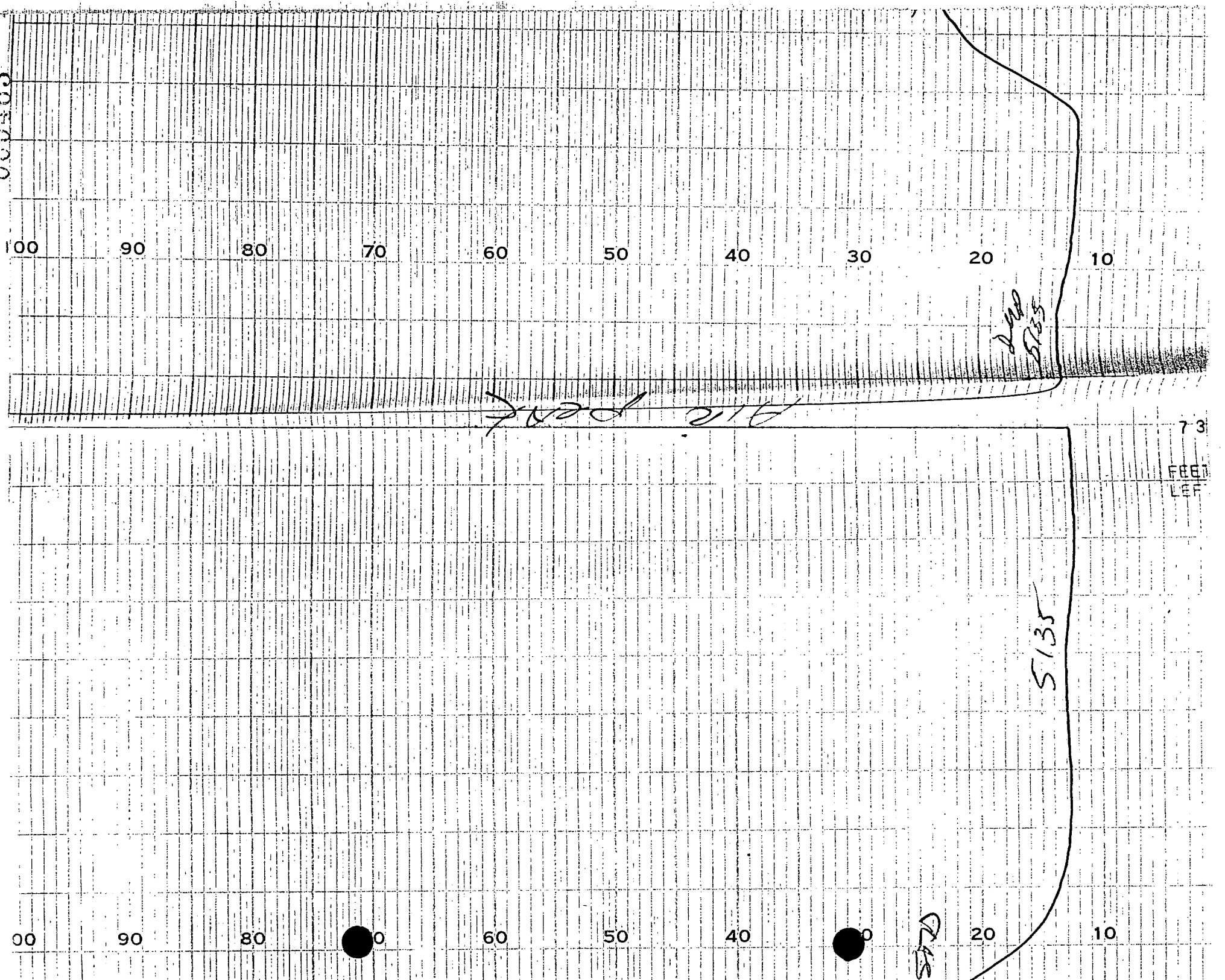
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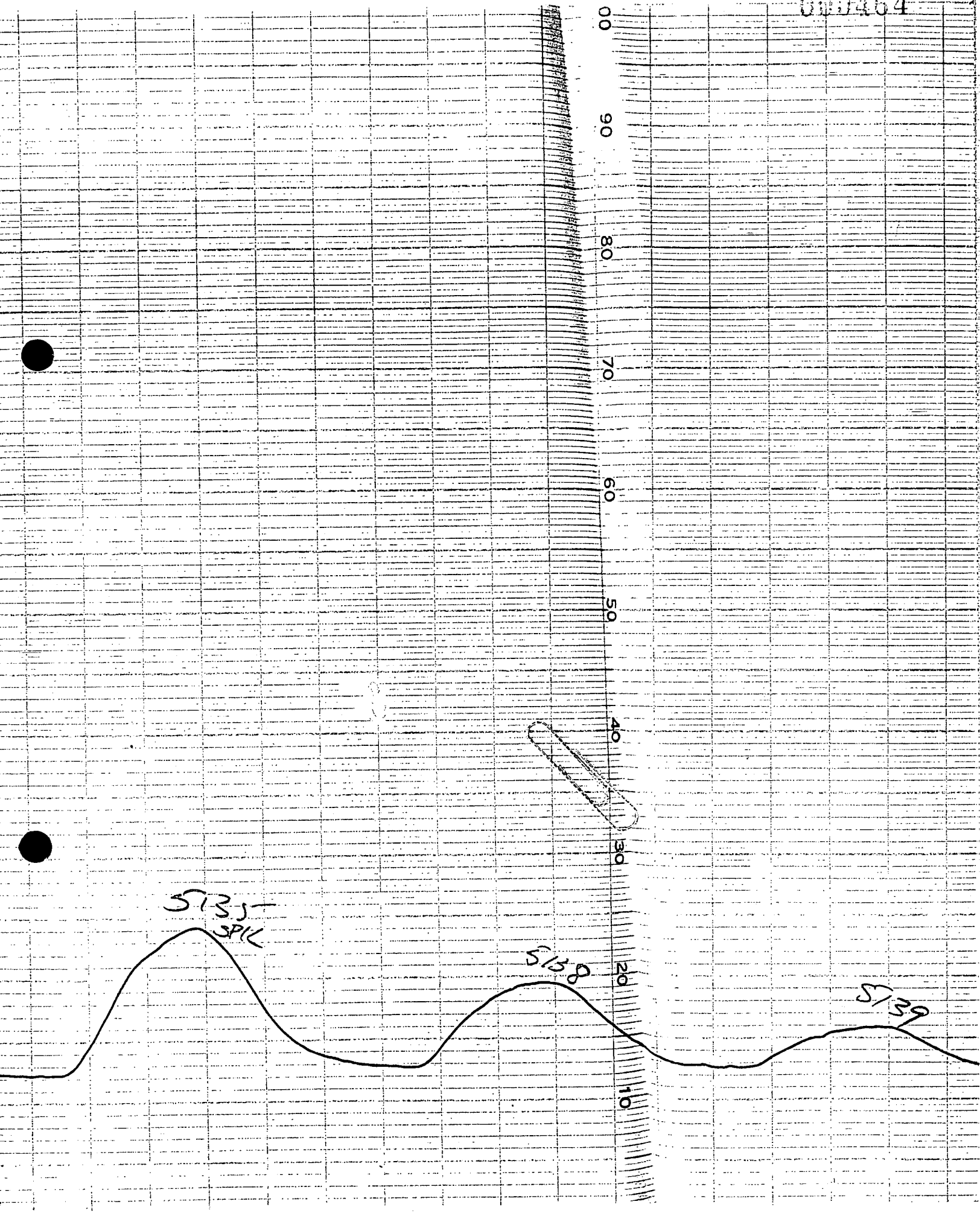
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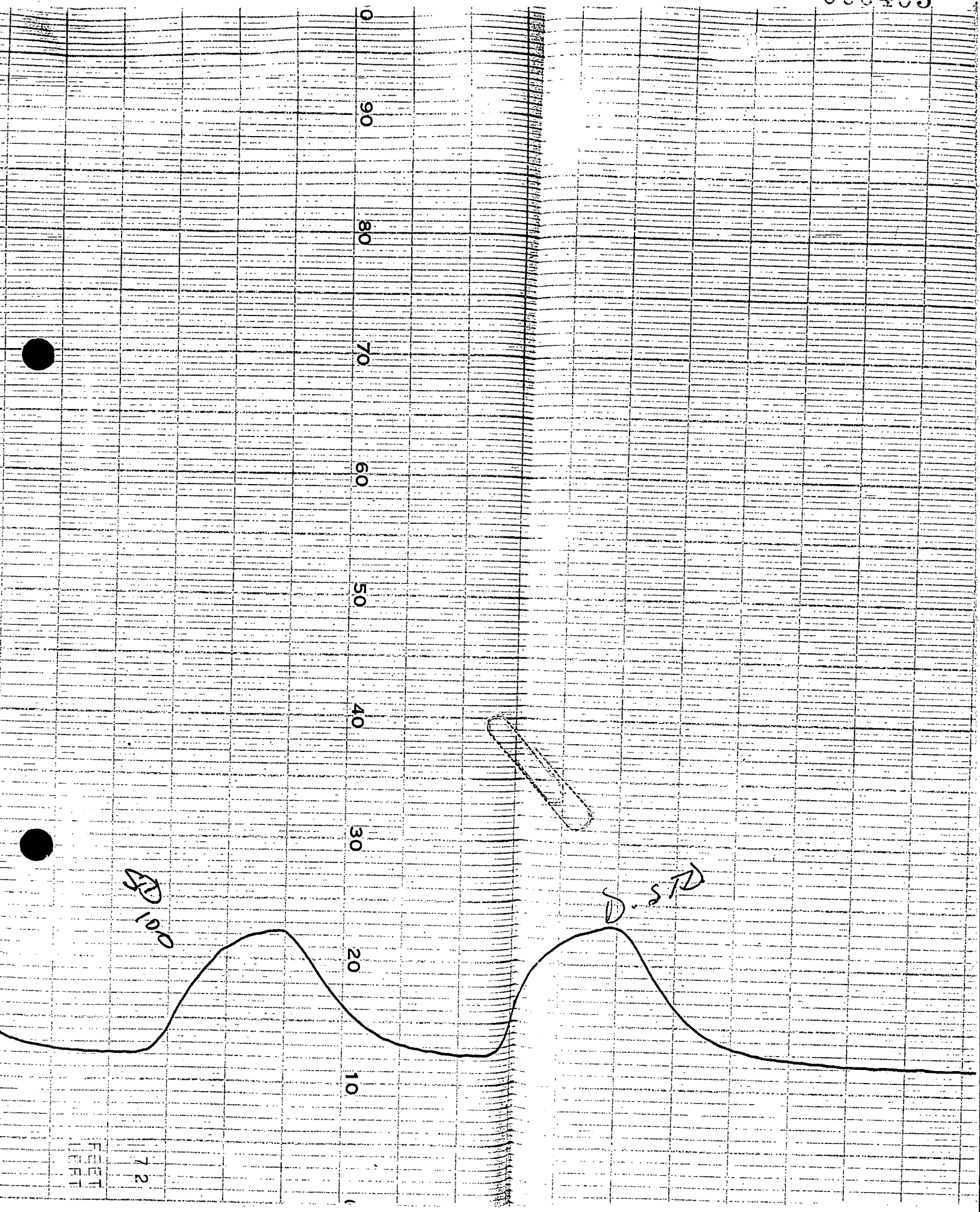
SPIK
5138
5139


90
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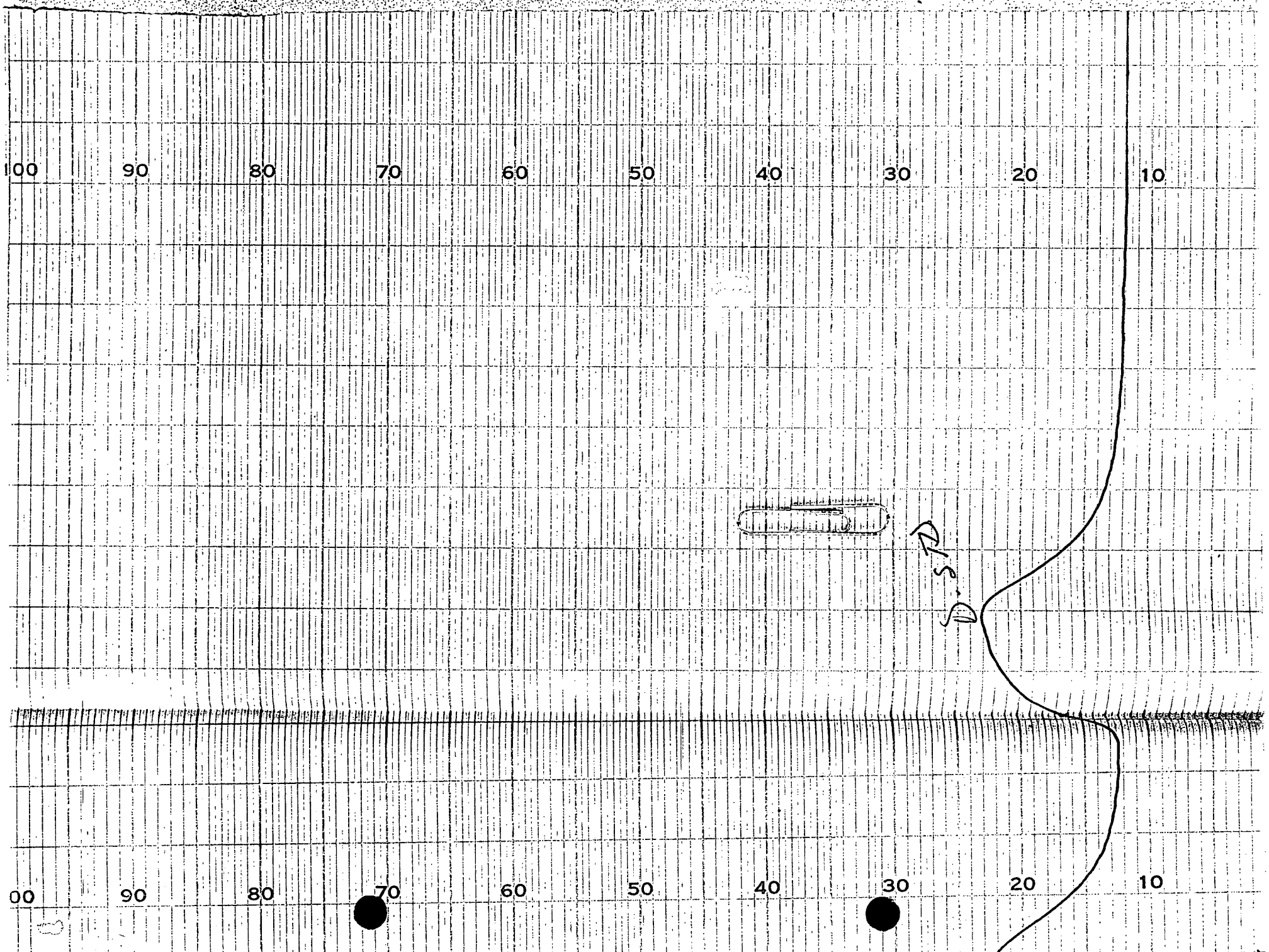
SD 100
D. STD
FEET
LEFT
72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10

TITLE: Phenol 10-15-86 Project No. 000467 Book No.

(Reported in computer)

① Prep. of Working Std's: STDA = 10 ml of phenol STD STOCK 100 ppb + QS TO 100 ml w/ DI

ml STD A	[phenol]/ppb
3.0	300
2.0	200
1.5	150
1.0	100
0.5	50
10 ml of 100 ppb	10

② EPA used = WP-179 conc #3 [phenol] = 68 ppb

③ Sensitivity of Instrument = @ STD Cal = 1.0 Au = 5.%
@ Au = 95% STD Cal = 8.4

④ Results

Sample	Peak HT
10	0.5
50	5.0
100	10.0
150	16.0
200	21.5
300	32.5
STD 100	10
EPA	7.75
DIG BLK	0
DIG STD.	0
EW 5135	0
5135 Dup	0
5135 spk	0
5136	STOPPED RUN
STD 100	~~10.25~~

no recovery

continued

Sample	Peak HT
EW 5137	STOPPED, REMOVED from run
5138	
5139	

RAN THESE UNDISTILLED WASTEWATERS:

STD 100	10.25
5709	7.5
5710	11.0
5720	13.0
5721	11.0
STD 100	10.0

* RAN samples NOT PREDISTILLED

STD 100	10.5
EPA	7.5
BLK	0
STD 100	10.5
5135	2.0

To Page No.

154 Project No. _____ Book No. _____ TITLE Phenols 10/15-8-6

From Page No. ___

Reported in computer

Sample	Peak Ht
5135 Dup	2.0
5135 Spk	13.0
5136	0
STD 100	10.5
5137	0
5138	2.25
5139	2.5
STD 100	10.5
BLK	0
STD 100	10.5
J-6-115-8	11.5
J6-115-8 Dup	8.0
J6-115-8 Spk	11.5
J6-116-8	9.5
STD 100	10.5
J6-117-8	Sel return
J6-118-8	0.5
J6-119-8	13.
J6-120-8	0
J6-121-8	0
J6-118-8 Repeat	3.5
STD 100	10.5

To Page No. ___

Witnessed & Understood by me. Date: Author: Date:

(Reported in computer)

① Prep. of Working Stds: 10 ml of Phenol stock 100 ppm + Qs to 100 ml w/ DI = STD A

STD A	phenol/ppb
3.0	300
2.0	200
1.5	150
1.0	100
0.5	50
10 ml 100 ppb	10

Qs to 100 w/ DI

② EPA used = WP-179 Conc #3 [phenol] = 68 ppb

③ Sensitivity of Instrument = @ STD Cal = 1.0 AU = 5.7%
@ AU = 55% STD Cal = 8.24

④ Results:

Sample	Peak HT
10	0.75
50	5.0
100	10.75
150	16.25
200	22.
300	34.
STD 100	10.5
EPA	6.5
D/G BLK	0
D/G STD	10.
JG-115-008	2.0 (see rerun)
" 116-008	3.0
" 117-008	7.0
" 117-008 dup	8.0

Sample	Peak HT
→ STD 100	10.
JG 117-008 spk	20.5
118-008	0
119-008	7.0
Rerun (air peak) 115-008	2.0
→ STD 100	10.0
EW 5696	0
5696 dup	0
5696 spk	0
STD 100	10.5
STD 100	10.25
→ ~~STD 100~~ EPA	7.25
~~EPA~~ D/G BLK	0
D/G STD →	11.5
EW 5735 →	0
5735 dup	0
5735 spk	12.0

Witnessed & Understood by me, Date Invented by Date

Thermal 10-20-86 Book No. 000470 161

Page No. (Reported in comp)

Sample	Peak Ht
EW-5138	7.0
5139	3.5
STD 100	10.25
D.S. 100	10.5

To Page No...

nessed & Understood by me. Date Invented by Date

(EPA)10-1-86

EW5124 → 5131

000471

GRAPH: F10
PRINT: ALT-P

CONCENTRATION MG/L
STANDARDS
ANALYST:

PEAK HEIGHT	CONC.
2.5	10
16	50
33.5	100
49.5	150
65.5	200

SUM Y:	167
SUM X:	510
SUM XY:	24700
SUM YY:	8125
SLOPE :	3.00957914
INTERCEPT:	1.48005653
DATA PTS.	5
DIL. FAC.	1

6.25	25
256	800
1122.25	3350
2450.25	7425
4290.25	13100

PEAK HEIGHT	CONC
2.5	10
16	50
33.5	100
49.5	150
65.5	200

{Goto}A2^{Up}*/PPR(?)***0

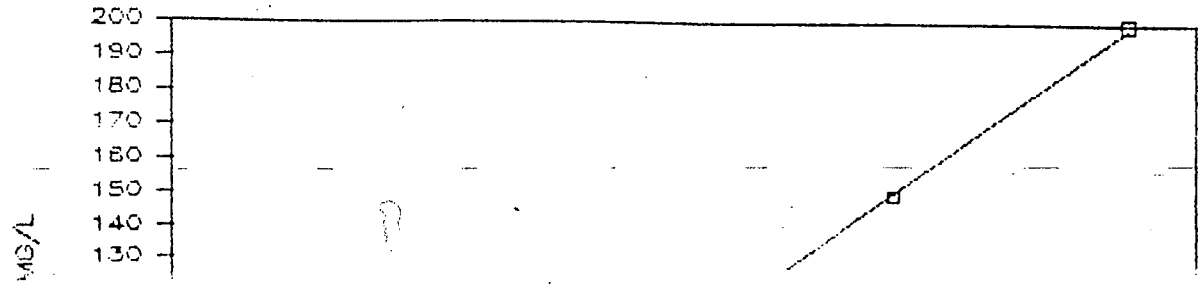
00400439
.6333228
102.300957
150.454224
198.607490

SAMPLES

PEAK HEIGHT	CONC UC	SAMPLE #	DILU.FA	CRR.CONC.	
33.5	102.30	STD 100	1.000	102.301	102%
0	1.48	BLK	1.000	1.480	
82	248.27	DIG EPA (224 ppb)	1.000	248.266	110%
0	1.48	DIG BLK	1.000	1.480	
26	79.73	DIG STD	1.000	79.729	80%
0	1.48	J6-99-006 DUP	1.000	1.480	
0	1.48	DIG BLK	1.000	1.480	
82	248.27	DIG EPA	1.000	248.266	110%
0	1.48	EW5124	1.000	1.480	
0	1.48	EW5125	1.000	1.480	
0	1.48	EW5126	1.000	1.480	
0	1.48	EW5127	1.000	1.480	
33.5	102.30	STD 100	1.000	102.301	102%
0	1.48	BLK	1.000	1.480	
0	1.48	EW5128	1.000	1.480	
0	1.48	EW5129	1.000	1.480	
0	1.48	EW 5130	1.000	1.480	
0	1.48	EW 5131	1.000	1.480	
34	103.81	STD 100	1.000	103.806	104%
0	1.48	BLK	1.000	1.480	
0	1.48	DIG BLK	1.000	1.480	
82	248.27	DIG EPA	1.000	248.266	110%
0	1.48	J6-115-008	1.000	1.480	
0	1.48	J6-115-008 DUP	1.000	1.480	
12.5	39.10	J6-115-008 SPK	1.000	39.100	38%
0	1.48	J6-116-008	1.000	1.480	
34	103.81	STD 100	1.000	103.806	104%
0	1.48	BLK	1.000	1.480	
0	1.48	J6-117-008	1.000	1.480	
0	1.48	J6-118-008	1.000	1.480	
0	1.48	J60119-008	1.000	1.480	
0	1.48	J6-120-008	1.000	1.480	
33	100.80	STD 100	1.000	100.796	101%
0	1.48	BLK	1.000	1.480	
0	1.48	J6-121-008	1.000	1.480	
~~3~~	~~10.81~~	~~J6-122-008~~	~~1.000~~	~~10.509~~	MM
0	1.48	EW 4926	1.000	1.480	
32.5	99.29	STD 100	1.000	99.291	99%
0	1.48	BLK	1.000	1.480	
	1.48		1.000	1.480	
	1.48		1.000	1.480	

008 DEP

CYANIDE (EPA)10-1-86



Batch 008
TOTAL CYANIDE
EPA
10-1-86 Instrument Cal.
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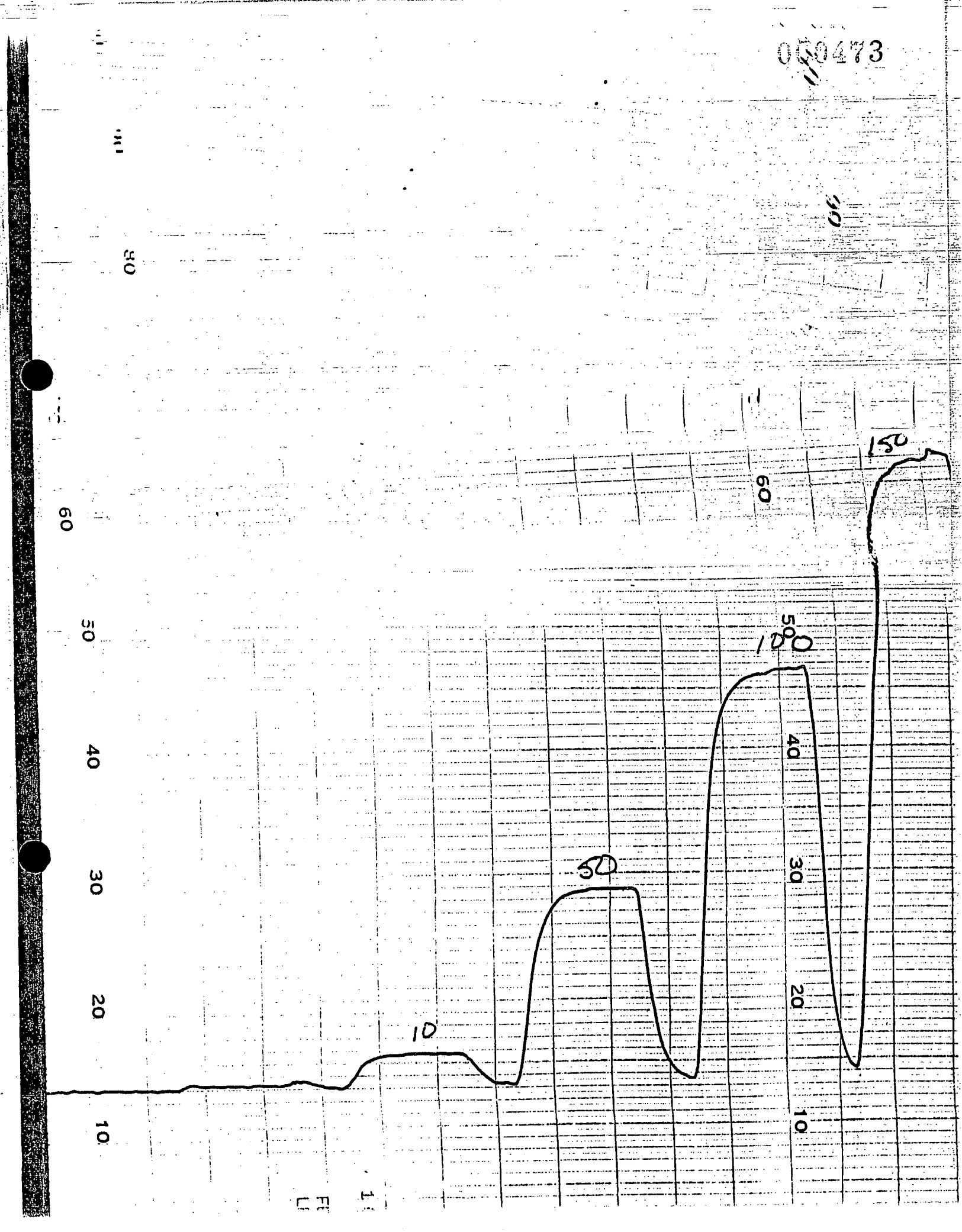
150
100
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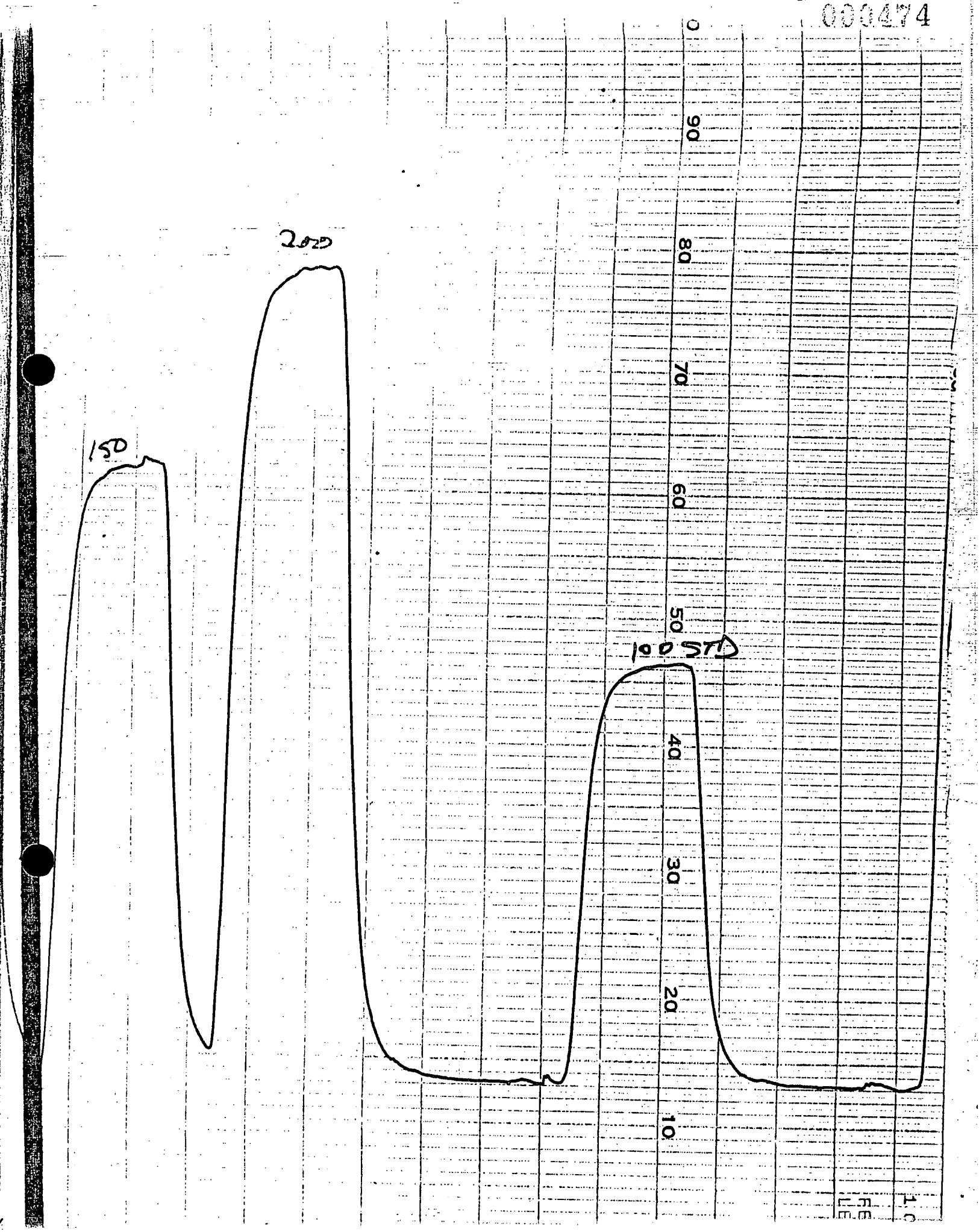
150
200
100 STD
0
90
80
70
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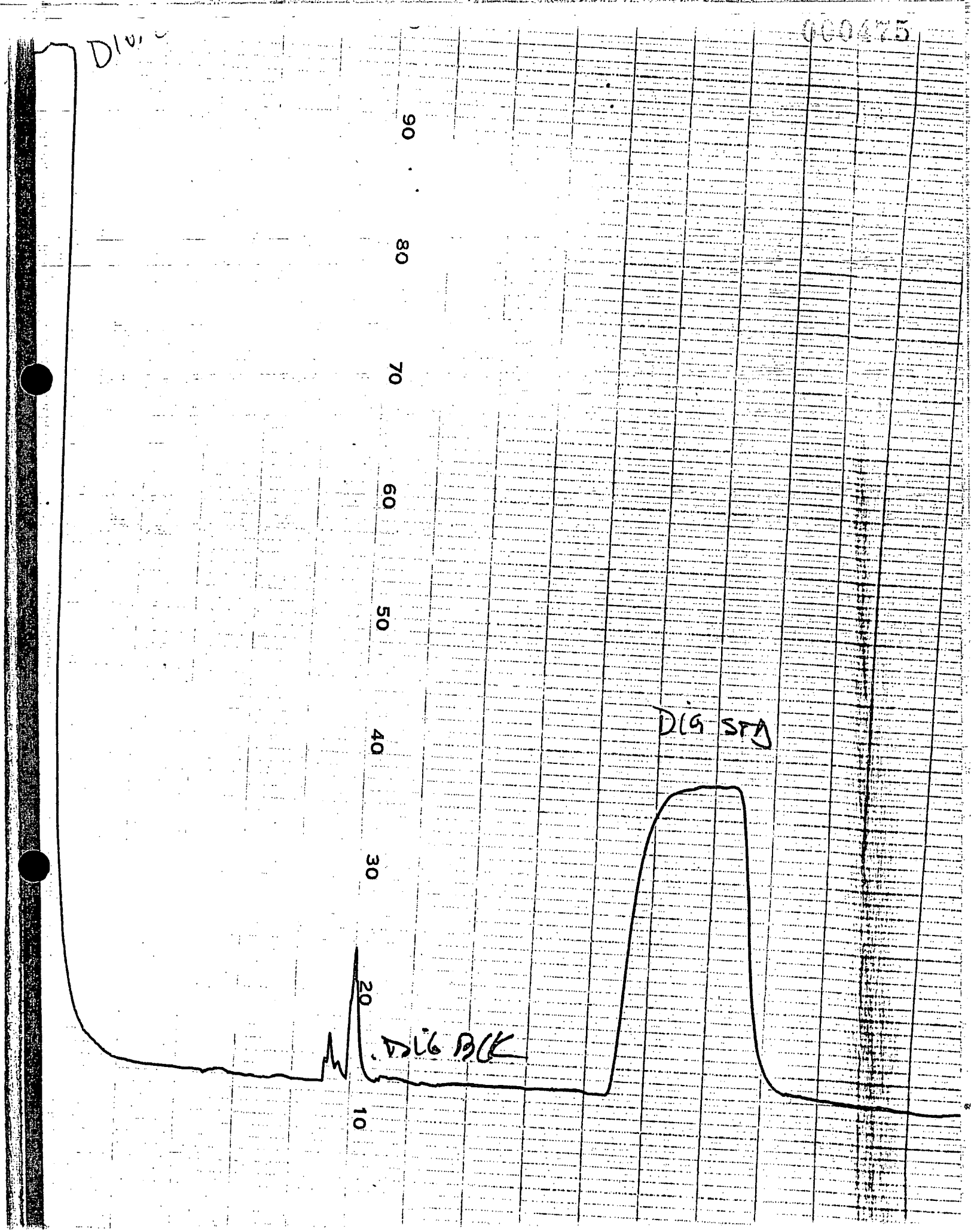
DIG STD
DIG BCK
10
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DIG EPA
DIG B/C
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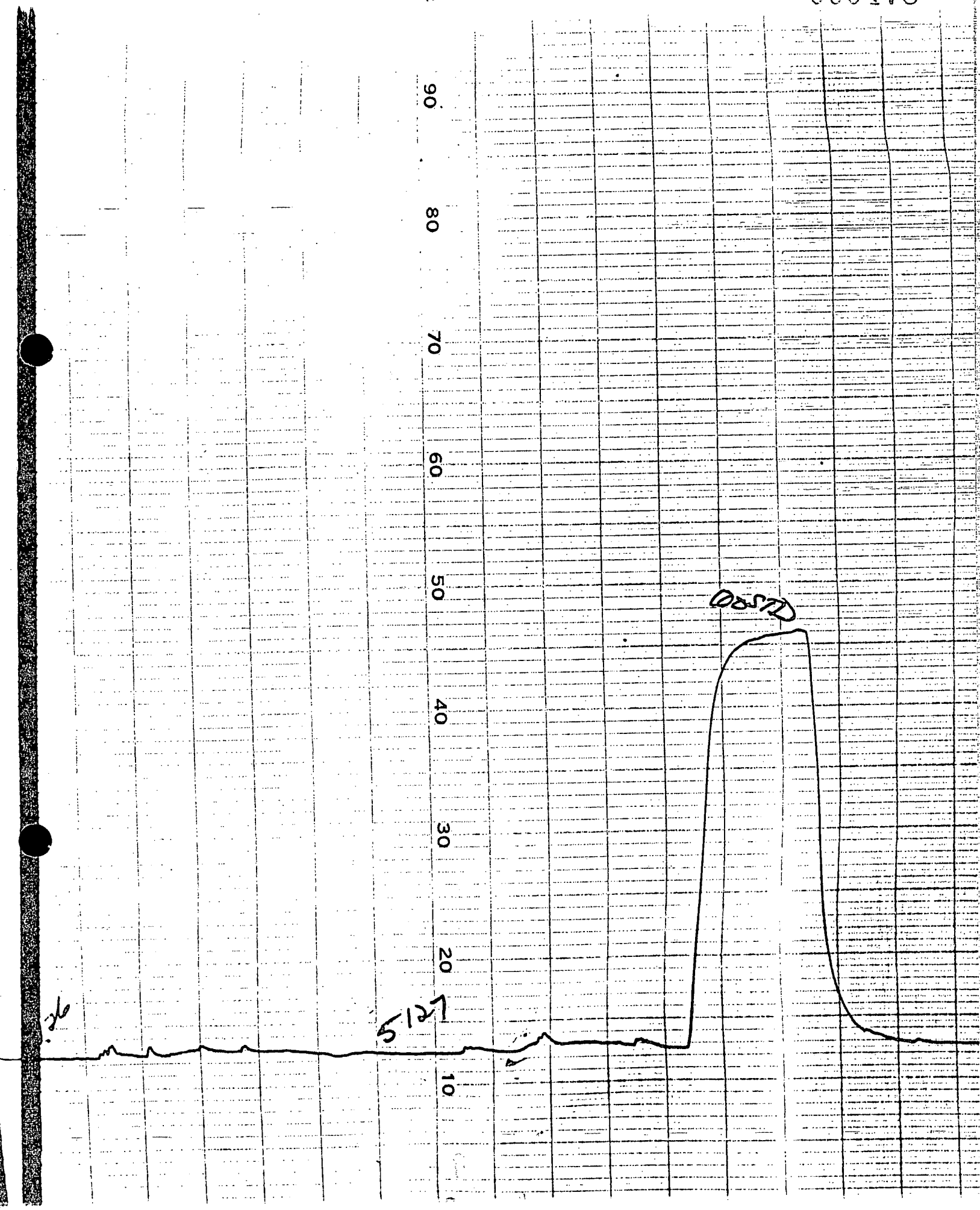
5124
5125
5126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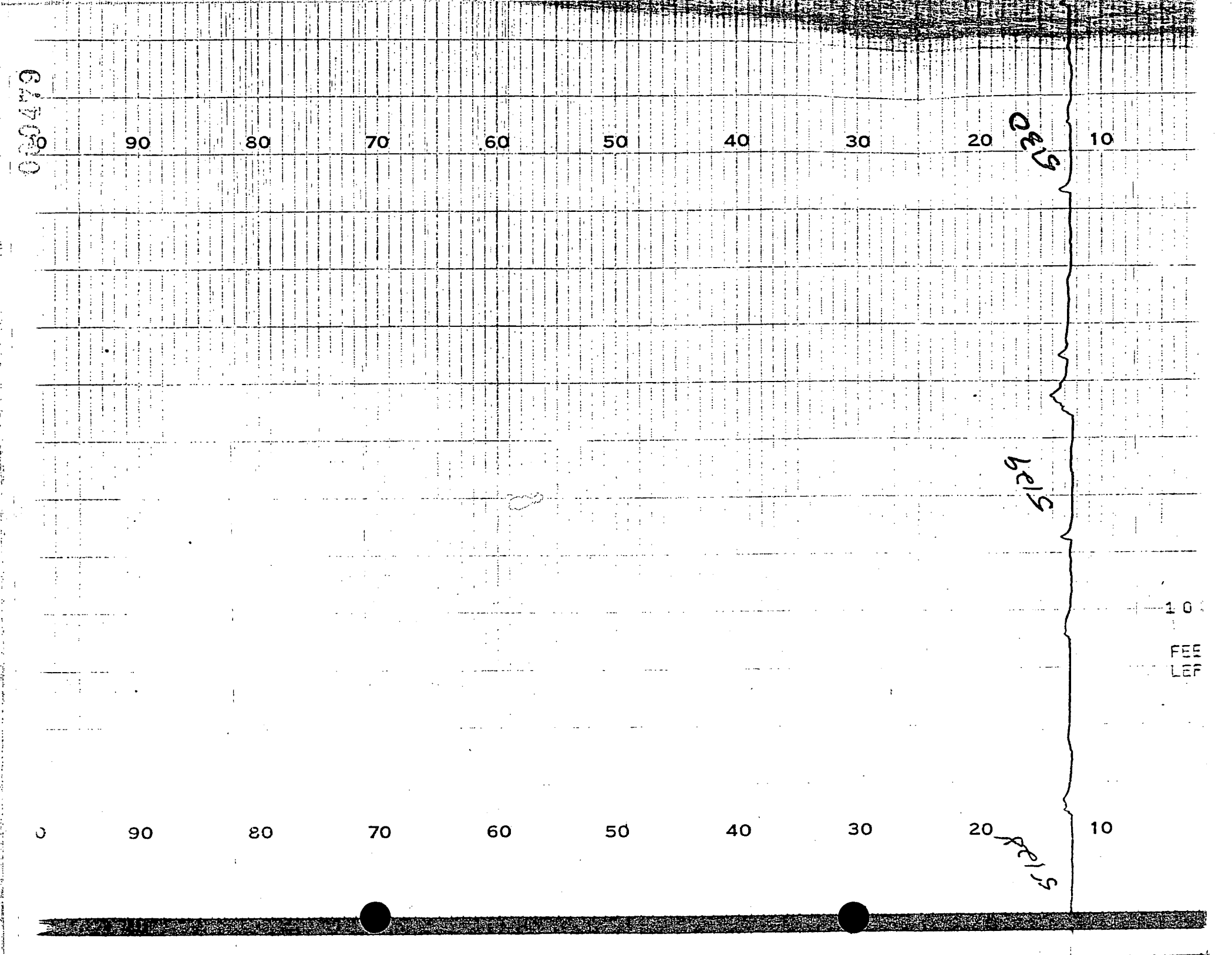
0
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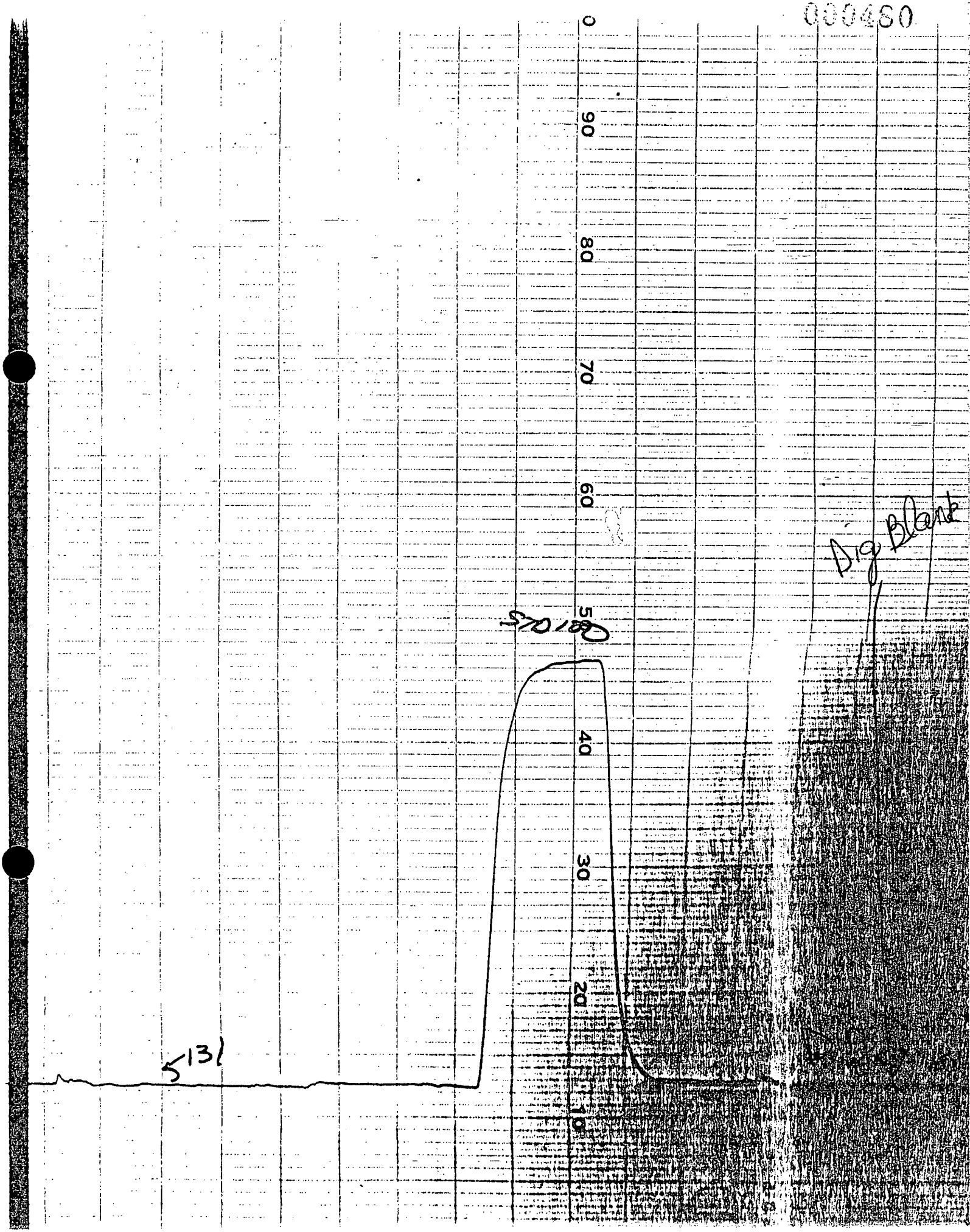
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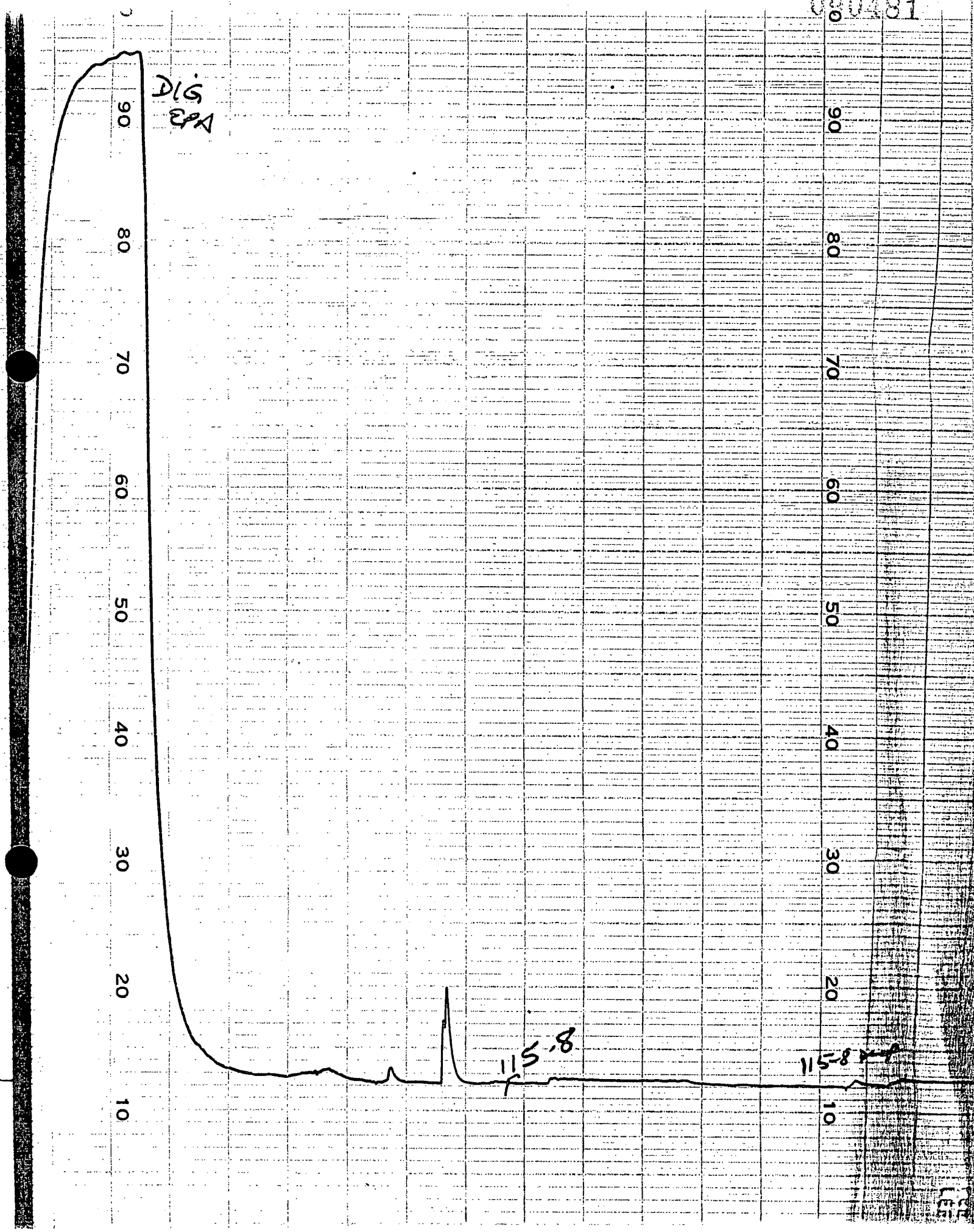
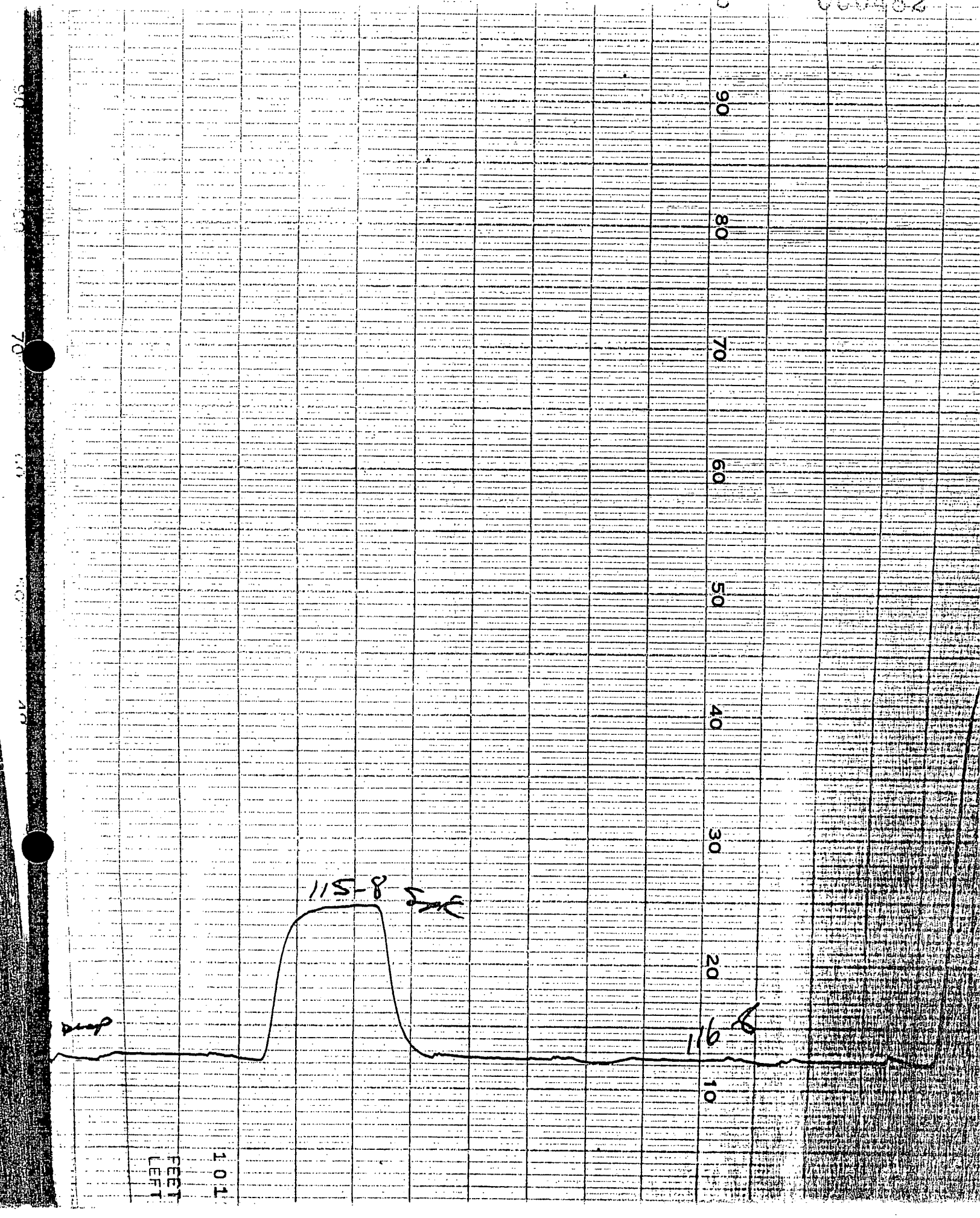
Dig Blank
5131


DIG
EPA
115.8
115.8


90
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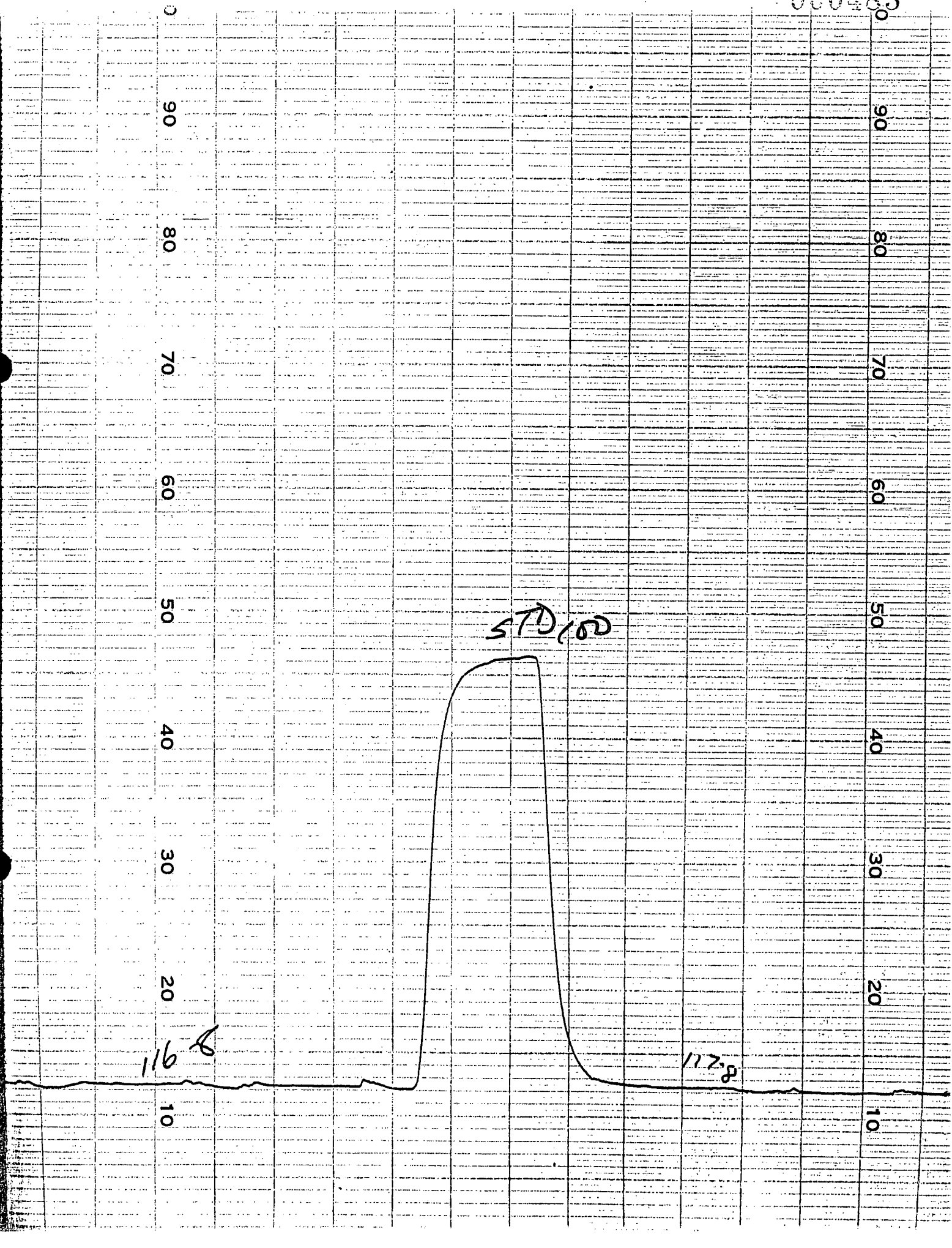
115-8
116
101
FEET
LEFT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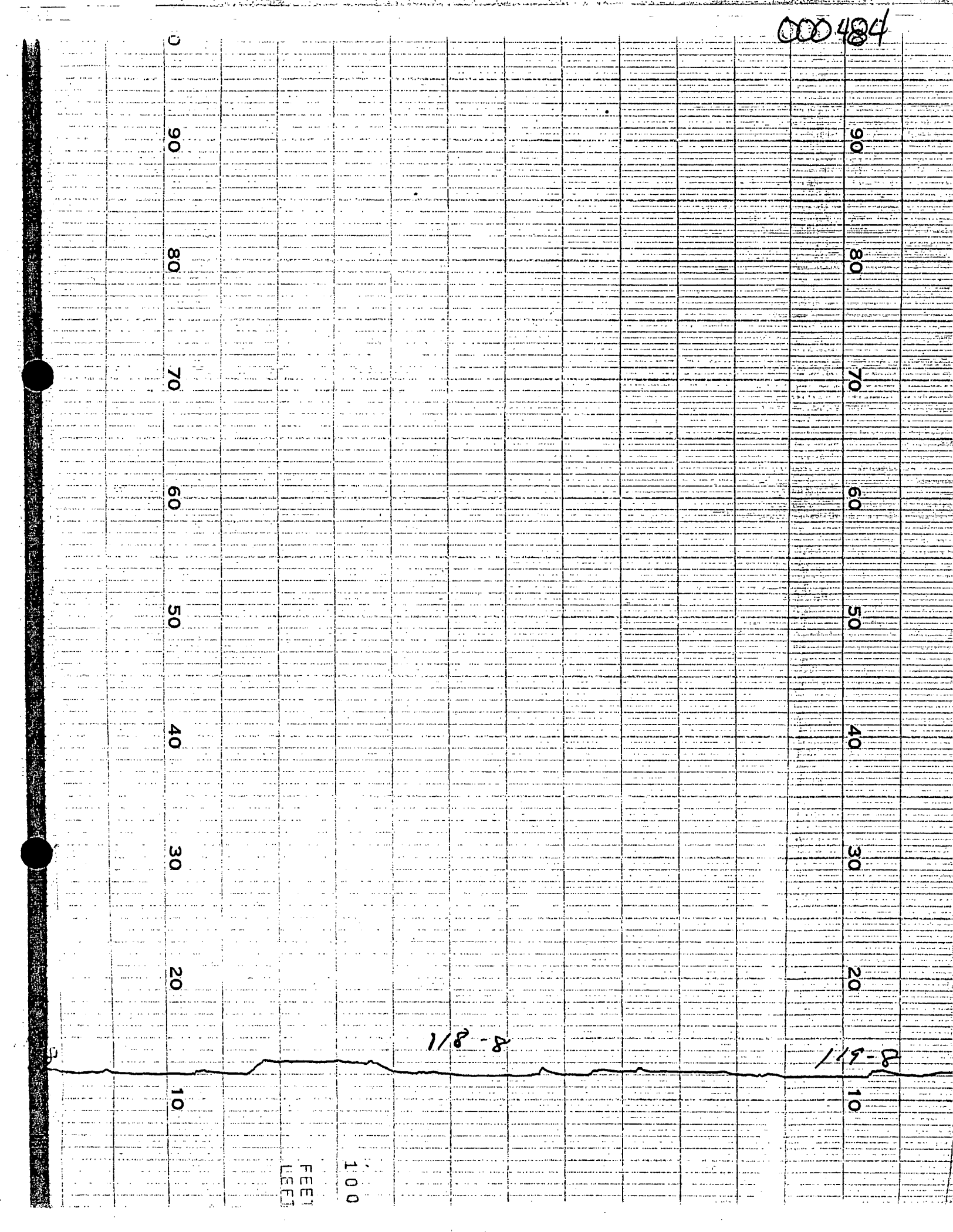
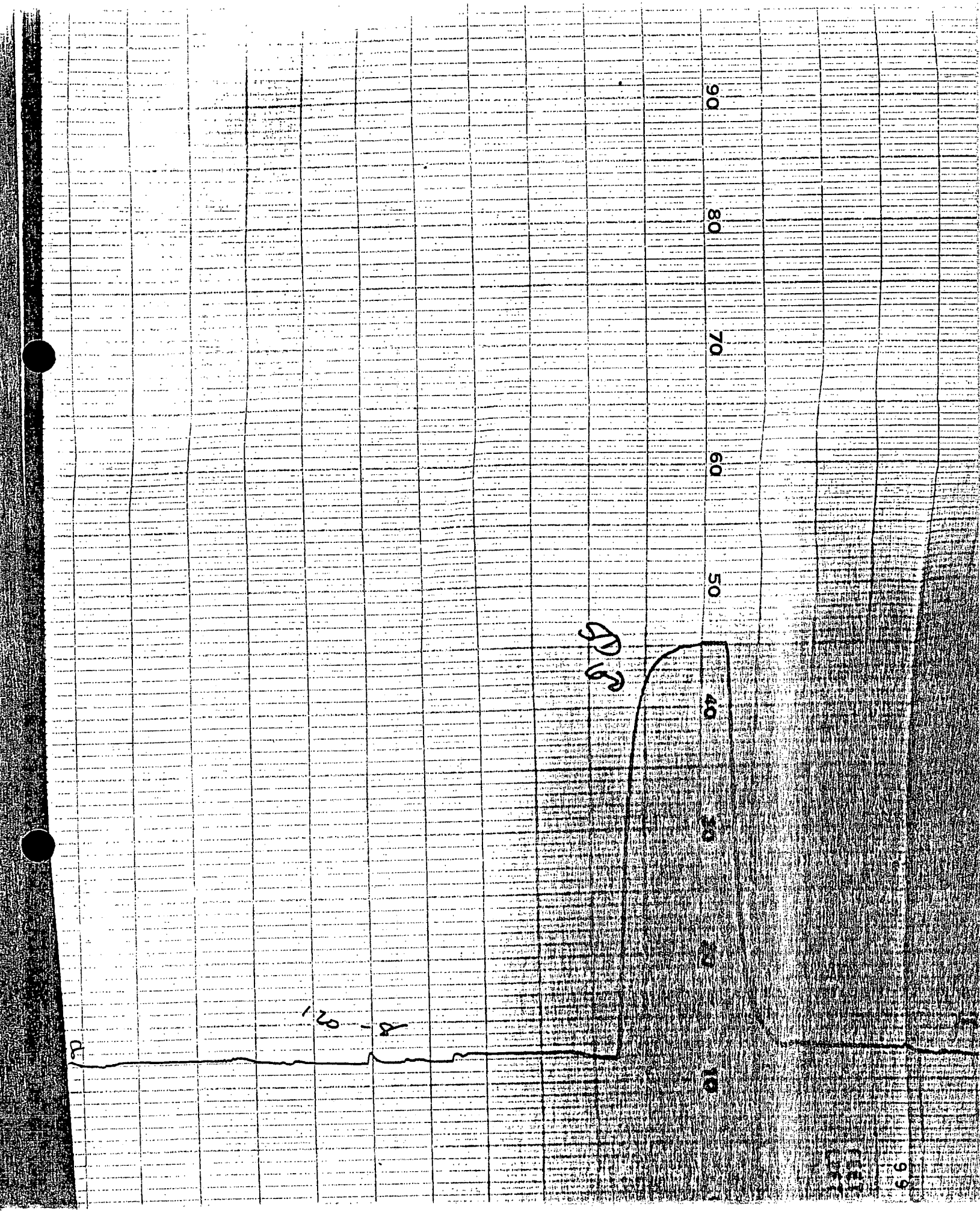
STD 100
116.8
112.8


000484
118-8
119-8
100
FEET
LEFT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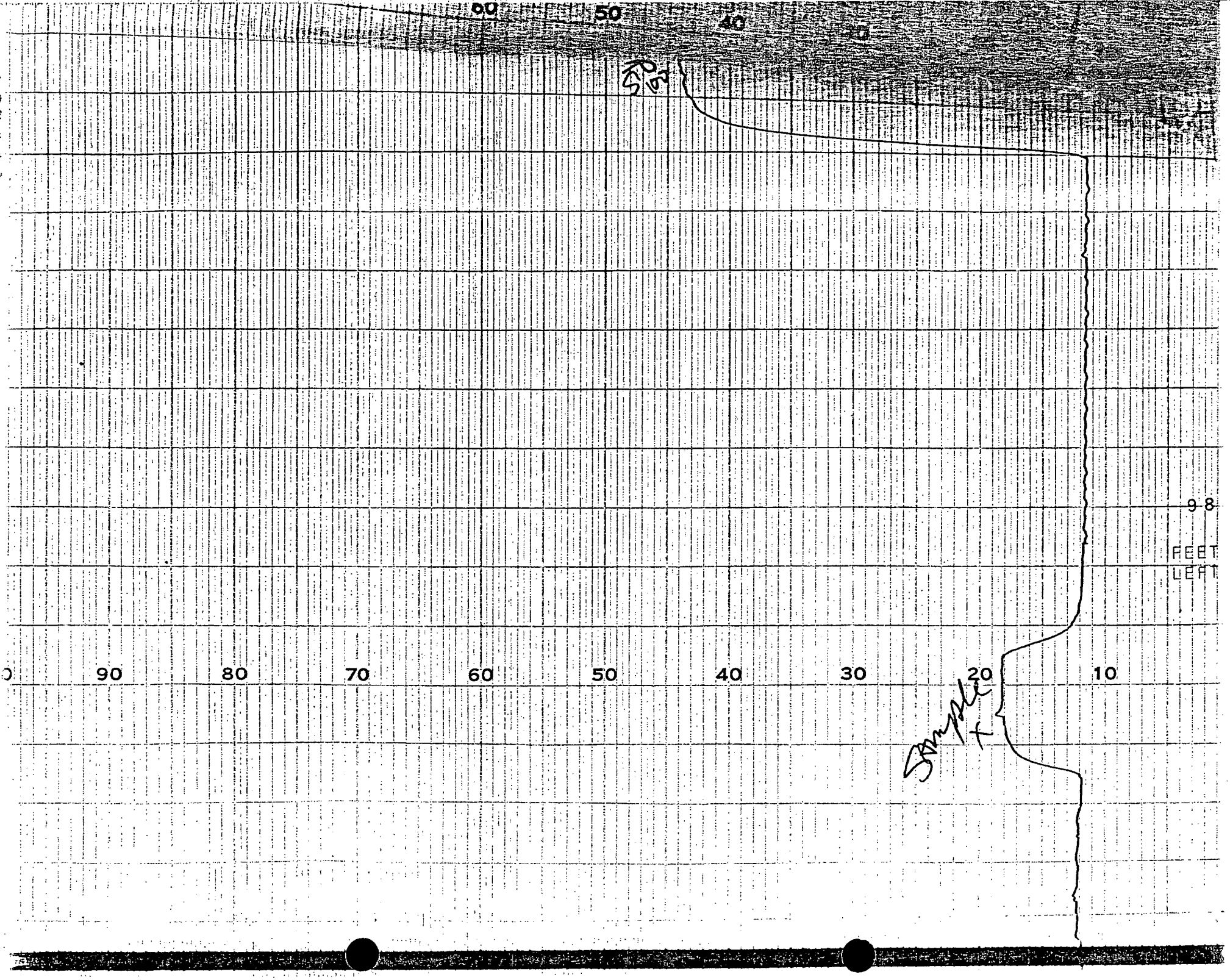
60
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FEET
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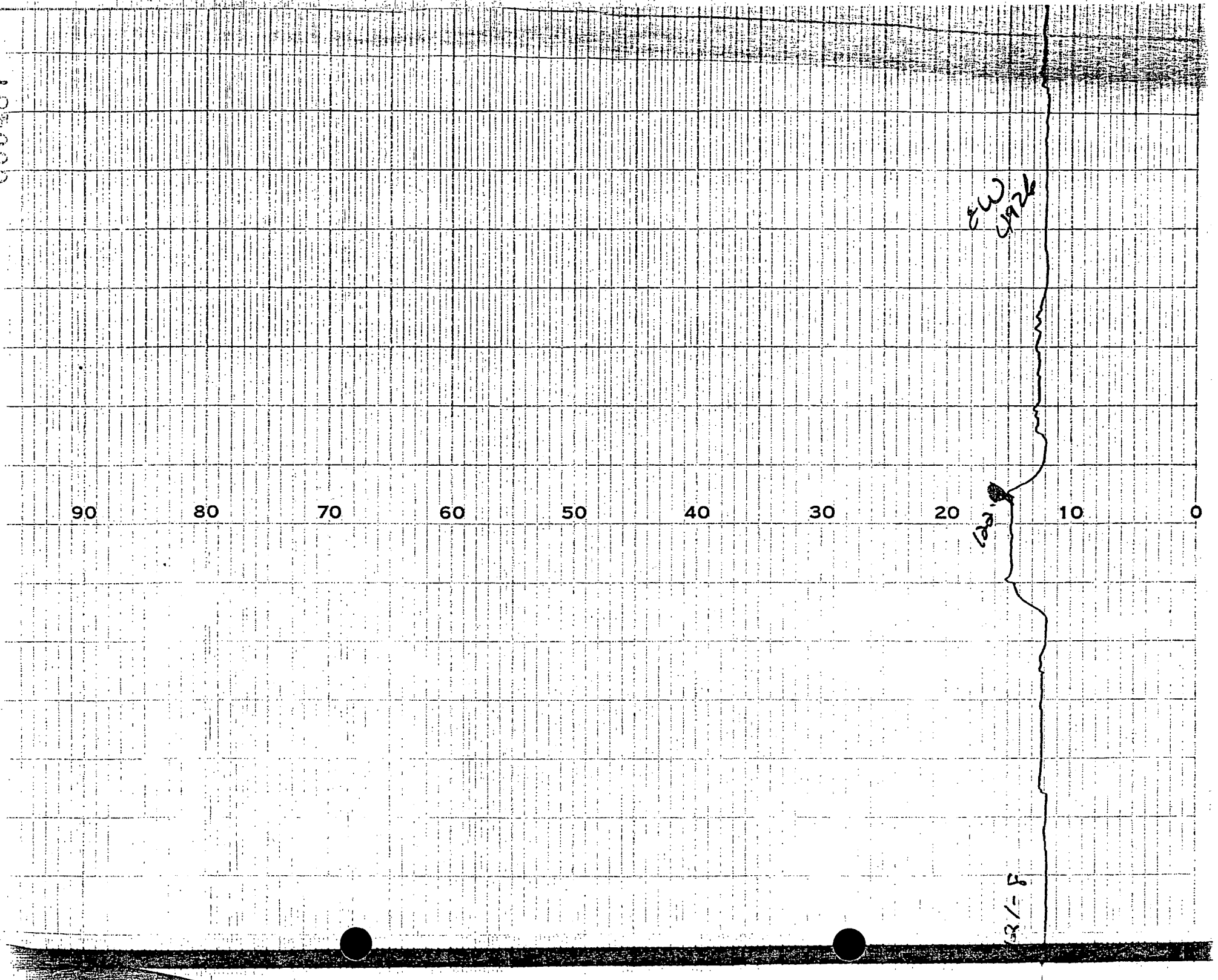
Sample
X



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DO NOT COPY

Batch 009 122-127

000489

CYANIDE (EPA) 10-2-86

GRAPH: F10
PRINT: ALT-P

CONCENTRATION MG/L
STANDARDS
ANALYST:

PEAK HEIGHT	CONC.
2.5	10
27	100
41	150
55.5	200
69.5	250

SUM Y:	195.5
SUM X:	710
SUM XY:	37350
SUM YY:	10326.75
SLOPE :	3.57438401
INTERCEPT:	2.24158497
DATA PTS.	5
DIL. FAC.	1

6.25	25
729	2700
1681	6150
3080.25	11100
4830.25	17375

PEAK HEIGHT	CONC
2.5	10
27	100
41	150
55.5	200
69.5	250

{Goto}A2^{Up}^/PPR(?)***0

11.1775450
98.7499534
148.791329
200.619897
250.661274

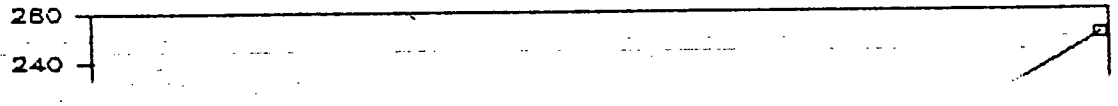
SAMPLES

PEAK HEIGHT	CONC UC	SAMPLE #	DILU.FA	CRR.CONC.
28	102.32	STD 100	1.000	102.324
0	2.24	BLK	1.000	2.242
55.5	200.62	EPA (224 ppb)	1.000	200.620
0	2.24	DIG BLK	1.000	2.242
16.5	61.22	DIG STD 85	1.000	61.219
0	2.24	W 4999	1.000	2.242
0	2.24	W 5000	1.000	2.242
0	2.24	W 5001	1.000	2.242
0	2.24	W 5002	1.000	2.242
17	63.01	STD 85	1.000	63.006
0	2.24	BLK	1.000	2.242
27.5	100.54	STD 100	1.000	100.537
0	2.24	BLK	1.000	2.242
0	2.24	W 5003	1.000	2.242
0	2.24	W 5004	1.000	2.242
27.5	100.54	STD 100	1.000	100.537
0	2.24	BLK	1.000	2.242
0	2.24	DIG BLK	1.000	2.242
14.5	54.07	DIG STD 85	1.000	54.070
0	2.24	W 5117	1.000	2.242
0	2.24	W 5118	1.000	2.242
0	2.24	W 5118 DUP	1.000	2.242
14	52.28	W 5118 SPK (85)	1.000	52.283
27.5	100.54	STD 100	1.000	100.537
0	2.24	BLK	1.000	2.242
0	2.24	W 5119	1.000	2.242
0.5	4.03	W 5120	1.000	4.029
0.5	4.03	W 5121	1.000	4.029
0.5	4.03	W 5122	1.000	4.029
27.5	100.54	STD 100	1.000	100.537
0	2.24	BLK	1.000	2.242
0	2.24	W 5123	1.000	2.242
27.5	100.54	STD 100	1.000	100.537
0	2.24	BLK	1.000	2.242
0	2.24	DIG BLK	1.000	2.242
56	202.41	DIG EPA	1.000	202.407
0	2.24	W 5135	1.000	2.242
0	2.24	W 5135 DUP	1.000	2.242
3	12.96	W 5135 SPK	1.000	12.965
0	2.24	W 5136	1.000	2.242
27	98.75	STD 100	1.000	98.750
0	2.24	WBLK	1.000	2.242
0	2.24	W 5137	1.000	2.242
0	2.24	W 5138	1.000	2.242
0.5	4.03	W 5139	1.000	4.029
27.5	100.54	STD 100	1.000	100.537
0	2.24	BLK	1.000	2.242
0	2.24	DIG BLK	1.000	2.242
55	198.83	DIG EPA	1.000	198.833
0	2.24	MFD-687-510	1.000	2.242
~~0~~	~~2.24~~	~~MFD-687-510 DUP~~	~~1.000~~	~~2.242~~
1	5.82	MFD 687-510 SPK	1.000	5.816

000490

0	2.24 MFD-687-510	1.000	2.242
~~0~~	~~2.24 MFD-687-510 DUP~~	~~1.000~~	~~2.242~~
1	5.82 MFD 687-510 SPK	1.000	5.816
0	2.24 MFD 688-510	1.000	2.242
27.5	100.54 STD 100	1.000	100.537
0	2.24 BLK	1.000	2.242
0	2.24 MFD 689-510	1.000	2.242
0	2.24 MFD 690-510	1.000	2.242
0	2.24 MFD 691-510	1.000	2.242
0	2.24 MFD 692-510	1.000	2.242
27.5	100.54 STD 100	1.000	100.537
0	2.24 BLK	1.000	2.242
0	2.24 MFD 693-510	1.000	2.242
0	2.24 MFD 694-510	1.000	2.242
0	2.24 MFD 695-510	1.000	2.242
0	2.24 MFD 696-510	1.000	2.242
27.5	100.54 STD 100	1.000	100.537
0	2.24 BLK	1.000	2.242
0	2.24 MFD 697-510	1.000	2.242
27.5	100.54 STD 100	1.000	100.537
0	2.24 BLK	1.000	2.242
0	2.24 DIG BLK	1.000	2.242
55	198.83 DIG EPA	1.000	198.833
0	2.24 MFD 698-511	1.000	2.242
0	2.24 MFD 698-511 DUP	1.000	2.242
3	12.96 MFD 698-511 SPK	1.000	12.965
27	98.75 STD 100	1.000	98.750 98870
0	2.24 BLK	1.000	2.242
0	~~2.24 DIG STD~~	1.000	2.242
54	195.26 DIG EPA	1.000	195.258 87470
0	2.24 J6-122-009	1.000	2.242
0	2.24 J6-122-009 DUP	1.000	2.242
2	9.39 J6-122-009 SPK	1.000	9.390
0	2.24 J6-123-009	1.000	2.242
27.25	99.64 STD 100	1.000	99.644
0	2.24 BLK	1.000	2.242
0	2.24 J6-124-009	1.000	2.242
2.5	11.18 J6-125-009	1.000	11.178
0	2.24 J6-126-009	1.000	2.242
0	2.24 J6-127-009	1.000	2.242
27.5	100.54 STD 100	1.000	100.537
0	2.24 BLK	1.000	2.242
27.5	100.54 DIG STD 100 W 4999	1.000	100.537
27.5	100.54 DIG STD 100 5135	1.000	100.537

CYANIDE (EPA) 10-2-86



TOTAL CYANIDE
EPA
10-2-86
90
80
70
60
50
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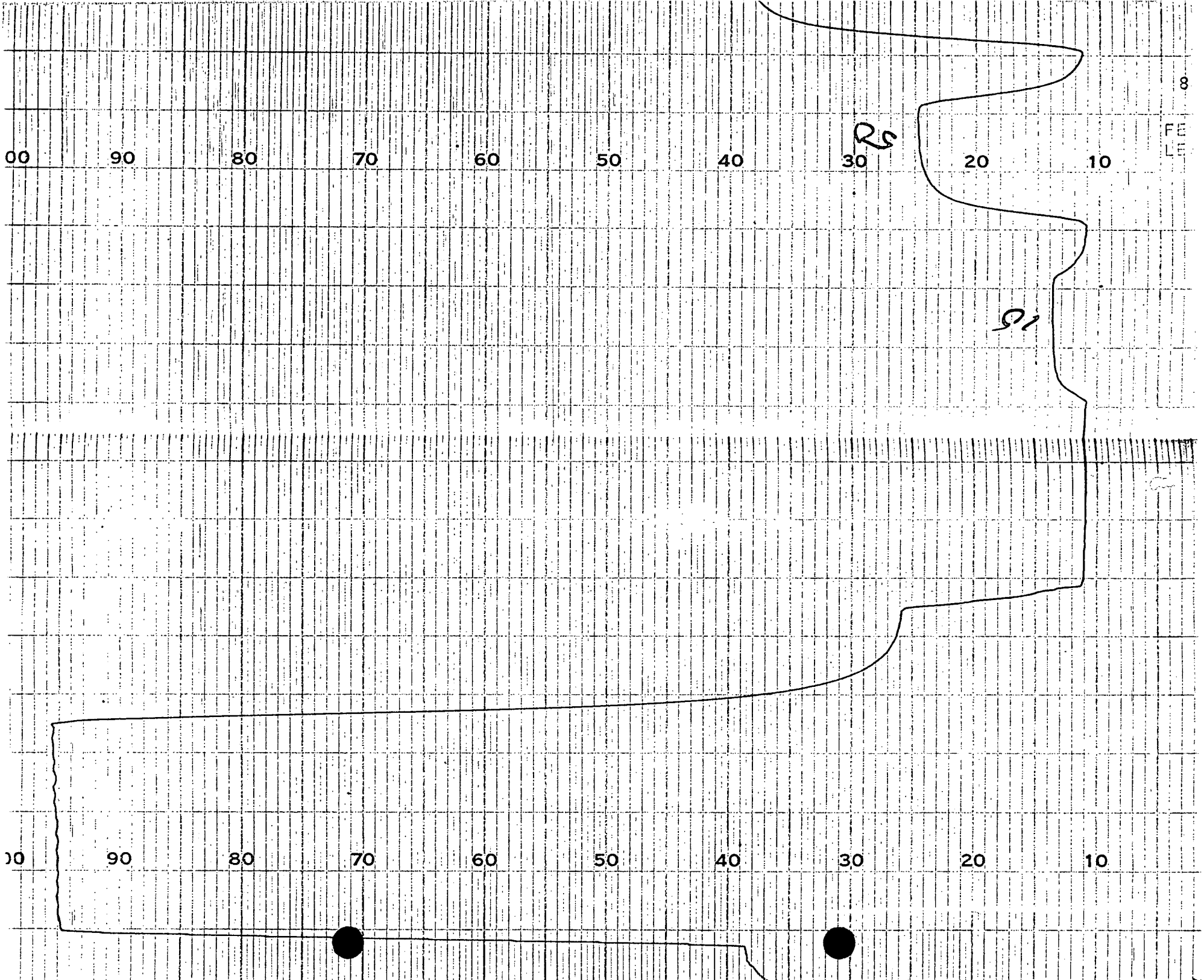
30
20
10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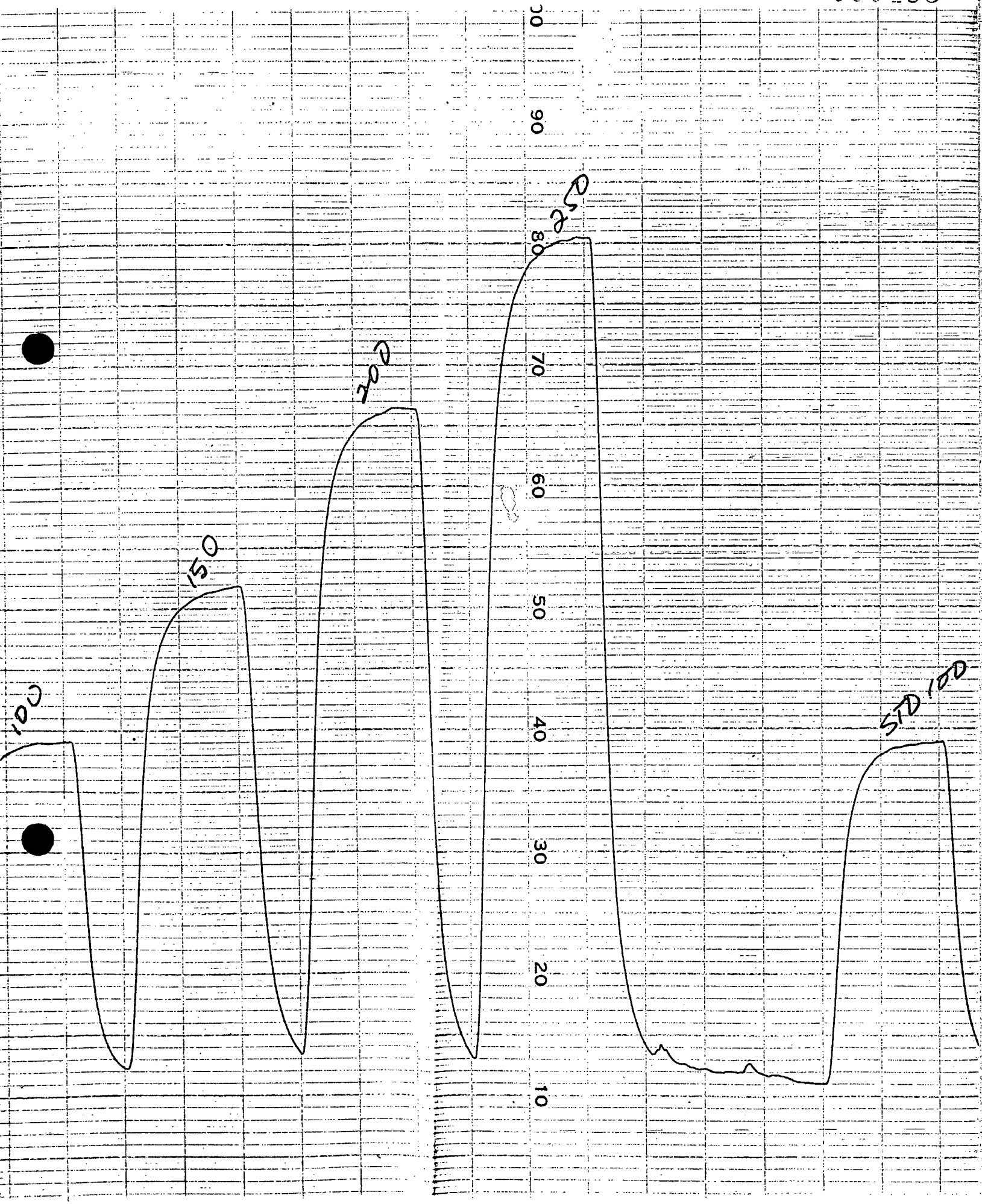
Rs
91
00 90 80 70 60 50 40 30 20 10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150
200
250
STD 100
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90
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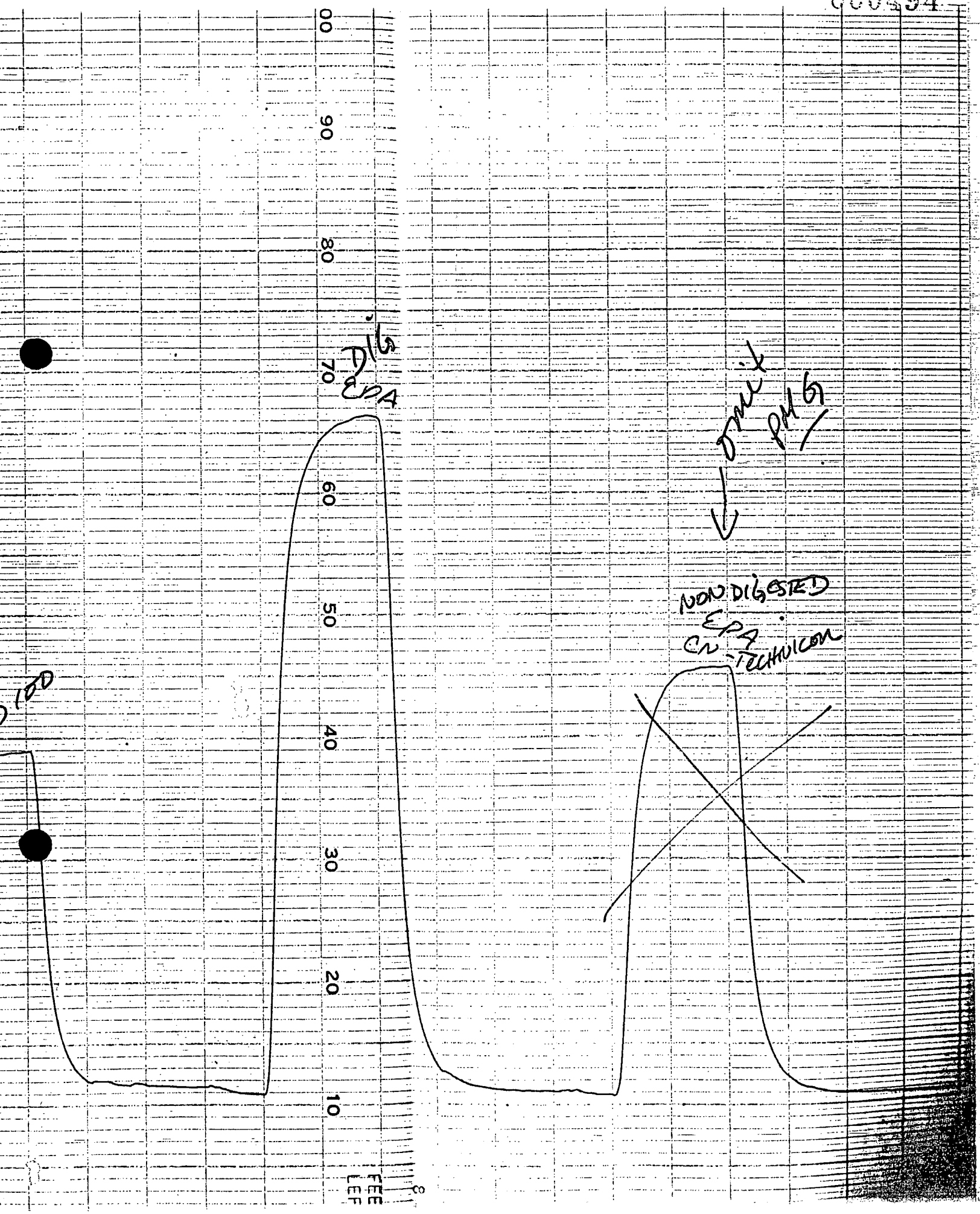
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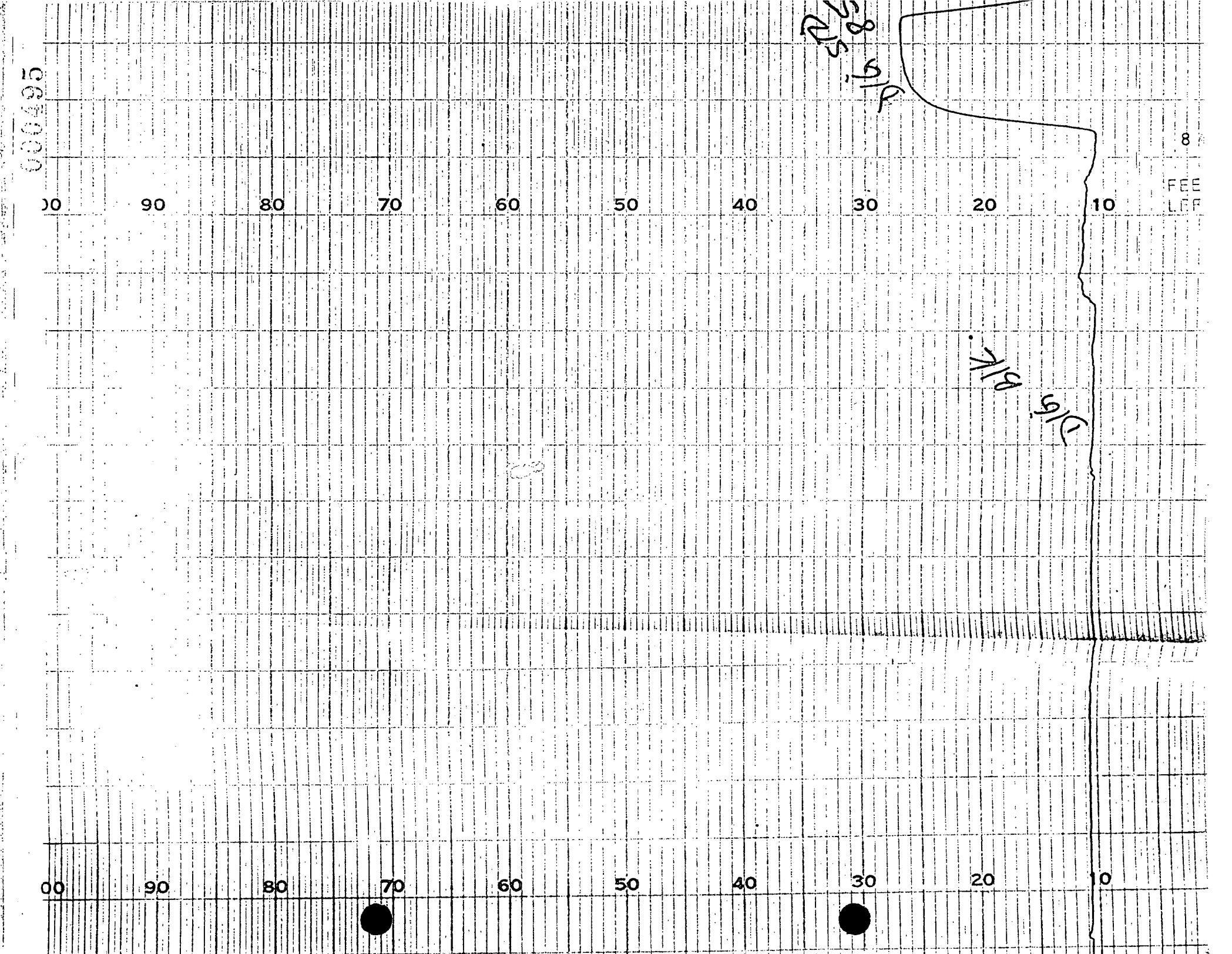
DIG
EPA
omit
PMG
NON DIGESTED
EPA
CN-TECHNICON
100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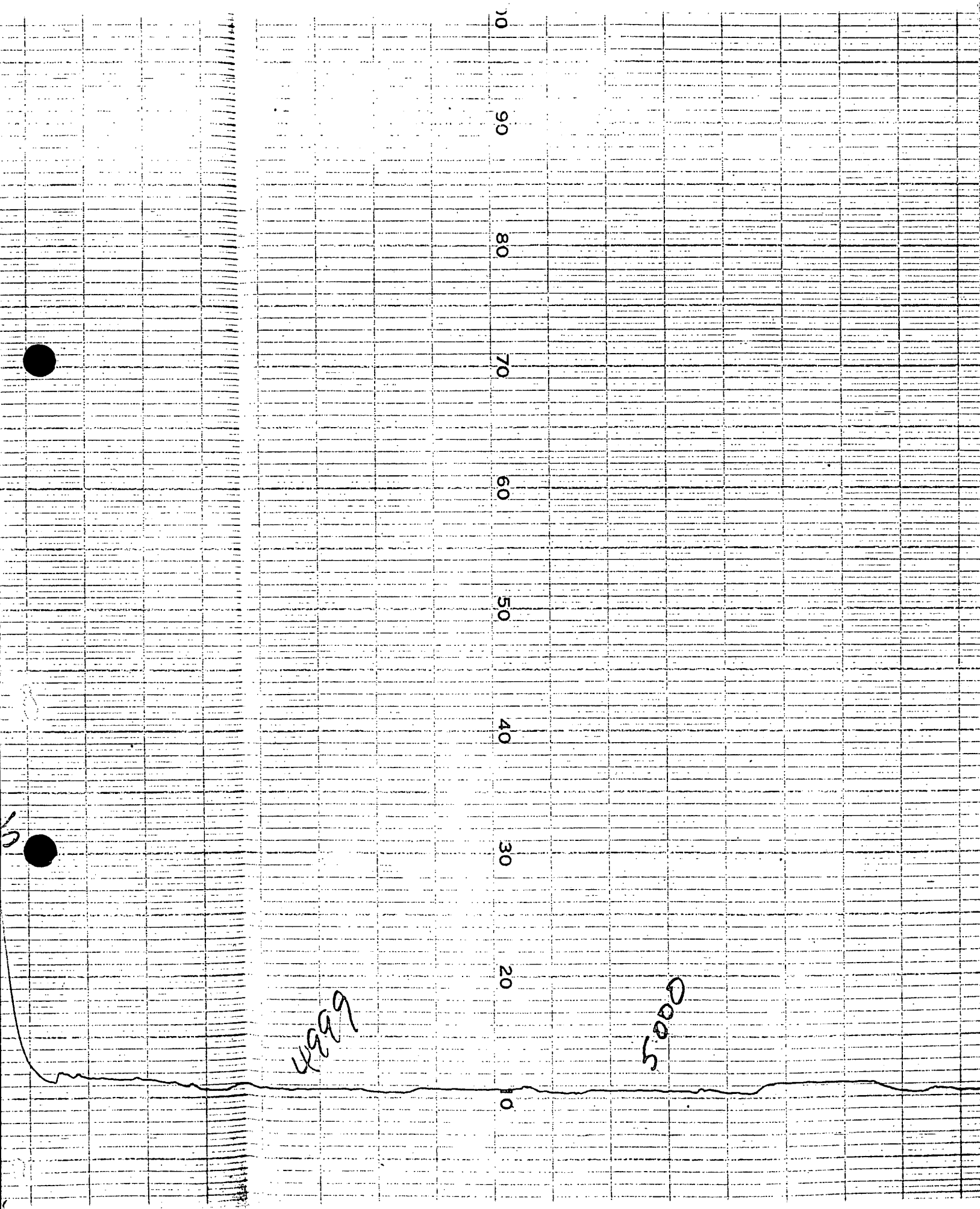
00 90 80 70 60 50 40 30 20 10
8
FEE
LEF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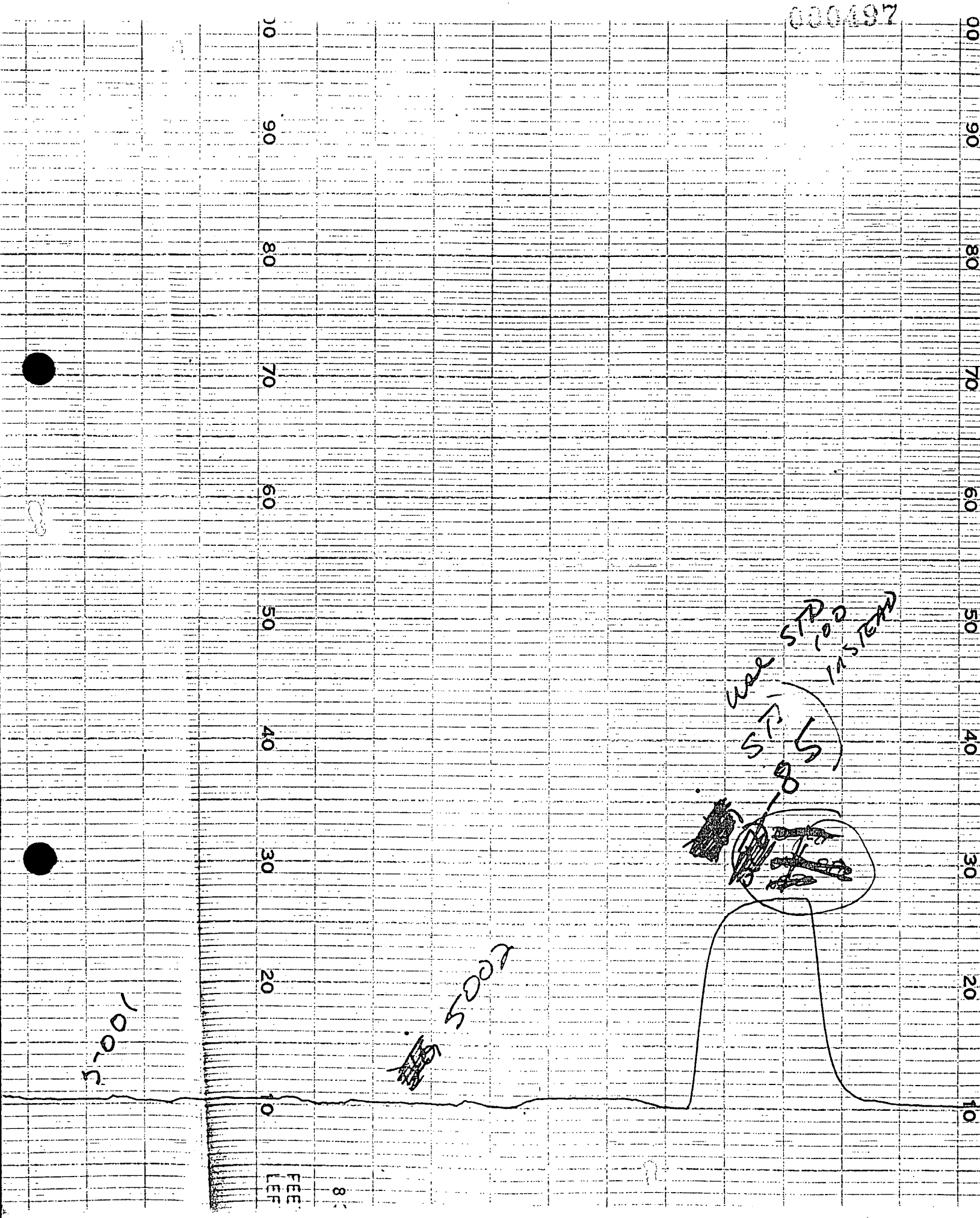
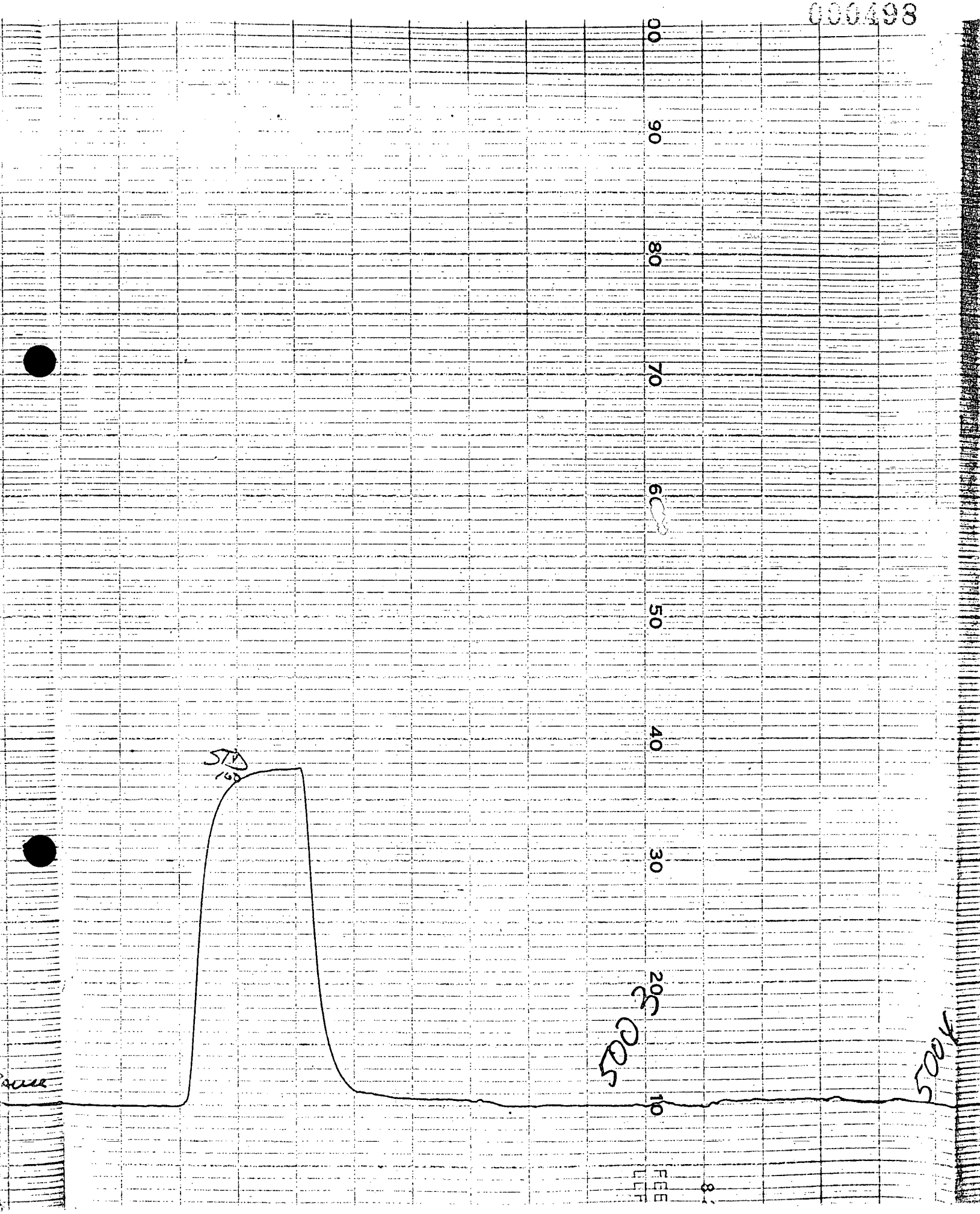
80
70
60
50
40
30
20
10
4999
5000


use STD 100 INSTEAD
ST 85
5002
5-001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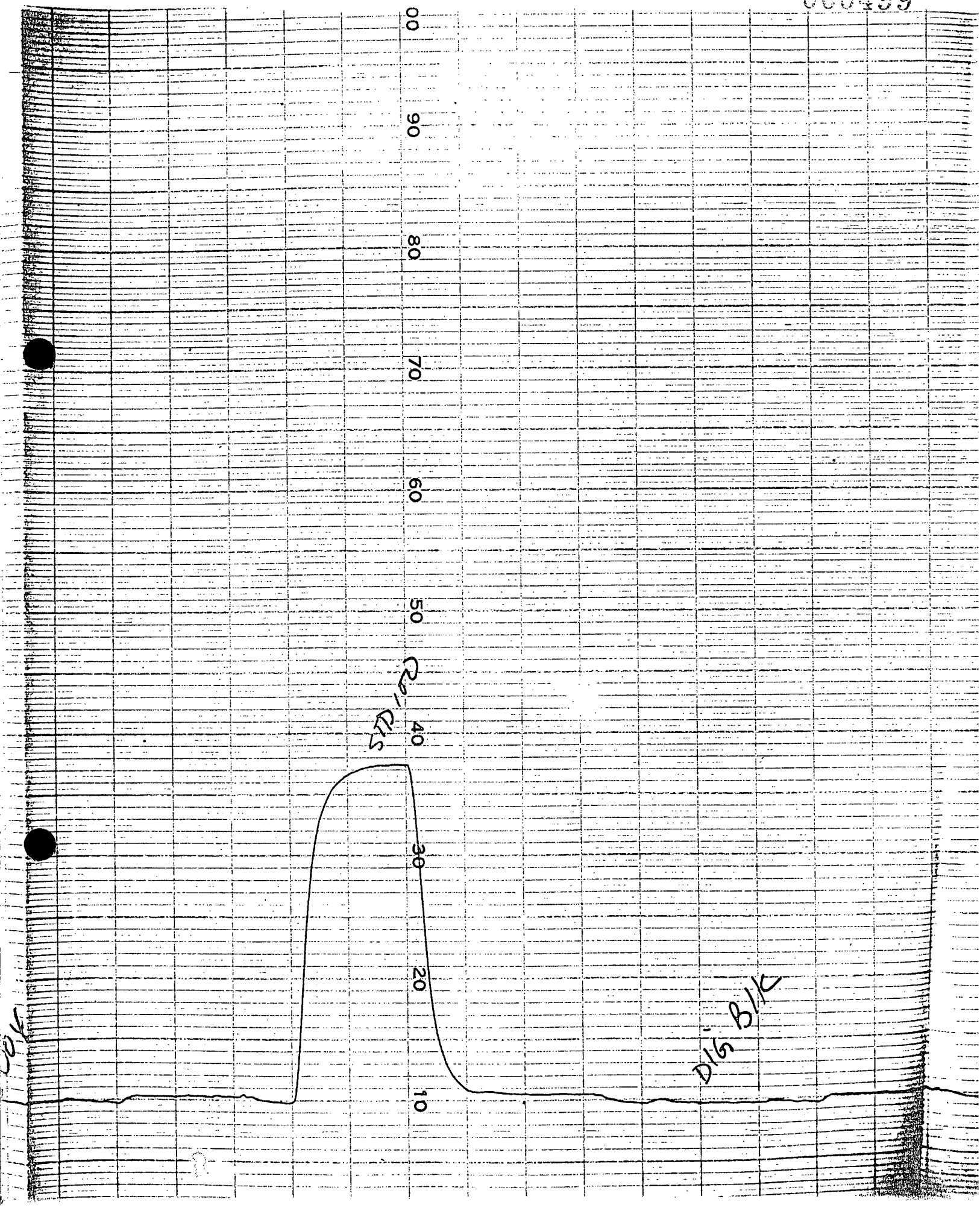
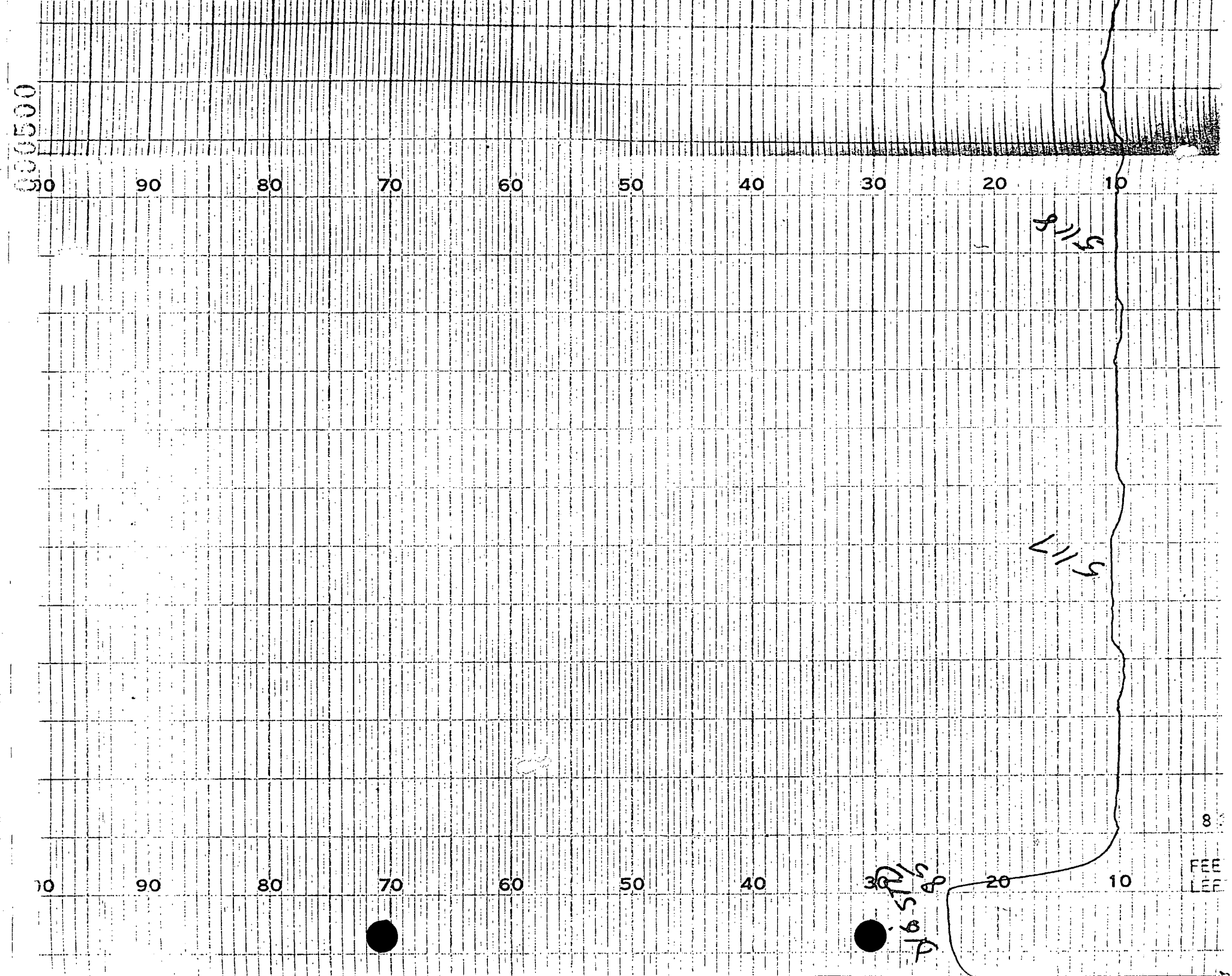
10
STD
500
500

000499

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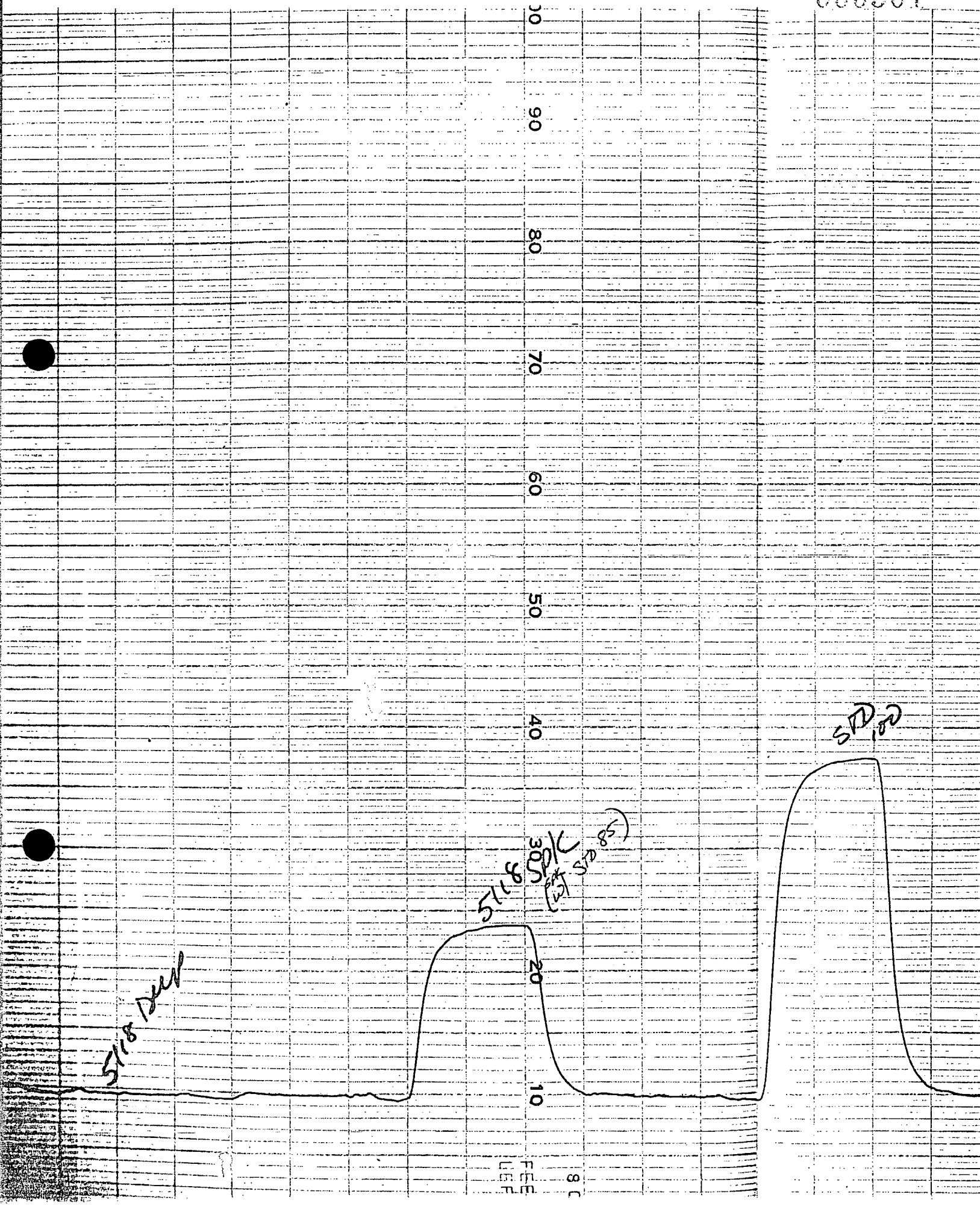
8
FEE
LEF



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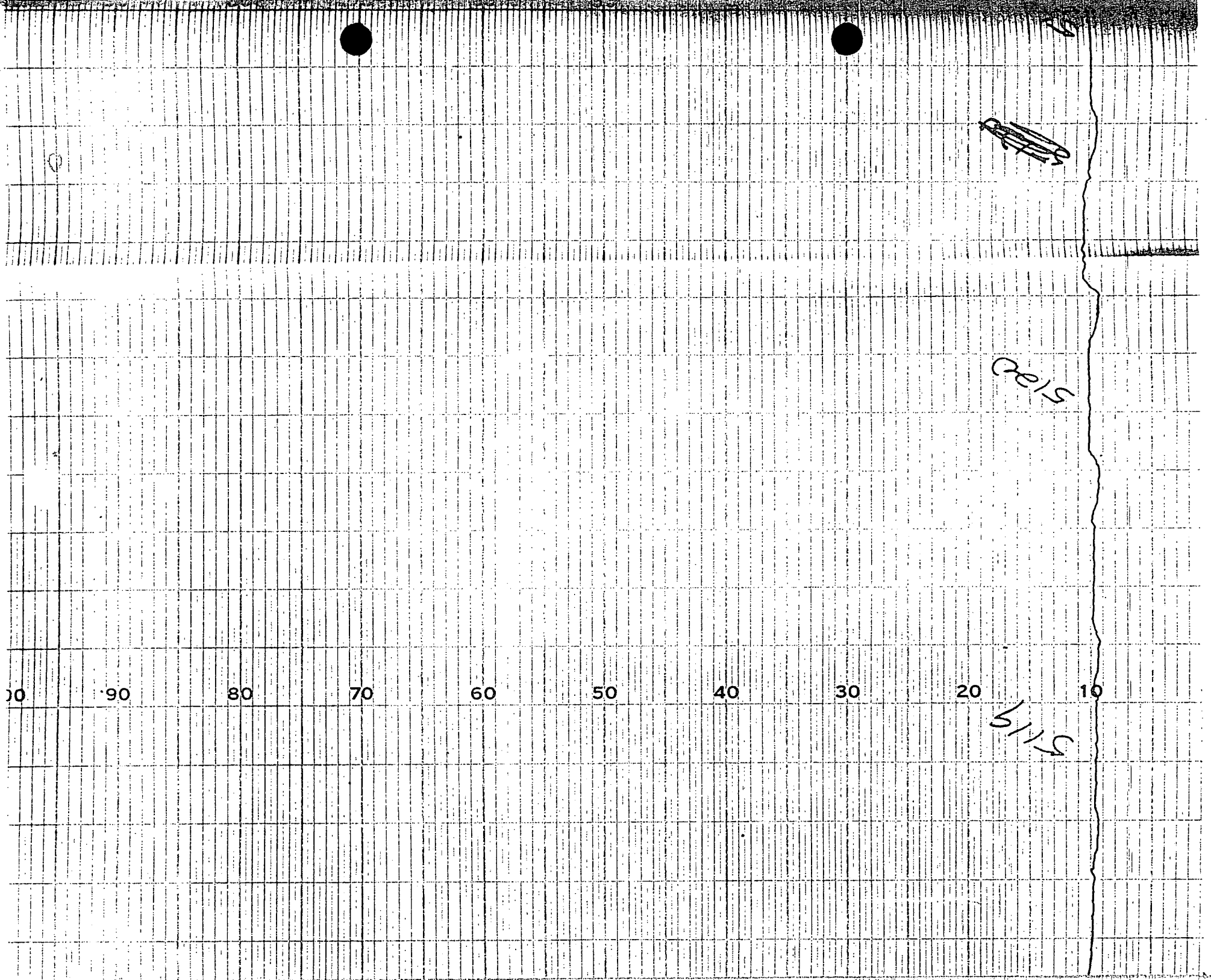
80
70
60
50
40
30
20
10
5118 Deep
5118 SPK
(SPK w/ STD 85)
STD 100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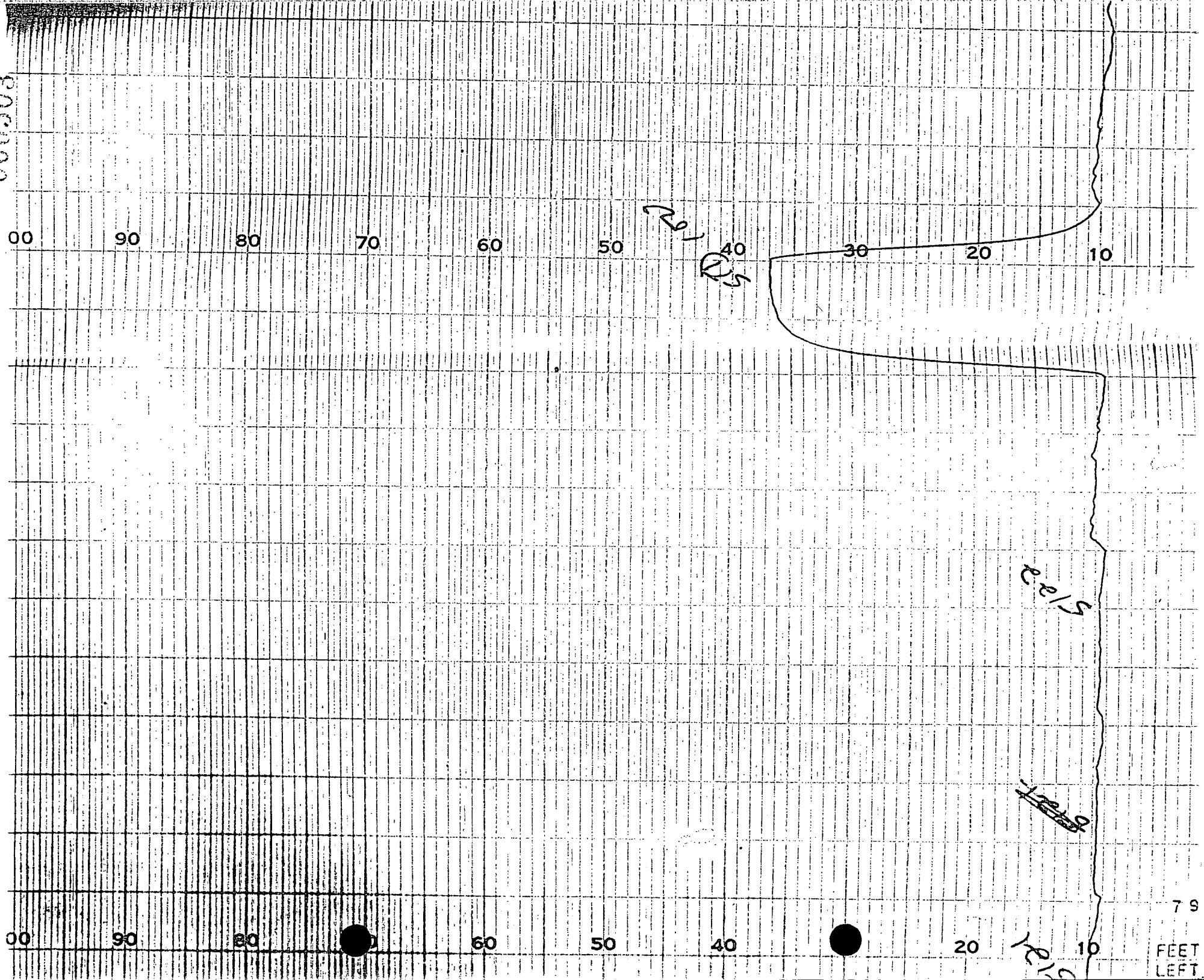
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00
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80
70
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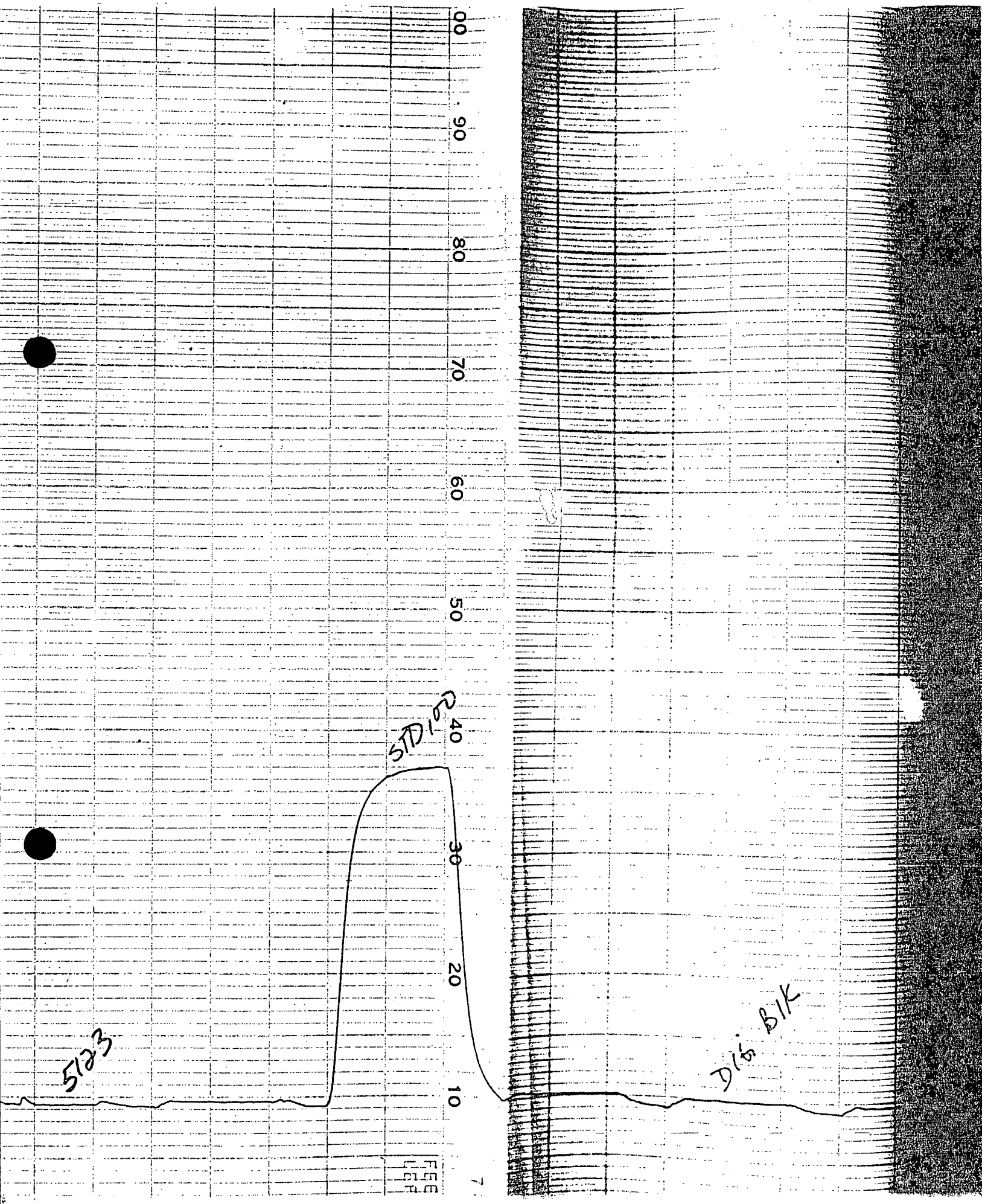
30
20
10
FEET
LEFT


00
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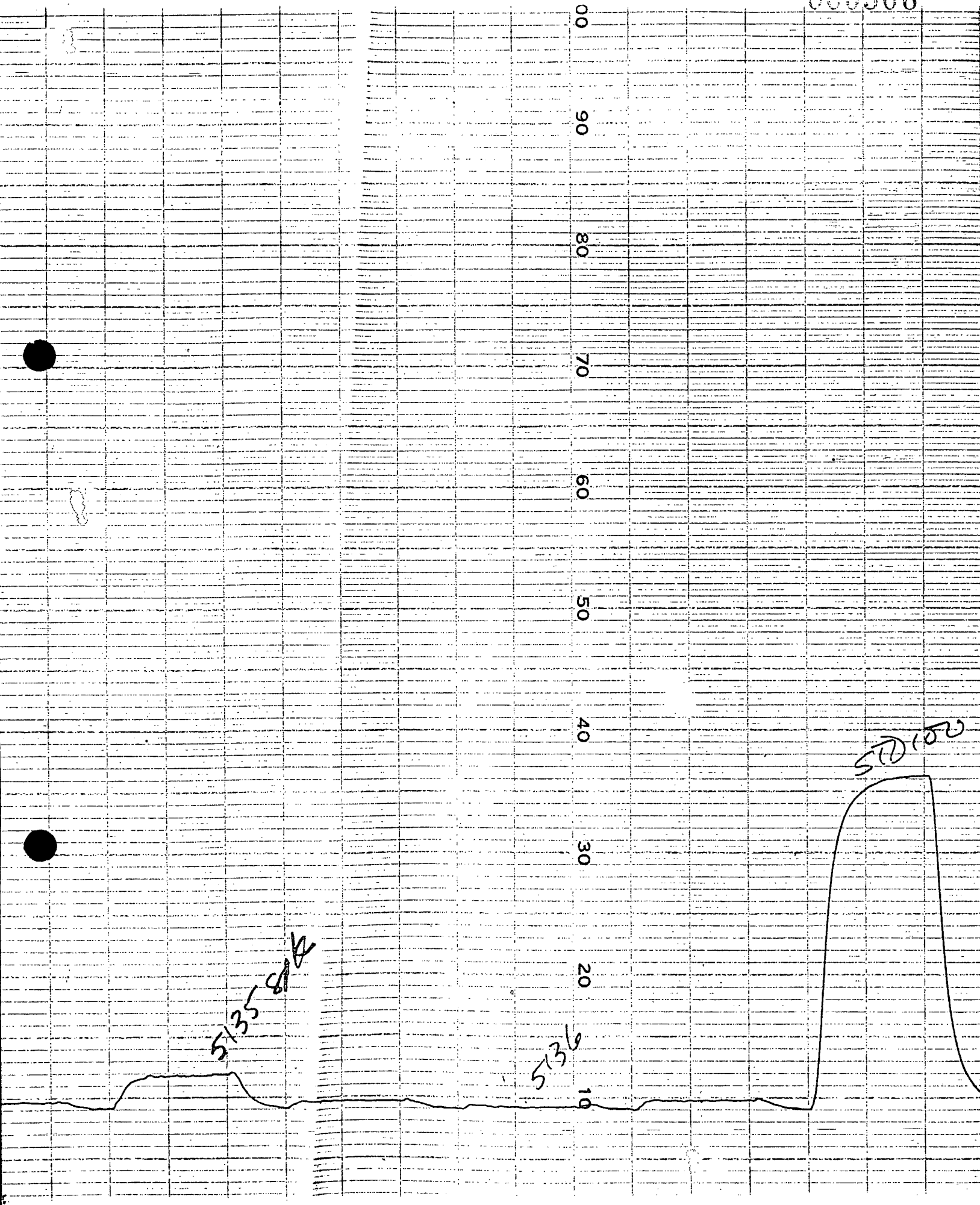
10
STD 10
5123
DIG BLK

000505


00
90
80
70
60
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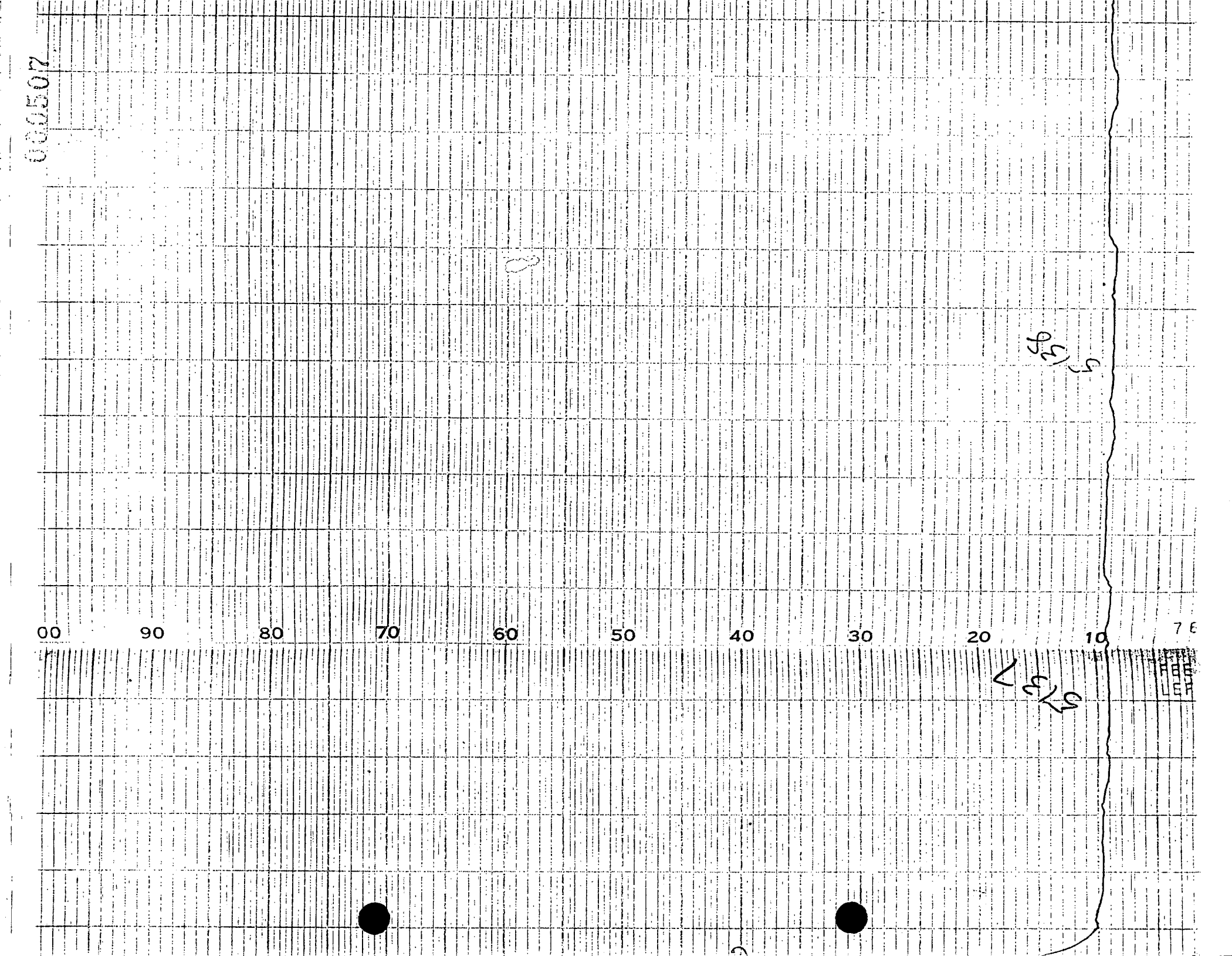
40
30
20
10
5135 8K
5136
STD100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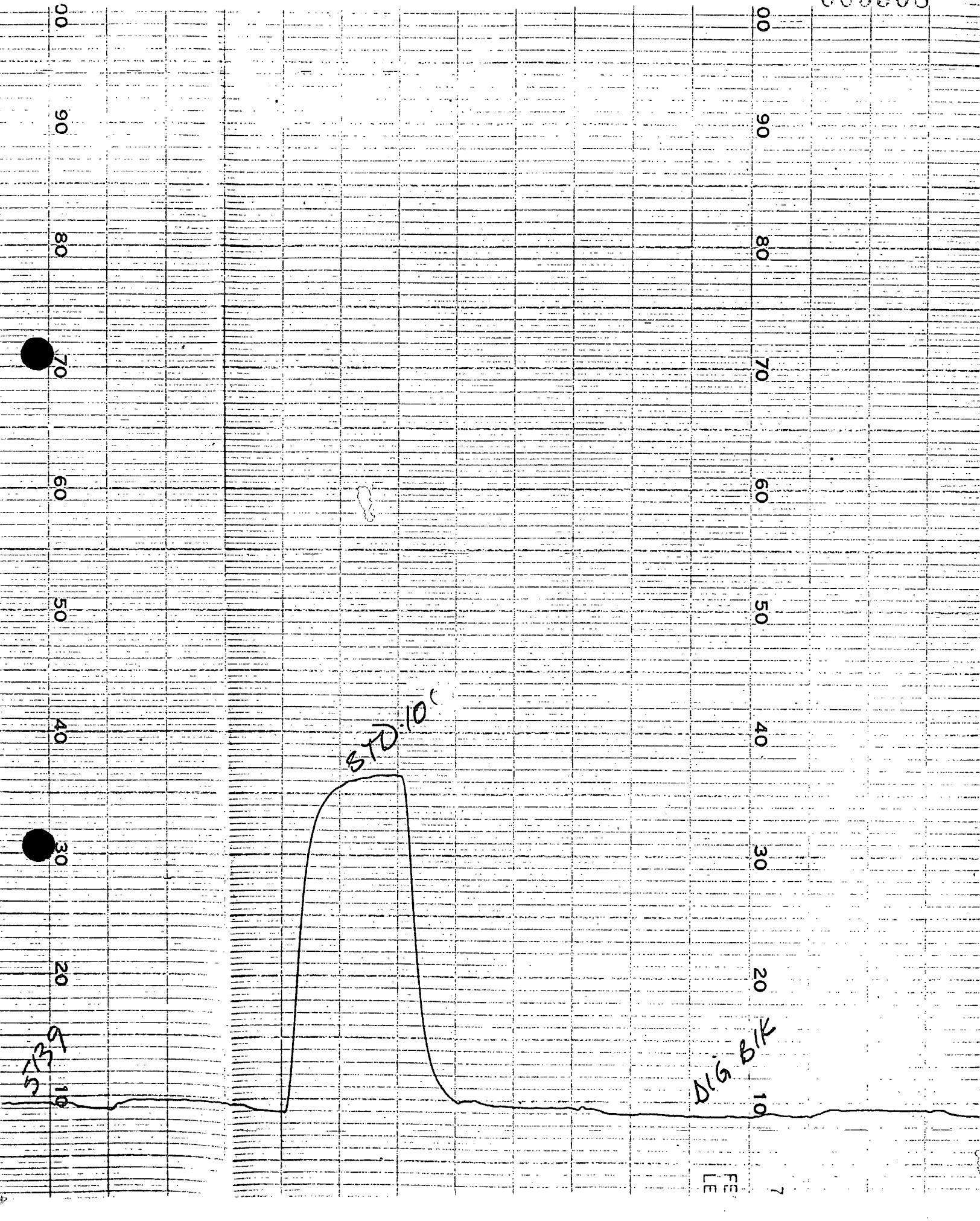
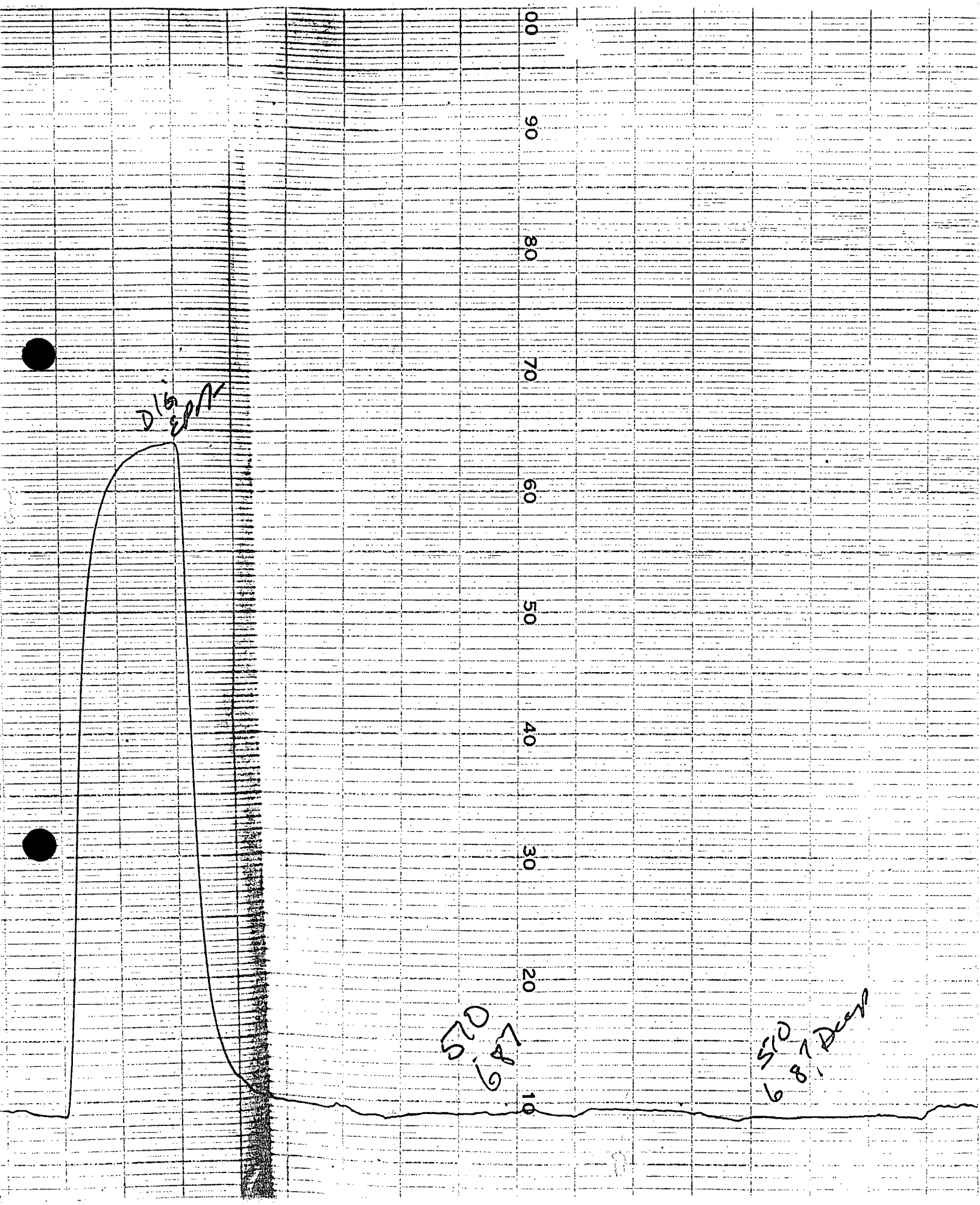
7 6

000503




00
90
80
70
60
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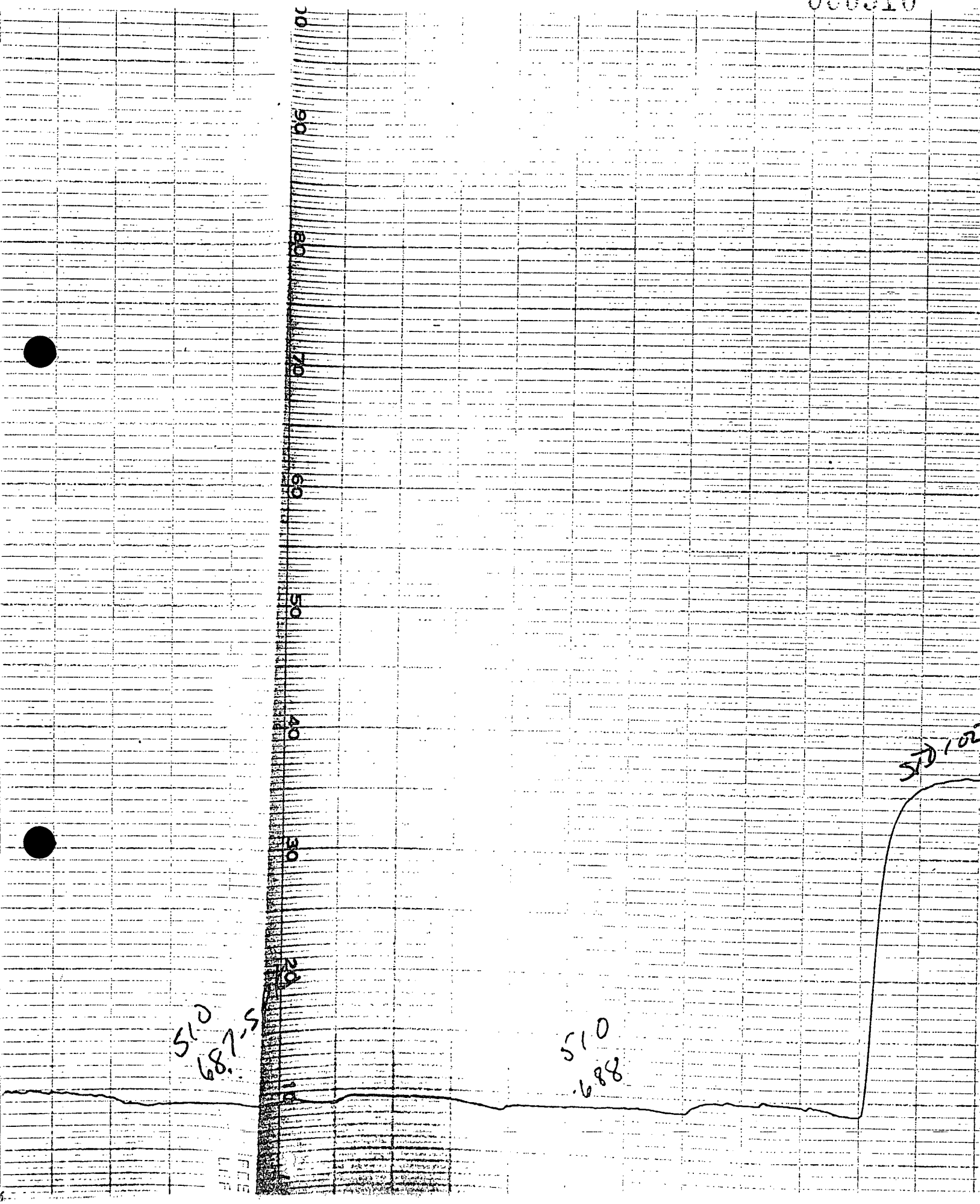
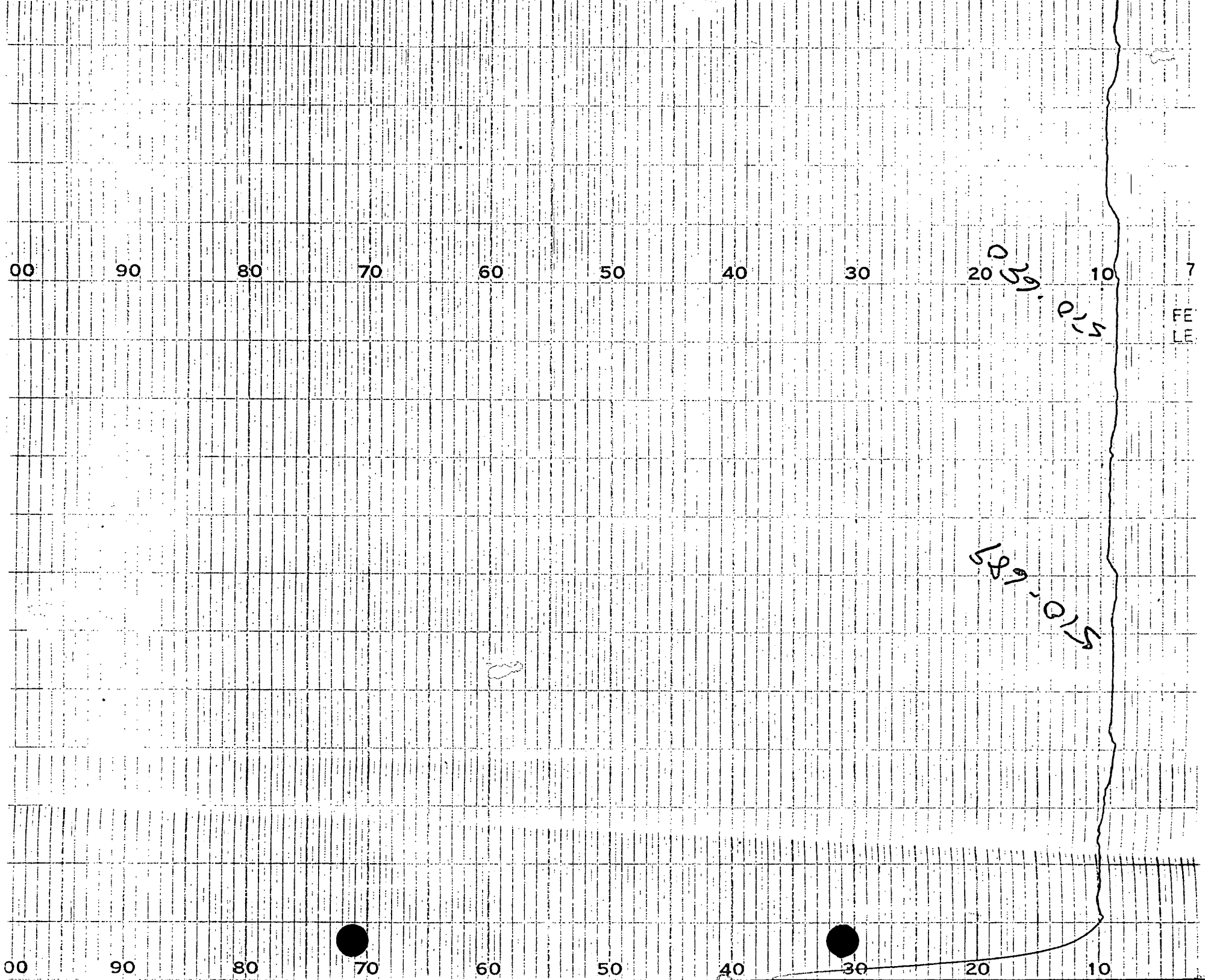
10
Dig EPA
510
687
510
687 Deep


510
687.5
510
688
STD 102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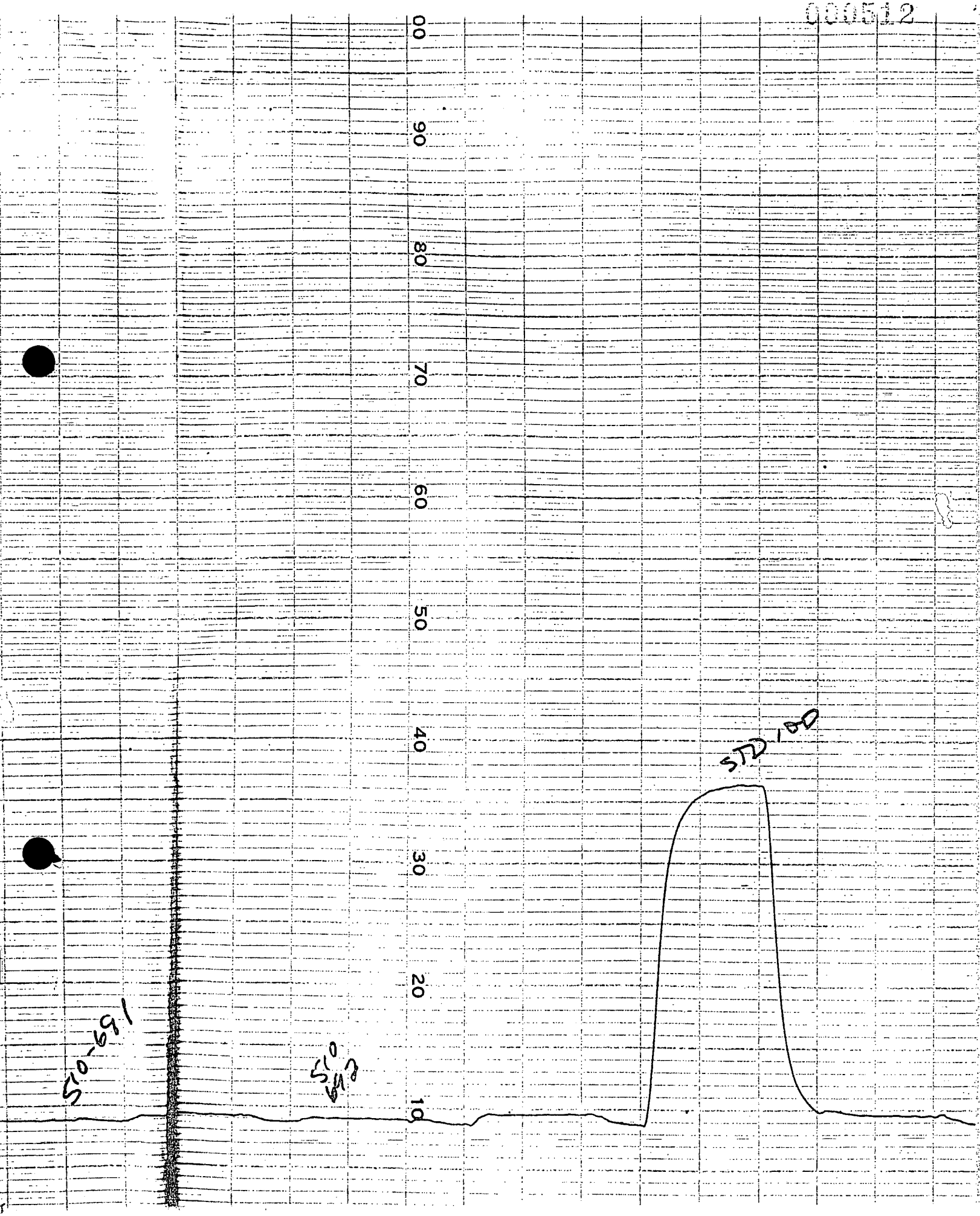
FE
LE
589.015
589.015
00 90 80 70 60 50 40 30 20 10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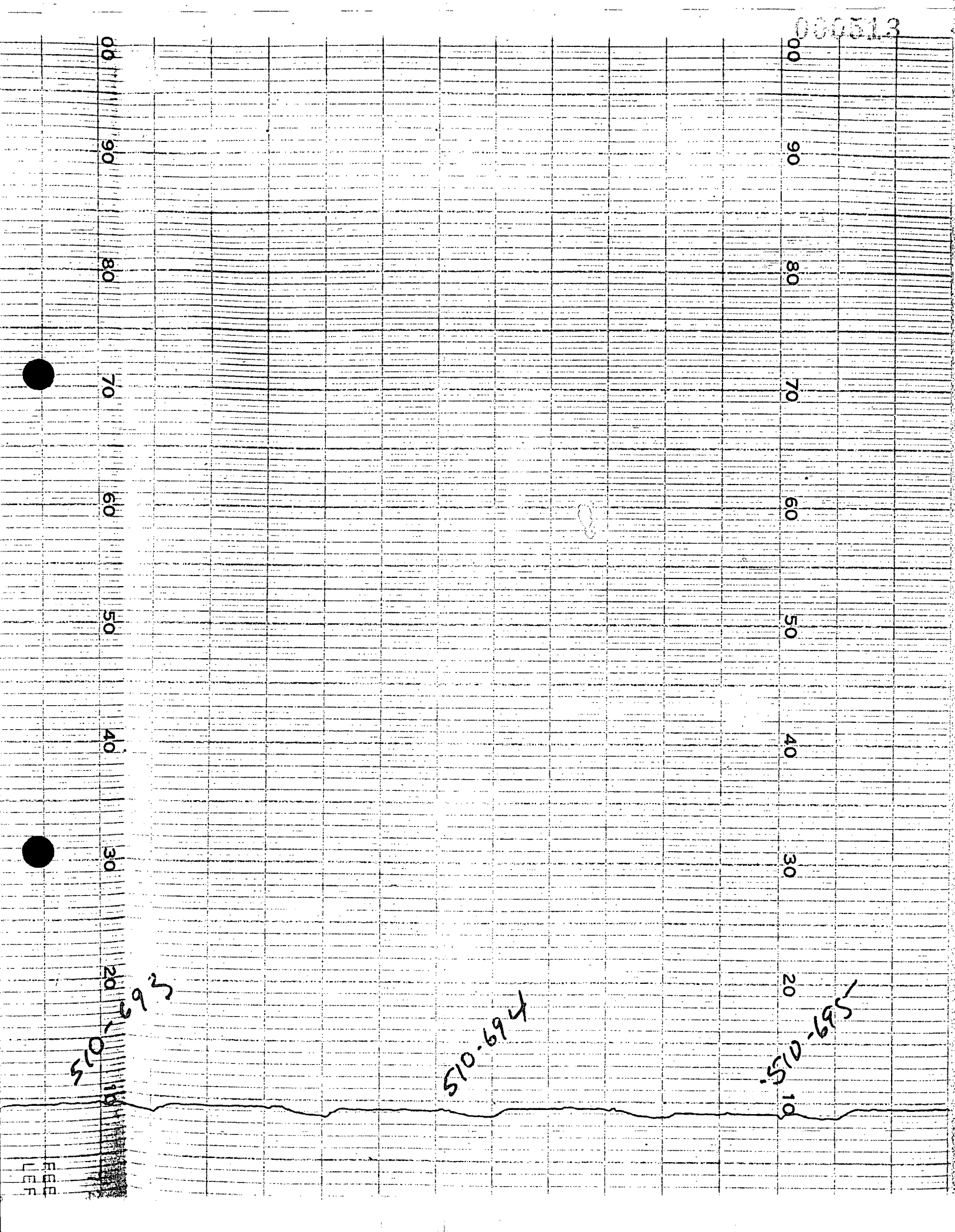
510-692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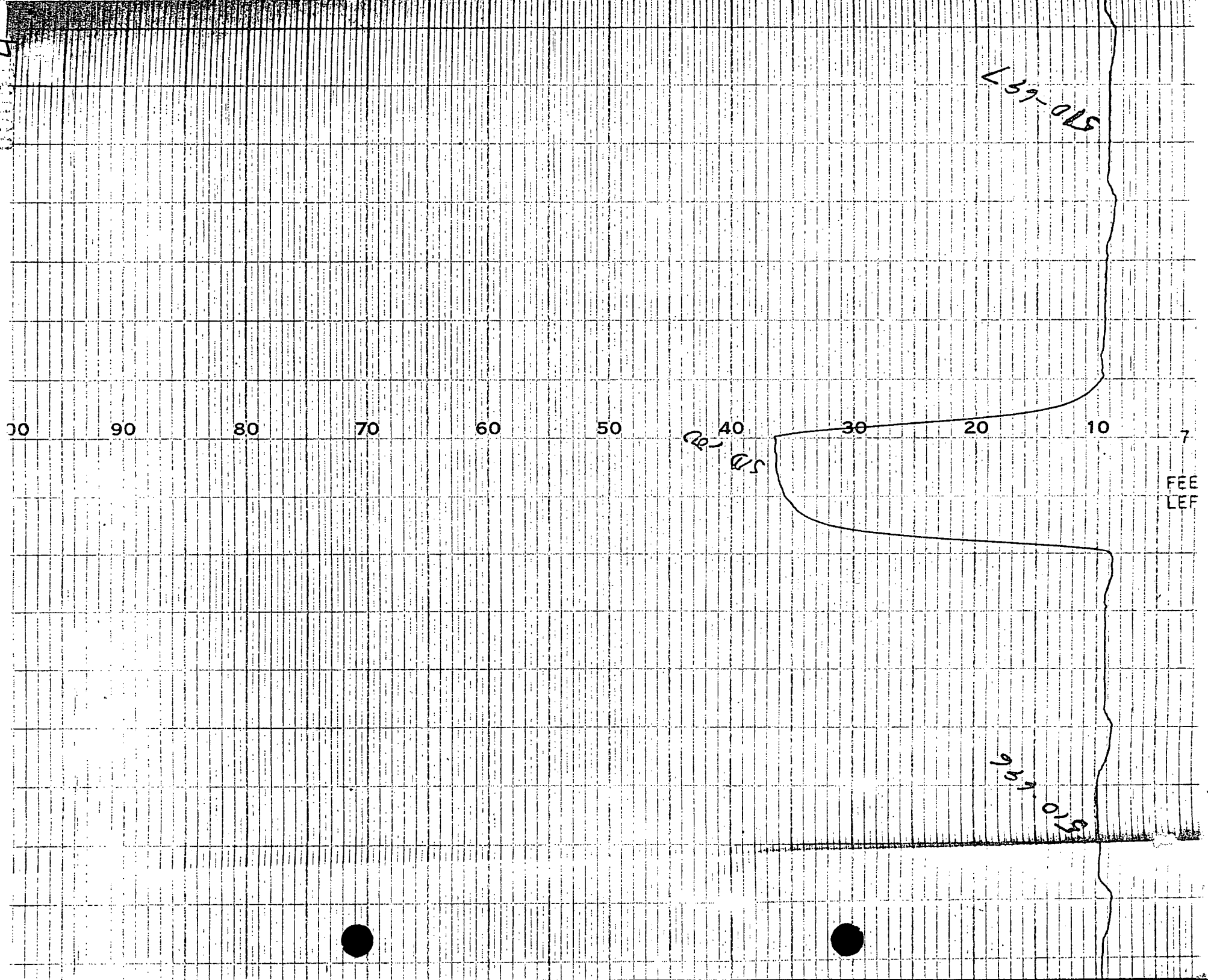
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7
FEE
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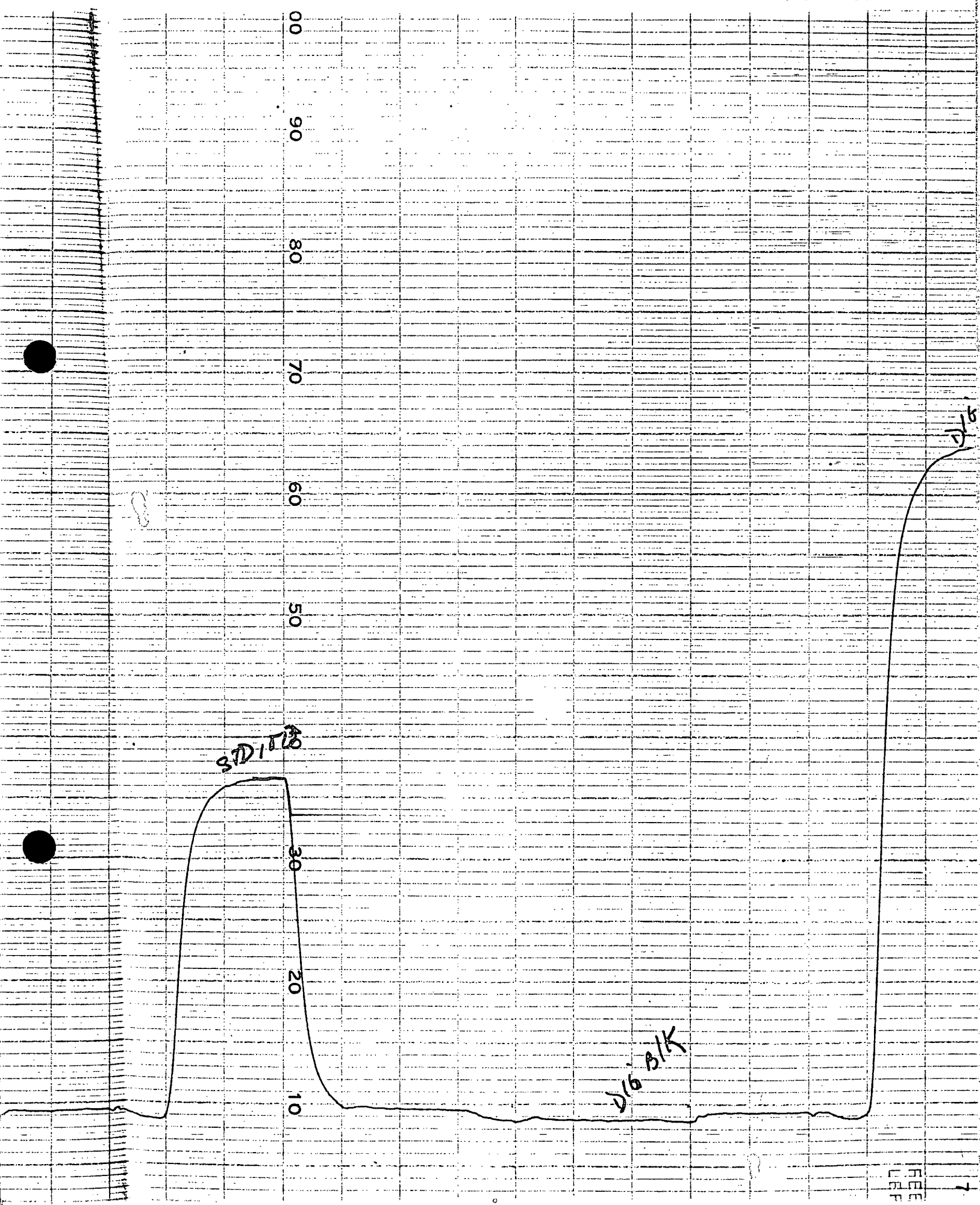
00
90
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70
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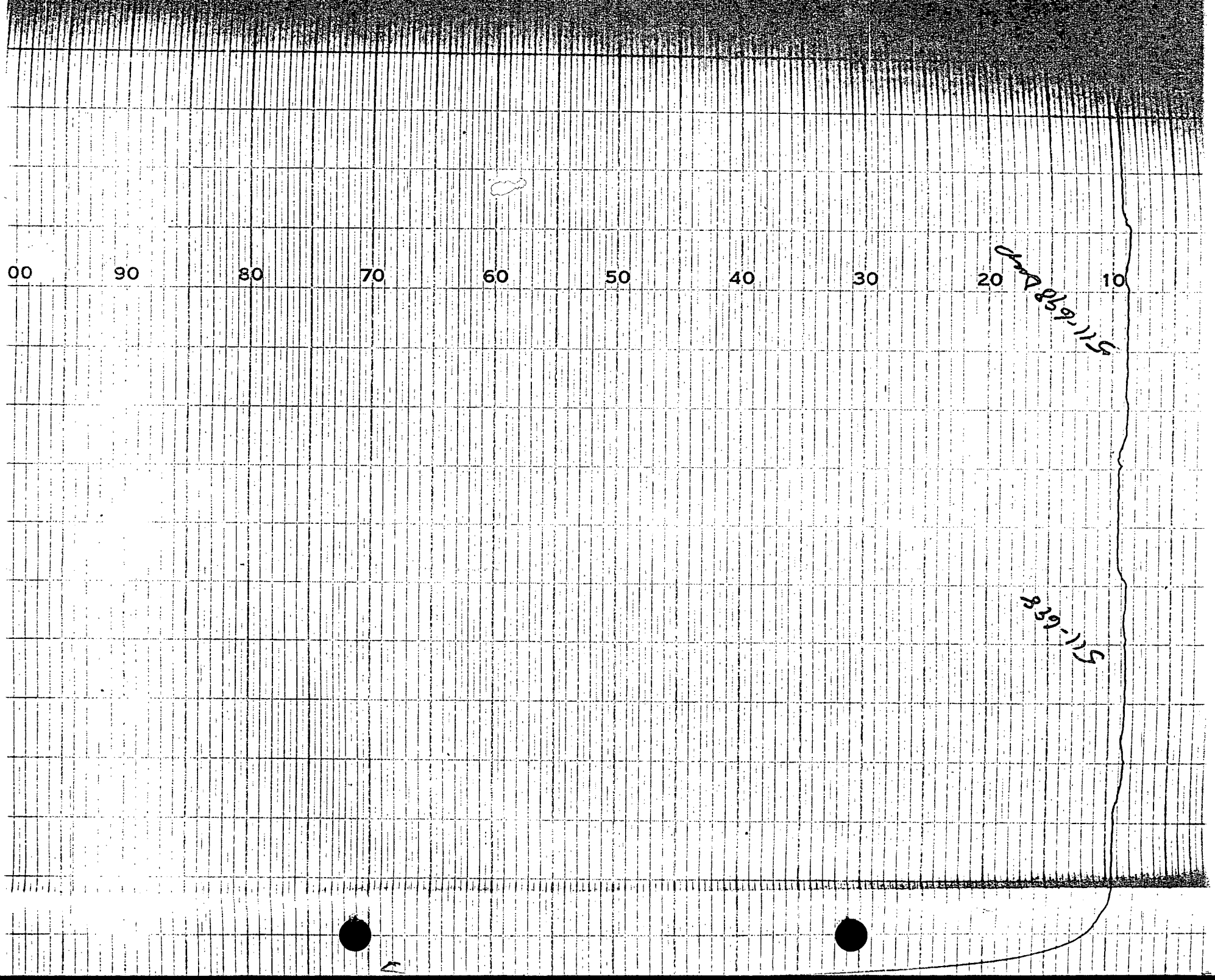
50
30
20
10
STD 1 ft
D16 B/K
D16


00
90
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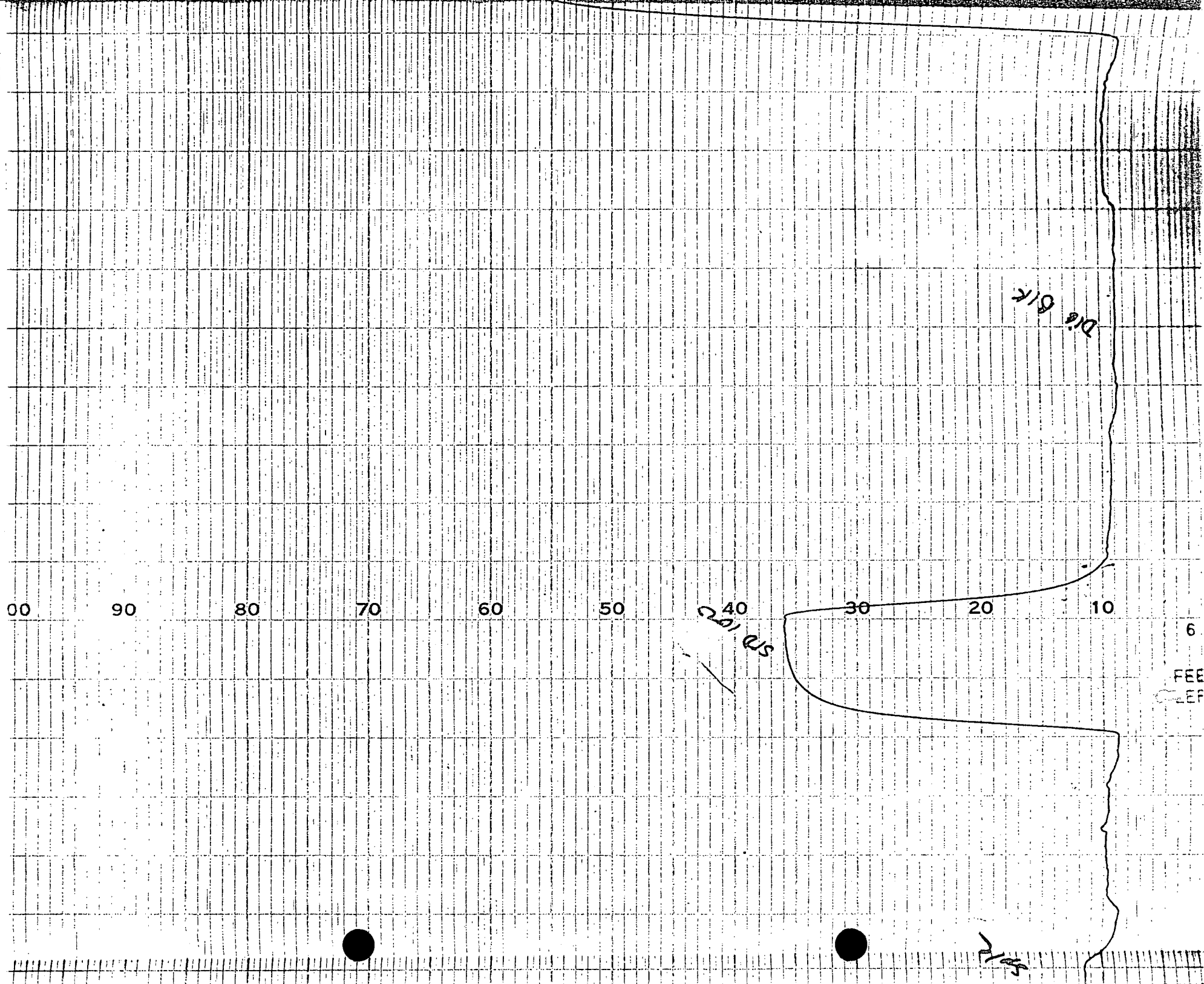
10
839-115
839-115



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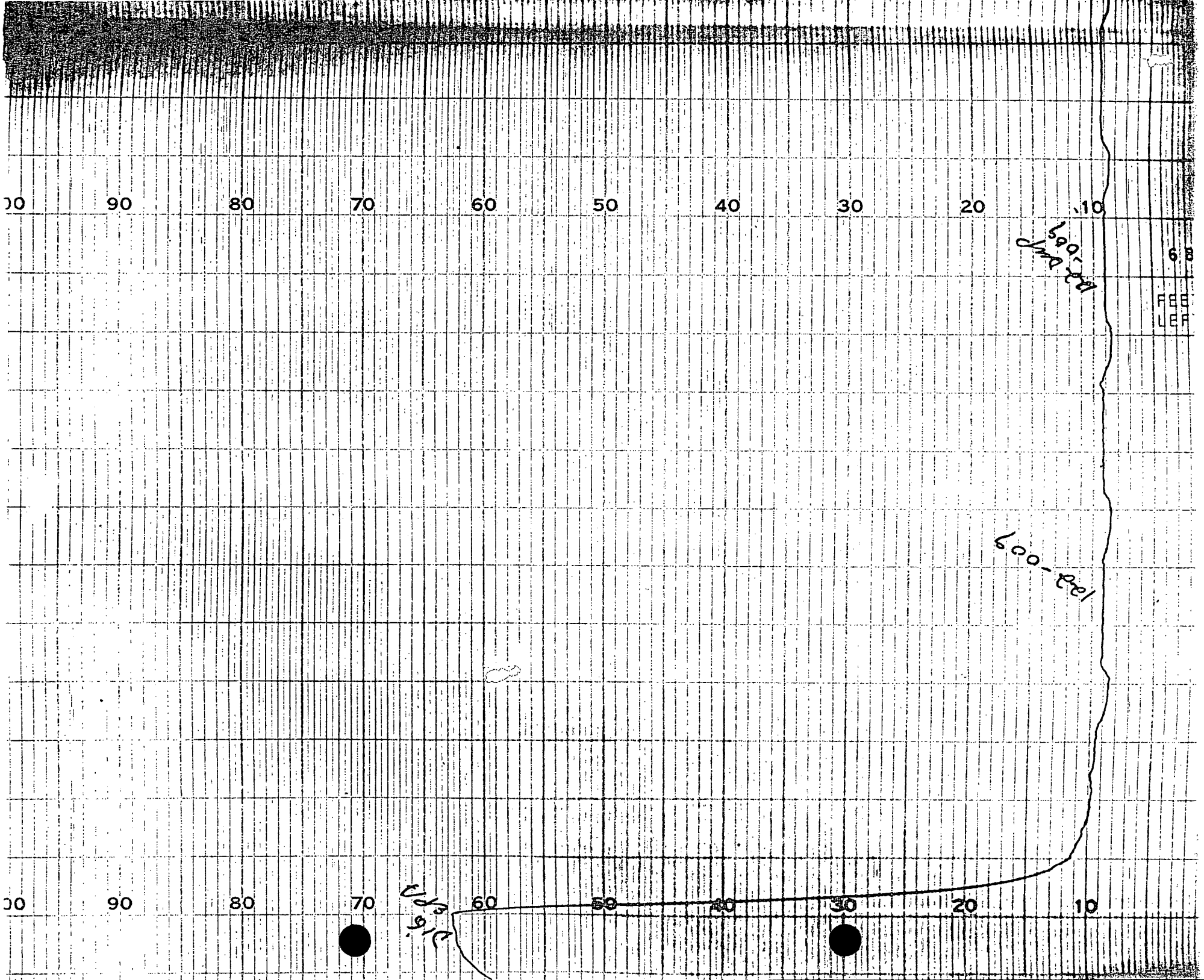
90
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30
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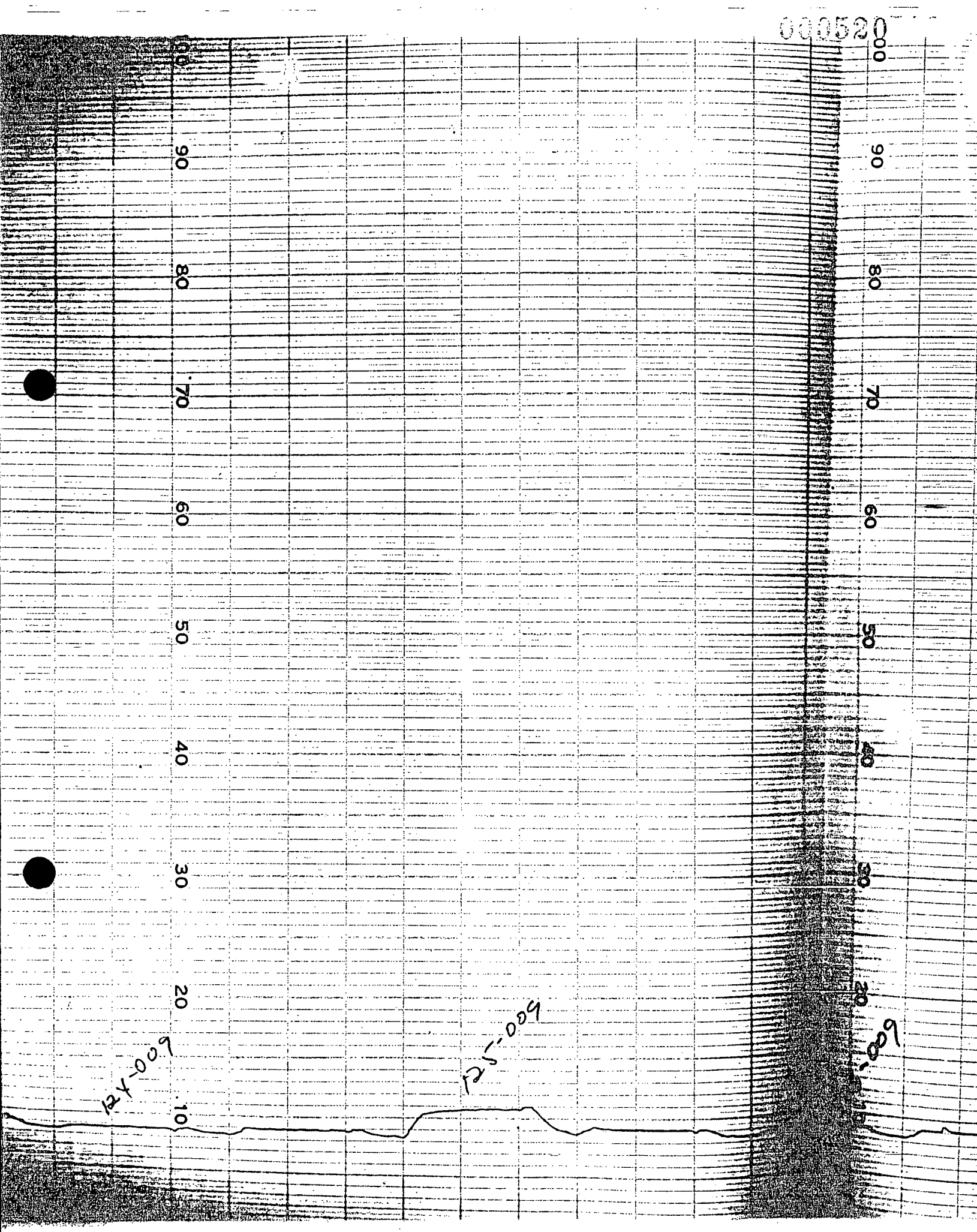
10
FEE
LEA

000519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125-009
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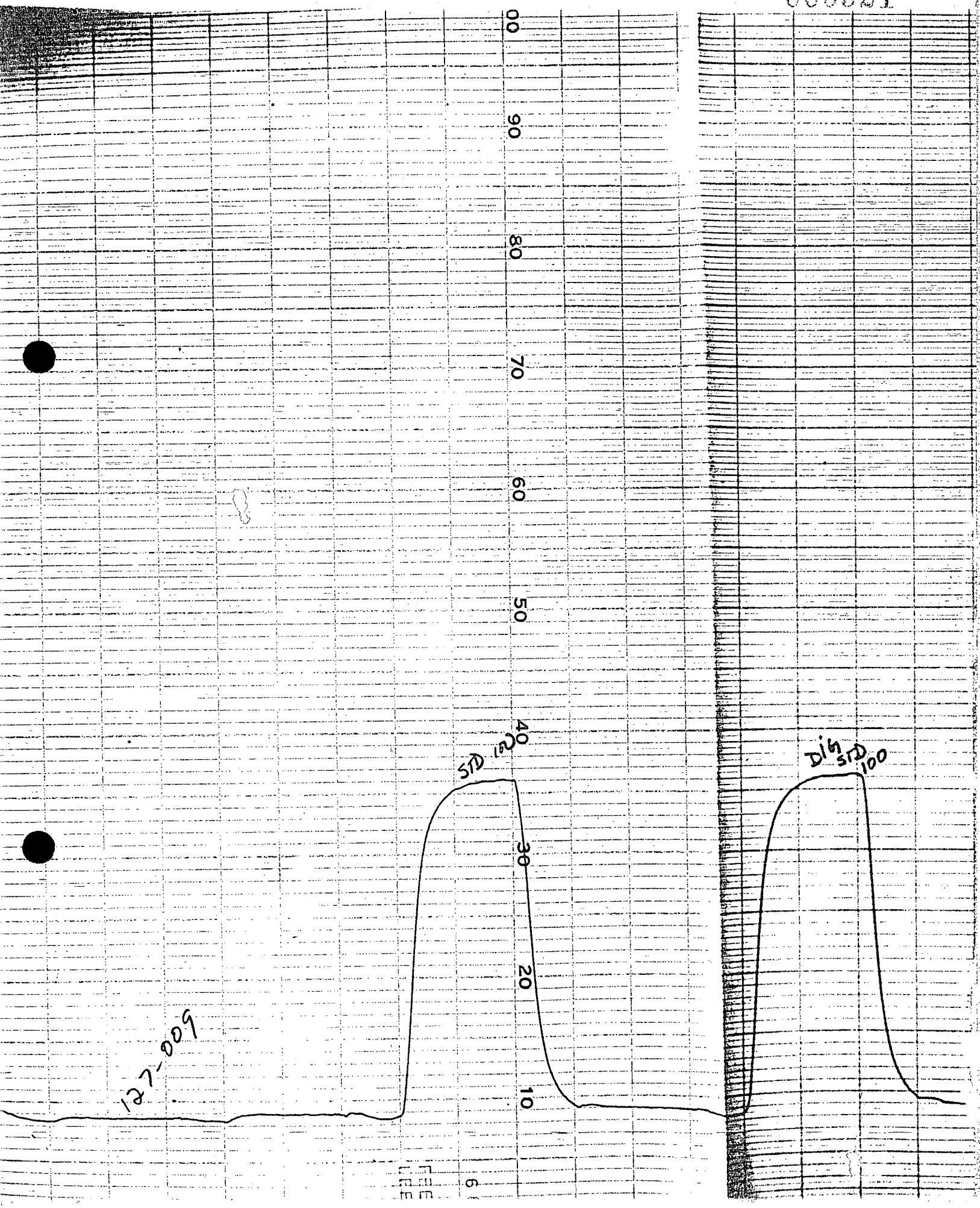
00
90
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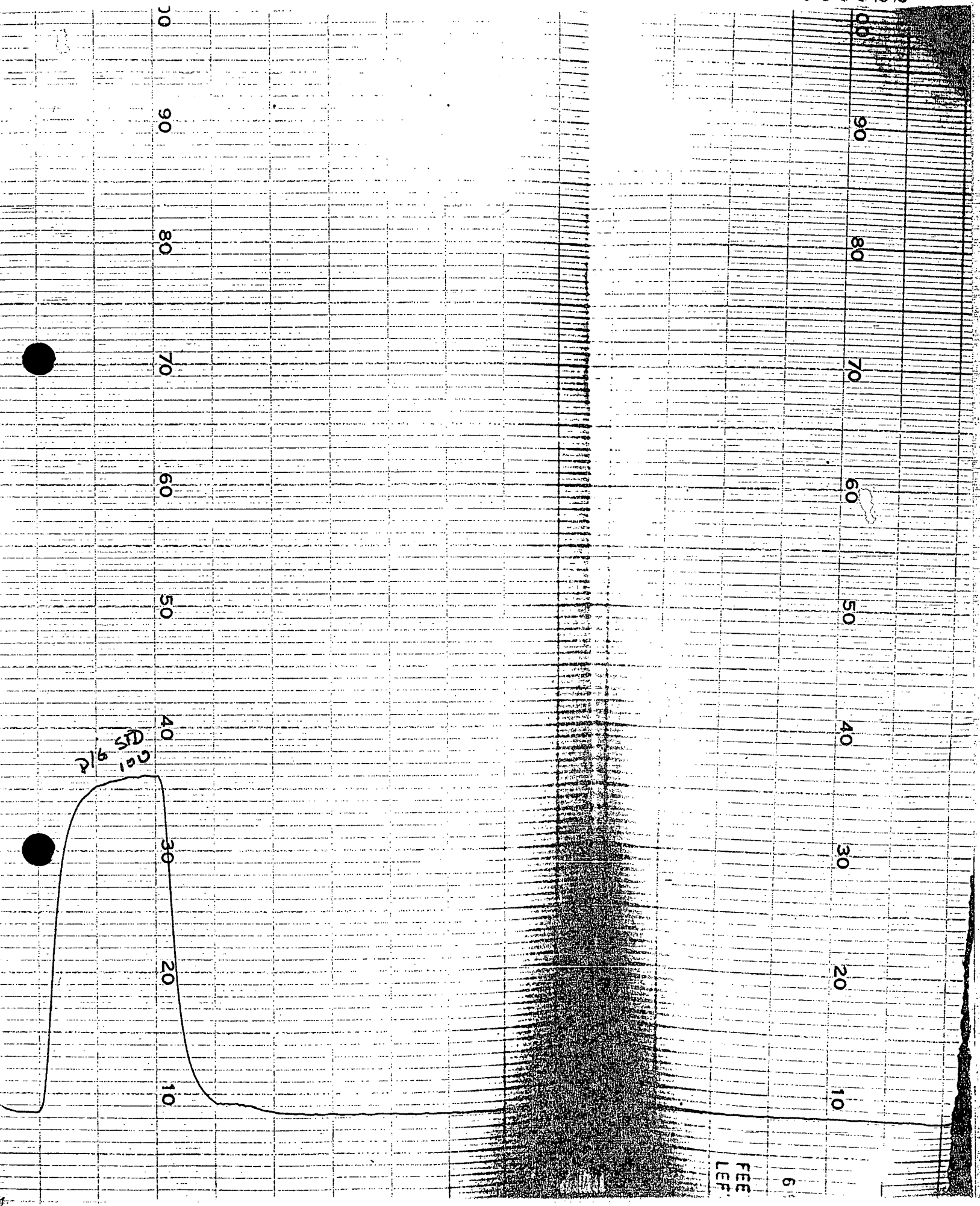
10
STD 100
DIG STD 100
127-009


P/6 STD
100
90
80
70
60
50
40
30
20
10

From Page No. CN P. Turner

9/22

		SAMPLE	D.I.	TOT Vol
SW4887	SPILLED OUT DURING FLUXING	100 MIL	400 MIL	100
SW4887 DUP				
BLK			500 MIL	
EW 4926		100 MIL	400 MIL	
EW 4926 SPK	*	100 MIL	400 MIL	
STD	*		500 MIL	
GW 4977		100 MIL	400 MIL	
[illegible]U 4976				
GW 4978				
GW 4979				
GW 4977 DUP				
GW 4980				

9/23 CN P. Turner

		SAMPLE	D.I.	TOT Vol
BLK			500	10
EW 4991 DUP		100	400	
EW 4991				
EW 4992				
EW 4992 SPK	* REPEAT TESTS - * WATER CIRCULATOR NOT ON			
EW 4994				
STD				
[illegible]4993				

*2ML OF 5000 PPB ADDED

To Page No.

Witnessed & Understood by me. Date Invent[illegible] by Date

From Page No. 9/24 CN P. Turner

	SAMPLE	D.I	TOT VOL
EW 4992 SPK ★	100 ML	400 ML	100
4993			
STD		500 ML	
4994	100ML	400 ML	
BLK		500 ML	
4995	100ML	400ML	
4997			
4998			
4999			
5000			
5001			
5002			

9/25 CN P. Turner

	SAMPLE	D.I	TOT VOL
BLK		500 ML	100
STD ★			
EW 5003	100 ML	400 ML.	
5004			

★ = 5000 PPB ADDED

Understood by me, Date Invented by Date

LE

om Page No. 9/27 CN P. Turner

	SAMPLE	D.I	TOT. VOL
STD ☆		500 MIL	100
W5137	100 ML	400 ML	
5138			
5139 > TUBE BROKE HAD TO RERUN			
BLK		500 ML	
FD 510-692	10 gr.		
693			
694			
695			
696			
697			
EW 5139	100 ML	400 ML	

9/29 CN P. Turner

	SAMPLE	D.I	TOT. VOL
LK		500 ML	100
STD ☆			
FD 511-698	100 ML	400 ML	
W 5119			
W 5118			
5118 DUP			
5118 SPK ☆			
5120			
5117			
5121			
5122			
5123			

2ML. OF 5000 PBB ADDED

To Page No.

tnessed & Understood by me, | Date | Invented by | Date

From Page No. 9/30 CN P. Turner

	SAMPLE	D.I	TOT VOL
BLK		500 ML	100 ML
STD ☆			
EPA	100 ML	400 ML	
EW 5124			
5125			
5126			
5127			
5128			
5129			
5130			
5131			
J6 0116-008			
0117-008			
0115			
0115 DUP			
0115 SPK ☆			
0118-008			
0119-008			
0120-008			
0121-008			

10/1 CN P. Turner

	SAMPLE	D.I	TOT. VOL
BLK		500 ML	100 ML
STD ☆			
4126	10 gr.		
J6-0122-009			
J6-0122-009 DUP			
J6-0122-009 SPK ☆ (RAN OUT HAVE TO REDO)			
J6-0123-009			
J6-0124-009			
J6-0122-009 SPK ☆			
J6-0125-009			
J6-0126-009			
J6-0127-009			

To Page No.

Witnessed & Understood by me. Date Recorded by Date

☆ 2ML OF 500 PPB ADDED

TITLE CYANIDE (EPA) 10-1-81 Book No. 000527

From Page No.

(1) Prep. of STD A: 10 ml stock intermediate + QS TO 100 ml (Reported in con
w/ 0.25N NaOH

ml STD A	[CN]/ppb	
4.0	200	QS TO 100 w/ 0.25 N NaOH
3.0	150	
2.0	100	
1.0	50	
10 ml 100ppb	10	

(2) EPA USED = WP-179 Conc #5 [CN] = 224 ppb SAMP DIGESTI

(3) Sensitivity of Instrument = @ STD Cal = 1.0 AU = 17.5%
@ AU = 95% STD Cal = 5.

(4) Results:

Sample	Peak Ht
10	2.5
50	16.0
100	33.5
150	49.5
200	65.5
STD 100	33.5
BLK DIG EPA	82.
DIG BLK	0
DIG STD	26.0
J-6 99-006 Dup	0
DIG BLK	0
DIG EPA	82
EW 5124	0
5125	0

Sample	Peak Ht
EW-5126	0
5127	0
STD 100	33.5
BLK EW5128	0
5129	0
5130	0
5131	0
STD 100	34.0
BLK DIG BLK	0
DIG EPA	82
115-008	0
115-008 Dup	0
115-008 Spk	12.5
116-008	0
STD 100	34
BLK	

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Witnessed & Understood by me. Date

132 Project No. Book No. TITLE Cyanide (EPA) 10-1-86 000528

(Reported in comp.)

Sample	Peak Ht
BIK	
117-008	0
118-008	0
119-008	0
120-008	0
STD 100	33
BIK	
121-008	0
122-008	3.0
EW 4926	0
Sample X	6.0 (← omit)
STD 100	32.5
BIK	

Witnesses Understood by me. Date Inventor Patricia M. Gudes Date

(Reported in computer)

① Prep of STD A: 10ml of CN, STOCK INTERMEDIATE qs to 100 w/ .25N NaOH

ml STD A	[CN]/ppb
5.0	250
4.0	200
3.0	150
2.0	100
1.0	50
10 ml 100ppb	10

② EPA used = DIG. EPA ⇒ WP-179 Conc #5 [CN] = 224ppb

③ Sensitivity = @ STD Cal = 1.0 AU = 38%
@ AU = 95% STD CAL = 3.7

④ Results:

Sample	Peak Ht
10	2.5
50	13.75
100	27.0
150	41.0
200	55.5
250	69.5
STD 100	28.0
BLK	
EPA	55.5
DIG BLK	0
DIG STD (85)	16.5
4999	0
5000	0
5001	0
5002	0
→ STD 85	17.

Sample	Peak Ht
STD 100	27.5
BLK.	
5003	0
5004	0
STD 100	27.5
BLK.	0
DIG BLK	0
DIG STD (85)	14.5
5117	0
5118	0
5118 Dup	0
5118 spk	14.
STD 100	27.5
BLK.	
5119	0
5120	0.5
5121	0.5
5122	0.5

134 Project No. 000530
Book No. TITLE TOTAL CN- EPA 10-2-86

From Page No.

Reported in computer

Sample	Peak Ht
STD 100	27.5
BLK.	
5123	0
STD 100	27.5
BLK.	
DIG BLK	0
DIG ~~STD~~ EPA	56
5135	0
5135 Dup	0
5135 Spk	3.0
5136	0
STD 100	27.
BLK.	
5137	0
5138	0
5139	0.5
STD 100	27.5
BLK.	
DIG BLK	0
DIG EPA	55
BATCH 510 - 687	0
- 687 Dup	0
- 687 Spk	1.0
- 688	0
STD 100	27.5
BLK 510 - 689	0
- 690	0
- 691	0
- 692	0

Sample	Peak Ht
STD 100	27.5
BLK 510 - 693	0
694	0
695	0
696	0
STD 100	27.5
510 - 697	0
STD 100	27.5
~~[illegible]~~ BLK	~~0~~
DIG BLK	0
DIG ~~STD~~ EPA	55
511 - 698	0
698 Dup	0
698 Spk	3.0
STD 100	27
BLK.	
DIG BLK	0
DIG EPA	54
BATCH 009 - 122	0
122 Dup	0
122 Spk	2.0
123	0
STD - 100	27.25
BLK 009 - 124	0
125	2.5
126	0
127	0
STD 100	27.5
BLK DIG STD 100 4999	27.5
DIG STD 100 5135	27.5

Witness Understood by me. Date Invented by Patricia M. Gadus Date

Digestion & Percent Solids Data

Client DEP
Case # J6
QC Batch # 008

Date Received

Digestion
ICP or AA (circle one)
Soil or Water (circle one)
EP Tox or F&P (circle one)

Date Digestive Process completed 20 Oct 86

Digestive appearance

Texture	coloration	clarity	Nanco sample #	wt. vol. of sample	Fin. Vol.	Post digestive app. coloration
	Flotations	clear	J6-0115	100ml	100ml	white
	Flotations	opaque	0116			white
	Flotations	clear	0117			white
	Flotations	clear	0118			
	Flotations	opaque	0119			white
		clear	0120			white
		clear	0121			white
		clear	WW 5297			white
	Flotations	opaque	EW 5220			white
		clear	5222			white
	Flotations	clear	GW 5260			
		Clear	5261			
	Flotations	clear	4580			
orange		Opaque	PW 4796			
			Blank DI			
			Dup 0115			white
			Reg. Spk. 0117			white

J.R

Client _____

Case # _____

QC Batch # _____

Date Received _____

Digestion

ICP or AA (circle one)

Soil or Water (circle one)

EP Tox or F&P (circle one)

Date Digestive Process completed 7 Oct. 86

Pre Digestive appearance

Texture	coloration	clarity	Nanco sample #	wt. vol. of sample	Fin. Vol.	Post digestive app. coloration
			JG-0122	1g	200ml	clear
			0123			tan
			0124			clear
			0125			clear
			0126			clear
			0127			clear
			SS 5205			clear
			5206			clear
			Blank B	100ml		white
			Dup 0122	1g		clear
			Reg Spk .0122			clear

JG - 009

fine
med. -
coarse

000534

	texture	color	artifacts
0122	med (sandy)	BR	—
0123	med. (watery sandy)	BR/BK	—
124	med. lumpy	BR	—
125	med (lumpy med)	BK	—
126	coarse (watery, stones) med, watery	BR	—
127	med (sandy watery)	DK brn.	—

SS 5205
5206

000535

Client JG DEP

Case # JG

QC Batch # 009

Digestion

ICP or AA (circle one)

Soil or Water (circle one)

EP Tox or F&P (circle one)

Date Received _____

Date Digestive Process completed 7/8/86

Pre Digestive appearance

texture	coloration	clarity	Nanco sample #	wt. vol. of sample	Fin. Vol.	Post digestive app. coloration
			JG-0122	1g	200ml	yellow
			0123			yellow
			0124			yellow
			0125			yellow
			0126			clear
			0127			clear
			SS 5205			yellow
			5206			yellow
			Blank DI	100ml		white
			Dup 0122	1g		yellow
			Reg. Spk. 0122			yellow
			Ag Spk 0122			yellow
			Sb Spk 0122			yellow

000536

001452

9/29/86 4g m-Sln[illegible]

ml-100 & g

1	EPA	100ml
2	Cal-BK.	100ml
3	cont-CAl	100ml
4	PRep-Blk 007	100ml
5	Lcs Dep.007	100ml
6	Lcs Dep 008	100ml
7	Lcs Dep 009	100ml
8	Lcs EW	100ml
9	PRep-Blk 008	100ml
10	PRep-Blk 009	100ml
11	PRep-Blk EW	100ml
12	CAl-Blk	100ml
13	cont-CAl	100ml
14	JG 100	100ml
15	JG 100 Dup	100ml
16	JG 100 spk	100ml
[illegible]	JG 101	100ml
18	JG 102	100ml
19	JG 103	100ml
20	JG 104	100ml
21	JG 105	100ml
22	JG 106	100ml
23	CAl-Blk	100ml
24	cont-CAl	100ml
25	JG 107	100ml
26	JG 108	100ml
27	JG 109	100ml

ml-100 & g

28	JG 110	100ml
29	JG 111	100ml
30	JG 112	100ml
31	JG 113	100ml
32	JG 114	100ml
33	JG 115	100ml
34	JG 115 Dup	100ml
35	CAl-Blk	100ml
36	cont-CAl	100ml
37	JG 115 spk	100ml
38	JG 116	100ml
39	JG 117	100ml
40	JG 118	100ml
41	JG 119	100ml
42	JG 120	100ml
43	JG 121	100ml
44	JG 122	100ml
45	JG 123 Dup	100ml
46	CAl-Blk	100ml
47	cont-CAl	100ml
48	JG 123	100ml
49	JG 123 spk	100ml
50	JG 124	100ml
51	JG 125	100ml
52	JG 126	100ml
53	JG 127	100ml
54	EW 5135 ~~JG 128~~	100ml

Project No.

146 No. TITLE

From Page No. 10/18 PHENOLS P. Turner

STD	SAMPLE	D.I	TOT. VOL
BLK		100+10 ML	100 ML
J6-0117-008	100 ML	20 ML	
J6-0117-008 DUP		320 ML	
J6-0117-008 SPK			
J6-0118-008			
J6-0115-008			
J[illegible]0119-008			
STD		120 ML	

10/20 PHENOLS P. Turner

STD	SAMPLE	D.I.	TOT. VOL
5135	100 MLS	100+ 10 MLS	100 MLS
5135 DUP		10 MLS	
5135 SPK			
5138			
5139			

*1 ML. OF ~~100 PPB~~ 10 PPM mM ADDED

To Page

Witnessed & Understood by me, Date Invented by Date

From Page No. 9/23 P. Turner

		SAMPLE	D.I
BLK			150 ML
4914 DUP		100 ML	50
4979			
4979 DUP	☆ NOT ENOUGH SAMPLES	50 ML	50 ML
4980		100	50
4980 SPK ☆	☆ NOT ENOUGH SAMPLE	50 ML	50 ML
STD			150 ML
4991 DUP		100 ML	50
4991 SPK ☆			150 ML
4992		100 ML	50
4993			
4994			
4995			
4996			
4997	DID NOT RUN		
4998			

9/24 D. Turn

		SAMPLE	D.I
BLK			150 ML
STD ☆			150 ML
EW 4999		100 ML	50 ML
5000			
5001			
5002			
5003			
5004			
EW 5135			
5135 DUP			
5135 SPK ☆			
5136			
5137			
5138			
5139			

☆

To Page No.

Witnessed & Understood by me. Date Invented by Date

Page No. 9/29 PHENOLS P. Turner

	SAMPLE	D.I	TOT. VOL
D		150 ML	100ML
K			
5118 SPK	100ML	50 ML	
5118 DUP			
5118			
5119			
5120			
51[illegible]			
122			
5123			
124			
5125			

/30 PHENOLS P. Turner

	SAMPLE	D.I	TOT. VOL
K		150 ML	100 ML
D			
5117	100ML	50 ML	
5126			
127			
5128			
5129			
51[illegible]			
51[illegible]			
115-008			
115-008 DUP			
115-008 SPK			
116			
117			
118			
119			

Project No.

Book No.

000540

10/2 PHENOLS P. Turner

	SAMPLE	D.I	TOT. VOL
STD ★		150 ML	100 ML
BLK			
J6-0120-008	100 ML	50 ML	
J6-0121-008			

10/3 PHENOLS

	SAMPLE	D.I	TOT. VOL
STD ★			
BLK			
J6-0122-009 DUP			
J6-0122-009 SPK ★			

10/8 PHENOLS P. Turner

	SAMPLE	D.I.	TOT. VOL
BLK		150 ML	100 ML
STD			
J6-0122-009	10 gr		
J6-0123-009			
J6-0124-009			
J6-0125-009			
J6-0126-009			
J6-0127-009			

10/9 PHENOLS P. Turner

	SAMPLE	D.I.	TOT. VOL
STD			
STD			
EW5118 SPK			
EW5122			

★

Witnessed & Understood by me | Date

From Page No. 9/30 CN P. Turner

	SAMPLE	D.I	TOT VOL
BLK		500 ML	100 ML
STD ✱			
EPA	100 ML	400 ML	
EW 5124			
5125			
5126			
5127			
5128			
5129			
5130			
5131			
J6 0116-008			
0117-008			
0115			
0115 DUP			
0115 SPK ✱			
0118-008			
0119-008			
0120-008			
0121-008			

10/1 CN P. Turner

	SAMPLE	D.I	TOT. VOL
BLK		500 ML	100 ML
STD ✱			
4926	10 gr.		
J6-0122-009			
J6-0122-009 DUP			
J6-0122-009 SPK ✱ (RAN OUT HAVE TO RERUN)			
J6-0123-009			
J6-0124-009			
J6-0122-009 SPK ✱			
J6-0125-009			
J6-0126-009			
J6-0127-009			

To Page No.

Witnessed & Understood by me. Date. Recorded by Date

✱ 2ML OF 5000 PPB ADDED

SAMPLE	WT OF Dish	WT OF Dish + SAMPLE	DRY WT		% Solids	
					MSPK	
J6-0122	1.9	11.9	10.5	1.4	14	86% ✓
J6-0123	1.9	11.9	9.7	2.2	22	78% ✓
J6-0124	2.0	12.0	9.8	2.2	22	78% ✓
J6-0125	1.9	11.9	6.9	5.0	50	50% ✓
J6-0126	1.8	11.8	9.1	2.7	27	73% ✓
J6-0127	2.0	12.0	9.7	2.3	23	77% ✓

000542