

FIGURE 10:

POTASSIUM FREE CATALYST/INTERMITTENT K-LAURATE ADDITION
 (K-LAURATE 0.03g / 10g 50:50(W) HEPTANE : ISOPROPANOL)

PLI 700B RUN 46 H₂:CO (M) feed=0.7, 1100 rpm. (VZ---->2/7/82).
 100g Fe : 125 C₂ : 172.7g CAT. In 280 g C₃₀ oil

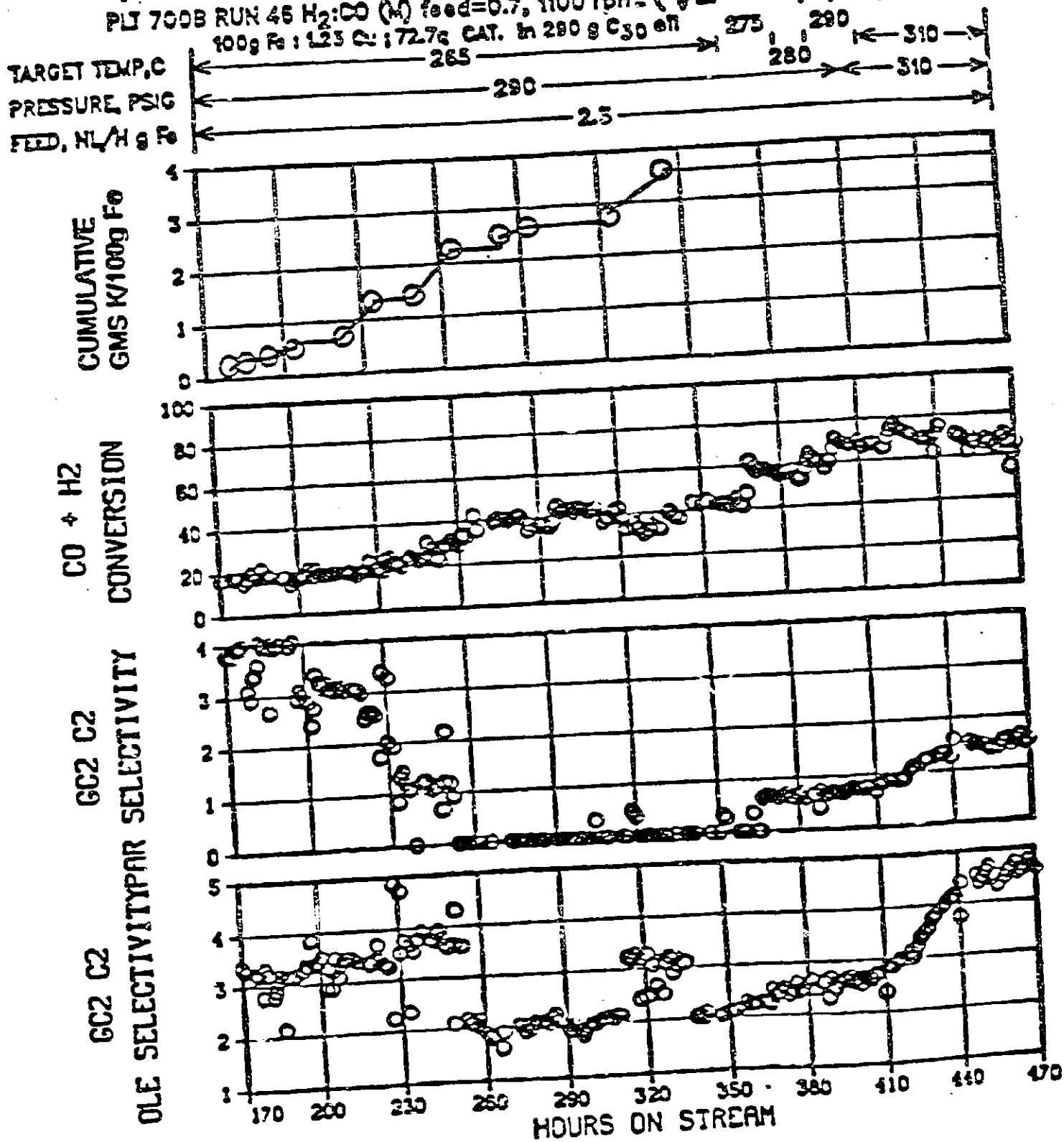
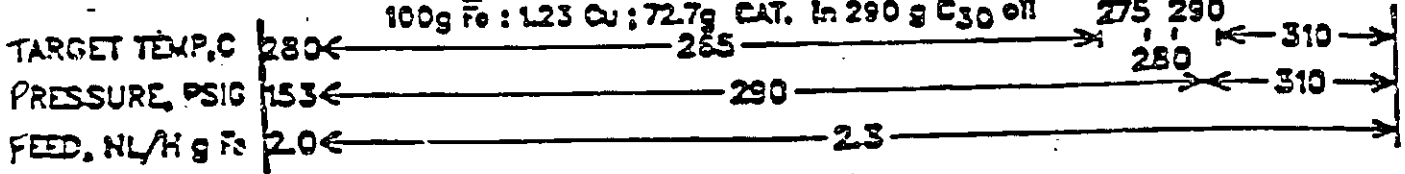


FIGURE 102

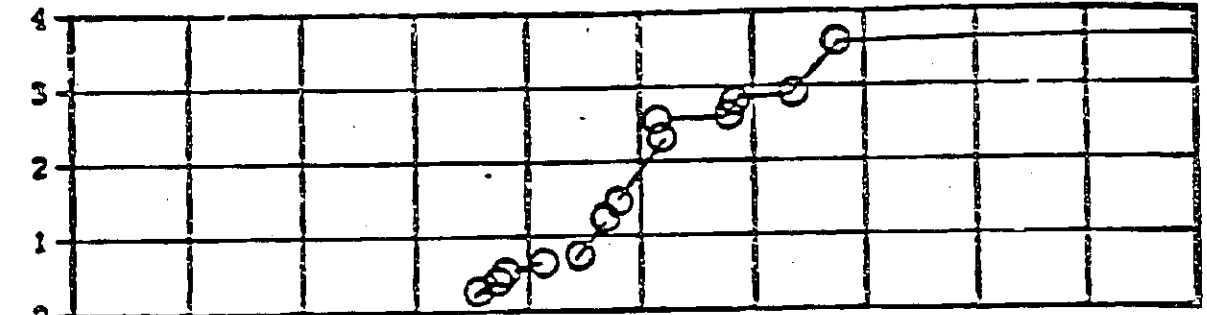
POTASSIUM FREE CATALYST/INTERMITTENT K-LAURATE ADDITION
 (K-LAURATE 0.03g / 10g 50:50(W) HEPTANE : ISOPROPANOL)

PLJ 700B RUN 46 H₂:CO (M) feed=0.7, 1100 rpm. (VZ--->2/17/92)

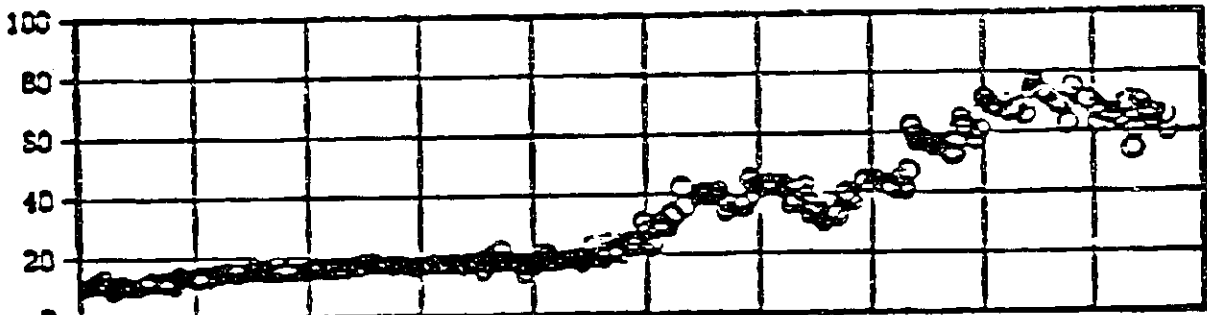
100g Fe : 1.23 Cu ; 72.7g CAT. In 290 g C₃₀ oil



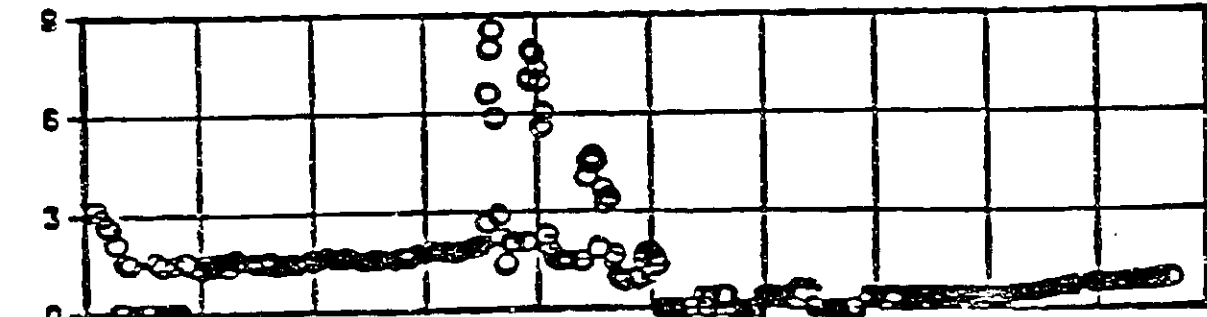
CUMULATIVE
GMS K/100g Fe



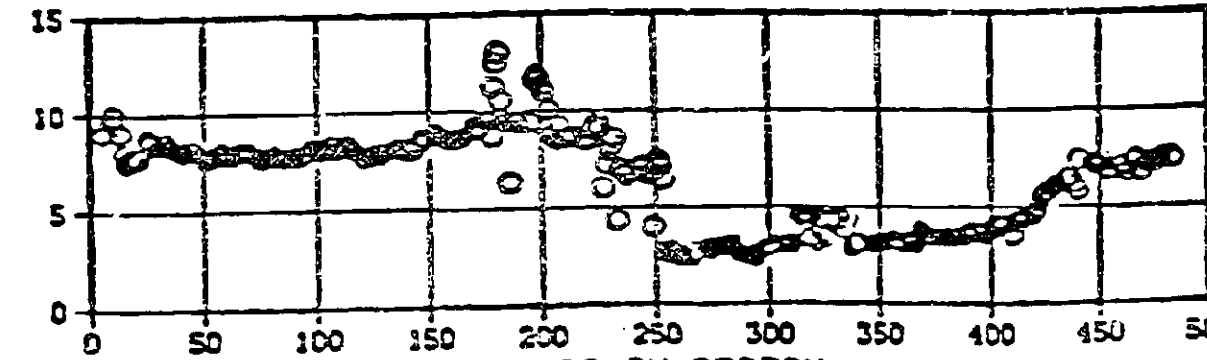
CO + H2
CONVERSION



GC2 C3
SELECTIVITY



GC2 C3
OLE SELECTIVITY



HOURS ON STREAM

FIGURE 103

POTASSIUM FREE CATALYST/INTERMITTENT K-LAURATE ADDITION
 (K-LAURATE 0.03g / 10g 50:50(W) HEPTANE : ISOPROPANOL)

PLI 700B RUN 46 H₂:CO (W) feed=0.7, 1100 rpm (VZT--->2/17/92)

100g Fe : 1.23 Cu : 72.7g CAT. In 290 g C₃₀ oil

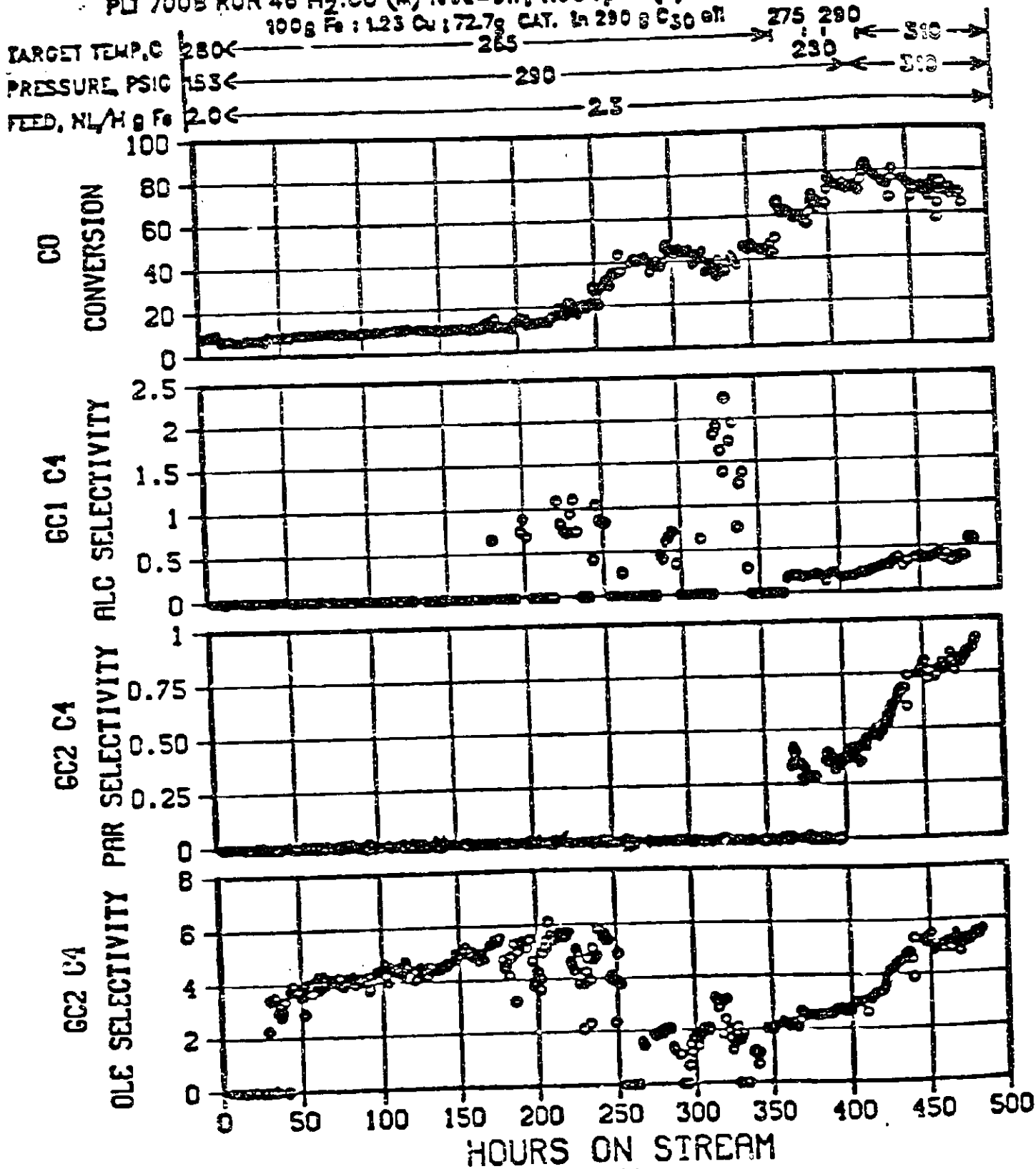
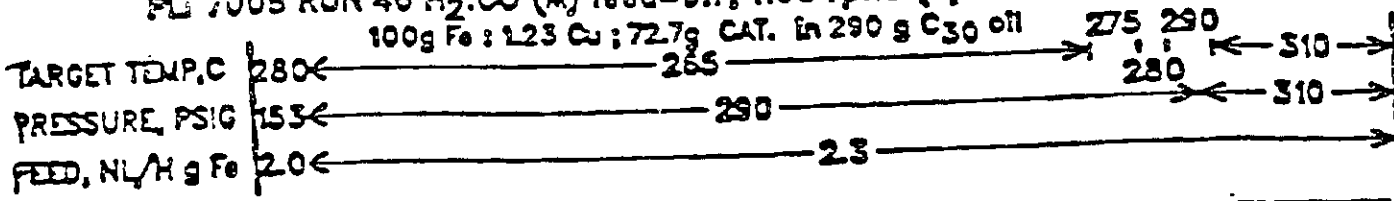
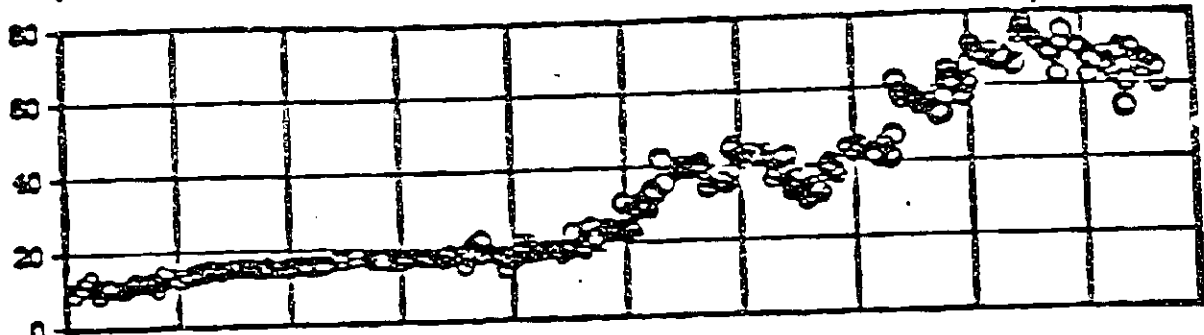


FIGURE 104

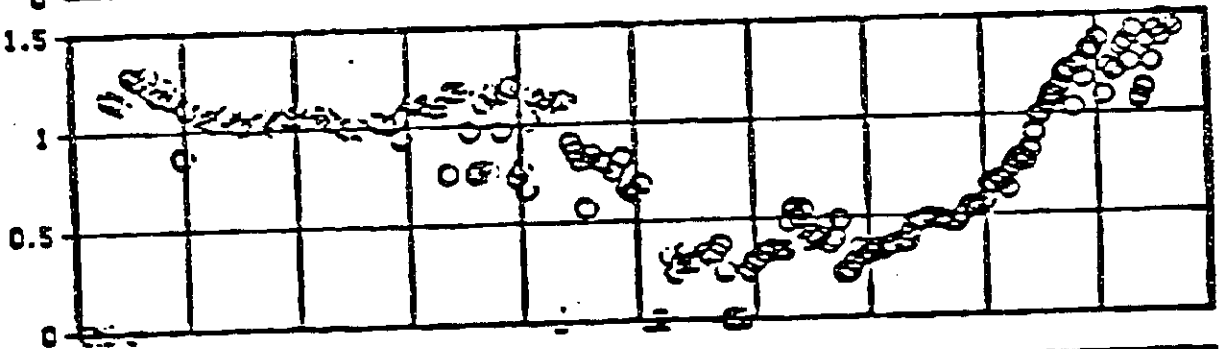
POTASSIUM FREE CATALYST/INTERMITTENT K-LAURATE ADDITION
 (K-LAURATE 0.03g / 10g 50:50(W) HEPTANE : ISOPROPANOL)
 PL 700B RUN 46 H₂:CO (W) feed=0.7, 1100 rpm. (✓✓--->2/17/92)
 100g Fe : 123 Cu : 72.7g CAT. in 290 g C₃₀ oil



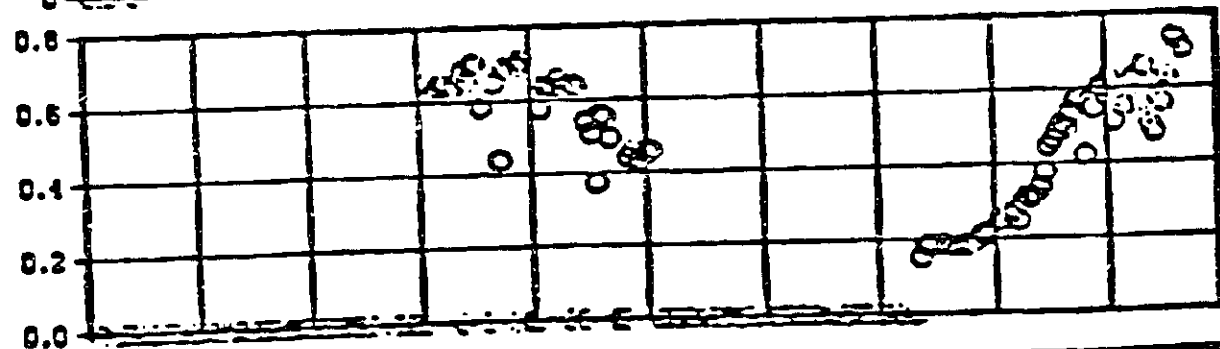
CO + H₂
CONVERSION



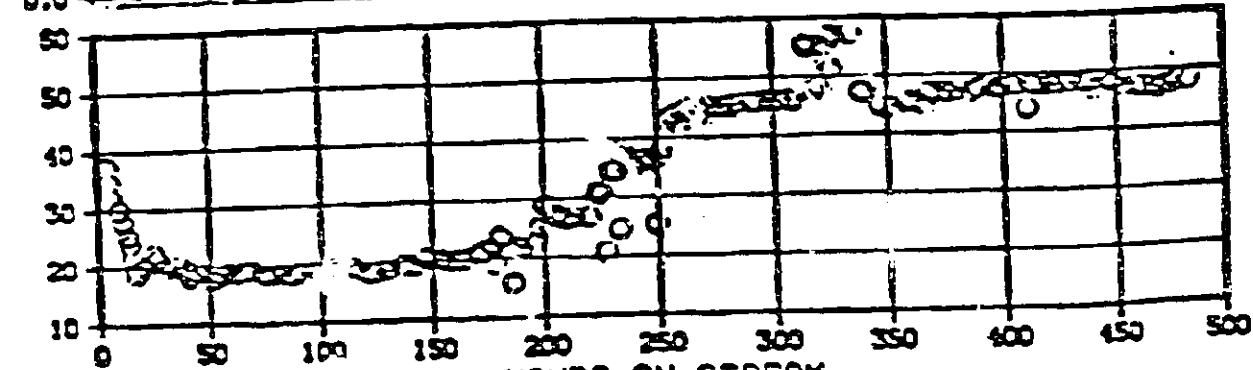
GC1 C2
SELECTIVITY



GC1 C3
SELECTIVITY



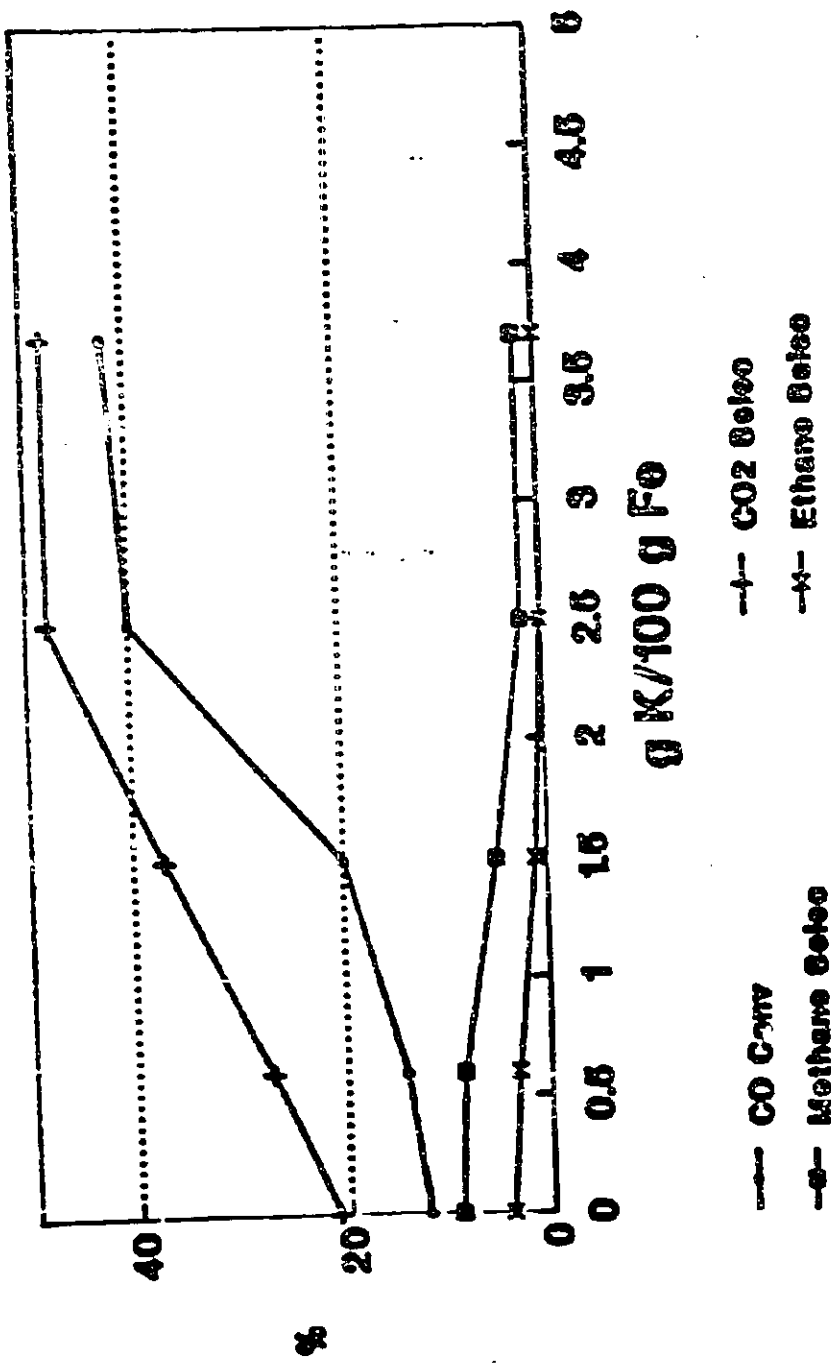
GC2
SELECTIVITY



HOURS ON STREAM

FIGURE 105

EFFECT OF K LEVEL ON CAT PERFORMANCE
 NO INITIAL K ON CATALYST
 K LAURATE ADDED DURING RUN



DATA AT 265 DEG C

FIGURE 106

PLT 700B RUN 49 INTERMITTENT CO-FEED POTASSIUM

72.7g 6827-17 in 290g C₃₀ oil

0.0405 wt% K-LAURATE in 50/50 IPA/HEPTANE

⊙ PARTIAL SLURRY LOSS

TEMPERATURE, °C
 PRESSURE, psig
 FEED RATE, SCFH

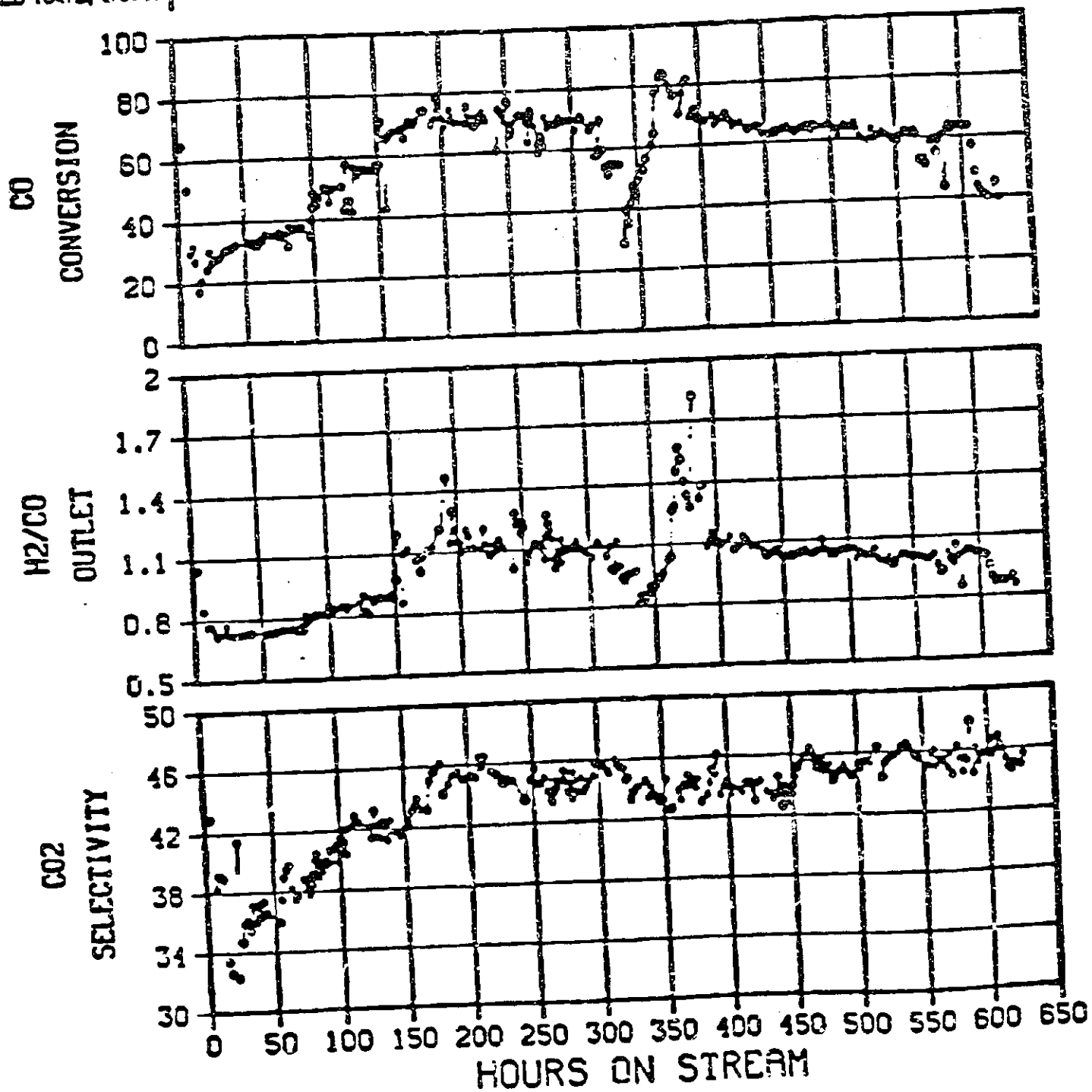
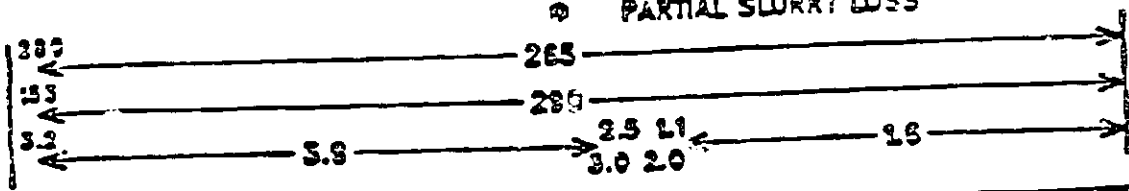


FIGURE 107

PLT 700B RUN 49 INTERMITTENT CO-FEED POTASSIUM
72.7g 6827-17 in 290g C₃₀ oil
0.0405 wt% K-LAURATE in 50/50 IPA/HEPTANE

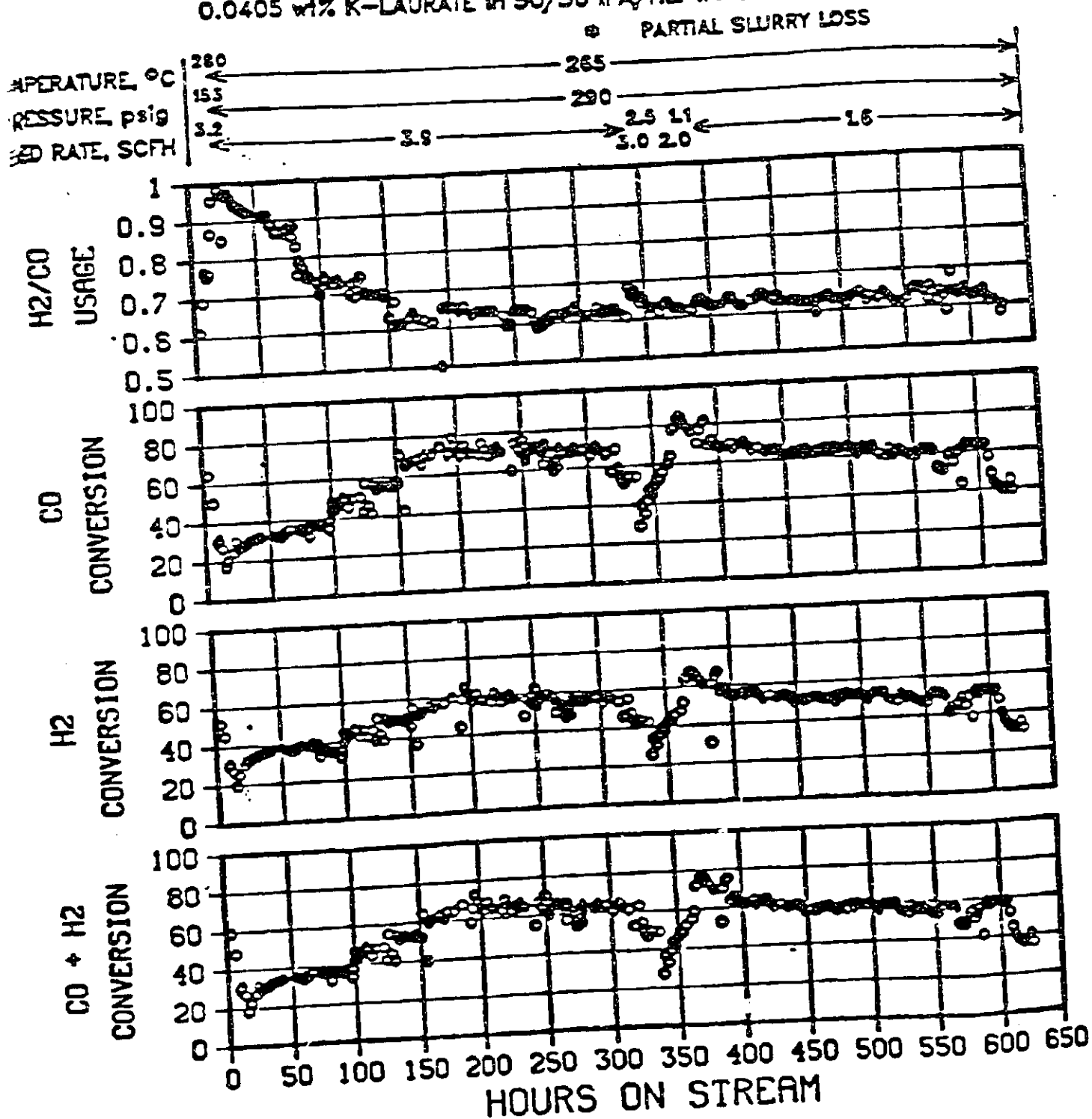


FIGURE 108

PLT 700B RUN 49 INTERMITTENT CO-FEED POTASSIUM
 72.7g 6827-17 in 290g C₃₀ oil
 0.0405 wt% K-LAURATE in 50/50 IPA/HEPTANE

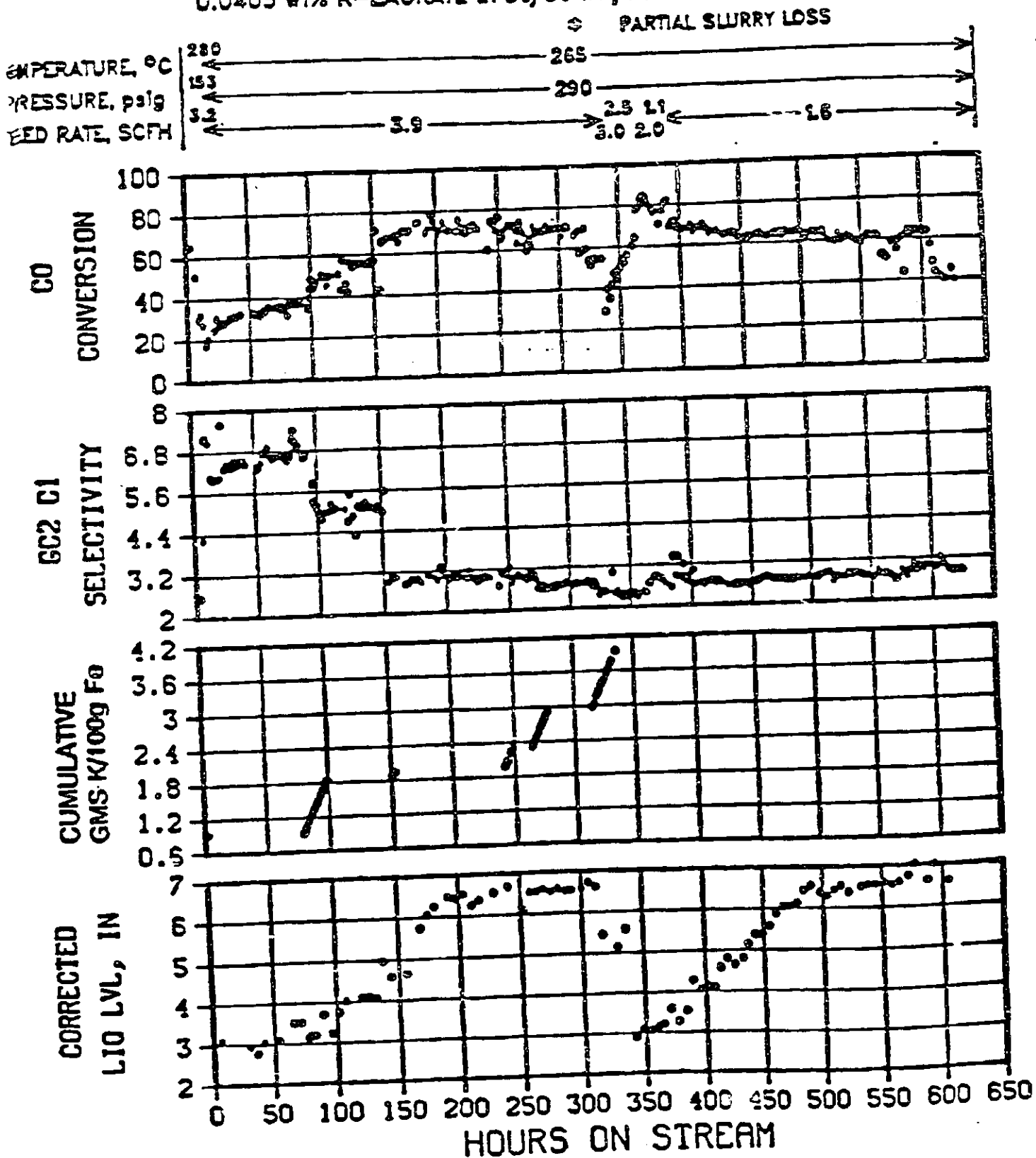


FIGURE 109

PLT 700B RUN 49 INTERMITTENT CO-FEED POTASSIUM
72.7g 6827-17 in 290g C30 oil
0.0405 wt% K-LAURATE in 50/50 IPA/HEPTANE

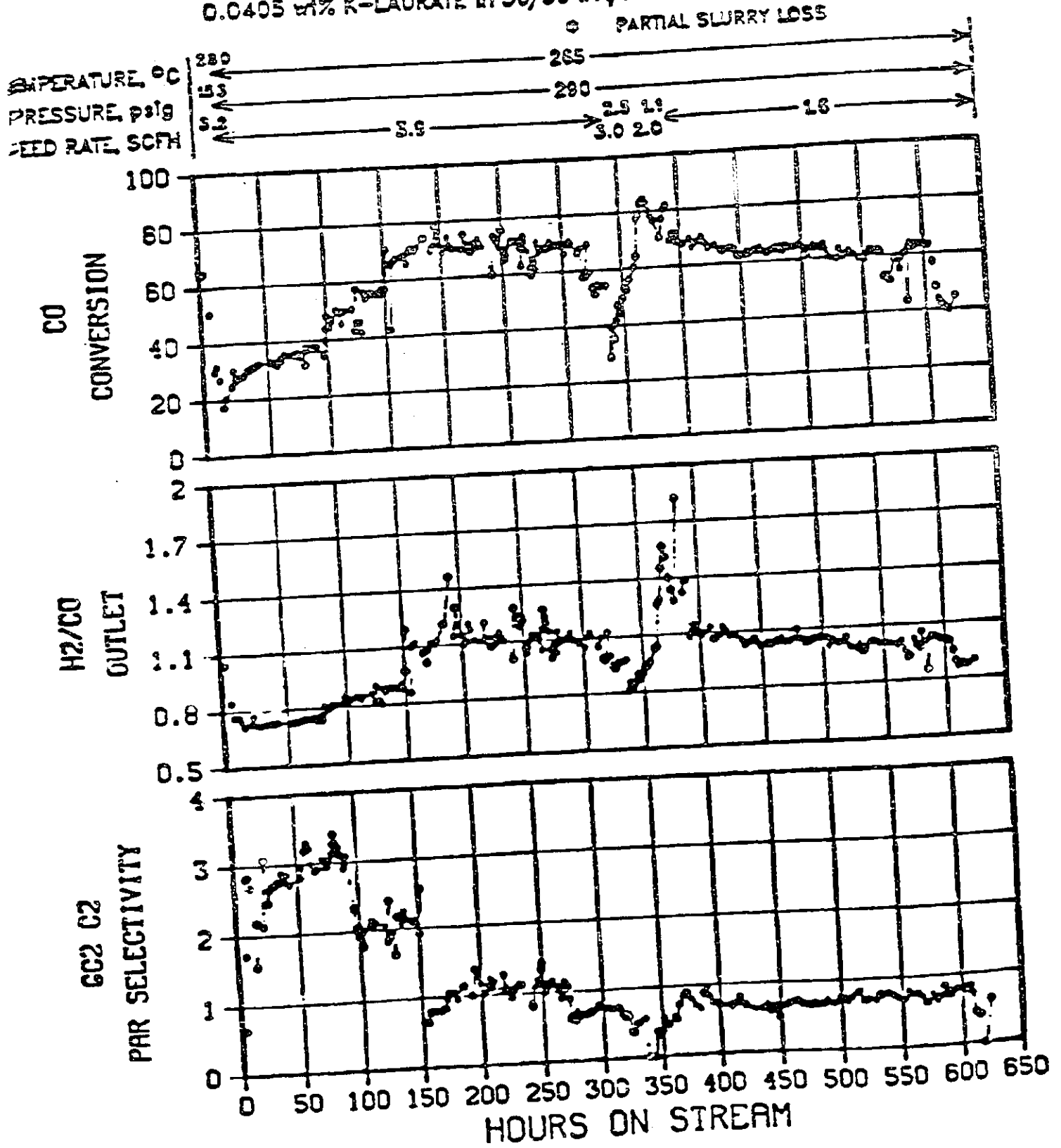


FIGURE 110

Effect of K Level on Cat Performance
Run 48

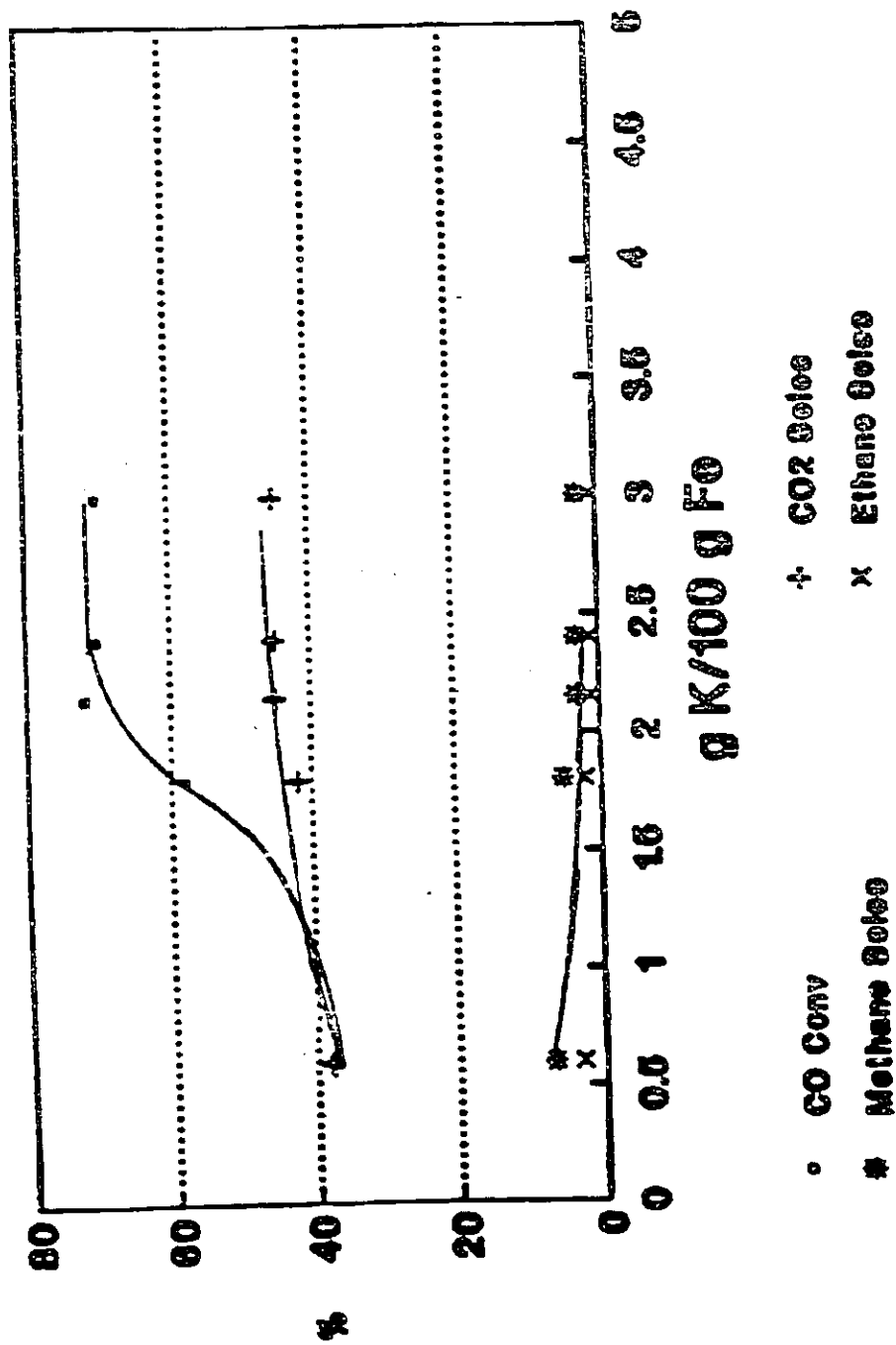


FIGURE 111

PLT 700B RUN 49 INTERMITTENT CO-FEED POTASSIUM
 72.7g 6827-17 in 290g C₃₀ oil
 0.0405 wt% K-LAURATE in 50/50 IPA/HEPTANE

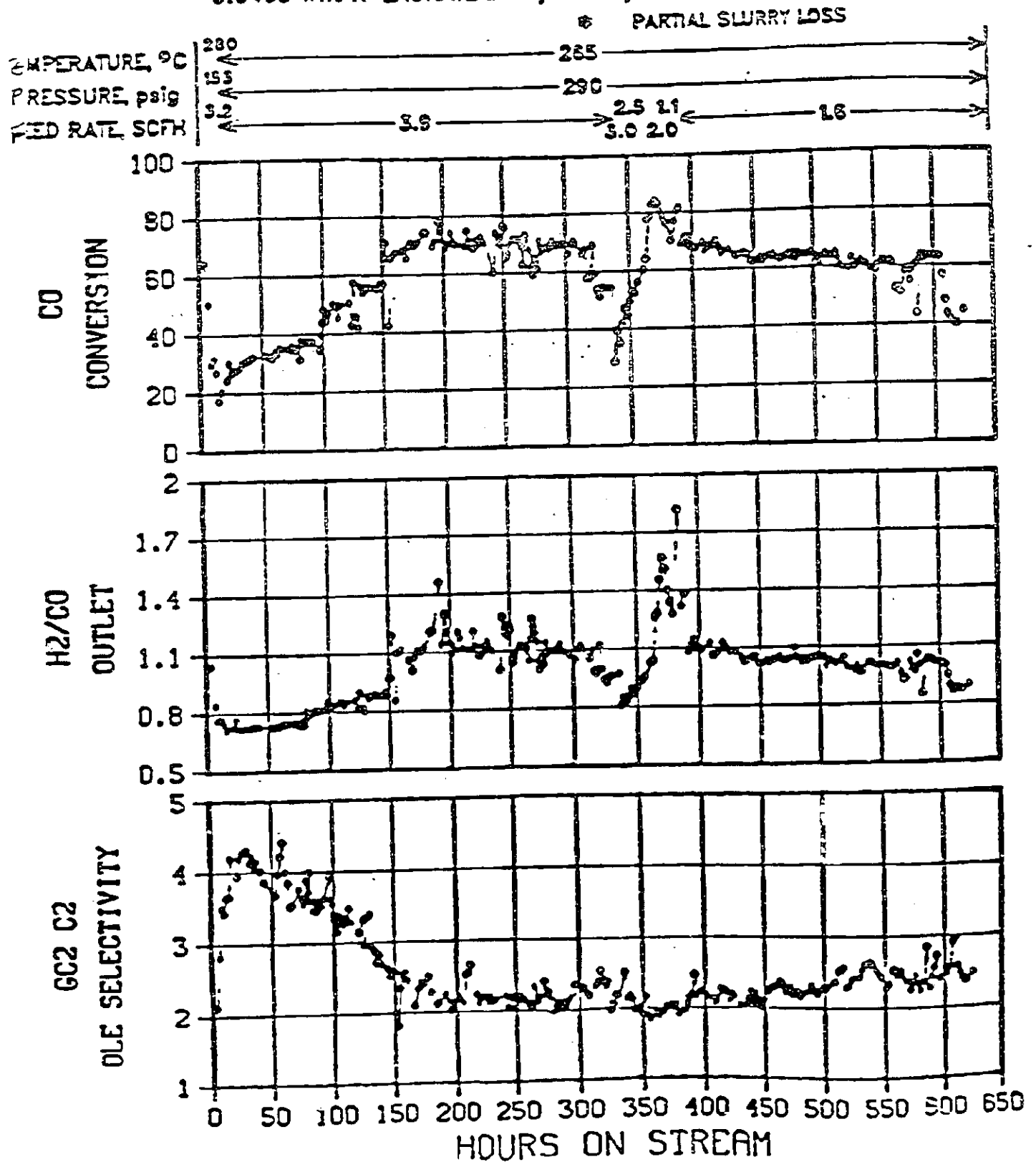


FIGURE 112

PLT 700B RUN 49 INTERMITTENT CO-FEED POTASSIUM
72.7g 6827-17 in 290g C₃₀ oil
0.0405 wt% K-LAURATE in 50/50 IPA/HEPTANE

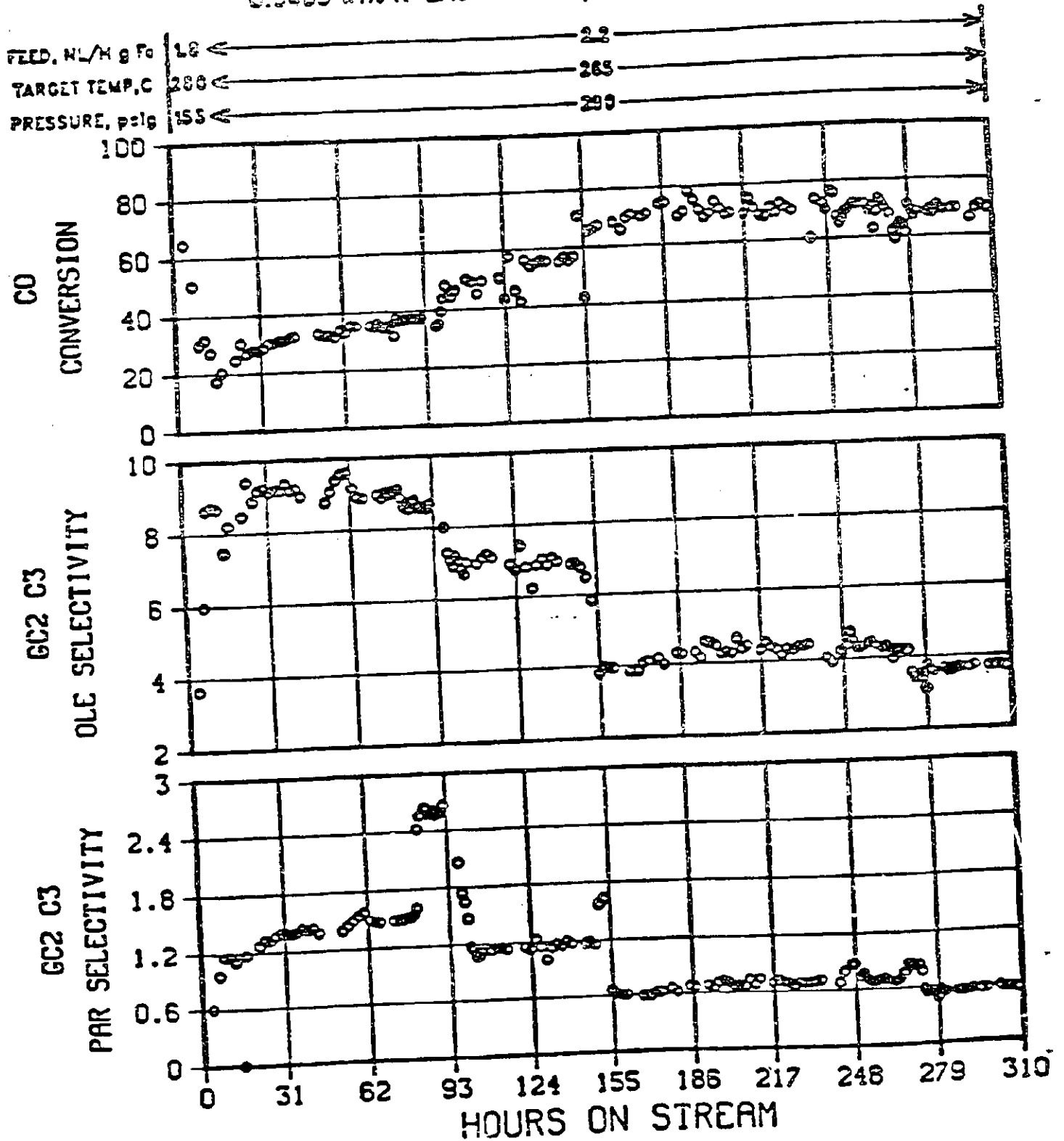


FIGURE 113

PLT 700B RUN 49 INTERMITTENT CO-FEED POTASSIUM
 72.7g 6827-17 in 290g C₃₀ oil
 0.0405 wt% K-LAURATE in 50/50 IPA/HEPTANE

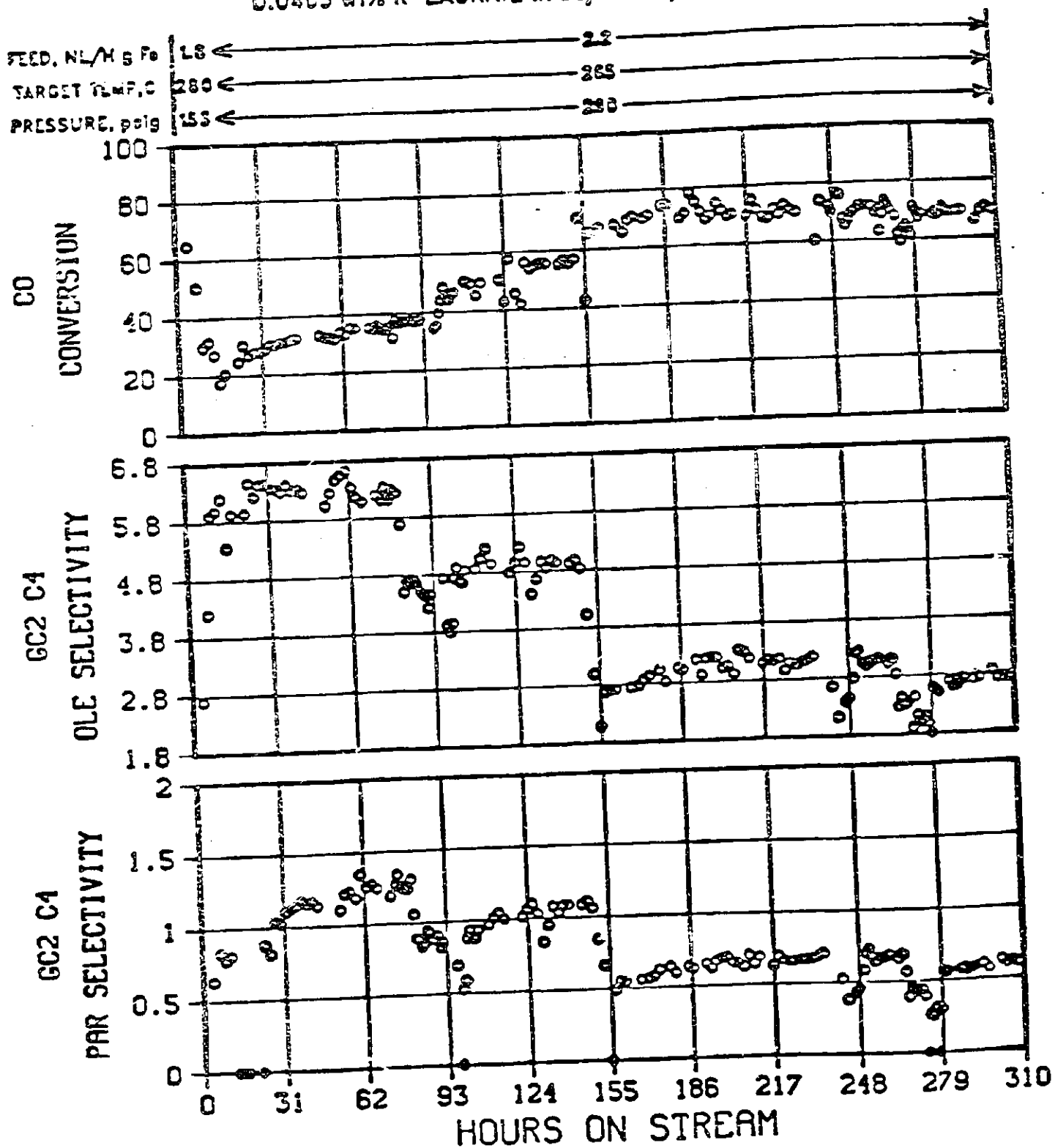


FIGURE 114

PRECIPITATED IRON CATALYST IN SLURRY AUTOCLAVE REACTOR

PLT 701 R-63 72.3g 6827-122 in 290g C₃₀ oil

H₂:CO in feed=0.7, 1100 rpm. 3/5-->3/17/93

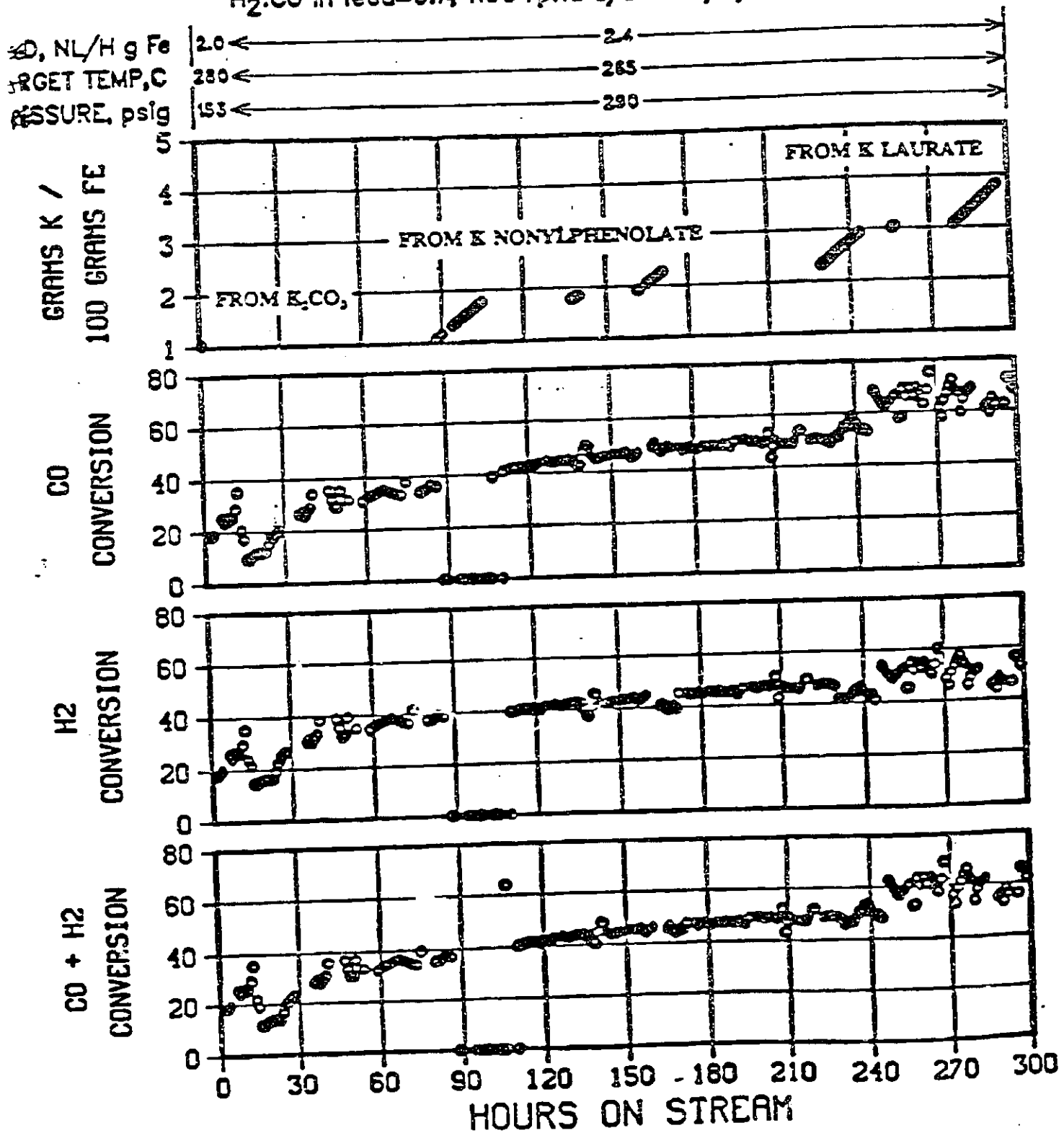


FIGURE 115

PRECIPITATED IRON CATALYST IN SLURRY AUTOCLAVE REACTOR

PLT 701 R-53 72.3g 6827-122 in 290g C₃₀ oil

H₂:CO in feed=0.7, 1100 rpm. 3/5-->3/7/93

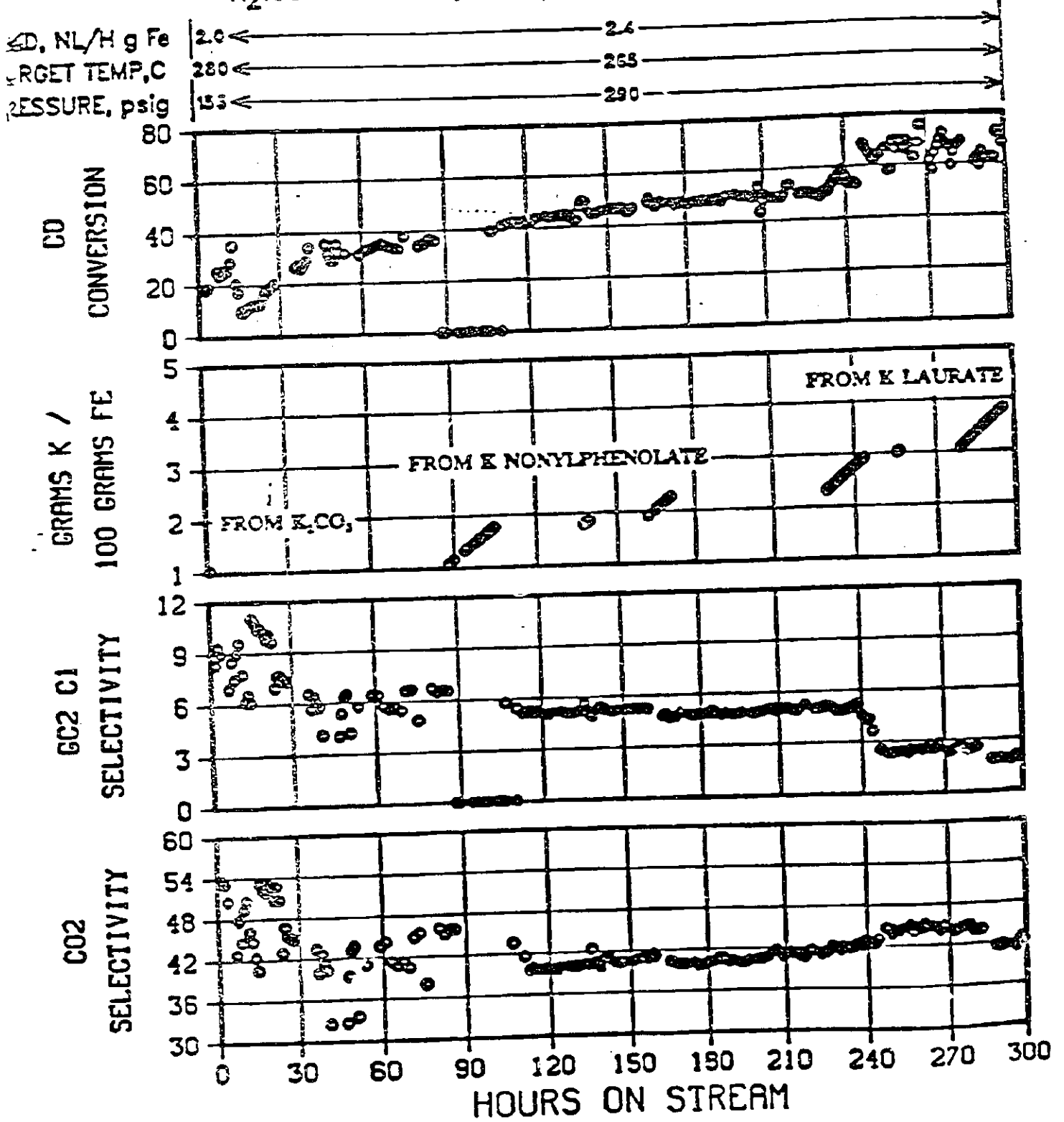


FIGURE 116

PRECIPITATED IRON CATALYST IN SLURRY AUTOCLAVE REACTOR

PLT 701 R-63 72.3g 6827-122 in 290g C₃₀ oil

H₂:CO in feed=0.7, 1100 rpm. 3/5-->3/17/93

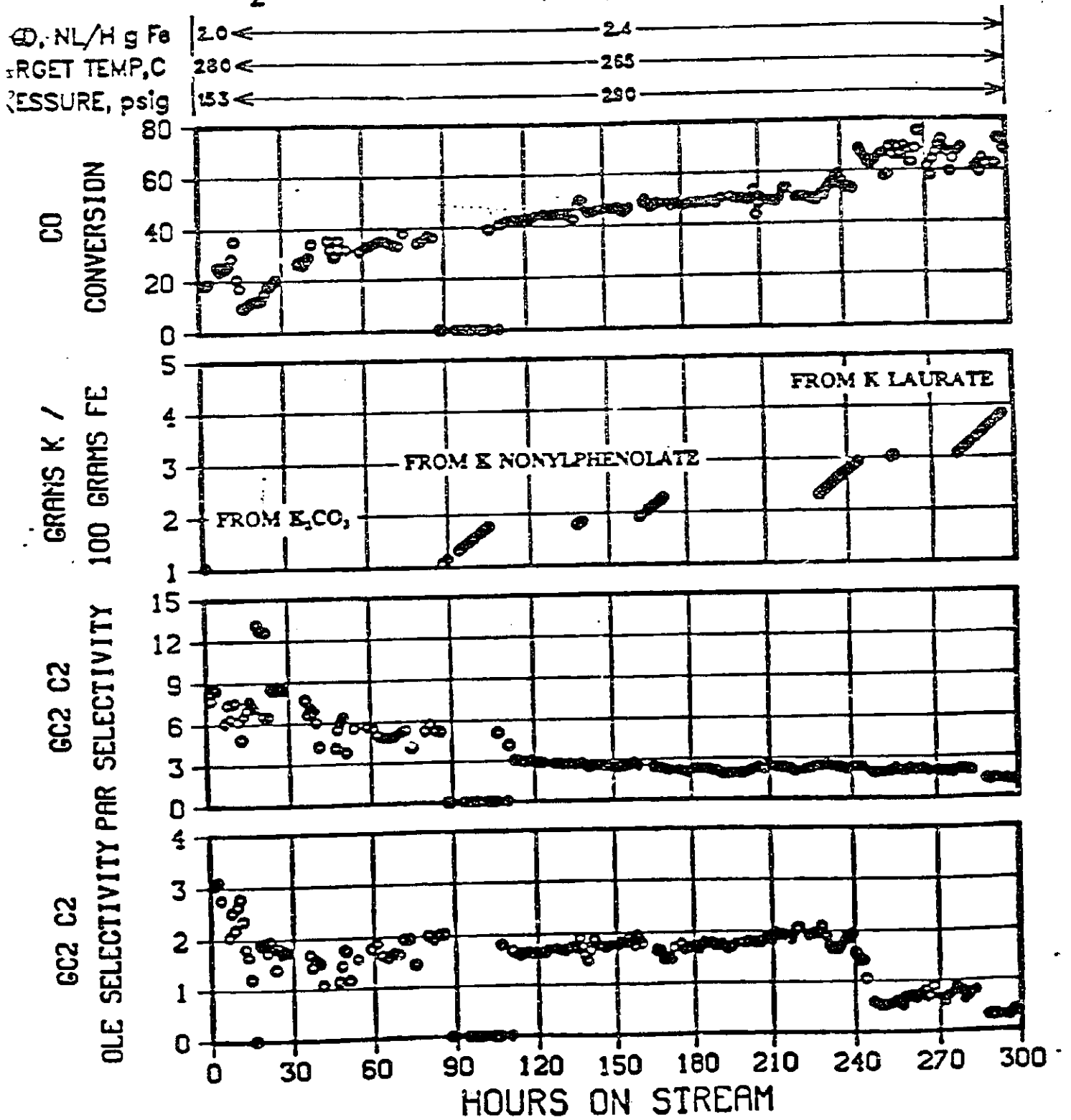


FIGURE 117

COMPARISON OF TWO ORGANO-POTASSIUM COMPOUNDS

RUN NO.	49		63
MODE OF K ADDITION	K ₂ CO ₃ + K LAURATE IN SOLUTION		K ₂ CO ₃ + K NONYLPHENOLATE IN SOLUTION
TOTAL K, g/100 g Fe	2.4	3.0	2.3
CO CONVERSION, %	70	70	50
SELECTIVITIES			
C ₁	3.1	2.7	5.0
C ₂	1.1	0.7	2.1
C ₃	2.1	2.1	1.0
C ₄	0.7	0.6	1.0
C ₅	4.2	3.8	6.0
C ₆	0.7	0.6	1.0
C ₇	3.0	2.8	5.0
OLEFIN/PARAFFIN RATIO			
C ₂ /C ₁	1.9	3.0	0.9
C ₃ /C ₂	6.0	6.3	6.0
C ₄ /C ₃	4.3	4.7	5.0

FIGURE 118

PRECIPITATED IRON CATALYST IN SLURRY AUTOCLAVE REACTOR

PLT 701 R-63 72.3g 6827-122 in 290g C₃₀ oil

H₂:CO In feed=0.7, 1100 rpm. 3/5-->3/17/93

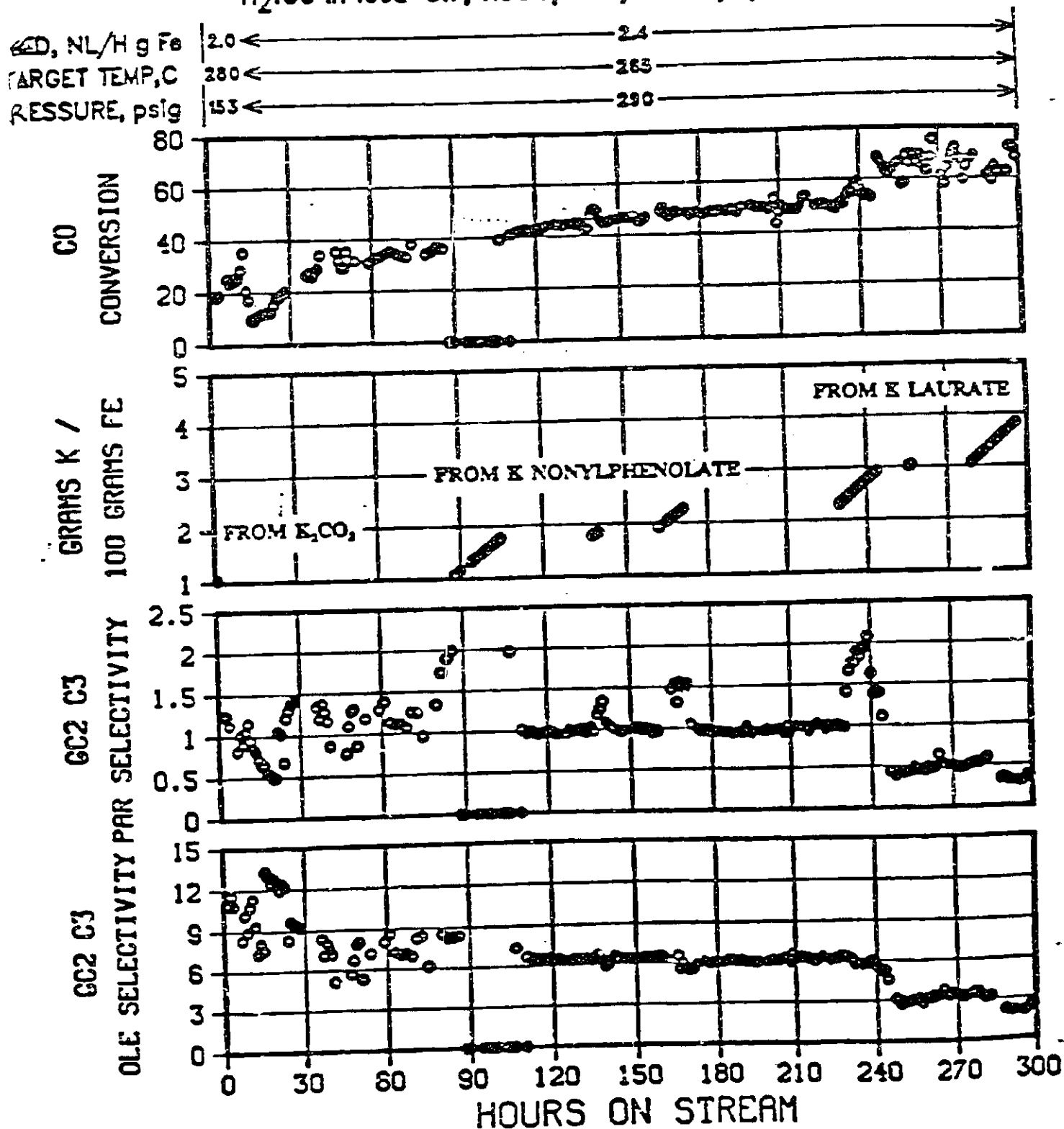


FIGURE 1:9

PRECIPITATED IRON CATALYST IN SLURRY AUTOCLAVE REACTOR

PLT 701 R-63 72.3g 6827-122 in 290g C₃₀ oil

H₂:CO in feed=0.7, 1100 rpm. 3/5-->3/17/93

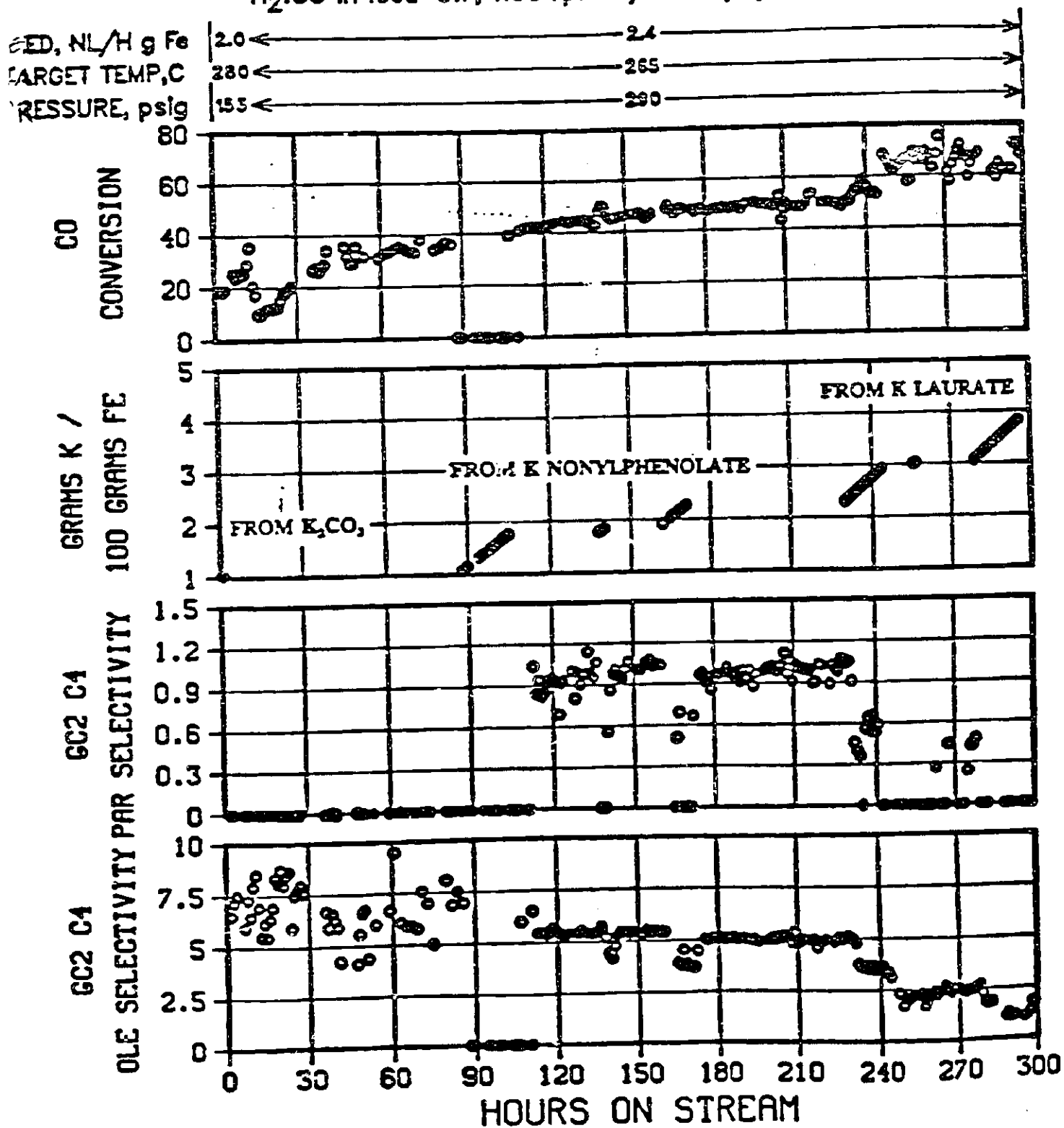


FIGURE 120

PRECIPITATED IRON CATALYST IN SLURRY AUTOCLAVE REACTOR

PLANT 701 R-65 25g 6827-108A in 290g C₃₀ oil

H₂:CO feed = 0.7, rpm=1100, 3/27-->4/1/93

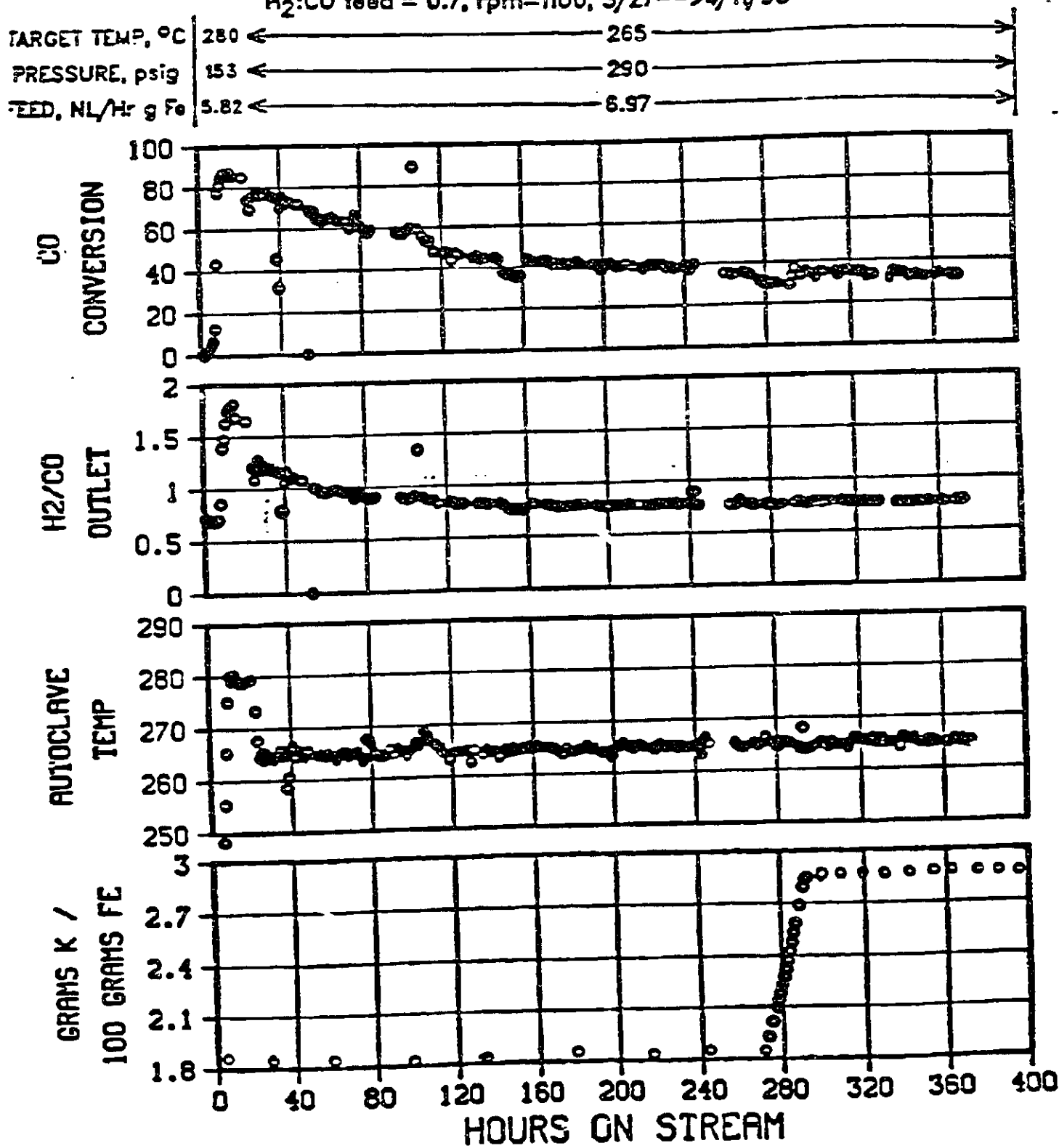


FIGURE 121

PRECIPITATED IRON CATALYST IN SLURRY AUTOCLAVE REACTOR

PLANT 701 R-65 25g 6827-108A in 290g C₃₀ oil

H₂:CO feed = 0.7, rpm=1100, 3/27-->4/1/93

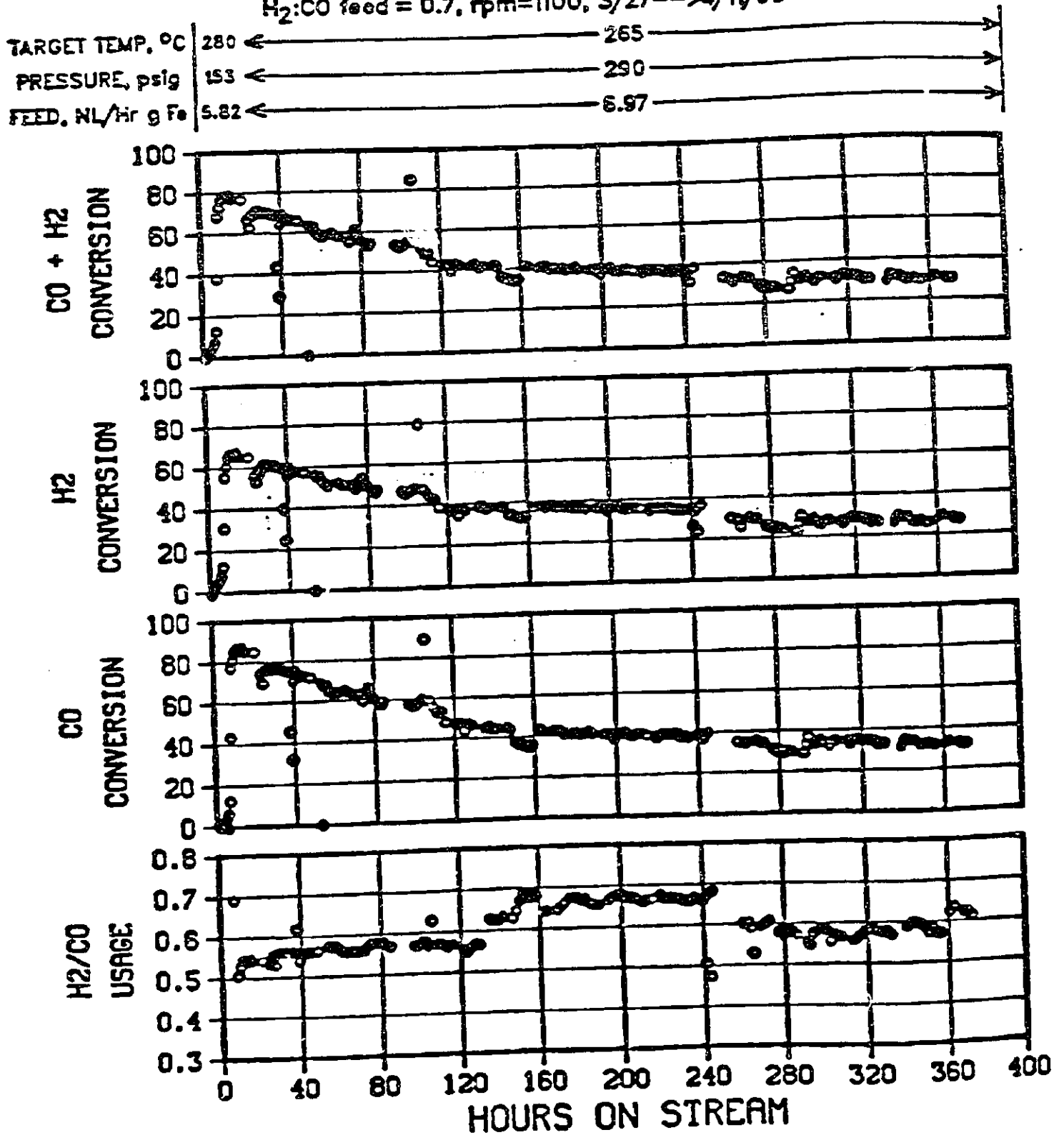


FIGURE 122

PRECIPITATED IRON CATALYST IN SLURRY AUTOCLAVE REACTOR

PLANT 701 R-65 25g 6827-108A in 290g C₃₀ oil

H₂:CO feed = 0.7, rpm=100, 3/27-->4/11/93

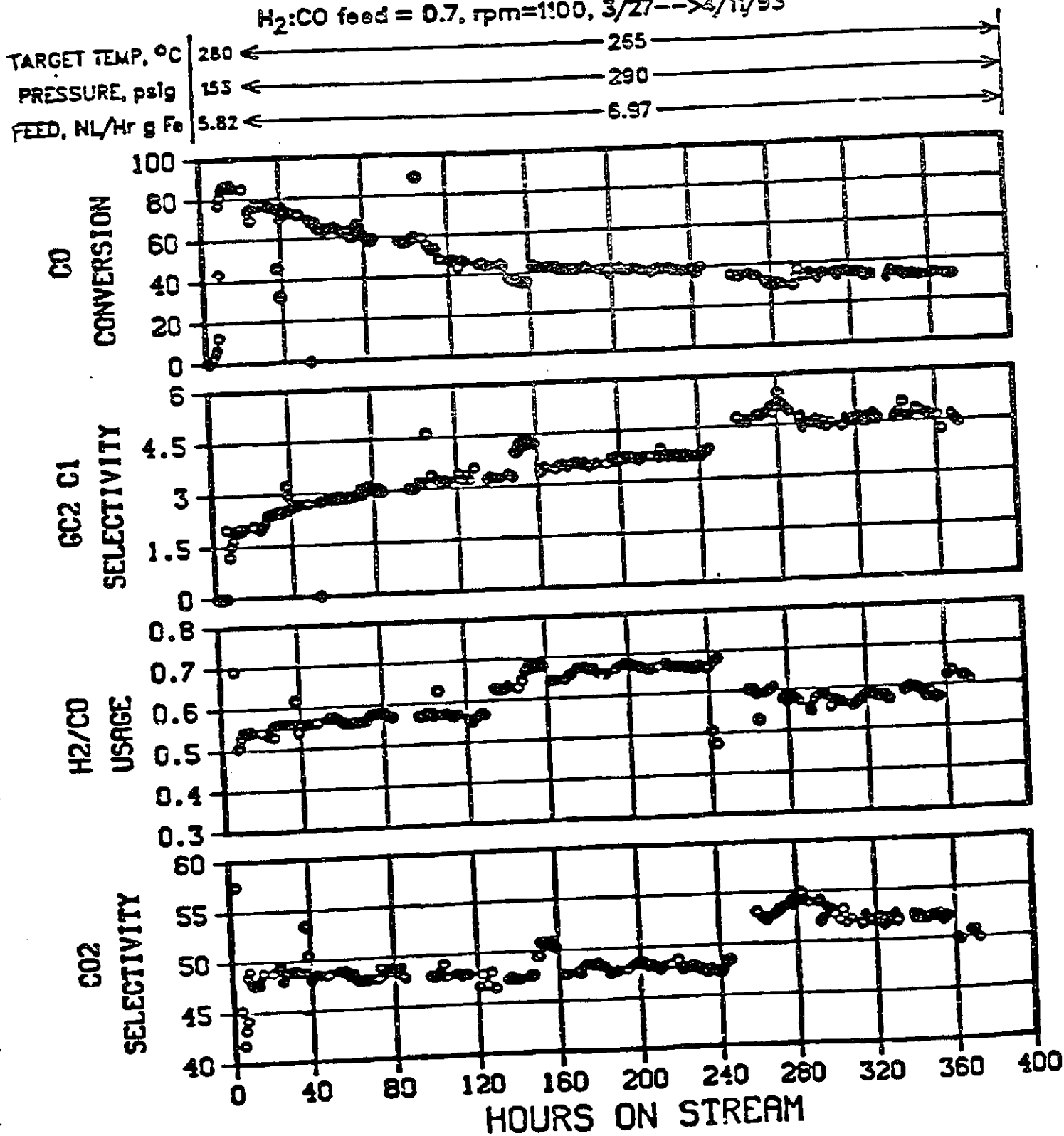


FIGURE 123

PRECIPITATED IRON CATALYST IN SLURRY AUTOCLAVE REACTOR

PLANT 701 R-55 25g 6827-108A in 290g C₃₀ oil

H₂:CO feed = 0.7, rpm=1100, 3/27-->4/1/93

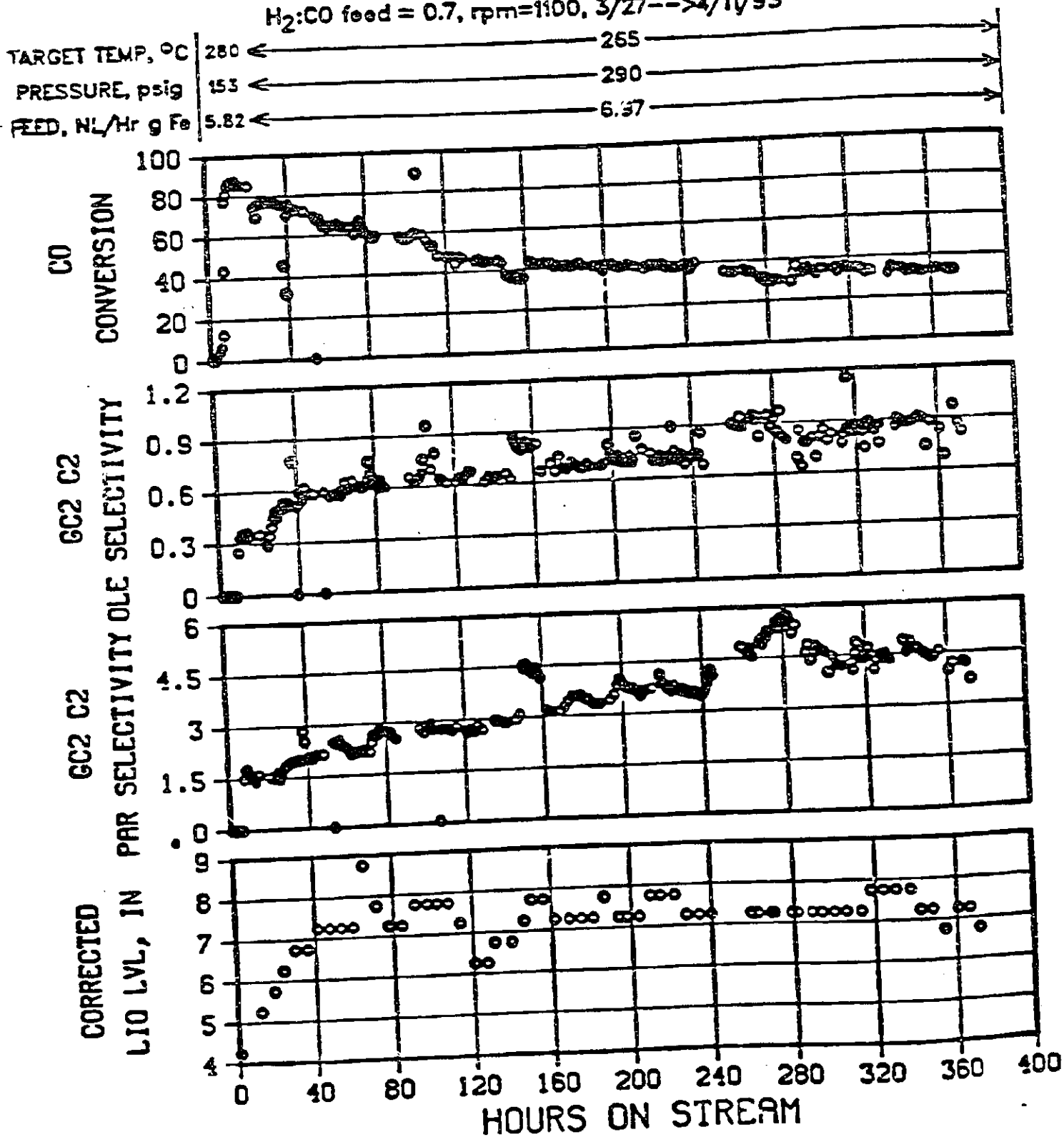


FIGURE 124

PRECIPITATED IRON CATALYST IN SLURRY AUTOCLAVE REACTOR

PLAN 701 R-65 25g 6827-108A in 290g C₃₀ oil

H₂:CO feed = 0.7, rpm=1100, 3/27-->4/1/93

TARGET TEMP, °C
PRESSURE, psig
FEED, NL/Hr g Fe

280 ← 265
153 ← 290
5.82 ← 6.97

GC2 C4
GC2 C4
GC2 C3
GC2 C3
PAR SELECTIVITY OLE
PAR SELECTIVITY OLE
PAR SELECTIVITY OLE
PAR SELECTIVITY OLE

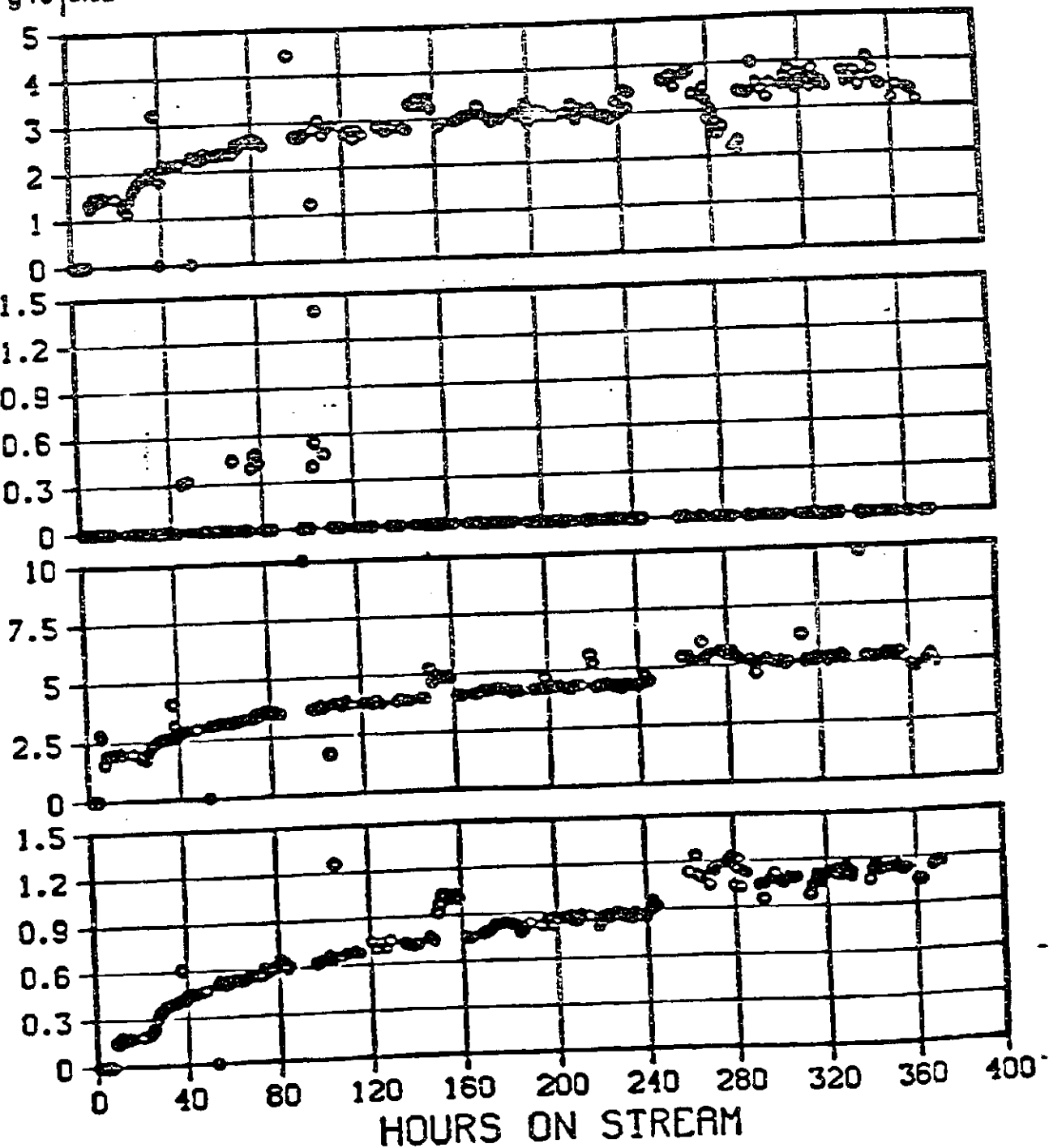


FIGURE 125

**PHYSICAL PROPERTIES OF DIFFERENT MESH RANGE IRON OXIDES AND
ONE FROM IRON/COPPER OXALATE DECOMPOSITION**

Fe/Cu OXIDES	MESH RANGE	METALS, WT%			BET	
		Fe	Cu	SI	SA, m ² /g	PV, cc/g
RUN 30, DIRECT	-140 + 400	65.5	2.1	N/A	97	0.47
RUN 30, DIRECT	-400	65.9	2.1	N/A	94	0.41
Fe/Cu OXALATE DECOMPOSITION	POWDER	62.7	2.8	N/A	206	0.10