



Instituto Tecnológico
GeoMinero de España

INFORME FINAL

PREVISION DEL DESPRENDIMIENTO
DE GRISU EN EXPLOTACIONES DE
CAPAS VERTICALES CON SUTIRAJE

ANEXOS 22-23

NOVIEMBRE, 1992



MINISTERIO DE INDUSTRIA, COMERCIO Y TURISMO



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ANEXO 22
MEDICIONES DE PRESIOMETRIA EN EL 5° SUBNIVEL

F I C H A D E M O D U L O S P R E S I O M E T R I C O S

S O N D E O : 1.00

F E C H A : 10/07/91

D A T O S G E N E R A L E S

E M P R E S A : HUNOSA

P L A N T A : 7.00

G R U P O : SAN NICOLAS

C A P A : 8.00

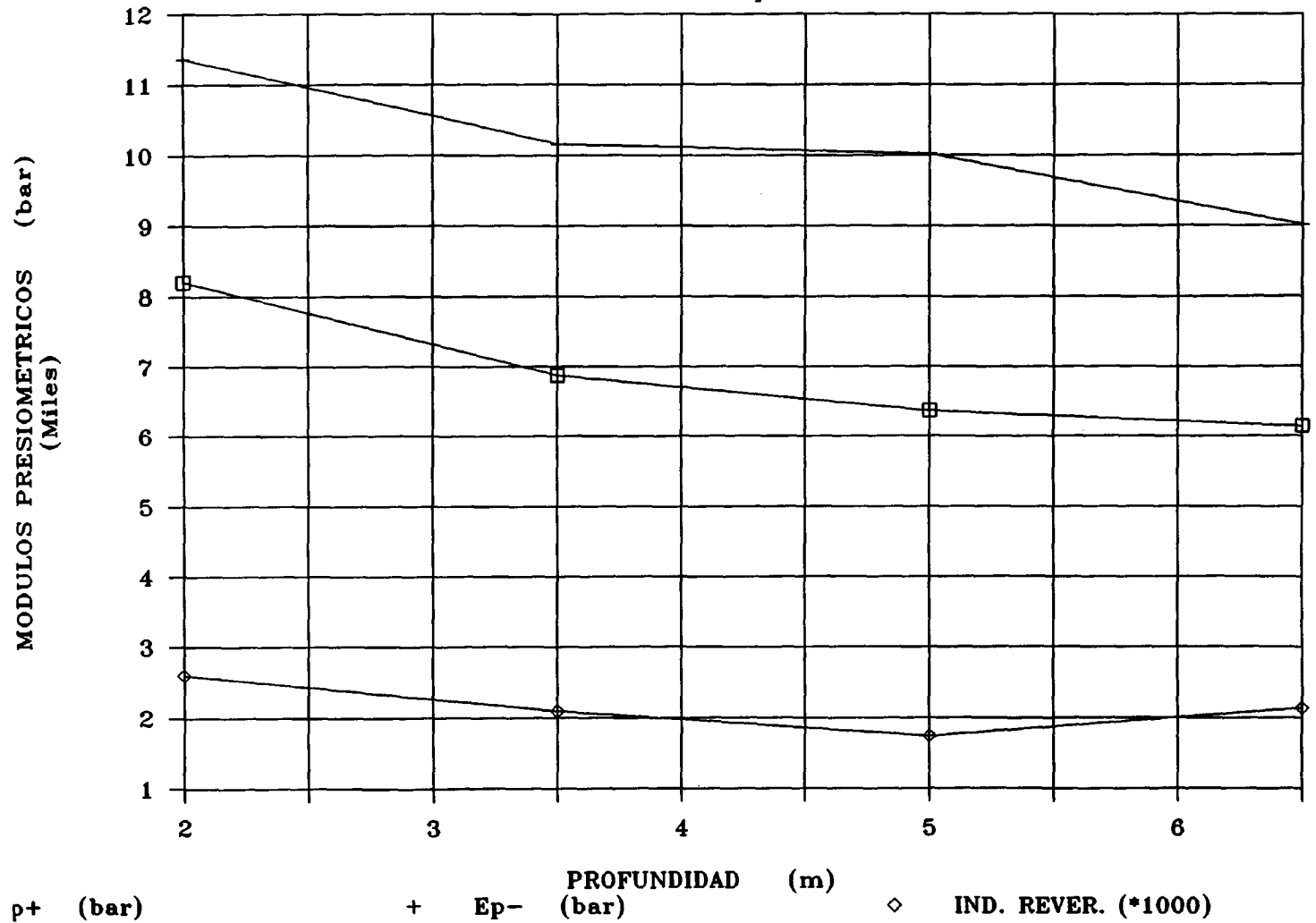
P O Z O : MONTSACRO

PROFUNDIDAD (m)	CURVA DE CARGA		CURVA DE DESCARGA		MODULOS PRESIOMETRICOS		INDICE DE REVERSIBILIDAD
	V1 (cm3)	V2 (cm3)	V1 (cm3)	V2 (cm3)	Ep+ (bar)	Ep- (bar)	
2.00	192.50	202.50	195.75	203.00	8205.00	11362.07	2.60
3.50	180.00	191.75	185.00	193.00	6876.60	10162.50	2.09
5.00	168.25	180.75	174.25	182.25	6370.00	10028.13	1.74
6.50	155.50	168.25	161.50	170.25	6145.10	9022.86	2.14

OBSERVACIONES: Sondeo realizado en un punto situado debajo del hundido del subnivel superior.

MODULOS PRESIOMETRICOS

Sondeo 1 Capa 8



FICHA DE MEDIDAS PRESIOMETRICAS

SONDEO : 1 PROF. MUESTRA (m) : 2.00 FECHA : 10-07-91

DATOS GENERALES

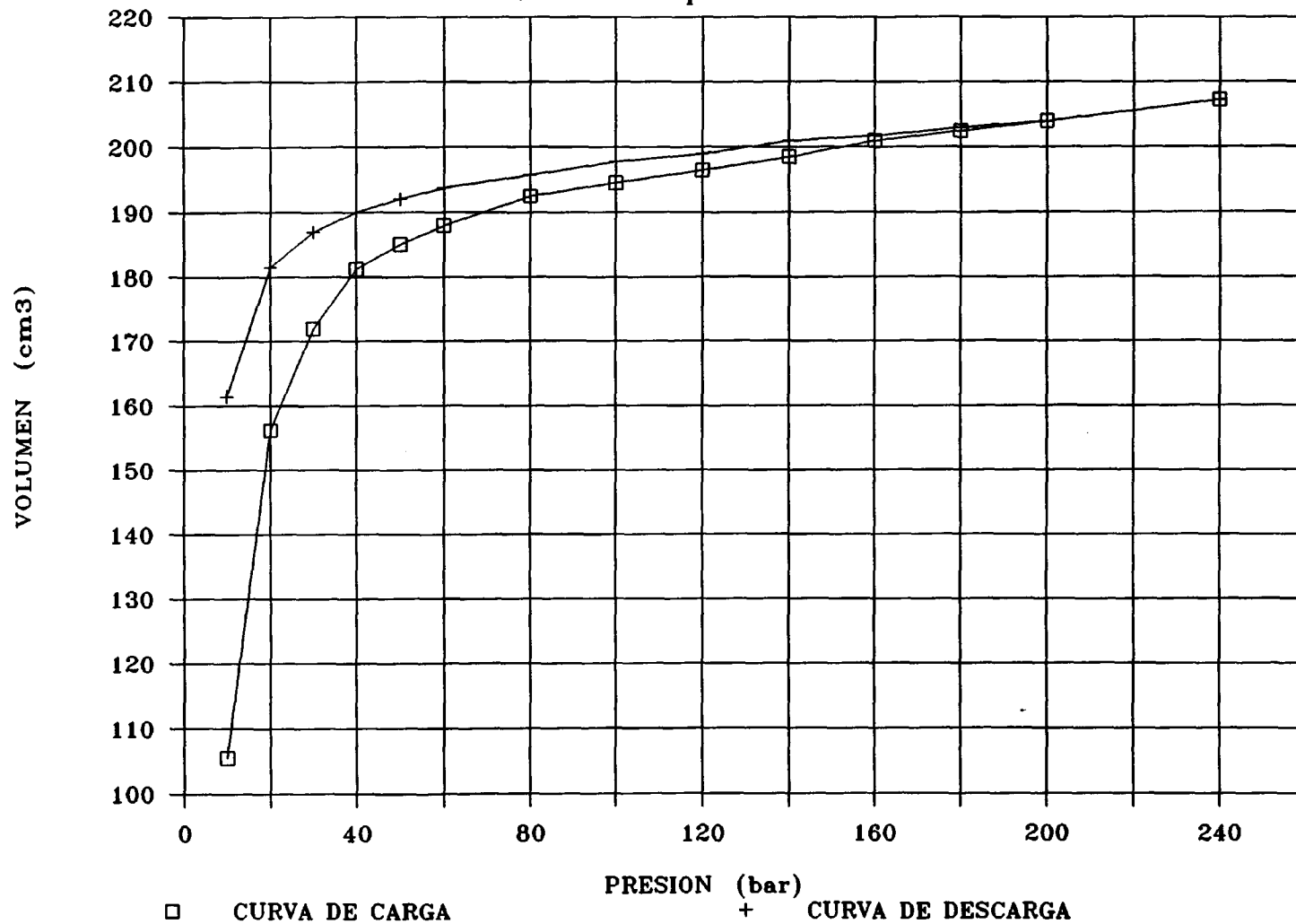
EMPRESA : HUNOSA PLANTA : SEPTIMA
GRUPO : SAN NICOLAS CAPA : OCTAVA
POZO : MONTSACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Dismi)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
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10.00	81.50	81.50	24.00	105.50	80.00	92.00	69.50	161.50
20.00	81.50	81.50	74.75	156.25	172.00	172.00	9.50	181.50
30.00	81.50	81.50	90.50	172.00	172.00	172.00	15.00	187.00
40.00	90.50	172.00	9.25	181.25	172.00	172.00	18.00	190.00
50.00	90.50	172.00	13.00	185.00	172.00	172.00	20.00	192.00
60.00	90.50	172.00	16.00	188.00	172.00	172.00	21.75	193.75
80.00	90.50	172.00	20.50	192.50	172.00	172.00	23.75	195.75
100.00	90.50	172.00	22.50	194.50	172.00	172.00	25.75	197.75
120.00	90.50	172.00	24.50	196.50	172.00	172.00	27.00	199.00
140.00	90.50	172.00	26.50	198.50	172.00	172.00	29.00	201.00
160.00	90.50	172.00	29.00	201.00	172.00	172.00	29.75	201.75
180.00	90.50	172.00	30.50	202.50	172.00	172.00	31.00	203.00
200.00	90.50	172.00	32.00	204.00	172.00	172.00	32.00	204.00
240.00	90.50	172.00	35.25	207.25	172.00	172.00		207.25

OBSERVACIONES:

CURVAS PRESIOMETRICAS

Sondeo 1 Capa 8 Prof. 2 m



FICHA DE MEDIDAS PRESIOMETRICAS

SONDEO : 1 PROF. MUESTRA (m) : 3.50 FECHA : 10-07-91

DATOS GENERALES

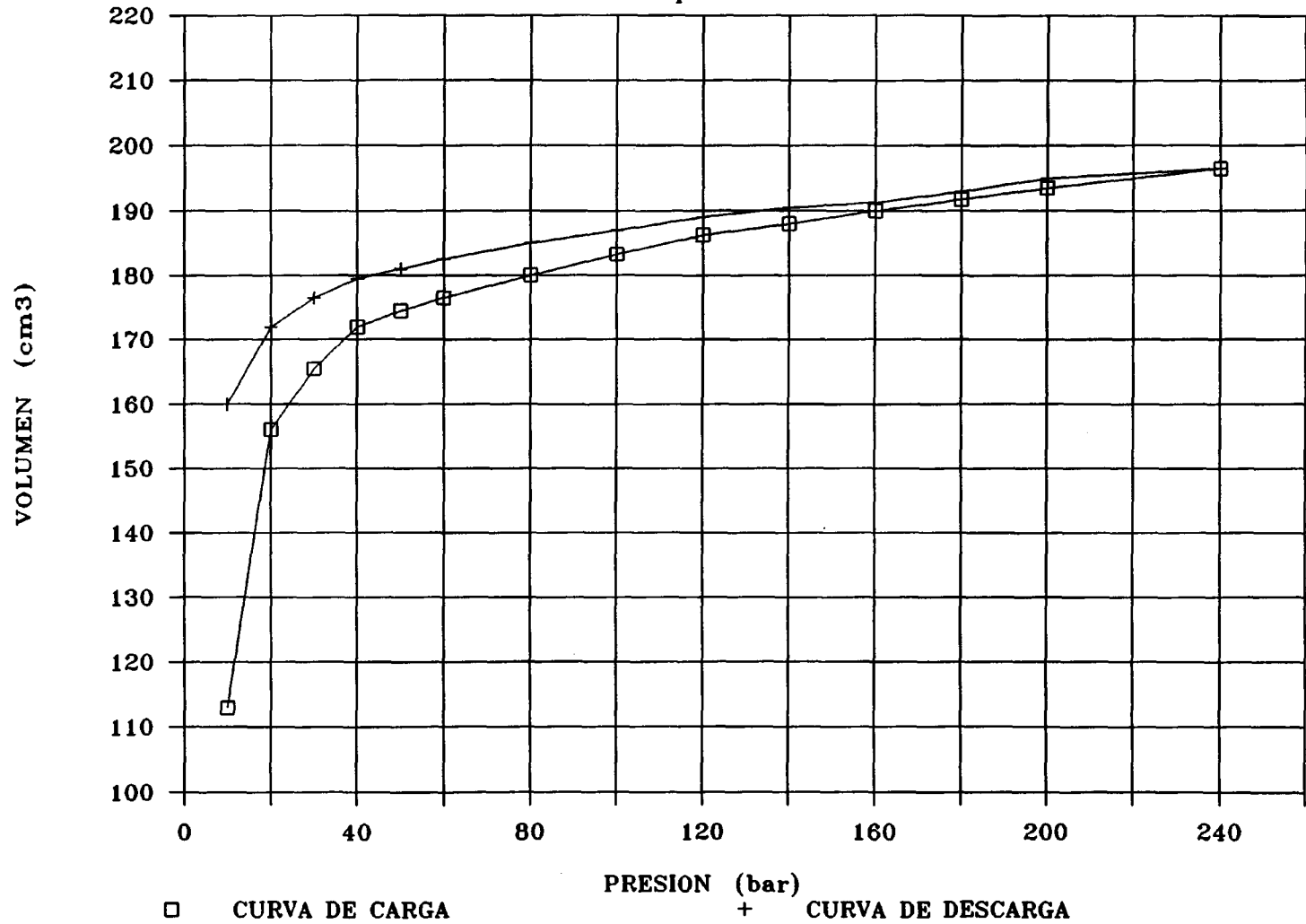
EMPRESA : HUNOSA PLANTA : SEPTIMA
GRUPO : SAN NICOLAS CAPA : OCTAVA
POZO : MONTSACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Disml)			
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30.00	92.00	92.00	73.50	165.50	172.00	172.00	4.50	176.50
40.00	80.00	172.00	0.00	172.00	172.00	172.00	7.50	179.50
50.00	80.00	172.00	2.50	174.50	172.00	172.00	9.00	181.00
60.00	80.00	172.00	4.50	176.50	172.00	172.00	10.50	182.50
80.00	80.00	172.00	8.00	180.00	172.00	172.00	13.00	185.00
100.00	80.00	172.00	11.25	183.25	172.00	172.00	15.00	187.00
120.00	80.00	172.00	14.25	186.25	172.00	172.00	17.00	189.00
140.00	80.00	172.00	16.00	188.00	172.00	172.00	18.50	190.50
160.00	80.00	172.00	18.00	190.00	172.00	172.00	19.25	191.25
180.00	80.00	172.00	19.75	191.75	172.00	172.00	21.00	193.00
200.00	80.00	172.00	21.50	193.50	172.00	172.00	23.00	195.00
240.00	80.00	172.00	24.50	196.50	172.00	172.00		196.50

OBSERVACIONES:

CURVAS PRESIOMETRICAS

Sondeo 1 Capa 8 Prof. 3.5 m



F I C H A D E M E D I D A S P R E S I O M E T R I C A S

S O N D E O : 1 P R O F . M U E S T R A (m) : 5.00 F E C H A : 10-07-91

D A T O S G E N E R A L E S

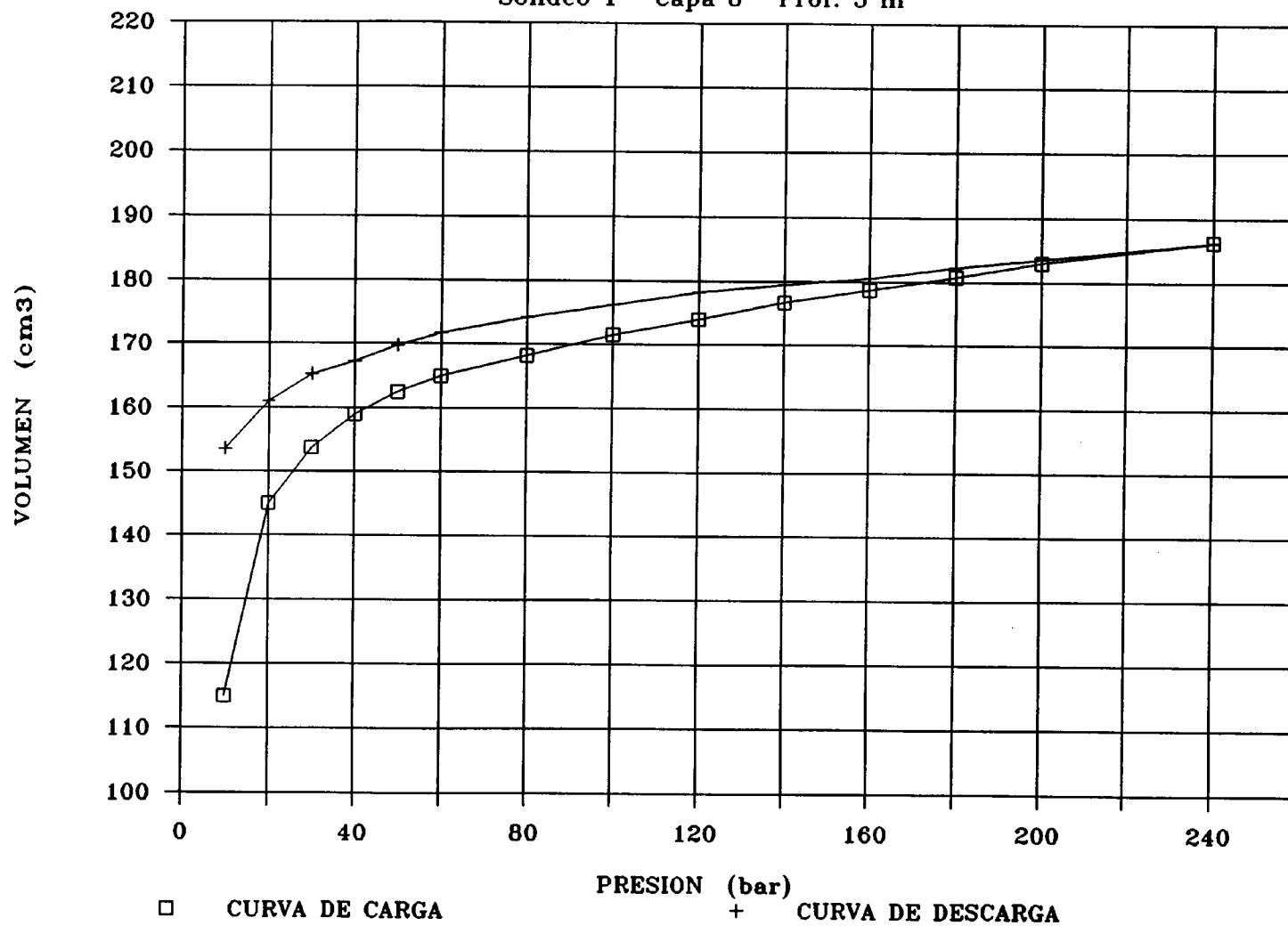
EMPRESA : H U N O S A P L A N T A : S E P T I M A
GRUPO : S A N N I C O L A S C A P A : O C T A V A
POZO : M O N T S A C R O

PRESION	VOLUMENES (Aumen)				VOLUMENES (Disml)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
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10.00	92.00	92.00	23.00	115.00	70.50	92.00	61.50	153.50
20.00	92.00	92.00	53.00	145.00	70.50	92.00	69.00	161.00
30.00	92.00	92.00	61.75	153.75	162.50	162.50	2.75	165.25
40.00	92.00	92.00	67.00	159.00	162.50	162.50	4.75	167.25
50.00	92.00	92.00	70.50	162.50	162.50	162.50	7.25	169.75
60.00	70.50	162.50	2.50	165.00	162.50	162.50	9.25	171.75
80.00	70.50	162.50	5.75	168.25	162.50	162.50	11.75	174.25
100.00	70.50	162.50	9.00	171.50	162.50	162.50	13.75	176.25
120.00	70.50	162.50	11.50	174.00	162.50	162.50	15.75	178.25
140.00	70.50	162.50	14.25	176.75	162.50	162.50	17.00	179.50
160.00	70.50	162.50	16.25	178.75	162.50	162.50	18.00	180.50
180.00	70.50	162.50	18.25	180.75	162.50	162.50	19.75	182.25
200.00	70.50	162.50	20.50	183.00	162.50	162.50	21.00	183.50
240.00	70.50	162.50	23.75	186.25	162.50	162.50		186.25

OBSERVACIONES:

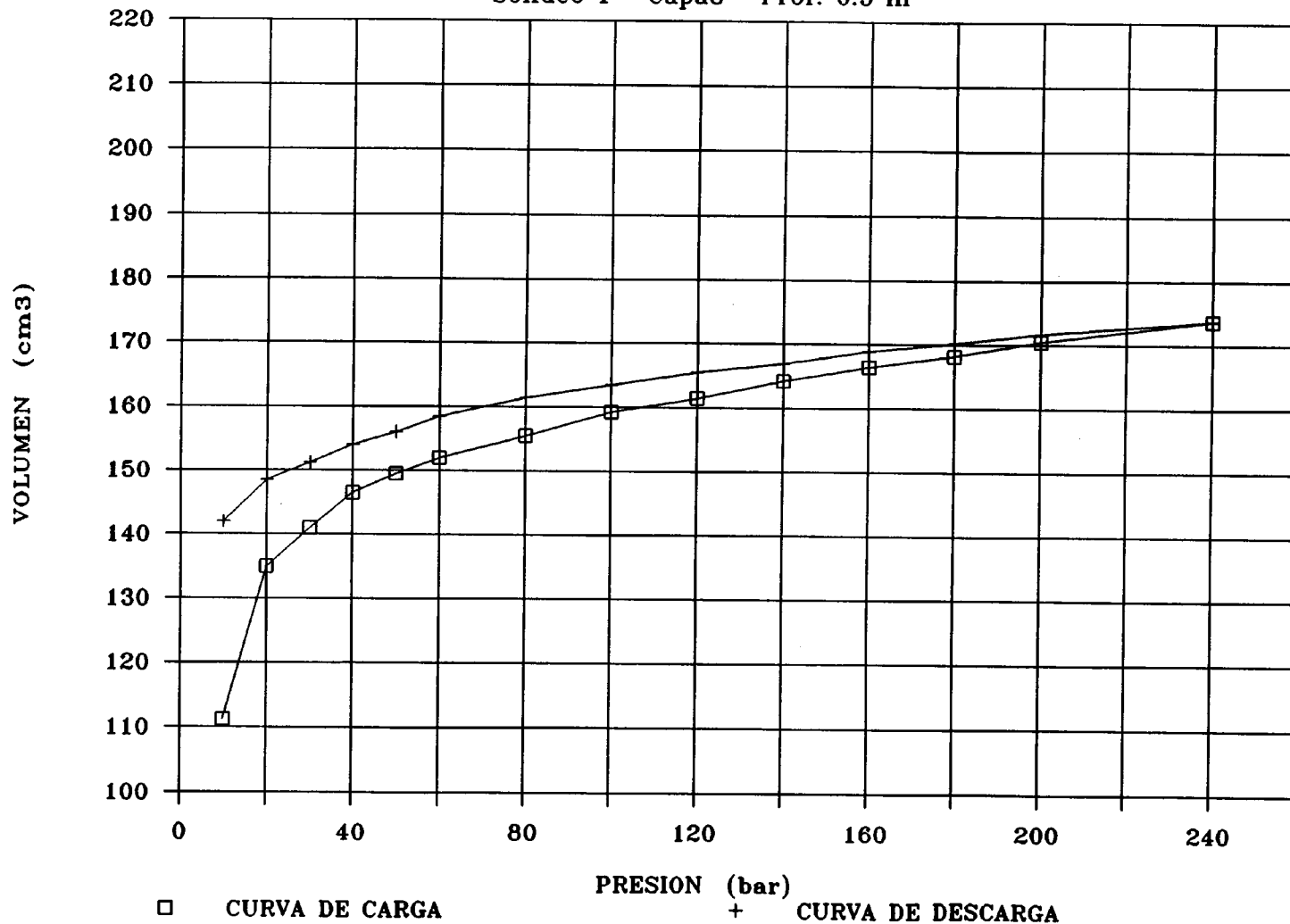
CURVAS PRESIOMETRICAS

Sondeo 1 Capa 8 Prof. 5 m



CURVAS PRESIOMETRICAS

Sondeo 1 Capa8 Prof. 6.5 m



F I C H A D E M O D U L O S P R E S I O M E T R I C O S

S O N D E O : 2

F E C H A : 25-07-91

D A T O S G E N E R A L E S

E M P R E S A : HUNOSA

P L A N T A : SEPTIMA

G R U P O : SAN NICOLAS

C A P A : OCTAVA

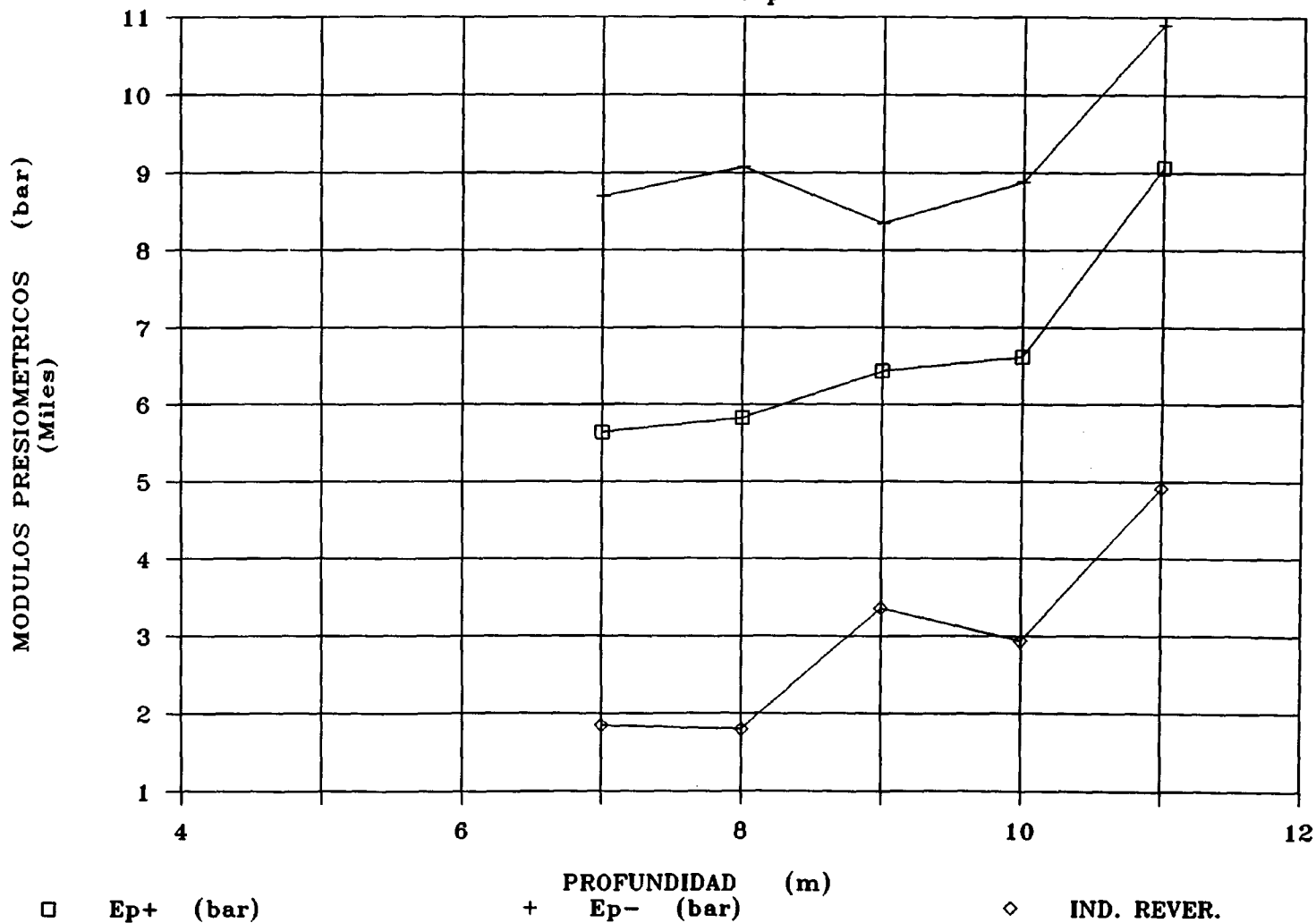
P O Z O : MONTSACRO

PROFUNDIDAD (m)	CURVA DE CARGA		CURVA DE DESCARGA		MODULOS PRESIOMETRICOS		INDICE DE REVERSIBILIDAD
	V1 (cm3)	V2 (cm3)	V1 (cm3)	V2 (cm3)	Ep+ (bar)	Ep- (bar)	
7.00	147.50	161.25	154.50	163.50	5640.00	8694.44	1.85
8.00	158.75	172.25	165.75	174.50	5827.78	9071.43	1.80
9.00	160.00	172.25	165.00	174.50	6432.65	8347.37	3.36
10.00	166.25	178.25	171.00	180.00	6618.75	8877.78	2.93
11.00	187.50	196.50	190.00	197.50	9061.11	10906.67	4.91

OBSERVACIONES: Sondeo realizado en un punto por donde aún no había pasado el frente del sutiraje.

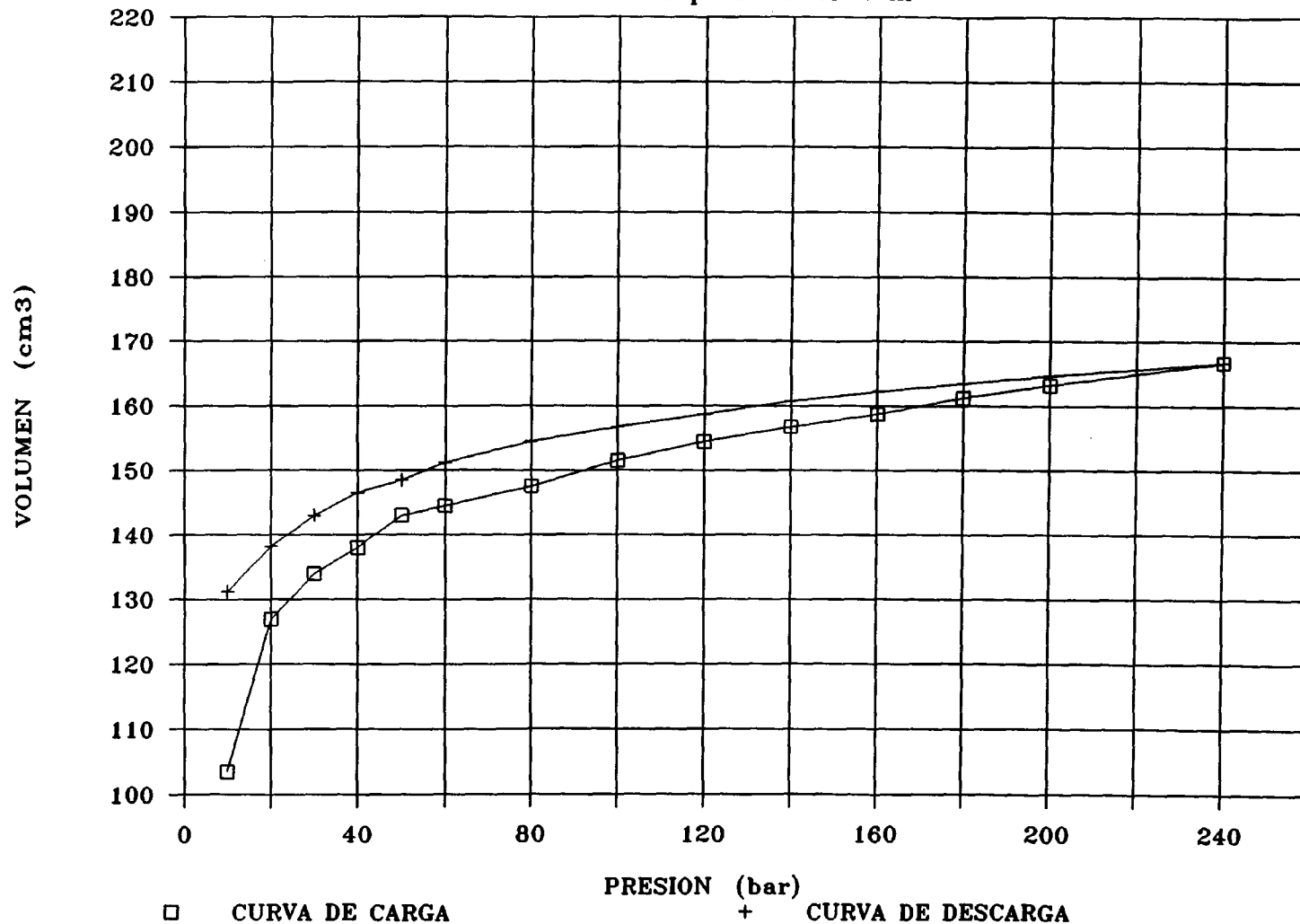
MODULOS PRESIOMETRICOS

Sondeo 2 Capa 8



CURVAS PRESIOMETRICAS

Sondeo 2 Capa 8 Prof. 7 m



FICHA DE MEDIDAS PRESIOMETRICAS

SONDEO : 2 PROF. MUESTRA (m) : 8.00 FECHA : 25-07-91

DATOS GENERALES

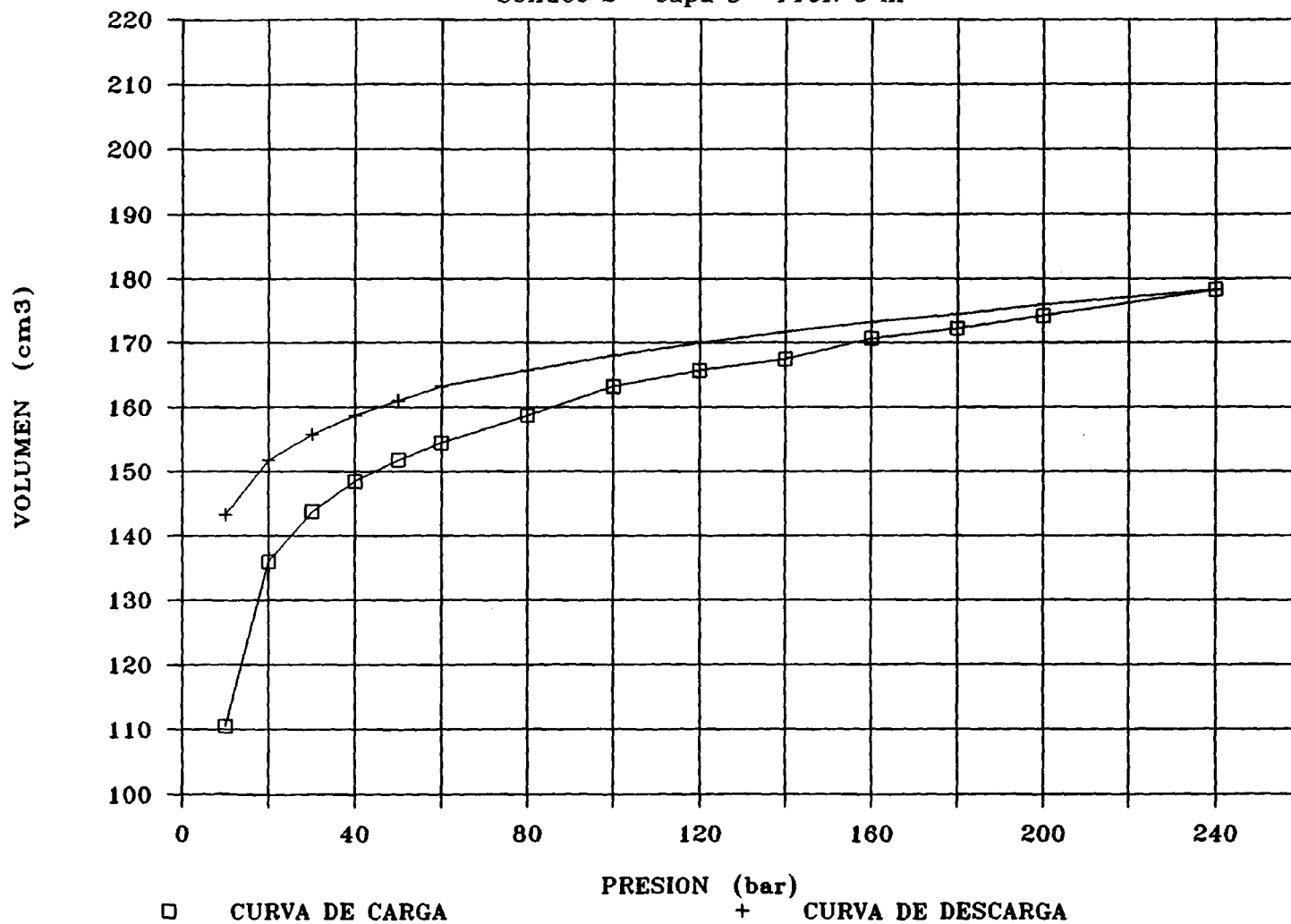
EMPRESA : HUNOSA PLANTA : SEPTIMA
GRUPO : SAN NICOLAS CAPA : OCTAVA
POZO : MONTSACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Dismi)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
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20.00	80.00	80.00	56.00	136.00	83.25	80.00	71.75	151.75
30.00	80.00	80.00	63.75	143.75	83.25	80.00	75.75	155.75
40.00	80.00	80.00	68.50	148.50	83.25	80.00	78.75	158.75
50.00	80.00	80.00	71.75	151.75	83.25	80.00	81.00	161.00
60.00	80.00	80.00	74.50	154.50	163.25	163.25	0.00	163.25
80.00	80.00	80.00	78.75	158.75	163.25	163.25	2.50	165.75
100.00	80.00	80.00	83.25	163.25	163.25	163.25	4.75	168.00
120.00	83.25	163.25	2.50	165.75	163.25	163.25	6.75	170.00
140.00	83.25	163.25	4.25	167.50	163.25	163.25	8.50	171.75
160.00	83.25	163.25	7.50	170.75	163.25	163.25	10.00	173.25
180.00	83.25	163.25	9.00	172.25	163.25	163.25	11.25	174.50
200.00	83.25	163.25	11.00	174.25	163.25	163.25	12.75	176.00
240.00	83.25	163.25	15.00	178.25	163.25	163.25	15.00	178.25

OBSERVACIONES:

CURVAS PRESIOMETRICAS

Sondeo 2 Capa 8 Prof. 8 m



F I C H A D E M E D I D A S P R E S I O M E T R I C A S

S O N D E O : 2 P R O F . M U E S T R A (m) : 9.00 F E C H A : 25-07-91

D A T O S G E N E R A L E S

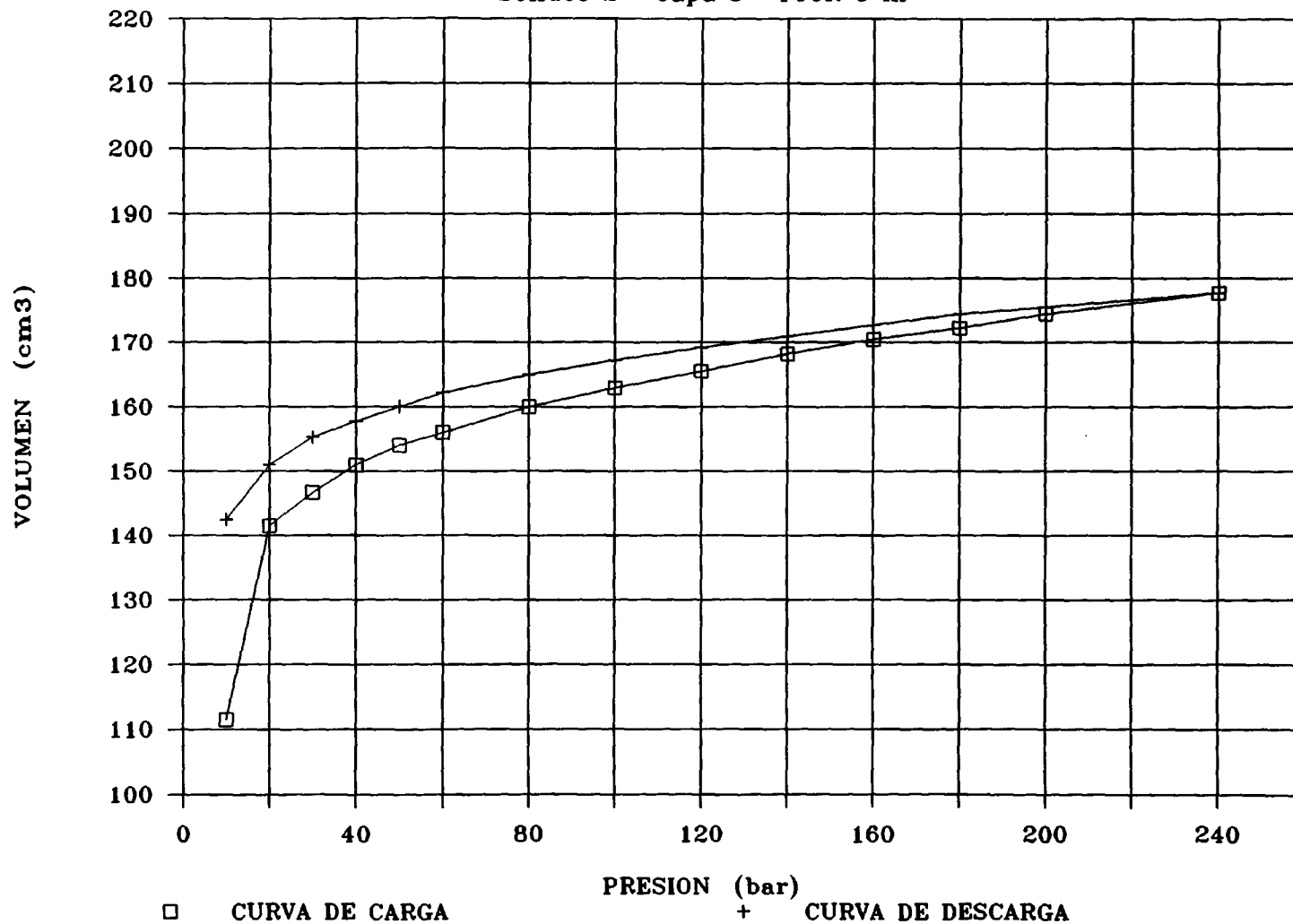
E M P R E S A : H U N O S A P L A N T A : S E P T I M A
 G R U P O : S A N N I C O L A S C A P A : O C T A V A
 P O Z O : M O N T S A C R O

PRESION	VOLUMENES (Aumen)				VOLUMENES (Dismi)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00	80.00	80.00	----	----	80.00	0.00	----	----
10.00	80.00	80.00	31.50	111.50	80.00	80.00	62.50	142.50
20.00	80.00	80.00	61.50	141.50	80.00	80.00	71.00	151.00
30.00	80.00	80.00	66.75	146.75	80.00	80.00	75.25	155.25
40.00	80.00	80.00	71.00	151.00	80.00	80.00	77.75	157.75
50.00	80.00	80.00	74.00	154.00	80.00	160.00	0.00	160.00
60.00	80.00	80.00	76.00	156.00	160.00	160.00	2.25	162.25
80.00	80.00	80.00	80.00	160.00	160.00	160.00	5.00	165.00
100.00	80.00	160.00	3.00	163.00	160.00	160.00	7.25	167.25
120.00	80.00	160.00	5.50	165.50	160.00	160.00	9.25	169.25
140.00	80.00	160.00	8.25	168.25	160.00	160.00	11.00	171.00
160.00	80.00	160.00	10.50	170.50	160.00	160.00	12.75	172.75
180.00	80.00	160.00	12.25	172.25	160.00	160.00	14.50	174.50
200.00	80.00	160.00	14.50	174.50	160.00	160.00	15.50	175.50
240.00	80.00	160.00	17.75	177.75	160.00	160.00	17.75	177.75

OBSERVACIONES:

CURVAS PRESIOMETRICAS

Sondeo 2 Capa 8 Prof. 9 m



FICHA DE MEDIDAS PRESIOMETRICAS

SONDEO : 2 PROF. MUESTRA (m) : 10.00 FECHA : 25-07-91

DATOS GENERALES

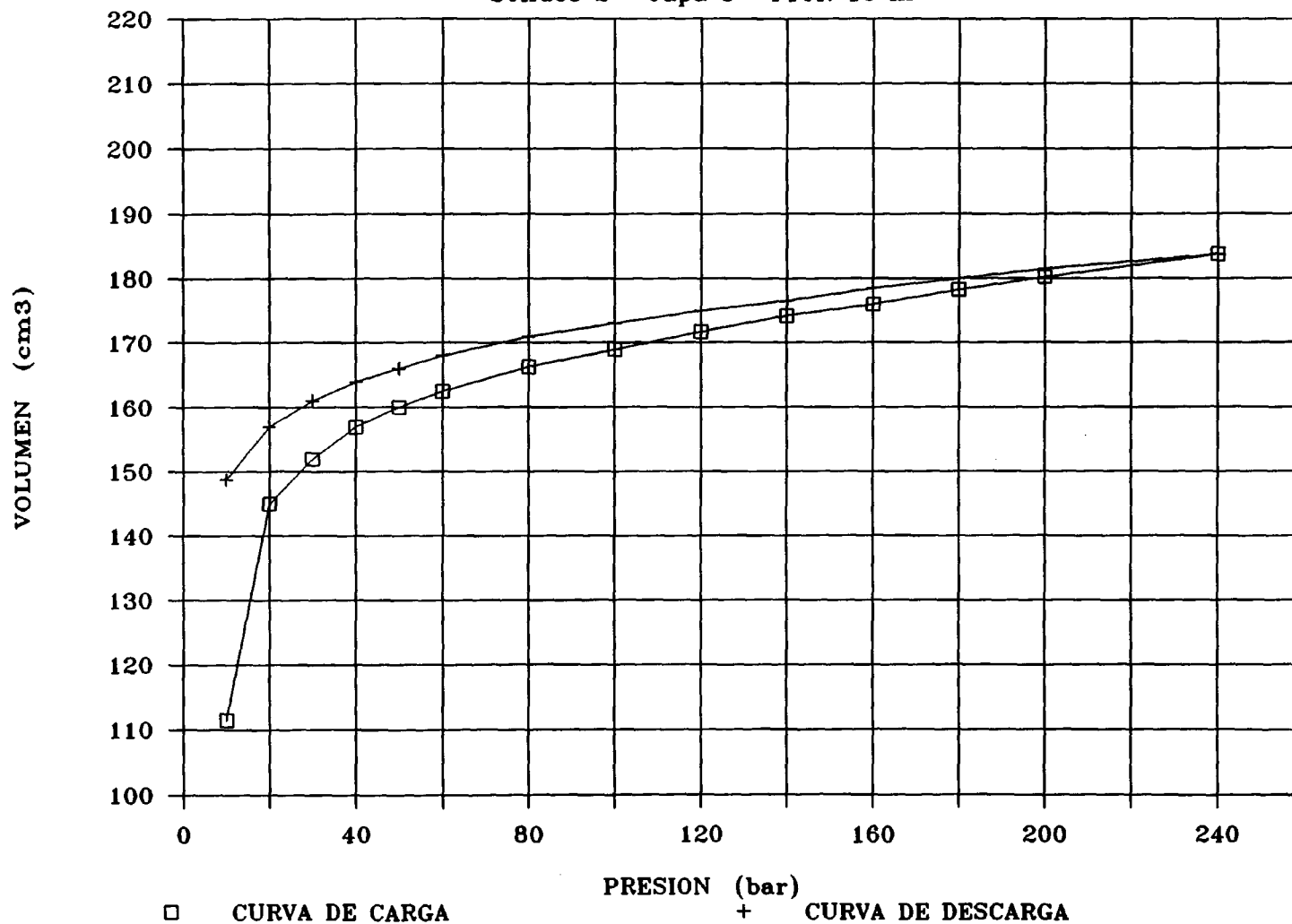
EMPRESA : HUNOSA PLANTA : SEPTIMA
GRUPO : SAN NICOLAS CAPA : OCTAVA
POZO : MONTSACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Dismi)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00	80.00	80.00	----	----	80.00	0.00	----	----
10.00	80.00	80.00	31.50	111.50	80.00	80.00	68.75	148.75
20.00	80.00	80.00	65.00	145.00	80.00	80.00	77.00	157.00
30.00	80.00	80.00	72.00	152.00	160.00	160.00	1.00	161.00
40.00	80.00	80.00	77.00	157.00	160.00	160.00	4.00	164.00
50.00	80.00	80.00	80.00	160.00	160.00	160.00	6.00	166.00
60.00	80.00	160.00	2.50	162.50	160.00	160.00	8.00	168.00
80.00	80.00	160.00	6.25	166.25	160.00	160.00	11.00	171.00
100.00	80.00	160.00	9.00	169.00	160.00	160.00	13.00	173.00
120.00	80.00	160.00	11.75	171.75	160.00	160.00	15.00	175.00
140.00	80.00	160.00	14.25	174.25	160.00	160.00	16.50	176.50
160.00	80.00	160.00	16.00	176.00	160.00	160.00	18.50	178.50
180.00	80.00	160.00	18.25	178.25	160.00	160.00	20.00	180.00
200.00	80.00	160.00	20.25	180.25	160.00	160.00	21.50	181.50
240.00	80.00	160.00	23.75	183.75	160.00	160.00	23.75	183.75

OBSERVACIONES:

CURVAS PRESIOMETRICAS

Sondeo 2 Capa 8 Prof. 10 m



FICHA DE MEDIDAS PRESIOMETRICAS

SONDEO : 2 PROF. MUESTRA (m) : 11.00 FECHA : 25-07-91

DATOS GENERALES

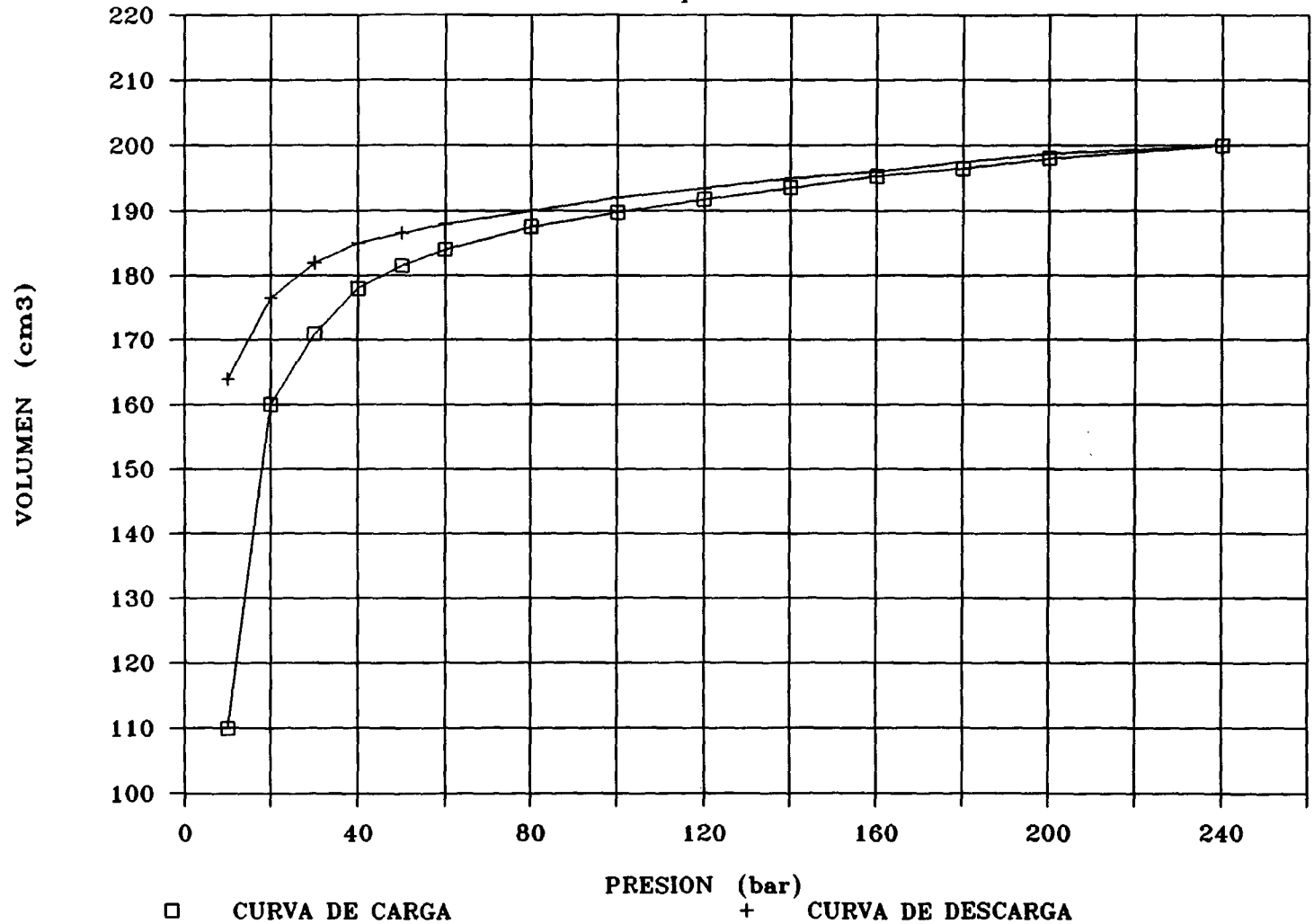
EMPRESA : HUNOSA PLANTA : SEPTIMA
GRUPO : SAN NICOLAS CAPA : OCTAVA
POZO : MONTSACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Dismi)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00	80.00	80.00	----	----	160.00	160.00	----	----
10.00	80.00	80.00	30.00	110.00	160.00	160.00	4.00	164.00
20.00	80.00	80.00	80.00	160.00	160.00	160.00	16.50	176.50
30.00	80.00	160.00	11.00	171.00	160.00	160.00	22.00	182.00
40.00	80.00	160.00	18.00	178.00	160.00	160.00	25.00	185.00
50.00	80.00	160.00	21.50	181.50	160.00	160.00	26.50	186.50
60.00	80.00	160.00	24.00	184.00	160.00	160.00	28.00	188.00
80.00	80.00	160.00	27.50	187.50	160.00	160.00	30.00	190.00
100.00	80.00	160.00	29.75	189.75	160.00	160.00	32.00	192.00
120.00	80.00	160.00	31.75	191.75	160.00	160.00	33.50	193.50
140.00	80.00	160.00	33.50	193.50	160.00	160.00	35.00	195.00
160.00	80.00	160.00	35.25	195.25	160.00	160.00	36.00	196.00
180.00	80.00	160.00	36.50	196.50	160.00	160.00	37.50	197.50
200.00	80.00	160.00	38.00	198.00	160.00	160.00	38.75	198.75
240.00	80.00	160.00	40.00	200.00	160.00	160.00	40.00	200.00

OBSERVACIONES:

CURVAS PRESIOMETRICAS

Sondeo 2 Capa 8 Prof. 11 m



F I C H A D E M O D U L O S P R E S I O M E T R I C O S

S O N D E O : 3

F E C H A : 12/09/91

D A T O S G E N E R A L E S

E M P R E S A : HUNOSA

P L A N T A : 7

G R U P O : SAN NICOLAS

C A P A : 8

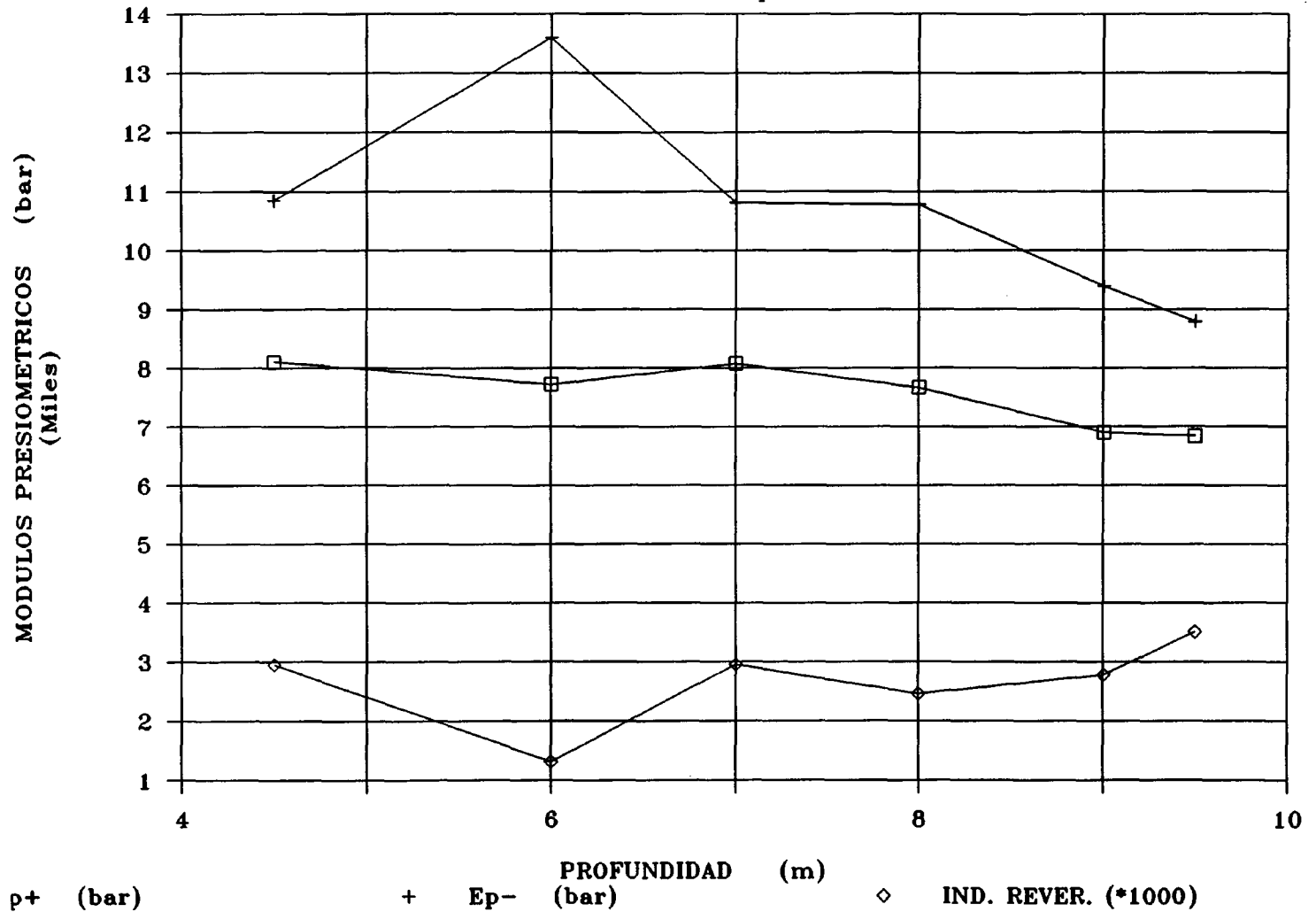
P O Z O : MONTSACRO

P R O F U N D I D A D (m)	C U R V A D E C A R G A		C U R V A D E D E S C A R G A		M O D U L O S P R E S I O M E T R I C O S		I N D I C E D E R E V E R S I B I L I D A D
	V1 (cm3)	V2 (cm3)	V1 (cm3)	V2 (cm3)	Ep+ (bar)	Ep- (bar)	
4.50	182.50	192.50	186.00	193.50	8105.00	10853.33	2.95
6.00	183.00	193.50	188.00	194.00	7723.81	13600.00	1.31
7.00	179.50	189.50	183.00	190.50	8075.00	10813.33	2.95
8.00	177.00	187.50	180.50	188.00	7666.67	10780.00	2.46
9.00	166.00	177.50	170.50	179.00	6904.35	9394.12	2.77
9.50	159.00	170.50	163.50	172.50	6843.48	8794.44	3.51

OBSERVACIONES: Sondeo realizado a 10 m del recorte de acceso, en un punto por donde aún no había pasado el frente de sutiraje.

MODULOS PRESIOMETRICOS

Sondeo 3 Capa 8



F I C H A D E M E D I D A S P R E S I O M E T R I C A S

S O N D E O : 3.00 P R O F . M U E S T R A (m) : 4.50 F E C H A : 12/09/91

D A T O S G E N E R A L E S

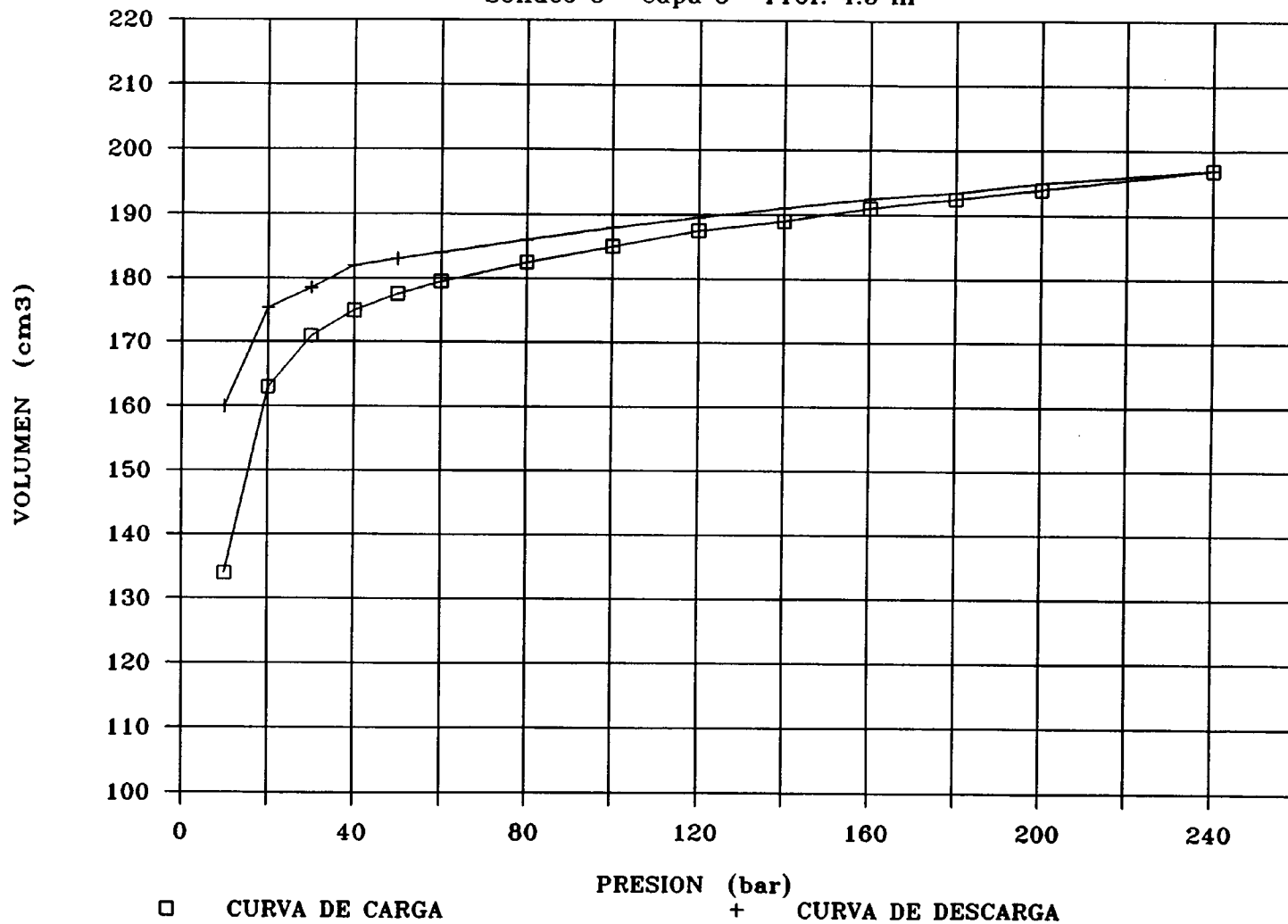
E M P R E S A : HUNOSA P L A N T A : 7.00
G R U P O : SAN NICOLAS C A P A : 8.00
P O Z O : MONTSACRO

PRESION	VOLUMENES (Aumen)		VOLUMEN		VOLUMENES (Disml)		VOLUMEN	
	DE RELLENO		PARCIAL	ACUMULADO	DE REBOSE		PARCIAL	ACUMULADO
	PARCIAL	ACUMULADO			PARCIAL	ACUMULADO		
0.00	80.00	80.00	----	----	160.00	160.00	----	----
10.00	0.00	80.00	54.00	134.00	160.00	160.00	0.00	160.00
20.00	80.00	160.00	3.00	163.00	160.00	160.00	15.40	175.40
30.00	80.00	160.00	11.00	171.00	160.00	160.00	18.50	178.50
40.00	80.00	160.00	15.00	175.00	160.00	160.00	22.00	182.00
50.00	80.00	160.00	17.50	177.50	160.00	160.00	23.00	183.00
60.00	80.00	160.00	19.50	179.50	160.00	160.00	24.00	184.00
80.00	80.00	160.00	22.50	182.50	160.00	160.00	26.00	186.00
100.00	80.00	160.00	25.00	185.00	160.00	160.00	28.00	188.00
120.00	80.00	160.00	27.50	187.50	160.00	160.00	29.50	189.50
140.00	80.00	160.00	29.00	189.00	160.00	160.00	31.00	191.00
160.00	80.00	160.00	31.00	191.00	160.00	160.00	32.50	192.50
180.00	80.00	160.00	32.50	192.50	160.00	160.00	33.50	193.50
200.00	80.00	160.00	34.00	194.00	160.00	160.00	35.00	195.00
240.00	80.00	160.00	37.00	197.00	160.00	160.00	37.00	197.00

OBSERVACIONES:

CURVAS PRESIOMETRICAS

Sondeo 3 Capa 8 Prof. 4.5 m



F I C H A D E M E D I D A S P R E S I O M E T R I C A S

S O N D E O : 3.00 P R O F . M U E S T R A (m) : 6.00 F E C H A : 12/09/91

D A T O S G E N E R A L E S

E M P R E S A : HUNOSA P L A N T A : 8.00

G R U P O : SAN NICOLAS C A P A : 7.00

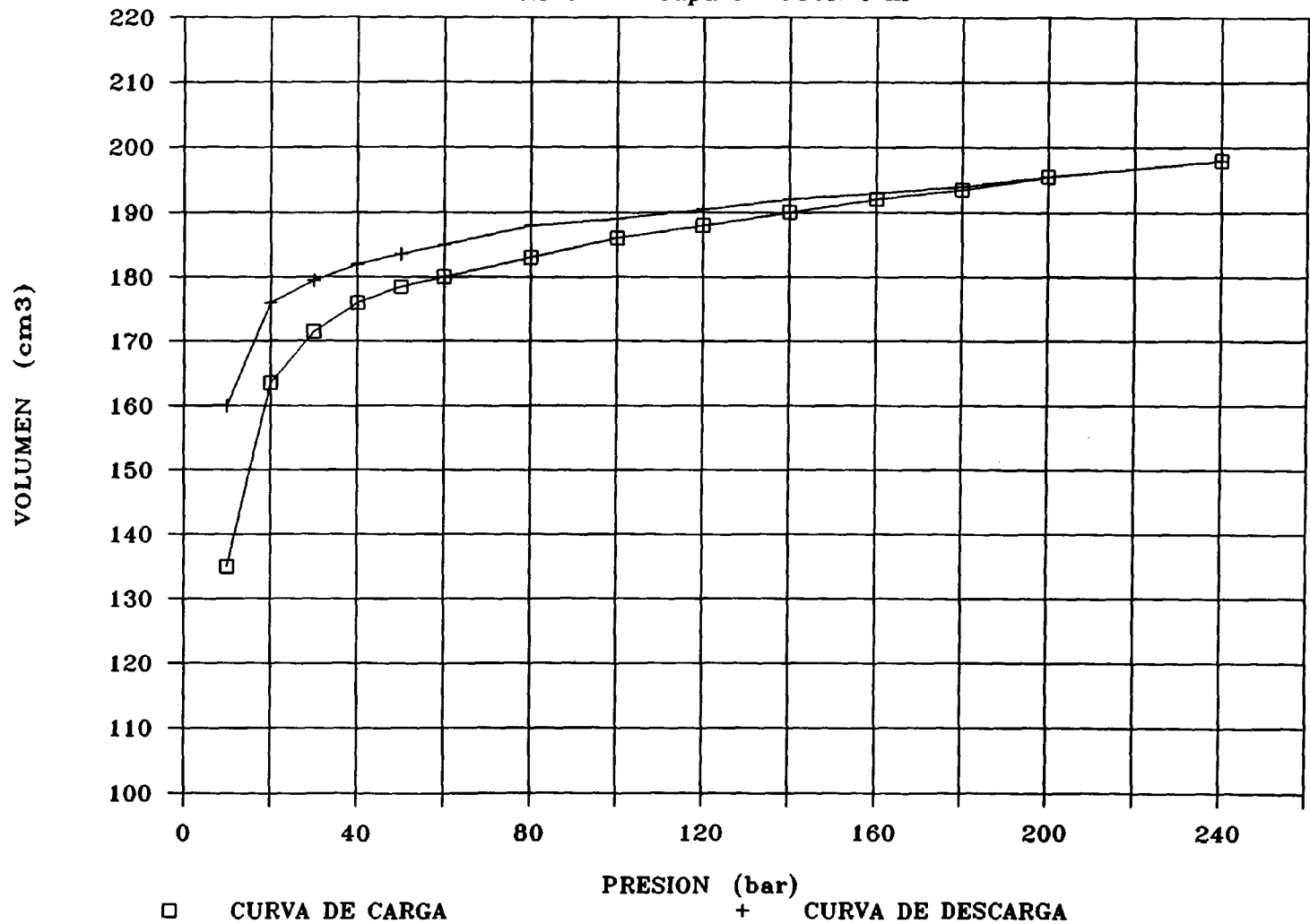
P O Z O : MONTSACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Dismi)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00	80.00	80.00	----	----	160.00	160.00	----	----
10.00	80.00	80.00	55.00	135.00	160.00	160.00	0.00	160.00
20.00	80.00	160.00	3.50	163.50	160.00	160.00	16.00	176.00
30.00	80.00	160.00	11.50	171.50	160.00	160.00	19.50	179.50
40.00	80.00	160.00	16.00	176.00	160.00	160.00	22.00	182.00
50.00	80.00	160.00	18.50	178.50	160.00	160.00	23.50	183.50
60.00	80.00	160.00	20.00	180.00	160.00	160.00	25.00	185.00
80.00	80.00	160.00	23.00	183.00	160.00	160.00	28.00	188.00
100.00	80.00	160.00	26.00	186.00	160.00	160.00	29.00	189.00
120.00	80.00	160.00	28.00	188.00	160.00	160.00	30.50	190.50
140.00	80.00	160.00	30.00	190.00	160.00	160.00	32.00	192.00
160.00	80.00	160.00	32.00	192.00	160.00	160.00	33.00	193.00
180.00	80.00	160.00	33.50	193.50	160.00	160.00	34.00	194.00
200.00	80.00	160.00	35.50	195.50	160.00	160.00	35.50	195.50
240.00	80.00	160.00	38.00	198.00	160.00	160.00	38.00	198.00

OBSERVACIONES:

CURVAS PRESIOMETRICAS

Sondeo 3 Capa 8 Prof. 6 m



F I C H A D E M E D I D A S P R E S I O M E T R I C A S

S O N D E O : 3.00 P R O F . M U E S T R A (m) : 7.00 F E C H A : 12/09/91

D A T O S G E N E R A L E S

E M P R E S A : H U N O S A P L A N T A : 8.00

G R U P O : S A N N I C O L A S C A P A : 7.00

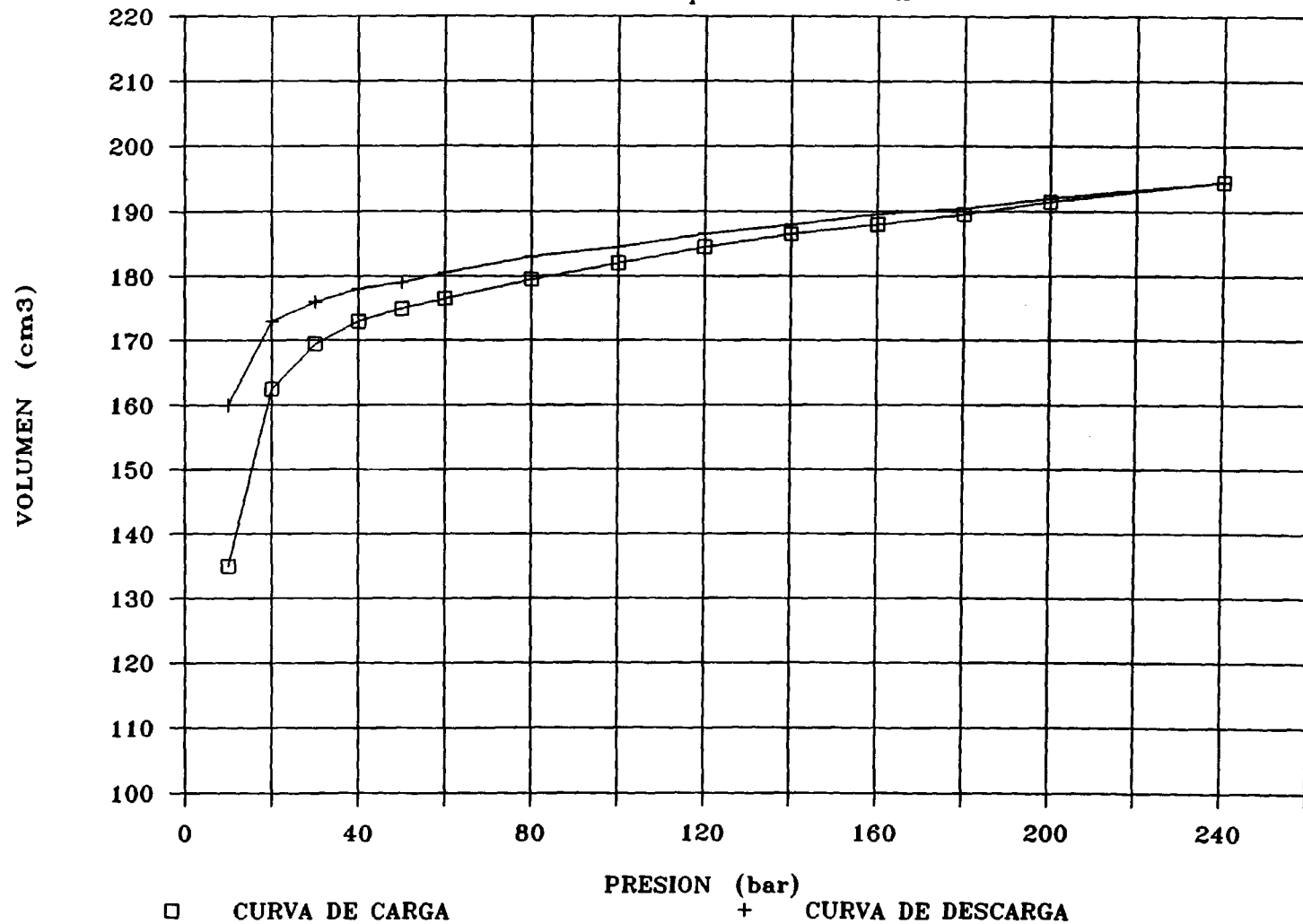
P O Z O : M O N T S A C R O

PRESION	VOLUMENES (Aumen)				VOLUMENES (Dismi)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00	80.00	80.00	----	----	160.00	160.00	----	----
10.00	80.00	80.00	55.00	135.00	160.00	160.00	0.00	160.00
20.00	80.00	160.00	2.50	162.50	160.00	160.00	13.00	173.00
30.00	80.00	160.00	9.50	169.50	160.00	160.00	16.00	176.00
40.00	80.00	160.00	13.00	173.00	160.00	160.00	18.00	178.00
50.00	80.00	160.00	15.00	175.00	160.00	160.00	19.00	179.00
60.00	80.00	160.00	16.50	176.50	160.00	160.00	20.50	180.50
80.00	80.00	160.00	19.50	179.50	160.00	160.00	23.00	183.00
100.00	80.00	160.00	22.00	182.00	160.00	160.00	24.50	184.50
120.00	80.00	160.00	24.50	184.50	160.00	160.00	26.50	186.50
140.00	80.00	160.00	26.50	186.50	160.00	160.00	28.00	188.00
160.00	80.00	160.00	28.00	188.00	160.00	160.00	29.50	189.50
180.00	80.00	160.00	29.50	189.50	160.00	160.00	30.50	190.50
200.00	80.00	160.00	31.50	191.50	160.00	160.00	32.00	192.00
240.00	80.00	160.00	34.50	194.50	160.00	160.00	34.50	194.50

OBSERVACIONES:

CURVAS PRESIOMETRICAS

Sondeo 3 Capa 8 Prof. 7 m



FICHA DE MEDIDAS PRESIOMETRICAS

SONDEO : 3.00 PROF. MUESTRA (m) : 8.00 FECHA : 12/09/91

DATOS GENERALES

EMPRESA : HUNOSA PLANTA : 7.00

GRUPO : SAN NICOLAS CAPA : 8.00

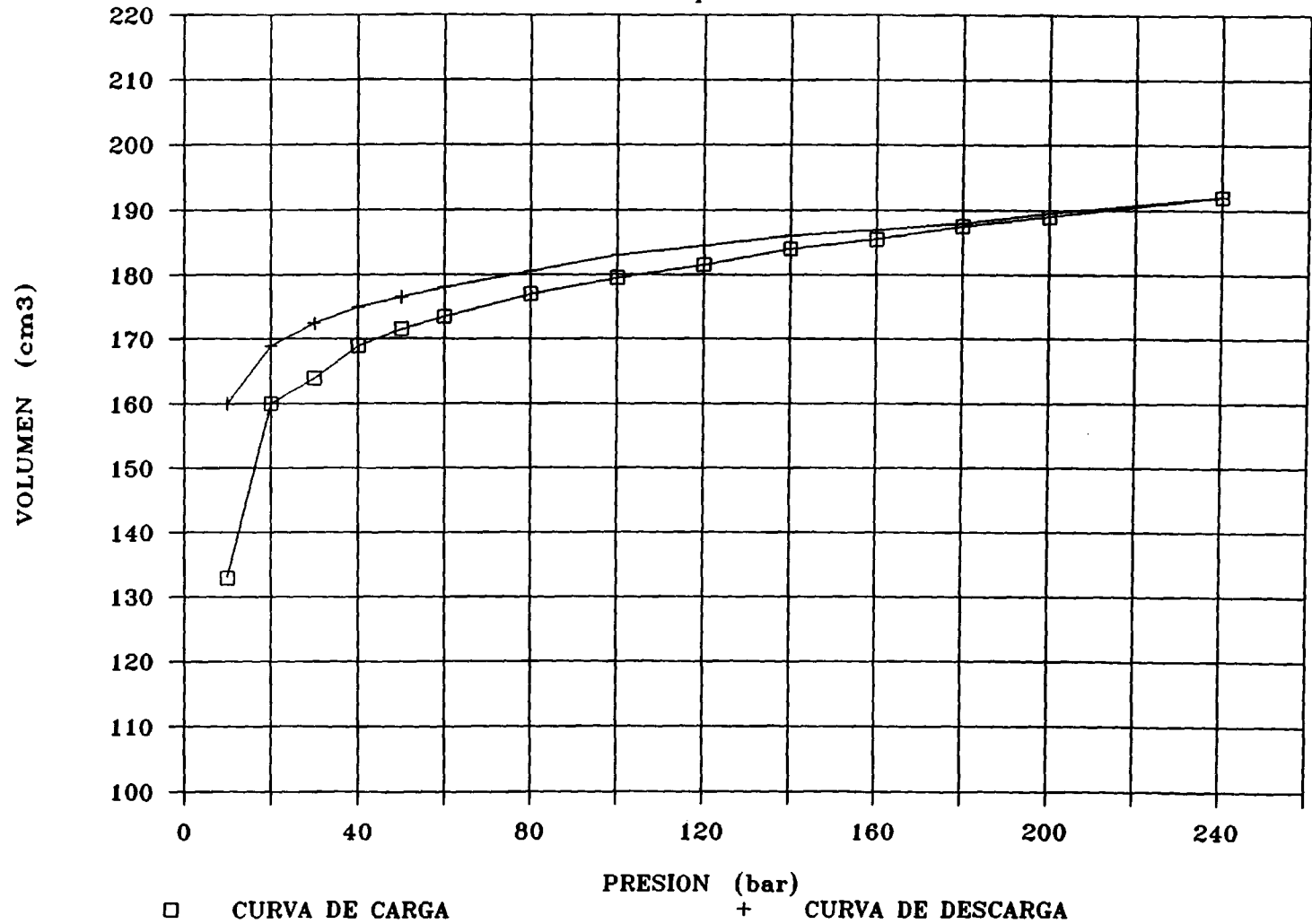
POZO : MONTSACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Dismi)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00	80.00	80.00	----	----	160.00	160.00	----	----
10.00	80.00	80.00	53.00	133.00	160.00	160.00	0.00	160.00
20.00	80.00	80.00	80.00	160.00	160.00	160.00	9.00	169.00
30.00	80.00	160.00	4.00	164.00	160.00	160.00	12.50	172.50
40.00	80.00	160.00	9.00	169.00	160.00	160.00	15.00	175.00
50.00	80.00	160.00	11.50	171.50	160.00	160.00	16.50	176.50
60.00	80.00	160.00	13.50	173.50	160.00	160.00	18.00	178.00
80.00	80.00	160.00	17.00	177.00	160.00	160.00	20.50	180.50
100.00	80.00	160.00	19.50	179.50	160.00	160.00	23.00	183.00
120.00	80.00	160.00	21.50	181.50	160.00	160.00	24.50	184.50
140.00	80.00	160.00	24.00	184.00	160.00	160.00	26.00	186.00
160.00	80.00	160.00	25.50	185.50	160.00	160.00	27.00	187.00
180.00	80.00	160.00	27.50	187.50	160.00	160.00	28.00	188.00
200.00	80.00	160.00	29.00	189.00	160.00	160.00	29.50	189.50
240.00	80.00	160.00	32.00	192.00	160.00	160.00	32.00	192.00

OBSERVACIONES:

CURVAS PRESIOMETRICAS

Sondeo 3 Capa 8 Prof. 8 m



FICHA DE MEDIDAS PRESIOMETRICAS

SONDEO : 3.00 PROF. MUESTRA (m) : 9.00 FECHA : 12/09/91

DATOS GENERALES

EMPRESA : HUNOSA PLANTA : 8.00

GRUPO : SAN NICOLAS CAPA : 7.00

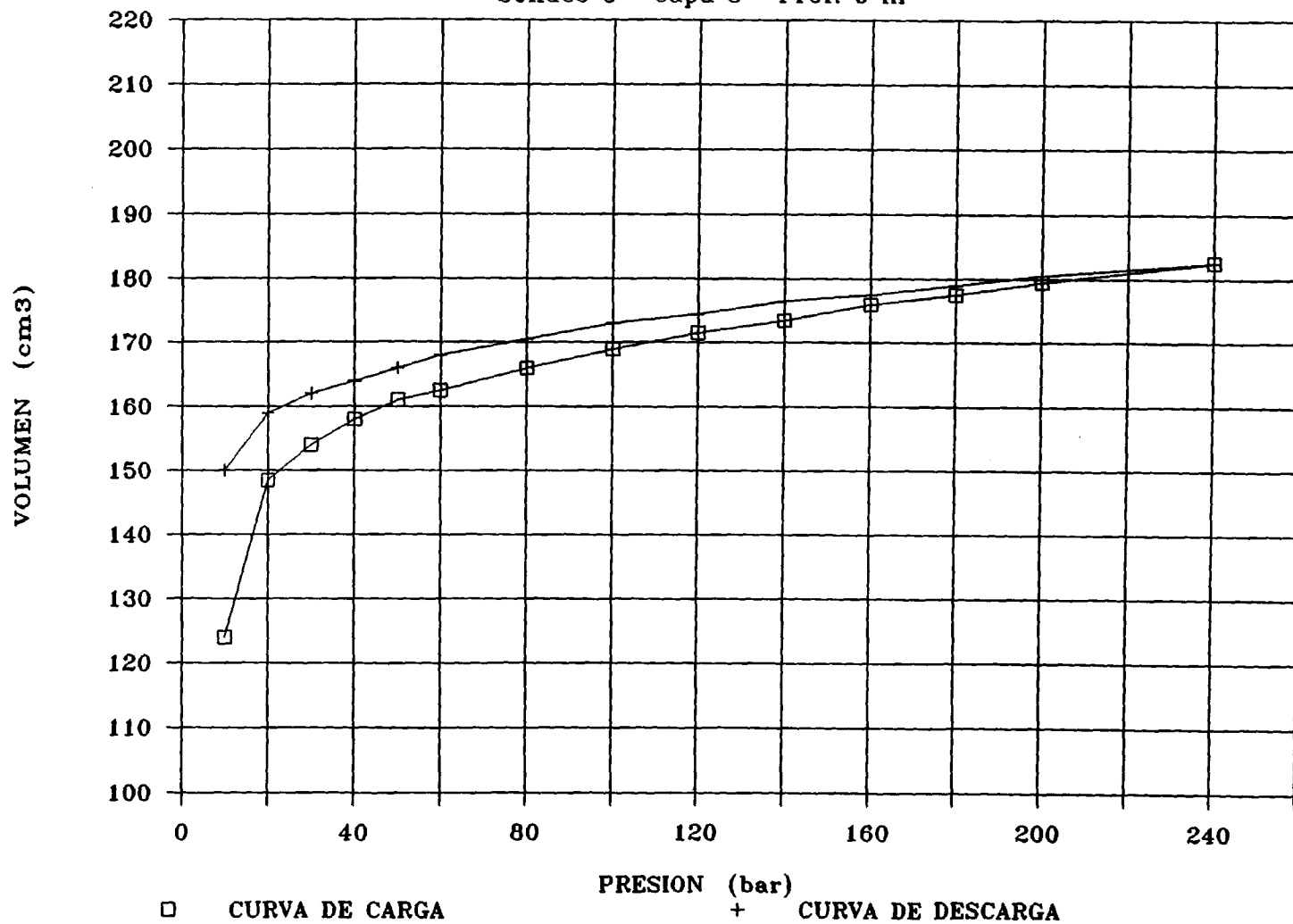
POZO : MONTSACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Disml)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00	80.00	80.00	----	----	80.00	80.00	----	----
10.00	80.00	80.00	44.00	124.00	80.00	80.00	70.00	150.00
20.00	80.00	80.00	68.50	148.50	80.00	80.00	79.00	159.00
30.00	80.00	80.00	74.00	154.00	160.00	160.00	2.00	162.00
40.00	80.00	80.00	78.00	158.00	160.00	160.00	4.00	164.00
50.00	80.00	160.00	1.00	161.00	160.00	160.00	6.00	166.00
60.00	80.00	160.00	2.50	162.50	160.00	160.00	8.00	168.00
80.00	80.00	160.00	6.00	166.00	160.00	160.00	10.50	170.50
100.00	80.00	160.00	9.00	169.00	160.00	160.00	13.00	173.00
120.00	80.00	160.00	11.50	171.50	160.00	160.00	14.50	174.50
140.00	80.00	160.00	13.50	173.50	160.00	160.00	16.50	176.50
160.00	80.00	160.00	16.00	176.00	160.00	160.00	17.50	177.50
180.00	80.00	160.00	17.50	177.50	160.00	160.00	19.00	179.00
200.00	80.00	160.00	19.50	179.50	160.00	160.00	20.50	180.50
240.00	80.00	160.00	22.50	182.50	160.00	160.00	22.50	182.50

OBSERVACIONES:

CURVAS PRESIOMETRICAS

Sondeo 3 Capa 8 Prof. 9 m



F I C H A D E M E D I D A S P R E S I O M E T R I C A S

S O N D E O : 3.00 P R O F . M U E S T R A (m) : 9.50 F E C H A : 12/09/91

D A T O S G E N E R A L E S

E M P R E S A : HUNOSA P L A N T A : 8.00

G R U P O : S A N N I C O L A S C A P A : 7.00

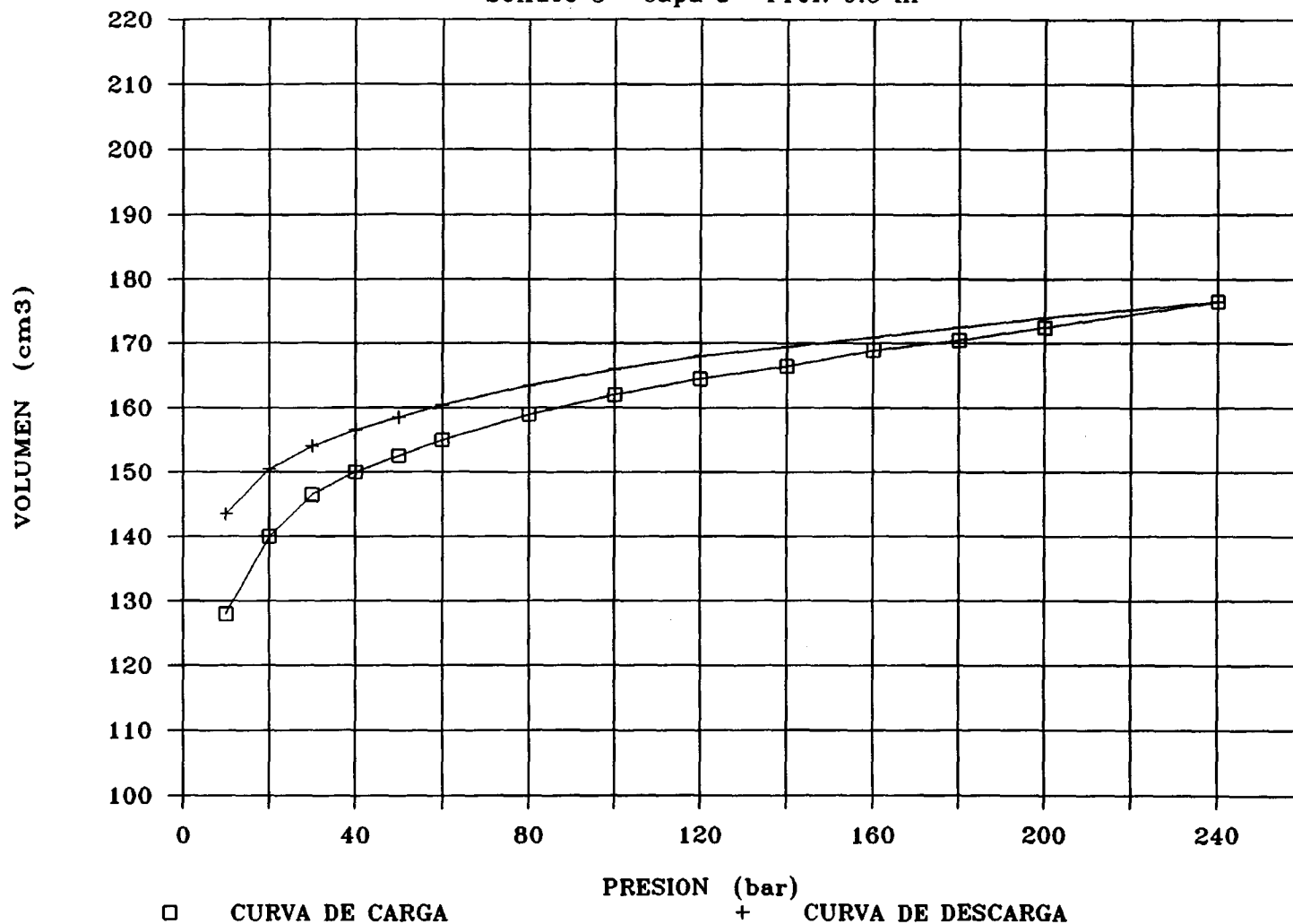
P O Z O : M O N T S A C R O

PRESION	VOLUMENES (Aumen)				VOLUMENES (Disml)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00	80.00	80.00	----	----	80.00	80.00	----	----
10.00	80.00	80.00	48.00	128.00	80.00	80.00	63.50	143.50
20.00	80.00	80.00	60.00	140.00	80.00	80.00	70.50	150.50
30.00	80.00	80.00	66.50	146.50	80.00	80.00	74.00	154.00
40.00	80.00	80.00	70.00	150.00	80.00	80.00	76.50	156.50
50.00	80.00	80.00	72.50	152.50	80.00	80.00	78.50	158.50
60.00	80.00	80.00	75.00	155.00	160.00	160.00	0.50	160.50
80.00	80.00	80.00	79.00	159.00	160.00	160.00	3.50	163.50
100.00	80.00	160.00	2.00	162.00	160.00	160.00	6.00	166.00
120.00	80.00	160.00	4.50	164.50	160.00	160.00	8.00	168.00
140.00	80.00	160.00	6.50	166.50	160.00	160.00	9.50	169.50
160.00	80.00	160.00	9.00	169.00	160.00	160.00	11.00	171.00
180.00	80.00	160.00	10.50	170.50	160.00	160.00	12.50	172.50
200.00	80.00	160.00	12.50	172.50	160.00	160.00	14.00	174.00
240.00	80.00	160.00	16.50	176.50	160.00	160.00	16.50	176.50

OBSERVACIONES:

CURVAS PRESIOMETRICAS

Sondeo 3 Capa 8 Prof. 9.5 m



F I C H A D E M O D U L O S P R E S I O M E T R I C O S

S O N D E O : 4

F E C H A : 25-09-91

D A T O S G E N E R A L E S

E M P R E S A : HUNOSA

P L A N T A : 7

G R U P O : SAN NICOLAS

C A P A : 8

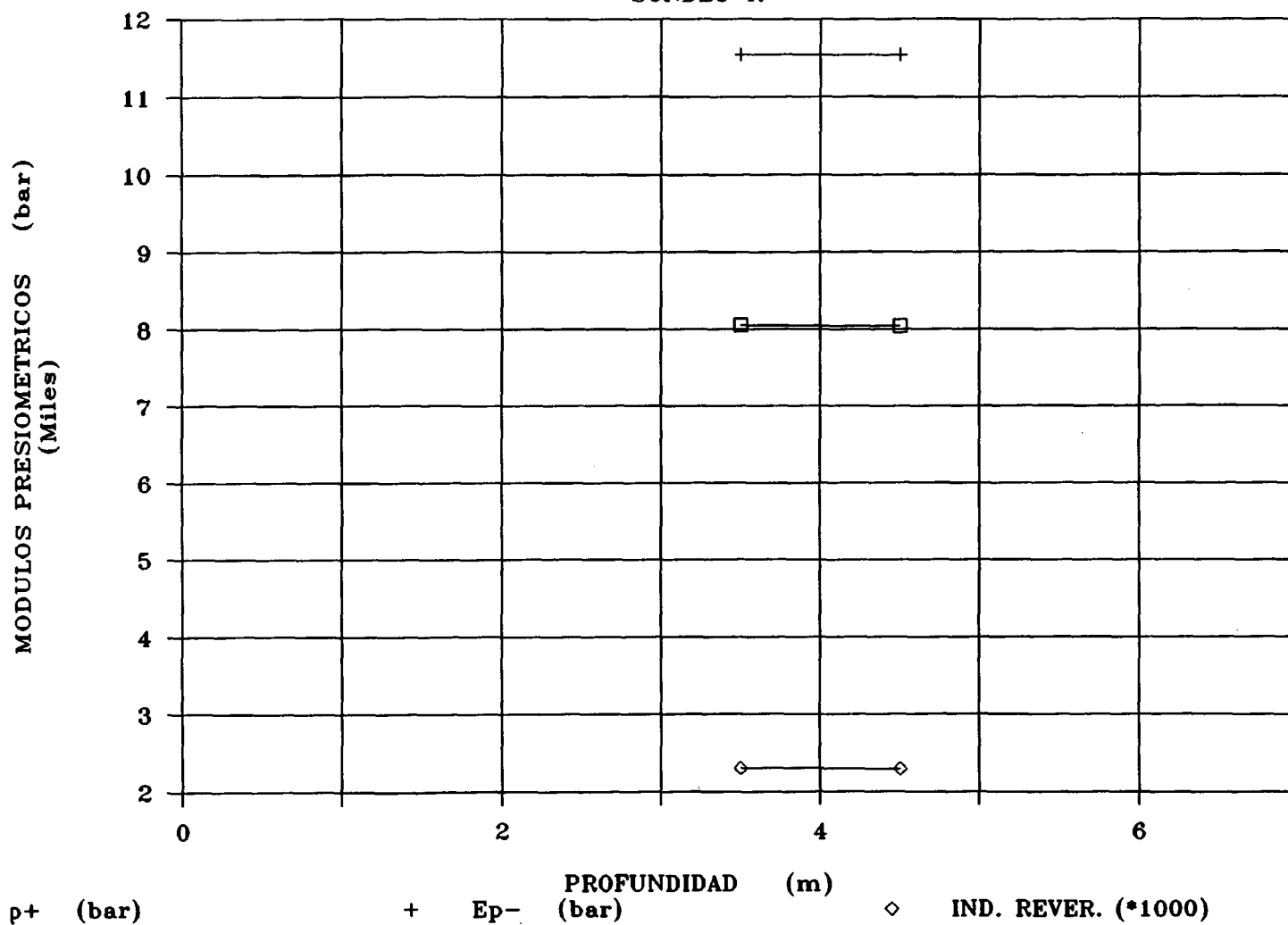
P O Z O : MONTSACRO

P R O F U N D I D A D (m)	C U R V A D E C A R G A		C U R V A D E D E S C A R G A		M O D U L O S P R E S I O M E T R I C O S		I N D I C E D E R E V E R S I B I L I D A D
	V1 (cm3)	V2 (cm3)	V1 (cm3)	V2 (cm3)	Ep+ (bar)	Ep- (bar)	
3.50	177.00	187.00	180.00	187.00	8050.00	11542.86	2.30
4.50	176.00	186.00	180.00	187.00	8040.00	11542.86	2.30

OBSERVACIONES:

MODULOS PRESIOMETRICOS

SONDEO 4.



F I C H A D E M E D I D A S P R E S I O M E T R I C A S

S O N D E O : 4 P R O F . M U E S T R A (m) : 3.50 F E C H A : 25-09-91

D A T O S G E N E R A L E S

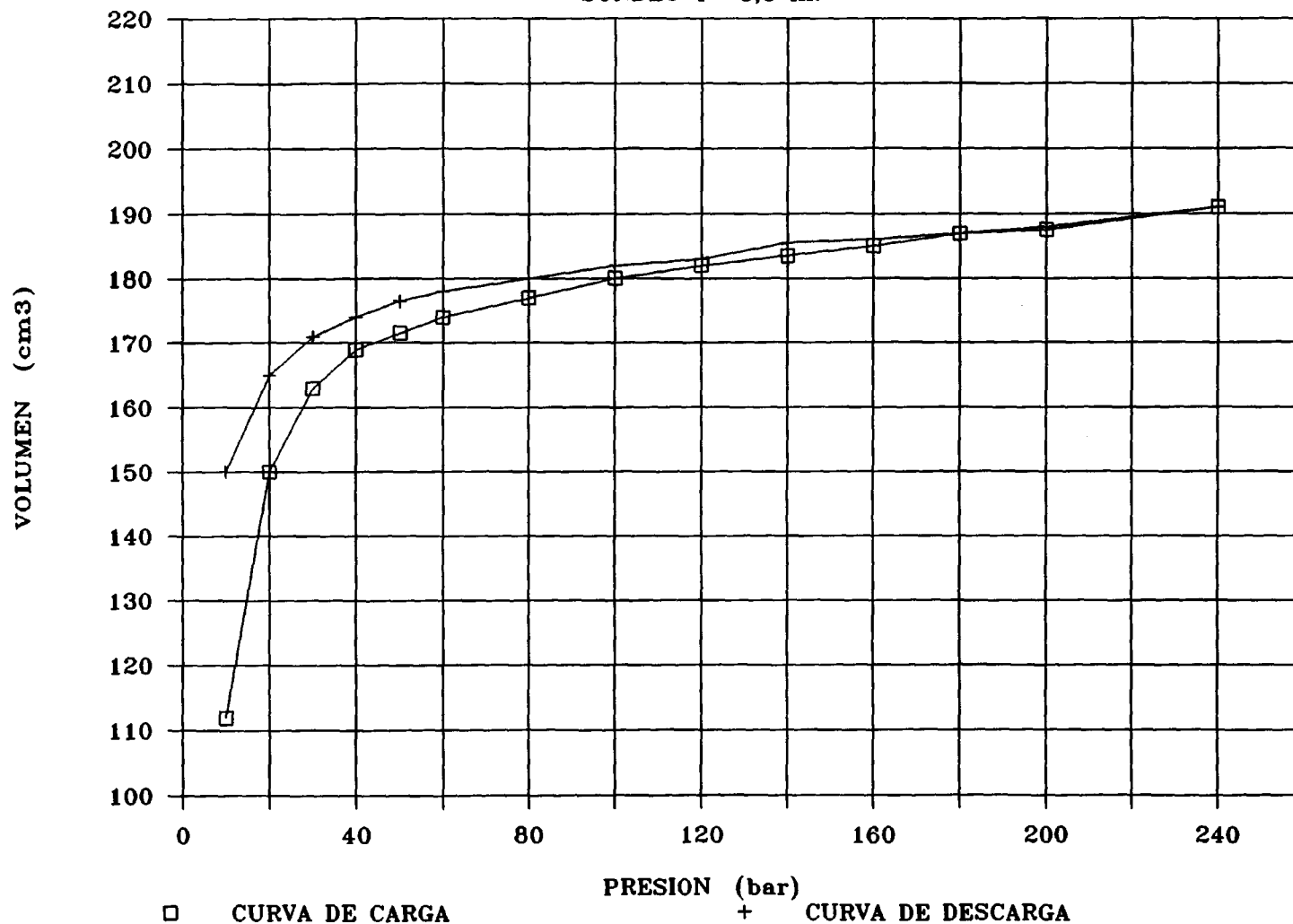
E M P R E S A : HUNOSA P L A N T A : 7
G R U P O : SAN NICOLAS C A P A : 8
P O Z O : MONTSACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Disml)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00		0.00	----	----	80.00	80.00	----	----
10.00	80.00	80.00	32.00	112.00	80.00	80.00	70.00	150.00
20.00	80.00	80.00	70.00	150.00	160.00	160.00	5.00	165.00
30.00	80.00	160.00	3.00	163.00	160.00	160.00	11.00	171.00
40.00	80.00	160.00	9.00	169.00	160.00	160.00	14.00	174.00
50.00	80.00	160.00	11.50	171.50	160.00	160.00	16.50	176.50
60.00	80.00	160.00	14.00	174.00	160.00	160.00	18.00	178.00
80.00	80.00	160.00	17.00	177.00	160.00	160.00	20.00	180.00
100.00	80.00	160.00	20.00	180.00	160.00	160.00	22.00	182.00
120.00	80.00	160.00	22.00	182.00	160.00	160.00	23.00	183.00
140.00	80.00	160.00	23.50	183.50	160.00	160.00	25.50	185.50
160.00	80.00	160.00	25.00	185.00	160.00	160.00	26.00	186.00
180.00	80.00	160.00	27.00	187.00	160.00	160.00	27.00	187.00
200.00	80.00	160.00	27.50	187.50	160.00	160.00	28.00	188.00
240.00	80.00	160.00	31.00	191.00	160.00	160.00	31.00	191.00

OBSERVACIONES:

CURVAS PRESIOMETRICAS

SONDEO 4- 3,5 m.



F I C H A D E M E D I D A S P R E S I O M E T R I C A S

S O N D E O : 4 P R O F . M U E S T R A (m) : 4.50 F E C H A : 25-09-91

D A T O S G E N E R A L E S

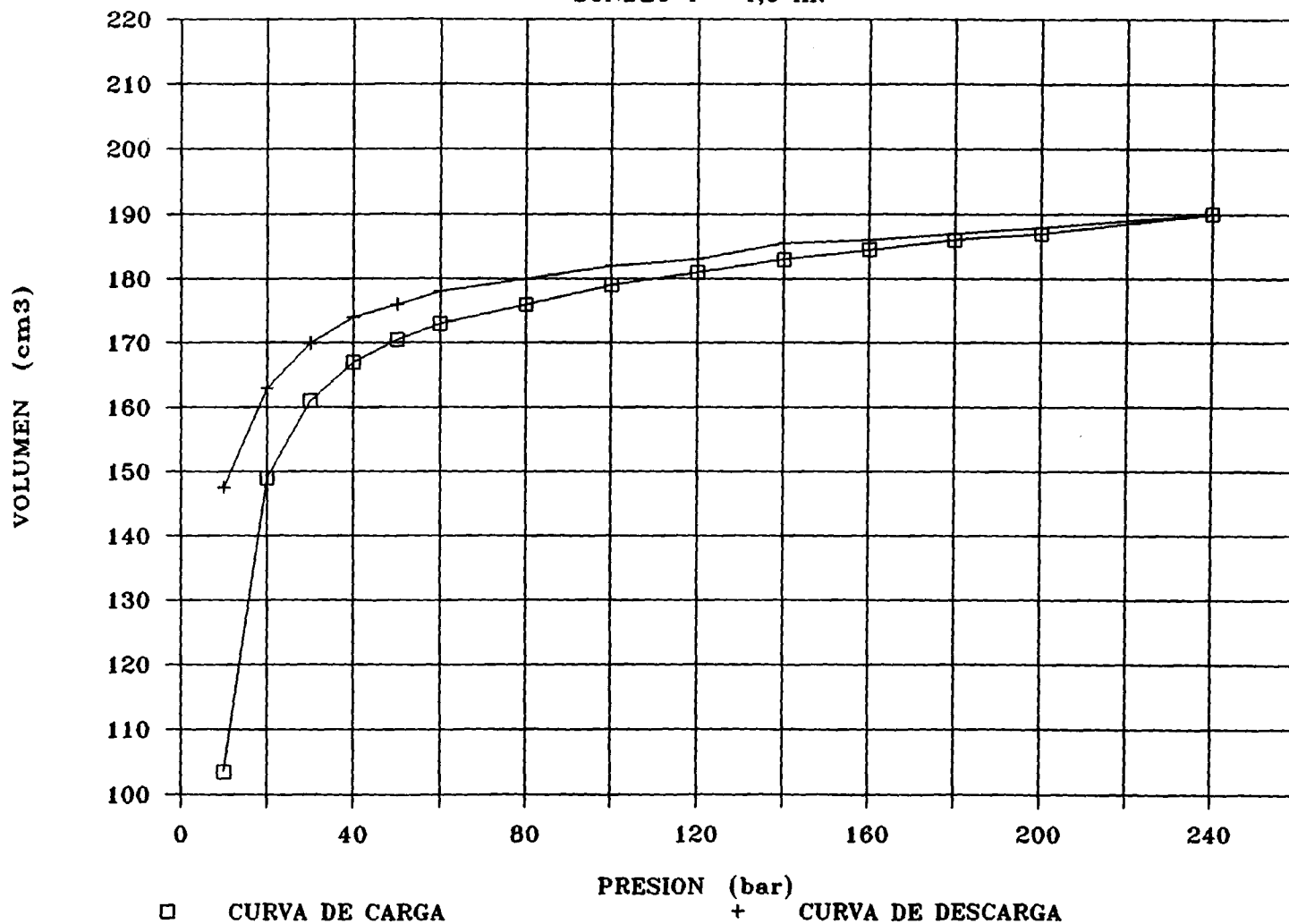
E M P R E S A : HUNOSA P L A N T A : 7
G R U P O : SAN NICOLAS C A P A : 8
P O Z O : MONTSACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Dismi)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00		0.00	----	----	80.00	80.00	----	----
10.00	80.00	80.00	23.50	103.50	80.00	80.00	67.50	147.50
20.00	80.00	80.00	69.00	149.00	80.00	160.00	3.00	163.00
30.00	80.00	160.00	1.00	161.00	160.00	160.00	10.00	170.00
40.00	80.00	160.00	7.00	167.00	160.00	160.00	14.00	174.00
50.00	80.00	160.00	10.50	170.50	160.00	160.00	16.00	176.00
60.00	80.00	160.00	13.00	173.00	160.00	160.00	18.00	178.00
80.00	80.00	160.00	16.00	176.00	160.00	160.00	20.00	180.00
100.00	80.00	160.00	19.00	179.00	160.00	160.00	22.00	182.00
120.00	80.00	160.00	21.00	181.00	160.00	160.00	23.00	183.00
140.00	80.00	160.00	23.00	183.00	160.00	160.00	25.50	185.50
160.00	80.00	160.00	24.50	184.50	160.00	160.00	26.00	186.00
180.00	80.00	160.00	26.00	186.00	160.00	160.00	27.00	187.00
200.00	80.00	160.00	27.00	187.00	160.00	160.00	28.00	188.00
240.00	80.00	160.00	30.00	190.00	160.00	160.00	30.00	190.00

OBSERVACIONES:

CURVAS PRESIOMETRICAS

SONDEO 4 - 4,5 m.



FICHA DE MODULOS PRESIOMETRICOS

SONDEO : 5

FECHA : 27-09-91

DATOS GENERALES

EMPRESA : HUNOSA

PLANTA : 7

GRUPO : SAN NICOLAS

CAPA : 8

POZO : MONTSACRO

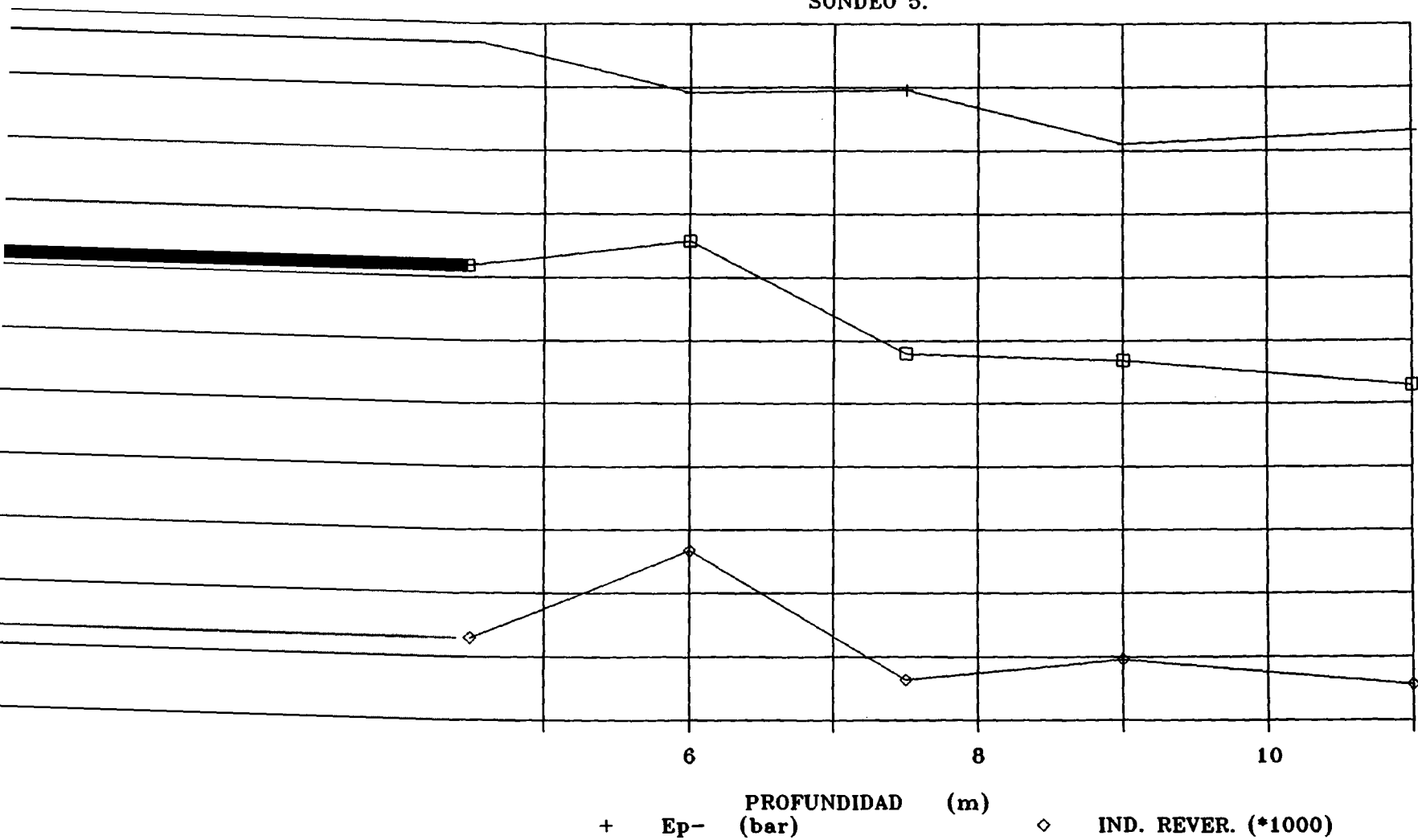
PROFUNDIDAD (m)	CURVA DE CARGA		CURVA DE DESCARGA		MODULOS PRESIOMETRICOS		INDICE DE REVERSIBILIDAD
	V1 (cm3)	V2 (cm3)	V1 (cm3)	V2 (cm3)	Ep+ (bar)	Ep- (bar)	
4.50	191.00	201.00	194.50	201.50	8190.00	11750.00	2.30
6.00	187.50	197.00	191.00	198.50	8584.21	10920.00	3.68
7.50	188.00	200.00	194.00	201.50	6800.00	10960.00	1.63
9.00	175.00	187.00	181.00	189.00	6691.67	10112.50	1.96
11.00	190.50	203.50	197.50	205.50	6296.15	10318.75	1.57

OBSERVACIONES:

Medidas realizadas al día siguiente de hacer el sondeo

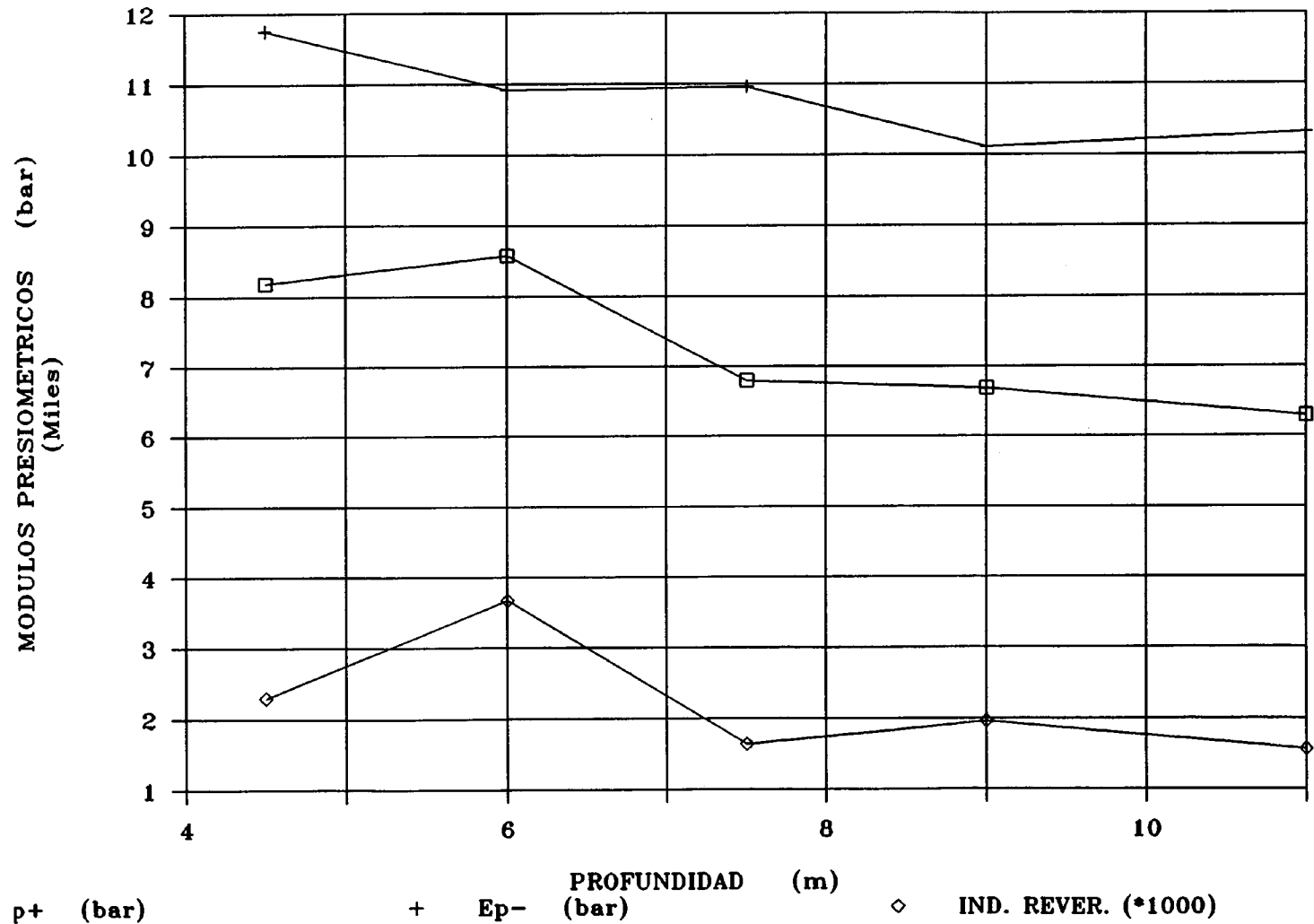
MODULOS PRESIOMETRICOS

SONDEO 5.



MODULOS PRESIOMETRICOS

SONDEO 5.



F I C H A D E M E D I D A S P R E S I O M E T R I C A S

S O N D E O : 5 P R O F . M U E S T R A (m) : 4.50 F E C H A : 27-09-91

D A T O S G E N E R A L E S

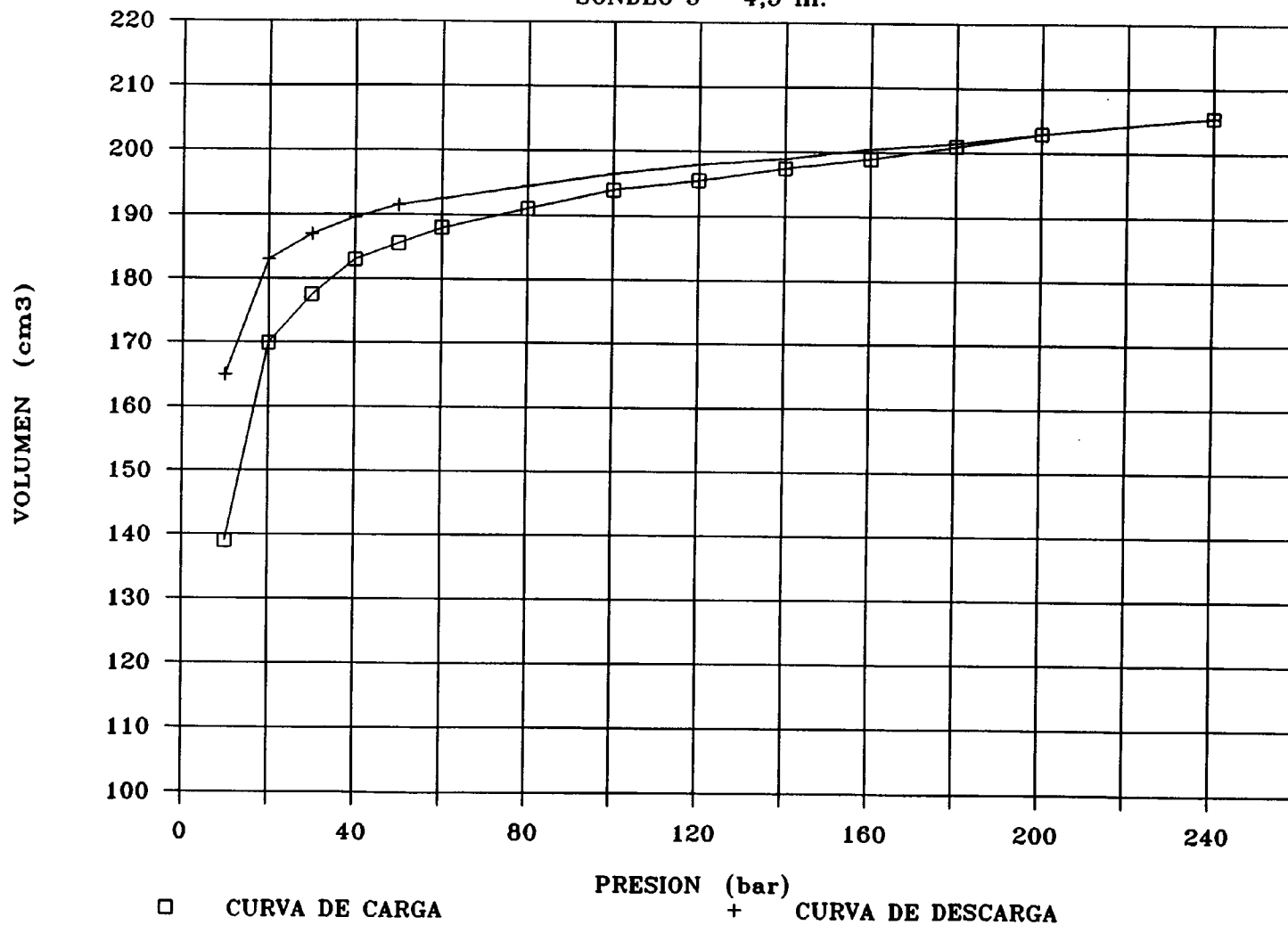
E M P R E S A : HUNOSA P L A N T A : 7
G R U P O : SAN NICOLAS C A P A : 8
P O Z O : MONTSACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Dismi)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00		0.00	----	----	160.00	160.00	----	----
10.00	80.00	80.00	59.00	139.00	160.00	160.00	5.00	165.00
20.00	80.00	160.00	10.00	170.00	160.00	160.00	23.00	183.00
30.00	80.00	160.00	17.50	177.50	160.00	160.00	27.00	187.00
40.00	80.00	160.00	23.00	183.00	160.00	160.00	29.50	189.50
50.00	80.00	160.00	25.50	185.50	160.00	160.00	31.50	191.50
60.00	80.00	160.00	28.00	188.00	160.00	160.00	32.50	192.50
80.00	80.00	160.00	31.00	191.00	160.00	160.00	34.50	194.50
100.00	80.00	160.00	34.00	194.00	160.00	160.00	36.50	196.50
120.00	80.00	160.00	35.50	195.50	160.00	160.00	38.00	198.00
140.00	80.00	160.00	37.50	197.50	160.00	160.00	39.00	199.00
160.00	80.00	160.00	39.00	199.00	160.00	160.00	40.50	200.50
180.00	80.00	160.00	41.00	201.00	160.00	160.00	41.50	201.50
200.00	80.00	160.00	43.00	203.00	160.00	160.00	43.00	203.00
240.00	80.00	160.00	45.50	205.50	160.00	160.00	45.50	205.50

OBSERVACIONES:

CURVAS PRESIOMETRICAS

SONDEO 5 - 4,5 m.



FICHA DE MEDIDAS PRESIOMETRICAS

SONDEO: 5 PROF. MUESTRA (m): 6.00 FECHA: 27-09-91

DATOS GENERALES

EMPRESA: HUNOSA PLANTA: 7

GRUPO: SAN NICOLAS CAPA: 8

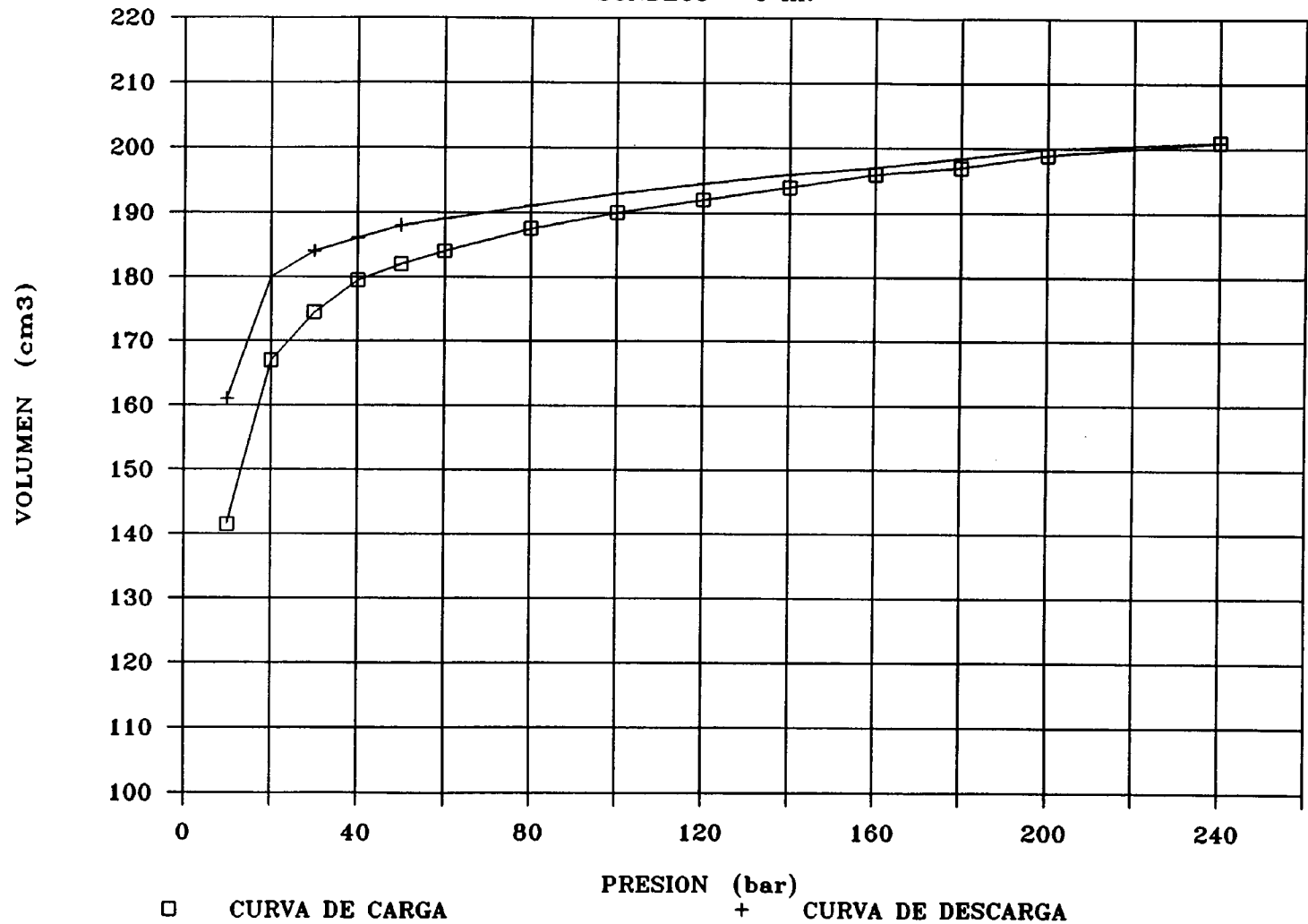
POZO: MONTSACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Dismi)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00		0.00	----	----	160.00	160.00	----	----
10.00	80.00	80.00	61.50	141.50	160.00	160.00	1.00	161.00
20.00	80.00	160.00	7.00	167.00	160.00	160.00	20.00	180.00
30.00	80.00	160.00	14.50	174.50	160.00	160.00	24.00	184.00
40.00	80.00	160.00	19.50	179.50	160.00	160.00	26.00	186.00
50.00	80.00	160.00	22.00	182.00	160.00	160.00	28.00	188.00
60.00	80.00	160.00	24.00	184.00	160.00	160.00	29.00	189.00
80.00	80.00	160.00	27.50	187.50	160.00	160.00	31.00	191.00
100.00	80.00	160.00	30.00	190.00	160.00	160.00	33.00	193.00
120.00	80.00	160.00	32.00	192.00	160.00	160.00	34.50	194.50
140.00	80.00	160.00	34.00	194.00	160.00	160.00	36.00	196.00
160.00	80.00	160.00	36.00	196.00	160.00	160.00	37.00	197.00
180.00	80.00	160.00	37.00	197.00	160.00	160.00	38.50	198.50
200.00	80.00	160.00	39.00	199.00	160.00	160.00	40.00	200.00
240.00	80.00	160.00	41.00	201.00	160.00	160.00	41.00	201.00

OBSERVACIONES:

CURVAS PRESIOMETRICAS

SONDE05 - 6 m.



F I C H A D E M E D I D A S P R E S I O M E T R I C A S

S O N D E O : 5 P R O F . M U E S T R A (m) : 7.50 F E C H A : 27-09-91

D A T O S G E N E R A L E S

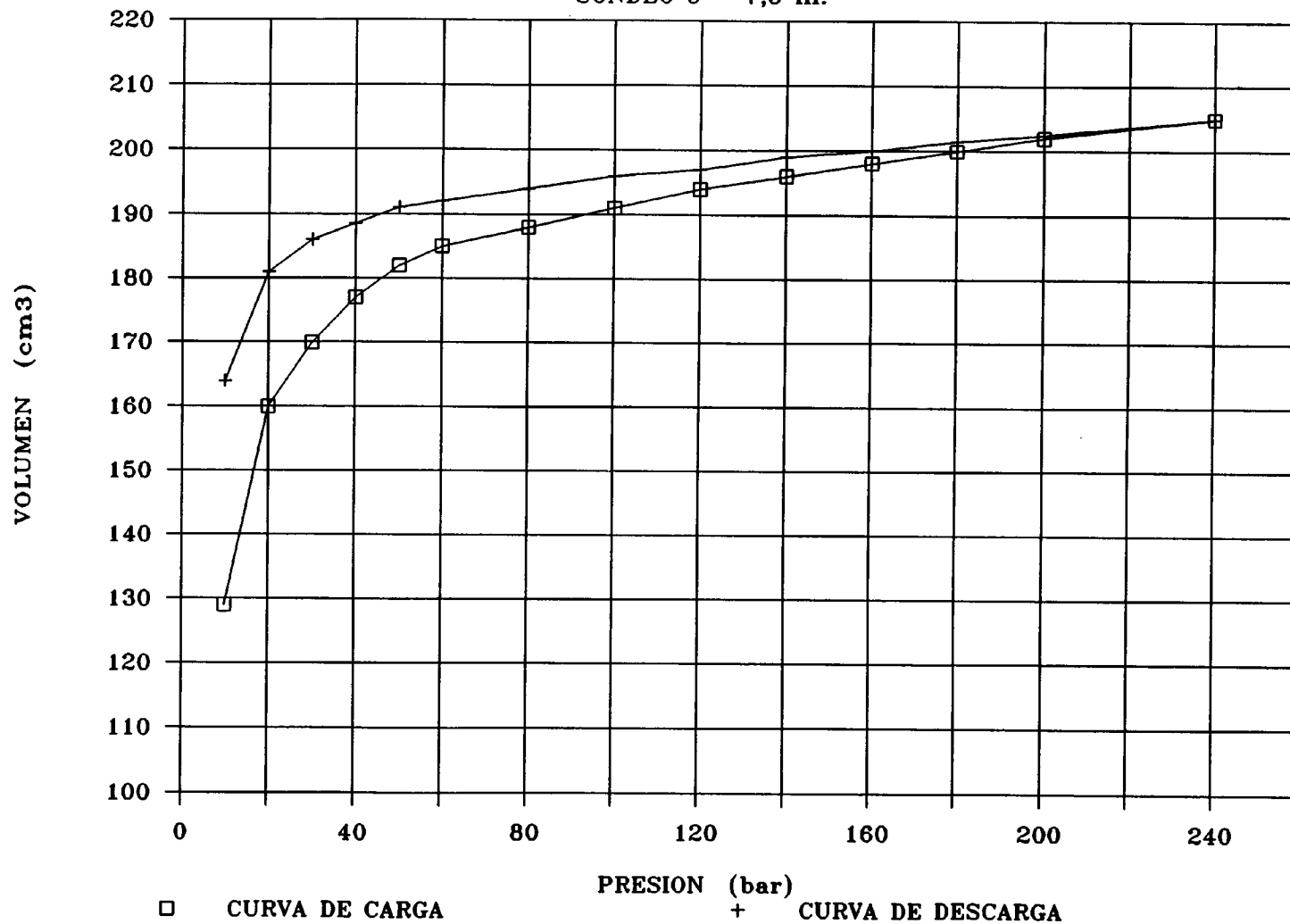
E M P R E S A : HUNOSA P L A N T A : 7
G R U P O : SAN NICOLAS C A P A : 8
P O Z O : MONTSACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Dismi)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00		0.00	----	----	160.00	160.00	----	----
10.00	80.00	80.00	49.00	129.00	160.00	160.00	4.00	164.00
20.00	80.00	160.00	0.00	160.00	160.00	160.00	21.00	181.00
30.00	80.00	160.00	10.00	170.00	160.00	160.00	26.00	186.00
40.00	80.00	160.00	17.00	177.00	160.00	160.00	28.50	188.50
50.00	80.00	160.00	22.00	182.00	160.00	160.00	31.00	191.00
60.00	80.00	160.00	25.00	185.00	160.00	160.00	32.00	192.00
80.00	80.00	160.00	28.00	188.00	160.00	160.00	34.00	194.00
100.00	80.00	160.00	31.00	191.00	160.00	160.00	36.00	196.00
120.00	80.00	160.00	34.00	194.00	160.00	160.00	37.00	197.00
140.00	80.00	160.00	36.00	196.00	160.00	160.00	39.00	199.00
160.00	80.00	160.00	38.00	198.00	160.00	160.00	40.00	200.00
180.00	80.00	160.00	40.00	200.00	160.00	160.00	41.50	201.50
200.00	80.00	160.00	42.00	202.00	160.00	160.00	42.50	202.50
240.00	80.00	160.00	45.00	205.00	160.00	160.00	45.00	205.00

OBSERVACIONES:

CURVAS PRESIOMETRICAS

SONDEO 5 - 7,5 m.



F I C H A D E M E D I D A S P R E S I O M E T R I C A S

S O N D E O : 5 P R O F . M U E S T R A (m) : 9.00 F E C H A : 27-09-91

D A T O S G E N E R A L E S

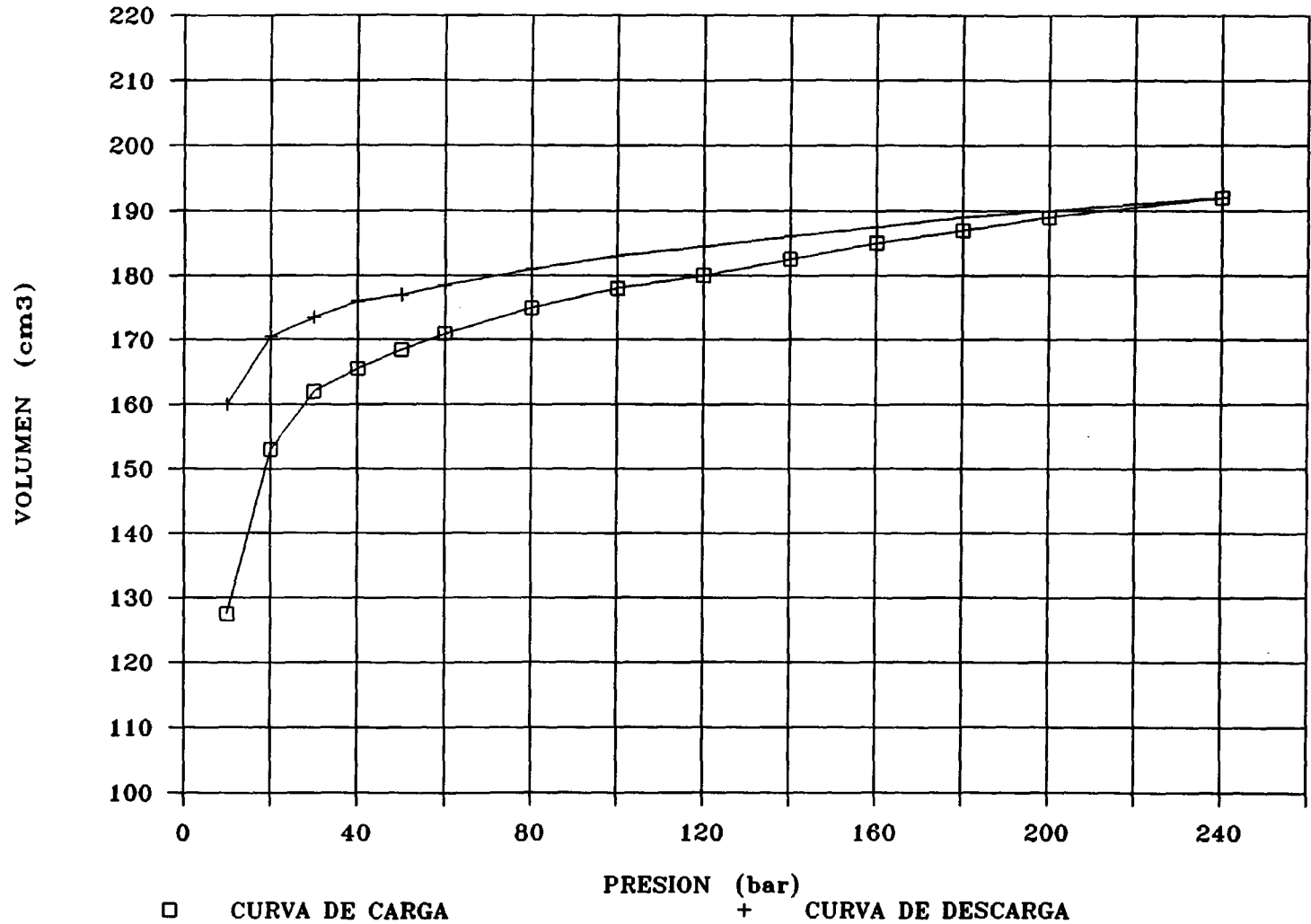
E M P R E S A : HUNOSA P L A N T A : 7
G R U P O : SAN NICOLAS C A P A : 8
P O Z O : MONTSACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Dismi)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00		0.00	----	----	160.00	160.00	----	----
10.00	80.00	80.00	47.50	127.50	160.00	160.00	0.00	160.00
20.00	80.00	80.00	73.00	153.00	160.00	160.00	10.50	170.50
30.00	80.00	160.00	2.00	162.00	160.00	160.00	13.50	173.50
40.00	80.00	160.00	5.50	165.50	160.00	160.00	16.00	176.00
50.00	80.00	160.00	8.50	168.50	160.00	160.00	17.00	177.00
60.00	80.00	160.00	11.00	171.00	160.00	160.00	18.50	178.50
80.00	80.00	160.00	15.00	175.00	160.00	160.00	21.00	181.00
100.00	80.00	160.00	18.00	178.00	160.00	160.00	23.00	183.00
120.00	80.00	160.00	20.00	180.00	160.00	160.00	24.50	184.50
140.00	80.00	160.00	22.50	182.50	160.00	160.00	26.00	186.00
160.00	80.00	160.00	25.00	185.00	160.00	160.00	27.50	187.50
180.00	80.00	160.00	27.00	187.00	160.00	160.00	29.00	189.00
200.00	80.00	160.00	29.00	189.00	160.00	160.00	30.00	190.00
240.00	80.00	160.00	32.00	192.00	160.00	160.00	32.00	192.00

OBSERVACIONES:

CURVAS PRESIOMETRICAS

SONDEO 5 - 9 m.



F I C H A D E M E D I D A S P R E S I O M E T R I C A S

S O N D E O : 5 P R O F . M U E S T R A (m) : 11.00 F E C H A : 27-09-91

D A T O S G E N E R A L E S

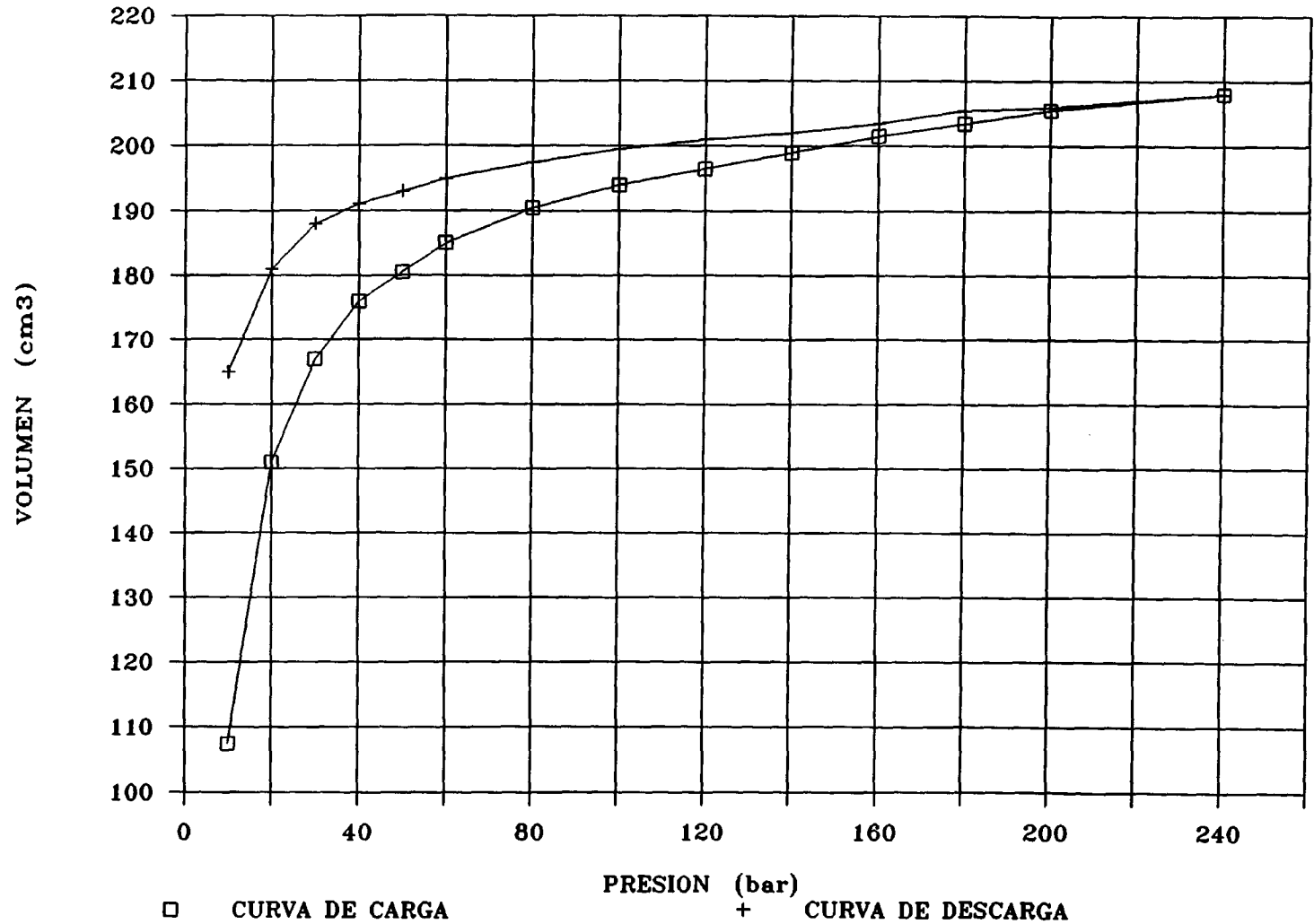
E M P R E S A : HUNOSA P L A N T A : 7
G R U P O : SAN NICOLAS C A P A : 8
P O Z O : MONTSACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Dismi)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00		0.00	----	----	160.00	160.00	----	----
10.00	80.00	80.00	27.50	107.50	160.00	160.00	5.00	165.00
20.00	80.00	80.00	71.00	151.00	160.00	160.00	21.00	181.00
30.00	80.00	160.00	7.00	167.00	160.00	160.00	28.00	188.00
40.00	80.00	160.00	16.00	176.00	160.00	160.00	31.00	191.00
50.00	80.00	160.00	20.50	180.50	160.00	160.00	33.00	193.00
60.00	80.00	160.00	25.00	185.00	160.00	160.00	35.00	195.00
80.00	80.00	160.00	30.50	190.50	160.00	160.00	37.50	197.50
100.00	80.00	160.00	34.00	194.00	160.00	160.00	39.50	199.50
120.00	80.00	160.00	36.50	196.50	160.00	160.00	41.00	201.00
140.00	80.00	160.00	39.00	199.00	160.00	160.00	42.00	202.00
160.00	80.00	160.00	41.50	201.50	160.00	160.00	43.50	203.50
180.00	80.00	160.00	43.50	203.50	160.00	160.00	45.50	205.50
200.00	80.00	160.00	45.50	205.50	160.00	160.00	46.00	206.00
240.00	80.00	160.00	48.00	208.00	160.00	160.00	48.00	208.00

OBSERVACIONES:

CURVAS PRESIOMETRICAS

SONDEO 5 - 11 m.



FICHA DE MODULOS PRESIOMETRICOS

S O N D E O : 5-1

F E C H A : 26-09-91

DATOS GENERALES

E M P R E S A : HUNOSA

P L A N T A : 7

G R U P O : SAN NICOLAS

C A P A : 8

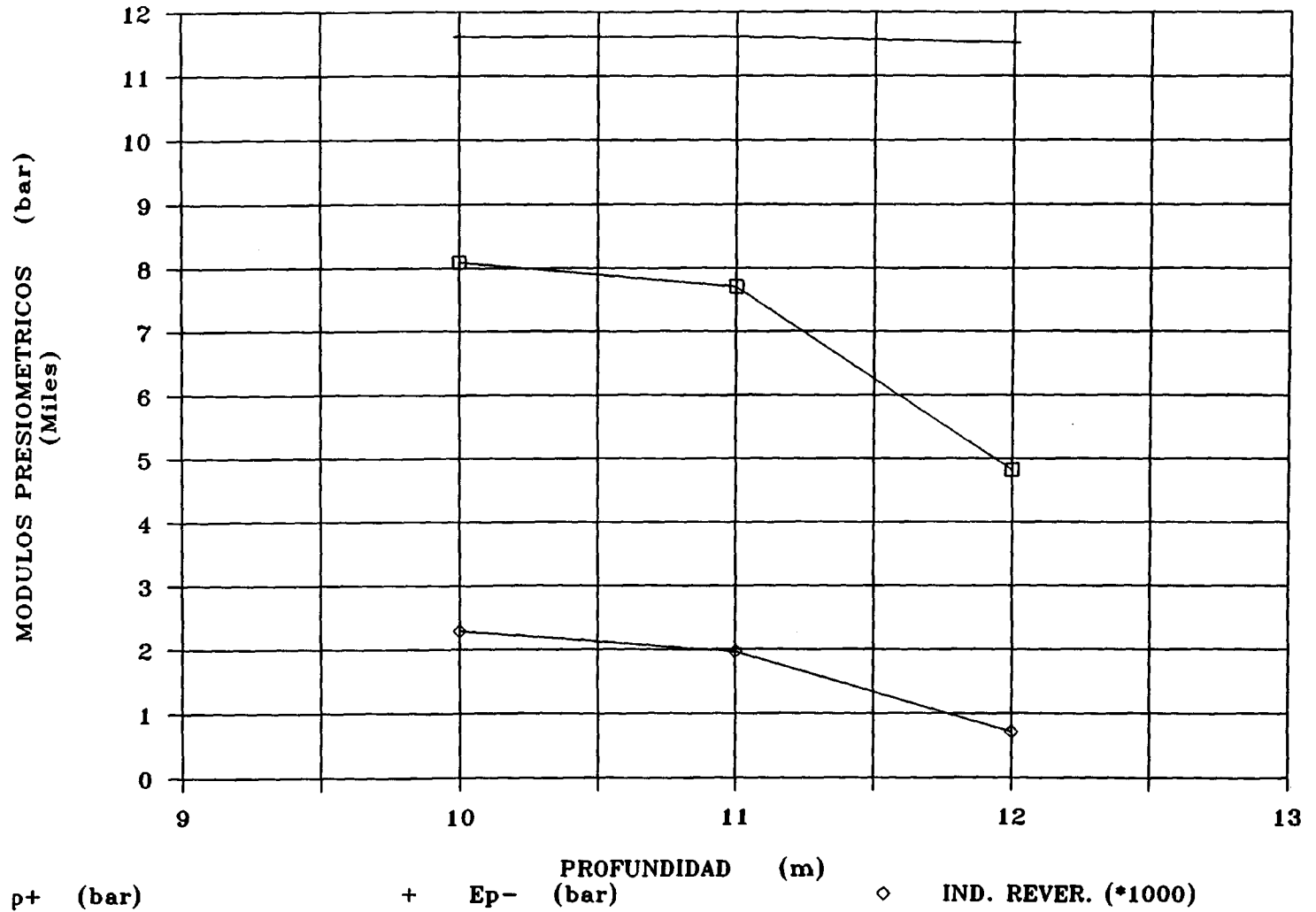
P O Z O : MONTSACRO

PROFUNDIDAD (m)	CURVA DE CARGA		CURVA DE DESCARGA		MODULOS PRESIOMETRICOS		INDICE DE REVERSIBILIDAD
	V1 (cm3)	V2 (cm3)	V1 (cm3)	V2 (cm3)	Ep+ (bar)	Ep- (bar)	
10.00	181.00	191.00	185.00	192.00	8090.00	11614.29	2.30
11.00	181.00	191.50	185.00	192.00	7704.76	11614.29	1.97
12.00	167.50	184.00	179.00	186.00	4821.21	11528.57	0.72

OBSERVACIONES:

MODULOS PRESIOMETRICOS

SONDEO 5.1.



F I C H A D E M E D I D A S P R E S I O M E T R I C A S

S O N D E O : 5-1 P R O F . M U E S T R A (m) : 10.00 F E C H A : 26-09-91

D A T O S G E N E R A L E S

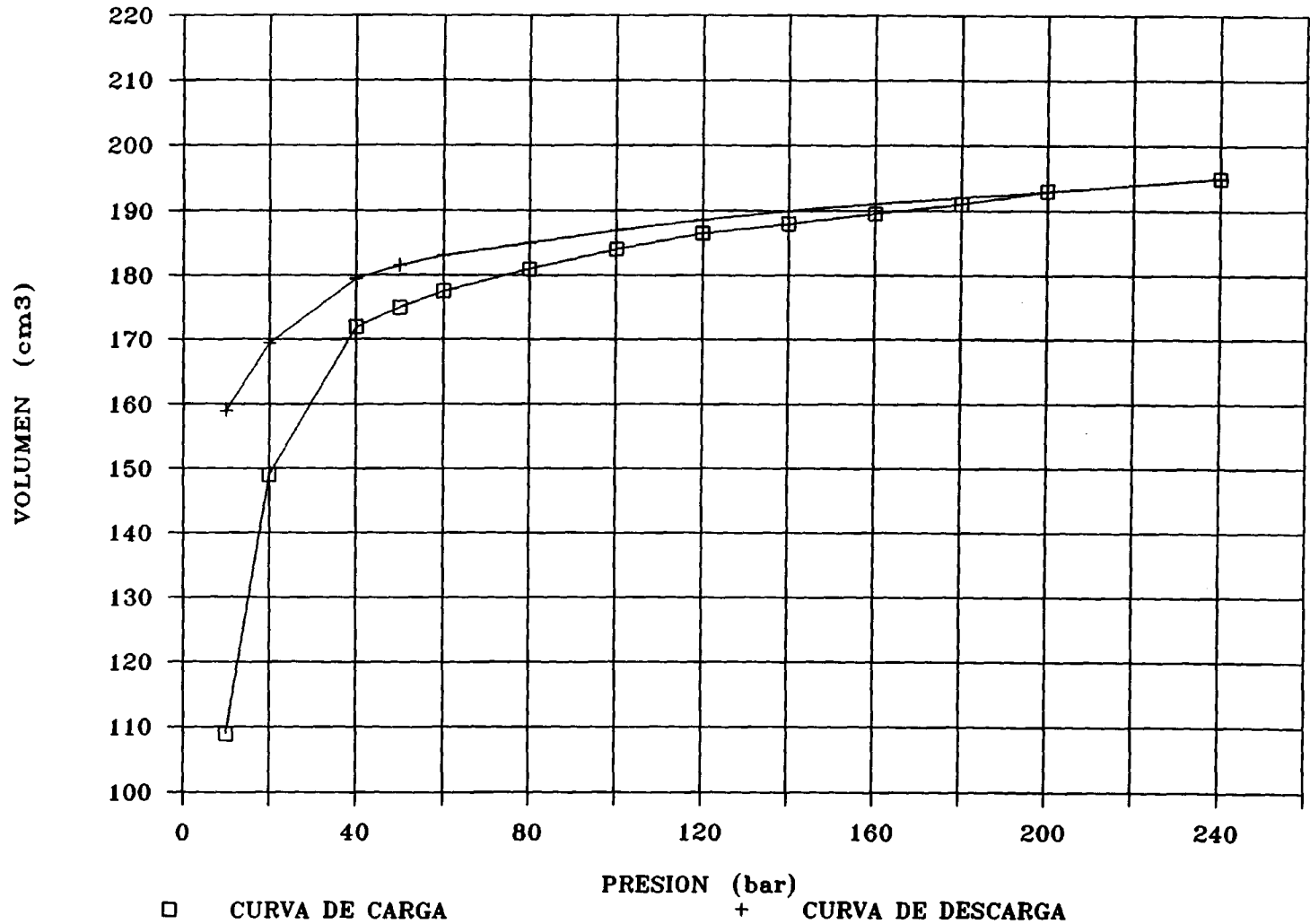
E M P R E S A : HUNOSA P L A N T A : 7
G R U P O : SAN NICOLAS C A P A : 8
P O Z O : MONTSACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Dismi)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00		0.00	----	----	0.00	159.00	----	----
10.00	80.00	80.00	29.00	109.00	0.00	159.00	0.00	159.00
20.00	80.00	80.00	69.00	149.00	1.00	159.00	10.50	169.50
30.00	80.00	160.00		160.00	160.00	160.00		160.00
40.00	80.00	160.00	12.00	172.00	160.00	160.00	19.50	179.50
50.00	80.00	160.00	15.00	175.00	160.00	160.00	21.50	181.50
60.00	80.00	160.00	17.50	177.50	160.00	160.00	23.00	183.00
80.00	80.00	160.00	21.00	181.00	160.00	160.00	25.00	185.00
100.00	80.00	160.00	24.00	184.00	160.00	160.00	27.00	187.00
120.00	80.00	160.00	26.50	186.50	160.00	160.00	28.50	188.50
140.00	80.00	160.00	28.00	188.00	160.00	160.00	30.00	190.00
160.00	80.00	160.00	29.50	189.50	160.00	160.00	31.00	191.00
180.00	80.00	160.00	31.00	191.00	160.00	160.00	32.00	192.00
200.00	80.00	160.00	33.00	193.00	160.00	160.00	33.00	193.00
240.00	80.00	160.00	35.00	195.00	160.00	160.00	35.00	195.00

OBSERVACIONES:

CURVAS PRESIOMETRICAS

SONDEO 5.1 - 10 m.



FICHA DE MEDIDAS PRESIOMETRICAS

SONDEO : 5-1 PROF. MUESTRA (m) : 11.00 FECHA : 26-09-91

DATOS GENERALES

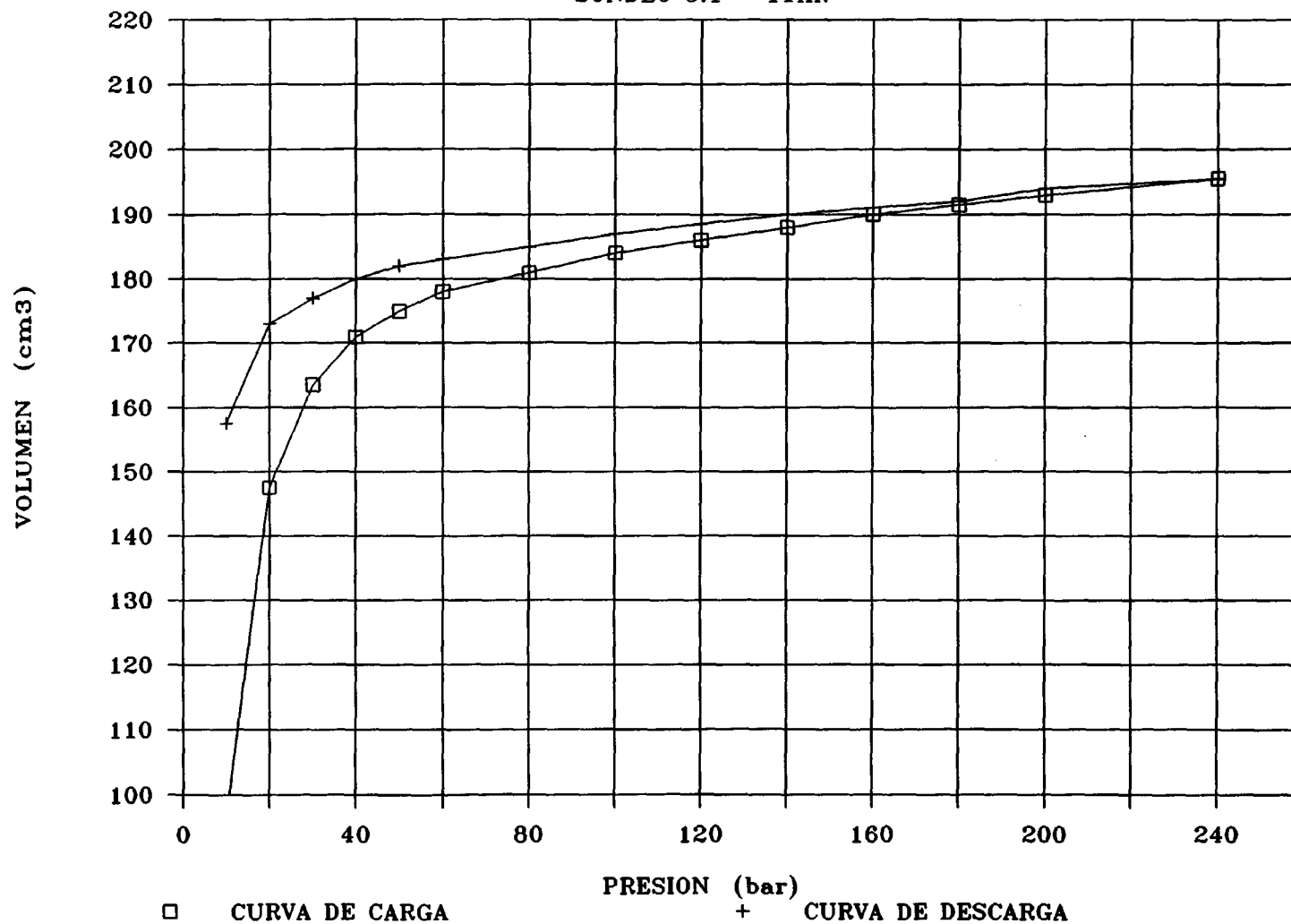
EMPRESA : HUNOSA PLANTA : 7
GRUPO : SAN NICOLAS CAPA : 8
POZO : MONTSACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Dismi)			
	DE RELLENO	VOLUMEN			DE REBOSE	VOLUMEN		
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00		0.00	----	----	80.00	80.00	----	----
10.00	80.00	80.00	15.50	95.50	80.00	80.00	77.50	157.50
20.00	80.00	80.00	67.50	147.50	160.00	160.00	13.00	173.00
30.00	80.00	160.00	3.50	163.50	160.00	160.00	17.00	177.00
40.00	80.00	160.00	11.00	171.00	160.00	160.00	20.00	180.00
50.00	80.00	160.00	15.00	175.00	160.00	160.00	22.00	182.00
60.00	80.00	160.00	18.00	178.00	160.00	160.00	23.00	183.00
80.00	80.00	160.00	21.00	181.00	160.00	160.00	25.00	185.00
100.00	80.00	160.00	24.00	184.00	160.00	160.00	27.00	187.00
120.00	80.00	160.00	26.00	186.00	160.00	160.00	28.50	188.50
140.00	80.00	160.00	28.00	188.00	160.00	160.00	30.00	190.00
160.00	80.00	160.00	30.00	190.00	160.00	160.00	31.00	191.00
180.00	80.00	160.00	31.50	191.50	160.00	160.00	32.00	192.00
200.00	80.00	160.00	33.00	193.00	160.00	160.00	34.00	194.00
240.00	80.00	160.00	35.50	195.50	160.00	160.00	35.50	195.50

OBSERVACIONES:

CURVAS PRESIOMETRICAS

SONDEO 5.1 - 11m.



F I C H A D E M E D I D A S P R E S I O M E T R I C A S

S O N D E O : 5-1 P R O F . M U E S T R A (m) : 12.00 F E C H A : 26-09-91

D A T O S G E N E R A L E S

E M P R E S A : H U N O S A P L A N T A : 7

G R U P O : S A N N I C O L A S C A P A : 8

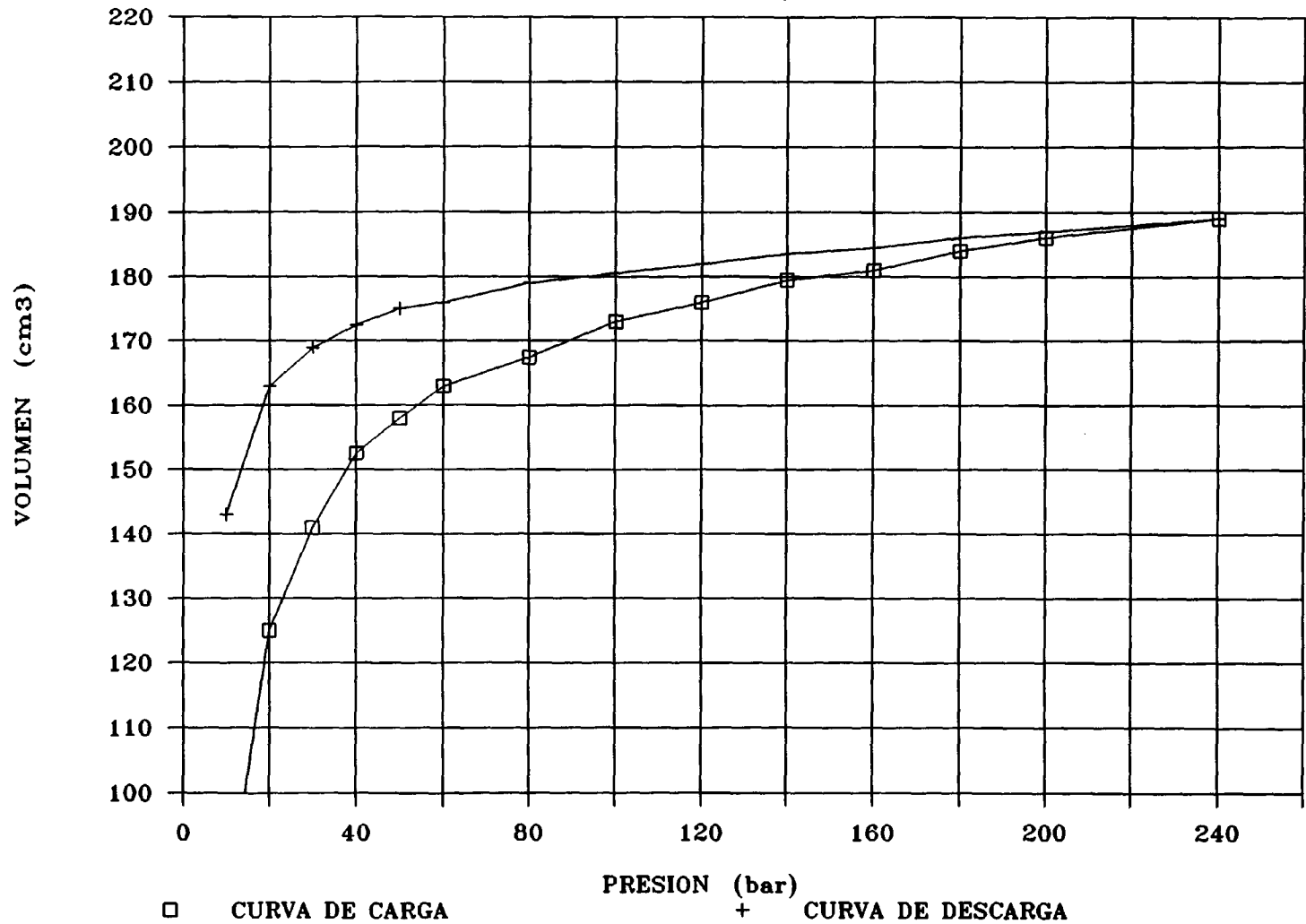
P O Z O : M O N T S A C R O

PRESION	VOLUMENES (Aumen)				VOLUMENES (Disml)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00		0.00	----	----	80.00	80.00	----	----
10.00	80.00	80.00	0.00	80.00	80.00	80.00	63.00	143.00
20.00	80.00	80.00	45.00	125.00	160.00	160.00	3.00	163.00
30.00	80.00	80.00	61.00	141.00	160.00	160.00	9.00	169.00
40.00	80.00	80.00	72.50	152.50	160.00	160.00	12.50	172.50
50.00	80.00	80.00	78.00	158.00	160.00	160.00	15.00	175.00
60.00	80.00	160.00	3.00	163.00	160.00	160.00	16.00	176.00
80.00	80.00	160.00	7.50	167.50	160.00	160.00	19.00	179.00
100.00	80.00	160.00	13.00	173.00	160.00	160.00	20.50	180.50
120.00	80.00	160.00	16.00	176.00	160.00	160.00	22.00	182.00
140.00	80.00	160.00	19.50	179.50	160.00	160.00	23.50	183.50
160.00	80.00	160.00	21.00	181.00	160.00	160.00	24.50	184.50
180.00	80.00	160.00	24.00	184.00	160.00	160.00	26.00	186.00
200.00	80.00	160.00	26.00	186.00	160.00	160.00	27.00	187.00
240.00	80.00	160.00	29.00	189.00	160.00	160.00	29.00	189.00

OBSERVACIONES:

CURVAS PRESIOMETRICAS

SONDEO 5.1 - 12 m.



ANEXO 23

MEDICIONES DE PRESIOMETRIA EN EL SUBNIVEL CERO

F I C H A D E M O D U L O S P R E S I O M E T R I C O S

S O N D E O : 1

F E C H A : 27-11-91

D A T O S G E N E R A L E S

E M P R E S A : H U N O S A P L A N T A : 5

G R U P O : S . N I C O L A S C A P A : 8

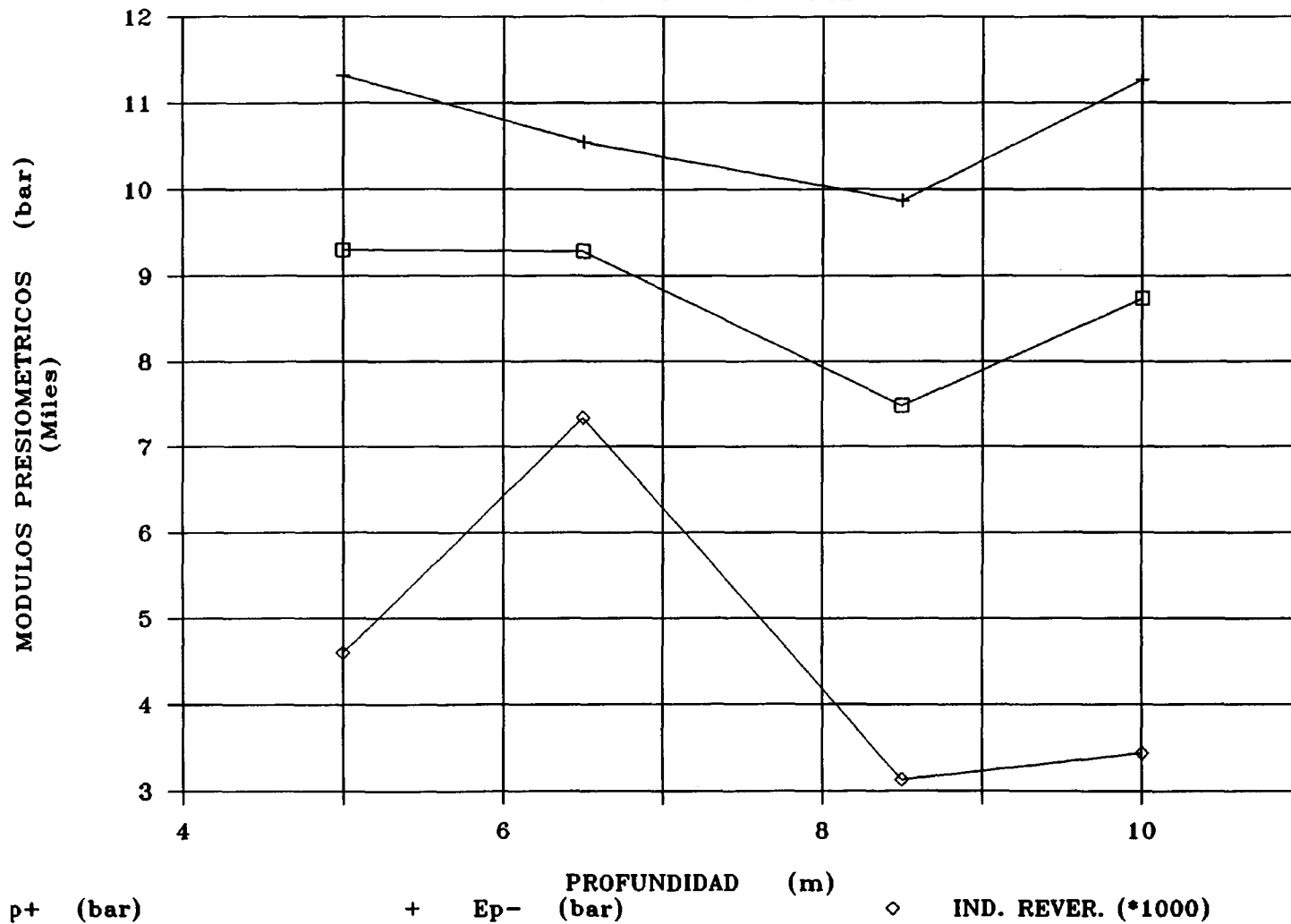
P O Z O : M O N T S A C R O

PROFUNDIDAD (m)	CURVA DE CARGA		CURVA DE DESCARGA		MODULOS PRESIOMETRICOS		INDICE DE
	V1 (cm3)	V2 (cm3)	V1 (cm3)	V2 (cm3)	Ep+ (bar)	Ep- (bar)	REVERSIBILIDAD
10.00	158.00	167.00	161.00	168.00	8733.33	11271.43	3.44
8.50	158.00	168.50	162.00	170.00	7485.71	9875.00	3.13
6.50	161.00	169.50	163.00	170.50	9282.35	10546.67	7.34
5.00	162.50	171.00	164.50	171.50	9300.00	11321.43	4.60

OBSERVACIONES: Sondeo realizado en el 4 recorte. A 40 m. del recorte.

MODULOS PRESIOMETRICOS

SONDEO 1 - 4 RECORTE



FICHA DE MEDIDAS PRESIOMETRICAS

SONDEO : 1 PROF. MUESTRA (m) : 5 FECHA : 27-11-91

DATOS GENERALES

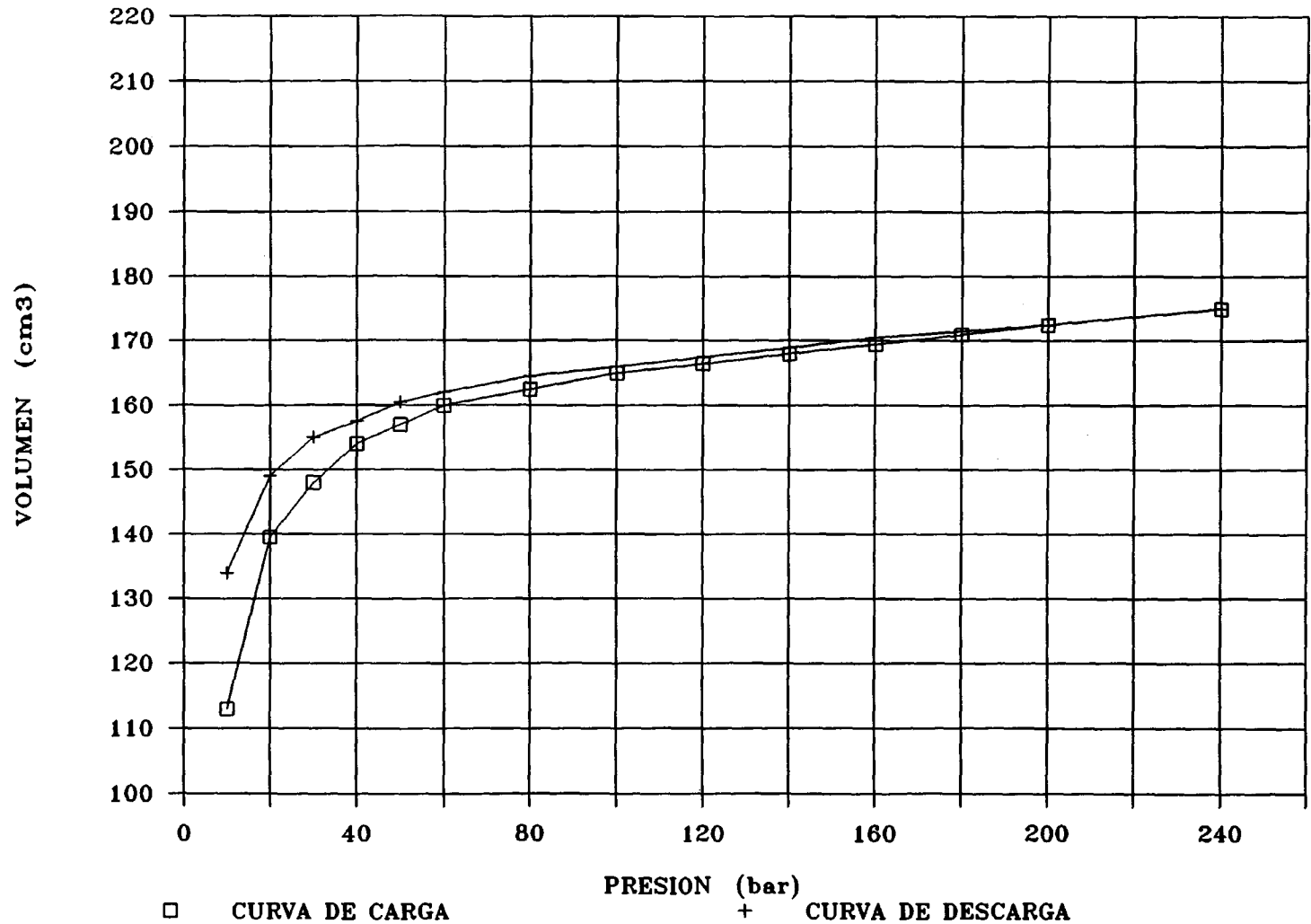
EMPRESA : HUNOSA PLANTA : 5
GRUPO : S. NICOLAS CAPA : 8
POZO : MONTSACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Dismi)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00		0.00	----	----	80.00	80.00	----	----
10.00	80.00	80.00	33.00	113.00	80.00	80.00	54.00	134.00
20.00	80.00	80.00	59.50	139.50	80.00	80.00	69.00	149.00
30.00	80.00	80.00	68.00	148.00	80.00	80.00	75.00	155.00
40.00	80.00	80.00	74.00	154.00	80.00	80.00	77.50	157.50
50.00	80.00	80.00	77.00	157.00	160.00	160.00	0.50	160.50
60.00	80.00	160.00	0.00	160.00	160.00	160.00	2.00	162.00
80.00	80.00	160.00	2.50	162.50	160.00	160.00	4.50	164.50
100.00	80.00	160.00	5.00	165.00	160.00	160.00	6.00	166.00
120.00	80.00	160.00	6.50	166.50	160.00	160.00	7.50	167.50
140.00	80.00	160.00	8.00	168.00	160.00	160.00	9.00	169.00
160.00	80.00	160.00	9.50	169.50	160.00	160.00	10.50	170.50
180.00	80.00	160.00	11.00	171.00	160.00	160.00	11.50	171.50
200.00	80.00	160.00	12.50	172.50	160.00	160.00	12.50	172.50
240.00	80.00	160.00	15.00	175.00	160.00	160.00	15.00	175.00

OBSERVACIONES: Sondeo realizado en el 4 recorte. A 40 m. del recorte.

CURVAS PRESIOMETRICAS

SONDEO 1. Prof. 5 m.



FICHA DE MEDIDAS PRESIOMETRICAS

SONDEO : 1 PROF. MUESTRA (m) : 6.50 FECHA : 27-11-91

DATOS GENERALES

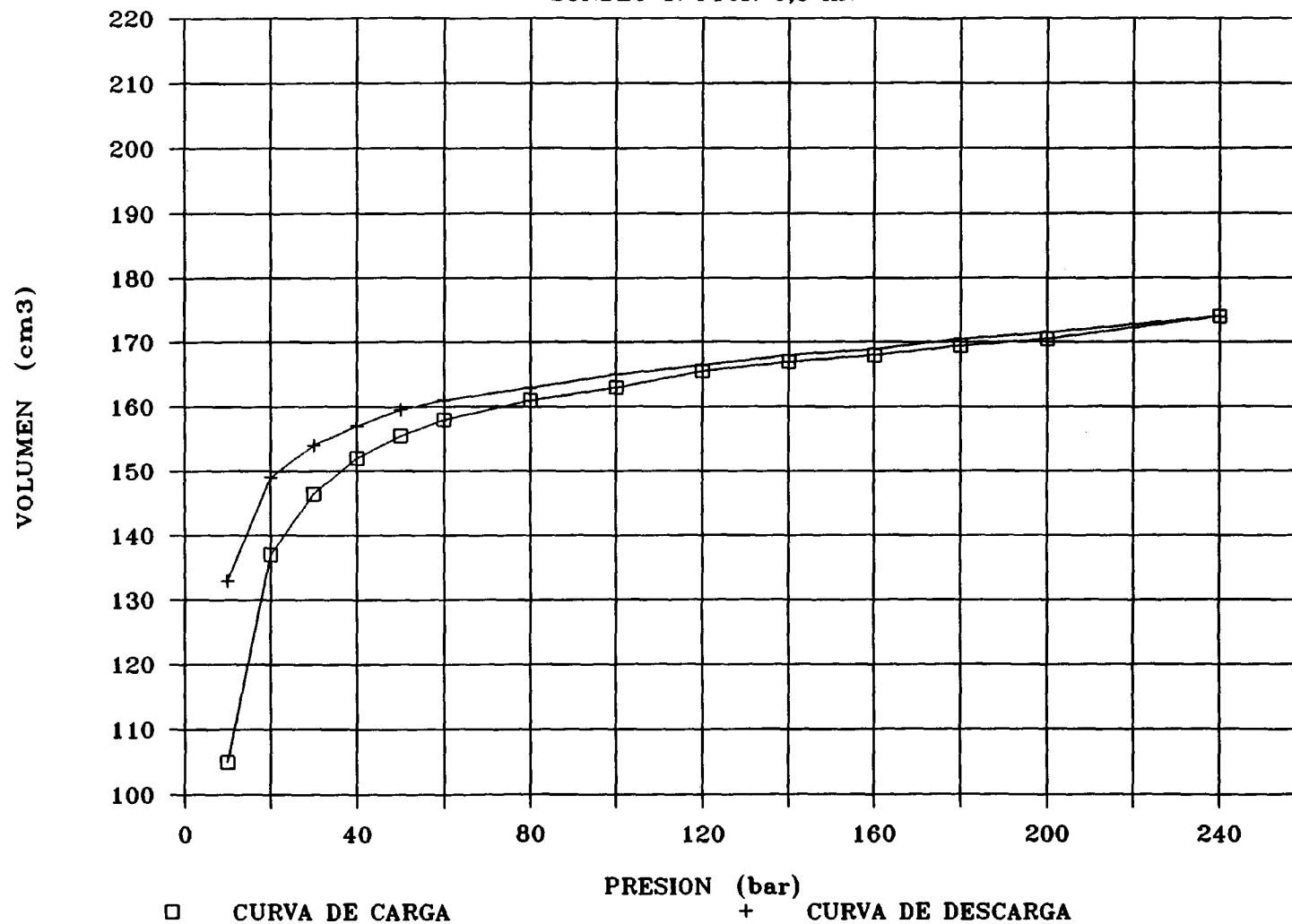
EMPRESA : HUNOSA PLANTA : 5
GRUPO : S. NICOLAS CAPA : 8
POZO : MONTACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Dismi)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00		0.00	----	----	80.00	80.00	----	----
10.00	80.00	80.00	25.00	105.00	80.00	80.00	53.00	133.00
20.00	80.00	80.00	57.00	137.00	80.00	80.00	69.00	149.00
30.00	80.00	80.00	66.50	146.50	80.00	80.00	74.00	154.00
40.00	80.00	80.00	72.00	152.00	80.00	80.00	77.00	157.00
50.00	80.00	80.00	75.50	155.50	80.00	80.00	79.50	159.50
60.00	80.00	80.00	78.00	158.00	160.00	160.00	1.00	161.00
80.00	80.00	160.00	1.00	161.00	160.00	160.00	3.00	163.00
100.00	80.00	160.00	3.00	163.00	160.00	160.00	5.00	165.00
120.00	80.00	160.00	5.50	165.50	160.00	160.00	6.50	166.50
140.00	80.00	160.00	7.00	167.00	160.00	160.00	8.00	168.00
160.00	80.00	160.00	8.00	168.00	160.00	160.00	9.00	169.00
180.00	80.00	160.00	9.50	169.50	160.00	160.00	10.50	170.50
200.00	80.00	160.00	10.50	170.50	160.00	160.00	11.50	171.50
240.00	80.00	160.00	14.00	174.00	160.00	160.00	14.00	174.00

OBSERVACIONES: Sondeo realizado en el 4 recorte. A 40 m. del recorte.

CURVAS PRESIOMETRICAS

SONDEO 1. Prof. 6,5 m.



FICHA DE MEDIDAS PRESIOMETRICAS

SONDEO : 1 PROF. MUESTRA (m) : 8,5 FECHA : 27-11-91

DATOS GENERALES

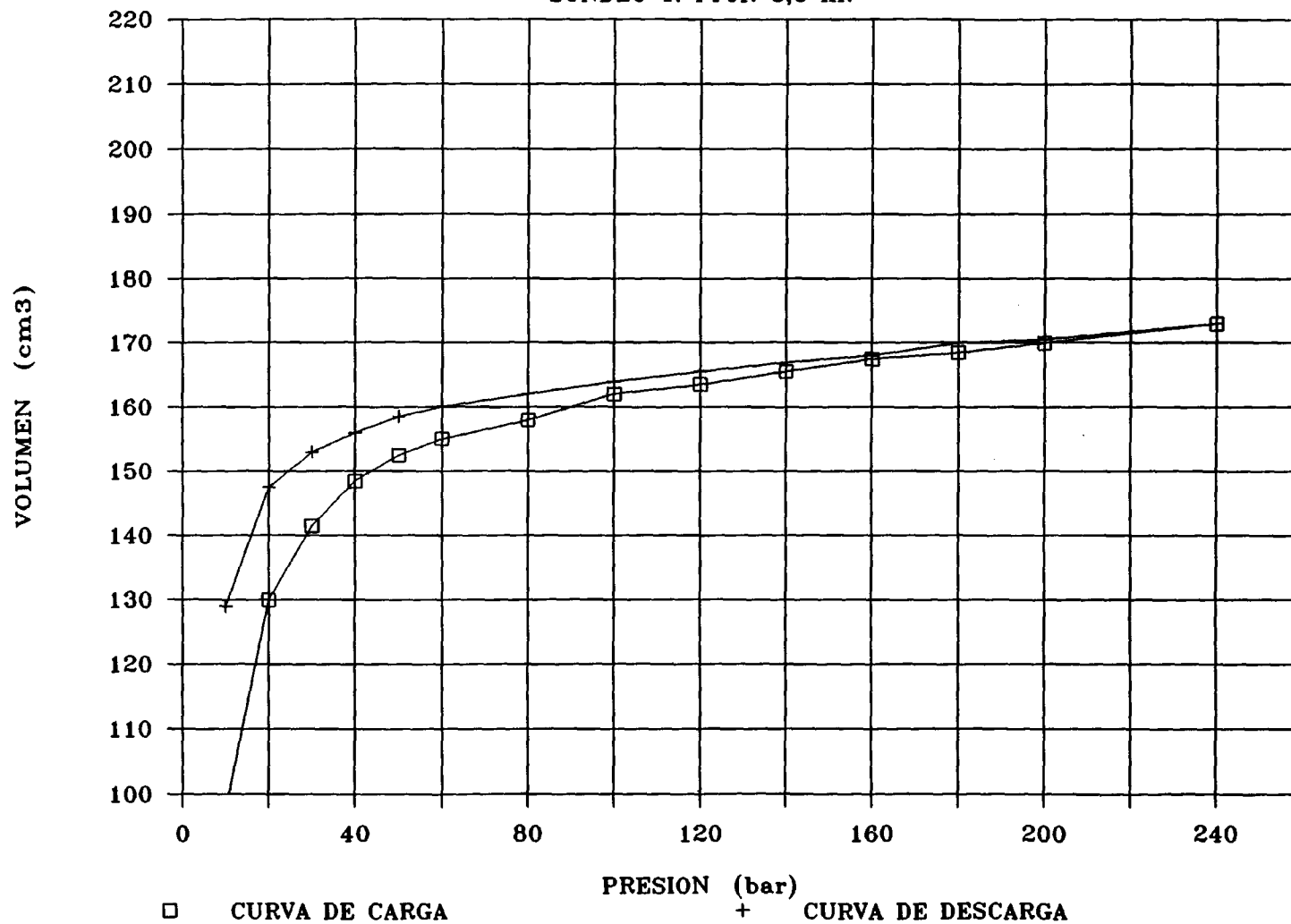
EMPRESA : HUNOSA PLANTA : 5
GRUPO : S. NICOLAS CAPA : 8
POZO : MONTSACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Dismi)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00		0.00	----	----	80.00	80.00	----	----
10.00	80.00	80.00	17.50	97.50	80.00	80.00	49.00	129.00
20.00	80.00	80.00	50.00	130.00	80.00	80.00	67.50	147.50
30.00	80.00	80.00	61.50	141.50	80.00	80.00	73.00	153.00
40.00	80.00	80.00	68.50	148.50	80.00	80.00	76.00	156.00
50.00	80.00	80.00	72.50	152.50	80.00	80.00	78.50	158.50
60.00	80.00	80.00	75.00	155.00	160.00	160.00	0.00	160.00
80.00	80.00	80.00	78.00	158.00	160.00	160.00	2.00	162.00
100.00	80.00	160.00	2.00	162.00	160.00	160.00	4.00	164.00
120.00	80.00	160.00	3.50	163.50	160.00	160.00	5.50	165.50
140.00	80.00	160.00	5.50	165.50	160.00	160.00	7.00	167.00
160.00	80.00	160.00	7.50	167.50	160.00	160.00	8.00	168.00
180.00	80.00	160.00	8.50	168.50	160.00	160.00	10.00	170.00
200.00	80.00	160.00	10.00	170.00	160.00	160.00	10.50	170.50
240.00	80.00	160.00	13.00	173.00	160.00	160.00	13.00	173.00

OBSERVACIONES: Sondeo realizado en el 4 recorte. A 40 m. del recorte.

CURVAS PRESIOMETRICAS

SONDEO 1. Prof. 8,5 m.



FICHA DE MEDIDAS PRESIOMETRICAS

SONDEO : 1 PROF. MUESTRA (m) : 10.00 FECHA : 27-11-91

DATOS GENERALES

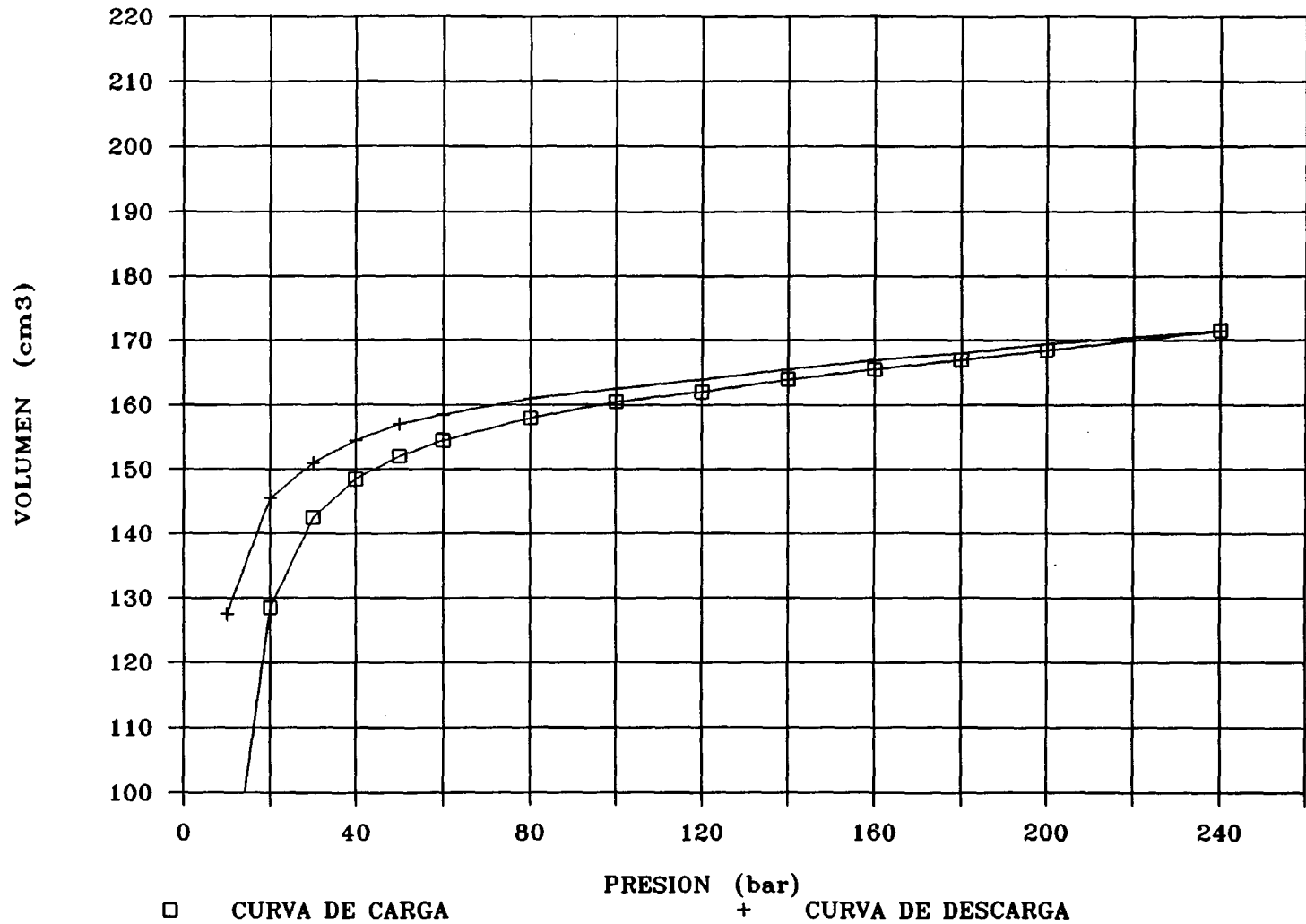
EMPRESA : HUNOSA PLANTA : 5
GRUPO : S. NICOLAS CAPA : 8
POZO : MONTSACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Dismi)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00		0.00	----	----	80.00	80.00	----	----
10.00	80.00	80.00	0.00	80.00	80.00	80.00	47.50	127.50
20.00	80.00	80.00	48.50	128.50	80.00	80.00	65.50	145.50
30.00	80.00	80.00	62.50	142.50	80.00	80.00	71.00	151.00
40.00	80.00	80.00	68.50	148.50	80.00	80.00	74.50	154.50
50.00	80.00	80.00	72.00	152.00	80.00	80.00	77.00	157.00
60.00	80.00	80.00	74.50	154.50	80.00	80.00	78.50	158.50
80.00	80.00	80.00	78.00	158.00	160.00	160.00	1.00	161.00
100.00	80.00	160.00	0.50	160.50	160.00	160.00	2.50	162.50
120.00	80.00	160.00	2.00	162.00	160.00	160.00	4.00	164.00
140.00	80.00	160.00	4.00	164.00	160.00	160.00	5.50	165.50
160.00	80.00	160.00	5.50	165.50	160.00	160.00	7.00	167.00
180.00	80.00	160.00	7.00	167.00	160.00	160.00	8.00	168.00
200.00	80.00	160.00	8.50	168.50	160.00	160.00	9.50	169.50
240.00	80.00	160.00	11.50	171.50	160.00	160.00	11.50	171.50

OBSERVACIONES: Sondeo realizado en el 4 recorte. A 40 m. del recorte.

CURVAS PRESIOMETRICAS

SONDEO 1. Prof. 10 m.



F I C H A D E M O D U L O S P R E S I O M E T R I C O S

S O N D E O :

2

F E C H A : 28-11-91

D A T O S G E N E R A L E S

E M P R E S A : HUNOSA

P L A N T A : 5

G R U P O : SAN NICOLAS

C A P A : 8

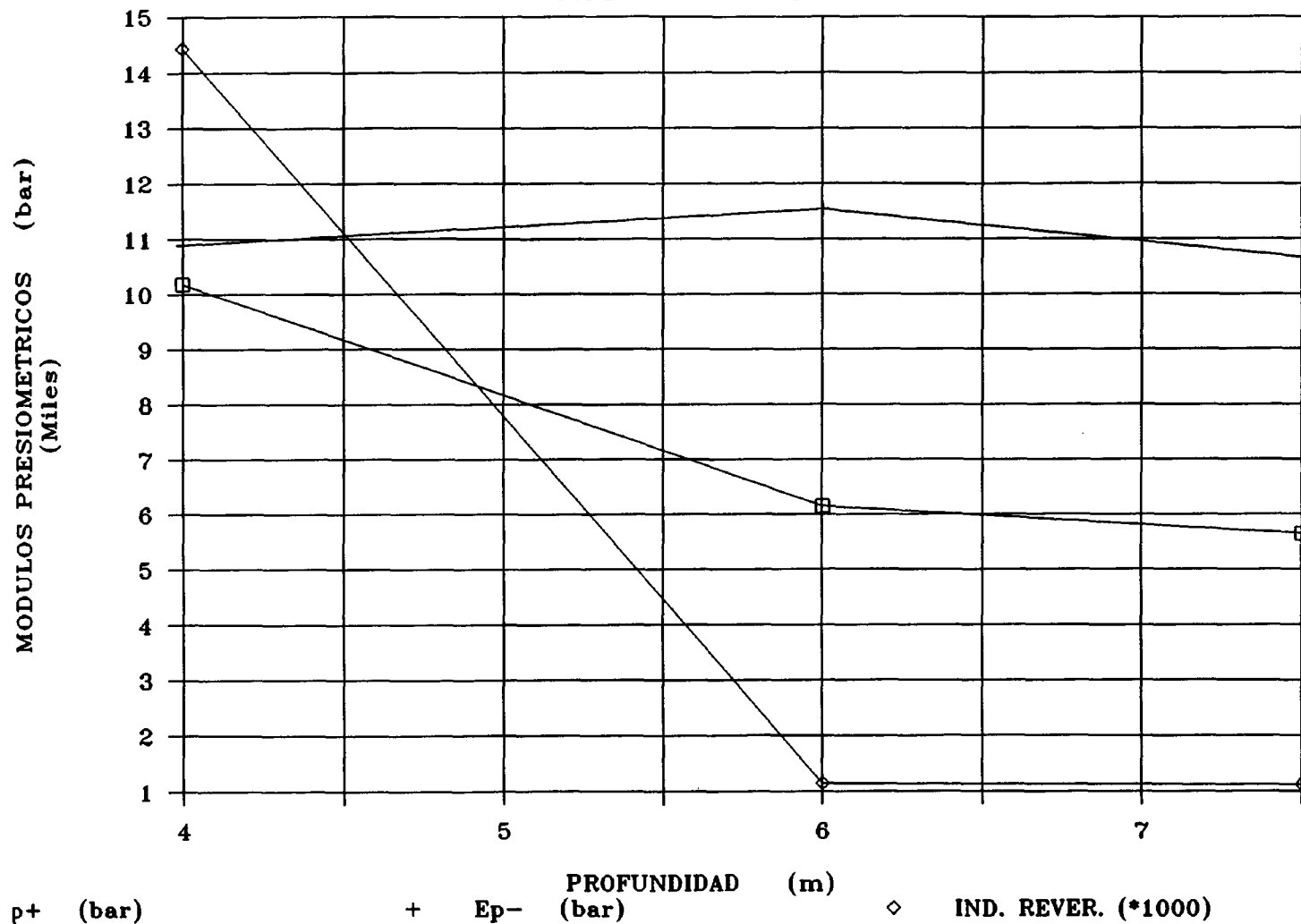
P O Z O : MONTSACRO

P R O F U N D I D A D (m)	C U R V A D E C A R G A		C U R V A D E D E S C A R G A		M O D U L O S P R E S I O M E T R I C O S		I N D I C E D E R E V E R S I B I L I D A D
	V1 (cm3)	V2 (cm3)	V1 (cm3)	V2 (cm3)	Ep+ (bar)	Ep- (bar)	
4.00	187.00	195.00	189.00	196.50	10187.50	10893.33	14.43
6.00	172.00	185.00	180.00	187.00	6153.85	11542.86	1.14
7.50	162.50	176.50	172.00	179.50	5646.43	10666.67	1.12

OBSERVACIONES: Sondeo realizado en la capa 8. 4 recorte a 18 m. del
recorte

MODULOS PRESIOMETRICOS

SONDEO 2. 4 RECORTE.



F I C H A D E M E D I D A S P R E S I O M E T R I C A S

S O N D E O : 2 P R O F . M U E S T R A (m) : 4.50 F E C H A : 28-11-91

D A T O S G E N E R A L E S

E M P R E S A : H U N O S A P L A N T A : 5

G R U P O : S A N N I C O L A S C A P A : 8

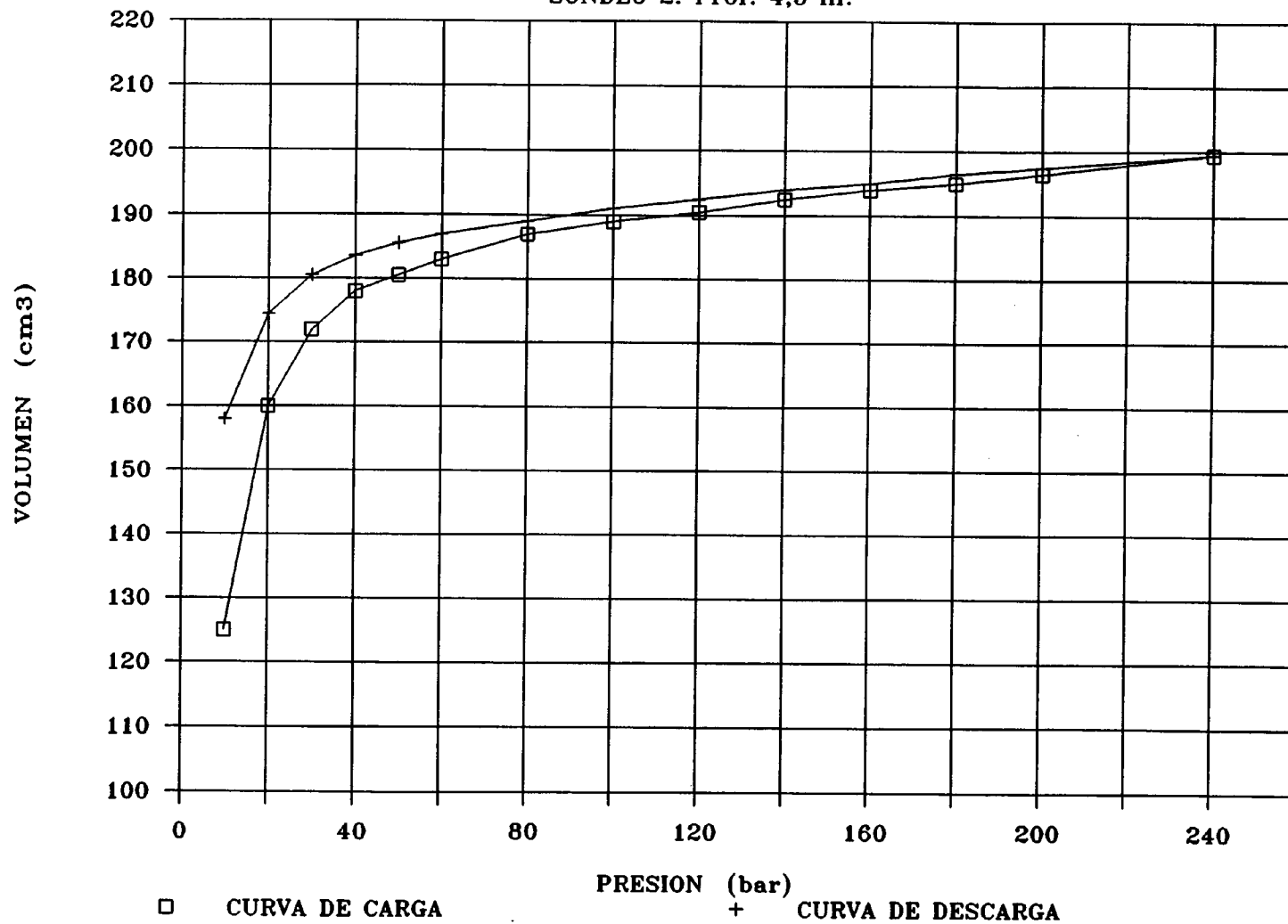
P O Z O : M O N T S A C R O

PRESION	VOLUMENES (Aumen)				VOLUMENES (Dismi)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00		0.00	----	----	80.00	80.00	----	----
10.00	80.00	80.00	45.00	125.00	80.00	80.00	78.00	158.00
20.00	80.00	160.00	0.00	160.00	80.00	160.00	14.50	174.50
30.00	80.00	160.00	12.00	172.00	160.00	160.00	20.50	180.50
40.00	80.00	160.00	18.00	178.00	160.00	160.00	23.50	183.50
50.00	80.00	160.00	20.50	180.50	160.00	160.00	25.50	185.50
60.00	80.00	160.00	23.00	183.00	160.00	160.00	27.00	187.00
80.00	80.00	160.00	27.00	187.00	160.00	160.00	29.00	189.00
100.00	80.00	160.00	29.00	189.00	160.00	160.00	31.00	191.00
120.00	80.00	160.00	30.50	190.50	160.00	160.00	32.50	192.50
140.00	80.00	160.00	32.50	192.50	160.00	160.00	34.00	194.00
160.00	80.00	160.00	34.00	194.00	160.00	160.00	35.00	195.00
180.00	80.00	160.00	35.00	195.00	160.00	160.00	36.50	196.50
200.00	80.00	160.00	36.50	196.50	160.00	160.00	37.50	197.50
240.00	80.00	160.00	39.50	199.50	160.00	160.00	39.50	199.50

OBSERVACIONES:

CURVAS PRESIOMETRICAS

SONDEO 2. Prof. 4,5 m.



FICHA DE MEDIDAS PRESIOMETRICAS

SONDEO : 2 PROF. MUESTRA (m) : 6.00 FECHA : 28-11-91

DATOS GENERALES

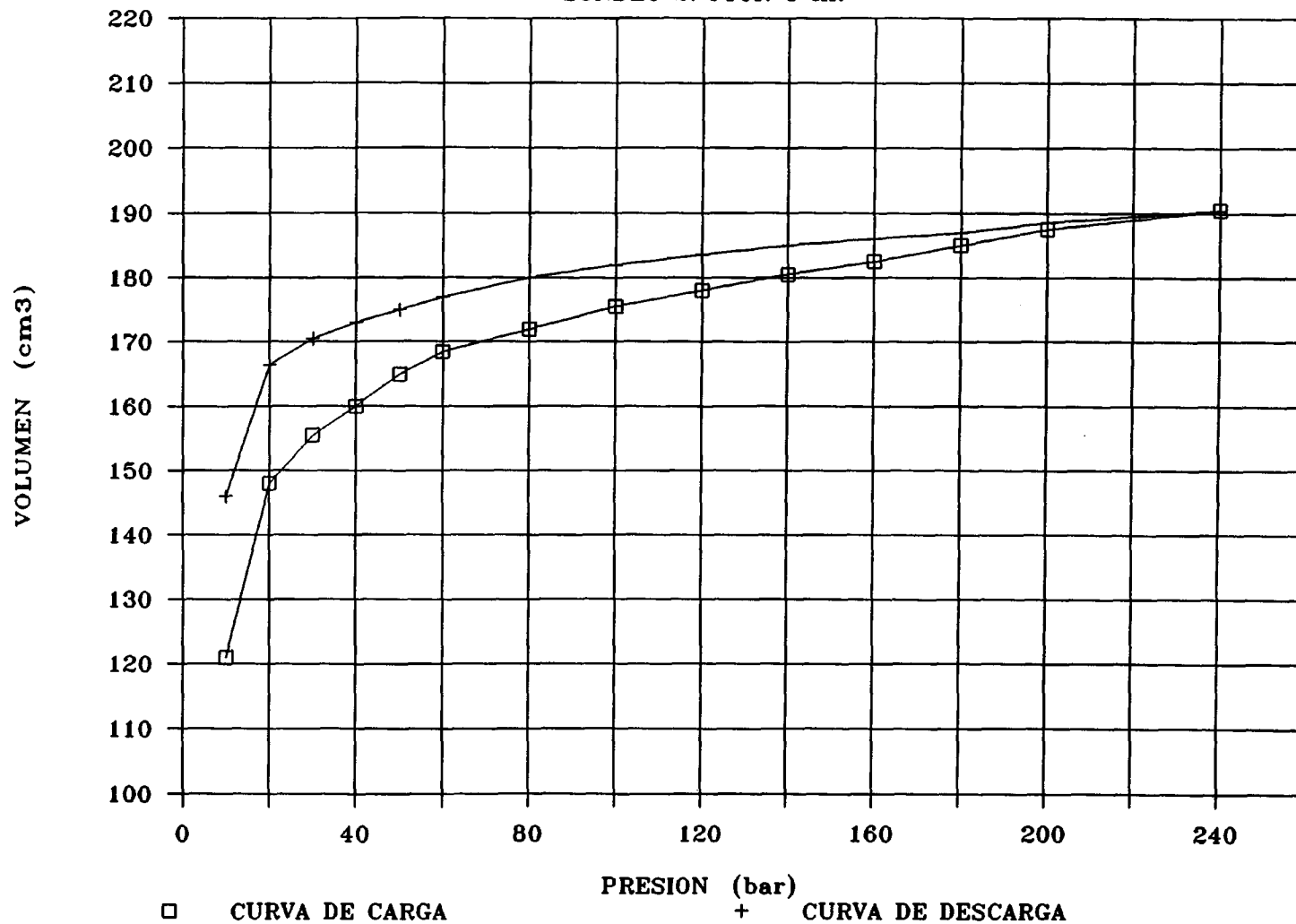
EMPRESA : HUNOSA PLANTA : 5
GRUPO : SAN NICOLAS CAPA : 8
POZO : MONTSACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Dismi)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00		0.00	----	----	80.00	80.00	----	----
10.00	80.00	80.00	41.00	121.00	80.00	80.00	66.00	146.00
20.00	80.00	80.00	68.00	148.00	80.00	160.00	6.50	166.50
30.00	80.00	80.00	75.50	155.50	160.00	160.00	10.50	170.50
40.00	80.00	160.00	0.00	160.00	160.00	160.00	13.00	173.00
50.00	80.00	160.00	5.00	165.00	160.00	160.00	15.00	175.00
60.00	80.00	160.00	8.50	168.50	160.00	160.00	17.00	177.00
80.00	80.00	160.00	12.00	172.00	160.00	160.00	20.00	180.00
100.00	80.00	160.00	15.50	175.50	160.00	160.00	22.00	182.00
120.00	80.00	160.00	18.00	178.00	160.00	160.00	23.50	183.50
140.00	80.00	160.00	20.50	180.50	160.00	160.00	25.00	185.00
160.00	80.00	160.00	22.50	182.50	160.00	160.00	26.00	186.00
180.00	80.00	160.00	25.00	185.00	160.00	160.00	27.00	187.00
200.00	80.00	160.00	27.50	187.50	160.00	160.00	28.50	188.50
240.00	80.00	160.00	30.50	190.50	160.00	160.00	30.50	190.50

OBSERVACIONES:

CURVAS PRESIOMETRICAS

SONDEO 2. Prof. 6 m.



FICHA DE MEDIDAS PRESIOMETRICAS

SONDEO : 2 PROF. MUESTRA (m) : 7.5 FECHA : 28-11-91

DATOS GENERALES

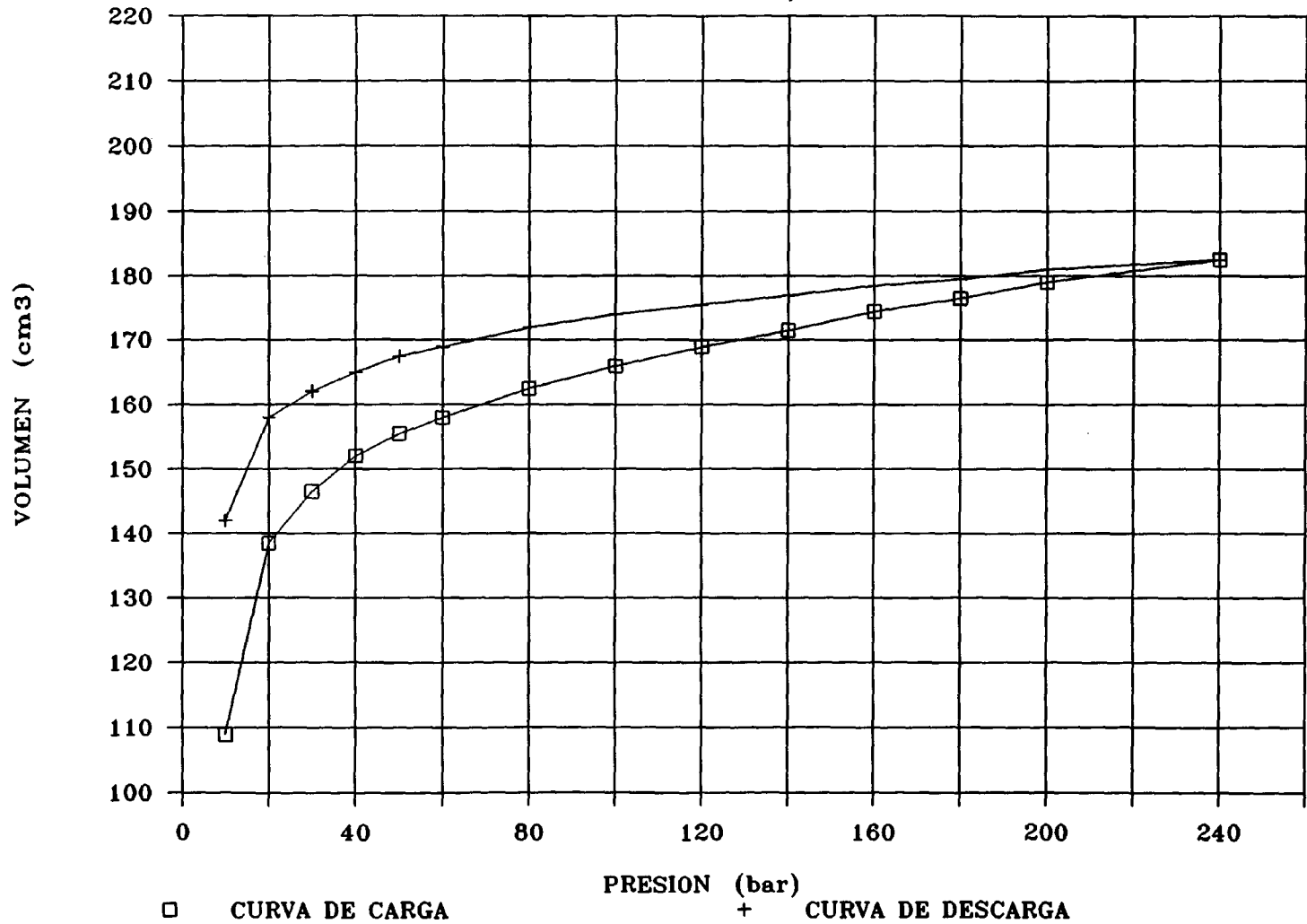
EMPRESA : HUNOSA PLANTA : 5
GRUPO : SAN NICOLAS CAPA : 8
POZO : MONTSACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Dismi)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00		0.00	----	----	80.00	80.00	----	----
10.00	80.00	80.00	29.00	109.00	80.00	80.00	62.00	142.00
20.00	80.00	80.00	58.50	138.50	80.00	80.00	78.00	158.00
30.00	80.00	80.00	66.50	146.50	160.00	160.00	2.00	162.00
40.00	80.00	80.00	72.00	152.00	160.00	160.00	5.00	165.00
50.00	80.00	80.00	75.50	155.50	160.00	160.00	7.50	167.50
60.00	80.00	80.00	78.00	158.00	160.00	160.00	9.00	169.00
80.00	80.00	160.00	2.50	162.50	160.00	160.00	12.00	172.00
100.00	80.00	160.00	6.00	166.00	160.00	160.00	14.00	174.00
120.00	80.00	160.00	9.00	169.00	160.00	160.00	15.50	175.50
140.00	80.00	160.00	11.50	171.50	160.00	160.00	17.00	177.00
160.00	80.00	160.00	14.50	174.50	160.00	160.00	18.50	178.50
180.00	80.00	160.00	16.50	176.50	160.00	160.00	19.50	179.50
200.00	80.00	160.00	19.00	179.00	160.00	160.00	21.00	181.00
240.00	80.00	160.00	22.50	182.50	160.00	160.00	22.50	182.50

OBSERVACIONES:

CURVAS PRESIOMETRICAS

SONDEO 2. Prof. 7,5 m.



F I C H A D E M O D U L O S P R E S I O M E T R I C O S

S O N D E O : 3

F E C H A : 19-02-92

D A T O S G E N E R A L E S

E M P R E S A : HUNOSA P L A N T A : 5

G R U P O : SAN NICOLAS C A P A : 8

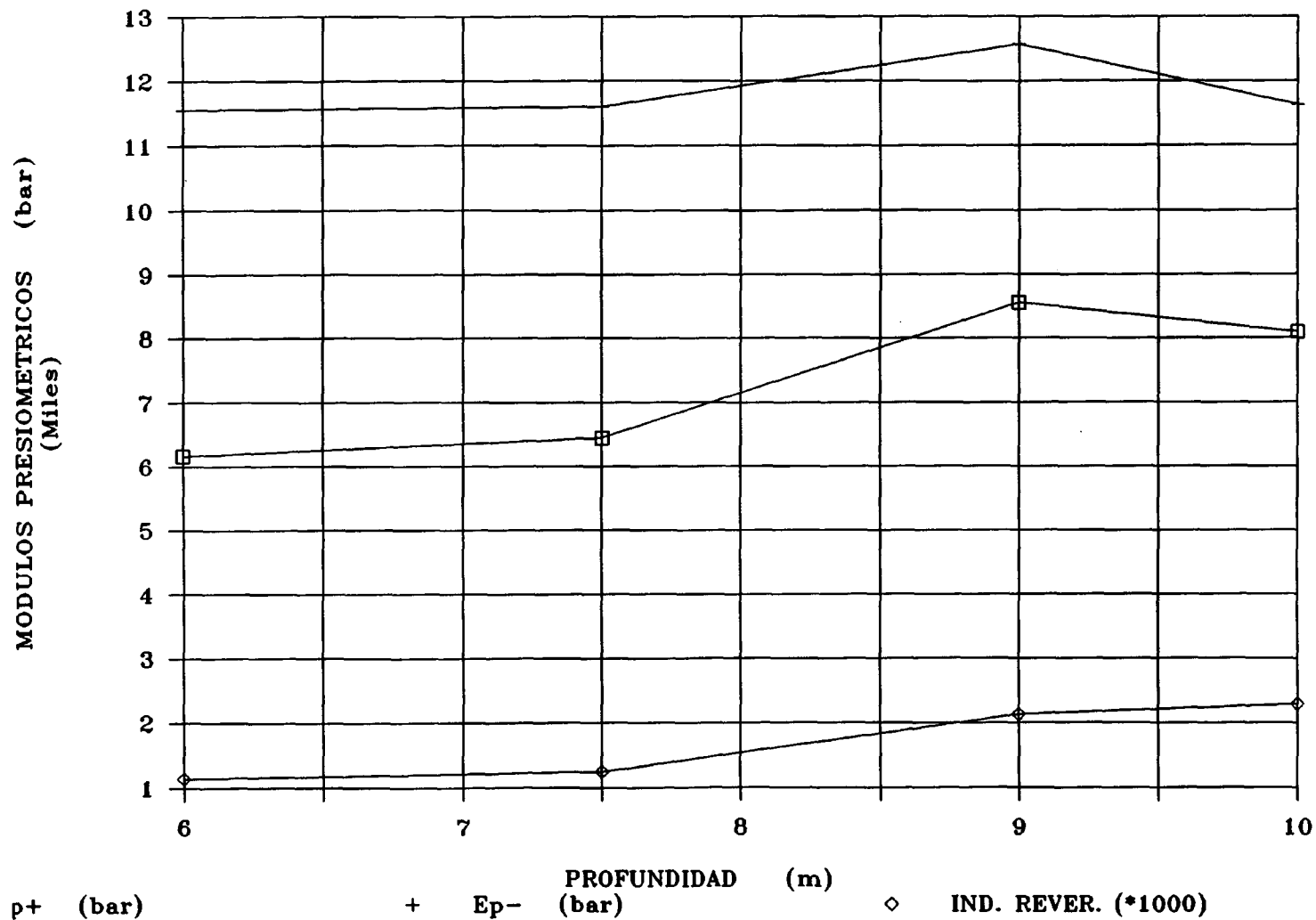
P O Z O : MONTSACRO

P R O F U N D I D A D (m)	C U R V A D E C A R G A		C U R V A D E D E S C A R G A		M O D U L O S P R E S I O M E T R I C O S		I N D I C E D E R E V E R S I B I L I D A D
	V1 (cm3)	V2 (cm3)	V1 (cm3)	V2 (cm3)	Ep+ (bar)	Ep- (bar)	
6.00	173.50	186.50	181.00	188.00	6165.38	11557.14	1.14
7.50	177.50	190.00	184.50	191.50	6444.00	11607.14	1.25
9.00	185.00	194.50	189.00	195.50	8557.89	12569.23	2.13
10.00	182.00	192.00	186.00	193.00	8100.00	11628.57	2.30
11.00	171.00	185.00	186.00	189.50	5707.14	23257.14	0.33

OBSERVACIONES: La medicion realizada a 11 m no es fiable al no estabilizarse la presion.

MODULOS PRESIOMETRICOS

4 Recorte. Sodeo 3.



FICHA DE MEDIDAS PRESIOMETRICAS

S O N D E O : 3 P R O F . M U E S T R A (m) : 6 F E C H A : 19-02-92

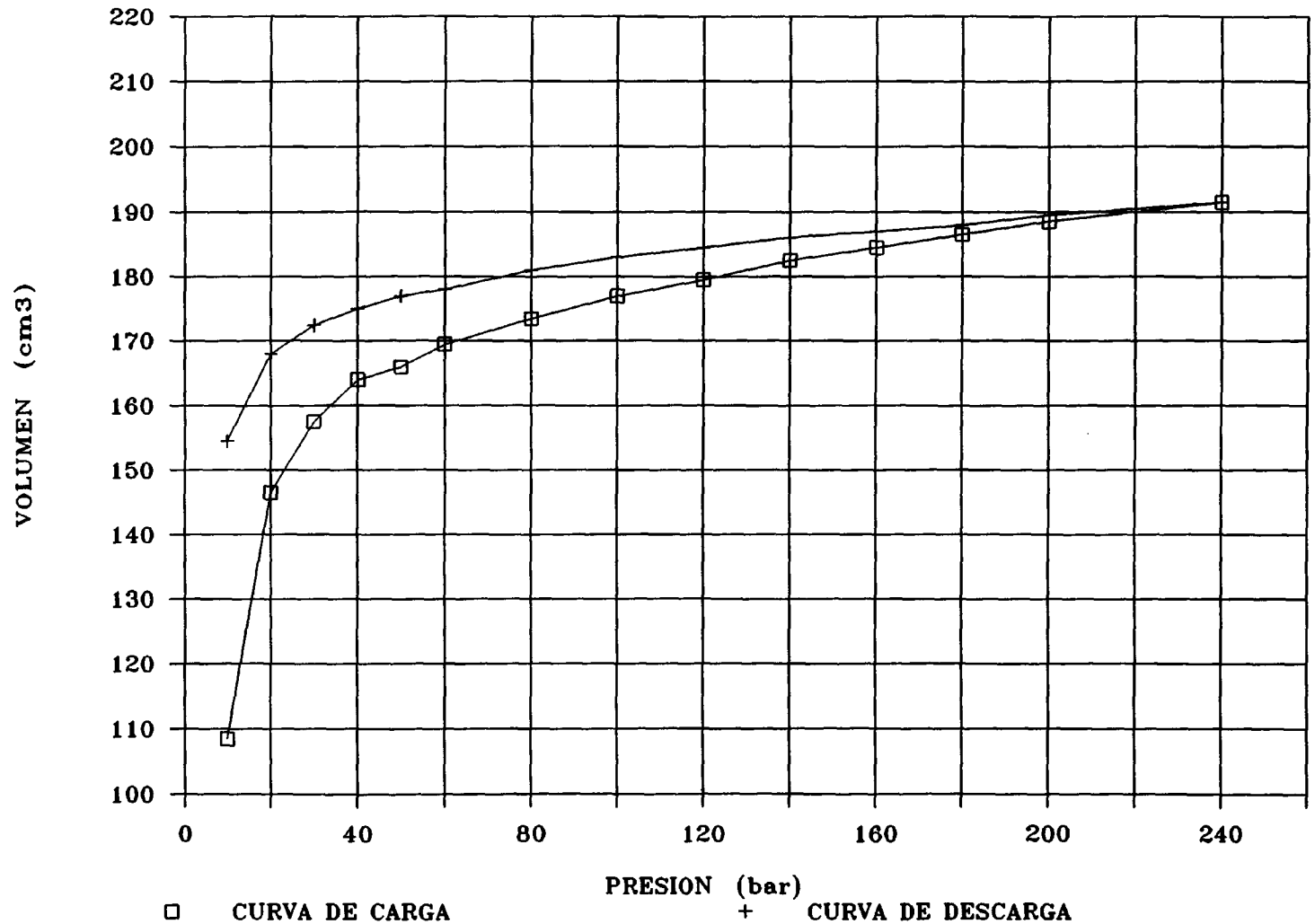
DATOS GENERALES

E M P R E S A : HUNOSA P L A N T A : 5
 G R U P O : SAN NICOLAS C A P A : 8
 P O Z O : MONTSACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Dismi)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00		0.00	----	----	80.00	80.00	----	----
10.00	80.00	80.00	28.50	108.50	80.00	80.00	74.50	154.50
20.00	80.00	80.00	66.50	146.50	160.00	160.00	8.00	168.00
30.00	80.00	80.00	77.50	157.50	160.00	160.00	12.50	172.50
40.00	80.00	160.00	4.00	164.00	160.00	160.00	15.00	175.00
50.00	80.00	160.00	6.00	166.00	160.00	160.00	17.00	177.00
60.00	80.00	160.00	9.50	169.50	160.00	160.00	18.00	178.00
80.00	80.00	160.00	13.50	173.50	160.00	160.00	21.00	181.00
100.00	80.00	160.00	17.00	177.00	160.00	160.00	23.00	183.00
120.00	80.00	160.00	19.50	179.50	160.00	160.00	24.50	184.50
140.00	80.00	160.00	22.50	182.50	160.00	160.00	26.00	186.00
160.00	80.00	160.00	24.50	184.50	160.00	160.00	27.00	187.00
180.00	80.00	160.00	26.50	186.50	160.00	160.00	28.00	188.00
200.00	80.00	160.00	28.50	188.50	160.00	160.00	29.50	189.50
240.00	80.00	160.00	31.50	191.50	160.00	160.00	31.50	191.50

OBSERVACIONES:

CURVAS PRESIOMETRICAS



FICHA DE MEDIDAS PRESIOMETRICAS

SONDEO : 3 PROF. MUESTRA (m) : 7,5 FECHA : 19-02-92

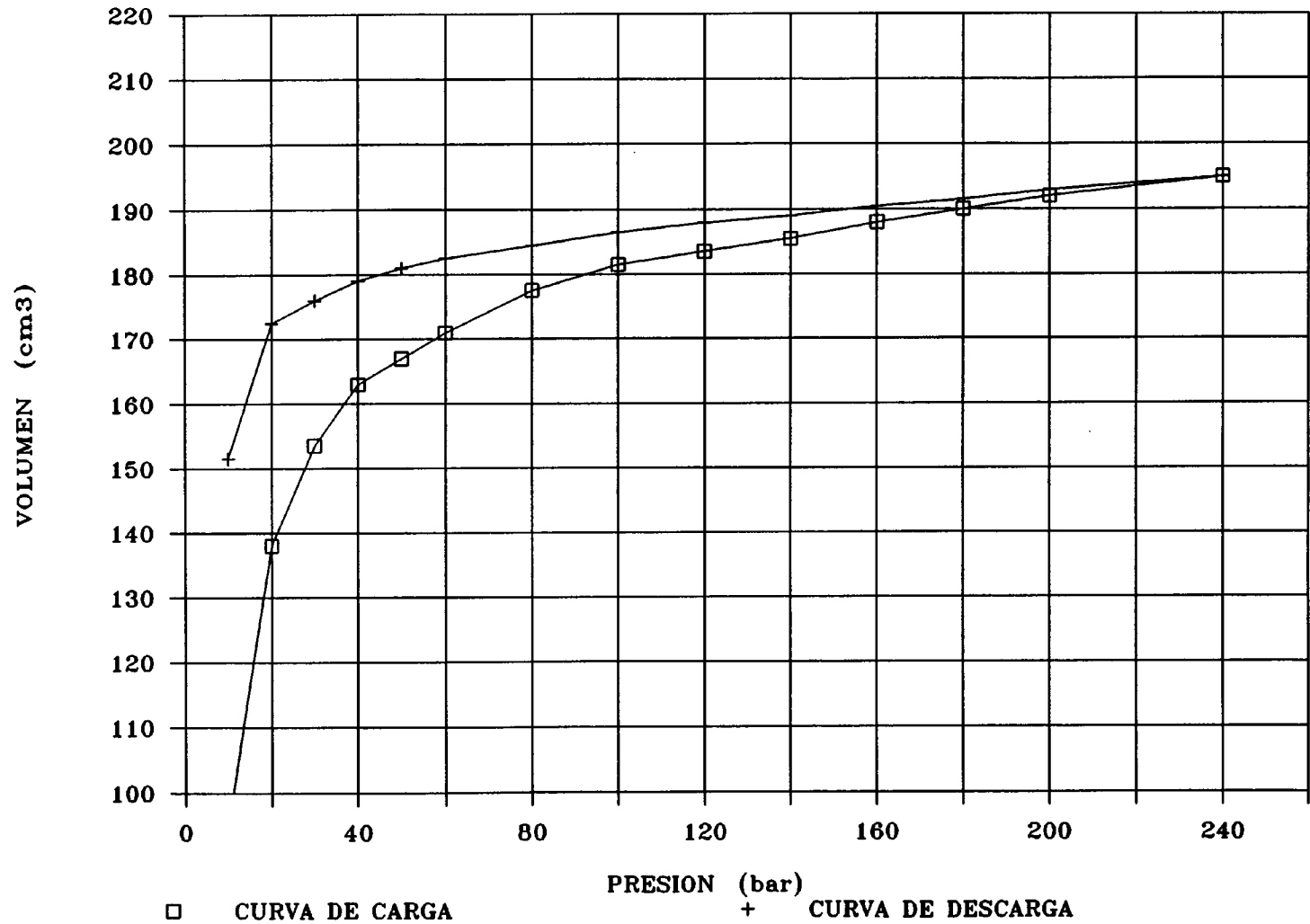
DATOS GENERALES

EMPRESA : HUNOSA PLANTA : 5
GRUPO : SAN NICOLAS CAPA : 8
POZO : MONTSACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Disml)			
	DE RELLENO	VOLUMEN			DE REBOSE	VOLUMEN		
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00		0.00	----	----	80.00	80.00	----	----
10.00	80.00	80.00	15.00	95.00	80.00	80.00	71.50	151.50
20.00	80.00	80.00	58.00	138.00	160.00	160.00	12.50	172.50
30.00	80.00	80.00	73.50	153.50	160.00	160.00	16.00	176.00
40.00	80.00	160.00	3.00	163.00	160.00	160.00	19.00	179.00
50.00	80.00	160.00	7.00	167.00	160.00	160.00	21.00	181.00
60.00	80.00	160.00	11.00	171.00	160.00	160.00	22.50	182.50
80.00	80.00	160.00	17.50	177.50	160.00	160.00	24.50	184.50
100.00	80.00	160.00	21.50	181.50	160.00	160.00	26.50	186.50
120.00	80.00	160.00	23.50	183.50	160.00	160.00	28.00	188.00
140.00	80.00	160.00	25.50	185.50	160.00	160.00	29.00	189.00
160.00	80.00	160.00	28.00	188.00	160.00	160.00	30.50	190.50
180.00	80.00	160.00	30.00	190.00	160.00	160.00	31.50	191.50
200.00	80.00	160.00	32.00	192.00	160.00	160.00	33.00	193.00
240.00	80.00	160.00	35.00	195.00	160.00	160.00	35.00	195.00

OBSERVACIONES:

CURVAS PRESIOMETRICAS



FICHA DE MEDIDAS PRESIOMETRICAS

SONDEO : 3 PROF. MUESTRA (m) : 9 FECHA : 19-02-92

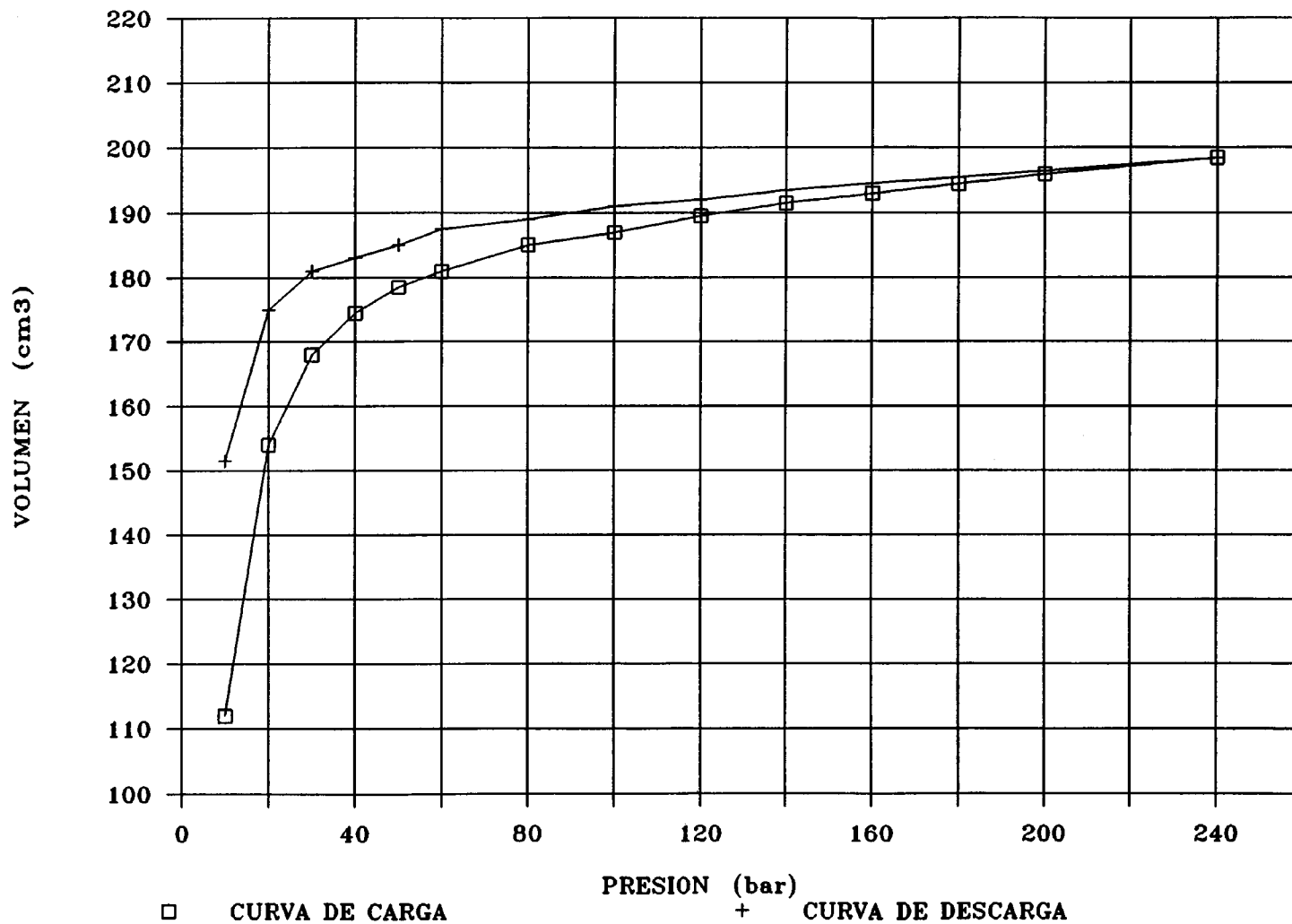
DATOS GENERALES

EMPRESA : HUNOSA PLANTA : 5
GRUPO : SAN NICOLAS CAPA : 8
POZO : MONTSACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Dismi)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00		0.00	----	----	80.00	80.00	----	----
10.00	80.00	80.00	32.00	112.00	80.00	80.00	71.50	151.50
20.00	80.00	80.00	74.00	154.00	160.00	160.00	15.00	175.00
30.00	80.00	160.00	8.00	168.00	160.00	160.00	21.00	181.00
40.00	80.00	160.00	14.50	174.50	160.00	160.00	23.00	183.00
50.00	80.00	160.00	18.50	178.50	160.00	160.00	25.00	185.00
60.00	80.00	160.00	21.00	181.00	160.00	160.00	27.50	187.50
80.00	80.00	160.00	25.00	185.00	160.00	160.00	29.00	189.00
100.00	80.00	160.00	27.00	187.00	160.00	160.00	31.00	191.00
120.00	80.00	160.00	29.50	189.50	160.00	160.00	32.00	192.00
140.00	80.00	160.00	31.50	191.50	160.00	160.00	33.50	193.50
160.00	80.00	160.00	33.00	193.00	160.00	160.00	34.50	194.50
180.00	80.00	160.00	34.50	194.50	160.00	160.00	35.50	195.50
200.00	80.00	160.00	36.00	196.00	160.00	160.00	36.50	196.50
240.00	80.00	160.00	38.50	198.50	160.00	160.00	38.50	198.50

OBSERVACIONES:

CURVAS PRESIOMETRICAS



F I C H A D E M E D I D A S P R E S I O M E T R I C A S

S O N D E O : 3 P R O F . M U E S T R A (m) : 10 F E C H A : 19-02-92

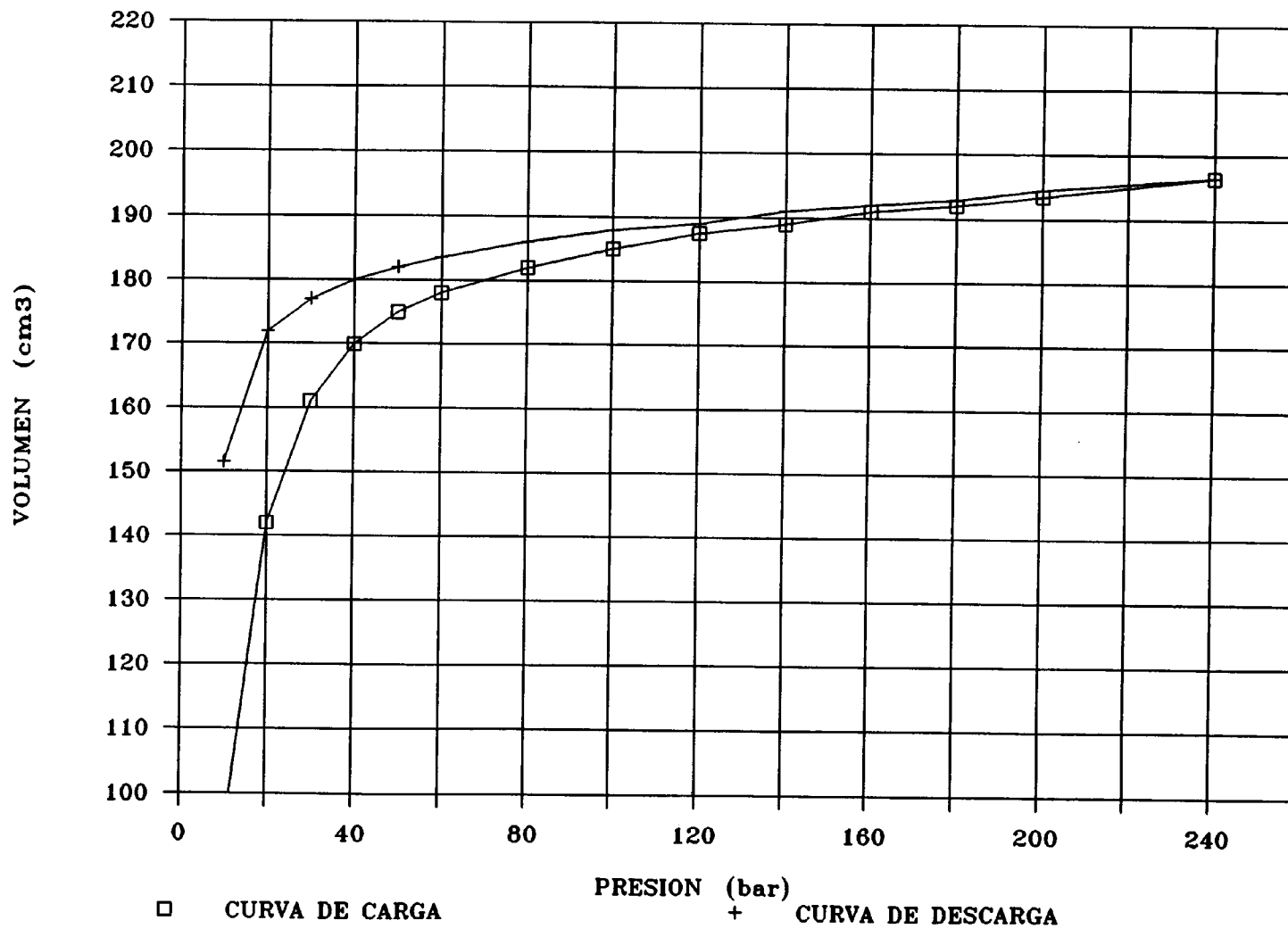
D A T O S G E N E R A L E S

E M P R E S A : HUNOSA P L A N T A : 5
G R U P O : SAN NICOLAS C A P A : 8
P O Z O : MONTSACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Dismi)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00		0.00	----	----	80.00	80.00	----	----
10.00	80.00	80.00	12.00	92.00	80.00	80.00	71.50	151.50
20.00	80.00	80.00	62.00	142.00	160.00	160.00	12.00	172.00
30.00	80.00	160.00	1.00	161.00	160.00	160.00	17.00	177.00
40.00	80.00	160.00	10.00	170.00	160.00	160.00	20.00	180.00
50.00	80.00	160.00	15.00	175.00	160.00	160.00	22.00	182.00
60.00	80.00	160.00	18.00	178.00	160.00	160.00	23.50	183.50
80.00	80.00	160.00	22.00	182.00	160.00	160.00	26.00	186.00
100.00	80.00	160.00	25.00	185.00	160.00	160.00	28.00	188.00
120.00	80.00	160.00	27.50	187.50	160.00	160.00	29.00	189.00
140.00	80.00	160.00	29.00	189.00	160.00	160.00	31.00	191.00
160.00	80.00	160.00	31.00	191.00	160.00	160.00	32.00	192.00
180.00	80.00	160.00	32.00	192.00	160.00	160.00	33.00	193.00
200.00	80.00	160.00	33.50	193.50	160.00	160.00	34.50	194.50
240.00	80.00	160.00	36.50	196.50	160.00	160.00	36.50	196.50

OBSERVACIONES:

CURVAS PRESIOMETRICAS



FICHA DE MEDIDAS PRESIOMETRICAS

SONDEO : 3 PROF. MUESTRA (m) : 11 FECHA : 19-02-92

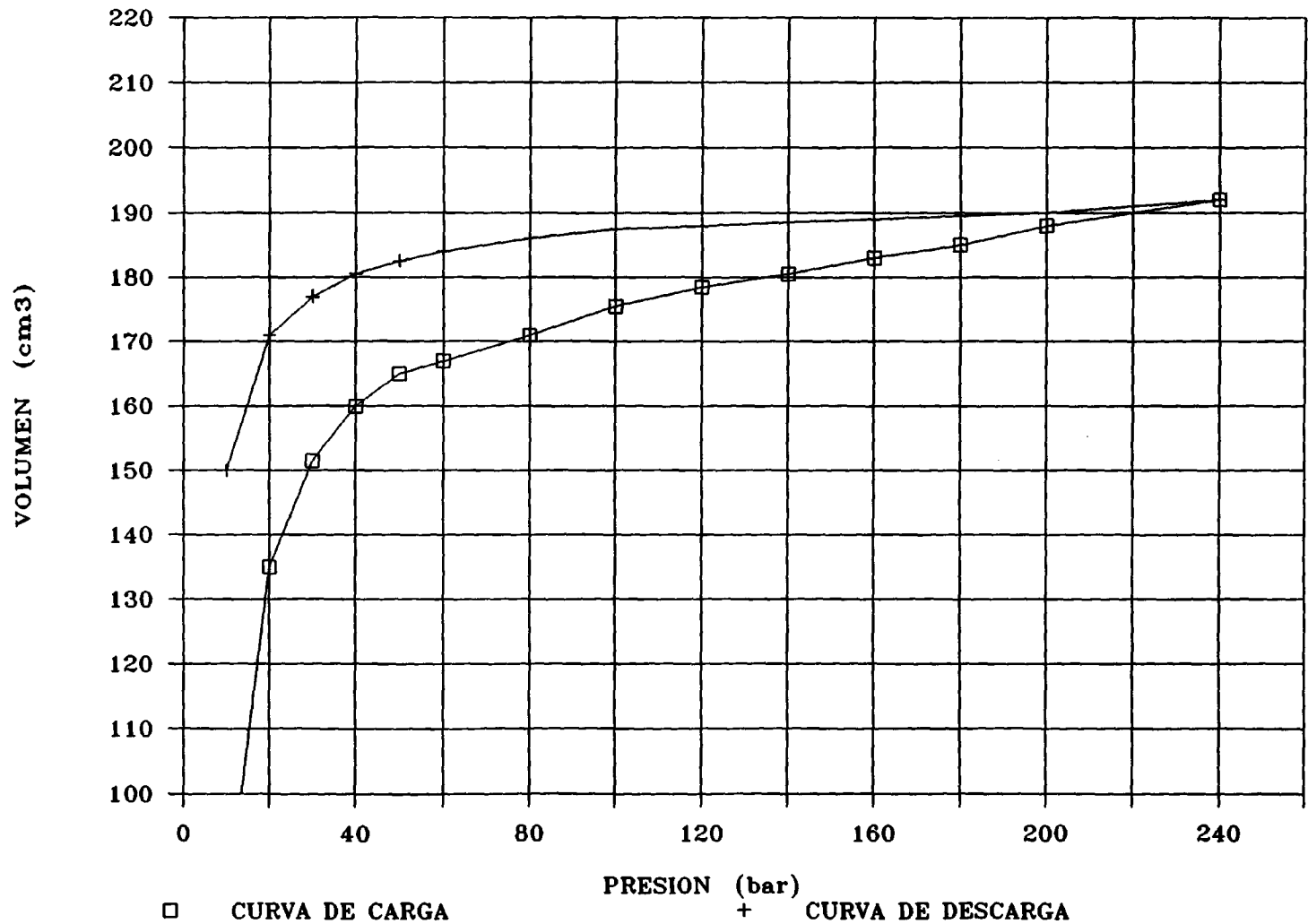
DATOS GENERALES

EMPRESA : HUNOSA PLANTA : 5
GRUPO : SAN NICOLAS CAPA : 8
POZO : MONTSACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Dismi)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00		0.00	----	----	80.00	80.00	----	----
10.00	80.00	80.00	1.00	81.00	80.00	80.00	70.00	150.00
20.00	80.00	80.00	55.00	135.00	160.00	160.00	11.00	171.00
30.00	80.00	80.00	71.50	151.50	160.00	160.00	17.00	177.00
40.00	80.00	160.00	0.00	160.00	160.00	160.00	20.50	180.50
50.00	80.00	160.00	5.00	165.00	160.00	160.00	22.50	182.50
60.00	80.00	160.00	7.00	167.00	160.00	160.00	24.00	184.00
80.00	80.00	160.00	11.00	171.00	160.00	160.00	26.00	186.00
100.00	80.00	160.00	15.50	175.50	160.00	160.00	27.50	187.50
120.00	80.00	160.00	18.50	178.50	160.00	160.00	28.00	188.00
140.00	80.00	160.00	20.50	180.50	160.00	160.00	28.50	188.50
160.00	80.00	160.00	23.00	183.00	160.00	160.00	29.00	189.00
180.00	80.00	160.00	25.00	185.00	160.00	160.00	29.50	189.50
200.00	80.00	160.00	28.00	188.00	160.00	160.00	30.00	190.00
240.00	80.00	160.00	32.00	192.00	160.00	160.00	32.00	192.00

OBSERVACIONES:

CURVAS PRESIOMETRICAS



F I C H A D E M O D U L O S P R E S I O M E T R I C O S

S O N D E O : 4

F E C H A : 10-03-92

D A T O S G E N E R A L E S

E M P R E S A : HUNOSA P L A N T A : 5

G R U P O : SAN NICOLAS C A P A : 8

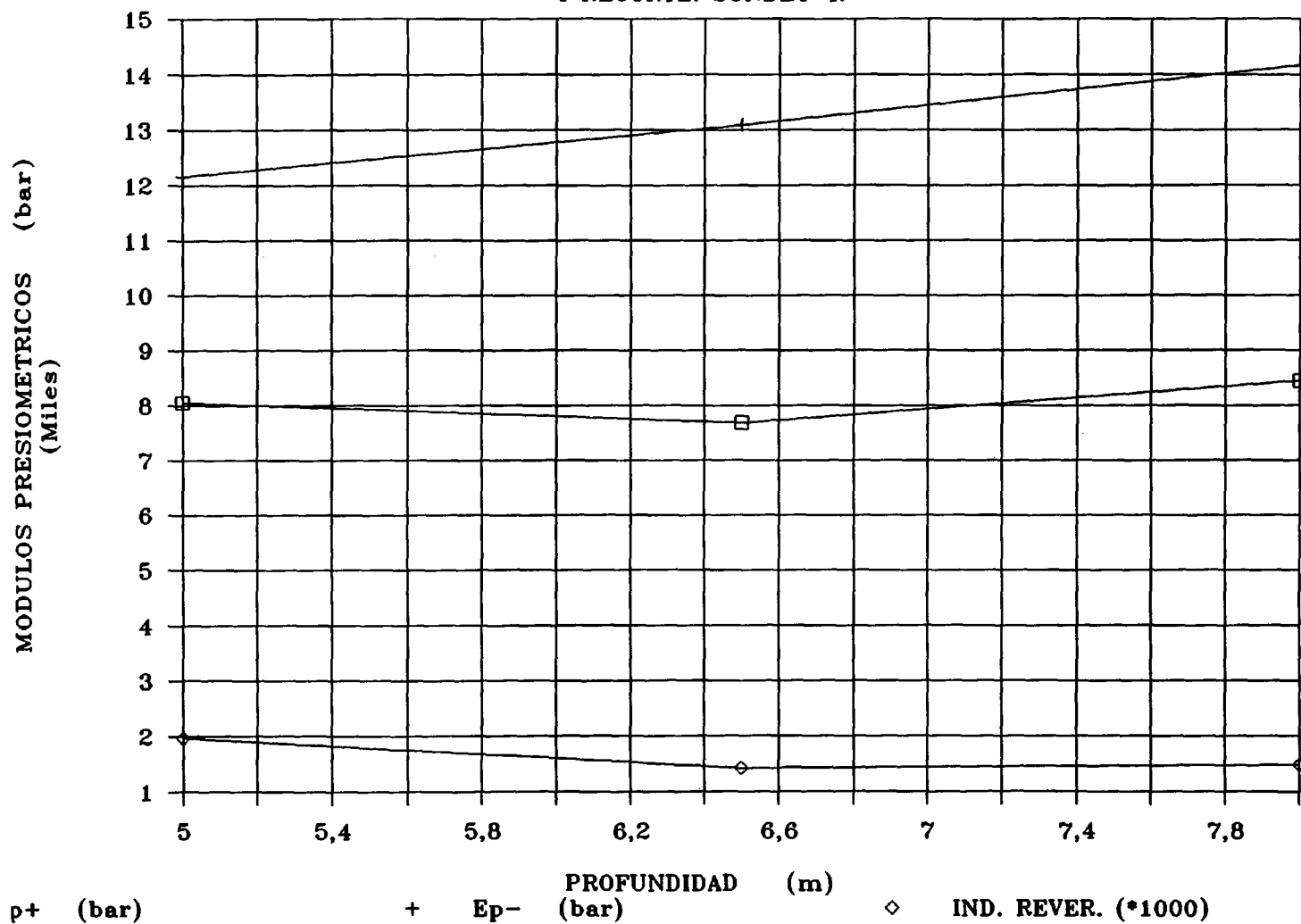
P O Z O : MONTSACRO

P R O F U N D I D A D (m)	C U R V A D E C A R G A		C U R V A D E D E S C A R G A		M O D U L O S P R E S I O M E T R I C O S		I N D I C E D E R E V E R S I B I L I D A D
	V1 (cm3)	V2 (cm3)	V1 (cm3)	V2 (cm3)	Ep+ (bar)	Ep- (bar)	
5.00	218.00	228.50	223.00	230.00	8057.14	12157.14	1.97
6.50	217.50	228.50	223.00	229.50	7686.36	13092.31	1.42
8.00	217.00	227.00	222.00	228.00	8450.00	14166.67	1.48
10.00	202.50	217.00	219.00	223.00	5727.59	21175.00	0.37

OBSERVACIONES: Sondeo realizado en el cuarto recorte a capa octava
a la altura del cuadro 13.

MODULOS PRESIOMETRICOS

4 RECORTE. SONDEO 4.



FICHA DE MEDIDAS PRESIOMETRICAS

SONDEO : 4 PROF. MUESTRA (m) : 5.00 FECHA : 10-3-92

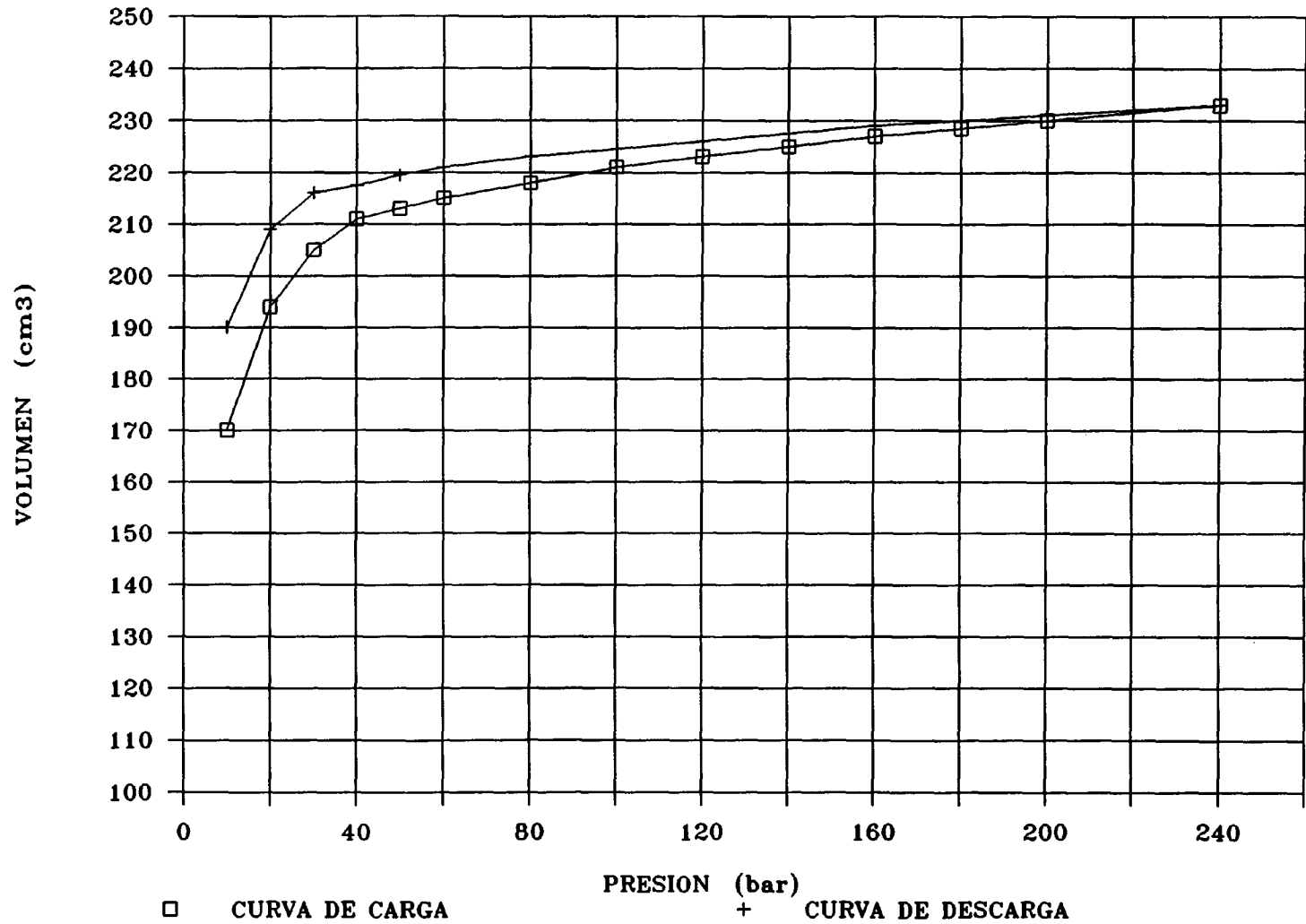
DATOS GENERALES

EMPRESA : HUNOSA PLANTA : 5
GRUPO : SAN NICOLAS CAPA : 8
POZO : MONTSACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Dismi)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00		0.00	----	----	160.00	160.00	----	----
10.00	160.00	160.00	10.00	170.00	160.00	160.00	30.00	190.00
20.00	160.00	160.00	34.00	194.00	160.00	160.00	49.00	209.00
30.00	160.00	160.00	45.00	205.00	160.00	160.00	56.00	216.00
40.00	160.00	160.00	51.00	211.00	160.00	160.00	57.50	217.50
50.00	160.00	160.00	53.00	213.00	160.00	160.00	59.50	219.50
60.00	160.00	160.00	55.00	215.00	160.00	160.00	61.00	221.00
80.00	160.00	160.00	58.00	218.00	160.00	160.00	63.00	223.00
100.00	160.00	160.00	61.00	221.00	160.00	160.00	64.50	224.50
120.00	160.00	160.00	63.00	223.00	160.00	160.00	66.00	226.00
140.00	160.00	160.00	65.00	225.00	160.00	160.00	67.50	227.50
160.00	160.00	160.00	67.00	227.00	160.00	160.00	69.00	229.00
180.00	160.00	160.00	68.50	228.50	160.00	160.00	70.00	230.00
200.00	160.00	160.00	70.00	230.00	160.00	160.00	71.00	231.00
240.00	160.00	160.00	73.00	233.00	160.00	160.00	73.00	233.00

OBSERVACIONES: Sondeo realizado a la altura del cuadro 13 en el cuarto recorte.

CURVAS PRESIOMETRICAS



FICHA DE MEDIDAS PRESIOMETRICAS

SONDEO : 4 PROF. MUESTRA (m) : 6.50 FECHA : 10-3-92

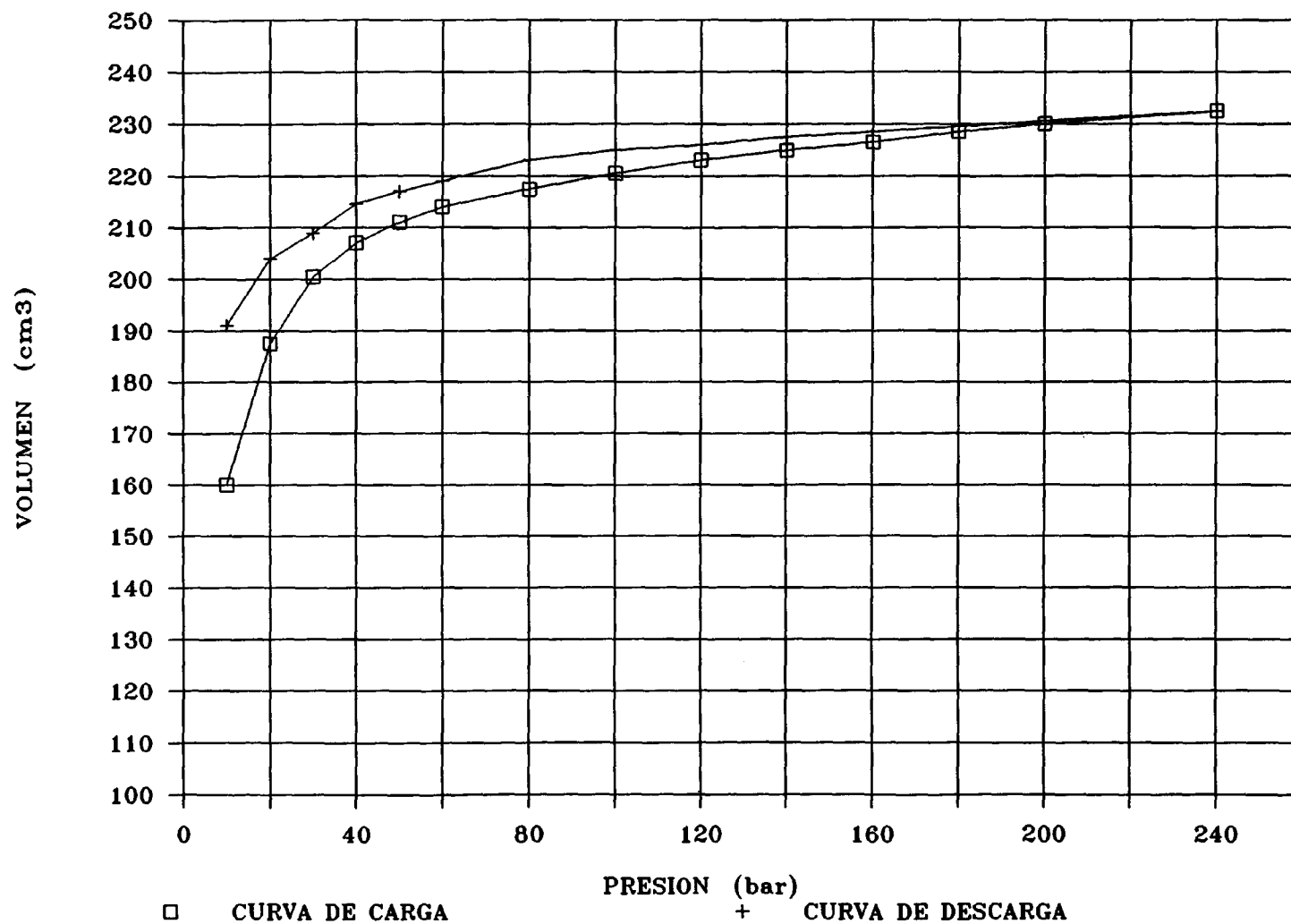
DATOS GENERALES

EMPRESA : HUNOSA PLANTA : 5
GRUPO : SAN NICOLAS CAPA : 8
POZO : MONTSACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Dismi)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00		0.00	----	----	160.00	160.00	----	----
10.00	80.00	80.00	80.00	160.00	160.00	160.00	31.00	191.00
20.00	80.00	160.00	27.50	187.50	160.00	160.00	44.00	204.00
30.00	80.00	160.00	40.50	200.50	160.00	160.00	49.00	209.00
40.00	80.00	160.00	47.00	207.00	160.00	160.00	54.50	214.50
50.00	80.00	160.00	51.00	211.00	160.00	160.00	57.00	217.00
60.00	80.00	160.00	54.00	214.00	160.00	160.00	59.00	219.00
80.00	80.00	160.00	57.50	217.50	160.00	160.00	63.00	223.00
100.00	80.00	160.00	60.50	220.50	160.00	160.00	65.00	225.00
120.00	80.00	160.00	63.00	223.00	160.00	160.00	66.00	226.00
140.00	80.00	160.00	65.00	225.00	160.00	160.00	67.50	227.50
160.00	80.00	160.00	66.50	226.50	160.00	160.00	68.50	228.50
180.00	80.00	160.00	68.50	228.50	160.00	160.00	69.50	229.50
200.00	80.00	160.00	70.00	230.00	160.00	160.00	70.50	230.50
240.00	80.00	160.00	72.50	232.50	160.00	160.00	72.50	232.50

OBSERVACIONES: Sondeo realizado a la altura del cuadro 13 en el cuarto recorte.

CURVAS PRESIOMETRICAS



FICHA DE MEDIDAS PRESIOMETRICAS

SONDEO : 4 PROF. MUESTRA (m) : 8.00 FECHA : 10-3-92

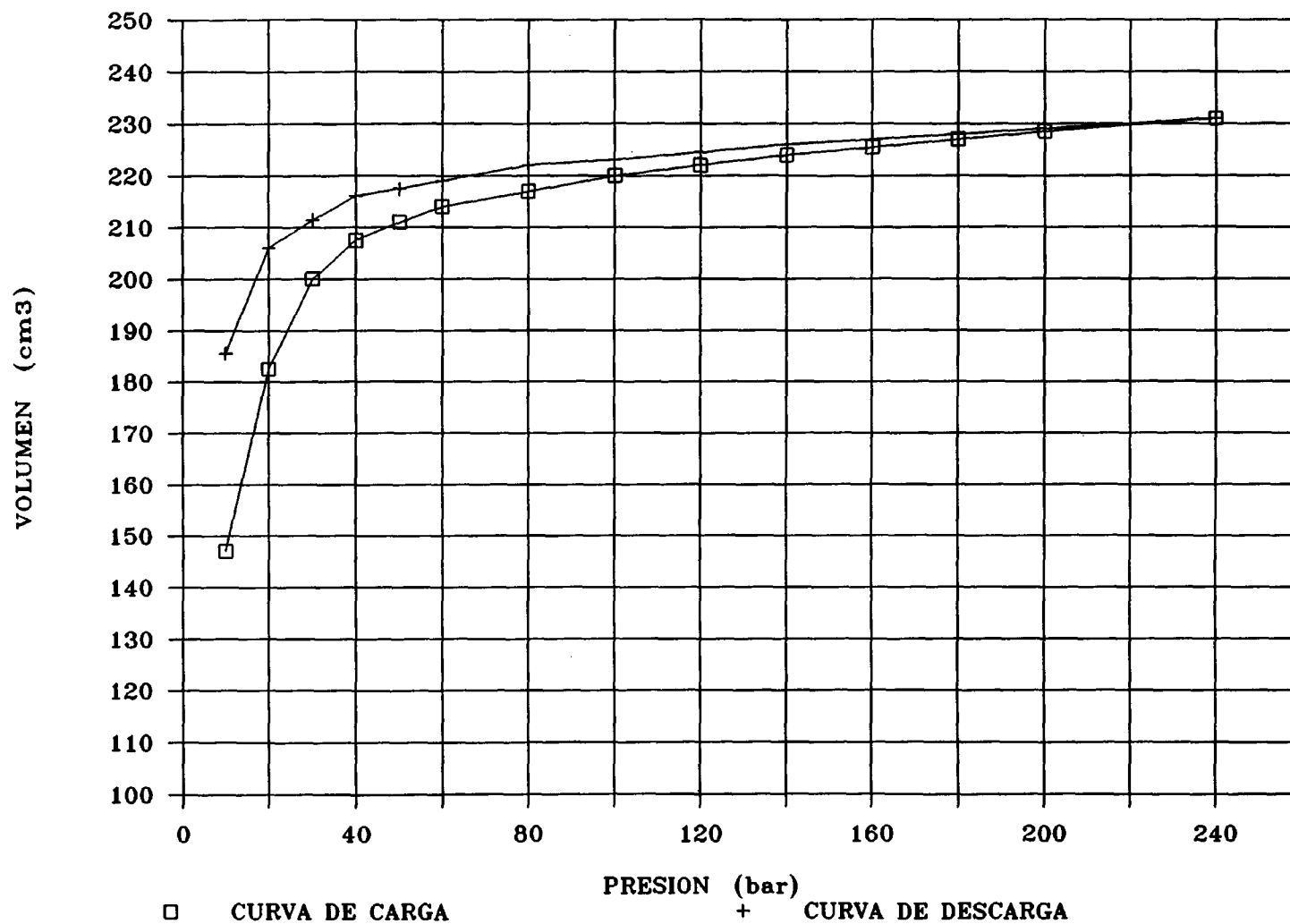
DATOS GENERALES

EMPRESA : HUNOSA PLANTA : 5
GRUPO : SAN NICOLAS CAPA : 8
POZO : MONTSACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Disml)			
	DE RELLENO		VOLUMEN		DE REBOSE		VOLUMEN	
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00		0.00	----	----	160.00	160.00	----	----
10.00	80.00	80.00	67.00	147.00	160.00	160.00	25.50	185.50
20.00	80.00	160.00	22.50	182.50	160.00	160.00	46.00	206.00
30.00	80.00	160.00	40.00	200.00	160.00	160.00	51.50	211.50
40.00	80.00	160.00	47.50	207.50	160.00	160.00	56.00	216.00
50.00	80.00	160.00	51.00	211.00	160.00	160.00	57.50	217.50
60.00	80.00	160.00	54.00	214.00	160.00	160.00	59.00	219.00
80.00	80.00	160.00	57.00	217.00	160.00	160.00	62.00	222.00
100.00	80.00	160.00	60.00	220.00	160.00	160.00	63.00	223.00
120.00	80.00	160.00	62.00	222.00	160.00	160.00	64.50	224.50
140.00	80.00	160.00	64.00	224.00	160.00	160.00	66.00	226.00
160.00	80.00	160.00	65.50	225.50	160.00	160.00	67.00	227.00
180.00	80.00	160.00	67.00	227.00	160.00	160.00	68.00	228.00
200.00	80.00	160.00	68.50	228.50	160.00	160.00	69.00	229.00
240.00	80.00	160.00	71.00	231.00	160.00	160.00	71.00	231.00

OBSERVACIONES: Sondeo realizado a la altura del cuadro 13 en el cuarto recorte.

CURVAS PRESIOMETRICAS



F I C H A D E M E D I D A S P R E S I O M E T R I C A S

S O N D E O : 4 P R O F . M U E S T R A (m) : 10.00 F E C H A : 10-3-92

D A T O S G E N E R A L E S

E M P R E S A : HUNOSA P L A N T A : 5
G R U P O : SAN NICOLAS C A P A : 8
P O Z O : MONTSACRO

PRESION	VOLUMENES (Aumen)				VOLUMENES (Dismi)			
	DE RELLENO	VOLUMEN			DE REBOSE	VOLUMEN		
	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO	PARCIAL	ACUMULADO
0.00		0.00	----	----	160.00	160.00	----	----
10.00	80.00	80.00	25.50	105.50	160.00	160.00	25.00	185.00
20.00	80.00	160.00	3.50	163.50	160.00	160.00	44.00	204.00
30.00	80.00	160.00	20.00	180.00	160.00	160.00	51.00	211.00
40.00	80.00	160.00	29.50	189.50	160.00	160.00	53.50	213.50
50.00	80.00	160.00	34.50	194.50	160.00	160.00	56.00	216.00
60.00	80.00	160.00	38.50	198.50	160.00	160.00	57.50	217.50
80.00	80.00	160.00	42.50	202.50	160.00	160.00	59.00	219.00
100.00	80.00	160.00	45.50	205.50	160.00	160.00	60.00	220.00
120.00	80.00	160.00	48.00	208.00	160.00	160.00	61.00	221.00
140.00	80.00	160.00	50.00	210.00	160.00	160.00	62.00	222.00
160.00	80.00	160.00	52.00	212.00	160.00	160.00	62.50	222.50
180.00	80.00	160.00	57.00	217.00	160.00	160.00	63.00	223.00
200.00	80.00	160.00	60.50	220.50	160.00	160.00	63.50	223.50
240.00	80.00	160.00	64.50	224.50	160.00	160.00	64.50	224.50

OBSERVACIONES: Sondeo realizado a la altura del cuadro 13 en el cuarto recorte.
problemas para mantener la presión a partir de 180 bares.

CURVAS PRESIOMETRICAS

