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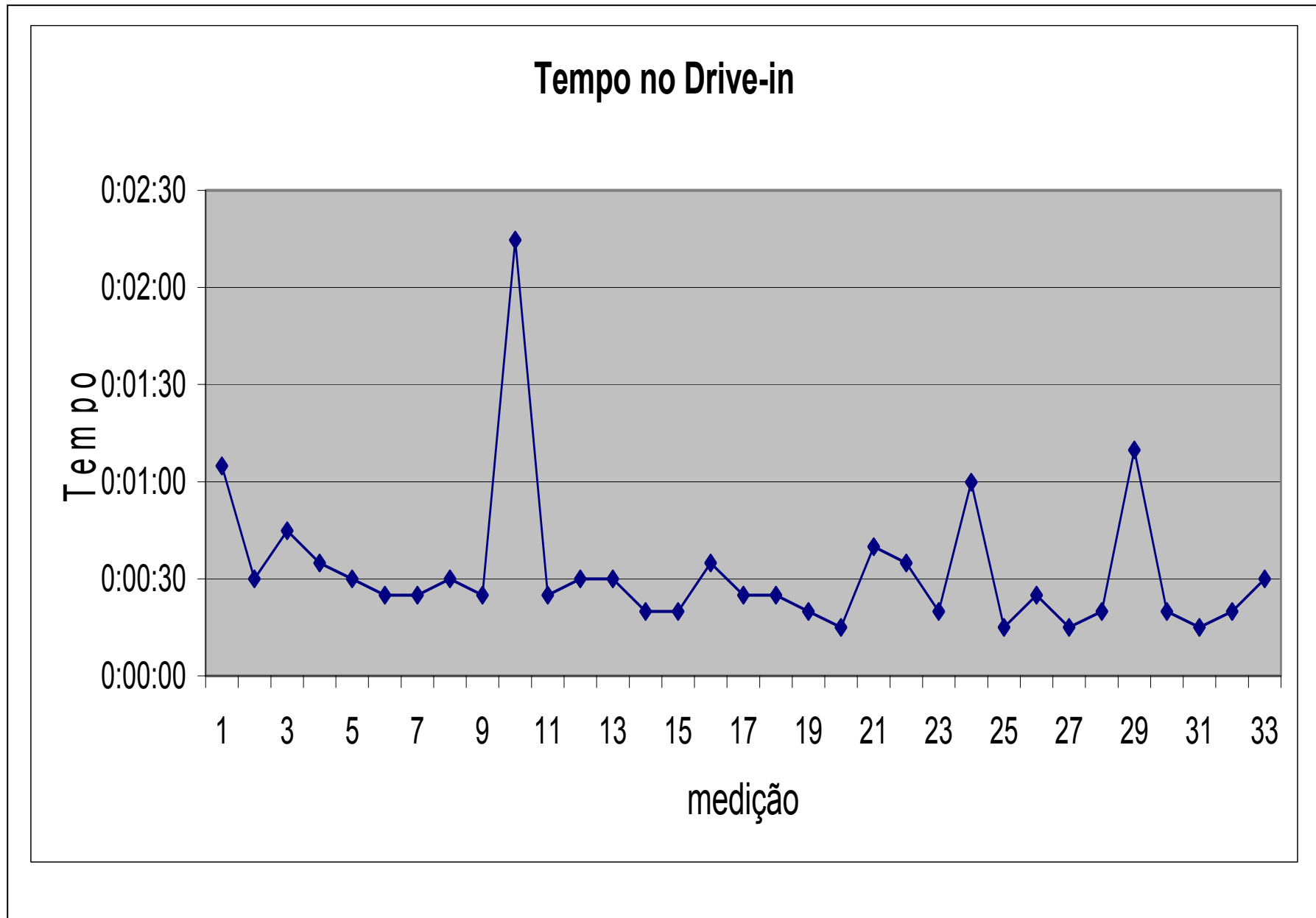
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APÊNDICES

Apêndice A – Planilha de medições de tempo, legenda e exemplo de medição.

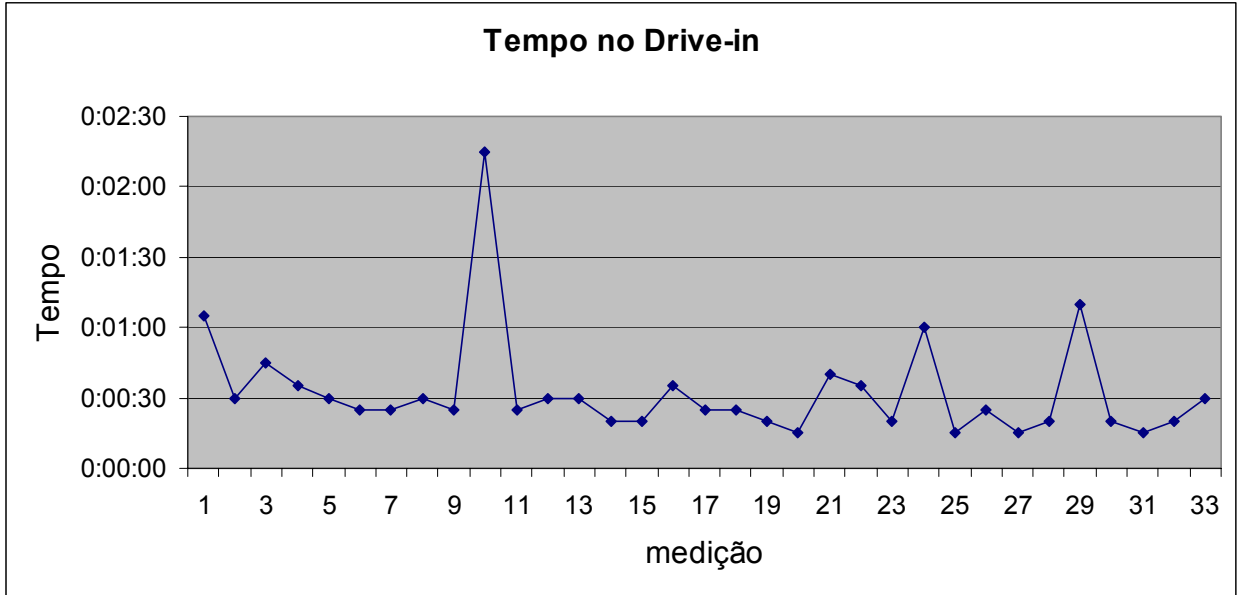


Medições realizadas na plataforma - 1a				
Ordem	Tipo	Parada na laje	Início do bombeio	Tempo morto na chegada
1	top	10:26:30	10:29:15	0:02:45
2	top	10:29:30	10:32:00	0:02:30
3	top	10:45:05	10:48:00	0:02:55
4	top	11:14:00	11:19:20	0:05:20
5	top	11:31:00	11:35:15	0:04:15
6	top	12:26:20	12:28:40	0:02:20
7	top	12:43:00	12:45:00	0:02:00
8	top	9:55:50	10:00:45	0:04:55
9	top	10:30:30	10:32:50	0:02:20
10	top	10:47:40	10:53:20	0:05:40
11	top	10:56:30	10:59:10	0:02:40
12	top	11:12:00	11:15:00	0:03:00
13	top	11:21:40	11:25:00	0:03:20
14	top	11:35:40	11:37:30	0:01:50
15	top	11:42:00	11:44:50	0:02:50
16	top	12:00:00	12:02:20	0:02:20
17	top	12:05:00	12:07:00	0:02:00
18	top	12:12:30	12:15:30	0:03:00
19	top	12:58:30	13:01:50	0:03:20
20	top	13:17:40	13:20:00	0:02:20
21	top	13:26:30	13:29:40	0:03:10
22	top	13:43:00	13:50:30	0:07:30
23	top	13:59:30	14:03:20	0:03:50
24	top	9:32:00	9:36:10	0:04:10
25	top	9:53:00	9:58:00	0:05:00
26	top	10:15:40	10:18:40	0:03:00
27	top	10:37:30	10:39:40	0:02:10
28	top	10:48:50	10:52:30	0:03:40

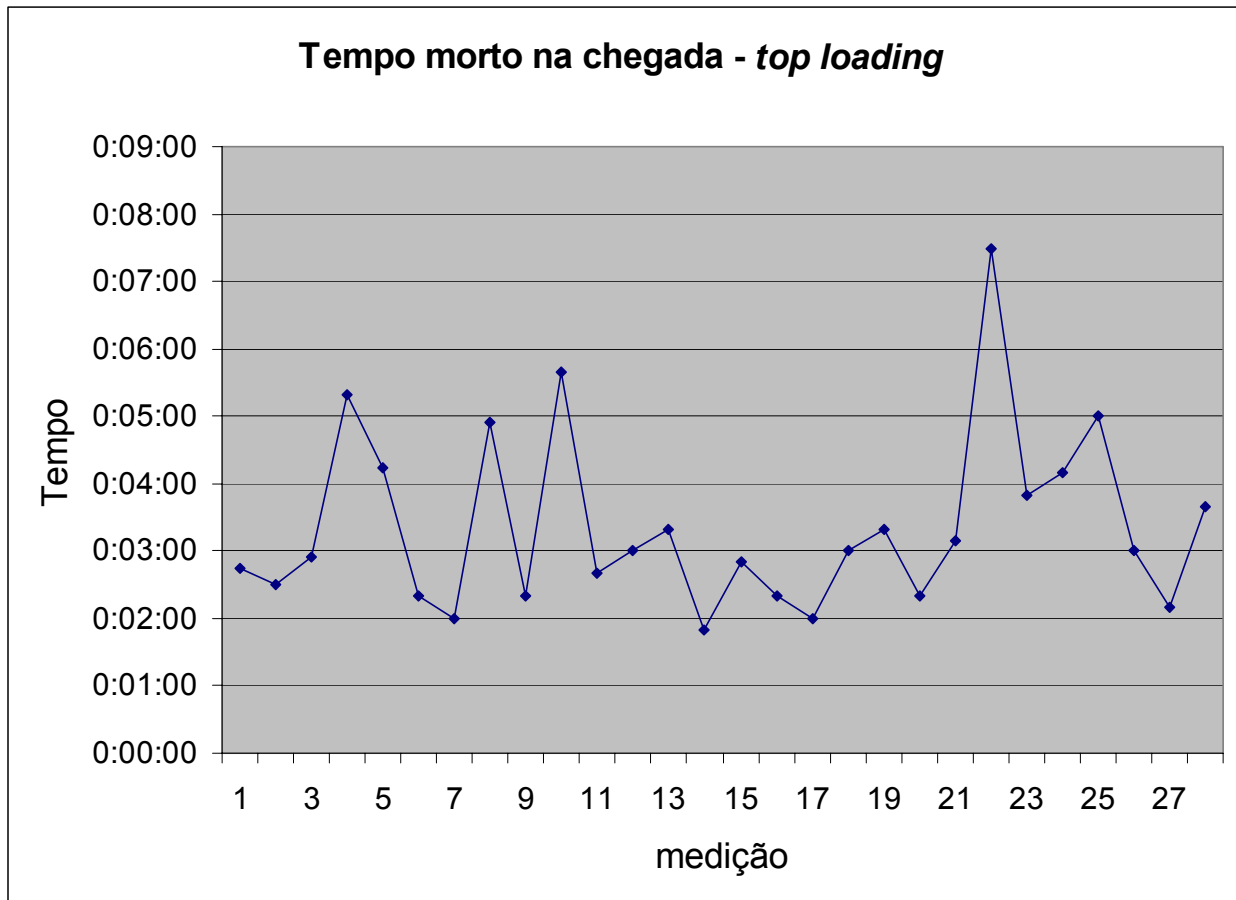
Placa	Comp. (m³)	Chegada ao drive-in	Saída do drive-in	Parada na laje	Início do bombeio	Fim do bombeio	Saída da laje	Chegada ao drive-out	Saída do drive-out	Observações
KMH							- x -	- x -	- x -	
5258	5	- x -	- x -	- x -			- x -	- x -	- x -	
Tipo	5	- x -	- x -	- x -			- x -	- x -	- x -	
Top	5	- x -	- x -	- x -		10:21:05	- x -	- x -	- x -	
Reboque?		- x -	- x -	- x -			- x -	- x -	- x -	
Não		- x -	- x -	- x -			- x -	- x -	- x -	
		- x -	- x -	- x -			10:25:15	10:25:50	10:26:10	
KOO							- x -	- x -	- x -	
2095	5	x	x	x			- x -	- x -	- x -	
Tipo	5	x	x	x			- x -	- x -	- x -	
Top	5	x	x	x		10:25:00	- x -	- x -	- x -	
Reboque?		- x -	- x -	- x -			- x -	- x -	- x -	
Não		- x -	- x -	- x -			- x -	- x -	- x -	
		- x -	- x -	- x -			10:27:00	10:54:00	10:54:45	"bola preta"?
GVI				10:26:30			- x -	- x -	- x -	
7541	5	- x -	- x -	- x -	10:29:15	10:32:50	- x -	- x -	- x -	
Tipo	5	- x -	- x -	- x -	10:34:10	10:37:45	- x -	- x -	- x -	
Top	5	- x -	- x -	- x -	10:38:10	10:41:50	- x -	- x -	- x -	
Reboque?		- x -	- x -	- x -			- x -	- x -	- x -	
Não		- x -	- x -	- x -			- x -	- x -	- x -	
		- x -	- x -	- x -			10:44:45	10:47:20		problema autobasi posição bico
KPC				10:29:30			- x -	- x -	- x -	
7334	5	- x -	- x -	- x -	10:32:00	10:36:20	- x -	- x -	- x -	
Tipo	5	- x -	- x -	- x -	10:32:00	10:36:20	- x -	- x -	- x -	carregou junto (2 motoristas)
Top	3	- x -	- x -	- x -	10:38:50	10:41:40	- x -	- x -	- x -	
Reboque?	2	- x -	- x -	- x -	10:43:00	10:46:00	- x -	- x -	- x -	
Não		- x -	- x -	- x -			- x -	- x -	- x -	
		- x -	- x -	- x -			10:47:10	10:48:50	10:49:20	
		10:53:15	10:54:20				- x -	- x -	- x -	
		- x -	- x -	- x -			- x -	- x -	- x -	
Tipo		- x -	- x -	- x -			- x -	- x -	- x -	
		- x -	- x -	- x -			- x -	- x -	- x -	
Reboque?		- x -	- x -	- x -			- x -	- x -	- x -	
		- x -	- x -	- x -			- x -	- x -	- x -	
		- x -	- x -	- x -			- x -	- x -	- x -	

Apêndice B – Planilhas de medição e gráficos por processo

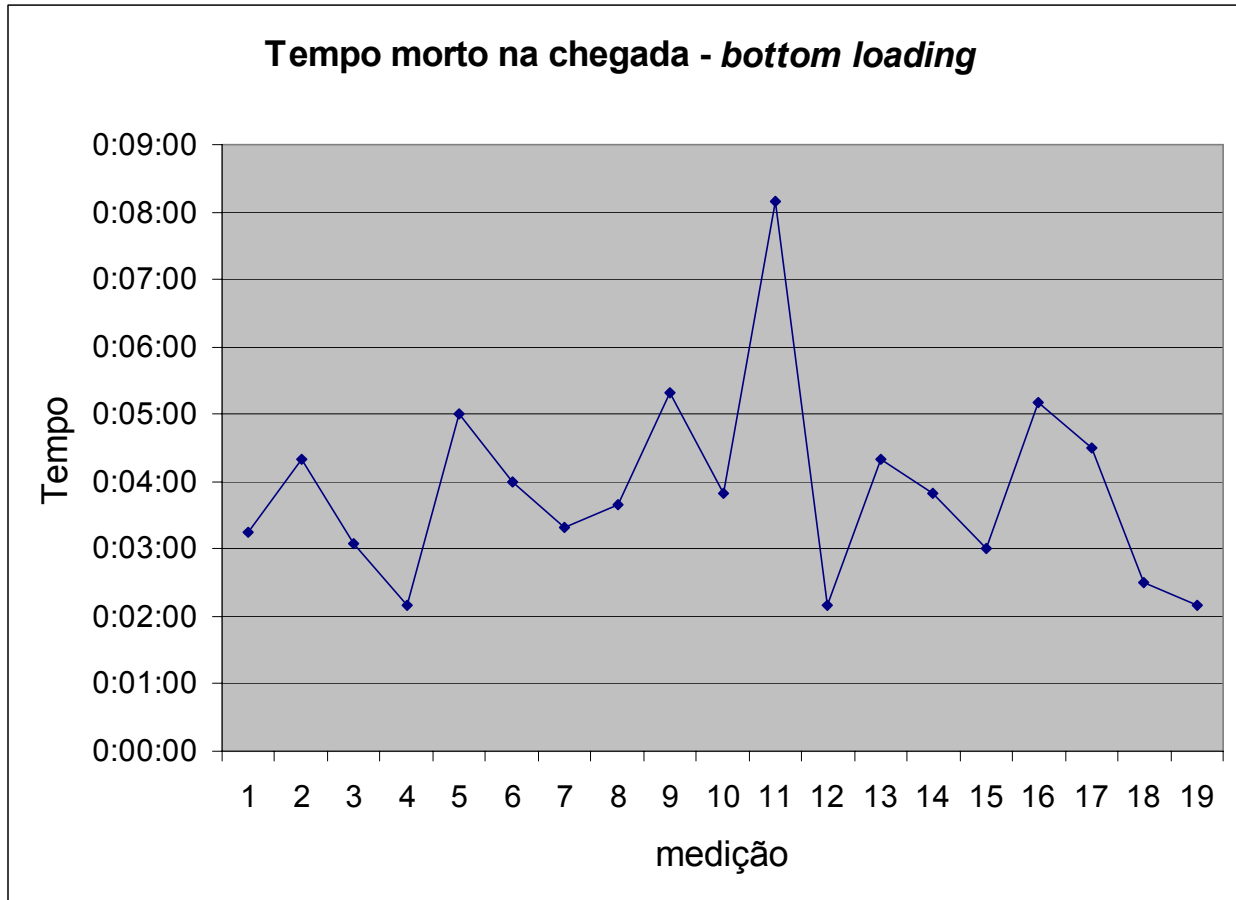
Medições realizadas no drive-in			
Ordem	Chegada ao drive-in	Saída do drive-in	Tempo no drive-in
1	10:53:15	10:54:20	0:01:05
2	11:01:50	11:02:20	0:00:30
3	11:17:30	11:18:15	0:00:45
4	11:18:25	11:19:00	0:00:35
5	11:20:40	11:21:10	0:00:30
6	11:26:10	11:26:35	0:00:25
7	11:34:20	11:34:45	0:00:25
8	11:44:40	11:45:10	0:00:30
9	11:51:10	11:51:35	0:00:25
10	12:03:15	12:05:30	0:02:15
11	12:06:00	12:06:25	0:00:25
12	12:18:40	12:19:10	0:00:30
13	12:22:30	12:23:00	0:00:30
14	12:23:30	12:23:50	0:00:20
15	12:35:50	12:36:10	0:00:20
16	9:46:25	9:47:00	0:00:35
17	9:50:50	9:51:15	0:00:25
18	9:58:15	9:58:40	0:00:25
19	10:00:40	10:01:00	0:00:20
20	10:05:55	10:06:10	0:00:15
21	10:09:10	10:09:50	0:00:40
22	10:10:35	10:11:10	0:00:35
23	10:50:20	10:50:40	0:00:20
24	10:41:00	10:42:00	0:01:00
25	11:04:10	11:04:25	0:00:15
26	11:55:20	11:55:45	0:00:25
27	9:47:00	9:47:15	0:00:15
28	9:20:00	9:20:20	0:00:20
29	10:03:10	10:04:20	0:01:10
30	10:27:50	10:28:10	0:00:20
31	10:29:25	10:29:40	0:00:15
32	12:20:50	12:21:10	0:00:20
33	12:22:30	12:23:00	0:00:30



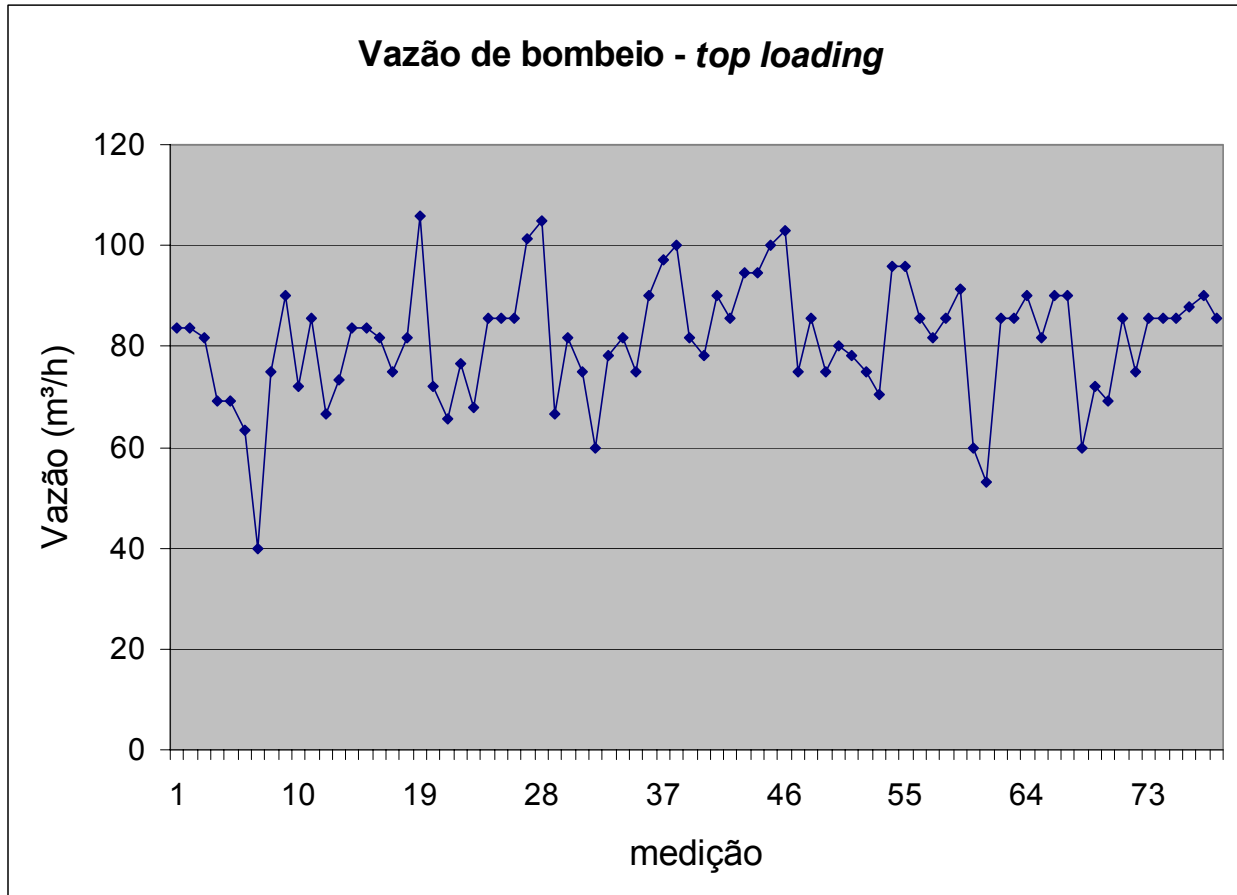
Medições realizadas na plataforma - 1a				
Ordem	Tipo	Parada na laje	Início do bombeio	Tempo morto na chegada
1	top	10:26:30	10:29:15	0:02:45
2	top	10:29:30	10:32:00	0:02:30
3	top	10:45:05	10:48:00	0:02:55
4	top	11:14:00	11:19:20	0:05:20
5	top	11:31:00	11:35:15	0:04:15
6	top	12:26:20	12:28:40	0:02:20
7	top	12:43:00	12:45:00	0:02:00
8	top	9:55:50	10:00:45	0:04:55
9	top	10:30:30	10:32:50	0:02:20
10	top	10:47:40	10:53:20	0:05:40
11	top	10:56:30	10:59:10	0:02:40
12	top	11:12:00	11:15:00	0:03:00
13	top	11:21:40	11:25:00	0:03:20
14	top	11:35:40	11:37:30	0:01:50
15	top	11:42:00	11:44:50	0:02:50
16	top	12:00:00	12:02:20	0:02:20
17	top	12:05:00	12:07:00	0:02:00
18	top	12:12:30	12:15:30	0:03:00
19	top	12:58:30	13:01:50	0:03:20
20	top	13:17:40	13:20:00	0:02:20
21	top	13:26:30	13:29:40	0:03:10
22	top	13:43:00	13:50:30	0:07:30
23	top	13:59:30	14:03:20	0:03:50
24	top	9:32:00	9:36:10	0:04:10
25	top	9:53:00	9:58:00	0:05:00
26	top	10:15:40	10:18:40	0:03:00
27	top	10:37:30	10:39:40	0:02:10
28	top	10:48:50	10:52:30	0:03:40



Medições realizadas na plataforma - 1b				
Ordem	Tipo	Parada na laje	Início do bombeio	Tempo morto na chegada
1	bottom	11:05:15	11:08:30	0:03:15
2	bottom	11:23:20	11:27:40	0:04:20
3	bottom	10:22:25	10:25:30	0:03:05
4	bottom	10:23:30	10:25:40	0:02:10
5	bottom	11:08:20	11:13:20	0:05:00
6	bottom	11:52:30	11:56:30	0:04:00
7	bottom	12:10:40	12:14:00	0:03:20
8	bottom	13:40:30	13:44:10	0:03:40
9	bottom	9:48:50	9:54:10	0:05:20
10	bottom	10:04:20	10:08:10	0:03:50
11	bottom	10:09:20	10:17:30	0:08:10
12	bottom	10:36:00	10:38:10	0:02:10
13	bottom	10:53:30	10:57:50	0:04:20
14	bottom	10:55:30	10:59:20	0:03:50
15	bottom	11:23:40	11:26:40	0:03:00
16	bottom	11:28:00	11:33:10	0:05:10
17	bottom	12:00:00	12:04:30	0:04:30
18	bottom	12:07:30	12:10:00	0:02:30
19	bottom	12:22:20	12:24:30	0:02:10

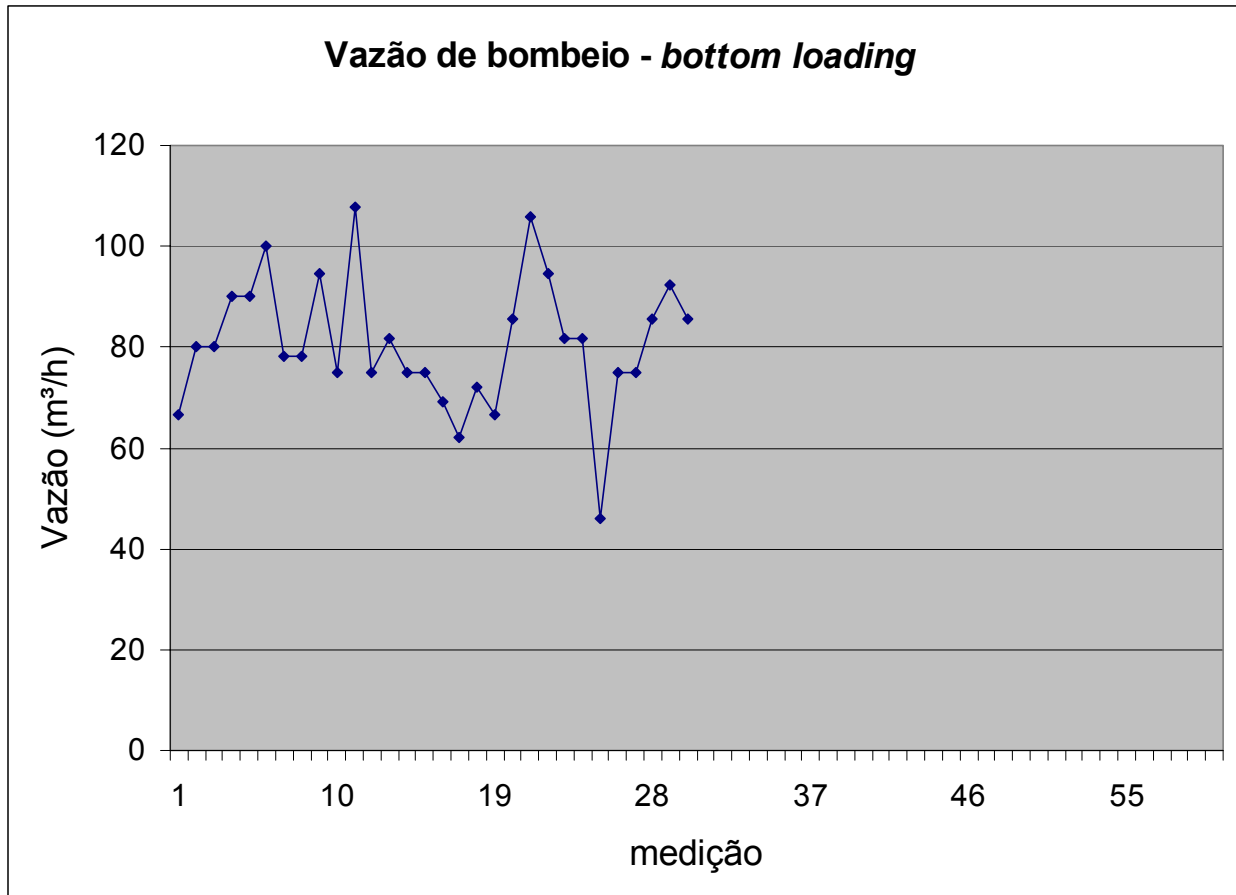


Medições realizadas na plataforma - 2a							
Ordem	Tipo	Compartimento (m³)	Vazão top (m³/h)	Ordem	Tipo	Compartimento (m³)	Vazão top (m³/h)
1	top	5	84	40	top	5	78
2	top	5	84	41	top	5	90
3	top	5	82	42	top	5	86
4	top	5	69	43	top	5	95
5	top	5	69	44	top	5	95
6	top	3	64	45	top	5	100
7	top	2	40	46	top	10	103
8	top	5	75	47	top	10	75
9	top	5	90	48	top	5	86
10	top	5	72	49	top	5	75
11	top	5	86	50	top	5	80
12	top	5	67	51	top	5	78
13	top	5	73	52	top	5	75
14	top	5	84	53	top	5	71
15	top	5	84	54	top	10	96
16	top	5	82	55	top	15	96
17	top	5	75	56	top	10	86
18	top	5	82	57	top	5	82
19	top	10	106	58	top	5	86
20	top	5	72	59	top	35	92
21	top	5	66	60	top	5	60
22	top	23	77	61	top	5	53
23	top	5	68	62	top	5	86
24	top	5	86	63	top	5	86
25	top	5	86	64	top	5	90
26	top	30	86	65	top	8	82
27	top	30	101	66	top	10	90
28	top	5	105	67	top	5	90
29	top	5	67	68	top	5	60
30	top	9	82	69	top	5	72
31	top	7	75	70	top	5	69
32	top	5	60	71	top	5	86
33	top	5	78	72	top	5	75
34	top	5	82	73	top	30	86
35	top	5	75	74	top	5	86
36	top	5	90	75	top	5	86
37	top	5	97	76	top	5	88
38	top	5	100	77	top	5	90
39	top	5	82	78	top	5	86

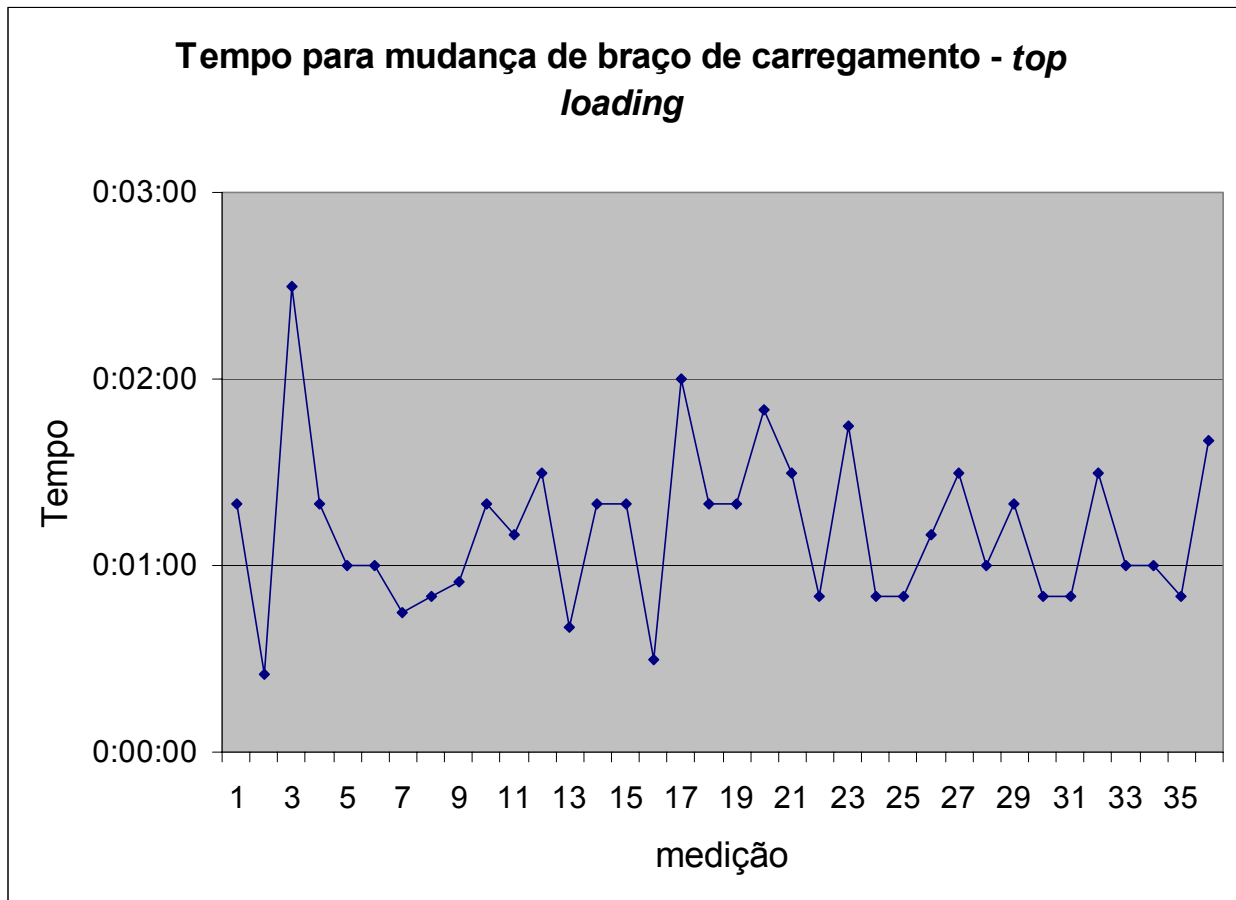


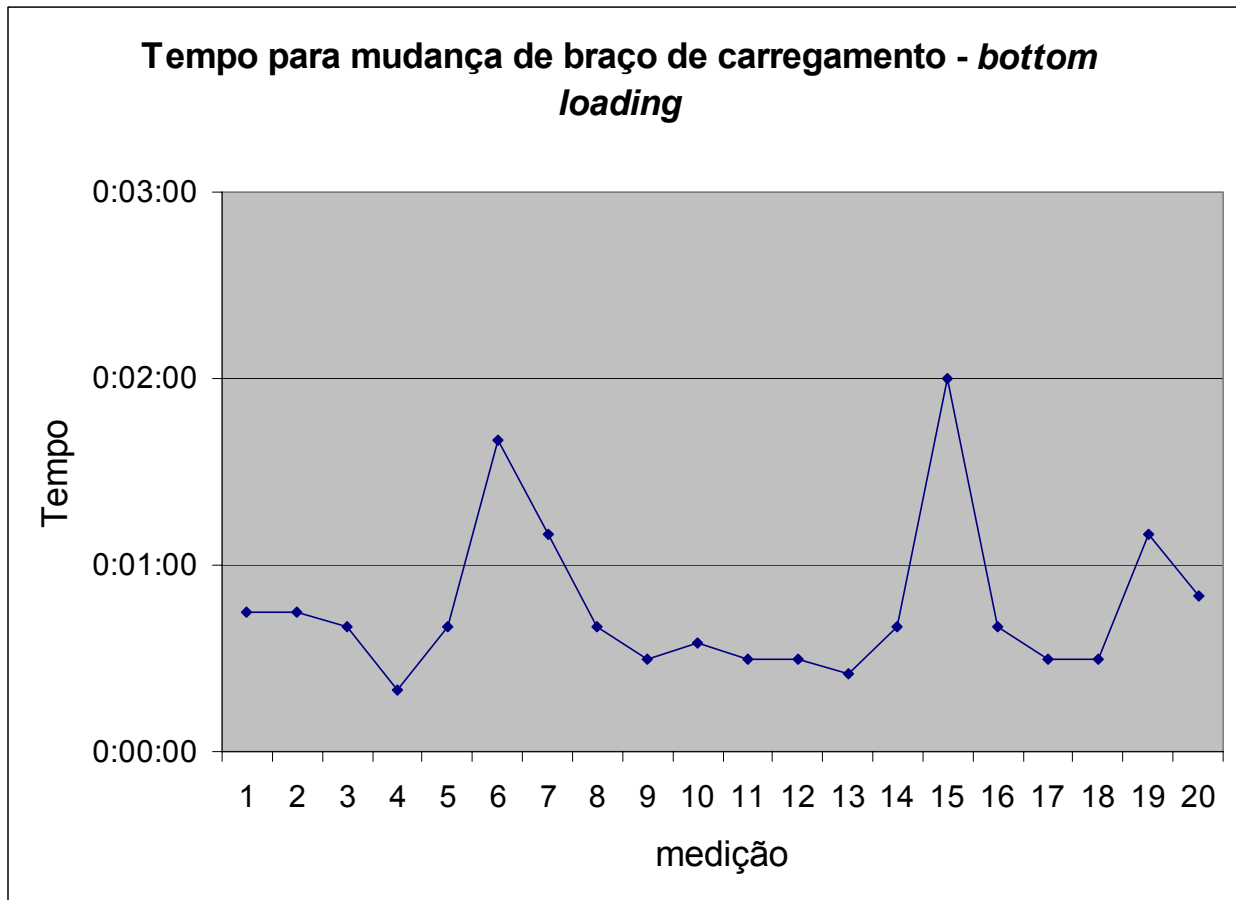
Medições realizadas na plataforma - 2b

Ordem	Tipo	Compartimento (m³)	Vazão bottom (m³/h)	Ordem	Tipo	Compartimento (m³)	Vazão bottom (m³/h)
1	bottom	5	67	31	bottom	7	86
2	bottom	5	80	32	bottom	5	86
3	bottom	5	80	33	bottom	5	82
4	bottom	5	90	34	bottom	5	82
5	bottom	5	90	35	bottom	5	82
6	bottom	3	100	36	bottom	5	82
7	bottom	2	78	37	bottom	5	90
8	bottom	5	78	38	bottom	5	90
9	bottom	5	95	39	bottom	5	86
10	bottom	5	75	40	bottom	5	100
11	bottom	5	108	41	bottom	5	90
12	bottom	5	75	42	bottom	5	78
13	bottom	5	82	43	bottom	5	78
14	bottom	5	75	44	bottom	5	100
15	bottom	5	75	45	bottom	5	72
16	bottom	5	69	46	bottom	10	78
17	bottom	5	62	47	bottom	10	75
18	bottom	5	72	48	bottom	5	82
19	bottom	10	67	49	bottom	5	78
20	bottom	5	86	50	bottom	5	86
21	bottom	5	106	51	bottom	5	90
22	bottom	23	95	52	bottom	5	90
23	bottom	5	82	53	bottom	5	90
24	bottom	5	82	54	bottom	10	90
25	bottom	5	46	55	bottom	15	90
26	bottom	30	75	56	bottom	10	95
27	bottom	30	75	57	bottom	5	95
28	bottom	5	86	58	bottom	5	90
29	bottom	5	92	59	bottom	35	90
30	bottom	9	86	60	bottom	5	86



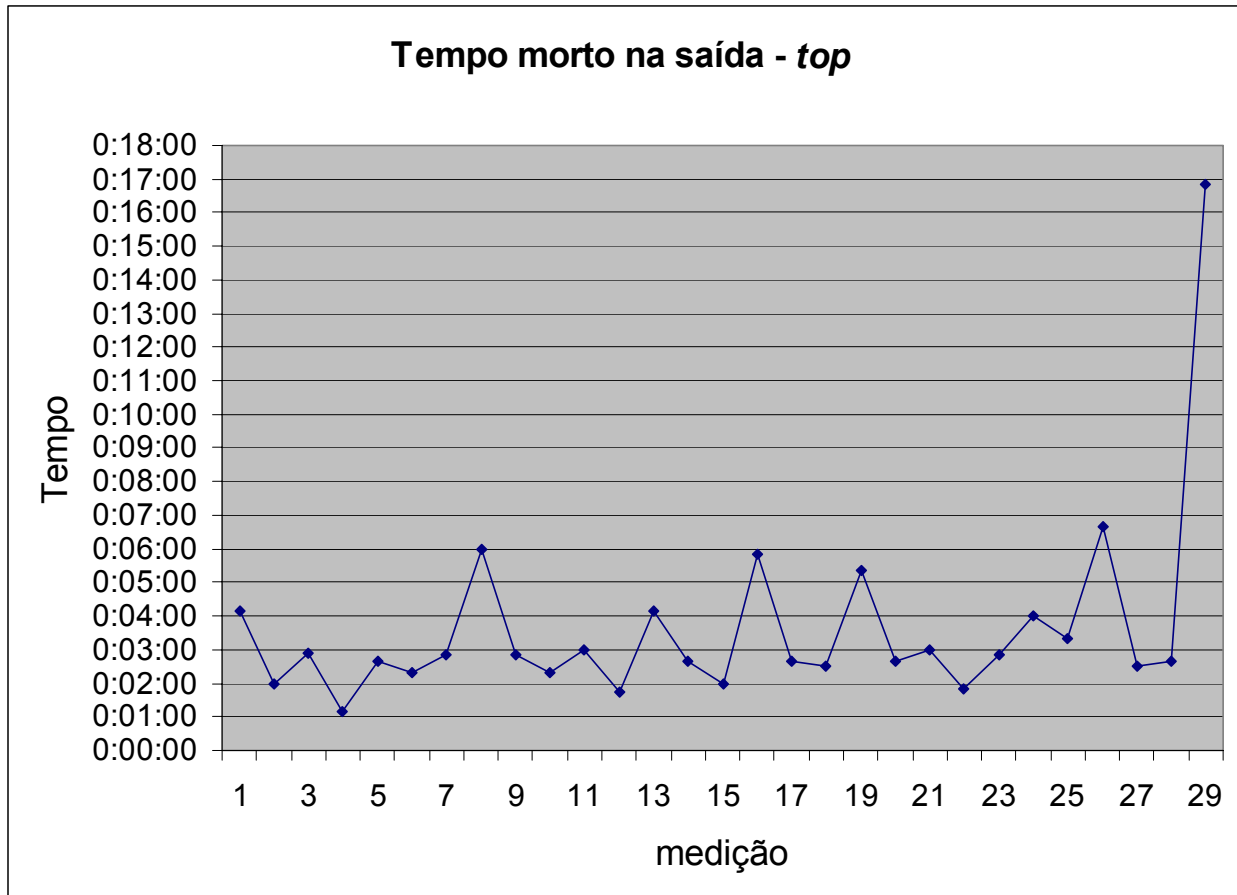
Medições realizadas na plataforma - 3				
Ordem	Tempo mudança de braço <i>top</i>		Ordem	Tempo mudança de braço <i>bottom</i>
1	0:01:20		1	0:00:45
2	0:00:25		2	0:00:45
3	0:02:30		3	0:00:40
4	0:01:20		4	0:00:20
5	0:01:00		5	0:00:40
6	0:01:00		6	0:01:40
7	0:00:45		7	0:01:10
8	0:00:50		8	0:00:40
9	0:00:55		9	0:00:30
10	0:01:20		10	0:00:35
11	0:01:10		11	0:00:30
12	0:01:30		12	0:00:30
13	0:00:40		13	0:00:25
14	0:01:20		14	0:00:40
15	0:01:20		15	0:02:00
16	0:00:30		16	0:00:40
17	0:02:00		17	0:00:30
18	0:01:20		18	0:00:30
19	0:01:20		19	0:01:10
20	0:01:50		20	0:00:50
21	0:01:30			
22	0:00:50			
23	0:01:45			
24	0:00:50			
25	0:00:50			
26	0:01:10			
27	0:01:30			
28	0:01:00			
29	0:01:20			
30	0:00:50			
31	0:00:50			
32	0:01:30			
33	0:01:00			
34	0:01:00			
35	0:00:50			
36	0:01:40			

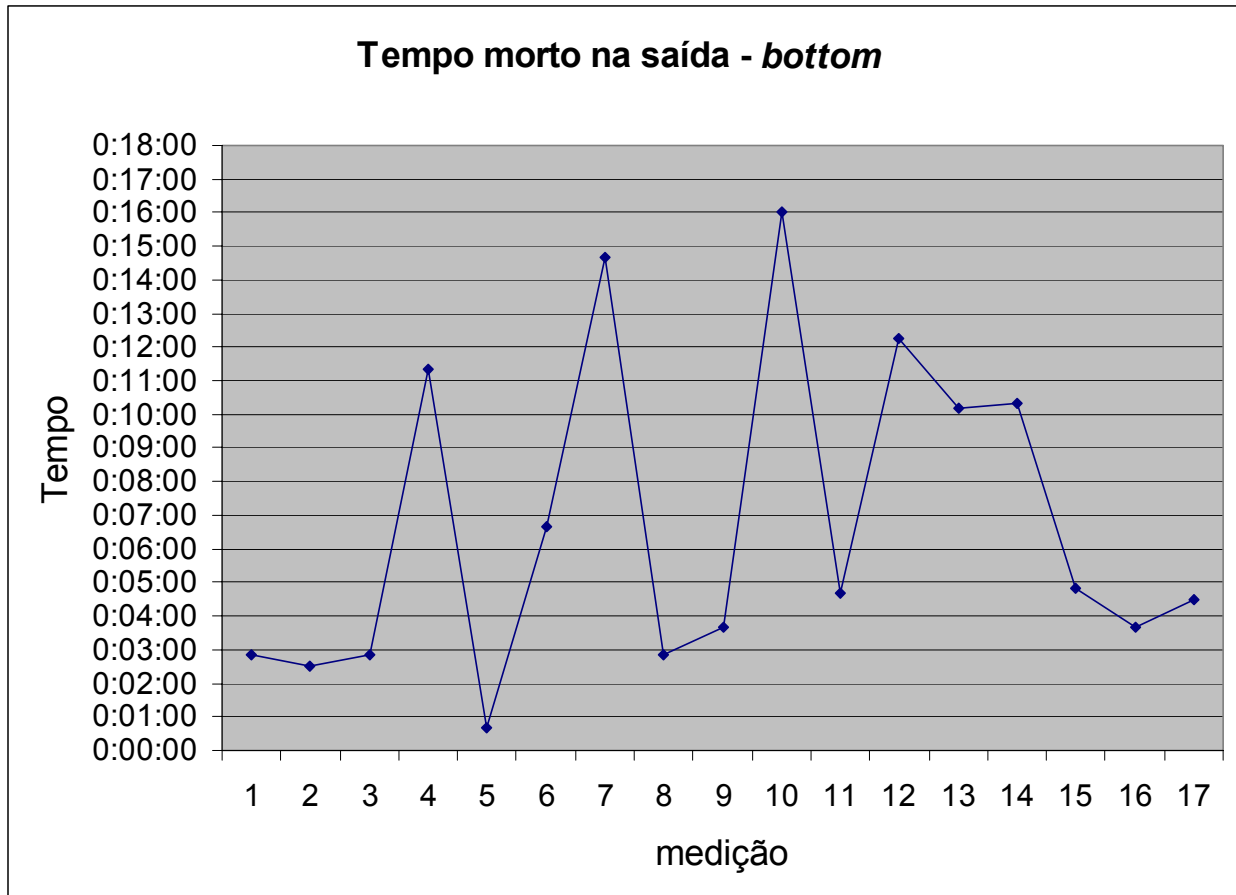




Medições realizadas na plataforma - 4

Ordem	Tempo morto na saída <i>top</i>		Ordem	Tempo morto na saída <i>bottom</i>
1	00:04:10		1	00:02:50
2	00:02:00		2	00:02:30
3	00:02:55		3	00:02:50
4	00:01:10		4	00:11:20
5	00:02:40		5	00:00:40
6	00:02:20		6	00:06:40
7	00:02:50		7	00:14:40
8	00:06:00		8	00:02:50
9	00:02:50		9	00:03:40
10	00:02:20		10	00:16:00
11	00:03:00		11	00:04:40
12	00:01:45		12	00:12:15
13	00:04:10		13	00:10:10
14	00:02:40		14	00:10:20
15	00:02:00		15	00:04:50
16	00:05:50		16	00:03:40
17	00:02:40		17	00:04:30
18	00:02:30			
19	00:05:20			
20	00:02:40			
21	00:03:00			
22	00:01:50			
23	00:02:50			
24	00:04:00			
25	00:03:20			
26	00:06:40			
27	00:02:30			
28	00:02:40			
29	00:16:50			

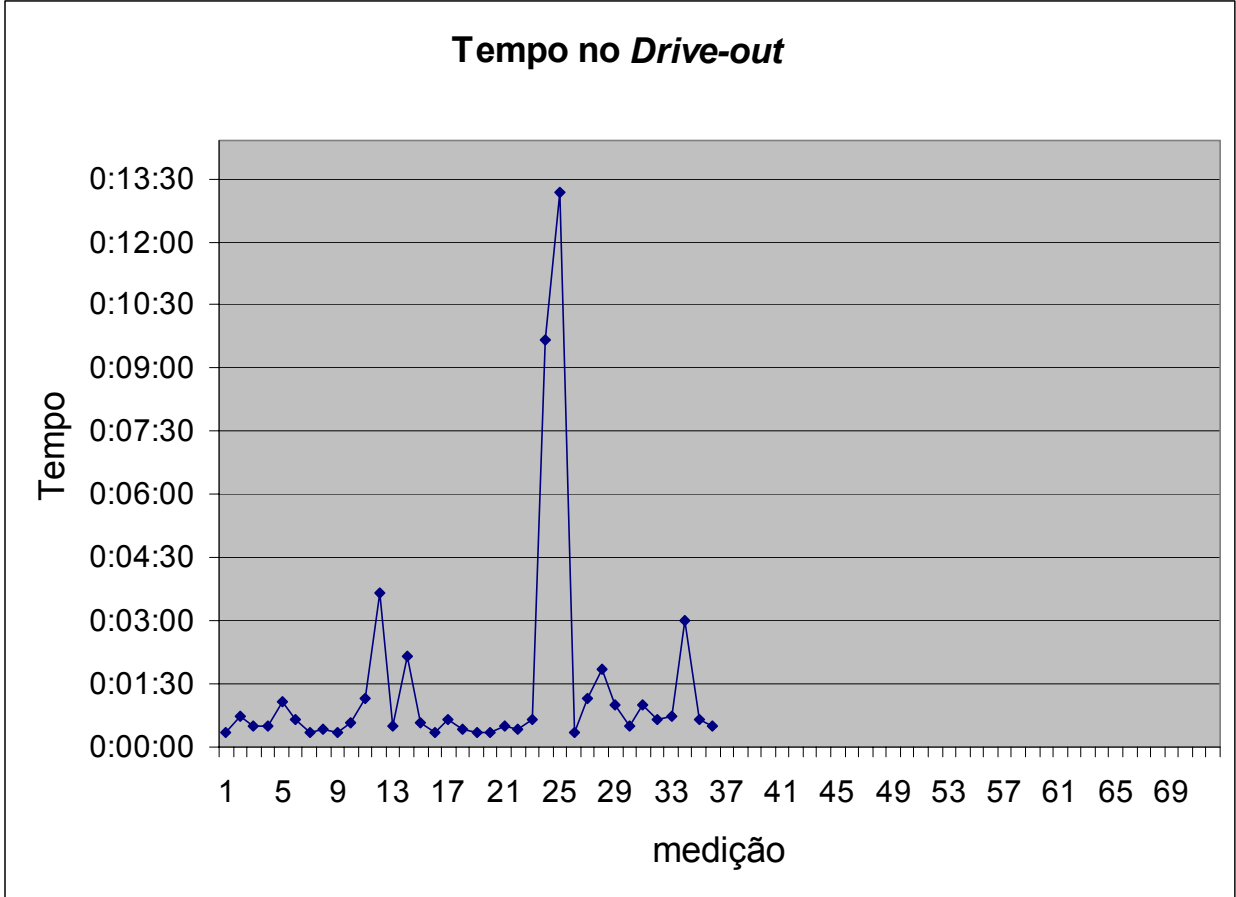




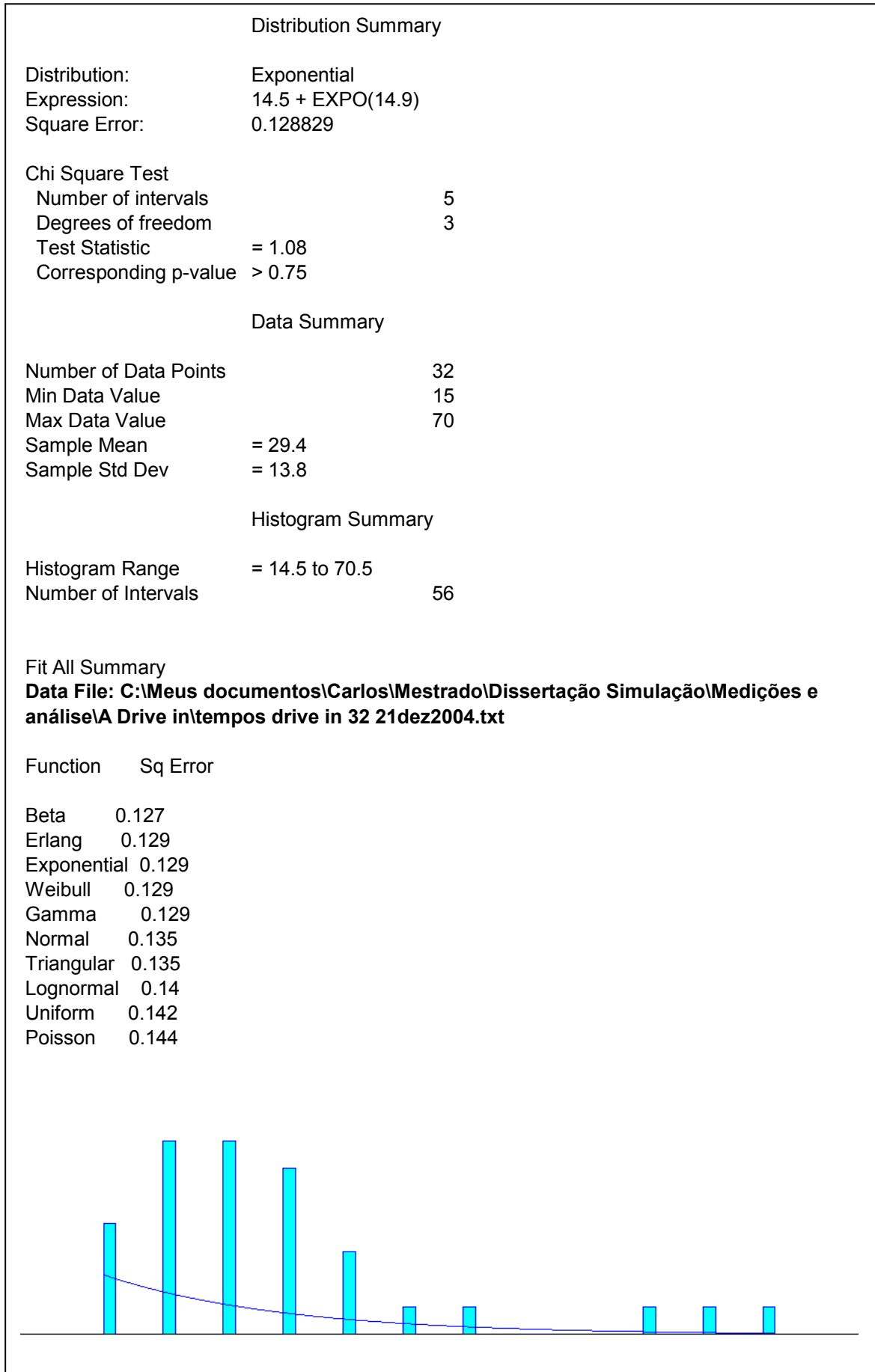
Medições realizadas no drive-out

Ordem	Chegada ao drive-out	Saída do drive-out	Tempo no drive-out	Ordem	Chegada ao drive-out	Saída do drive-out	Tempo no drive-out
1	10:25:50	10:26:10	0:00:20	37	11:28:15	11:31:00	0:02:45
2	10:54:00	10:54:45	0:00:45	38	12:04:10	12:04:30	0:00:20
3	10:48:50	10:49:20	0:00:30	39	12:11:50	12:12:30	0:00:40
4	11:10:00	11:10:30	0:00:30	40	12:07:00	12:07:30	0:00:30
5	11:26:25	11:27:30	0:01:05	41	12:28:15	12:28:35	0:00:20
6	11:27:50	11:28:30	0:00:40	42	12:40:40	12:41:20	0:00:40
7	11:30:10	11:30:30	0:00:20	43	12:36:50	12:37:30	0:00:40
8	11:32:05	11:32:30	0:00:25	44	13:17:30	13:18:10	0:00:40
9	11:48:50	11:49:10	0:00:20	45	13:41:40	13:42:30	0:00:50
10	12:01:25	12:02:00	0:00:35	46	13:00:30	13:02:10	0:01:40
11	12:14:20	12:15:30	0:01:10	47	13:27:10	13:27:30	0:00:20
12	12:16:00	12:19:40	0:03:40	48	13:38:30	13:39:50	0:01:20
13	12:20:10	12:20:40	0:00:30	49	13:35:40	13:36:40	0:01:00
14	12:40:00	12:42:10	0:02:10	50	14:03:00	14:07:00	0:04:00
15	12:42:35	12:43:10	0:00:35	51	9:33:40	9:34:00	0:00:20
16	13:05:40	13:06:00	0:00:20	52	9:32:00	9:32:20	0:00:20
17	10:59:20	11:00:00	0:00:40	53	9:52:40	9:53:30	0:00:50
18	10:57:50	10:58:15	0:00:25	54	9:45:00	9:45:30	0:00:30
19	11:22:20	11:22:40	0:00:20	55	10:23:00	10:25:10	0:02:10
20	11:46:20	11:46:40	0:00:20	56	9:18:10	9:19:30	0:01:20
21	12:39:15	12:39:45	0:00:30	57	9:23:10	9:24:00	0:00:50
22	13:07:20	13:07:45	0:00:25	58	9:24:10	9:24:40	0:00:30
23	10:02:00	10:02:40	0:00:40	59	9:34:10	9:35:10	0:01:00
24	10:09:10	10:18:50	0:09:40	60	10:15:10	10:15:30	0:00:20
25	10:52:50	11:06:00	0:13:10	61	10:32:40	10:33:30	0:00:50
26	9:33:10	9:33:30	0:00:20	62	10:39:50	10:40:30	0:00:40
27	9:44:40	9:45:50	0:01:10	63	11:37:30	11:39:10	0:01:40
28	9:49:00	9:50:50	0:01:50	64	11:23:50	11:25:40	0:01:50
29	9:51:00	9:52:00	0:01:00	65	12:07:20	12:09:10	0:01:50
30	10:44:20	10:44:50	0:00:30	66	11:49:40	11:50:20	0:00:40
31	10:56:00	10:57:00	0:01:00	67	11:16:10	11:16:40	0:00:30
32	11:10:35	11:11:15	0:00:40	68	11:39:20	11:40:20	0:01:00
33	11:17:25	11:18:10	0:00:45	69	11:44:00	11:45:50	0:01:50
34	11:41:50	11:44:50	0:03:00	70	11:49:10	11:49:30	0:00:20
35	11:31:50	11:32:30	0:00:40	71	12:17:00	12:18:05	0:01:05
36	11:18:40	11:19:10	0:00:30	72	12:20:20	12:21:40	0:01:20

Tempo no *Drive-out*



Apêndice C – Cálculo das distribuições por meio do *Input Analyzer*



Distribution Summary

Distribution: Uniform
 Expression: UNIF(130, 320)
 Square Error: 0.003704

Kolmogorov-Smirnov Test

Test Statistic = 0.117
 Corresponding p-value > 0.15

Data Summary

Number of Data Points 18
 Min Data Value 130
 Max Data Value 320
 Sample Mean 219
 Sample Std Dev = 61.3

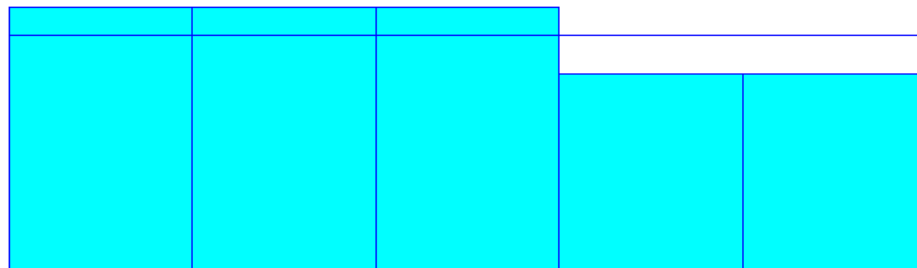
Histogram Summary

Histogram Range = 130 to 320
 Number of Intervals 5

Fit All Summary

Data File: C:\Meus documentos\Carlos\Mestrado\Dissertação Simulação\Medições e análise\B Chegada\Bottom\Morto chegada bottom 18 19fev2005.txt

Function	Sq Error
Uniform	0.0037
Normal	0.0146
Beta	0.0178
Triangular	0.0284
Exponential	0.037
Erlang	0.037
Gamma	0.0925
Lognormal	0.117
Weibull	0.155



Distribution Summary

Distribution: Exponential
 Expression: $110 + \text{EXPO}(91.8)$
 Square Error: 0.005662

Chi Square Test

Number of intervals 3
 Degrees of freedom 1
 Test Statistic = 0.644
 Corresponding p-value = 0.446

Kolmogorov-Smirnov Test

Test Statistic = 0.136
 Corresponding p-value > 0.15

Data Summary

Number of Data Points 28
 Min Data Value 110
 Max Data Value 450
 Sample Mean 202
 Sample Std Dev = 79.5

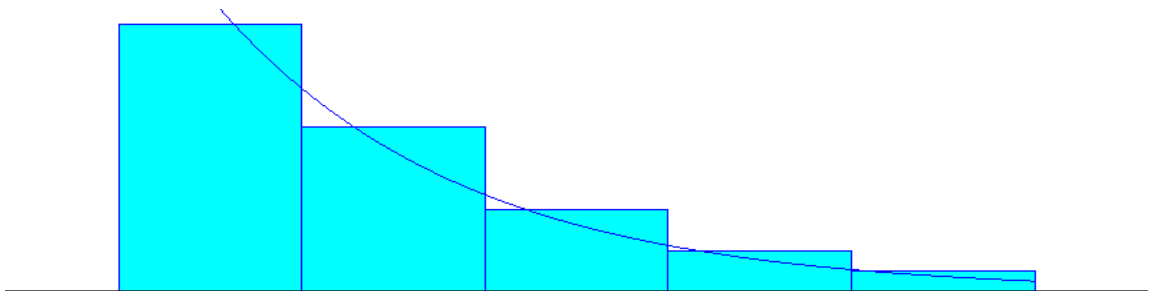
Histogram Summary

Histogram Range = 110 to 450
 Number of Intervals 5

Fit All Summary

Data File: C:\Meus documentos\Carlos\Mestrado\Dissertação Simulação\Medições e análise\B Chegada\Top\Morto chegada top 28 19fev2005.txt

Function	Sq Error
Beta	0.00554
Erlang	0.00566
Exponential	0.00566
Weibull	0.00694
Gamma	0.00838
Lognormal	0.0392
Triangular	0.0416
Normal	0.0492
Uniform	0.124



Distribution Summary

Distribution: Weibull
 Expression: 45.5 + WEIB(41.5, 3.75)
 Square Error: 0.082956

Chi Square Test

Number of intervals 9
 Degrees of freedom 6
 Test Statistic = 8.04
 Corresponding p-value = 0.239

Data Summary

Number of Data Points 60
 Min Data Value 46
 Max Data Value 108
 Sample Mean = 83.6
 Sample Std Dev = 10.7

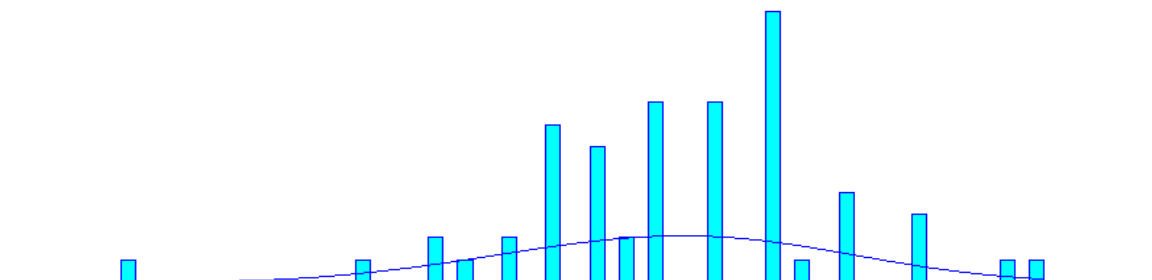
Histogram Summary

Histogram Range = 45.5 to 109
 Number of Intervals 63

Fit All Summary

Data File: C:\Meus documentos\Carlos\Mestrado\Dissertação Simulação\Medições e análise\C Bombeio\Bottom\Bombeio bottom 60 20fev2005.txt

Function	Sq Error
Poisson	0.0822
Normal	0.0824
Weibull	0.083
Beta	0.0832
Triangular	0.0849
Erlang	0.0868
Gamma	0.0869
Lognormal	0.0928
Uniform	0.0952
Exponential	0.104



Distribution Summary

Distribution: Beta
 Expression: $52.5 + 54 * \text{BETA}(2.66, 2.22)$
 Square Error: 0.056891

Chi Square Test

Number of intervals 8
 Degrees of freedom 5
 Test Statistic = 9.94
 Corresponding p-value = 0.0809

Data Summary

Number of Data Points 77
 Min Data Value 53
 Max Data Value 106
 Sample Mean = 81.9
 Sample Std Dev = 11.1

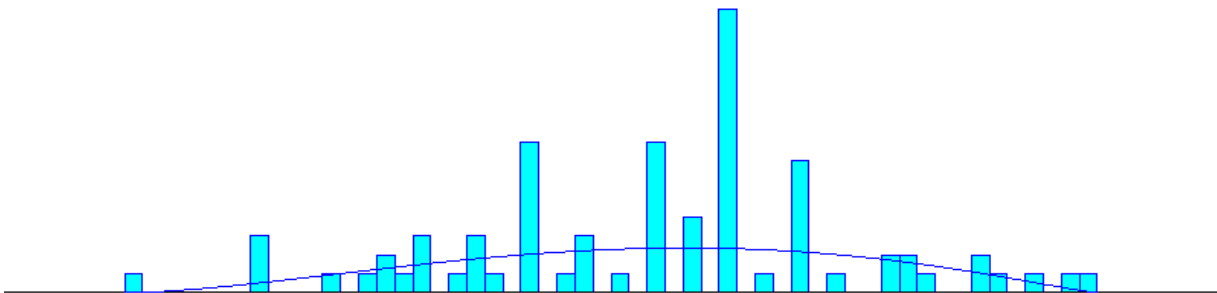
Histogram Summary

Histogram Range = 52.5 to 107
 Number of Intervals 54

Fit All Summary

Data File: C:\Meus documentos\Carlos\Mestrado\Dissertação Simulação\Medições e análise\C Bombeio\Bombeio top 77 20fev2005.txt

Function	Sq Error
Triangular	0.0555
Normal	0.056
Weibull	0.0565
Poisson	0.0568
Beta	0.0569
Gamma	0.0586
Erlang	0.059
Lognormal	0.0617
Uniform	0.0633
Exponential	0.0715



Distribution Summary

Distribution: Exponential
 Expression: $20 + \text{EXPO}(26.5)$
 Square Error: 0.040529

Chi Square Test

Number of intervals 2
 Degrees of freedom 0
 Test Statistic = 2.66
 Corresponding p-value < 0.005

Kolmogorov-Smirnov Test

Test Statistic = 0.214
 Corresponding p-value > 0.15

Data Summary

Number of Data Points 20
 Min Data Value 20
 Max Data Value 120
 Sample Mean = 46.5
 Sample Std Dev = 25.4

Histogram Summary

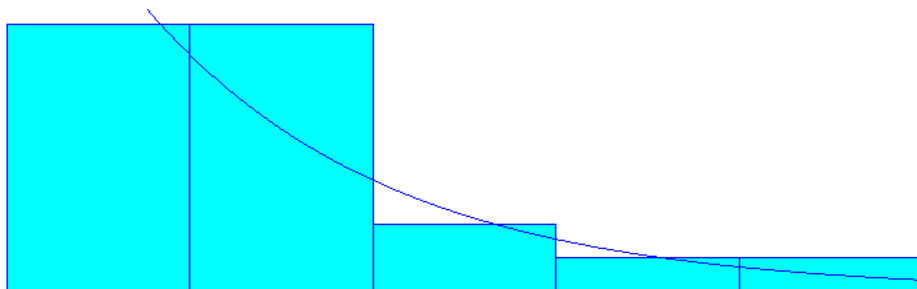
Histogram Range = 20 to 120
 Number of Intervals 5

Fit All Summary

Data File: C:\Meus documentos\Carlos\Mestrado\Dissertação Simulação\Medições e análise\D Muda braço\Bottom\Muda braço bottom 20 20fev2005.txt

Function Sq Error

Erlang 0.0405
 Exponential 0.0405
 Normal 0.042
 Triangular 0.0422
 Weibull 0.0495
 Gamma 0.0505
 Beta 0.0945
 Lognormal 0.0984
 Uniform 0.135



Distribution Summary

Distribution: Triangular
 Expression: TRIA(25, 56.2, 150)
 Square Error: 0.008059

Chi Square Test

Number of intervals 4
 Degrees of freedom 2
 Test Statistic = 1.51
 Corresponding p-value = 0.478

Kolmogorov-Smirnov Test

Test Statistic = 0.103
 Corresponding p-value > 0.15

Data Summary

Number of Data Points 36
 Min Data Value 25
 Max Data Value 150
 Sample Mean = 71.4
 Sample Std Dev 26

Histogram Summary

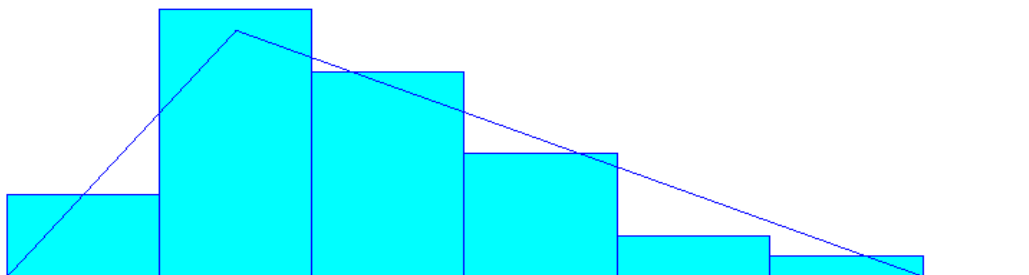
Histogram Range = 25 to 150
 Number of Intervals 6

Fit All Summary

Data File: C:\Meus documentos\Carlos\Mestrado\Dissertação Simulação\Medições e análise\D Muda braço\Top\Muda braço top 36 20fev2005.txt

Function Sq Error

Triangular 0.00806
 Normal 0.0107
 Beta 0.0131
 Weibull 0.0276
 Gamma 0.0615
 Uniform 0.0849
 Exponential 0.102
 Erlang 0.102
 Lognormal 0.185



Distribution Summary

Distribution: Weibull
 Expression: $150 + \text{WEIB}(223, 0.639)$
 Square Error: 0.024069

Kolmogorov-Smirnov Test

Test Statistic = 0.171
 Corresponding p-value > 0.15

Data Summary

Number of Data Points	16
Min Data Value	150
Max Data Value	960
Sample Mean	427
Sample Std Dev	276

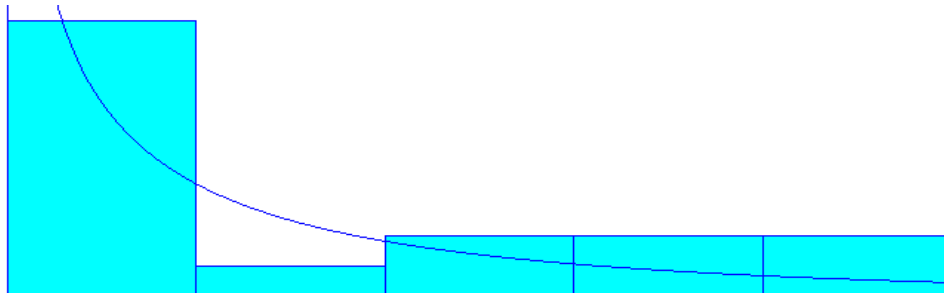
Histogram Summary

Histogram Range = 150 to 960
 Number of Intervals 5

Fit All Summary

Data File: C:\Meus documentos\Carlos\Mestrado\Dissertação Simulação\Medições e análise\E Saída\Bottom\Morto saída bottom 16 24fev2005.txt

Function	Sq Error
Weibull	0.0241
Gamma	0.0316
Lognormal	0.0432
Exponential	0.0575
Erlang	0.0575
Beta	0.0614
Triangular	0.112
Uniform	0.167
Normal	0.186



Distribution Summary

Distribution: Exponential
 Expression: 105 + EXPO(89.4)
 Square Error: 0.007167

Chi Square Test

Number of intervals	3
Degrees of freedom	1
Test Statistic	= 0.422
Corresponding p-value	= 0.524

Kolmogorov-Smirnov Test

Test Statistic	= 0.176
Corresponding p-value	> 0.15

Data Summary

Number of Data Points	27
Min Data Value	105
Max Data Value	400
Sample Mean	194
Sample Std Dev	= 79.1

Histogram Summary

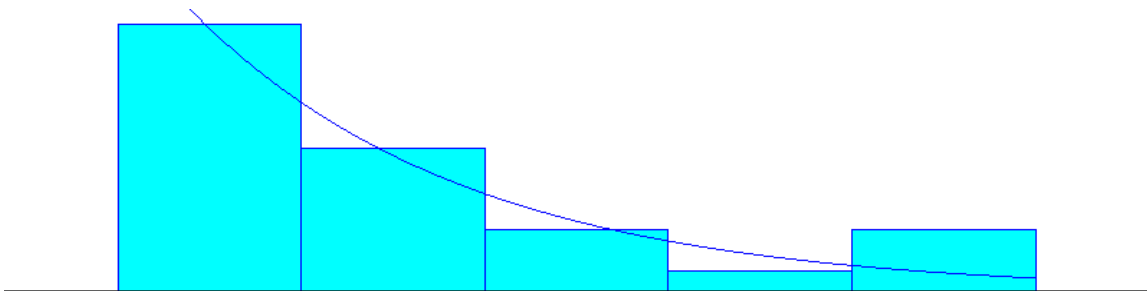
Histogram Range	= 105 to 400
Number of Intervals	5

Fit All Summary

Data File: C:\Meus documentos\Carlos\Mestrado\Dissertação Simulação\Medições e análise\E Saída\Top\Morto saída top 27 400 21fev2005.txt

Function	Sq Error
----------	----------

Erlang	0.00717
Exponential	0.00717
Weibull	0.00728
Gamma	0.00776
Beta	0.0126
Lognormal	0.0301
Triangular	0.0658
Normal	0.093
Uniform	0.125



Distribution Summary

Distribution: Exponential
 Expression: $20 + \text{EXPO}(36.7)$
 Square Error: 0.014051

Chi Square Test

Number of intervals 4
 Degrees of freedom 2
 Test Statistic = 4.32
 Corresponding p-value = 0.123

Kolmogorov-Smirnov Test

Test Statistic = 0.0919
 Corresponding p-value > 0.15

Data Summary

Number of Data Points 70
 Min Data Value 20
 Max Data Value 240
 Sample Mean = 56.7
 Sample Std Dev = 46.4

Histogram Summary

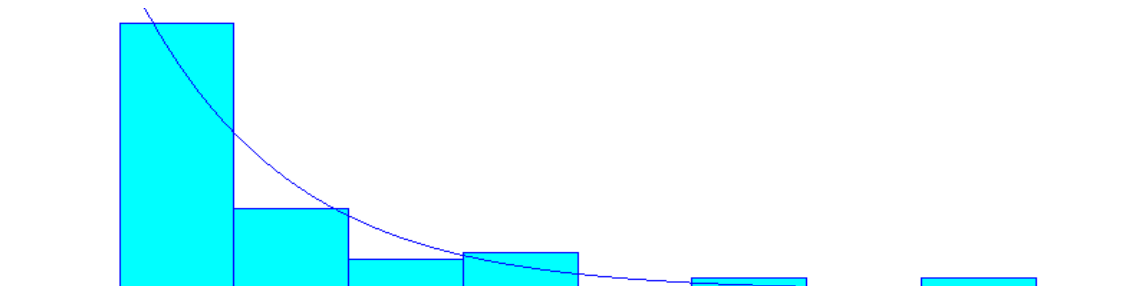
Histogram Range = 20 to 240
 Number of Intervals 8

Fit All Summary

Data File: C:\Meus documentos\Carlos\Mestrado\Dissertação Simulação\Medições e análise\F Drive out\tempos drive out 70 26fev2005.txt

Function	Sq Error
----------	----------

Erlang	0.0141
Exponential	0.0141
Weibull	0.0166
Gamma	0.0295
Beta	0.0541
Lognormal	0.0859
Normal	0.172
Triangular	0.21
Uniform	0.284



Apêndice D – Desvios padrão nas Tabelas 6, 9, 11 e 12

Complementando os resultados tabelados no capítulo 5, apresentam-se aqui os desvios padrão referentes aos valores médios obtidos nas simulações e ainda não relatados. Estes valores não foram incluídos nas tabelas do capítulo 5 para evitar sobrecarregá-las pelo excesso de informação e devido a restrições de formato do texto.

Na Tabela 6 – Cenários 1, 1a e 1b - resultados

Cenário	tempos ¹				Desvios padrão			
	filas (min)	<i>bottom</i> (min)	<i>top</i> (min)	médio (min)	filas (min)	<i>bottom</i> (min)	<i>top</i> (min)	médio (min)
1a	13,4	36,8	44,1	40,8	1,2	1,2	2,1	1,2
1	24,8	46,7	56,4	52,1	2,1	2,1	3,1	2,1
1b	41,6	60,5	75,8	68,9	3,4	3,7	5,2	3,4

¹ Os tempos *bottom*, *top* e médio incluem o tempo de espera em filas.

Na Tabela 9 – Cenários 1, 1d, 1e e 1b - resultados

Cenário	tempos ¹				Desvios padrão			
	filas (min)	<i>bottom</i> (min)	<i>top</i> (min)	médio (min)	filas (min)	<i>bottom</i> (min)	<i>top</i> (min)	médio (min)
1	24,8	46,7	56,4	52,1	2,1	2,1	3,1	2,1
1d	22,0	50,2	52,5	52,2	1,8	2,4	2,1	1,8
1e	44,1	71,0	75,0	74,4	3,7	5,8	4,9	4,0
1b	41,6	60,5	75,8	68,9	3,4	3,7	5,2	3,4

¹ Os tempos *bottom*, *top* e médio incluem o tempo de espera em filas.

Na Tabela 11 – Cenários 1, 2a, 2b - resultados

Cenário	tempos ¹				Desvios padrão			
	filas (min)	<i>bottom</i> (min)	<i>top</i> (min)	médio (min)	filas (min)	<i>bottom</i> (min)	<i>top</i> (min)	médio (min)
1	24,8	46,7	56,4	52,1	2,1	2,1	3,1	2,1
2a	33,7	57,1	66,4	62,6	4,3	4,0	5,5	4,3
	35,8%	22,1%	17,9%	20,0%				
2b	32,4	52,2	69,0	61,8	3,1	3,4	4,9	3,7
	30,7%	11,7%	22,4%	18,6%				

¹ Os tempos *bottom*, *top* e médio incluem o tempo de espera em filas.

Na Tabela 12 – Cenários 1, 3a, 3b - resultados

Cenário	tempos ¹				Desvios padrão			
	filas (min)	<i>bottom</i> (min)	<i>top</i> (min)	médio (min)	filas (min)	<i>bottom</i> (min)	<i>top</i> (min)	médio (min)
1	24,8	46,7	56,4	52,1	2,1	2,1	3,1	2,1
3a	24,8	46,7	55,0	51,7	2,1	2,1	3,1	2,1
	0%	0%	-2,4%	-0,8%				
3b	28,4	52,1	56,9	55,4	2,8	3,1	4,0	2,8
	14,6%	11,5%	1,0%	6,3%				

¹ Os tempos *bottom*, *top* e médio incluem o tempo de espera em filas.