



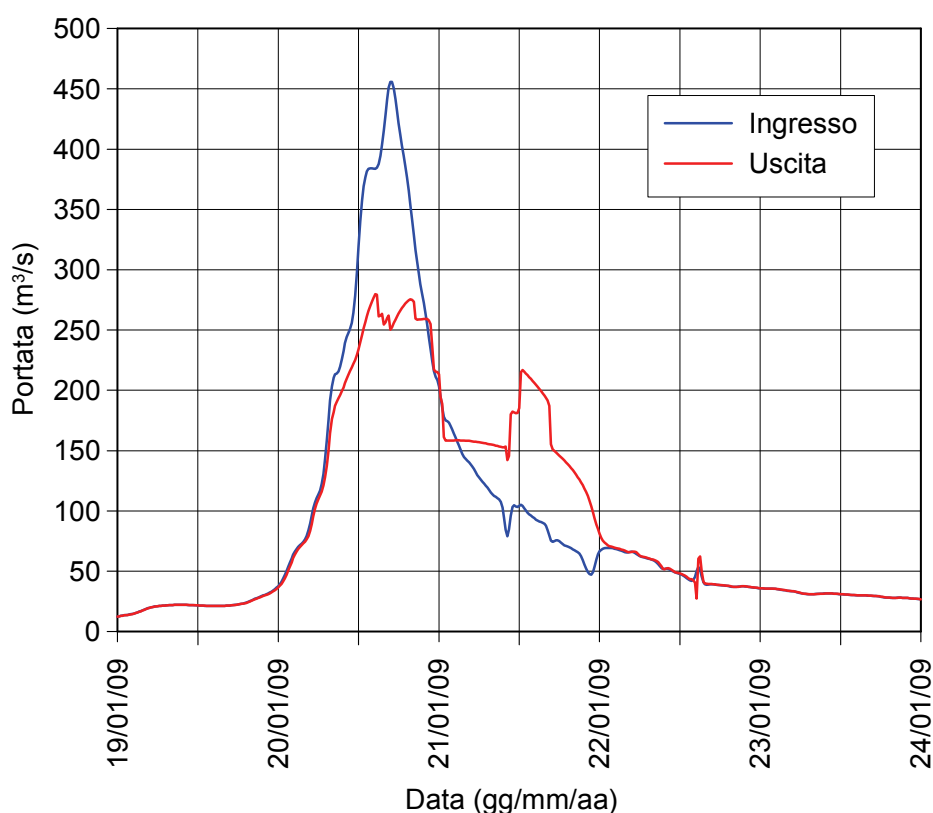
AIPO – Agenzia Interregionale
per il Fiume Po



Dipartimento di Ingegneria Civile, dell'Ambiente,
del Territorio ed Architettura
DICATeA - UNIVERSITÀ DEGLI STUDI DI PARMA

Monitoraggio durante la V fase delle prove di invaso e studi sul comportamento della cassa di espansione del torrente Parma

- ALLEGATO C – Scala delle Portate -



Responsabilità scientifica:

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Gruppo di lavoro:

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Parma, Agosto 2009

	Apertura [m]	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	1.00	1.05	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80	1.90	2.00	2.10	2.20	2.30	2.40	2.50		
Quota [m slm]	Livello [m]	Portata [m³/s]																																					
91.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
91.3	0.3	2.1	3.9	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	
91.4	0.4	2.4	4.6	6.6	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	
91.5	0.5	2.7	5.3	7.6	9.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	
91.6	0.6	3.0	5.8	8.5	11.0	13.3	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	
91.7	0.7	3.3	6.4	9.3	12.0	14.7	17.2	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	
91.8	0.8	3.5	6.9	10.0	13.0	15.9	18.7	21.3	23.9	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	
91.9	0.9	3.7	7.3	10.7	14.0	17.1	20.1	23.0	25.8	28.5	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	
92.0	1.0	4.0	7.7	11.4	14.8	18.2	21.4	24.5	27.6	30.5	33.3	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	
92.1	1.1	4.2	8.1	12.0	15.7	19.2	22.7	26.0	29.2	32.4	35.4	38.4	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	
92.2	1.2	4.3	8.5	12.6	16.5	20.2	23.9	27.4	30.9	34.2	37.4	40.6	43.7	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	
92.3	1.3	4.5	8.9	13.1	17.2	21.2	25.0	28.8	32.4	35.9	39.4	42.7	46.0	49.2	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	
92.4	1.4	4.7	9.3	13.7	17.9	22.1	26.1	30.1	33.9	37.6	41.2	44.7	48.2	51.6	54.9	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	
92.5	1.5	4.9	9.6	14.2	18.6	23.0	27.2	31.3	35.3	39.2	43.0	46.7	50.3	53.9	57.4	60.8	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5	
92.6	1.6	5.0	9.9	14.7	19.3	23.8	28.2	32.5	36.7	40.7	44.7	48.6	52.4	56.1	59.8	63.3	67.0	67.8	67.8	67.8	67.8	67.8	67.8	67.8	67.8	67.8	67.8	67.8	67.8	67.8	67.8	67.8	67.8	67.8	67.8	67.8	67.8	67.8	
92.7	1.7	5.2	10.3	15.2	20.0	24.6	29.2	33.6	38.0	42.2	46.4	50.4	54.4	58.3	62.1	65.8	69.7	73.5	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2		
92.8	1.8	5.4	10.6	15.7	20.6	25.4	30.2	34.8	39.3	43.7	48.0	52.2	56.4	60.4	64.4	68.3	72.3	76.3	80.2	80.9	80.9	80.9	80.9	80.9	80.9	80.9	80.9	80.9	80.9	80.9	80.9	80.9	80.9	80.9	80.9	80.9	80.9	80.9	
92.9	1.9	5.5	10.9	16.1	21.2	26.2	31.1	35.9	40.5	45.1	49.6	53.9	58.2	62.4	66.6	70.6	74.8	79.0	83.1	87.1	87.7	87.7	87.7	87.7	87.7	87.7	87.7	87.7	87.7	87.7	87.7	87.7	87.7	87.7	87.7	87.7	87.7	87.7	
93.0	2.0	5.7	11.2	16.6	21.8	27.0	32.0	36.9	41.7	46.5	51.1	55.6	60.1	64.4	68.7	72.9	77.3	81.6	85.8	90.0	94.2	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	
93.1	2.1	5.8	11.5	17.0	22.4	27.7	32.9	37.9	42.9	47.8	52.6	57.3	61.9	66.4	70.8	75.2	79.7	84.1	88.5	92.9	97.2	99.8	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	
93.2	2.2	5.9	11.7	17.4	23.0	28.4	33.7	38.9	44.1	49.1	54.0	58.8	63.6	68.3	72.8	77.3	82.0	86.6	91.2	95.7	100	103	106	109	109	109	109	109	109	109	109	109	109	109	109	109	109	109	
93.3	2.3	6.1	12.0	17.8	23.5	29.1	34.6	39.9	45.2	50.4	55.4	60.4	65.3	70.1	74.8	79.5	84.3	89.0	93.8	98.4	103	106	109	116	117	117	117	117	117	117	117	117	117	117	117	117	117	117	
93.4	2.4	6																																					

Allegato C - Portate Uscenti in Funzione del Grado di Apertura

	Apertura [m]	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	1.00	1.05	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80	1.90	2.00	2.10	2.20	2.30	2.40	2.50
Quota [m slm]	Livello [m]	Portata [m³/s]																																			
97.6	6.6	10.3	20.6	30.7	40.8	50.7	60.6	70.3	80.0	89.6	99	108	118	127	136	145	155	164	174	183	192	198	205	220	233	246	259	270	282	296	308	319	330	341	352	362	372
97.8	6.8	10.5	20.9	31.2	41.4	51.5	61.5	71.4	81.3	91.0	101	110	120	129	138	148	157	167	176	186	196	201	209	223	237	250	263	275	287	301	313	325	336	347	358	368	379
98.0	7.0	10.7	21.2	31.7	42.0	52.3	62.5	72.5	82.5	92.4	102	112	122	131	141	150	160	170	179	189	199	205	212	227	241	255	267	280	292	306	319	330	342	353	364	375	385
98.2	7.2	10.8	21.5	32.1	42.6	53.1	63.4	73.6	83.7	93.8	104	114	123	133	143	152	162	172	182	192	202	208	216	231	245	259	272	284	297	311	324	336	347	359	370	381	392
98.4	7.4	11.0	21.8	32.6	43.2	53.8	64.3	74.7	85.0	95.2	105	115	125	135	145	155	165	175	185	195	205	211	219	234	249	263	276	289	302	316	329	341	353	365	376	387	398
98.6	7.6	11.1	22.1	33.0	43.8	54.5	65.2	75.7	86.1	96.5	107	117	127	137	147	157	167	177	188	198	208	214	222	238	253	267	280	293	306	321	334	347	359	371	382	394	405
98.8	7.8	11.3	22.4	33.5	44.4	55.3	66.1	76.7	87.3	97.8	108	119	129	139	149	159	169	180	190	201	211	217	225	241	256	271	284	297	311	326	339	352	364	376	388	400	411
99.0	8.0	11.4	22.7	33.9	45.0	56.0	66.9	77.7	88.5	99.1	110	120	131	141	151	161	172	182	193	203	214	220	229	245	260	275	288	302	315	331	344	357	369	382	394	406	417
99.2	8.2	11.5	23.0	34.3	45.6	56.7	67.8	78.7	89.6	100	111	122	132	143	153	163	174	185	196	206	217	223	232	248	263	278	292	306	320	336	349	362	375	387	400	412	423
99.4	8.4	11.7	23.3	34.7	46.1	57.4	68.6	79.7	90.7	102	113	123	134	145	155	165	176	187	198	209	220	226	235	251	267	282	296	310	324	340	354	367	380	393	405	418	429
99.6	8.6	11.8	23.5	35.2	46.7	58.1	69.5	80.7	91.9	103	114	125	136	146	157	168	179	190	201	212	223	229	238	255	271	286	300	314	329	345	359	372	385	398	411	423	435
99.8	8.8	12.0	23.8	35.6	47.2	58.8	70.3	81.7	93.0	104	115	126	137	148	159	170	181	192	203	214	225	232	241	258	274	290	304	318	333	349	363	377	390	404	417	429	441
100.0	9.0	12.1	24.1	36.0	47.8	59.5	71.1	82.6	94.1	105	117	128	139	150	161	172	183	194	206	217	228	235	244	261	277	293	308	322	337	354	368	382	395	409	422	435	447
100.2	9.2	12.2	24.4	36.4	48.3	60.2	71.9	83.6	95.1	107	118	129	141	152	163	174	185	197	208	219	231	238	247	264	281	297	312	326	341	358	373	387	400	414	427	440	453
100.4	9.4	12.4	24.6	36.8	48.8	60.8	72.7	84.5	96.2	108	119	131	142	153	165	176	187	199	210	222	234	241	250	267	284	300	316	330	345	363	377	392	405	419	433	446	458
100.6	9.6	12.5	24.9	37.2	49.4	61.5	73.5	85.4	97.3	109	121	132	144	155	166	178	189	201	213	225	236	243	253	270	287	304	319	334	350	367	382	396	410	424	438	451	464
100.8	9.8	12.6	25.1	37.6	49.9	62.1	74.3	86.3	98.3	110	122	134	145	157	168	180	191	203	215	227	239	246	255	273	291	307	323	338	354	371	386	401	415	429	443	456	469
101.0	10.0	12.7	25.4	38.0	50.4	62.8	75.1	87.2	99.3	111	123	135	147	158	170	182	194	206	218	230	242	249	258	276	294	311	327	342	358	375	391	406	420	434	448	462	475
101.2	10.2	12.9	25.7	38.3	50.9	63.4	75.8	88.1	100	112	125	136	148	160	172	183	196	208	220	232	244	251	261	279	297	314	330	346	362	380	395	410	425	439	453	467	480
101.4	10.4	13.0	25.9	38.7	51.4	64.0	76.6	89.0	101	114	126	138	150	162	174	185	198	210	222	234	247	254	264	282	300	317	334	349	366	384	399	415	429	444	458	472	486
101.6	10.6	13.1	26.2	39.1	51.9	64.7	77.3	89.9	102	115	127	139	151	163	175	187	200	212	224	237	249	257	266	285	303	321	337	353	369	388	404	419	434	449	463	477	491
101.8	10.8	13.2	26.4	39.5	52.4	65.3	78.1	90.8	103	116	128	141	153	165	177	189	202	214	227	239	252	259	269	288	307	324	341	357	373	392	408	424	439	454	468	483	496
102.0	11.0	13.4	26.6	39.8	52.9	65.9	78.8	91.6	104	117	130	142	154	167	179	191	204	216	229	242	254	262	272	291	310	327	344	360	377	396	412	428	443	458	473	488	501
102.2	11.2	13.5	26.9	40.2	53.4	66.5	79.5	92.5	105	118	131	143	156	168	180	193	206	218	231	244	257	264	274	294	313	331	348	364	381	400	416	432	448	463	478	493	507
102.4	11.4	13.6	27.1	40.6	53.9	67.1	80.3	93.3	106	119	132	145	157																								