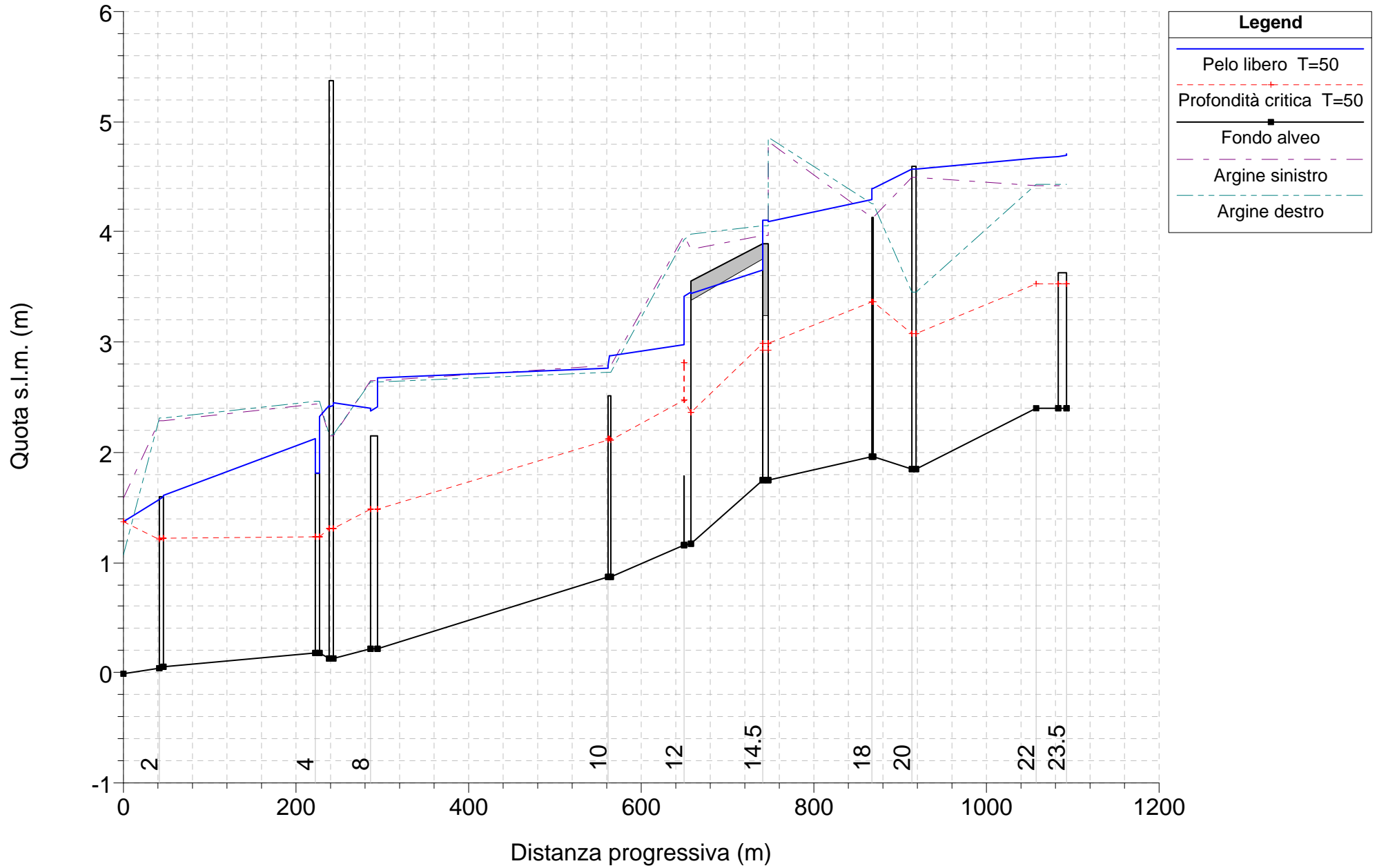


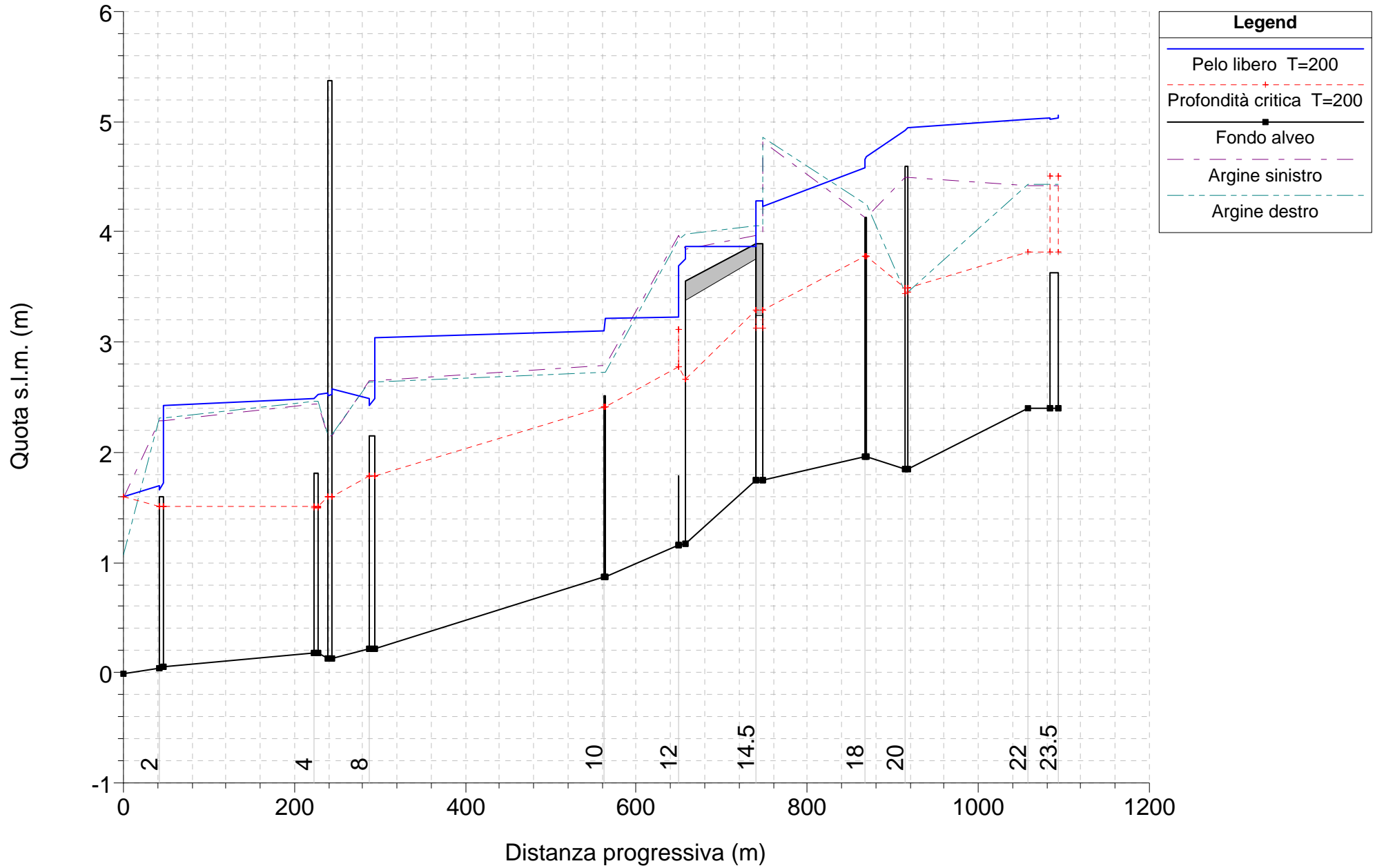
**PROFILI DI RIGURGITO IN CONDIZIONI DI MOTO
PERMANENTE PER LE PORTATE T=50, 200, 500 ANNI**

RIO AVARENNA

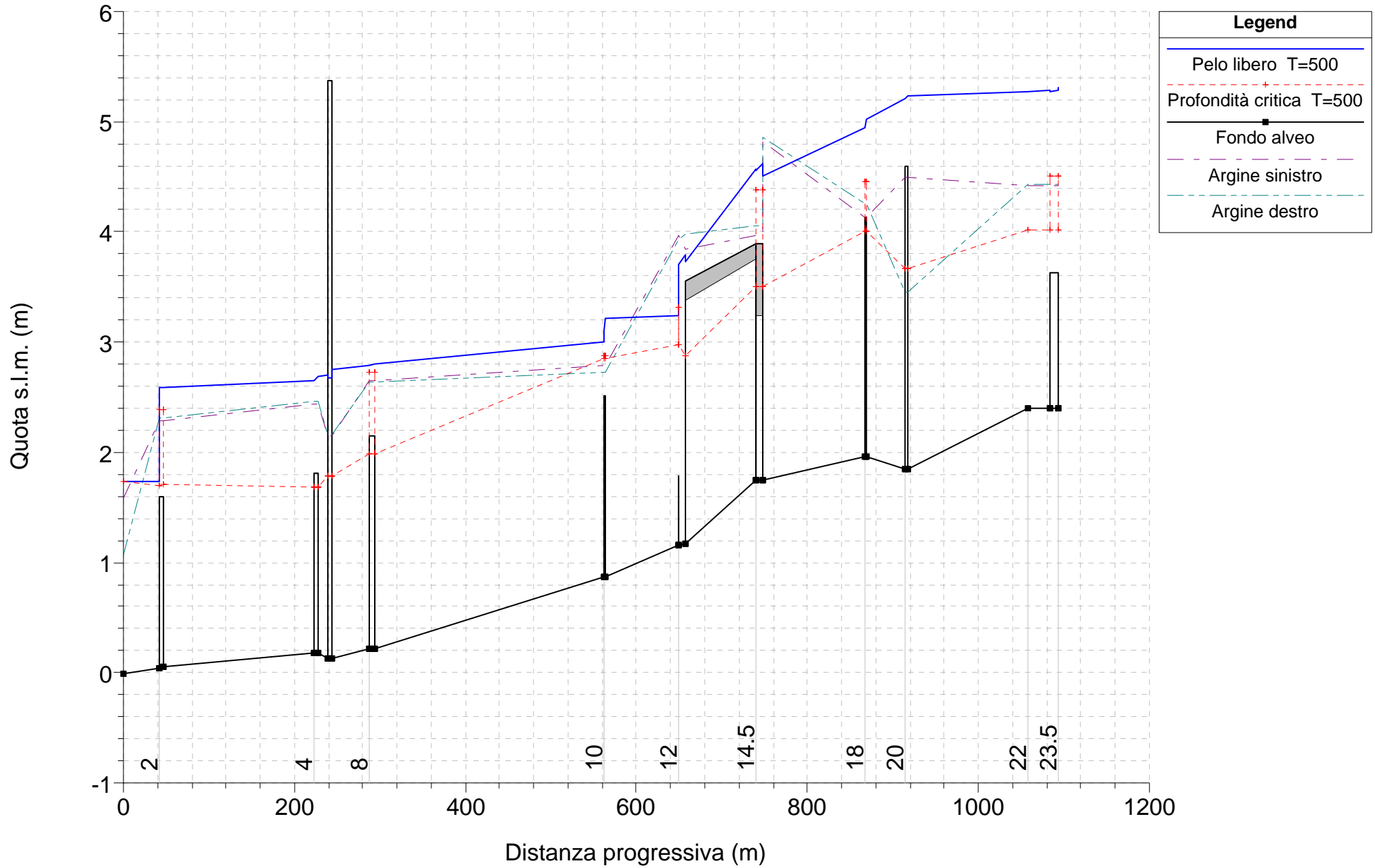
Rio Avarena – profilo longitudinale di moto permanente T=50 anni



Rio Avarena – profilo longitudinale di moto permanente T=200 anni



Rio Avarena – profilo longitudinale di moto permanente T=500 anni



**GEOMETRIA DELLE SEZIONI ED ALTEZZA DEL PELO
LIBERO IN CONDIZIONI DI MOTO PERMANENTE
PER LE PORTATE T=50, 200, 500 ANNI**

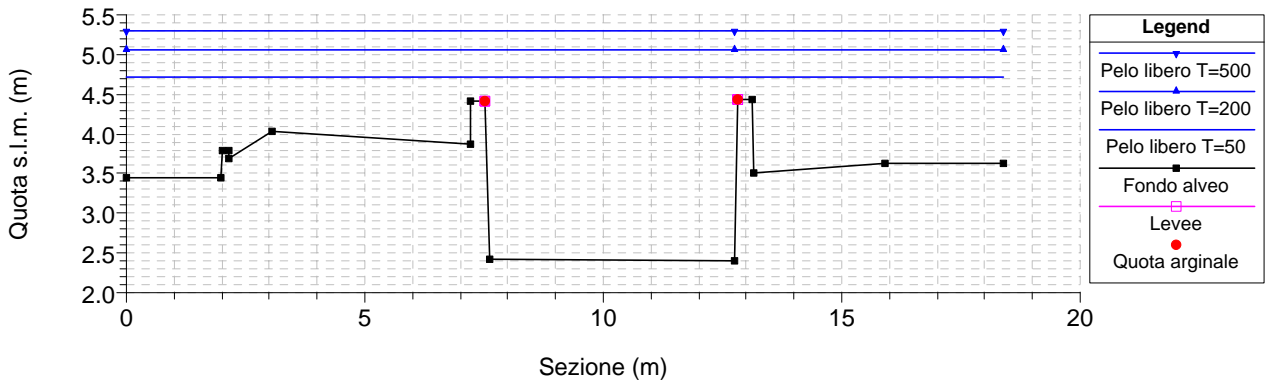
RIO AVARENNA

DALLA SEZ. 24
ALLA SEZ. 1

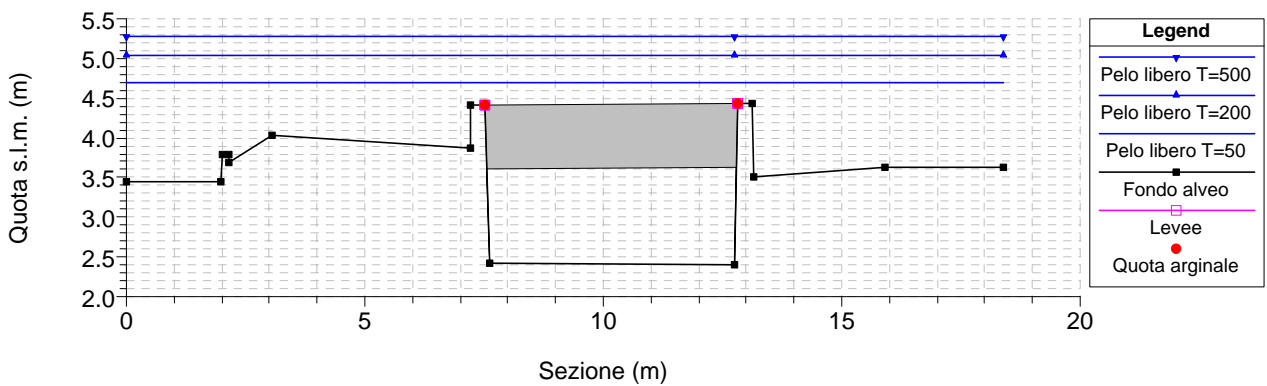
RIO AVARENNA

Sezioni trasversali

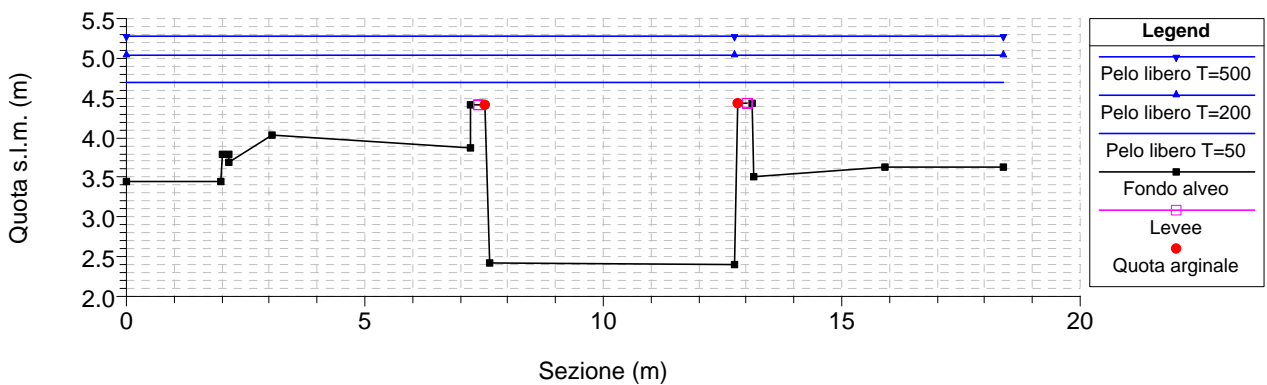
RS = 24



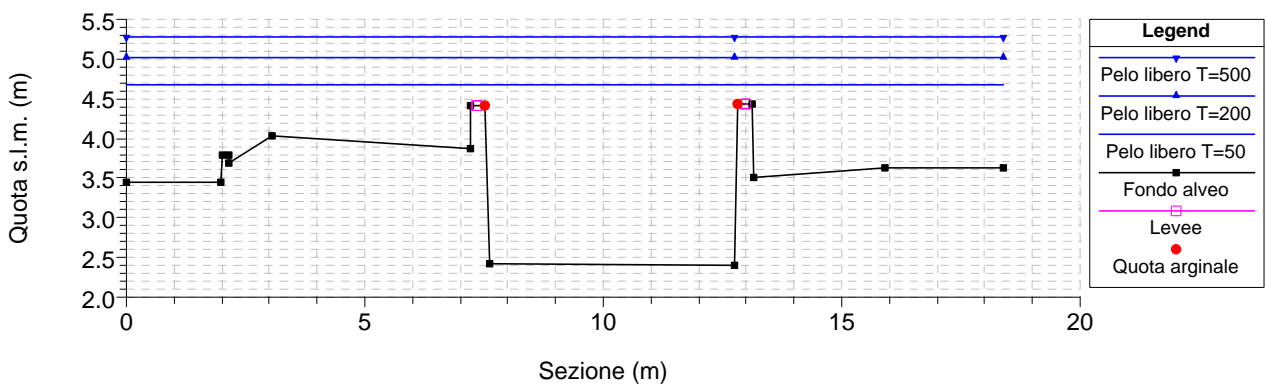
RS = 23.5 BR



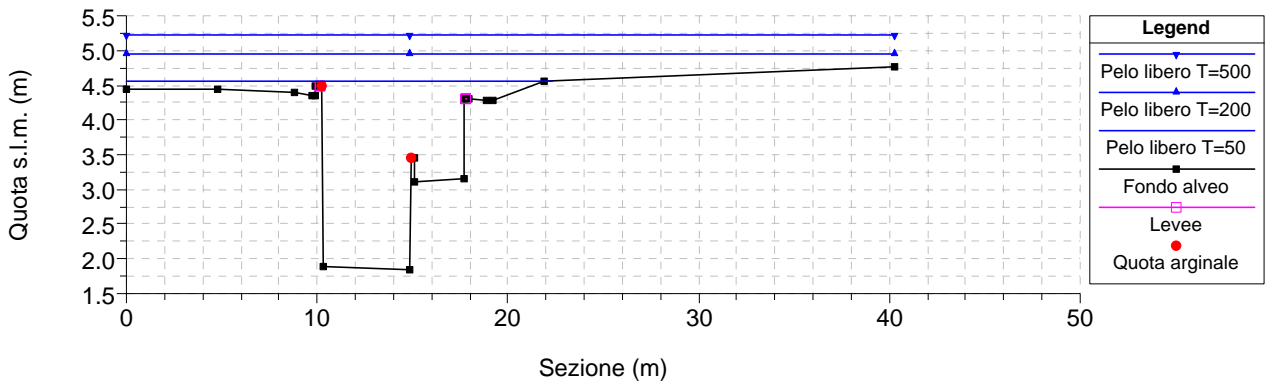
RS = 23



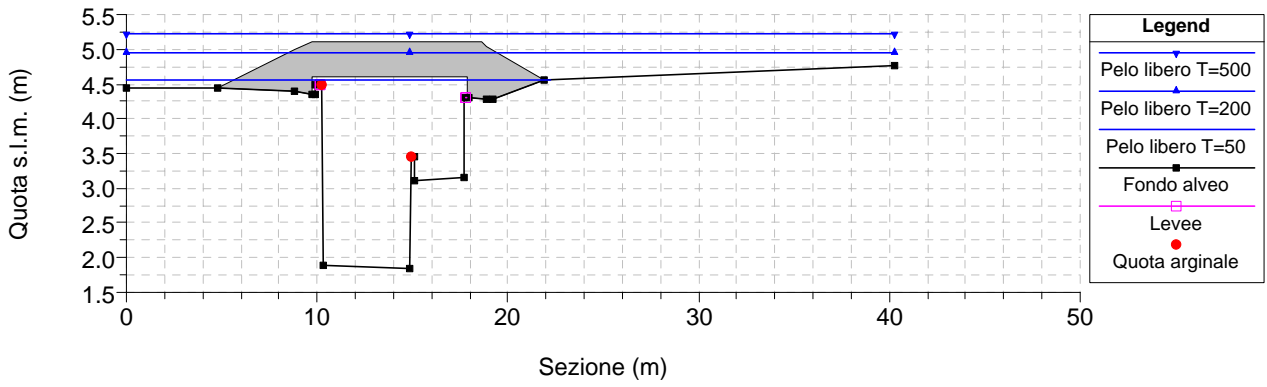
RS = 22



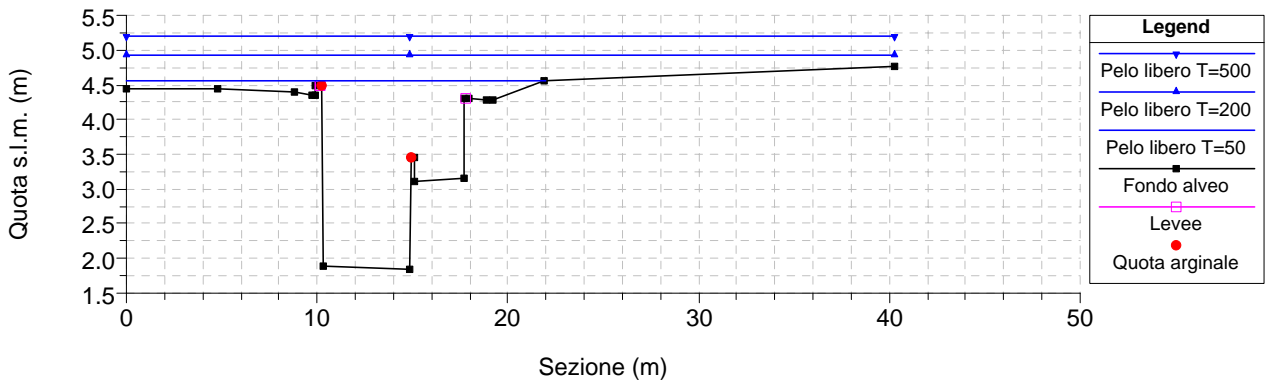
RS = 21



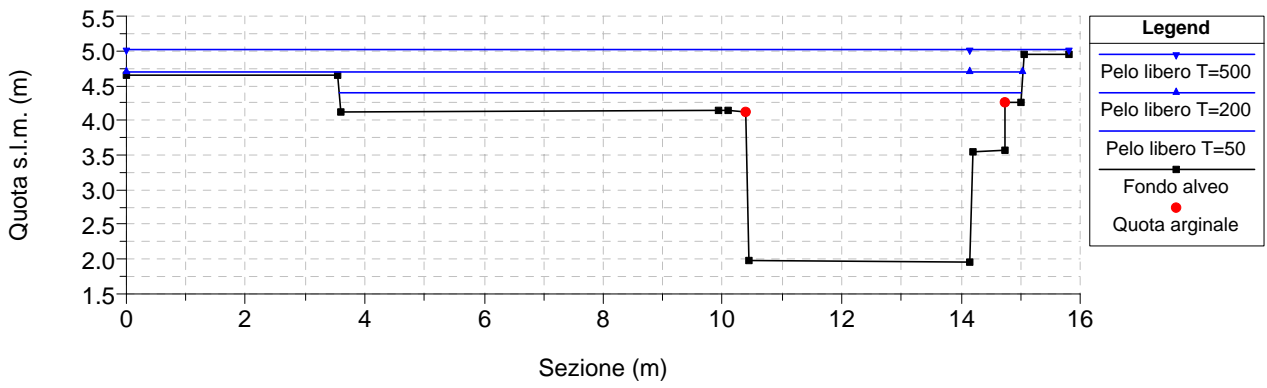
RS = 20.5 BR



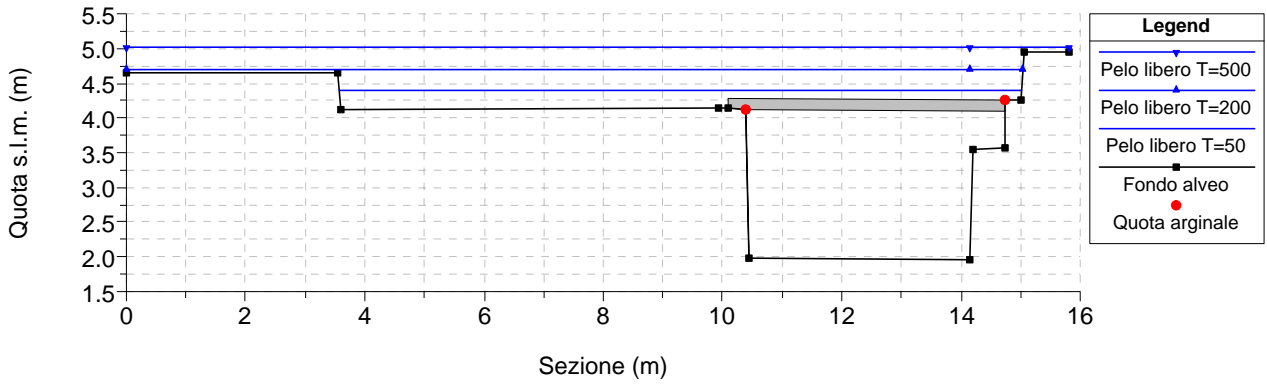
RS = 20



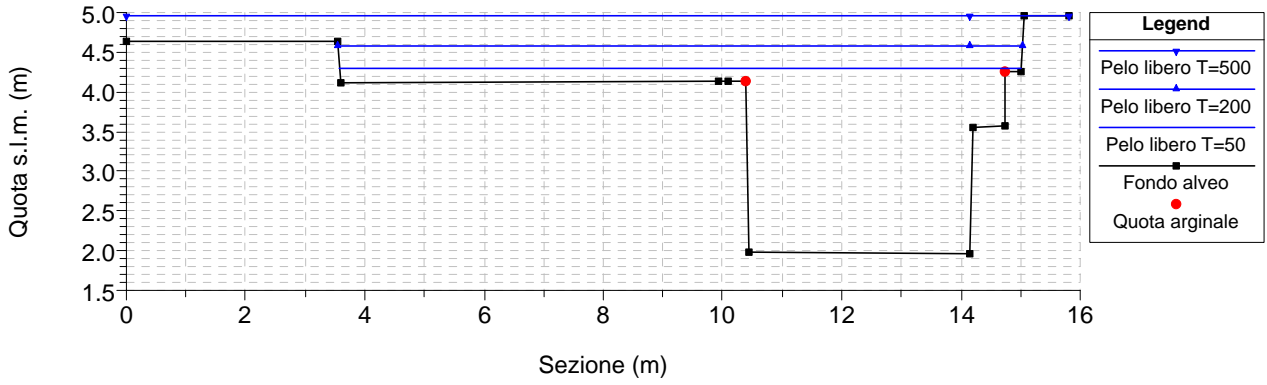
RS = 19



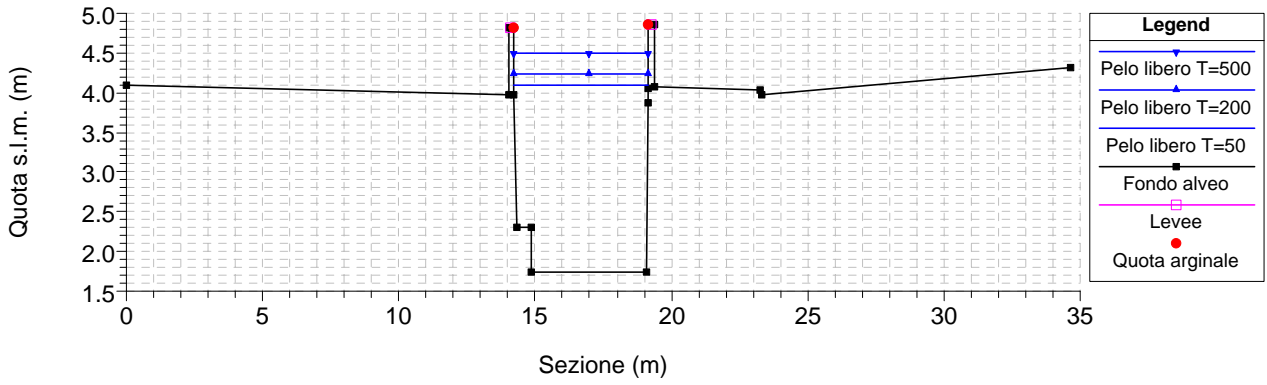
RS = 18.5 BR



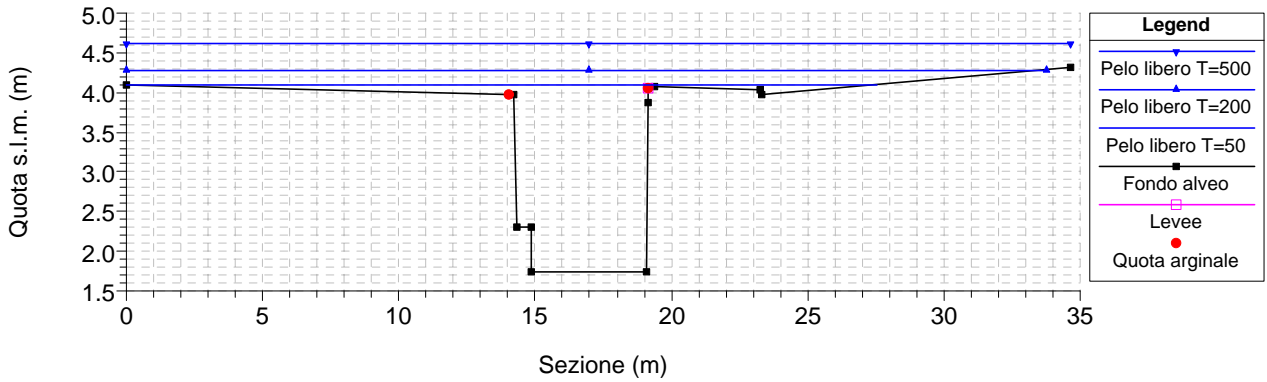
RS = 18



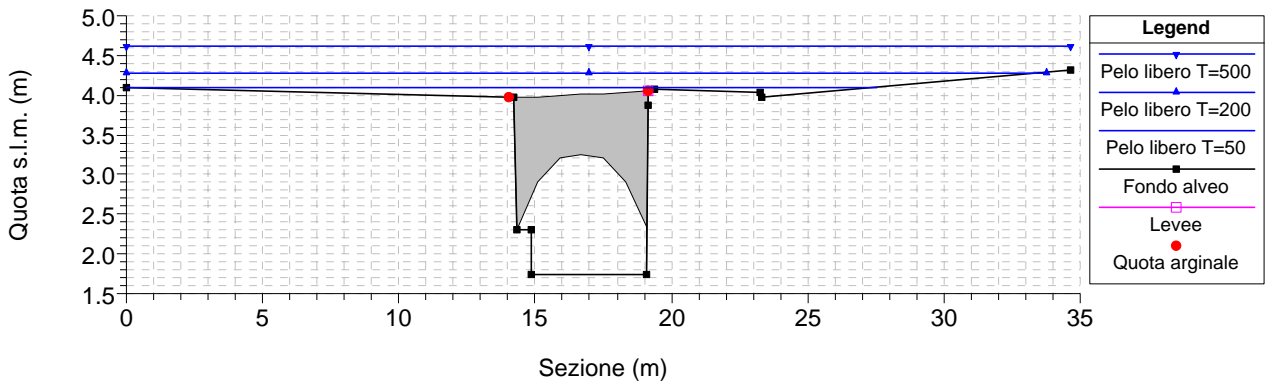
RS = 17



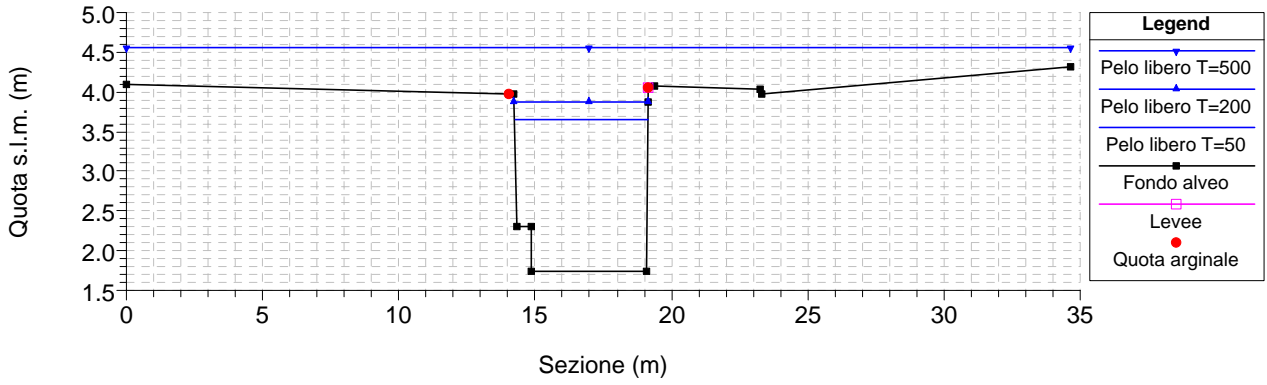
RS = 16



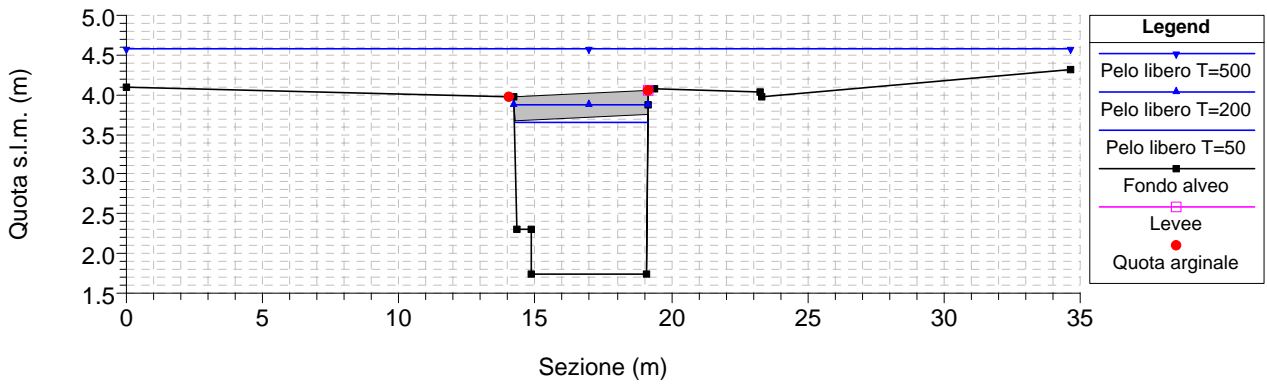
RS = 15.5 BR



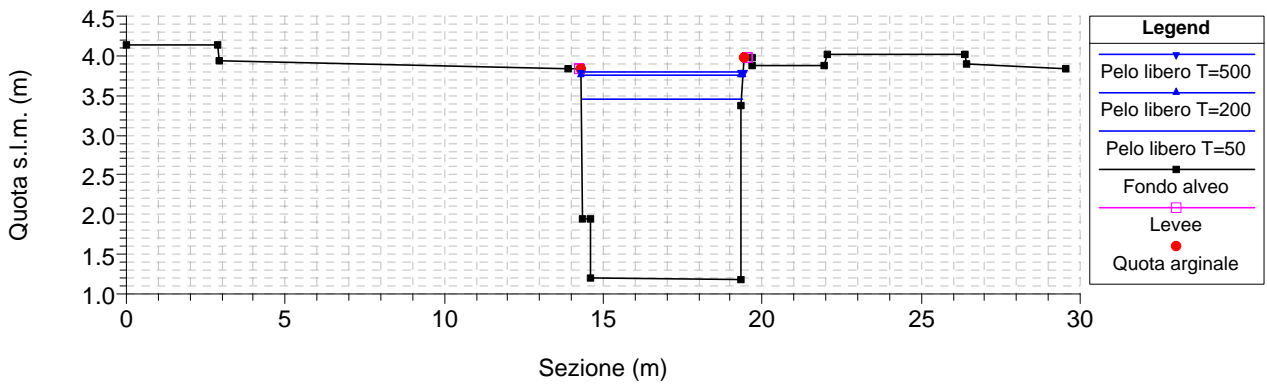
RS = 15



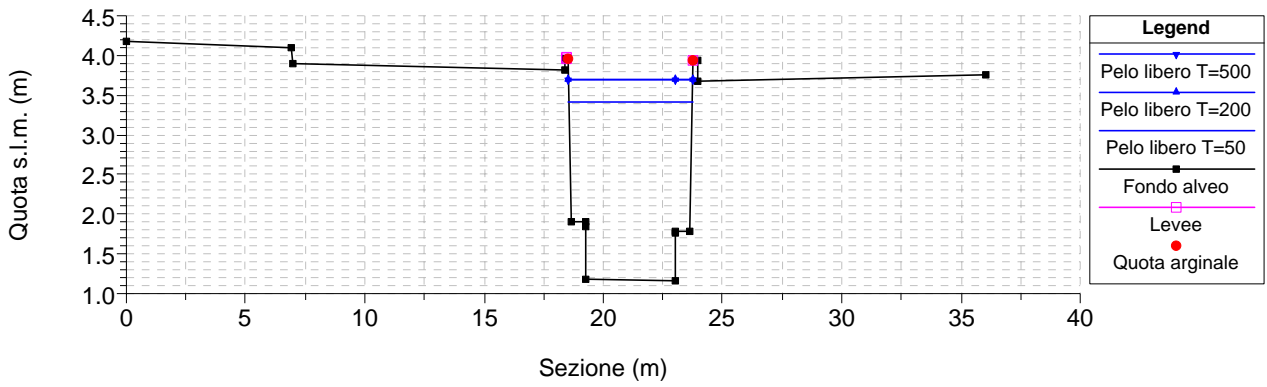
RS = 14.5 BR



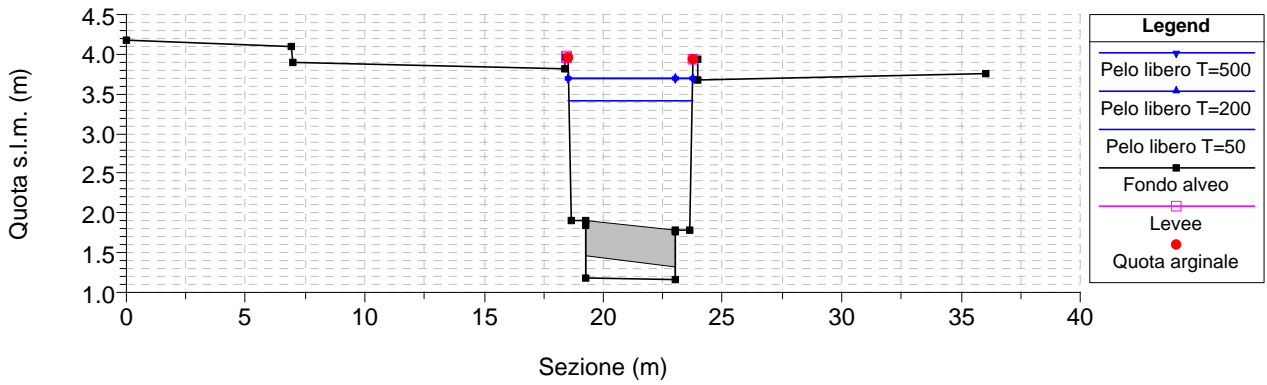
RS = 14



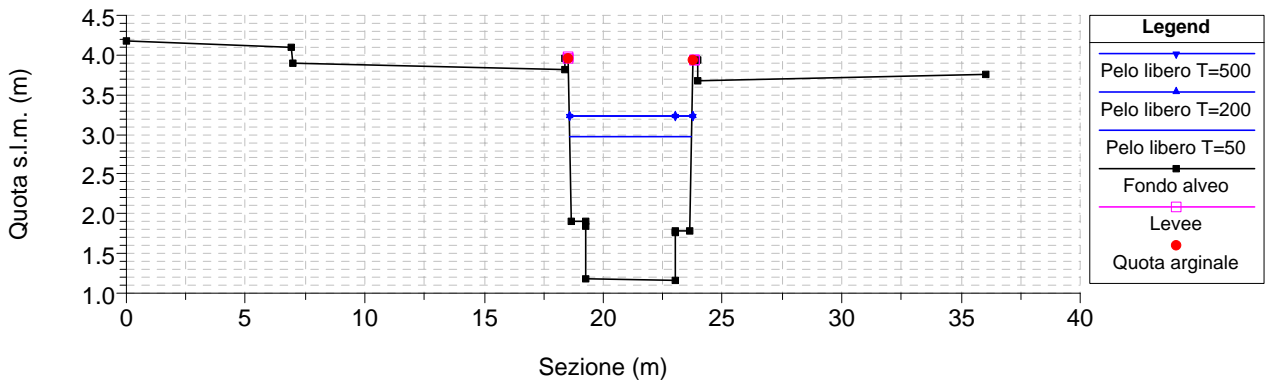
RS = 13



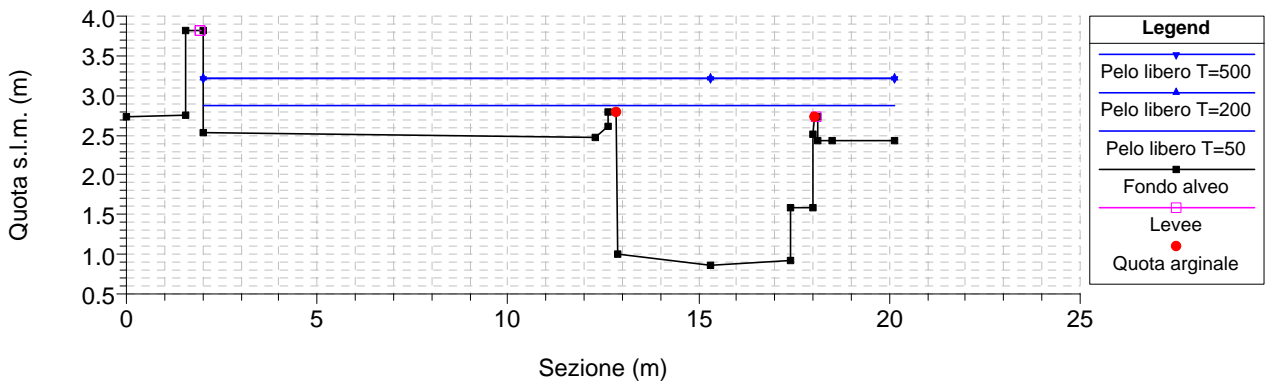
RS = 12.5 BR



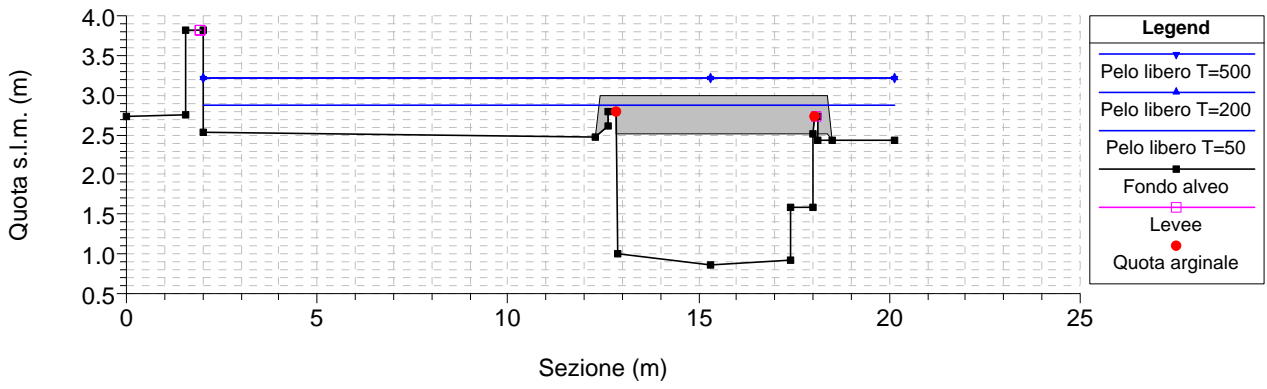
RS = 12



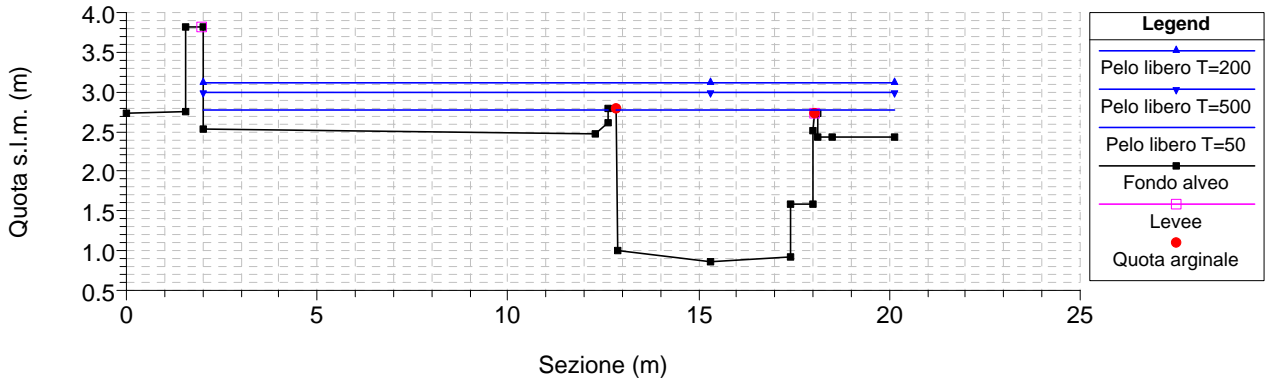
RS = 11



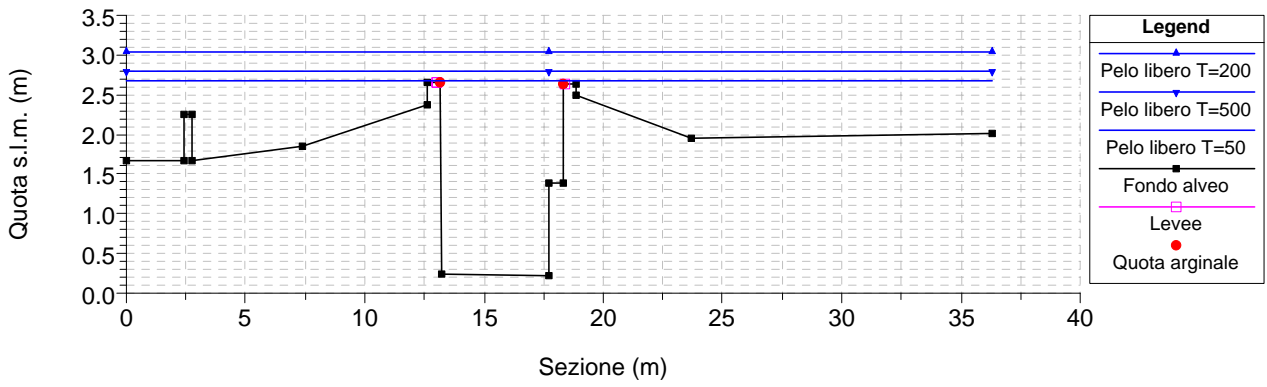
RS = 10.5 BR



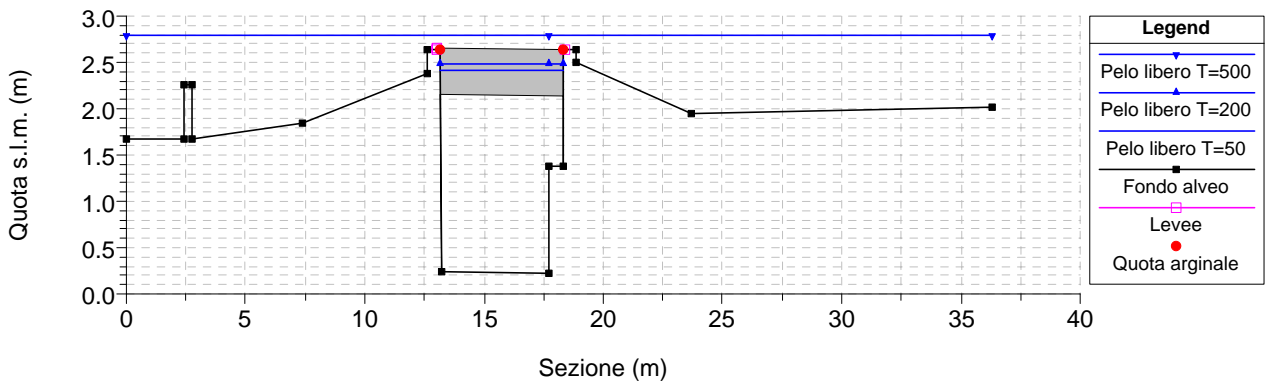
RS = 10



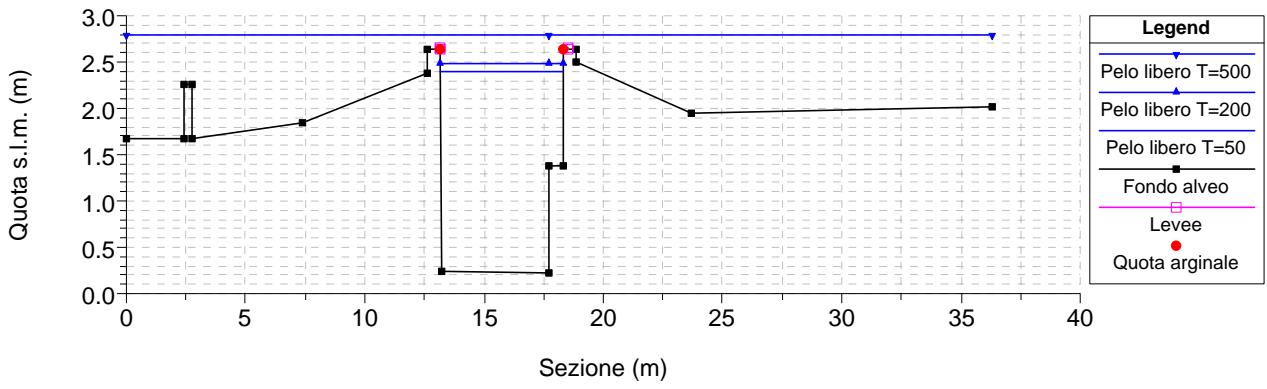
RS = 9



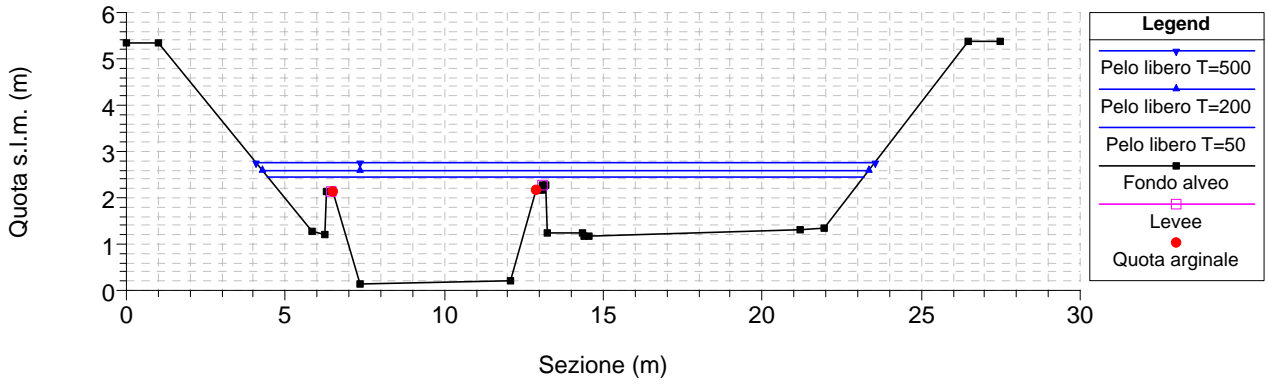
RS = 8.5 BR



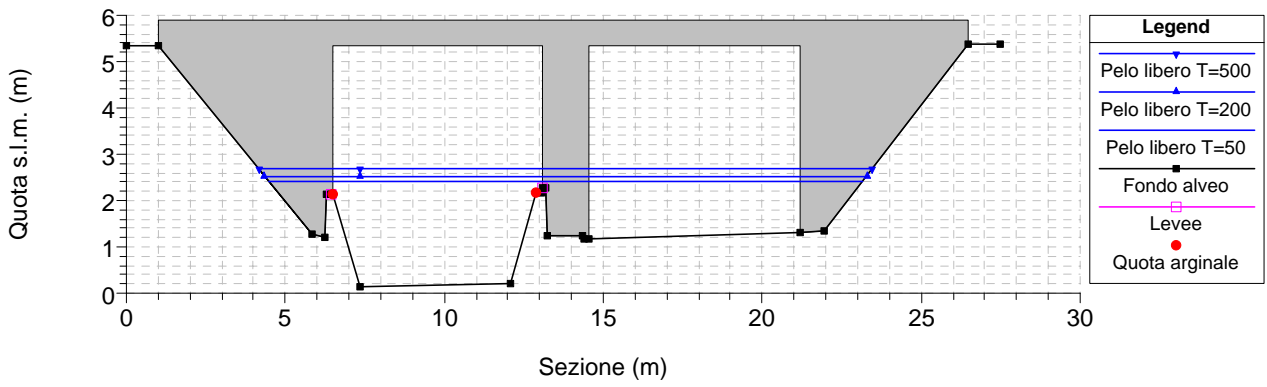
RS = 8



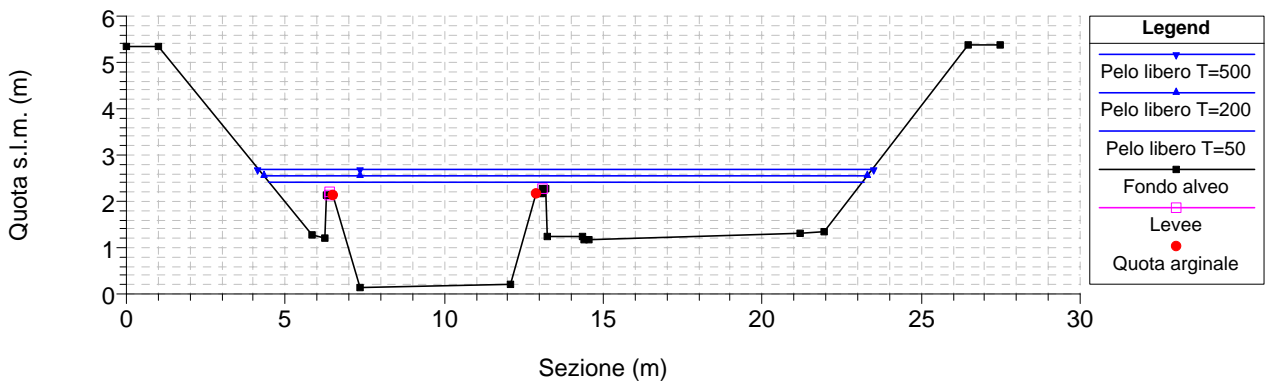
RS = 7



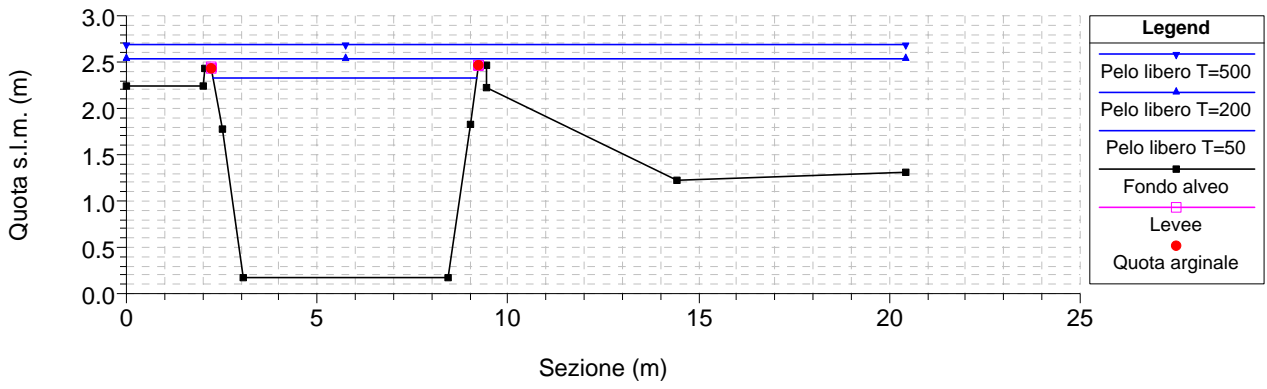
RS = 6.5 BR



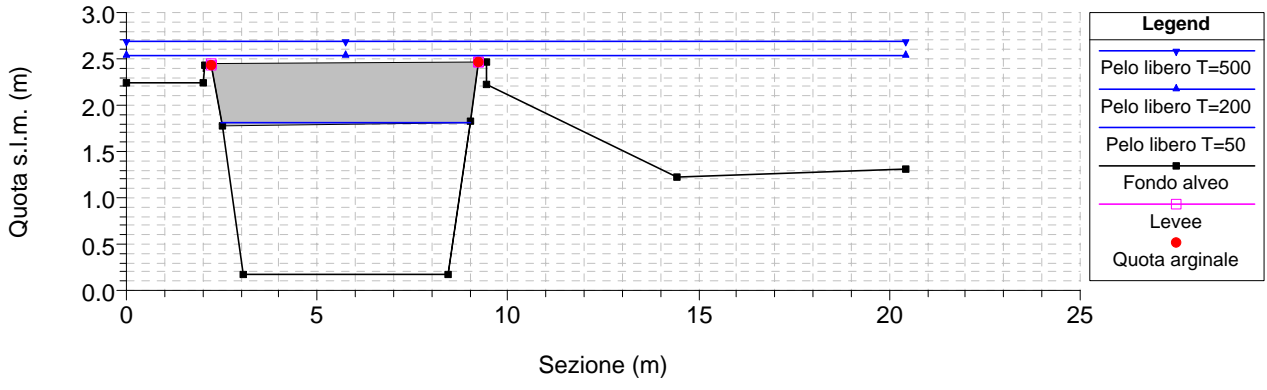
RS = 6



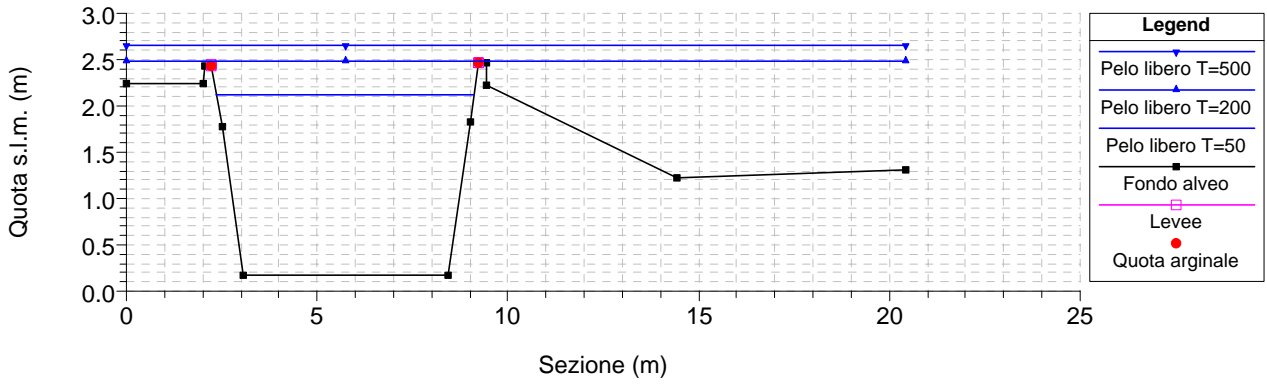
RS = 5



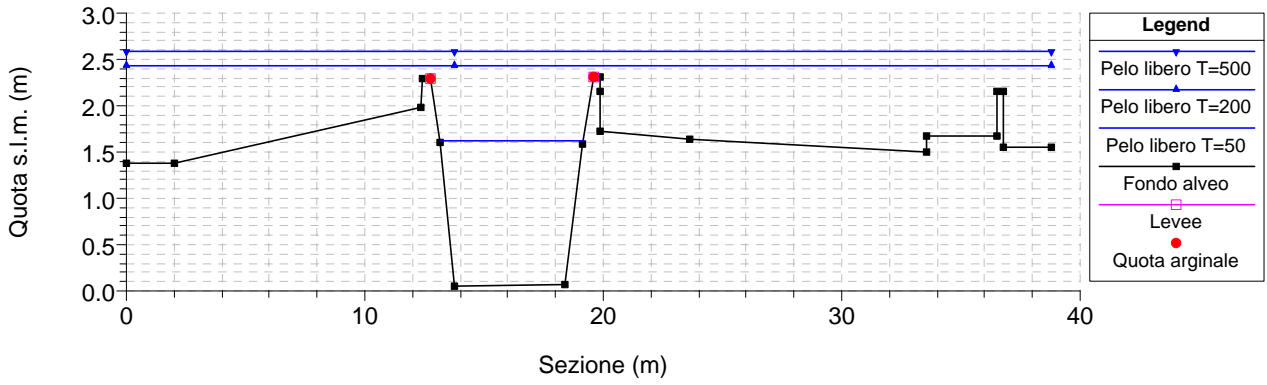
RS = 4.5 BR



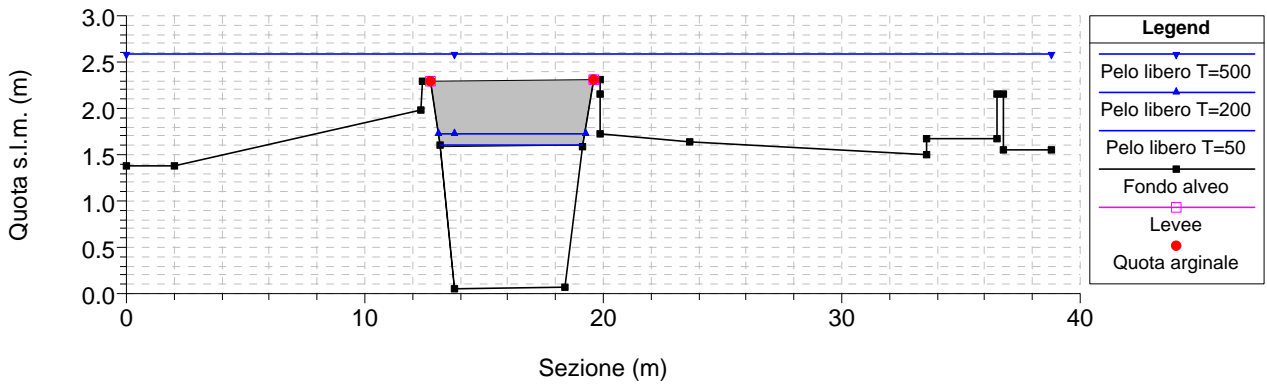
RS = 4



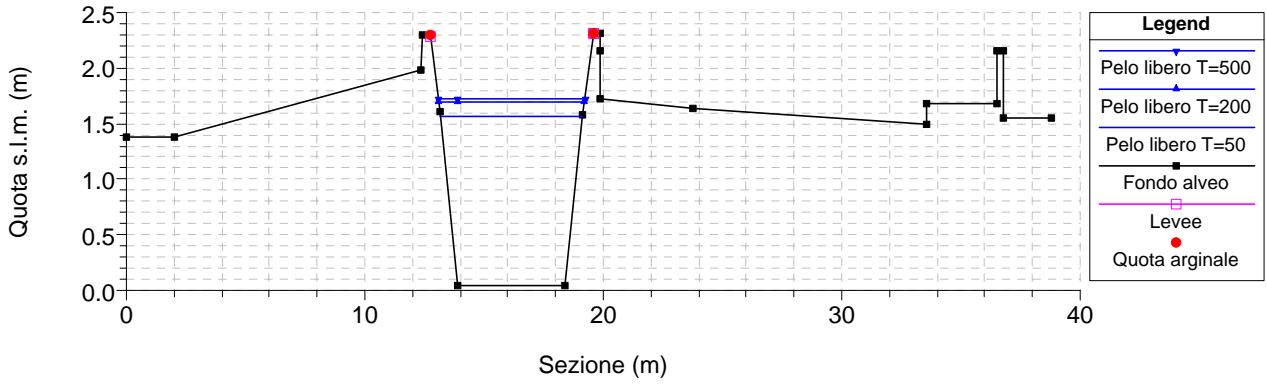
RS = 3



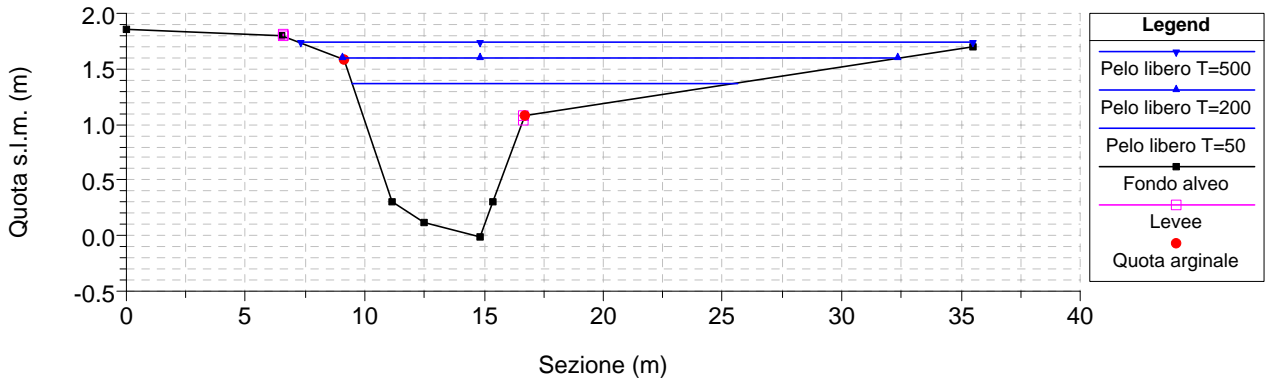
RS = 2.5 BR



RS = 2



RS = 1



**MODELLAZIONE IDRAULICA IN CONDIZIONI DI MOTO
PERMANENTE:
TABELLE DELLE GRANDEZZE IDRAULICHE SIGNIFICATIVE
PER LE PORTATE T=50, 200, 500 ANNI**

RIO AVARENNA

Rio Avarena T=50 anni

Sezioni	Portata totale (m3/s)	Fondo alveo (m)	Argine sinistro (m)	Argine destro (m)	Pelo libero (m)	Profondità critica (m)	Energia (m2)	Velocità (m/s)	Area bagnata (m2)	N° Froude
24	19	2.4	4.42	4.44	4.71	3.53	4.75	0.77	24.64	0.21
23.5	Bridge									
23	19	2.4	4.42	4.44	4.69	3.53	4.72	0.79	24.17	0.22
22	19	2.4	4.42	4.44	4.68	3.53	4.71	0.79	23.96	0.22
21	19	1.84	4.49	3.46	4.57	3.07	4.63	1.01	18.83	0.35
20.5	Bridge									
20	19	1.84	4.49	3.46	4.56	3.07	4.63	1.01	18.76	0.35
19	19	1.96	4.13	4.25	4.39	3.36	4.56	1.67	11.39	0.53
18.5	Bridge									
18	19	1.96	4.13	4.25	4.29	3.36	4.49	1.85	10.27	0.62
17	19	1.75	4.82	4.85	4.1	2.99	4.25	1.72	11.05	0.37
16	19	1.75	3.97	4.06	4.1	2.99	4.24	1.5	12.64	0.71
15.5	Bridge									
15	19	1.75	3.97	4.06	3.65	2.99	3.88	2.15	8.85	0.51
14.5	Bridge									
14	19	1.17	3.84	3.98	3.45	2.37	3.6	1.71	11.11	0.37
13	19	1.16	3.97	3.93	3.41	2.48	3.58	1.81	10.51	0.41
12.5	Bridge									
12	19	1.16	3.97	3.93	2.98	2.48	3.25	2.3	8.26	0.58
11	19	0.87	2.79	2.73	2.88	2.12	2.99	1.3	14.64	0.46
10.5	Bridge									
10	19	0.87	2.79	2.73	2.77	2.12	2.92	1.51	12.57	0.58
9	19	0.22	2.65	2.64	2.67	1.49	2.69	0.58	32.52	0.2
8.5	Bridge									
8	19	0.22	2.65	2.64	2.41	1.49	2.57	1.81	10.47	0.41
7	19	0.13	2.14	2.16	2.45	1.3	2.48	0.74	25.68	0.2
6.5	Bridge									
6	19	0.13	2.14	2.16	2.43	1.31	2.46	0.75	25.3	0.21
5	19	0.17	2.44	2.47	2.33	1.23	2.43	1.44	13.2	0.33
4.5	Bridge									
4	19	0.17	2.44	2.47	2.12	1.23	2.25	1.61	11.81	0.39
3	19	0.06	2.29	2.31	1.62	1.22	1.89	2.31	8.24	0.63
2.5	Bridge									
2	19	0.04	2.29	2.31	1.57	1.21	1.86	2.38	7.97	0.66
1	19	0	1.59	1.07	1.37	1.37	1.68	2.26	8.39	1

Rio Avarenna T=200 anni

Sezioni	Portata totale (m3/s)	Fondo alveo (m)	Argine sinistro (m)	Argine destro (m)	Pelo libero (m)	Profondità critica (m)	Energia (m2)	Velocità (m/s)	Area bagnata (m2)	N° Froude
24	27	2.4	4.42	4.44	5.06	3.82	5.1	0.87	31.01	0.21
23.5	Bridge									
23	27	2.4	4.42	4.44	5.04	3.82	5.08	0.88	30.58	0.22
22	27	2.4	4.42	4.44	5.02	3.82	5.07	0.89	30.37	0.22
21	27	1.84	4.49	3.46	4.95	3.49	5.01	0.83	32.59	0.29
20.5	Bridge									
20	27	1.84	4.49	3.46	4.92	3.49	4.98	0.86	31.37	0.31
19	27	1.96	4.13	4.25	4.68	3.78	4.89	1.81	14.9	0.58
18.5	Bridge									
18	27	1.96	4.13	4.25	4.58	3.78	4.82	1.99	13.57	0.58
17	27	1.75	4.82	4.85	4.23	3.29	4.5	2.3	11.72	0.48
16	27	1.75	3.97	4.06	4.28	3.29	4.45	1.48	18.19	0.65
15.5	Bridge									
15	27	1.75	3.97	4.06	3.87	3.29	4.25	2.72	9.92	0.61
14.5	Bridge									
14	27	1.17	3.84	3.98	3.75	2.67	3.98	2.14	12.62	0.43
13	27	1.16	3.97	3.93	3.7	2.78	3.95	2.25	11.97	0.48
12.5	Bridge									
12	27	1.16	3.97	3.93	3.23	2.78	3.63	2.83	9.54	0.66
11	27	0.87	2.79	2.73	3.21	2.41	3.31	1.31	20.6	0.39
10.5	Bridge									
10	27	0.87	2.79	2.73	3.11	2.41	3.23	1.45	18.68	0.45
9	27	0.22	2.65	2.64	3.05	1.78	3.06	0.59	46.04	0.17
8.5	Bridge									
8	27	0.22	2.65	2.64	2.49	1.78	2.8	2.48	10.9	0.54
7	27	0.13	2.14	2.16	2.58	1.59	2.63	0.96	28.14	0.25
6.5	Bridge									
6	27	0.13	2.14	2.16	2.54	1.59	2.59	0.99	27.38	0.26
5	27	0.17	2.44	2.47	2.53	1.5	2.58	1.01	26.81	0.28
4.5	Bridge									
4	27	0.17	2.44	2.47	2.49	1.5	2.55	1.04	25.95	0.29
3	27	0.06	2.29	2.31	2.43	1.51	2.46	0.7	38.8	0.22
2.5	Bridge									
2	27	0.04	2.29	2.31	1.69	1.51	2.18	3.09	8.73	0.83
1	27	0	1.59	1.07	1.59	1.59	1.89	2.11	12.78	0.91

Rio Avarenna T=500 anni

Sezioni	Portata totale (m3/s)	Fondo alveo (m)	Argine sinistro (m)	Argine destro (m)	Pelo libero (m)	Profondità critica (m)	Energia (m2)	Velocità (m/s)	Area bagnata (m2)	N° Froude
24	33	2.4	4.42	4.44	5.31	4.02	5.35	0.93	35.56	0.21
23.5	Bridge									
23	33	2.4	4.42	4.44	5.28	4.02	5.33	0.94	35.14	0.22
22	33	2.4	4.42	4.44	5.27	4.02	5.32	0.94	34.95	0.22
21	33	1.84	4.49	3.46	5.23	3.66	5.27	0.75	43.74	0.23
20.5	Bridge									
20	33	1.84	4.49	3.46	5.21	3.67	5.25	0.77	42.97	0.24
19	33	1.96	4.13	4.25	5.02	4	5.18	1.65	20.04	0.47
18.5	Bridge									
18	33	1.96	4.13	4.25	4.95	4	5.13	1.74	18.91	0.51
17	33	1.75	4.82	4.85	4.5	3.51	4.83	2.53	13.04	0.5
16	33	1.75	3.97	4.06	4.62	3.51	4.71	1.1	29.96	0.38
15.5	Bridge									
15	33	1.75	3.97	4.06	4.56	3.51	4.66	1.19	27.77	0.42
14.5	Bridge									
14	33	1.17	3.84	3.98	3.79	2.87	4.13	2.57	12.85	0.52
13	33	1.16	3.97	3.93	3.7	2.98	4.09	2.75	12	0.58
12.5	Bridge									
12	33	1.16	3.97	3.93	3.24	2.98	3.84	3.43	9.62	0.8
11	33	0.87	2.79	2.73	3.22	2.85	3.37	1.59	20.77	0.47
10.5	Bridge									
10	33	0.87	2.79	2.73	3	2.85	3.24	1.97	16.75	0.65
9	33	0.22	2.65	2.64	2.8	1.98	2.85	0.89	37.28	0.28
8.5	Bridge									
8	33	0.22	2.65	2.64	2.79	1.99	2.84	0.89	36.88	0.28
7	33	0.13	2.14	2.16	2.75	1.79	2.81	1.05	31.48	0.26
6.5	Bridge									
6	33	0.13	2.14	2.16	2.7	1.79	2.76	1.08	30.45	0.28
5	33	0.17	2.44	2.47	2.69	1.69	2.76	1.1	30.09	0.29
4.5	Bridge									
4	33	0.17	2.44	2.47	2.65	1.69	2.72	1.13	29.2	0.3
3	33	0.06	2.29	2.31	2.59	1.71	2.62	0.73	45.17	0.22
2.5	Bridge									
2	33	0.04	2.29	2.31	1.73	1.7	2.42	3.69	8.95	0.98
1	33	0	1.59	1.07	1.74	1.74	2.01	1.99	16.58	0.83