

Allegato F

## Dati Input e Output dell'Analisi delle Componenti Principali

## Analisi delle Componenti Principali (PCA)

### Variabili originarie

Punti	As (ug/l)	Fe (ug/l)	Mn (ug/l)	RedOx (mV)	O2 (mg/l)	Temperatura (° C)	pH	Melamina (ug/l)	Pentaeritrite (ug/l)	Formaldeide (ug/l)	Acetaldeide (ug/l)	Idrocarburi Tot (ug/l)
MW01	91.40	196.00	154.00	-151.00	0.50	25.20	7.77	0.00	982.00	3.88	1.16	0.00
MW02	31.00	7.04	12.00	-30.00	0.20	22.40	9.25	0.00	0.00	6.93	1.68	6.82
MW03	1.26	12.30	3.57	307.00	2.15	21.50	7.98	0.00	0.00	1.56	0.00	6.49
MW04	1.44	5.33	101.00	182.00	0.80	10.30	5.22	183.00	0.00	2.06	0.78	0.00
MW05	0.51	9.21	1010.00	135.00	1.10	18.30	7.03	0.00	0.00	6.19	0.88	0.00
MW06	0.46	6.27	1.35	385.00	5.75	14.80	7.93	0.00	0.00	0.00	0.00	0.00
MW07	19.80	292.00	362.00	-212.00	1.40	19.30	7.13	0.00	1070.00	3.67	0.79	8.58
MW08	1.10	20.10	364.00	133.00	0.90	20.80	7.26	0.00	10.90	3.74	0.92	11.80
MW09	24.80	12.50	12.40	16.00	0.30	18.80	8.48	1860.00	0.00	0.00	1.27	11.70
MW10	6.47	5.24	33.20	35.00	0.30	12.80	7.10	0.00	25.80	0.00	0.78	8.87
MW11	89.50	663.00	177.00	406.00	0.88	22.50	7.77	0.00	992.00	2.40	0.78	14.00
MW12	177.00	76.10	17.60	-209.00	0.20	16.30	8.35	0.00	360.00	6.05	0.78	6.29
MW13	43.20	16.50	12.30	-12.00	0.20	23.30	8.73	0.00	486.00	5.23	1.05	16.30
MW14	0.49	208.00	462.00	5.00	0.50	18.70	7.27	0.00	0.00	7.12	0.98	6.14
MW15	13.30	10.70	16.60	260.00	0.36	23.30	7.06	0.00	190.00	0.00	0.00	0.00
MW16	0.56	17.60	1300.00	148.00	0.80	19.10	7.22	0.00	0.00	0.00	0.47	7.07
MW17	0.70	60.50	25.00	940.00	0.25	15.90	7.39	0.00	0.00	0.00	1.58	10.60
MW18	0.70	40.80	38.40	140.00	0.40	17.30	7.19	0.00	0.00	0.00	0.23	0.00
MW19	0.83	29.00	36.80	169.00	2.50	16.30	7.21	0.00	0.00	2.45	0.70	0.00
MW20	0.48	10.60	19.40	247.00	4.00	17.20	7.24	0.00	0.00	0.00	0.00	16.00
AS	0.35	131.00	643.00	57.00	0.30	17.20	7.11	0.00	0.00	0.00	0.00	0.00

Chemisol - Stabilimento di Castellanza  
Progettazione definitiva barriera idraulica

Variabili scalate

Punti	As (ug/l)	Fe (ug/l)	Mn (ug/l)	RedOx (mV)	O2 (mg/l)	Temperatura (° C)	pH	Melamina (ug/l)	Pentaeritrite (ug/l)	Formaldeide (ug/l)	Acetaldeide (ug/l)	Idrocarburi Tot (ug/l)
MW01	0.515	0.290	0.118	0.053	0.054	1.000	0.633	0.000	0.918	0.545	0.690	0.000
MW02	0.174	0.003	0.008	0.158	0.000	0.812	1.000	0.000	0.000	0.973	1.000	0.418
MW03	0.005	0.011	0.002	0.451	0.351	0.752	0.685	0.000	0.000	0.219	0.000	0.398
MW04	0.006	0.000	0.077	0.342	0.108	0.000	0.000	0.098	0.000	0.289	0.464	0.000
MW05	0.001	0.006	0.777	0.301	0.162	0.537	0.449	0.000	0.000	0.869	0.521	0.000
MW06	0.001	0.002	0.000	0.518	1.000	0.302	0.672	0.000	0.000	0.000	0.000	0.000
MW07	0.110	0.436	0.278	0.000	0.216	0.604	0.474	0.000	1.000	0.515	0.467	0.526
MW08	0.004	0.023	0.279	0.299	0.126	0.705	0.506	0.000	0.010	0.525	0.545	0.724
MW09	0.138	0.011	0.009	0.198	0.018	0.570	0.809	1.000	0.000	0.000	0.756	0.718
MW10	0.035	0.000	0.025	0.214	0.018	0.168	0.467	0.000	0.024	0.000	0.463	0.544
MW11	0.505	1.000	0.135	0.536	0.123	0.819	0.633	0.000	0.927	0.337	0.466	0.859
MW12	1.000	0.108	0.013	0.003	0.000	0.403	0.777	0.000	0.336	0.850	0.466	0.386
MW13	0.243	0.017	0.008	0.174	0.000	0.872	0.871	0.000	0.454	0.735	0.625	1.000
MW14	0.001	0.308	0.355	0.188	0.054	0.564	0.509	0.000	0.000	1.000	0.580	0.377
MW15	0.073	0.008	0.012	0.410	0.029	0.872	0.457	0.000	0.178	0.000	0.000	0.000
MW16	0.001	0.019	1.000	0.313	0.108	0.591	0.496	0.000	0.000	0.000	0.277	0.434
MW17	0.002	0.084	0.018	1.000	0.009	0.376	0.538	0.000	0.000	0.000	0.940	0.650
MW18	0.002	0.054	0.029	0.306	0.036	0.470	0.489	0.000	0.000	0.000	0.136	0.000
MW19	0.003	0.036	0.027	0.331	0.414	0.403	0.494	0.000	0.000	0.344	0.418	0.000
MW20	0.001	0.008	0.014	0.398	0.685	0.463	0.501	0.000	0.000	0.000	0.000	0.982
AS	0.000	0.191	0.494	0.234	0.018	0.463	0.469	0.000	0.000	0.000	0.000	0.000

Output di XLStat 7.1

XLSTAT 2008.7.01 - Analisi in Componenti Principali (ACP) - il 19/02/2009 a 15:12:59

Tabella osservazioni/variabili: Cartella = Finale elaborato\_18\_2\_09.xls / Foglio = Trasn. var - param. selez. / Intervallo = "Trasn. var - param. selez."!\$C\$10:\$N\$31 / 21 righe e 12 colonne

Etichette delle osservazioni: Cartella = Finale elaborato\_18\_2\_09.xls / Foglio = Trasn. var - param. selez. / Intervallo = "Trasn. var - param. selez."!\$B\$10:\$B\$31 / 21 righe e 1 colonna

Tipo di ACP: Pearson (n)

Statistiche descrittive:

Variabile	Osservazioni	Oss. con dati		Oss. senza dati		Minimo	Massimo	Media	Deviazione std.
		mancanti		mancanti					
As	21	0	21	0.000	1.000	0.134	0.252		
Fe	21	0	21	0.000	1.000	0.125	0.235		
Mn	21	0	21	0.000	1.000	0.175	0.276		
Melamina	21	0	21	0.000	1.000	0.052	0.218		
Pentaeritrite	21	0	21	0.000	1.000	0.183	0.343		
Formaldeide	21	0	21	0.000	1.000	0.343	0.367		
Acetaldeide	21	0	21	0.000	1.000	0.420	0.307		
O2	21	0	21	0.000	1.000	0.168	0.256		
T	21	0	21	0.000	1.000	0.559	0.247		
pH	21	0	21	0.000	1.000	0.568	0.203		
RedOx	21	0	21	0.000	1.000	0.306	0.218		
Idrocarburi	21	0	21	0.000	1.000	0.382	0.353		

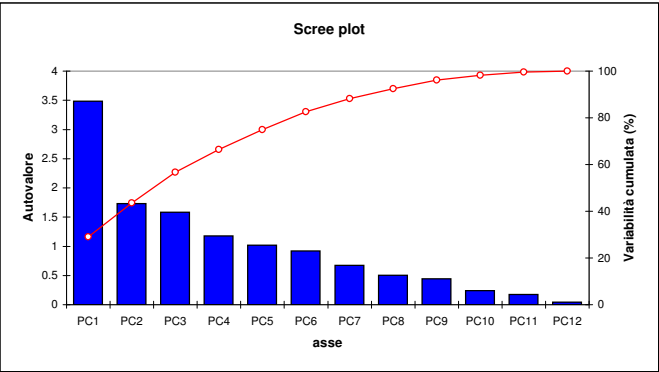
Matrice di correlazione (Pearson (n)):

Variabili	As	Fe	Mn	Melamina	Pentaeritrite	Formaldeide	Acetaldeide	O2	T	pH	RedOx	HC
As	1	0.394	-0.224	-0.008	0.576	0.403	0.246	-0.271	0.268	0.422	-0.380	0.136
Fe	0.394	1	0.056	-0.123	0.742	0.156	0.101	-0.126	0.310	0.025	0.000	0.221
Mn	-0.224	0.056	1	-0.146	-0.079	0.111	-0.073	-0.146	0.037	-0.271	-0.125	-0.158
Melamina	-0.008	-0.123	-0.146	1	-0.135	-0.217	0.254	-0.140	-0.041	0.209	-0.110	0.194
Pentaeritrite	0.576	0.742	-0.079	-0.135	1	0.252	0.179	-0.149	0.488	0.152	-0.315	0.190
Formaldeide	0.403	0.156	0.111	-0.217	0.252	1	0.523	-0.275	0.320	0.316	-0.495	0.048
Acetaldeide	0.246	0.101	-0.073	0.254	0.179	0.523	1	-0.519	0.144	0.323	-0.074	0.298
O2	-0.271	-0.126	-0.146	-0.140	-0.149	-0.275	-0.519	1	-0.238	-0.043	0.256	-0.072
T	0.268	0.310	0.037	-0.041	0.488	0.320	0.144	-0.238	1	0.563	-0.195	0.220
pH	0.422	0.025	-0.271	0.209	0.152	0.316	0.323	-0.043	0.563	1	-0.185	0.386
RedOx	-0.380	0.000	-0.125	-0.110	-0.315	-0.495	-0.074	0.256	-0.195	-0.185	1	0.098
Idrocarburi	0.136	0.221	-0.158	0.194	0.190	0.048	0.298	-0.072	0.220	0.386	0.098	1

Analisi in Componenti Principali:

Autovalori:

	PC1	PC2	PC3	PC4	PC5	PC6	PC7	PC8	PC9	PC10	PC11	PC12
Autovalore	3.486	1.734	1.581	1.179	1.019	0.921	0.672	0.505	0.443	0.239	0.178	0.043
Variabilità (%)	29.1	14.4	13.2	9.8	8.5	7.7	5.6	4.2	3.7	2.0	1.5	0.4
% cumulata	29.1	43.5	56.7	66.5	75.0	82.7	88.3	92.5	96.2	98.2	99.6	100.0



Chemisol - Stabilimento di Castellanza  
Progettazione definitiva barriera idraulica

Autovettori:

	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12
As	0.396	-0.070	0.085	0.204	-0.370	-0.129	-0.022	0.236	0.625	-0.125	-0.359	-0.212
Fe	0.287	-0.345	0.352	-0.372	-0.116	0.042	0.099	-0.256	0.086	0.549	0.284	-0.237
Mn	-0.051	-0.342	-0.378	-0.299	0.391	0.396	0.278	-0.045	0.457	-0.220	0.003	0.047
Melamina	0.030	0.516	-0.057	-0.145	-0.368	0.538	0.104	-0.374	0.053	0.146	-0.285	0.165
Pentaeritrite	0.386	-0.323	0.286	-0.092	-0.203	0.095	0.020	-0.117	-0.256	-0.514	0.031	0.511
Formaldeide	0.349	-0.100	-0.367	0.186	0.202	-0.367	0.265	-0.225	-0.105	0.383	-0.345	0.354
Acetaldeide	0.303	0.318	-0.273	-0.342	0.008	-0.377	0.028	-0.362	-0.064	-0.400	0.159	-0.390
O2	-0.253	-0.064	0.405	0.417	0.136	-0.035	0.490	-0.464	0.029	-0.202	-0.130	-0.245
T	0.350	-0.040	0.124	0.104	0.476	0.348	-0.449	-0.079	-0.233	-0.012	-0.368	-0.323
pH	0.320	0.372	0.129	0.363	0.311	0.086	-0.078	-0.072	0.345	0.039	0.556	0.259
RedOx	-0.256	0.131	0.377	-0.391	0.265	-0.347	-0.315	-0.190	0.338	-0.007	-0.290	0.313
Idrocarburi	0.203	0.340	0.307	-0.284	0.258	0.007	0.533	0.528	-0.148	0.006	-0.132	-0.019

Coordinate delle variabili:

	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12
As	0.739	-0.092	0.107	0.222	-0.374	-0.123	-0.018	0.168	0.416	-0.061	-0.151	-0.044
Fe	0.536	-0.454	0.443	-0.404	-0.117	0.040	0.081	-0.182	0.057	0.268	0.120	-0.049
Mn	-0.096	-0.451	-0.475	-0.324	0.395	0.380	0.228	-0.032	0.304	-0.108	0.001	0.010
Melamina	0.056	0.680	-0.072	-0.158	-0.372	0.516	0.086	-0.265	0.035	0.071	-0.120	0.034
Pentaeritrite	0.720	-0.426	0.359	-0.100	-0.205	0.091	0.016	-0.083	-0.170	-0.252	0.013	0.106
Formaldeide	0.651	-0.131	-0.462	0.202	0.204	-0.352	0.217	-0.160	-0.070	0.187	-0.146	0.073
Acetaldeide	0.566	0.419	-0.344	-0.371	0.008	-0.362	0.023	-0.257	-0.043	-0.195	0.067	-0.081
O2	-0.472	-0.084	0.509	0.453	0.137	-0.034	0.402	-0.330	0.019	-0.099	-0.055	-0.051
T	0.653	-0.052	0.156	0.113	0.480	0.334	-0.368	-0.056	-0.155	-0.006	-0.155	-0.067
pH	0.597	0.489	0.162	0.394	0.314	0.083	-0.064	-0.052	0.229	0.019	0.234	0.053
RedOx	-0.478	0.172	0.474	-0.425	0.267	-0.333	-0.258	-0.135	0.225	-0.003	-0.122	0.065
Idrocarburi	0.379	0.448	0.385	-0.308	0.261	0.007	0.437	0.375	-0.098	0.003	-0.056	-0.004

Correlazioni tra variabili e fattori:

	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12
As	0.739	-0.092	0.107	0.222	-0.374	-0.123	-0.018	0.168	0.416	-0.061	-0.151	-0.044
Fe	0.536	-0.454	0.443	-0.404	-0.117	0.040	0.081	-0.182	0.057	0.268	0.120	-0.049
Mn	-0.096	-0.451	-0.475	-0.324	0.395	0.380	0.228	-0.032	0.304	-0.108	0.001	0.010
Melamina	0.056	0.680	-0.072	-0.158	-0.372	0.516	0.086	-0.265	0.035	0.071	-0.120	0.034
Pentaeritrite	0.720	-0.426	0.359	-0.100	-0.205	0.091	0.016	-0.083	-0.170	-0.252	0.013	0.106
Formaldeide	0.651	-0.131	-0.462	0.202	0.204	-0.352	0.217	-0.160	-0.070	0.187	-0.146	0.073
Acetaldeide	0.566	0.419	-0.344	-0.371	0.008	-0.362	0.023	-0.257	-0.043	-0.195	0.067	-0.081
O2	-0.472	-0.084	0.509	0.453	0.137	-0.034	0.402	-0.330	0.019	-0.099	-0.055	-0.051
T	0.653	-0.052	0.156	0.113	0.480	0.334	-0.368	-0.056	-0.155	-0.006	-0.155	-0.067
pH	0.597	0.489	0.162	0.394	0.314	0.083	-0.064	-0.052	0.229	0.019	0.234	0.053
RedOx	-0.478	0.172	0.474	-0.425	0.267	-0.333	-0.258	-0.135	0.225	-0.003	-0.122	0.065
Idrocarburi	0.379	0.448	0.385	-0.308	0.261	0.007	0.437	0.375	-0.098	0.003	-0.056	-0.004

