

Dordrecht Works C-8 Sampling Summary-Revision 1

Groundwater Sampling Results
March 2003



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Revision 1

Note:

Revision 1 of the Dordrecht Works March 2003 sampling event summary was prepared based on new well constriction information received in June 2003. This new information changed the observations presented on the “Second Aquifer” in this document.

Scope of Work Summary

- 24 samples were collected on March 10-12, 2003, including:
 - 18 site monitoring wells (most previously sampled in mid 1990's). Two water bearing zones: freatic and first aquifers. No samples were collected from deeper, "second" aquifer.
 - 1 site tapwater (local "city" water)
 - 1 from "Spaarbekk" or "Drinkwaterbekken" reservoir
 - 2 from groundwater treatment system (combined influent and effluent)
 - 2 from site wastewater treatment plant (sweetwater and saltwater)

Analytical Results (in ug/L)

Sample ID	Date	C-8 (ug/L)
MW-315	3/10/2003	71.3
MW-N10-2	3/10/2003	15
MW-N23-1	3/10/2003	5.5
MW-N28-1	3/10/2003	14.4
GW Treatment 103	3/11/2003	9.18
Waste Treatment 82	3/11/2003	3,890
GW Treatment 401	3/11/2003	7.91
Waste Treatment 80	3/11/2003	4,850
Spaarbekk	3/11/2003	0.439
Tap Water	3/11/2003	0.0736
MW-119	3/11/2003	158
MW-303	3/11/2003	7,430
MW-05A	3/11/2003	6.1
MW-N26-1	3/11/2003	16.1
MW-N25-1	3/11/2003	3.99
MW-308	3/11/2003	131
MW-W02-A	3/11/2003	14.7
MW-314	3/11/2003	50.2
MW-118	3/11/2003	34.9
MW-N17-1	3/11/2003	0.139
MW-N19-1	3/12/2003	0.762
MW-311	3/12/2003	354
MW-316	3/12/2003	1530
MW-317	3/12/2003	2890

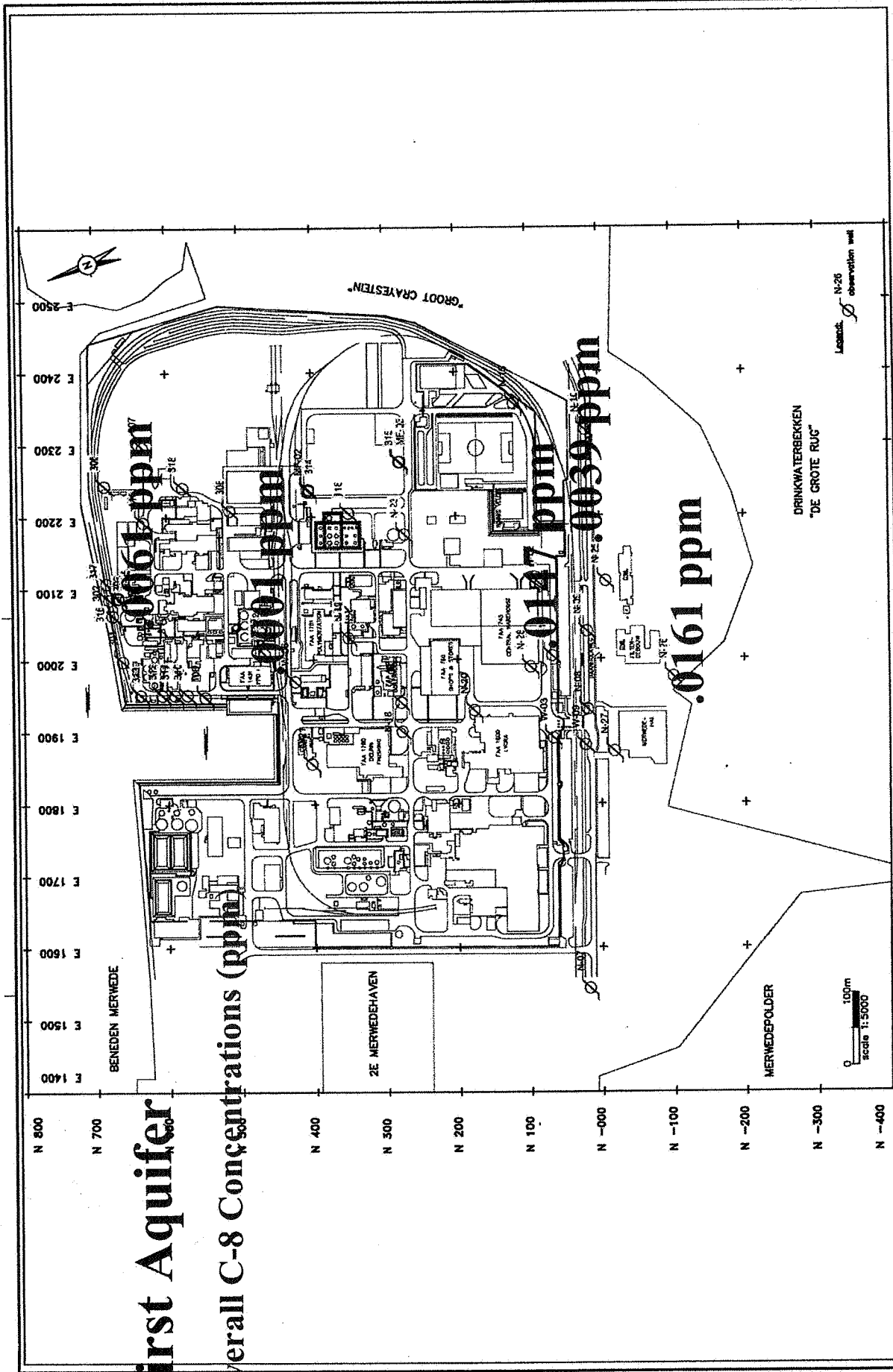
June Analytical Result/MF-11

- June Sampling Result, MF-11 = 29.5 ug/L (First Aquifer)

* Well is situated near southern end of site near edge of “Drinkwaterbekken” reservoir.

First Aquifer

Overall C-8 Concentrations (ppm)



GeoDelft P.O. Box 88, 2600 AB Delft The Netherlands Telephone 31-(0)15-2633000 Telefax 31-(0)15-2610821 Homepage: www.geodelft.nl		Planname: b.-f.001 Departement: 700 Revisie: 2002-12-20
DUPONT DE NEMOURS (NEDERLAND) B.V. MONITORING CB (AFPO)		date: 2002-12-20 ch: BO-403970 Mtn: ANNEX. form: A3
OBSERVATION WELLS		

Results Discussion

- Elevated levels found in Waste Treatment 82-Sweetwater (3890 ug/L) and Waste Treatment 80-Saltwater (4850 ug/L).
 - Based on flow of approximately 500,000 gal./day, this represents discharge of approximately 7,300 lbs/year.
- Highest groundwater measurement 7430 ug/L in MW-303, a well completed in shallowest water bearing zone, “freatic layer” (“Ophooglaag”). Slightly higher than Aug. 1995 measurement of 1700 ug/L. Other shallow wells near this site location MW-316 (1530 ug/L) and MW-317 (2890 ug/L).
- Range for shallow water bearing zone is 34.9 ug/L (central site) to 7430 ug/L, north site, near river.

Results Discussion

- Concentrations in first aquifer “Eerste” range from .139 to 16.1 ug/L.
- Overall, 2003 measured concentrations are higher than mid 90’s sampling events.
- Spaarbekk Reservoir .439 ug/L. Water used by site for non-contact cooling. Also used for water sports/recreation.
- Groundwater treatment system influent, GW Treatment 103 was 9.18 ug/L and effluent, GW Treatment 401, was 7.91 ug/L.
- Site “Tap Water” was .0736 ug/L. Source is “city water”.

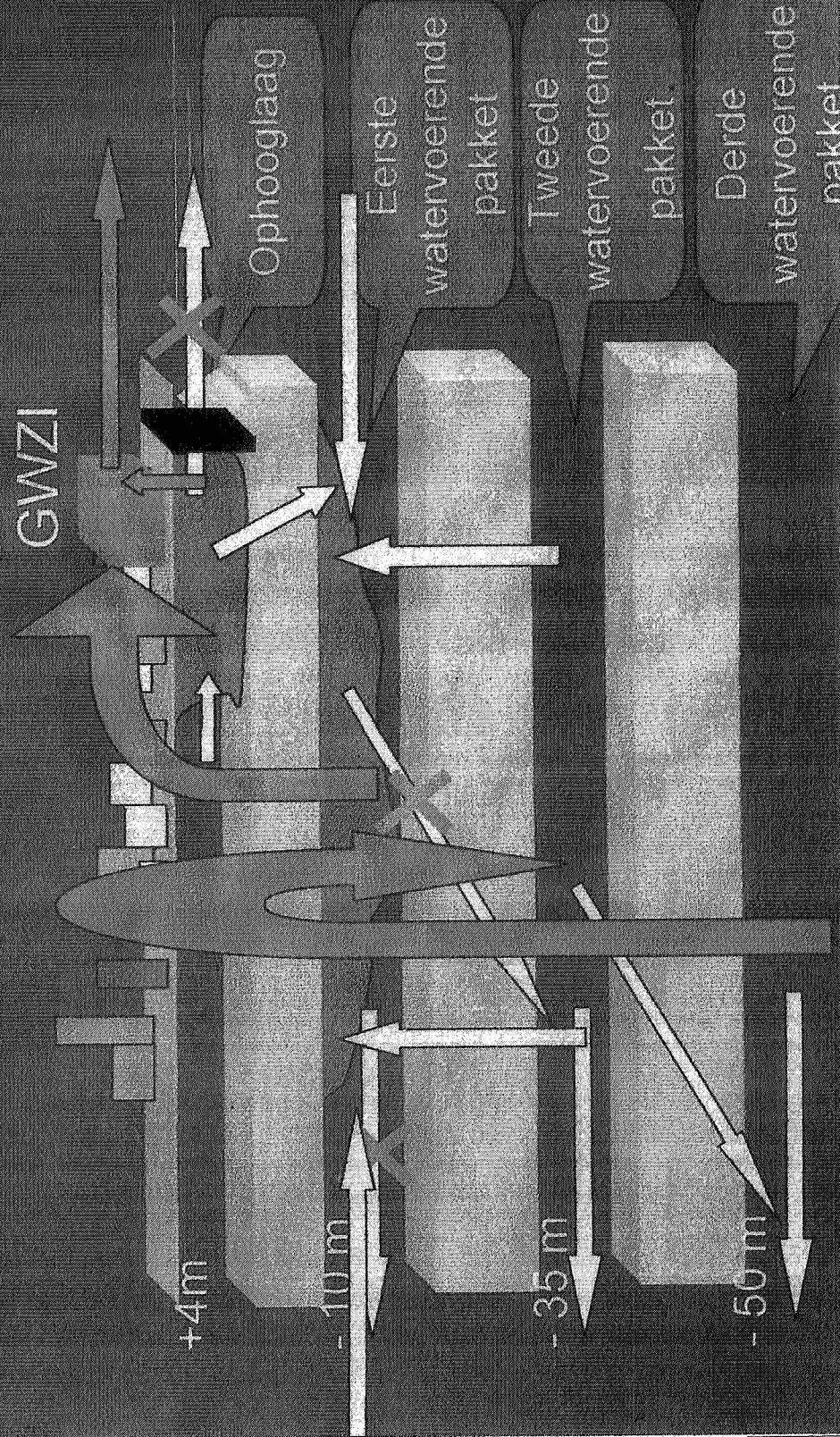
Site Conceptual Model Summary

Areas of impact and groundwater flow directions

Site Conceptual Model

- Primary source area (I.e., C8 and chlorocarbons) is freatic (shallow) aquifer underlying FP process area. This area of impact is contained by a sheet-pile cut-off wall and a Groundwater Pump & Treat system. Treatment is air stripper (no affect on C-8).
- First aquifer is also pumped to maintain inward groundwater flow gradient.
- Second aquifer receives “Pumped Infiltration” to establish higher pressures (upward gradient) and prevent first aquifer from flowing vertically downward to second.

Principe van het GBS





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