CENTRAL HUDSON
GAS & ELECTRIC CORPORATION

284 SOUTH AVENUE, POUGHKEEPSIE, N. Y. 12601-4879 (914) 452-2000

M Wells

Overnight Mail

February 27, 1987

Ms. Luanne Whitbeck
New York State Department of
Environmental Conservation
Division of Solid and
Hazardous Waste
Bureau of Hazardous Waste
Technology
50 Wolf Road, Room 401
Albany, New York 12233-0001

Re: Annual Groundwater Report - Danskammer

Dear Ms. Whitbeck:

Central Hudson herein submits the following data and information in fulfillment of the requirements of 6NYCRR, Part 373-3.6(e) for an annual groundwater report:

1. The results of semi-annual detection monitoring samples collected in June 1986.

2. Letters to the Department from Central Hudson dated: 9/25/86, 9/29/86, 10/15/86 which provide an assessment of that data.

3. Letter from the Department to Central Hudson dated 11/7/86 approving our assessment.

4. Letter from LMS to Central Hudson dated 2/25/87 which provides an interpretation of water level data.

5. Letter from LMS to Central Hudson dated 2/25/87 which provides the results of the first quarter of follow up monitoring samples collected on 12/18/86. As this data has only recently been received from the laboratory, statistical analyses and interpretation have not yet been performed. Such analyses will be conducted by March 15, 1987 and will be submitted at that time to the Department.

Please feel free to call me if you have any questions or require further information. My telephone number is 914-486-5534.

Very truly yours

Jeffrey A. Clock (yf)

Jeffrey A. Clock,
Director-Environmental
Affairs and R&D

JAC134:ifs

cc: Mr. L. H. Rummler
Mr. J. C. Checklick, w/o enclosures
Record Retention

GROUNDWATER ANALYSIS RESULTS SAMPLED JUNE 1986

PARAMETER	M1	M2	M3	M4	M5+
Chloride	145	18	43	.7	17
Fluoride	7.8	<0.1	<0.1	<0.1	0.29
Lead	18.6	<0.005	<0.005	<0.005	0.010
Nitrate	<0.1	4.3	0.2	<0.1	ND
Sodium	382.5	62.5	292.5	87.5	21.0
Sulfate	915	1,844	1,367	815	823
Temperature (C)	14.2	14.1	16.1	14.8	21.6
	13.8	13.7	14.7	14.8	
	13.4	13.5	15.0	14.6	
	13.3	13.7	14.9	13.8	
pH	7.70	4.60	10.47	9.42	6.50
	7.60	4.59	10.53	9.29	
	7.67	4.51	10.47	9.21	
	7.64	4.61	10.47	9.32	
Spec. Conductance (umhos @ 25 C)	1,680	2,320	2,190	990	1,572
	1,710	2,380	2,180	1,090	
	1,710	2,440	2,150	1,090	
	1,670	2,350	2,130	1,020	
Total Organic Carbon	4.98	5.45	3.35	5.67	162
	3.77	4.06	2.91	2.53	180
	5.4	7.17	2.67	3.30	166
	4.24	4.82	2.53	2.18	171
Total Organic Halogen (ug/l)	15	7.8	6.2	<5	18
	14	6.5	7.8	<5	18
	16	6.7	6.7	5.3	19
	18	8.8	8.8	<5	16
Total Suspended Solids	3,840	126	3,333	6,018	40

NOTE: All results expressed in mg/l unless noted otherwise.
+ Sampled on July 29, 1986, all other wells sampled on June 17, 1986
^ Samples filtered and reanalyzed due to high solids. Reanalysis exceeded recommended holding time.
± Maximum and minimum of range obtained from analytical results sampled from August 1983 to September 1985.

CENTRAL HUDSON
GAS & ELECTRIC CORPORATION

284 SOUTH AVENUE, POUGHKEEPSIE, N. Y. 12601-4879 (914) 452-2000

September 25, 1986

Mr. Paul R. Counterman, P.E.
Chief, Bureau of Hazardous
Waste Technology
Division of Solid and
Hazardous Waste
New York State Department of
Environmental Conservation
50 Wolf Road
Albany, New York 12233-001

Re: Detection Monitoring - Danskammer
Generating Station NYD 980592612

Dear Mr. Counterman:

Central Hudson herein notifies you as required in 6 NYCRR Part 373-3(d)(4)(i) that analyses of the groundwater monitoring samples collected downgradient of the Danskammer facility show significant t-test differences with upgradient wells for pH and specific conductance. As the data collected in June and July 1986 is consistent with previous data from the facility, it is unnecessary, in our opinion, to conduct resampling to confirm those data as allowed for under 6 NYCRR 3733.6(d)(3)(ii).

We are developing a plan for assessing the data relative to its effects on groundwater quality at the facility. This plan will be submitted to you within 15 days of the date of this letter.

In the meantime, if you or your staff have any questions, please call me at (914) 486-5534.

Very truly yours

J. A. Clock

Jeffrey A. Clock
Environmental Coordinator-
Industrial Wastes

JAC55:ifs

bxc: Messrs. J. J. Checklick
L. Rummler

CENTRAL HUDSON
GAS & ELECTRIC CORPORATION

284 SOUTH AVENUE, POUGHKEEPSIE, N. Y. 12601-4879 (914) 452-2000

September 29, 1986

Mr. Paul R. Counterman, P.E.
Chief, Bureau of Hazardous
Waste Technology
Division of Solid and
Hazardous Waste
New York State Department
of Conservation
50 Wolf Road
Albany, New York 12233-001

Re: Groundwater Quality Assessment
Danskammer Point Generating Station
NYD 980592612

Dear Mr. Counterman:

In a letter dated September 25, 1986, Central Hudson notified you of significant differences between background upgradient and downgradient values for pH and conductivity at the Danskammer facility. You may recall that a similar finding was reported in September 1985 and that subsequently an assessment of groundwater quality was conducted. The finding of that assessment was that no hazardous waste or hazardous waste constituents were migrating to groundwater.

Central Hudson has been advised by our consultant, LMS Engineers, that they have assessed the most recent data and that there has been no deviation from the previously assessed conditions at the facility. Table 1 provides a comparison of the most recent monitoring data with that evaluated in the assessment report. As can be seen, values fall within the range of the previously collected data.

Furthermore, hazardous wastes have not been treated or stored at Danskammer since February 1985. The facility is in the process of implementing the approved closure plan.

LMS' assessment of the most recent data and the fact that closure is in progress, is adequate, we believe, to respond to the requirements of 6NYCRR 373-3.6 for an assessment plan. A post operational groundwater monitoring program will be initiated immediately

following closure. This program provides for continued verification of the assessment that hazardous waste is not migrating from the facility.

If you or your staff have any questions or require any further information, please do not hesitate to call me. My telephone number is 914-486-5534.

Very truly yours

J A Clock

Jeffrey A. Clock
Coordinator, Industrial Wastes

JAC57:ifs
Encl.

bxc: Mr. J. C. Checklick
Mr. L. H. Rummler

TABLE 1. SEMI-ANNUAL GROUNDWATER MONITORING
JUNE/JULY 1986 DANSKAMMER GENERATING STATION

Parameter[a]	Monitoring Well M_1	M_2	M_3	M_4	M_5	Range*
pH (SU	7.70 7.60 7.67 7.64	4.60 4.59 4.51 4.61	10.47 10.53 10.47 10.47	9.40 9.29 9.21 9.32	6.50	4.4- 11.0
Spec. Conductance (umhos@25C)	1,680 1,710 1,710 1,670	2,320 2,380 2,440 2,350	2,190 2,180 2,150 2,130	990 1,090 1,090 1,020	1,572	730- 6,900
Total Organic Carbon	4.98 3.77 5.4 4.24	5.45 4.06 7.17 4.28	3.35 2.91 2.67 2.53	5.67 2.53 3.30 2.18	162 180 166 171	1.8-264
Total Organic Halogen (ug/l)	15 14 16 18	7.8 6.5 6.7 8.8	6.2 7.8 6.7 8.8	5 5 5.3 5	18 18 19 16	522
Chloride	145	18	43	17	17	1-203
Fluoride	7.8	0.1	0.1	0.1	0.29	10.1
Nitrate[b]	0.1	4.3	0.2	0.1	ND	10.7
Sodium	382.5	62.5	292.5	87.5	21.0	13-1092
Sulfate	915	1,844	1,367	815	823	12-4188

a. All results expressed in mg/l unless noted otherwise.

b. Samples filtered and re-analyzed due to high solids. Re-analyses exceed recommended holding time.

ND Not detected

* Maximum and minimum of range obtained from analytical results sampled from August 1983 to September 1985.

CENTRAL HUDSON
GAS & ELECTRIC CORPORATION

284 SOUTH AVENUE, POUGHKEEPSIE, N. Y. 12601-4879 (914) 452-2000

October 15, 1986

Mr. Paul R. Counterman, P.E.
Chief, Bureau of Hazardous Waste Technology
Division of Solid and Hazardous Waste
New York State Department of Conservation
50 Wolf Road
Albany, New York 12233-0001

Re: Groundwater Quality Assessment Report
Danskammer Point Generating Station
NYD 980592612

Dear Mr. Counterman:

Central Hudson has further assessed groundwater monitoring data collected in July 1986 at the Danskammer plant. Downgradient well data collected during this period, when compared statistically with upgradient background values, showed significant differences for pH and conductivity. You were notified of this finding in a letter dated September 25, 1986.

Central Hudson's plan for assessing the latest data by comparing it with previously collected and assessed data from the plant, was submitted to you on September 29,1986.

Central Hudson has been advised by our consultant, LMS Engineers, that a comparison has been done which shows that there has been no deviation from the previously assessed conditions at the facility. As can be seen from a comparison of the most recent data and that previously assessed (Table 1), all data falls within the range of previously analyzed data.

The results of the t-test analysis for September 1984 (Table 2) and July 1986 (Table 3) show the same trends. Average pH values for downgradient wells M_1 (7.65 in 1984 and 1986) and M_2 (4.58 in 1986 and 5.10 in 1984) were both significantly less than upgradient pH (8.32). Downgradient well M_3 showed significant pH increases in both 1985 and 1986. Downgradient specific conductance concentrations were significantly higher both years. Downgradient concentrations of the two other indicator parameters, TOC and TOX, continue to be less than background.

Based on these comparisons, we do not believe that any significant changes have occurred with respect to groundwater quality which would change the conclusion of our assessment that no hazardous waste or hazardous waste constituents are migrating to groundwater. No hazardous wastes have been treated or stored at Danskammer since February 1985. Corrosive hazardous wastes that were previously treated in the Danskammer surface impoundments are now neutralized in Elementary Neutralization Units prior to their discharge to the treatment facility.

The facility is now implementing the approved closure plan. A post operational groundwater monitoring program will be initiated immediately following closure. We believe that this program provides for continued verification that hazardous waste is not migrating from the facility.

If you or your staff have any questions, please do not hesitate to call me.

Very truly yours

JAClock

Jeffrey A. Clock
Environmental Coordinator
Industrial Wastes

JAC63:ifs
Attachs.

cc: Messrs. J. C. Checklick
L. H. Rummler

TABLE 1. SEMI-ANNUAL GROUNDWATER MONITORING
JUNE/JULY 1986 DANSKAMMER GENERATING STATION

Parameter[a]	Monitoring Well M_1	M_2	M_3	M_4	M_5	Range*
pH (SU	7.70 7.60 7.67 7.64	4.60 4.59 4.51 4.61	10.47 10.53 10.47 10.47	9.40 9.29 9.21 9.32	6.50	4.4– 11.0
Spec. Conductance (umhos@25C)	1,680 1,710 1,710 1,670	2,320 2,380 2,440 2,350	2,190 2,180 2,150 2,130	990 1,090 1,090 1,020	1,572	730– 6,900
Total Organic Carbon	4.98 3.77 5.4 4.24	5.45 4.06 7.17 4.28	3.35 2.91 2.67 2.53	5.67 2.53 3.30 2.18	162 180 166 171	1.8–264
Total Organic Halogen (ug/l)	15 14 16 18	7.8 6.5 6.7 8.8	6.2 7.8 6.7 8.8	5 5 5.3 5	18 18 19 16	522
Chloride	145	18	43	17	17	1–203
Fluoride	7.8	0.1	0.1	0.1	0.29	10.1
Nitrate[b]	0.1	4.3	0.2	0.1	ND	10.7
Sodium	382.5	62.5	292.5	87.5	21.0	13–1092
Sulfate	915	1,844	1,367	815	823	12–4188

a. All results expressed in mg/l unless noted otherwise.

b. Samples filtered and re-analyzed due to high solids. Re-analyses exceed recommended holding time.

ND Not detected

* Maximum and minimum of range obtained from analytical results sampled from August 1983 to September 1985.

TABLE 2

t-TEST FOR DEVIATIONS FROM
INITIAL BACKGROUND QUALITY

Danskammer Point Groundwater Data

PARAMETER	LOCATION		MEAN	STANDARD DEVIATION	n	CHANGE	t	SIGNIFICANCE
pH	Initial Background (August 1983-May 1984)	M4 & M5	8.32	1.25	32	-	-	-
	Down gradient (August 1984)	M1	7.65	0.06	4	Decrease	-3.0	Significant at 0.01 level
	Down gradient (August 1984)	M2	5.10	0.00	4	Decrease	-14.6	Significant at 0.01 level
	Down gradient (August 1984)	M3	9.82	0.29	4	Increase	5.7	Significant at 0.01 level
Specific Conductance	Initial Background (August 1983-May 1984)	M4 & M5	1273	129	32	-	-	-
	Down gradient (August 1984)	M1	1870	0	4	Increase	26.2	Significant at 0.01 level
	Down gradient (August 1984)	M2	2882	15	4	Increase	67.2	Significant at 0.01 level
	Down gradient (August 1984)	M3	6300	0	4	Increase	221.0	Significant at 0.01 level
Total Organic Carbon (TOC)	Initial Background (August 1983-May 1984)	M4 & M5	42.0	72.0	32	-	-	-
	Down gradient (August 1984)	M1	4.4	0.4	4	Decrease	-3.0	-
	Down gradient (August 1984)	M2	2.6	3.4	4	Decrease	-3.1	-
	Down gradient (August 1984)	M3	0.1	0.2	4	Decrease	-3.0	-
Total Organic Halides (TOX)	Initial Background (August 1983-May 1984)	M4 & M5	68.3	89.0	32	-	-	-
	Down gradient (August 1984)	M1	18.4	2.4	4	Decrease	-3.2	-
	Down gradient (August 1984)	M2	4.1	1.8	4	Decrease	-4.1	-
	Down gradient (August 1984)	M3	11.4	4.3	4	Decrease	-3.6	-

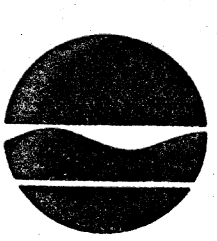
TABLE 3

t-TEST FOR DEVIATIONS FROM INITIAL BACKGROUND QUALITY

Danskammer Point Generating Data - July 1986

PARAMETER	LOCATION		MEAN	STANDARD DEVIATION	n	CHANGE	t	SIGNIFICANCE
pH	Initial Background (Aug 1983-May 1984)	M4 & M5	8.32	1.25	32	-	-	-
	Downgradient (Jul 1986)	M1	7.65	0.04	4	Decrease	3.04	Not significant at 0.01 level
	Downgradient (Jul 1986)	M2	4.58	0.05	4	Decrease	16.92	Significant at 0.01 level
	Downgradient (Jul 1986)	M3	10.48	0.03	4	Increase	9.78	Significant at 0.01 level
TOX	Initial Background (Aug 1983-May 1984)	M4 & M5	68	8 9	32	-	-	-
	Downgradient (Jul 1986)	M1	16	1.71	4	Decrease	3.34	Significant at 0.01 level
	Downgradient (Jul 1986)	M2	7	1.07	4	Decrease	3.87	Significant at 0.01 level
	Downgradient (Jul 1986)	M3	7	1.16	4	Decrease	3.87	Significant at 0.01 level
Specific Conductance	Initial Background (Aug 1983-May 1984)	M4 & M5	1273	129	32	-	-	-
	Downgradient (Jul 1986)	M1	1692	21	4	Increase	16.79	Significant at 0.01 level
	Downgradient (Jul 1986)	M2	2372	51	4	Increase	32.09	Significant at 0.01 level
	Downgradient (Jul 1986)	M3	2162	28	4	Increase	33.45	Significant at 0.01 level
TOC	Initial Background (Aug 1983-May 1984)	M4 & M5	42	72	32	-	-	-
	Downgradient (Jul 1986)	M1	5	0.7	4	Decrease	2.94	Not significant at 0.01 level
	Downgradient (Jul 1986)	M2	5	1.32	4	Decrease	2.88	Not significant at 0.01 level
	Downgradient (Jul 1986)	M3	3	0.4	4	Decrease	3.08	Not significant at 0.01 level

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233-4016



Henry G. Williams
Commissioner

NOV 0 7 1986

Mr. Jeffrey A. Clock
Environmental Coordinator
Industrial Wastes
Central Hudson Gas &
Electric Corporation
284 South Street
Poughkeepsie, NY 12601-4879

Dear Mr. Clock: Jeff

Re: Groundwater Quality Assessment Report
Danskammer - NYD980952612

The New York State Department of Environmental Conservation (NYSDEC) has reviewed Danskammer's Groundwater Quality Assessment Report submitted on October 15, 1986.

The NYSDEC finds your report satisfactory. From the data you submitted, the conditions at Danskammer appear to be the same as those assessed in your October, 1985 report; no groundwater degradation from the surface impoundments has occurred.

As stated in your letter, the post-operational groundwater monitoring program will be initiated immediately following closure. However, if circumstances prevent physical closure from being completed by December 31, 1986, Danskammer may substitute the first quarterly post-operational groundwater sampling event for the December, 1986 semi-annual detection monitoring sampling event.

If you have any questions regarding the sampling program, call me at (518) 457-9255.

Sincerely,

Luanne F. Whitbeck

Luanne F. Whitbeck
Assistant Engineering Geologist
Engineering Geology Section
Bureau of Hazardous Waste Technology
Division of Solid and Hazardous Waste

cc: S. Siegel, USEPA Region II
S. Potter, Region 3, New Paltz
S. Ghosh

Lawler, Matusky & Skelly Engineers

Environmental Science & Engineering Consultants

JOHN P. LAWLER, P. E.
FELIX E. MATUSKY, P. E.
MICHAEL J. SKELLY, P. E.
KARIM A. ABOOD, P. E.
PATRICK J. LAWLER, P. E.
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THOMAS L. ENGLERT, P. E.

ONE BLUE HILL PLAZA
P. O. BOX 1509
PEARL RIVER, NEW YORK 10965
(914) 735-8300
TWX: LMSE PERL 710-577-2782

25 February 1987
File No. 176-212

Mr. Jeffrey A. Clock
Environmental Affairs Division
Central Hudson Gas & Electric Corp.
284 South Avenue
Poughkeepsie, New York 12602

Dear Mr. Clock:

Enclosed please find our "Interpretation of Water Level Data from RCRA Monitoring at Danskammer Point through December 1986" for your use.

Very truly yours,

Thomas E. Pease, P.E.
Project Manager

INTERPRETATION OF WATER LEVEL DATA
FROM RCRA MONITORING AT DANSKAMMER POINT, 1986

Groundwater monitoring at the facility in 1986 included sampling five wells. Those wells, designated M-1 through M-5 on Figure 1, were installed in the spring of 1983. Wells designated M-4 and M-5 are upgradient wells for the equalization (E) basin and the acid (A) basin, respectively. Monitoring wells M-2 and M-3 were located downgradient of the E basin; M-1 is downgradient of the A basin. In the fall of 1985 additional wells M-6, M-7, M-8S, M-8D, M-9 and M-10 were installed as part of the groundwater assessment program. The assessment program indicated the general direction of the groundwater flow from south to north beneath the A basin and from the southwest toward the north under the E basin.

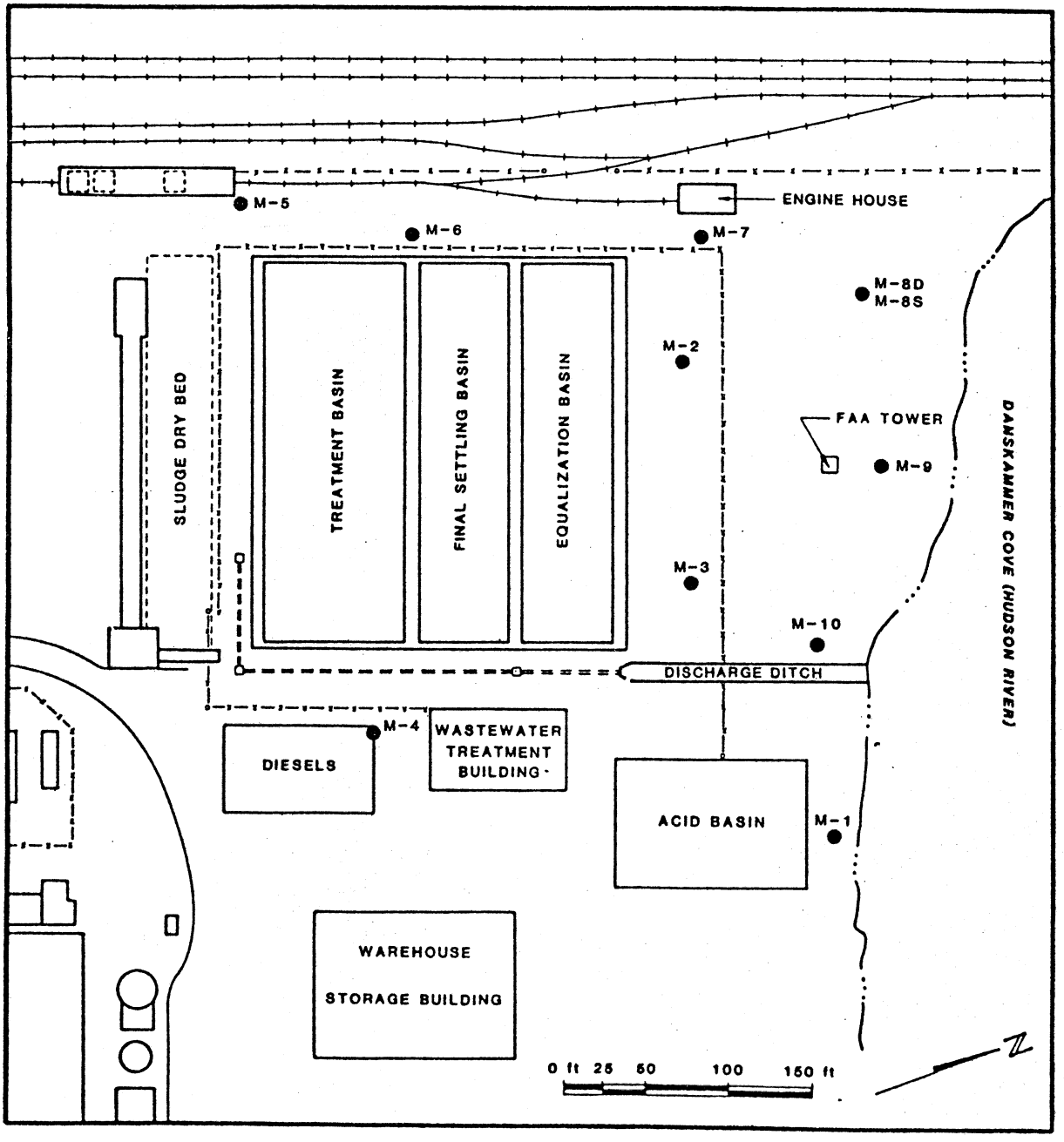
During 1986 semi-annual sampling was conducted. However, Well M-5 was damaged by nearby construction and replaced by use of M-6 during the year. Well M-8S was judged a more representative downgradient location than M-2. Thus the second sampling (December 1986) involved sampling M-1, M-3, M-4, M-6 and M-8S. Table 1 lists water levels at the monitoring wells sampled in 1986 and shows that M-5 and M-6 are upgradient of all impoundments. Comparisons of M-4 with M-1 water levels illustrates that M-4 is consistently upgradient of the M-1 location. In summary, water levels measured during the RCRA monitoring program in 1986 have demonstrated that M-4, M-5, and M-6 are upgradient of the subject facility and are expected to represent background quality at the site.

Significant differences as specified under 40 CFR 265 were detected by the t-test of indicators in June-July 1986. The data were analyzed (23 October 1986) to establish that conditions had not changed significantly from those assessed previously. In December 1986 the Follow up Assessment Monitoring Program specified by the New

York State Department of Environmental Conservation was implemented. That program entails quarterly monitoring of pH, specific conductance, chloride, chromium, fluorides, lead, sodium, sulfate, and total suspended solids at M-1, M-3, M-4, M-6, and M-8S. The Follow up Program will continue in 1987.

FIGURE 1-1

WASTEWATER TREATMENT FACILITY
Danskammer Point Generating Station



File No. 176-212

TABLE 1

WATER TABLE ELEVATIONS

AT M WELLS 1986

	M-1	M-2	M-3	M-4	M-5	M-6	M-8s
June - July	2.9	4.4	4.1	4.5	8.5	NM	NM
December	3.0	NM	3.6	4.3	NM	4.2	2.2

NM - Not Measured

Lawler, Matusky & Skelly Engineers

Environmental Science & Engineering Consultants

JOHN P. LAWLER, P. E.
FELIX E. MATUSKY, P. E.
MICHAEL J. SKELLY, P. E.
KARIM A. ABOOD, P. E.
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TWX: LMSE PERL 710-577-2782

25 February 1987
File No. 176-212

Mr. Jeffrey A. Clock
Central Hudson Gas & Electric Corporation
284 South Avenue
Poughkeepsie, NY 12601-4879

Dear Mr. Clock:

Enclosed are analytical results from the December 1986 sampling of the "M" Wells at your Danskammer facility, pursuant to the Follow-up Assessment Monitoring Program.

Very truly yours,

Thomas E. Pease, Ph.D., P.E.
Project Manager

TEP:jms
Encl.

File No. 176-212

TABLE 1

GROUNDWATER QUALITY RESULTS

FOLLOW-UP ASSESSMENT MONITORING PROGRAM

18 December 1986

	Upgradient		Downgradient		
	M-4	M-6	M-1	M-3	M-8
Fluoride, mg/l	<0.1	<0.1	10.9	<0.1	0.4
Chloride, mg/l	13	17	136	68	44
Chromium (total), mg/l	<0.03	<0.03	<0.03	<0.03	<0.03
Lead, mg/l	<0.005	<0.005	<0.005	<0.005	<0.005
pH	9.5	7.4	7.9	10.8	7.2
Sodium, mg/l	94	90	360	500	295
Conductivity, μmhol/cm	1700	2900	2900	4000	3400
Sulfate, mg/l	1050	1240	950	1720	990
TSS, mg/l	3	62	<1	3	110