

ATTACHMENT VI
to
FINAL RFA REPORT

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ATTACHMENT VII
to
FINAL RFA REPORT

SITE INVESTIGATION AND REMEDIATION

ADDENDUM

HAZELTINE CORPORATION

COMMACK, NEW YORK

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February, 1990

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CORPORATION

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This report is written as an addendum to the January 1990 report prepared by Radian entitled "Site Investigation and Remediation, Hazeltine Corporation, Commack, New York". The addendum specifically addresses implementation of the recommendations in the report for additional cesspool sampling and investigation of the pipe leading from an underground concrete vault.

AD.2.0 INVESTIGATION OF UNDERGROUND VAULT PIPE

The pipe leading from the concrete underground vault on the south side of the building (See Figure 1) was traced using water and dye to confirm that it leads to the facility's recharge basin. Water and dye were traced by visual observation of the dye from the five manholes along the pipes length on its way to the recharge basin. Observation of the dye flowing from the vault through the pipe to the recharge basin confirmed connection of the vault to the basin.

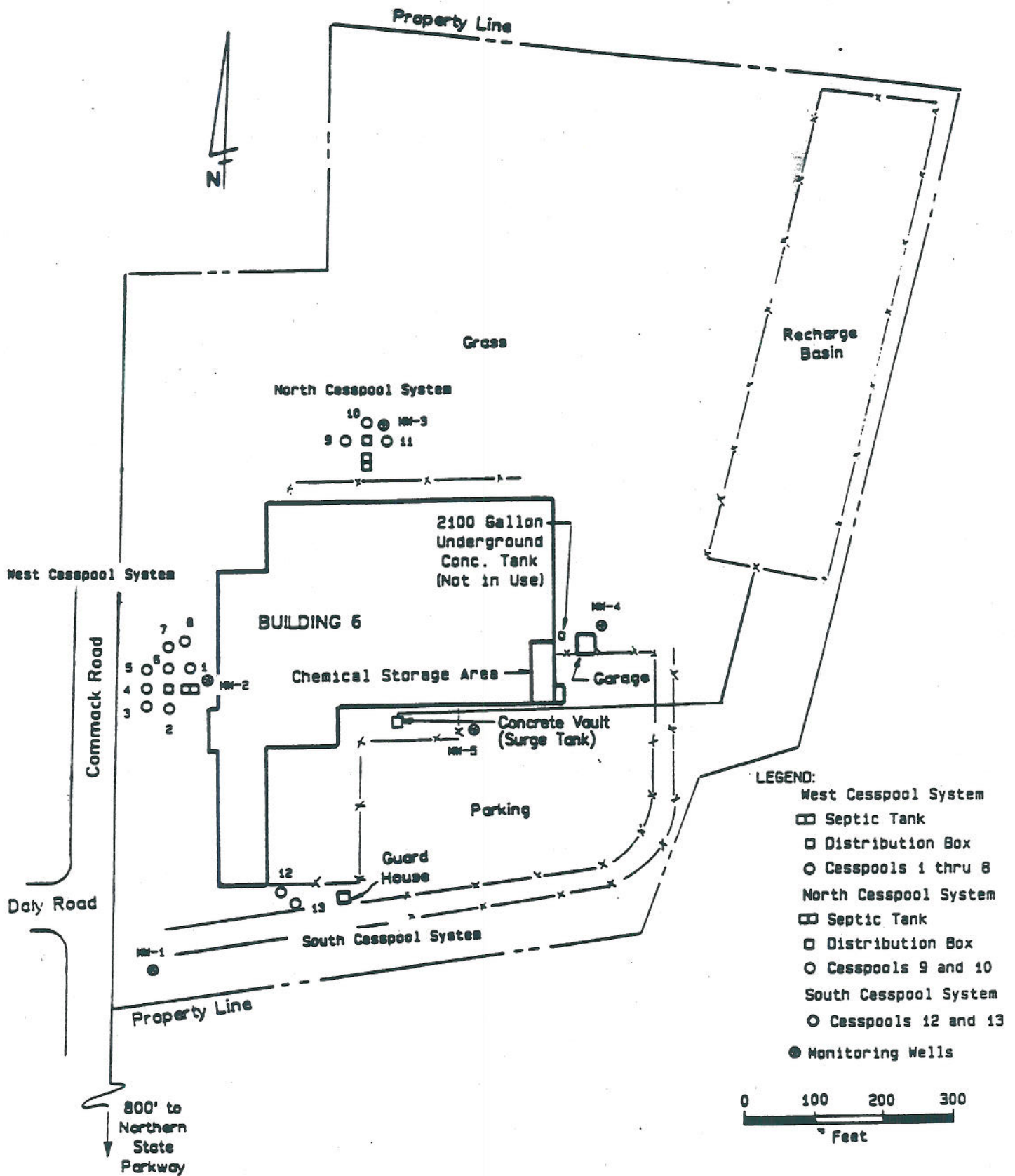


Figure 1 Hazeltine Corporation Facility Layout
Showing Cesspools, Vaults and Monitoring Wells

The following sections summarize the samples taken and analytical results obtained during the sampling of the additional cesspool system structures which occurred in January, 1990. Analytical results for the samples previously collected from cesspools 3, 10, and 13 are documented in January, 1990 Site Investigation and Remediation report.

Samples were collected from each of the structures in the three systems with the exception of the three noted above which were previously sampled. Soil samples were collected from the bottom of each structures where it was possible. Soil samples could not be obtained from the septic tanks and distribution box structures with concrete bottoms. A soil sample also could not be obtained from cesspool number 5 as the bottom was too hard to allow the sampling equipment to penetrate and collect samples. Liquid samples were collected from those structures where solid samples could not be obtained. Figure 1 shows the location of the cesspool structures at the facility.

All of the samples collected were analyzed for volatile organic compounds (VOCs) by EPA methods 8010 and 8020, and total metals by EPA method 6010. The attached tables AD-1 through AD-4 present a summary of the compounds detected in these samples. Hard copies of the raw analytical data are available upon request.

Samples were analyzed by Radian Corporations laboratory in Austin, Texas. Radian's laboratory holds current New York State Department of Health Certification.

All samples were collected, preserved, and analyzed by method protocols specified in SW-846, 3rd edition. All method-specified quality assurance and quality control procedures were followed.

AD.3.1 West Cesspool System

Samples were collected from the septic tank, distribution box, and cesspools 1,2,4,5,6,7, and 8. A duplicate sample was also collected from cesspool number 6. Soil was collected for all of the structures with the exception of the distribution box, the septic tank and cesspool number 5. Liquid samples were collected from each of these structures.

AD.3.2 North Cesspool System

Liquid samples were collected from the septic tank and distribution box in this system. A soil sample was collected from the bottom of cesspool number 9.

AD.3.3 South Cesspool System

Liquid samples were collected from cesspool number 12 in this system. This cesspool actually acts as a septic tank for the adjacent cesspool number 13.

AD.4.0 DISCUSSION OF ANALYTICAL RESULTS

The following sections discuss the analytical results presented in Section AD.3.0. A summary of the compounds detected are included in the attached Tables AD-1 through AD-4.

AD.4.1 West Cesspool System

No volatile organic compounds were detected above 0.1 parts per million (ppm) in the soil samples collected from cesspools 1 and 7. Less than 0.01 ppm volatile organic compounds were detected in the liquid samples collected from cesspool number 5, the distribution box, and the septic tank. Several other volatile organic compounds were detected in the soil samples from cesspools 2, 4, 6, and 8 at concentrations less than 5 ppm.

A significant difference in the results for the two samples collected from cesspool number 6 were noted. Total xylenes were detected in one of the samples at 0.01 ppm and at 2.9 ppm in the other sample collected. This is outside the degree of variability normally associated with random soil sampling. This variability is most likely due both to the heterogeneity of the media sampled and the difficulty of collecting side by side duplicate composite samples from a large area that is under water and must be sampled remotely.

Lead and chromium were detected in the soil samples from cesspools 2, 4, and 8 at concentrations less than 100 and 210 ppm, respectively. These analytes were detected at similar levels in the samples of sludge collected from these structures prior to cleaning of the cesspools, with the exception of the samples collected from the distribution box. Approximately 400 ppm of both lead and chromium were detected in the sludge from this structure prior to removal and cleaning activities. An EP toxicity test for metals was performed on the this sludge (as cited in Radian's September, 1989 "Site Assessment Report") and no metals were detected in the extract above the EP

toxicity characteristic limits for metals. No sludge remained in this concrete bottom structure after cleaning, and no lead or chromium were detected in the liquid samples collected from this structure after cleaning.

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No other analytes of concern were detected in the samples collected from the structures in this system.

AD.4.2 North and South Cesspool Systems

No volatile organic compounds were detected in the samples collected from the structures in this system above 0.15 ppm. Lead and chromium were detected in the soil sample from cesspool number 9 from the north system at concentrations less than 10 ppm. No other analytes of concern were detected in the samples collected from the structures in this system.

TABLE AD-1. VOLATILE ORGANIC COMPOUNDS DETECTED (EPA METHODS 8010/8020)
AFTER CLEANING, WEST CESSPOOL SYSTEM SAMPLES,
HAZELTINE CORPORATION, COMMACK, NEW YORK

Parameter	Cesspool #1 μg/kg	Cesspool #2 μg/kg	Cesspool #4 μg/kg	Cesspool #5 μg/l	Cesspool #6 μg/kg
1,4-Dichlorobenzene	<3.0	<30	2,000	<12	20
Ethylbenzene	6.3*	4,400	4,900	<0.20	330
Tetrachloroethene	<1.3	1,500	<13	<5.0	<1.3
1,1-Dichloroethane	<6.3	<63	<63	<25	<6.3
1,1,1-Trichloroethane	<25	<25	<25	<2.5	<2.5
Toluene	52	800	<500	5.5	<50
Total Xylenes	21	4,100	4,900	6.78*	2,900

Parameter	Duplicate Cesspool #6 μg/kg	Cesspool #7 μg/kg	Cesspool #8 μg/kg	West D. Box μg/l	West S. Tank μg/kg
1,4-Dichlorobenzene	<3.0	<3.0	1,100	1.3	<0.24
Ethylbenzene	2.8*	<2.5	52*	<0.20	<0.20
Tetrachloroethene	<1.3	<1.3	<13	<0.10	<0.10
1,1-Dichloroethane	<6.3	<6.3	<63	0.58*	0.54*
1,1,1-Trichloroethane	<2.5	<2.5	<25	0.88*	0.86*
Toluene	<2.5	6*	2,700	9.5	11
Total Xylenes	10*	20	290	0.88*	<0.20

*Estimated result, less than five times detection limit.

TABLE AD-2. TOTAL METALS DETECTED (EPA METHOD 6010)
AFTER CLEANING, WEST CESSPOOL SYSTEM SAMPLES,
HAZELTINE CORPORATION, COMMACK, NEW YORK

Parameter	Cesspool #1 mg/kg	Cesspool #2 mg/kg	Cesspool #4 mg/kg	Cesspool #5 mg/l	Cesspool #6 mg/kg
Aluminum	260	390	1,300	<0.20	880
Antimony	<13	<13	<13	<0.20	<13
Arsenic	<20	<20	<20	<0.30	<20
Barium	3.7	40	87	0.018*	200
Beryllium	<0.13	<0.13	<0.13	<0.0020	<0.13
Boron	<40	<40	<40	<0.60	<40
Cadmium	<0.34	8.5	12	<0.0050	1.6*
Calcium	140*	750	970	18	1,500
Chromium	0.87*	65	91	<0.010	7.0
Cobalt	<0.67	1.1*	1.1*	<0.010	0.93*
Copper	3.0*	460	770	0.22	99
Iron	210	920	1,600	0.74	2,300
Lead	<3.4	80	68	<0.050	12*
Magnesium	<67	130*	210*	2.3*	470
Manganese	1.2*	3.6	8.0	0.022*	15
Molybdenum	<3.4	4.1*	7.9*	<0.050	<4.1
Nickel	<1.3	2.8*	2.5*	<0.020	4.4*
Potassium	<200	<200	<200	15	<200
Selenium	<20	<20	<20	<0.30	<20
Silicon	290*	380	430	4.6*	400*
Silver	<0.67	3.1*	2.3*	<0.010	1.1*
Sodium	140*	140*	150*	22	190*
Strontium	0.93*	3.7	6.2	0.067	8.6
Thallium	<6.7	<6.7	<6.7	<0.10	<6.7
Vanadium	<1.3	2.0*	4.8*	<0.020	<1.6
Zinc	4.3*	2,000	3,300	0.16	540

*Estimated result, less than five times detection limit.

TABLE AD-2. TOTAL METALS DETECTED (EPA METHOD 6010)
AFTER CLEANING, WEST CESSPOOL SYSTEM SAMPLES,
HAZELTINE CORPORATION, COMMACK, NEW YORK (CONTINUED)

Parameter	Duplicate Cesspool #6 mg/kg	Cesspool #7 mg/kg	Cesspool #8 mg/kg	West D. Box mg/l	West S. Tank mg/l
Aluminum	6,800	400	1,200	<0.20	<0.20
Antimony	<15	<14	<13	<0.20	<0.20
Arsenic	<22	<21	<20	<0.30	<0.30
Barium	120	6.6	100	0.022*	0.031*
Beryllium	0.20*	<0.14	<0.13	<0.0020	<0.0020
Boron	<44	<43	<40	<0.60	<0.60
Cadmium	<0.37	<0.36	5.2	<0.005	<0.005
Calcium	740	300*	1,600	19	26
Chromium	17	2.4*	210	<0.010	<0.010
Cobalt	4.6	<0.71	0.069*	<0.010	<0.010
Copper	21	12	1,100	0.22	0.19
Iron	4,600	660	1,500	0.69	0.59
Lead	19	12*	100	<0.050	<0.050
Magnesium	1,700	140*	<120	2.4*	2.0*
Manganese	54	6.6	12	0.025*	0.025*
Molybdenum	9.6*	<3.6	4.3*	<0.050	<0.050
Nickel	5.7*	3.7*	3.0*	<0.020	<0.020
Potassium	970*	<210	<200	17	11*
Selenium	49*	<21	24*	<0.30	<0.30
Silicon	330*	260*	460	5.3	6.6
Silver	<.73	0.74*	13	<0.010	<0.010
Sodium	190*	160*	150*	25	28
Strontium	7.6	2.4	8.5	0.068	0.12
Thallium	<7.3	<7.1	9.0*	<0.10	<0.10
Vanadium	7.1*	<1.4	3.9*	<0.020	<0.020
Zinc	42	46	1,100	0.30	0.60

*Estimated result, less than five times detection limit.

TABLE AD-3. VOLATILE ORGANIC COMPOUNDS DETECTED (EPA METHODS 8010/8020)
AFTER CLEANING, NORTH AND SOUTH CESSPOOL SYSTEM SAMPLES,
HAZELTINE CORPORATION, COMMACK, NEW YORK

Parameter	North Cesspool #9 μg/kg	North Septic Tank μg/l	North Dist. Box μg/l	South Cesspool #12 μg/l
Benzene	6.9*	<0.20	<2.0	<2.0
1,4-Dichlorobenzene	<3.8	<0.24	<0.24	<0.24
1,1-Dichloroethane	<6.3	<0.50	<0.50	0.73*
Ethylbenzene	<2.5	<0.20	<2.0	1.3
Tetrachloroethene	<1.3	<0.10	<0.10	0.30*
Toluene	<2.5	1.3	<2.0	1.3
1,1,1-Trichloroethane	<2.5	<0.20	<0.20	1.1
Total Xylenes	12	0.91*	<2.0	<0.20

*Estimated result, less than five times detection limit.

TABLE AD-4. TOTAL METALS DETECTED (EPA METHOD 6010)
AFTER CLEANING, NORTH AND SOUTH CESSPOOL SYSTEM SAMPLES,
HAZELTINE CORPORATION, COMMACK, NEW YORK

Parameter	North Cesspool #9 mg/kg	North Septic Tank mg/l	North Dist. Box mg/l	South Cesspool #12 mg/l
Aluminum	2,200	<0.20	0.23*	<0.20
Antimony	<14	<0.20	<0.20	<0.20
Arsenic	<20	<0.30	<0.30	<0.30
Barium	13	<0.010	0.012	0.011*
Beryllium	0.14*	<0.0020	<0.0020	<0.0020
Boron	<41	<0.60	<0.60	<0.60
Cadmium	<0.34	<0.0050	<0.0050	<0.0050
Calcium	350	22	20	23
Chromium	3.4	<0.010	<0.010	<0.010
Cobalt	1.3*	<0.010	<0.010	<0.010
Copper	7.8	<0.020	0.020*	0.16
Iron	2,200	0.19*	1.0	0.61
Lead	8.7*	<0.050	<0.050	<0.050
Magnesium	400	2.0*	2.5*	3.3*
Manganese	25	<0.010	<0.010	0.019*
Molybdenum	<3.4	<0.050	<0.050	<0.050
Nickel	<1.4	<0.020	<0.020	0.051*
Potassium	<200	12*	20	30
Selenium	<20	<0.30	<0.30	<0.30
Silicon	210*	4.3*	6.2	7.5
Silver	<0.68	<0.010	<0.010	<0.010
Sodium	150*	19	28	35
Strontium	2.3	0.15	0.064	0.11
Thallium	<6.8	<0.10	<0.10	<0.10
Vanadium	3.6*	<0.020	<0.020	<0.020
Zinc	89	0.028*	0.065*	0.11

*Estimated result, less than five times detection limit.

The facility's sanitary waste disposal system of septic tanks, cesspools, and distribution boxes were cleaned out. Samples of soil from the bottom of the structures or liquid from the structures where no soil was obtainable were collected from the structures after cleaning. The results of the analysis of these samples, cited in this addendum and the previous report showed that most of the analytes of concern found during the site survey were removed. The highest concentrations of analytes of concern detected after cleaning of the cesspool systems were found in the three structures previously sampled and documented in the January, 1990 "Site Investigation and Remediation Report". Ground-water samples collected from monitoring wells installed downgradient of each system showed no evidence of waste constituent migration from these systems.

The findings from the summer 1989 site survey and site assessment, that there is no evidence of significant impact to the surrounding environment due to past waste disposal and handling practices at the facility, were substantiated by the site remediation and investigation analytical results cited in this addendum and the earlier Investigation and Remediation report. Sources of potential future discharge or release of waste constituents to the surrounding environment were removed and disposed. The actions taken during the investigation and remediation phases of this work are in accordance with the Remediation Work Plan prepared by Radian and approved by the Suffolk County Department of Health Services and the New York State Department of Environmental Conservation.

To the best of Radian's ability, all potential sources of environmental impact on the site have been investigated and removed where evidence of their impact existed. With the exception of the encapsulation of deteriorating asbestos cited in the previous report, Radian recommends no further remediation or investigation activities at this site.