Formerly Utilized Sites Remedial
Action Program (FUSRAP)

Maywood Chemical Company Superfund Site

ADMINISTRATIVE RECORD

Document Number

MISS- 017.

US Army Corps
of Engineers®

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Bechtel National, Inc.
Engineers – Constructors

Jackson Plaza Tower
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37830

Mail Address: P.O. Box 350, Oak Ridge, TN 37831-0350
Telex: 3785873

SEP 3 1986

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107 Essex

U.S. Department of Energy
Oak Ridge Operations
Post Office Box E
Oak Ridge, Tennessee 37831

Attention: R. G. Atkin, Site Manager
Technical Services Division

Subject: Bechtel Job No. 14501, FUSRAP Project
DOE Contract No. DE-AC05-81OR20722
Radiological Survey Report for the Scanel Property, Maywood, New Jersey
File No. 069, 138-A

Dear Mr. Atkin:

In November and December of 1985, Bechtel National, Inc. (BNI) performed a radiological characterization of the Scanel property in Maywood, New Jersey to establish the depth and areal limits of surface and subsurface contamination on the property. A limited chemical characterization was also performed to provide the information needed for development of: (1) a waste containment facility design that complies with applicable Resource Conservation and Recovery Act (RCRA) requirements, and (2) appropriate employee health protection measures to be implemented during remedial action. This letter describes the methods used for characterization of the Scanel property and presents the findings of the characterization survey.

SITE DESCRIPTION AND BACKGROUND

The Scanel property is a 1-1/2-acre vacant lot in Maywood, New Jersey, about 2 mi from the Maywood Interim Storage Site (MISS). The property approximates the shape of an isosceles triangle (Figure 1). The northern and southern sides of the triangle are each about 750 ft long, and the west side measures 150 ft. The "point" of the triangle on the east side

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of the property narrows to a width of about 5 ft. The north side of the property borders on the right-of-way to the Hackensack and Lodi Railroad; a single-line spur and a siding are located on this right-of-way. The southern side borders on Coles Brook, which serves as a drainage pathway from Essex Street.

The Maywood Chemical Works formerly served as a facility for the processing of thorium from monazite sands. It is probable that process wastes from the facility were disposed of or used as fill at the Scanel site. Previous investigations by ORNL in 1981 and by NUS in 1983 detected elevated concentrations of thorium-232, radium-226, and radium-228. A 6-ft-deep, 12,000-ft^2 area of contamination near the center of the property was reported by NUS.

RADIOLOGICAL CHARACTERIZATION

To provide sufficiently detailed information regarding the vertical and horizontal limits of radioactive contamination on the Scanel property and to ensure the development of cost-effective remedial action measures, both surface surveys and subsurface investigations were performed.

To allow for collection of data in a systematic, reproducible manner, a 50-ft grid was established across the site (Figure 1). This grid was also tied to the New Jersey state grid system to ensure that it could be reestablished precisely in its original form during remedial action. All characterization data are tied to this grid.

<u>Surface Characterization</u>

Surface characterization was conducted primarily by means of near-surface gamma logging. Using a shielded gamma scintillation detector, near-surface gamma radiation measurements were taken 12 in. from the ground at the intersections of mutually perpendicular grid lines spaced at least 10 ft apart. Use of the shielded detector ensures that any radiation detected by the probe is originating from the ground directly beneath the unit. By shielding against lateral gamma flux from nearby areas of contamination, the shielded detector eliminates possible sources of error in the measurements. Furthermore, this detector was calibrated at the Technical Measurements Center (TMC) in Grand Junction, Colorado, to provide a direct correlation of counts per minute (cpm) to picocuries per gram (pCi/g).

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To identify surface areas where the level of contamination exceeds the DOE criterion of 5 pCi/g for thorium-232, areas where readings exceeded 11,000 cpm (indicating that they exceeded 5 pCi/g based on the calibration) were plotted on a map (Figure 2). Gamma levels measured on the property ranged from background (5,000 cpm) to 500,000 cpm. This represents a total area of 12,500 ft^2 for which remedial action will be required. In addition, while near-surface gamma measurements were being taken, contamination was found to exist on the railroad property to the north of the site, extending under the railroad tracks of the spur line.

Surface soil samples were collected from areas at which gamma readings were marginal and, therefore, requiring additional analyses. Soil samples were also collected from selected locations to serve as quality control checks on the gamma scanning results. Surface soil samples were collected at 43 on-site locations (shown in Figure 3) and analyzed for thorium-232, radium-226, and uranium-238. Analytical results are presented in Table 2. Analysis of these samples indicated concentrations of thorium-232 and radium-226 in excess of the DOE guidelines, with maximum concentrations of 238 pCi/g and 8 pCi/g, respectively. The maximum uranium-238 concentration was less than 40 pCi/g. No DOE guidelines have been established for concentrations of uranium in soil.

Since the southern boundary of the site is formed by a drainage pathway (Coles Brook), the sediments were sampled to determine whether contamination is migrating from the site via Coles Brook. Samples were collected at 16 locations spaced at 50-ft intervals along the entire length of the brook. The samples were analyzed for thorium-232, radium-226, and uranium-238. As shown in Table 1, none of the samples exhibited contamination exceeding DOE guidelines. It is therefore apparent that contamination is not migrating from the site via Coles Brook.

Subsurface Investigation

After surface characterization was completed, a subsurface investigation was conducted to determine the depths to which the previously identified surface contamination extends, and to locate subsurface contamination with no surface manifestation.

Subsurface investigations were conducted primarily by means of down-hole gamma-logging. This technique is significantly more cost-effective than soil sampling because the procedure can be completed more quickly, and because the need for laboratory analysis is eliminated.

The instrument used to perform down-hole logging was calibrated at TMC, where it was determined that a count rate of approximately 40,000 cpm is analogous to a 15-pCi/g concentration limit for thorium-232. This relationship has been supported in the performance of previous characterizations where similar materials are found.

During the course of the subsurface investigation, 61 radiological boreholes were drilled and gamma-logged to determine the depths and concentrations of radioactive contamination. The borehole logs were reviewed to identify trends, regardless of whether concentrations exceeded the DOE guidelines. Borehole locations are shown in Figure 4. Detailed gamma-logging data are presented in Table 3.

Using the split-spoon sampling method, subsurface soil samples were collected at five locations (Figure 5) to compare laboratory soil sample results to downhole gamma radiation measurements. Table 4 presents the results of the laboratory analysis. This provided another check on the applicability of the 40,000 cpm correlation factor and confirmed the effectiveness and accuracy of down-hole gamma-logging in detecting levels exceeding the DOE criterion of 15 pCi/g.

Based on the interpretation of the borehole logging and soil sampling data, the volume of contamination was estimated, and a profile of the horizontal and vertical boundaries of contamination was developed (Figure 2). The estimated volume of contamination on the site is 6,000 yd^3. Based on the contamination boundaries identified, the areas to be excavated and the remedial action methods to be employed will be determined.

CHEMICAL CHARACTERIZATION

Limited chemical characterization of the Scanel property was performed to determine whether hazardous waste is commingled with the radioactive waste, and to provide the information needed to design an employee health protection program appropriate to the nature of the materials present. To provide information as to the identities of any hazardous chemicals on-site, soil samples were collected from seven boreholes by driving a split-spoon sampler in advance of the auger (Figure 6). This limited chemical characterization was planned and implemented in accordance with the methods described by the EPA in "Test Methods for Evaluating Solid Waste" (SW-846, 2nd ed., 1982). The chemical sampling plan was reviewed by the New Jersey Department of Environmental Protection (NJDEP).

Soil samples were composited to a depth of 8 ft. Table 5 presents analytical results for the seven composite samples. Samples were analyzed for volatiles, acid extractables, base/neutral extractables, PCBs, arsenic, barium, cadmium, chromium, lead, lithium, mercury, selenium, titanium, and total organic carbon. These parameters were selected to provide a representative cross section of the hazardous constituents listed in RCRA (40 CFR 261, Appendix VII). Although surface obstructions and the unmaneuverability of the drill rig necessitated that the chemical boreholes be placed in locations different from those identified in the characterization plan, these changes would not be expected to bias the results.

SUMMARY

The results of the characterization of the Scanel property are summarized below. They are generally consistent with the findings of the NUS investigation.

- A total surface area of approximately 12,500 ft^2 is contaminated in excess of 5 pCi/g above background. Contamination extends as far east as the shoulder of Coles Brook (R 150 line). In addition, several of the contaminated areas on the Hackensack-Lodi Railroad lie outside of the Scanel property limits; this will necessitate that the railroad property be designated for remedial action.

- The quantity of material that will require excavation (including the railroad property) is estimated at 6,000 yd^3. Contamination extends to depths as great as 9.5 ft, with an average depth of approximately 4 ft.

- None of the sediment samples from Coles Brook were found to be contaminated in excess of DOE guidelines; however, since contamination does extend as far as the banks of Coles Brook, BNI is investigating applicable permit requirements imposed by the New Jersey Department of Environmental Protection and the Army Corps of Engineers relative to remedial action involving the brook.

- Results of the limited chemical characterization indicate the presence of priority pollutant base neutrals identified in EPA National Pollutant Discharge Elimination System Permit Regulations (40 CFR 122) promulgated pursuant to the Clean Water Act (CWA). The base neutrals identified are: phenanthrene (11.4 ppm), chrysene (5.4 ppm), pyrene (7.6 ppm), fluoranthene (14.7 ppm), fluorene (1.5 ppm), acenophthene (1.2 ppm) and naphthalene (0.9 ppm). The New Jersey Department of Environmental Protection lists fluoranthene, chrysene and naphthalene as hazardous constituents under New Jersey Administrative Code (NJAC) 7:26-8.16. As such, the contaminated soil to be removed from the Scanel property may be regulated as hazardous waste under the Resource Conservation Recovery Act (RCRA). BNI is initiating action to obtain a determination by the EPA and State Administrators as to the RCRA status based on the above limited characterization.

If additional information concerning the characterization of the Scanel property is required, please contact Chris Leichtweis at 576-2366.

Very truly yours,

James R. Kannard
Project Manager - FUSRAP

AMF:bjs
Attachments: As Stated

cc: S. W. Ahrends
B. A. Hughlett

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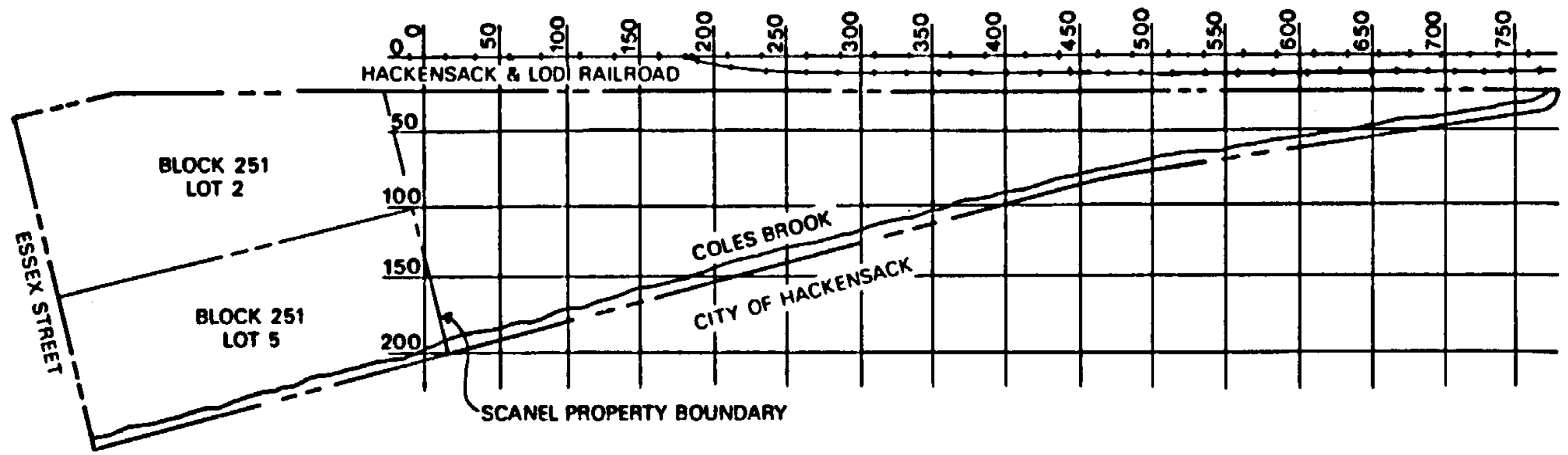

FIGURE 1 RADIOLOGICAL/CHEMICAL SURVEY GRID FOR THE SCANEL PROPERTY

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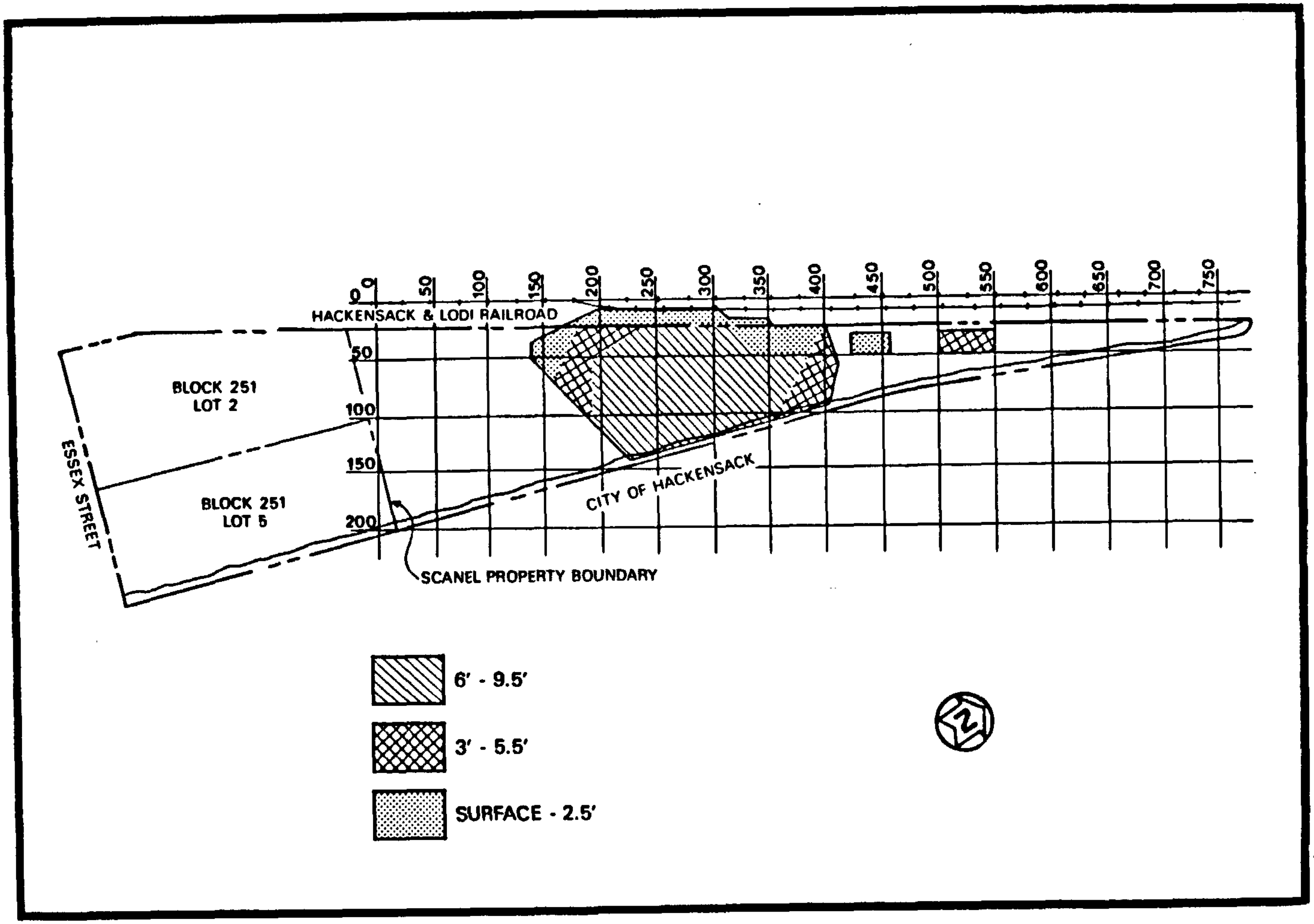

FIGURE 2 BOUNDARIES OF SURFACE AND SUBSURFACE CONTAMINATION ON SCANEL PROPER

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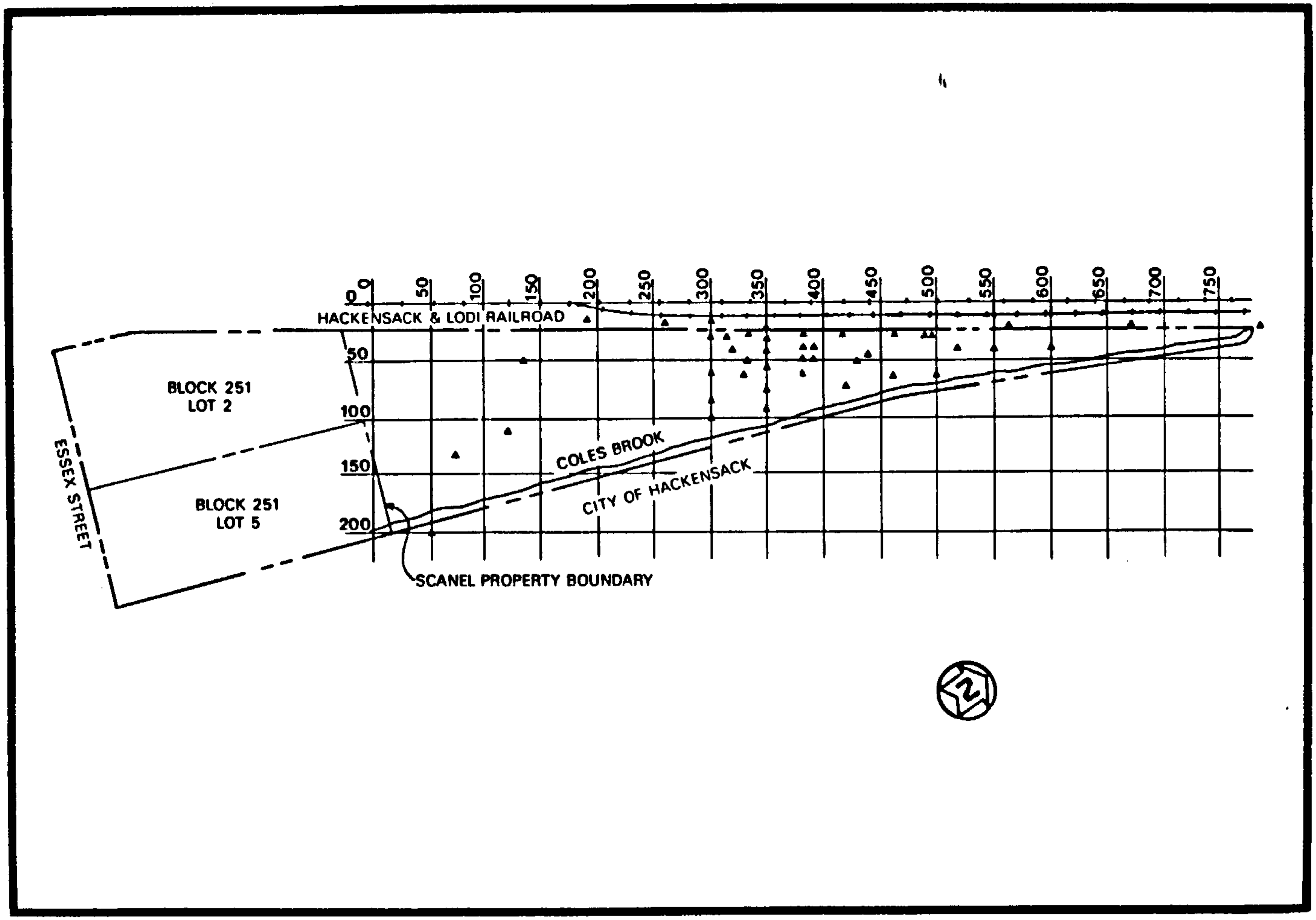

FIGURE 3 1985 SURFACE SOIL SAMPLING LOCATIONS AT SCANEL PROPERTY

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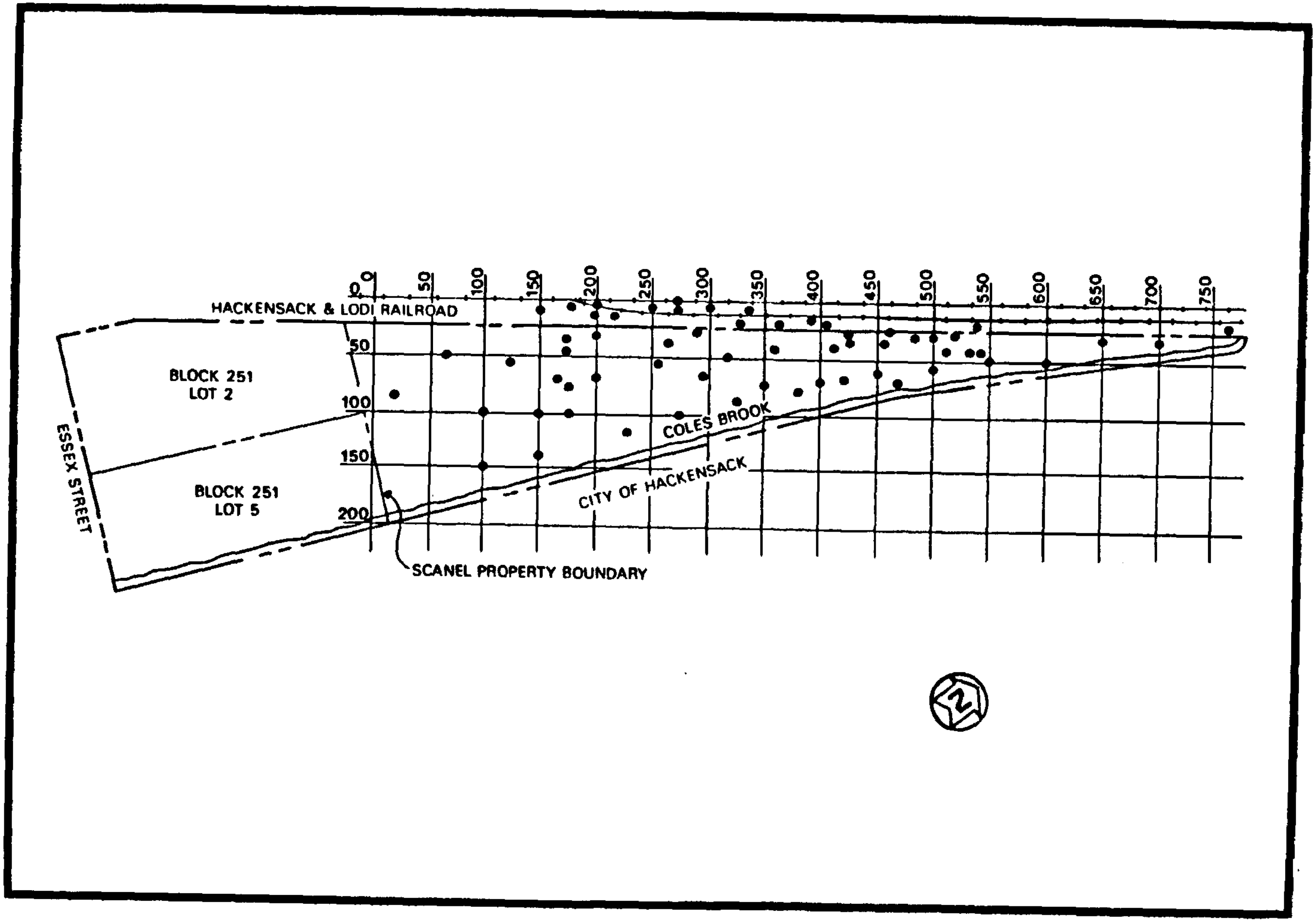

FIGURE 4 BOREHOLE LOCATIONS FOR 1985 RADIOLOGICAL SURVEY OF SCANEL PROPERTY

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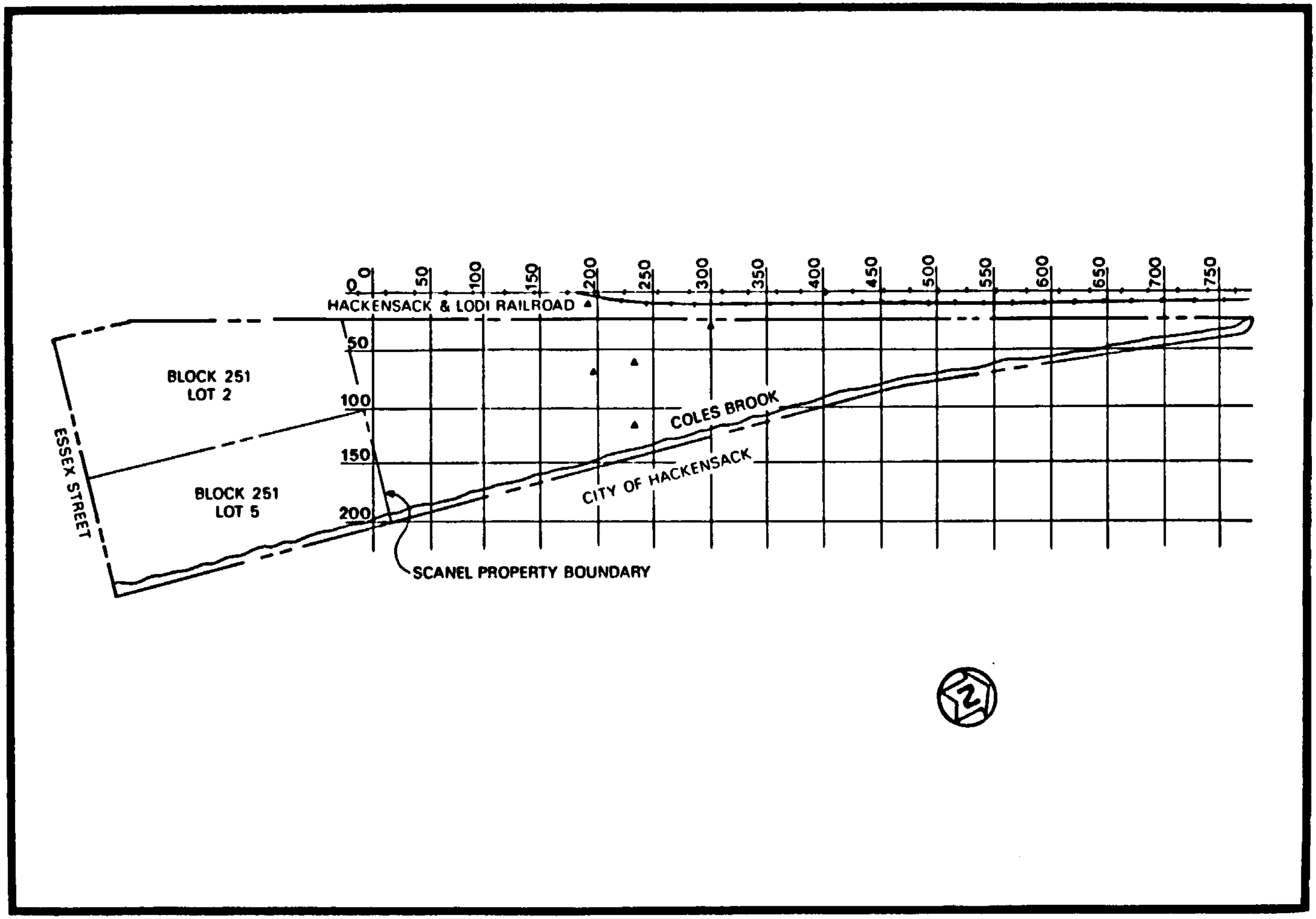

FIGURE 5 1985 SUBSURFACE SAMPLING LOCATIONS AT SCANEL PROPERTY

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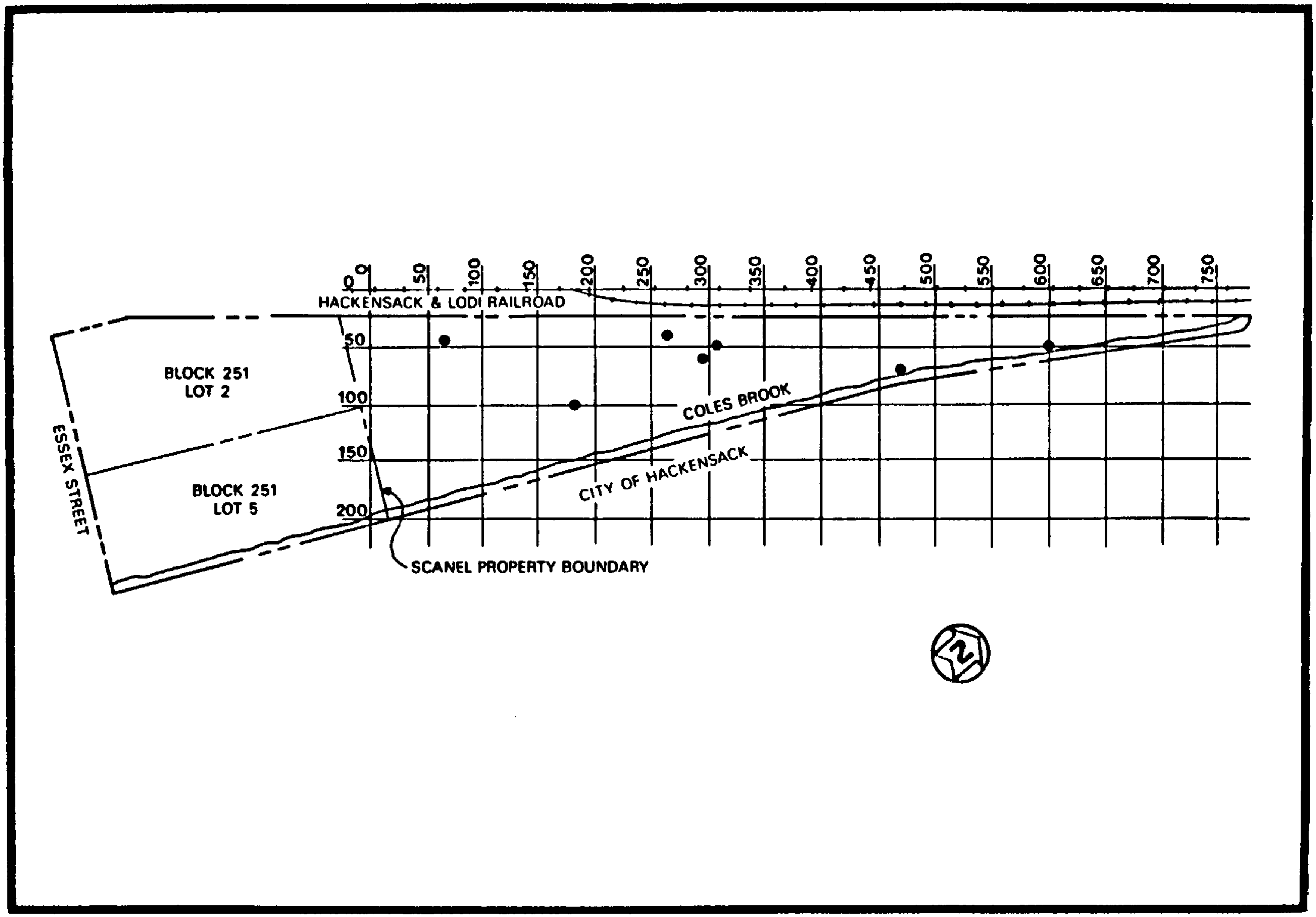

FIGURE 6 BOREHOLE LOCATIONS FOR 1985 CHEMICAL SURVEY OF SCANEL PROPERTY

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TABLE 1

Coles Brook Sediment Samples

Grid Coordinate	Concentration (pCi/g)		
(Stream Central) Back	U-238	Ra-226	Th-232
775	<7.9	0.8 +/- 0.3	1.0 +/- 0.4
750	<7.3	1.1 +/- 0.3	1.1 +/- 0.5
700	<6.7	0.9 +/- 0.3	0.5 +/- 0.6
650	3.9 +/- 3.2	0.8 +/- 0.3	1.9 +/- 0.7
600	8.0 +/- 0.4	1.9 +/- 0.1	3.8 +/- 0.9
550	<8.8	0.6 +/- 0.3	1.6 +/- 0.7
500	3.5 +/- 2.3	<1.5	1.9 +/- 0.6
450	<8.0	0.9 +/- 0.3	1.7 +/- 0.2
400	<8.0	1.5 +/- 0.3	1.7 +/- 0.5
350	<6.8	<1.0	2.1 +/- 0.7
300	5.8 +/- 2.1	1.3 +/- 0.1	1.9 +/- 0.3
250	<11.5	1.2 +/- 0.1	1.5 +/- 0.5
200	5.4 +/- 2.1	<1.2	1.1 +/- 0.4
150	<4.6	<0.8	0.5 +/- 0.7
100	<3.6	<0.9	0.6 +/- 0.4
050	<4.0	<0.6	<1.0

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TABLE 2

Surface Soil Sample Results

Grid Coordinates		Concentration (pCi/g)		
Right	Back	U-238	Ra-226	Th-232
020	350	<12.4	<1.2	<3.0
030	350	<1.8	6.5 +/- 0.4	59.0 +/- 4.2
040	350	22.0 +/- 0.1	2.0 +/- 0.1	20.5 +/- 2.1
055	350	14.7 +/- 5.3	1.9 +/- 0.5	10.8 +/- 2.2
075	350	<13.6	1.5 +/- 0.4	2.6 +/- 0.7
090	350	9.5 +/- 3.9	1.5 +/- 0.5	8.5 +/- 0.8
030	300	<31.6	7.1 +/- 0.3	163.2 +/-13.5
015	190	<13.9	0.8 +/- 0.1	2.5 +/- 2.4
020	260	<28.3	8.2 +/- 2.1	238.4 +/-34.3
020	300	<7.3	<0.8	<1.6
030	300	<40.0	5.2 +/- 0.5	164.9 +/-16.4
060	300	<12.5	<1.8	4.1 +/- 0.6
080	300	<11.8	1.9 +/- 0.04	5.3 +/- 1.2
100	300	22.6 +/- 0.8	0.6 +/- 0.3	8.9 +/- 2.9
030	315	3.2 +/- 3.7	2.6 +/- 0.2	13.0 +/- 2.1
040	320	<15.0	1.8 +/- 0.5	8.7 +/- 0.8
025	335	15.8 +/- 5.4	5.0 +/- 1.2	41.3 +/- 5.0
050	335	16.3 +/- 5.6	5.1 +/- 1.3	42.4 +/- 5.1
060	335	<7.2	1.1 +/- 0.1	1.2 +/- 0.5
070	420	<19.3	<1.6	<2.9
050	430	<18.8	2.4 +/- 0.7	18.0 +/- 5.8
045	440	<19.4	<2.2	13.0 +/- 3.8
025	460	<12.1	<1.7	6.8 +/- 1.1
060	460	<10.9	<1.6	2.0 +/- 1.0
030	490	<16.3	<2.0	6.3 +/- 0.7
035	495	<12.6	<1.9	5.7 +/- 1.1
060	500	<8.3	<1.2	3.7 +/- 0.7
040	520	<15.7	<1.7	7.4 +/- 1.2
040	550	<12.5	<1.5	<3.9
020	560	<9.1	<1.1	1.5 +/- 0.8
040	600	<8.3	<1.3	Not available
020	670	<9.4	<1.7	<2.7
020	790	<8.7	<1.4	<2.5
050	000	<9.3	0.7 +/- 0.1	0.8 +/- 0.1
200	050	2.8 +/- 0.9	<1.7	1.0 +/- 0.4
130	070	<12.8	0.8 +/- 0.3	<2.2
110	120	<10.9	1.1 +/- 0.3	1.7 +/- 0.4
040	380	<16.3	1.7 +/- 0.4	4.4 +/- 0.7
060	380	9.7 +/- 2.8	<2.7	<4.0
050	390	<22.5	2.0 +/- 0.9	15.4 +/- 2.7
030	380	6.6 +/- 4.2	1.4 +/- 0.02	3.1 +/- 0.4
050	380	<23.5	<3.2	<4.3
025	415	4.4 +/- 7.1	2.2 +/- 0.4	9.7 +/- 0.9

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TABLE 3

Down Hole Logging

(counts/minute)

Depth (ft)	Coordinates B062 E048	B020 E080	B100 E100	B100 E150	B125 E055	B148 E012
0.0	19,000	9,773	11,174	5,511	14,743	13,000
0.5	20,000	15,346	11,939	9,631	16,217	18,000
1.0	16,000	16,714	13,334	11,392	25,975	17,000
1.5	15,000	16,043	15,152	13,809	19,673	15,000
2.0	13,000	16,394	15,076	14,635	16,575	15,000
2.5	13,000	14,670	14,085	15,287	15,385	14,000
3.0	13,000	15,455	14,320	13,922	14,252	14,000
3.5	13,000	15,874	14,029	14,286	14,424	13,000
4.0	13,000	15,666	16,575	14,185	14,605	13,000
4.5	13,000	15,594	24,194	13,987	14,128	13,000
5.0	13,000	16,760	19,803	14,743	13,304	13,000
5.5	13,000	16,217	15,545	21,506	12,858	13,000
6.0	13,000	17,392	14,151	23,623	11,545	13,000
6.5	13,000	15,307	13,606	17,700	12,637	13,000*
7.0	13,000	14,852	13,678	17,493	12,455	
7.5	13,000	14,743	14,670	15,707	13,044	
8.0	13,000*	14,424	12,669	13,426	14,085*	
8.5		14,538*	13,275*	11,407		
9.0				10,979*		
9.5						
10.0						
10.5						
11.0						
11.5						
12.0						
12.5						
13.0						
13.5						
14.0						
14.5						
15.0						

* - Bottom of hole

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TABLE 3

Down Hole Logging

(counts/minute)

Depth (ft)	Coordinates B150 R100	B150 R145	B160 R072	B175 R007	B175 R035	B175 R042
0.0	15,307	9,662	13,000	23,905	16,760	17,421
0.5	23,623	12,606	13,000	24,490	40,279	38,966
1.0	22,223	12,059	13,000	26,212	75,766	89,430
1.5	17,598	14,029	13,000	19,712	105,370	110,714
2.0	12,501	15,425	11,000	20,624	91,750	119,430
2.5	12,270	16,950	13,000	22,199	94,819	108,765
3.0	11,473	18,359	17,000	R	106,430	92,148
3.5	10,589	17,008	17,000		R	111,200
4.0	11,236	15,910	17,000			87,463
4.5	13,981	14,399	26,000			92,788
5.0	17,242	14,743	28,000			C
5.5	22,642	19,481	22,000			C
6.0	19,058	22,901	17,000			C
6.5	15,874	21,583	16,000			R
7.0	15,152	16,355	15,000			
7.5	13,432	14,743	15,000			
8.0	14,085*	13,216	17,000			
8.5		13,825	16,000			
9.0		14,151*	15,000*			
9.5						
10.0						
10.5						
11.0						
11.5						
12.0						
12.5						
13.0						
13.5						
14.0						
14.5						
15.0						

* - Bottom of hole
R - Refuse blocking further drilling of hole
C - Hole collapsed

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TABLE 3

Down Hole Logging

(counts/minute)

Depth (ft)	Coordinates B175 R075	B180 R100	B200 L005	B200 R010	B200 R035	B200 R069
0.0	10,000	11,000	14,815	75,190	18,293	9,519
0.5	11,000	13,000	20,340	78,131	21,472	8,824
1.0	12,000	17,000	20,791	94,351	21,127	12,766
1.5	11,000	21,000	19,242	65,720	19,737	13,423
2.0	11,000	25,000	17,700	34,683W	28,906	14,743
2.5	11,000	19,000	14,442W	39,871W	46,667	13,606
3.0	12,000	15,000	C	35,719W	61,350	15,027
3.5	13,000	13,000	C	C	84,920	14,229
4.0	26,000	12,000	C	C	84,810	17,700
4.5	30,000	11,000	R	C	67,055	28,029
5.0	42,000	10,000		C	66,136	39,737
5.5	22,000	12,000		C	40,143	48,986
6.0	18,000	16,000		R	28,625	53,520
6.5	17,000	21,000			21,121	55,295
7.0	16,000	18,000			15,114	46,432
7.5	14,000	17,000			14,286	28,878
8.0	11,000	14,000			13,825	15,076
8.5	10,000*	12,000			14,504	12,459
9.0		12,000			16,505	13,678
9.5		10,000*			16,714	12,669
10.0					17,199	11,606
10.5					15,666	9,091
11.0					15,076	9,616
11.5					15,128	10,205
12.0					14,320	12,459
12.5					13,954	14,229
13.0					14,286	14,185
13.5					13,514	14,852*
14.0					13,393	
14.5					14,252*	
15.0						

* - Bottom of hole
R - Refuse blocking further drilling of hole
C - Hole collapsed
W - Water in the hole

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TABLE 3

Down Hole Logging

(counts/minute)

Depth (ft)	Coordinates B212 R013	B225 R120	B250 R005	B253 R066	B263 R042	B275 R000
0.0	26,000	46,512	27,532	42,000	53,000	13,187
0.5	34,000	56,017	28,719	68,000	72,000	18,121
1.0	44,000	85,720	27,273	111,000	122,000	21,661
1.5	34,000	140,190	29,314	187,000	242,000	21,439
2.0	27,000	237,160	23,167W	321,000	411,000	16,449
2.5	16,000	392,160	14,302W	414,000	414,000	14,117
3.0	13,000	560,150	13,977W	361,000	349,000	C
3.5	12,000	631,590	C	285,000	326,000	C
4.0	13,000	625,780	C	263,000	322,000	C
4.5	13,000	576,560	C	252,000	299,000	C
5.0	13,000	428,580	C	227,000	249,000	C
5.5	13,000	264,320	R	217,000	170,000	C
6.0	13,000	263,150		221,000	65,000	C
6.5	13,000	56,604		159,000	37,000	
7.0	13,000*	31,501		106,000	24,000	
7.5		31,099		77,000	21,000	
8.0		33,334		57,000	18,000	
8.5		50,858		46,000	16,000	
9.0		58,224		45,000	14,000	
9.5		31,251		33,000	14,000	
10.0		18,073		30,000*	13,000	
10.5		17,008			13,000*	
11.0		14,926				
11.5		15,666				
12.0		15,504				
12.5		15,152				
13.0		16,621				
13.5		16,807				
14.0		16,950*				
14.5						
15.0						

* - Bottom of hole
R - Refuse blocking further drilling of hole
C - Hole collapsed
W - Water in the hole

TABLE 3

Down Hole Logging

(counts/minute)

	Coordinates					
Depth (ft)	**N275 E005**	**N275 E100**	**N290 E023**	**N295 E065**	**N300 E005**	**N307 E050**
0.0	38,708	41,096	93,000	32,269	17,658	34,483
0.5	47,622	44,128	184,000	54,546	19,618	49,587
1.0	52,175	51,283	168,000	100,350	22,399	64,590
1.5	67,216	58,824	84,000	193,550	24,897	84,990
2.0	51,813	96,620	67,000	337,080	24,490	144,240
2.5	22,116	259,520	46,000	375,010	24,232	295,570
3.0	14,202	545,460	26,000	289,860	24,816	400,010
3.5	15,600	789,230	20,000	287,090	22,319	555,560
4.0	C	697,680	16,000	276,500	21,304	600,010
4.5	C	588,240	13,000	248,970	14,230	512,830
5.0	C	377,670	12,000	167,600	14,866	402,690
5.5	C	259,750	11,000	85,600	R	348,840
6.0	C	121,960	9,000	44,445		196,730
6.5		88,820	10,000	31,099		118,350
7.0		62,700	11,000	24,292		96,940
7.5		43,166	11,000	20,000		67,570
8.0		30,457	13,000	18,405		60,010
8.5		21,506	13,000*	21,202		51,283
9.0		28,847		24,590		44,120
9.5		46,876		17,805		36,810
10.0		28,986		14,185		32,619*
10.5		19,545		12,527		
11.0		13,731		13,016*		
11.5		C				
12.0		C				
12.5		C				
13.0		C				
13.5		C				
14.0		C				
14.5		C				
15.0		C				

* - Bottom of hole
R - Refuse blocking further drilling of hole
C - Hole collapsed

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TABLE 3

Down Hole Logging

(counts/minute)

Depth (ft)	B325 E020	B325 E090	B332 E009	B350 E075	B355 E045	B358 E020
	Coordinates					
0.0	56,078	41,096	14,000	24,288	24,490	20,000
0.5	42,421	65,940	20,000	27,273	40,541	22,000
1.0	39,279	70,840	17,000	35,715	45,802	24,000
1.5	21,202	107,340	16,000	32,787	41,096	18,000
2.0	20,340	163,490	15,000	36,810	33,520	16,000
2.5	17,989	348,840	15,000	49,587	32,269	17,000
3.0	17,654	480,010	15,000	76,930	28,170	17,000
3.5	R	413,800	14,000	87,340	28,300	15,000
4.0		357,150	14,000	133,040	27,150	14,000
4.5		306,130	13,000	205,480	23,810	16,000
5.0		288,470	12,000	181,820	23,925	16,000
5.5		251,050	13,000	162,050	23,000	14,000
6.0		205,480	13,000	171,400	20,271	12,000
6.5		167,600	13,000	177,000	24,097	12,000
7.0		154,350	13,000	167,600	25,011	12,000
7.5		63,700	13,000	109,900	18,751	12,000
8.0		41,380	13,000	62,900	12,589	12,000
8.5		31,915	13,000	47,620	11,835	12,000*
9.0		28,437	13,000	29,279	11,977	
9.5		30,304	13,000	16,404	12,025*	
10.0		18,405	13,000*	13,637		
10.5		14,789		12,749		
11.0		12,404		12,501		
11.5		14,029		13,371		
12.0		14,815		13,130		
12.5		16,515		13,637		
13.0		16,130		14,670		
13.5		17,493		14,424		
14.0		19,545*		14,564		
14.5				13,453*		
15.0						

* - Bottom of hole
R - Refuse blocking further drilling of hole

TABLE 3

Down Hole Logging

(counts/minute)

Depth (ft)	B378 R077	B395 R020	B400 R072	B402 R021	B409 R040	B417 R074
	Coordinates					
0.0	18,576	27,150	16,667	18,000	13,072	12,196
0.5	27,700	30,616	16,575	27,000	16,667	16,130
1.0	28,437	31,810	15,278	26,000	21,227	14,609
1.5	30,001	18,975	17,193	20,000	19,355	15,464
2.0	32,423	17,117	23,716	17,000	15,707	15,058
2.5	39,736	17,610	21,740	15,000	15,076	20,980
3.0	50,858	R	23,347	17,000	13,762	20,690
3.5	58,824		22,81	18,000	15,114	25,317
4.0	41,096		20,906	18,000	17,493	30,304
4.5	34,683		23,077	15,000	19,170	30,151
5.0	39,157		23,316	14,000	16,241	26,554
5.5	37,278		28,437	14,000	14,052	17,658
6.0	28,572		18,022	12,000	15,278	15,307
6.5	20,762		16,086	13,000	11,905	12,907
7.0	18,248		14,395	16,000	10,527	11,303
7.5	13,275		12,146	19,000	10,017	10,831
8.0	11,451		12,998	18,000*	10,792	11,835*
8.5	11,798		13,545		11,195*	
9.0	12,669		14,789			
9.5	12,858		15,666			
10.0	12,686		17,868*			
10.5	13,101					
11.0	11,977*					
11.5						
12.0						
12.5						
13.0						
13.5						
14.0						
14.5						
15.0						

* - Bottom of hole
R - Refuse blocking further drilling of hole

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TABLE 3

Down Hole Logging

(counts/minute)

Depth (ft)	B425 R030	B431 R043	B450 R064	B455 R023	B455 R030	B470 R070
	Coordinates					
0.0	21,506	27,038	13,168	13,000	28,558	14,815
0.5	22,719	33,909	17,700	12,000	25,314W	17,596
1.0	28,932	37,334	18,750	14,000	24,879W	15,464
1.5	29,710	30,408	19,355	17,000	24,802W	12,073
2.0	33,806	25,863	20,488	14,000	23,716W	10,850
2.5	30,919	18,275	23,623	13,000	25,414W	12,397
3.0	29,716	14,052	23,347	13,000	C	12,220
3.5	C	15,666	24,794	14,000	C	11,798
4.0	C	13,825	26,090	13,000	C	12,178
4.5	C	12,527	19,545	14,000	C	11,289
5.0	C	14,743	20,762	14,000	C	11,439
5.5	C	14,320	20,488	13,000	C	11,798
6.0	R	10,472	19,293	14,000	C	12,196
6.5		10,490	14,743	15,000		11,584
7.0		10,205	12,196	15,000*		11,742
7.5		10,345	13,181			12,712
8.0		10,583*	14,424			13,016
8.5			13,187			12,998*
9.0			11,584			
9.5			10,409			
10.0			10,850			
10.5			10,715*			
11.0						
11.5						
12.0						
12.5						
13.0						
13.5						
14.0						
14.5						
15.0						

* - Bottom of hole
R - Refuse blocking further drilling of hole
C - Hole collapsed
W - Water in the hole

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TABLE 3

Down Hole Logging

(counts/minute)

Depth (ft)	Coordinates B485 R030	B500 R030	B500 R057	B513 R044	B520 R030	B535 R042
0.0	20,135	15,048	10,696	12,998	16,217	10,078
0.5	22,766W	17,100W	14,097	17,700	16,019W	17,095
1.0	23,094W	19,216W	15,916	23,167	17,115W	21,829
1.5	27,944W	21,819W	17,544	45,796	16,842W	21,503
2.0	26,003W	22,705W	19,119	63,630	C	24,619
2.5	26,902W	C	20,419	84,630	C	26,452
3.0	C	C	20,558	83,340	C	28,951
3.5	C	C	23,810	81,266	C	27,150
4.0	C	C	20,488	51,283	C	23,077
4.5	C	C	20,203	46,285	C	22,790
5.0	C	C	20,203	31,051	C	17,760
5.5	C	R	16,621	24,007	C	C
6.0	C		15,916	15,464	R	C
6.5			15,464	13,304		C
7.0			15,545	15,759		R
7.5			16,449	13,794		
8.0			16,394	12,423		
8.5			13,016	12,000		
9.0			12,712	12,059*		
9.5			14,052*			
10.0						
10.5						
11.0						
11.5						
12.0						
12.5						
13.0						
13.5						
14.0						
14.5						
15.0						

* - Bottom of hole
R - Refuse blocking further drilling of hole
C - Hole collapsed
W - Water in the hole

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TABLE 3

Down Hole Logging

(counts/minute)

Depth (ft)	B540 R020	B541 R041	B550 R055	B600 R050	B650 R030	B700 R030
	Coordinates					
0.0	11,674	12,686	10,890	11,495	11,091	11,407
0.5	16,219	19,355	14,320	13,545	13,168	12,501
1.0	16,130	22,472	19,058	21,353	17,008	15,504
1.5	15,527	22,223	23,077	22,472	18,576	15,374
2.0	15,122	24,897	22,738	21,794	18,462	17,596
2.5	14,106	33,334	24,097	26,098	22,176	18,878
3.0	14,570	47,620	23,347	25,000	20,797	21,202
3.5	14,923	56,075	24,001	31,581	26,418	23,167
4.0	15,117	55,802	23,810	32,269	26,203	25,111
4.5	14,029	40,048	21,202	21,439	28,975	27,813
5.0	C	35,098	15,385	14,538	29,212	26,911
5.5	C	28,448	13,794	13,575	C	C
6.0	R	20,293	15,152	13,899	C	C
6.5		19,968	16,043	10,545	R	C
7.0		16,921	14,635	10,870		R
7.5		14,355	13,545	10,870		
8.0		14,285	12,245	11,765		
8.5		15,307	10,668	12,122		
9.0		12,749	12,196	13,130		
9.5		13,514	12,346*	14,493		
10.0		12,501		14,128		
10.5		12,423		15,346		
11.0		11,765*		17,658		
11.5				17,700*		
12.0						
12.5						
13.0						
13.5						
14.0						
14.5						
15.0						

* - Bottom of hole
R - Refuse blocking further drilling of hole
C - Hole collapsed

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TABLE 3

Down Hole Logging

(counts/minute)

Depth (ft)	Coordinates B765 R020
0.0	10,078
0.5	13,133
1.0	16,760
1.5	20,906
2.0	24,194
2.5	24,001
3.0	20,419
3.5	20,690
4.0	20,834
4.5	C
5.0	C
5.5	R
6.0	
6.5	
7.0	
7.5	
8.0	
8.5	
9.0	
9.5	
10.0	
10.5	
11.0	
11.5	
12.0	
12.5	
13.0	
13.5	
14.0	
14.5	
15.0	

* - Bottom of hole
R - Refuse blocking further drilling of hole
C - Hole collapsed

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TABLE 4

Subsurface Soil Sample Results

Grid Coordinates		Depth (feet)	Concentration (pCi/g)		
Right	Back		U-238	Ra-226	Th-232
070	195	0 - 1	<10.3	1.0 +/- 0.4	2.0 +/- 0.5
070	195	1 - 2	<11.1	0.7 +/- 0.01	1.9 +/- 0.4
070	195	2 - 3	<13.4	<1.7	<3.1
030	300	0 - 1	<2.4	6.3 +/- 0.7	152.6 +/- 7.7
030	300	1 - 2	<46.0	5.1 +/- 0.1	138.9 +/- 6.9
115	230	0 - 1	<9.0	0.7 +/- 0.3	0.9 +/- 0.3
115	230	1 - 2	<10.8	0.6 +/- 0.01	1.4 +/- 0.4
115	230	2 - 3	5.2 +/- 2.6	1.4 +/- 0.1	1.3 +/- 0.4
015	190	1 - 2	18.4 +/- 4.0	1.7 +/- 0.2	25.0 +/- 3.7
015	190	2 - 2.5	<12.9	2.5 +/- 0.4	36.2 +/- 3.7
060	230	0 - 1	<10.7	1.4 +/- 0.4	1.7 +/- 0.3
060	230	1 - 2	4.5 +/- 5.4	5.6 +/- 0.8	24.7 +/- 4.2

TABLE 5

CHEMICAL ANALYSIS RESULTS FOR SUBSURFACE SOIL SAMPLES

Sample Location: Right 100
Back 180

EP TOXICITY RESULTS

Organic Compounds	Detection Limit (mg/l)	Instrument	Method	Concentration mg/l
Metals				
Arsenic	<0.003	HGA A.A.	(1) - pg 175	0.005
Barium	<0.1	ICP	(1) - pg 180	0.3
Cadmium	<0.01	ICP	(1) - pg 180	<0.01
Chromium	<0.03	ICP	(1) - pg 180	< 0.03
Lead	<0.02	ICP	(1) - pg 180	<0.04
Mercury	<0.002	Cold Vapor A.A	(1) - pg 171	<0.002
Selenium	<0.003	HGA A.A.	(1) - pg 175	<0.003
Silver	<0.02	ICP	(1) - pg 180	<0.02
Chromium (+6)	<0.005	Colorimetric	(1) - pg 201	<0.005

(1) "Standard Methods for Examination of Water and Waste Water," 16th Edition, 1985.

TABLE 5
(continued)

Sample Location: Right 100
Back 180

Analytes	Method Detection Limit (mg/kg)	Instrument	Method	Concentration (Dry Wt) mg/kg
Lithium	2	A.A.	(1) - P.157	8
Titanium	<39	A.A.	(1) - P.162	<39

(1)"Standard Methods for Examination of Water and Waste Water," 16th Edition, 1985.

TABLE 5
(continued)

Sample Location: Right 100
Back 180

Analytes	Detection Limit	Instrument	Method	Concentration (%)
Total Organic Carbon		Combustion and Absorption in Hydroxide	(1)	5.068
% Moisture		Balance	(2)	24

(1)Gravimetric Determination of Carbon in Sediment by Hydroxide Absorption: J. Sediment Petrology 38, 617-620 (1968).

(2)Standard Methods for Examination of Water and Wastewater, 16th Edition, 1985.

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TABLE 5
(continued)

Sample Location: Right 100
Back 180

Organic Compounds	Detection Limit (ppb)	Instrument	Method	Concentration ppb
Aroclor-1016	<80	GC	Modified 8080[(1)]	<80
Aroclor-1221	<80	GC	Modified 8080[(1)]	<80
Aroclor-1232	<80	GC	Modified 8080[(1)]	<80
Aroclor-1242	<80	GC	Modified 8080[(1)]	<80
Aroclor-1248	<80	GC	Modified 8080[(1)]	<80
Aroclor-1254	<160	GC	Modified 8080[(1)]	<160
Aroclor-1260	<160	GC	Modified 8080[(1)]	<160

(1)Modified Method means the EPA Method may not be performed in exact specifications, i.e., the level of quality control specially outlined in the EPA Method. "Test Methods for Evaluating Solid Waste," SW-846, U.S. Environmental Protection Agency, 2nd Edition, 1982.

TABLE 5
(continued)

Sample Location: Right 100
Back 180

(MODIFIED EPA METHODS 3540 & 8270)

COMPOUNDS	ug/kg(ppb)	COMPOUNDS	ug/kg(ppb)
2,4,6-trichlorophenol	<3000	hexachlorobutadiene	<3000
p-chloro-m-cresol	<3000	hexachlorocyclopentadiene	<3000
2-chlorophenol	<3000	isophorone	<3000
2,4-dichlorophenol	<3000	naphthalene	<3000
2,4-dimethylphenol	<3000	nitrobenzene	<3000
2-nitrophenol	<3000	N-nitrosodiphenylamine	<3000
4-nitrophenol	<15000	N-nitrosodipropylamine	<3000
2,4-dinitrophenol	<15000	bis(2-ethylhexyl)phthalate	<3000
4,6-dinitro-2-methylphenol	<15000	benzyl butyl phthalate	<3000
pentachlorophenol	<15000	di-n-butyl phthalate	<3000
phenol	<3000	di-n-octyl phthalate	<3000
acenaphthene	<3000	diethyl phthalate	<3000
benzidine	<15000	dimethyl phthalate	<3000
1,2,4-trichlorobenzene	<3000	benzo(a)anthracene	6000
hexachlorobenzene	<3000	benzo(a)pyrene	6200
hexachloroethane	<3000	benzo(b)fluoranthene	10200*
bis(2-chloroethyl)ether	<3000	benzo(k)fluoranthene	<3000
2-chloronaphthalene	<3000	chrysene	6200
1-2-dichlorobenzene	<3000	acenaphthylene	<3000
1,3-dichlorobenzene	<3000	anthracene	<3000
1,4-dichlorobenzene	<3000	benzo(ghi)perylene	<3000
3,3'-dichlorobenzidine	<6000	fluorene	<3000
2,4-dinitrotoluene	<3000	phenanthrene	14000
1,2-diphenylhydrazine	<3000	dibenzo(a,h)anthracene	<3000
4-chlorophenyl phenyl ether	<3000	indeno(1,2,3-cd)pyrene	<3000
bis(2-chloroisopropyl)ether	<3000	pyrene	13000
fluoranthene	14000	2,6-dinitrotoluene	<3000
bis(2-chloroethoxy)methane	<3000	4-bromophenyl phenyl ether	<3000

NON-PRIORITY POLLUTANTS

benzoic acid	<15000	aniline	<3000
2-methylphenol	<3000	benzyl alcohol	<3000
4-methylphenol	<3000	4-chloroaniline	<3000
2,4,5-trichlorophenol	<3000	dibenzofuran	<15000
2-methylnapthalene	<3000	2-nitroaniline	<15000
3-nitroaniline	<15000	4-nitroaniline	<15000

*Compound identified and quantitated as benzo(b)fluoranthene. Could be either isomer.
Sample diluted 1:10 due to matrix interference. Sample extracted and analyzed according to TMA Method which is Modified EPA Method 8270.

TABLE 5
(continued)

Sample Location: **Right 100**
Back 180

pH	Reactivity	Ignitability
8.0	(1)	(2)

(1) These soils do not react with water or with alkali. However, there is evolution of gas (most probably carbon dioxide) when treated with acid. The gas is not characterized.

(2) These soils are not ignitable when subjected to friction, moisture or open flame and are not classified as ignitable.

TABLE 5
(continued)

Sample Location: Right 048
Back 062

EP TOXICITY RESULTS

Organic Compounds	Detection Limit (mg/l)	Instrument	Method	Concentration mg/l
Metals				
Arsenic	<0.003	HGA A.A.	(1) - pg 175	<0.003
Barium	<0.1	ICP	(1) - pg 180	0.2
Cadmium	<0.01	ICP	(1) - pg 180	<0.01
Chromium	<0.03	ICP	(1) - pg 180	< 0.03
Lead	<0.02	ICP	(1) - pg 180	<0.02
Mercury	<0.002	Cold Vapor A.A	(1) - pg 171	<0.002
Selenium	<0.003	HGA A.A.	(1) - pg 175	<0.003
Silver	<0.02	ICP	(1) - pg 180	<0.02
Chromium (+6)	<0.005	Colorimetric	(1) - pg 201	<0.005

(1) "Standard Methods for Examination of Water and Waste Water," 16th Edition, 1985.

TABLE 5
(continued)

Sample Location: Right 048
Back 062

Analytes	Method Detection Limit (mg/kg)	Instrument	Method	Concentration (Dry Wt) mg/kg
Lithium	2	A.A.	(1) - P.157	10
Titanium	<35	A.A.	(1) - P.162	<35

(1)"Standard Methods for Examination of Water and Waste Water," 16th Edition, 1985.

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TABLE 5
(continued)

Sample Location: Right 048
Back 062

Analytes	Detection Limit	Instrument	Method	Concentration (%)
Total Organic Carbon		Combustion and Absorption in Hydroxide	(1)	1.286
% Moisture		Balance	(2)	15

(1)Gravimetric Determination of Carbon in Sediment by Hydroxide Absorption: J. Sediment Petrology 38, 617-620 (1968).

(2)Standard Methods for Examination of Water and Wastewater, 16th Edition, 1985.

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TABLE 5
(continued)

Sample Location: Right 048
Back 062

Organic Compounds	Detection Limit (ppb)	Instrument	Method	Concentration (ppb)
Aroclor-1016	<80	GC	Modified 8080[1]	<80
Aroclor-1221	<80	GC	Modified 8080[1]	<80
Aroclor-1232	<80	GC	Modified 8080[1]	<80
Aroclor-1242	<80	GC	Modified 8080[1]	<80
Aroclor-1248	<80	GC	Modified 8080[1]	<80
Aroclor-1254	<160	GC	Modified 8080[1]	<160
Aroclor-1260	<160	GC	Modified 8080[1]	<160

(1)Modified Method means the EPA Method may not be performed in exact specifications, i.e., the level of quality control specially outlined in the EPA Method. "Test Methods for Evaluating Solid Waste," SW-846, U.S. Environmental Protection Agency, 2nd Edition, 1982.

TABLE 5
(continued)

Sample Location: Right 048
Back 062

(MODIFIED EPA METHODS 3540 & 8270)

COMPOUNDS	ug/kg(ppb)	COMPOUNDS	ug/kg(ppb)
2,4,6-trichlorophenol	<3000	hexachlorobutadiene	<3000
p-chloro-m-cresol	<3000	hexachlorocyclopentadiene	<3000
2-chlorophenol	<3000	isophorone	<3000
2,4-dichlorophenol	<3000	naphthalene	<3000
2,4-dimethylphenol	<3000	nitrobenzene	<3000
2-nitrophenol	<3000	N-nitrosodiphenylamine	<3000
4-nitrophenol	<15000	N-nitrosodipropylamine	<3000
2,4-dinitrophenol	<15000	bis(2-ethylhexyl)phthalate	<3000
4,6-dinitro-2-methylphenol	<15000	benzyl butyl phthalate	<3000
pentachlorophenol	<15000	di-n-butyl phthalate	3500
phenol	<3000	di-n-octyl phthalate	<3000
acenaphthene	<3000	diethyl phthalate	<3000
benzidine	<15000	dimethyl phthalate	<3000
1,2,4-trichlorobenzene	<3000	benzo(a)anthracene	<3000
hexachlorobenzene	<3000	benzo(a)pyrene	<3000
hexachloroethane	<3000	benzo(b)fluoranthene	<3000
bis(2-chloroethyl)ether	<3000	benzo(k)fluoranthene	<3000
2-chloronaphthalene	<3000	chrysene	<3000
1-2-dichlorobenzene	<3000	acenaphthylene	<3000
1,3-dichlorobenzene	<3000	anthracene	<3000
1,4-dichlorobenzene	<3000	benzo(ghi)perylene	<3000
3,3'-dichlorobenzidine	<6000	fluorene	<3000
2,4-dinitrotoluene	<3000	phenanthrene	<3000
1,2-diphenylhydrazine	<3000	dibenzo(a,h)anthracene	<3000
4-chlorophenyl phenyl ether	<3000	indeno(1,2,3-cd)pyrene	<3000
bis(2-chloroisopropyl)ether	<3000	pyrene	<3000
fluoranthene	<3000	2,6-dinitrotoluene	<3000
bis(2-chloroethoxy)methane	<3000	4-bromophenyl phenyl ether	<3000

NON-PRIORITY POLLUTANTS

benzoic acid	<15000	aniline	<3000
2-methylphenol	<3000	benzyl alcohol	<3000
4-methylphenol	<3000	4-chloroaniline	<3000
2,4,5-trichlorophenol	<3000	dibenzofuran	<15000
2-methylnapthalene	<3000	2-nitroaniline	<15000
3-nitroaniline	<15000	4-nitroaniline	<15000

Sample diluted 1:10 due to matrix interference.

Sample extracted and analyzed according to TMA Method which is Modified EPA Method 8270.

TABLE 5
(continued)

Sample Location: **Right 048**
Back 062

pH	Reactivity	Ignitability
6.5	(1)	(2)

(1) These soils do not react with water or with alkali. However, there is evolution of gas (most probably carbon dioxide) when treated with acid. The gas is not characterized.

(2) These soils are not ignitable when subjected to friction, moisture or open flame and are not classified as ignitable.

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TABLE 5
(continued)

Sample Location: Right 042
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EP TOXICITY RESULTS

Organic Compounds	Detection Limit (mg/L)	Instrument	Method	Concentration mg/L
Metals				
Arsenic	<0.003	HGA A.A.	(1) - pg 175	0.003
Barium	<0.1	ICP	(1) - pg 180	0.2
Cadmium	<0.01	ICP	(1) - pg 180	<0.01
Chromium	<0.03	ICP	(1) - pg 180	< 0.03
Lead	<0.02	ICP	(1) - pg 180	<0.02
Mercury	<0.002	Cold Vapor A.A	(1) - pg 171	<0.002
Selenium	<0.003	HGA A.A.	(1) - pg 175	<0.003
Silver	<0.003	ICP	(1) - pg 180	<0.02
Chromium (+6)	<0.005	Colorimetric	(1) - pg 201	<0.005

(1) "Standard Methods for Examination of Water and Waste Water," 16th Edition, 1985.

TABLE 5
(continued)

Sample Location: Right 042
Back 263

Analytes	Method Detection Limit (mg/kg)	Instrument	Method	Concentration (Dry Wt) mg/kg
Lithium	2	A.A.	(1) - P.157	14
Titanium	<34	A.A.	(1) - P.162	100

(1)"Standard Methods for Examination of Water and Waste Water," 16th Edition, 1985.

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TABLE 5
(continued)

Sample Location: **Right 042**
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Analytes	Detection Limit	Instrument	Method	Concentration (%)
Total Organic Carbon		Combustion and Absorption in Hydroxide	(1)	6.533
% Moisture		Balance	(2)	22

(1)Gravimetric Determination of Carbon in Sediment by Hydroxide Absorption: J. Sediment Petrology 38, 617-620 (1968).

(2)Standard Methods for Examination of Water and Wastewater, 16th Edition, 1985.

TABLE 5
(continued)

Sample Location: Right 042
Back 263

Organic Compounds	Detection Limit (ppb)	Instrument	Method	Concentration (ppb)
Aroclor-1016	<80	GC	Modified 8080[(1)]	<80
Aroclor-1221	<80	GC	Modified 8080[(1)]	<80
Aroclor-1232	<80	GC	Modified 8080[(1)]	<80
Aroclor-1242	<80	GC	Modified 8080[(1)]	<80
Aroclor-1248	<80	GC	Modified 8080[(1)]	<80
Aroclor-1254	<160	GC	Modified 8080[(1)]	<160
Aroclor-1260	<160	GC	Modified 8080[(1)]	<160

(1)Modified Method means the EPA Method may not be performed in exact specifications, i.e., the level of quality control specially outlined in the EPA Method. "Test Methods for Evaluating Solid Waste," SW-846, U.S. Environmental Protection Agency, 2nd Edition, 1982.

TABLE 5
(continued)

Sample Location: Right 042
Back 263

(MODIFIED EPA METHODS 3540 & 8270)

COMPOUNDS	ug/kg(ppb)	COMPOUNDS	ug/kg(ppb)
2,4,6-trichlorophenol	<3000	hexachlorobutadiene	<3000
p-chloro-m-cresol	<3000	hexachlorocyclopentadiene	<3000
2-chlorophenol	<3000	isophorone	<3000
2,4-dichlorophenol	<3000	naphthalene	<3000
2,4-dimethylphenol	<3000	nitrobenzene	<3000
2-nitrophenol	<3000	N-nitrosodiphenylamine	<3000
4-nitrophenol	<15000	N-nitrosodipropylamine	<3000
2,4-dinitrophenol	<15000	bis(2-ethylhexyl)phthalate	<3000
4,6-dinitro-2-methylphenol	<15000	benzyl butyl phthalate	<3000
pentachlorophenol	<15000	di-n-butyl phthalate	<3000
phenol	<3000	di-n-octyl phthalate	<3000
acenaphthene	<3000	diethyl phthalate	<3000
benzidine	<15000	dimethyl phthalate	<3000
1,2,4-trichlorobenzene	<3000	benzo(a)anthracene	<3000
hexachlorobenzene	<3000	benzo(a)pyrene	<3000
hexachloroethane	<3000	benzo(b)fluoranthene	<3000
bis(2-chloroethyl)ether	<3000	benzo(k)fluoranthene	<3000
2-chloronaphthalene	<3000	chrysene	<3000
1-2-dichlorobenzene	<3000	acenaphthylene	<3000
1,3-dichlorobenzene	<3000	anthracene	<3000
1,4-dichlorobenzene	<3000	benzo(ghi)perylene	<3000
3,3'-dichlorobenzidine	<6000	fluorene	<3000
2,4-dinitrotoluene	<3000	phenanthrene	<3000
1,2-diphenylhydrazine	<3000	dibenzo(a,h)anthracene	<3000
4-chlorophenyl phenyl ether	<3000	indeno(1,2,3-cd)pyrene	<3000
bis(2-chloroisopropyl)ether	<3000	pyrene	<3000
fluoranthene	<3000	2,6-dinitrotoluene	<3000
bis(2-chloroethoxy)methane	<3000	4-bromophenyl phenyl ether	<3000

NON-PRIORITY POLLUTANTS

benzoic acid	<15000	aniline	<3000
2-methylphenol	<3000	benzyl alcohol	<3000
4-methylphenol	<3000	4-chloroaniline	<3000
2,4,5-trichlorophenol	<3000	dibenzofuran	<15000
2-methylnapthalene	<3000	2-nitroaniline	<15000
3-nitroaniline	<15000	4-nitroaniline	<15000

Sample diluted 1:10 due to matrix interference. Sample extracted and analyzed according to TMA Method which is Modified EPA Method 8270.

TABLE 5
(continued)

Sample Location: **Right 042**
Back 263

pH	Reactivity	Ignitability
8.3	(1)	(2)

(1) These soils do not react with water or with alkali. However, there is evolution of gas (most probably carbon dioxide) when treated with acid. The gas is not characterized.

(2) These soils are not ignitable when subjected to friction, moisture or open flame and are not classified as ignitable.

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TABLE 5
(continued)

Sample Location: Right 050
Back 307

Analytes	Method Detection Limit (mg/kg)	Instrument	Method	Concentration (Dry Wt) mg/kg
Lithium	2	A.A.	(1) - P.157	21
Titanium	<55	A.A.	(1) - P.162	<55

(1)"Standard Methods for Examination of Water and Waste Water," 16th Edition, 1985.

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TABLE 5
(continued)

Sample Location: Right 050
Back 307

Analytes	Detection Limit	Instrument	Method	Concentration (%)
Total Organic Carbon		Combustion and Absorption in Hydroxide	(1)	
% Moisture		Balance	(2)	42

(1)Gravimetric Determination of Carbon in Sediment by Hydroxide Absorption: J. Sediment Petrology 38, 617-620 (1968).

(2)Standard Methods for Examination of Water and Wastewater, 16th Edition, 1985.

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TABLE 5
(continued)

Sample Location: Right 050
Back 307

Organic Compounds	Detection Limit (ppb)	Instrument	Method	Concentration (ppb)
Aroclor-1016	<80	GC	Modified 8080 (1)	<80
Aroclor-1221	<80	GC	Modified 8080 (1)	<80
Aroclor-1232	<80	GC	Modified 8080 (1)	<80
Aroclor-1242	<80	GC	Modified 8080 (1)	<80
Aroclor-1248	<80	GC	Modified 8080 (1)	<80
Aroclor-1254	<160	GC	Modified 8080 (1)	<160
Aroclor-1260	<160	GC	Modified 8080 (1)	<160

(1) Modified Method means the EPA Method may not be performed in exact specifications, i.e., the level of quality control specially outlined in the EPA Method. "Test Methods for Evaluating Solid Waste," SW-846, U.S. Environmental Protection Agency, 2nd Edition, 1982.

TABLE 5
(continued)

Sample Location: Right 065
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EP TOXICITY RESULTS

Organic Compounds	Detection Limit (mg/l)	Instrument	Method	Concentration mg/l
<u>Metals</u>				
Arsenic	<0.003	HGA A.A.	(1) - pg 175	0.008
Barium	<0.1	ICP	(1) - pg 180	0.2
Cadmium	<0.01	ICP	(1) - pg 180	<0.01
Chromium	<0.03	ICP	(1) - pg 180	< 0.03
Lead	<0.02	ICP	(1) - pg 180	<0.02
Mercury	<0.002	Cold Vapor A.A	(1) - pg 171	<0.002
Selenium	<0.003	HGA A.A.	(1) - pg 175	<0.003
Silver	<0.003	ICP	(1) - pg 180	<0.02
Chromium (+6)	<0.005	Colorimetric	(1) - pg 201	<0.005

(1) "Standard Methods for Examination of Water and Waste Water," 16th Edition, 1985.

TABLE 5
(continued)

Sample Location: Right 065
Back 295

Analytes	Method Detection Limit (mg/kg)	Instrument	Method	Concentration (Dry Wt) mg/kg
Lithium	2	A.A.	(1) - P.157	20
Titanium	<45	A.A.	(1) - P.162	150

(1)"Standard Methods for Examination of Water and Waste Water," 16th Edition, 1985.

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TABLE 5
(continued)

Sample Location: Right 065
Back 295

Analytes	Detection Limit	Instrument	Method	Concentration (%)
Total Organic Carbon		Combustion and Absorption in Hydroxide	(1)	
% Moisture		Balance	(2)	27

(1)Gravimetric Determination of Carbon in Sediment by Hydroxide Absorption: J. Sediment Petrology 38, 617-620 (1968).

(2)Standard Methods for Examination of Water and Wastewater, 16th Edition, 1985.

TABLE 5
(continued)

Sample Location: Right 065
Back 295

Organic Compounds	Detection Limit (ppb)	Instrument	Method	Concentration (ppb)
Aroclor-1016	<80	GC	Modified 8080[1]	<80
Aroclor-1221	<80	GC	Modified 8080[1]	<80
Aroclor-1232	<80	GC	Modified 8080[1]	<80
Aroclor-1242	<80	GC	Modified 8080[1]	<80
Aroclor-1248	<80	GC	Modified 8080[1]	<80
Aroclor-1254	<160	GC	Modified 8080[1]	<160
Aroclor-1260	<160	GC	Modified 8080[1]	<160

(1) Modified Method means the EPA Method may not be performed in exact specifications, i.e., the level of quality control specially outlined in the EPA Method. "Test Methods for Evaluating Solid Waste," SW-846, U.S. Environmental Protection Agency, 2nd Edition, 1982.

TABLE 5
(continued)

Sample Location: Right 065
Back 295

(MODIFIED EPA METHODS 3540 & 8270)

COMPOUNDS	ug/kg(ppb)	COMPOUNDS	ug/kg(ppb)
2,4,6-trichlorophenol	<300	hexachlorobutadiene	<300
p-chloro-m-cresol	<300	hexachlorocyclopentadiene	<300
2-chlorophenol	<300	isophorone	<300
2,4-dichlorophenol	<300	naphthalene	<300
2,4-dimethylphenol	<300	nitrobenzene	<300
2-nitrophenol	<300	N-nitrosodiphenylamine	<300
4-nitrophenol	<1500	N-nitrosodipropylamine	<300
2,4-dinitrophenol	<1500	bis(2-ethylhexyl)phthalate	900
4,6-dinitro-2-methylphenol	<1500	benzyl butyl phthalate	<300
pentachlorophenol	<1500	di-n-butyl phthalate	1200
phenol	<300	di-n-octyl phthalate	<300(J)
acenaphthene	<300	diethyl phthalate	<300
benzidine	<1500	dimethyl phthalate	<300
1,2,4-trichlorobenzene	<300	benzo(a)anthracene	<300
hexachlorobenzene	<300	benzo(a)pyrene	<300(J)
hexachloroethane	<300	benzo(b)fluoranthene	<300(J)
bis(2-chloroethyl)ether	<300	benzo(k)fluoranthene	<300
2-chloronaphthalene	<300	chrysene	1600
1-2-dichlorobenzene	<300	acenaphthylene	<300(J)
1,3-dichlorobenzene	<300	anthracene	370
1,4-dichlorobenzene	<300	benzo(ghi)perylene	<300
3,3'-dichlorobenzidine	<600	fluorene	<300(J)
2,4-dinitrotoluene	<300	phenanthrene	2000
1,2-diphenylhydrazine	<300	dibenzo(a,h)anthracene	<300
4-chlorophenyl phenyl ether	<300	indeno(1,2,3-cd)pyrene	<300
bis(2-chloroisopropyl)ether	<300	pyrene	1600
fluoranthene	2700	2,6-dinitrotoluene	<300
bis(2-chloroethoxy)methane	<300	4-bromophenyl phenyl ether	<300

NON-PRIORITY POLLUTANTS

benzoic acid	<1500	aniline	<300
2-methylphenol	<300	benzyl alcohol	<300
4-methylphenol	<300	4-chloroaniline	<300
2,4,5-trichlorophenol	<300	dibenzofuran	<300
2-methylnapthalene	<300	2-nitroaniline	<1500
3-nitroaniline	<1500	4-nitroaniline	<1500

J = present but below detection limits

TABLE 5
(continued)

Sample Location: **Right 065**
Back 295

pH	Reactivity	Ignitability
7.6	(1)	(2)

(1) These soils do not react with water or with alkali. However, there is evolution of gas (most probably carbon dioxide) when treated with acid. The gas is not characterized.

(2) These soils are not ignitable when subjected to friction, moisture or open flame and are not classified as ignitable.

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TABLE 5
(continued)

Sample Location: Right 050
Back 307

EP TOXICITY RESULTS

Organic Compounds	Detection Limit (mg/l)	Instrument	Method	Concentration (mg/l)
Metals				
Arsenic	<0.003	HGA A.A.	(1) - pg 175	0.003
Barium	<0.1	ICP	(1) - pg 180	0.2
Cadmium	<0.01	ICP	(1) - pg 180	<0.01
Chromium	<0.03	ICP	(1) - pg 180	< 0.03
Lead	<0.02	ICP	(1) - pg 180	<0.02
Mercury	<0.002	Cold Vapor A.A	(1) - pg 171	<0.002
Selenium	<0.003	HGA A.A.	(1) - pg 175	<0.003
Silver	<0.003	ICP	(1) - pg 180	<0.02
Chromium (+6)	<0.005	Colorimetric	(1) - pg 201	<0.005

(1) "Standard Methods for Examination of Water and Waste Water," 16th Edition, 1985.

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TABLE 5
(continued)

Sample Location: Right 050
Back 307

(MODIFIED EPA METHODS 3540 & 8270)

COMPOUNDS	ug/kg(ppb)	COMPOUNDS	ug/kg(ppb)
2,4,6-trichlorophenol	<300	hexachlorobutadiene	<300
p-chloro-m-cresol	<300	hexachlorocyclopentadiene	<300
2-chlorophenol	<300	isophorone	<300
2,4-dichlorophenol	<300	naphthalene	<300(J)
2,4-dimethylphenol	<300	nitrobenzene	<300
2-nitrophenol	<300	N-nitrosodiphenylamine	<300
4-nitrophenol	<1500	N-nitrosodipropylamine	<300
2,4-dinitrophenol	<1500	bis(2-ethylhexyl)phthalate	1800
4,6-dinitro-2-methylphenol	<1500	benzyl butyl phthalate	<300
pentachlorophenol	<1500	di-n-butyl phthalate	1600
phenol	<300	di-n-octyl phthalate	<300
acenaphthene	<300	diethyl phthalate	<300
benzidine	<1500	dimethyl phthalate	<300
1,2,4-trichlorobenzene	<300	benzo(a)anthracene	<300
hexachlorobenzene	<300	benzo(a)pyrene	<300(J)
hexachloroethane	<300	benzo(b)fluoranthene	<300
bis(2-chloroethyl)ether	<300	benzo(k)fluoranthene	<300
2-chloronaphthalene	<300	chrysene	2300
1-2-dichlorobenzene	<300	acenaphthylene	<300(J)
1,3-dichlorobenzene	<300	anthracene	<300
1,4-dichlorobenzene	<300	benzo(ghi)perylene	<300
3,3'-dichlorobenzidine	<600	fluorene	<300
2,4-dinitrotoluene	<300	phenanthrene	2200
1,2-diphenylhydrazine	<300	dibenzo(a,h)anthracene	<300
4-chlorophenyl phenyl ether	<300	indeno(1,2,3-cd)pyrene	<300
bis(2-chloroisopropyl)ether	<300	pyrene	1400
fluoranthene	2600	2,6-dinitrotoluene	<300
bis(2-chloroethoxy)methane	<300	4-bromophenyl phenyl ether	<300

NON-PRIORITY POLLUTANTS

benzoic acid	<1500	aniline	<300
2-methylphenol	<300	benzyl alcohol	<300
4-methylphenol	<300	4-chloroaniline	<300
2,4,5-trichlorophenol	<300	dibenzofuran	<300
2-methylnapthalene	<300	2-nitroaniline	<1500
3-nitroaniline	<1500	4-nitroaniline	<1500

J = present but below detection limits

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TABLE 5
(continued)

Sample Location: Right 050
Back 307

pH	Reactivity	Ignitability
6.6	(1)	(2)

(1) These soils do not react with water or with alkali. However, there is evolution of gas (most probably carbon dioxide) when treated with acid. The gas is not characterized.

(2) These soils are not ignitable when subjected to friction, moisture or open flame and are not classified as ignitable.

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TABLE 5
(continued)

Sample Location: Right 070
Back 470

EP TOXICITY RESULTS

Organic Compounds	Detection Limit (mg/l)	Instrument	Method	Concentration mg/l
Metals				
Arsenic	<0.003	HGA A.A.	(1) - pg 175	<0.003
Barium	<0.1	ICP	(1) - pg 180	0.2
Cadmium	<0.01	ICP	(1) - pg 180	<0.01
Chromium	<0.03	ICP	(1) - pg 180	< 0.03
Lead	<0.02	ICP	(1) - pg 180	<0.02
Mercury	<0.002	Cold Vapor A.A	(1) - pg 171	<0.002
Selenium	<0.003	HGA A.A.	(1) - pg 175	<0.003
Silver	<0.003	ICP	(1) - pg 180	<0.02
Chromium (+6)	<0.005	Colorimetric	(1) - pg 201	<0.005

(1) "Standard Methods for Examination of Water and Waste Water," 16th Edition, 1985.

TABLE 5
(continued)

Sample Location: Right 070
Back 470

Analytes	Method Detection Limit (mg/kg)	Instrument	Method	Concentration (Dry Wt) mg/kg
Lithium	2	A.A.	(1) - P.157	35
Titanium	<45	A.A.	(1) - P.162	<45

(1)"Standard Methods for Examination of Water and Waste Water," 16th Edition, 1985.

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TABLE 5
(continued)

Sample Location: Right 070
Back 470

Analytes	Detection Limit	Instrument	Method	Concentration (%)
Total Organic Carbon		Combustion and Absorption in Hydroxide	(1)	3.761
% Moisture		Balance	(2)	28

(1)Gravimetric Determination of Carbon in Sediment by Hydroxide Absorption: J. Sediment Petrology 38, 617-620 (1968).

(2)Standard Methods for Examination of Water and Wastewater, 16th Edition, 1985.

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TABLE 5
(continued)

Sample Location: **Right 070**
Back 470

Organic Compounds	Detection Limit (ppb)	Instrument	Method	Concentration (ppb)
Aroclor-1016	<80	GC	Modified 8080[1]	<80
Aroclor-1221	<80	GC	Modified 8080[1]	<80
Aroclor-1232	<80	GC	Modified 8080[1]	<80
Aroclor-1242	<80	GC	Modified 8080[1]	<80
Aroclor-1248	<80	GC	Modified 8080[1]	<80
Aroclor-1254	<160	GC	Modified 8080[1]	<160
Aroclor-1260	<160	GC	Modified 8080[1]	<160

(1)Modified Method means the EPA Method may not be performed in exact specifications, i.e., the level of quality control specially outlined in the EPA Method. "Test Methods for Evaluating Solid Waste," SW-846, U.S. Environmental Protection Agency, 2nd Edition, 1982.

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TABLE 5
(continued)

Sample Location: Right 070
Back 470

(MODIFIED EPA METHODS 3540 & 8270)

COMPOUNDS	ug/kg(ppb)	COMPOUNDS	ug/kg(ppb)
2,4,6-trichlorophenol	<300	hexachlorobutadiene	<300
p-chloro-m-cresol	<300	hexachlorocyclopentadiene	<300
2-chlorophenol	<300	isophorone	<300
2,4-dichlorophenol	<300	naphthalene	930
2,4-dimethylphenol	<300	nitrobenzene	<300
2-nitrophenol	<300	N-nitrosodiphenylamine	<300
4-nitrophenol	<1500	N-nitrosodipropylamine	<300
2,4-dinitrophenol	<1500	bis(2-ethylhexyl)phthalate	<300(J)
4,6-dinitro-2-methylphenol	<1500	benzyl butyl phthalate	<300
pentachlorophenol	<1500	di-n-butyl phthalate	890
phenol	<300	di-n-octyl phthalate	<300
acenaphthene	1200	diethyl phthalate	<300
benzidine	<1500	dimethyl phthalate	<300
1,2,4-trichlorobenzene	<300	benzo(a)anthracene	<300
hexachlorobenzene	<300	benzo(a)pyrene	<300
hexachloroethane	<300	benzo(b)fluoranthene	<300
bis(2-chloroethyl)ether	<300	benzo(k)fluoranthene	<300
2-chloronaphthalene	<300	chrysene	5400
1-2-dichlorobenzene	<300	acenaphthylene	380
1,3-dichlorobenzene	<300	anthracene	<300
1,4-dichlorobenzene	<300	benzo(ghi)perylene	<300
3,3'-dichlorobenzidine	<600	fluorene	1500
2,4-dinitrotoluene	<300	phenanthrene	11400
1,2-diphenylhydrazine	<300	dibenzo(a,h)anthracene	<300
4-chlorophenyl phenyl ether	<300	indeno(1,2,3-cd)pyrene	<300
bis(2-chloroisopropyl)ether	<300	pyrene	7600
fluoranthene	14700	2,6-dinitrotoluene	<300
bis(2-chloroethoxy)methane	<300	4-bromophenyl phenyl ether	<300

NON-PRIORITY POLLUTANTS

benzoic acid	<1500	aniline	<300
2-methylphenol	<300	benzyl alcohol	<300
4-methylphenol	<300	4-chloroaniline	<300
2,4,5-trichlorophenol	<300	dibenzofuran	1100
2-methylnapthalene	330	2-nitroaniline	<1500
3-nitroaniline	<1500	4-nitroaniline	<1500

J = present but below detection limits

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TABLE 5
(continued)

Sample Location: **Right 070**
Back 470

pH	Reactivity	Ignitability
7.3	(1)	(2)

(1) These soils do not react with water or with alkali. However, there is evolution of gas (most probably carbon dioxide) when treated with acid. The gas is not characterized.

(2) These soils are not ignitable when subjected to friction, moisture or open flame and are not classified as ignitable.

TABLE 5
(continued)

Sample Location: Right 050
Back 600

EP TOXICITY RESULTS

Organic Compounds	Detection Limit (mg/l)	Instrument	Method	Concentration mg/l
Metals				
Arsenic	<0.003	HGA A.A.	(1) - pg 175	0.010
Barium	<0.1	ICP	(1) - pg 180	0.2
Cadmium	<0.01	ICP	(1) - pg 180	<0.01
Chromium	<0.03	ICP	(1) - pg 180	< 0.03
Lead	<0.02	ICP	(1) - pg 180	<0.02
Mercury	<0.002	Cold Vapor A.A	(1) - pg 171	<0.002
Selenium	<0.003	HGA A.A.	(1) - pg 175	<0.003
Silver	<0.02	ICP	(1) - pg 180	<0.02
Chromium (+6)	<0.005	Colorimetric	(1) - pg 201	<0.005

(1) "Standard Methods for Examination of Water and Waste Water," 16th Edition, 1985.

TABLE 5
(continued)

Sample Location: Right 050
Back 600

Analytes	Method Detection Limit (mg/kg)	Instrument	Method	Concentration (Dry Wt)(mg/kg)
Lithium	2	A.A.	(1) - P.157	17
Titanium	<45	A.A.	(1) - P.162	86

(1)"Standard Methods for Examination of Water and Waste Water," 16th Edition, 1985.

TABLE 5
(continued)

Sample Location: Right 050
Back 600

Analytes	Detection Limit	Instrument	Method	Concentration (%)
Total Organic Carbon		Combustion and Absorption in Hydroxide	(1)	5.284
% Moisture		Balance	(2)	32

(1)Gravimetric Determination of Carbon in Sediment by Hydroxide Absorption: J. Sediment Petrology 38, 617-620 (1968).

(2)Standard Methods for Examination of Water and Wastewater, 16th Edition, 1985.

TABLE 5
(continued)

Sample Location: Right 050
Back 600

Organic Compounds	Detection Limit (ppb)	Instrument	Method	Concentration (ppb)
Aroclor-1016	<80	GC	Modified 8080[1]	<80
Aroclor-1221	<80	GC	Modified 8080[1]	<80
Aroclor-1232	<80	GC	Modified 8080[1]	<80
Aroclor-1242	<80	GC	Modified 8080[1]	<80
Aroclor-1248	<80	GC	Modified 8080[1]	<80
Aroclor-1254	<160	GC	Modified 8080[1]	<160
Aroclor-1260	<160	GC	Modified 8080[1]	<160

(1)Modified Method means the EPA Method may not be performed in exact specifications, i.e., the level of quality control specially outlined in the EPA Method. "Test Methods for Evaluating Solid Waste," SW-846, U.S. Environmental Protection Agency, 2nd Edition, 1982.

TABLE 5
(continued)

Sample Location: Right 050
Back 600

(MODIFIED EPA METHODS 3540 & 8270)

COMPOUNDS	ug/kg(ppb)	COMPOUNDS	ug/kg(ppb)
2,4,6-trichlorophenol	<3000	hexachlorobutadiene	<3000
p-chloro-m-cresol	<3000	hexachlorocyclopentadiene	<3000
2-chlorophenol	<3000	isophorone	<3000
2,4-dichlorophenol	<3000	naphthalene	<3000
2,4-dimethylphenol	<3000	nitrobenzene	<3000
2-nitrophenol	<3000	N-nitrosodiphenylamine	<3000
4-nitrophenol	<15000	N-nitrosodipropylamine	<3000
2,4-dinitrophenol	<15000	bis(2-ethylhexyl)phthalate	<3000
4,6-dinitro-2-methylphenol	<15000	benzyl butyl phthalate	<3000
pentachlorophenol	<15000	di-n-butyl phthalate	<3000(J)
phenol	<3000	di-n-octyl phthalate	<3000
acenaphthene	<3000	diethyl phthalate	<3000
benzidine	<15000	dimethyl phthalate	<3000
1,2,4-trichlorobenzene	<3000	benzo(a)anthracene	<3000(J)
hexachlorobenzene	<3000	benzo(a)pyrene	<3000(J)
hexachloroethane	<3000	benzo(b)fluoranthene	<3000(J)*
bis(2-chloroethyl)ether	<3000	benzo(k)fluoranthene	<3000
2-chloronaphthalene	<3000	chrysene	<3000(J)
1-2-dichlorobenzene	<3000	acenaphthylene	<3000
1,3-dichlorobenzene	<3000	anthracene	<3000
1,4-dichlorobenzene	<3000	benzo(ghi)perylene	<3000(J)
3,3'-dichlorobenzidine	<6000	fluorene	<3000
2,4-dinitrotoluene	<3000	phenanthrene	3080
1,2-diphenylhydrazine	<3000	dibenzo(a,h)anthracene	<3000
4-chlorophenyl phenyl ether	<3000	indeno(1,2,3-cd)pyrene	<3000(J)
bis(2-chloroisopropyl)ether	<3000	pyrene	4300
fluoranthene	3400	2,6-dinitrotoluene	<3000
bis(2-chloroethoxy)methane	<3000	4-bromophenyl phenyl ether	<3000

NON-PRIORITY POLLUTANTS

benzoic acid	<15000	aniline	<3000
2-methylphenol	<3000	benzyl alcohol	<3000
4-methylphenol	<3000	4-chloroaniline	<3000
2,4,5-trichlorophenol	<3000	dibenzofuran	<3000
2-methylnapthalene	<3000	2-nitroaniline	<15000
3-nitroaniline	<15000	4-nitroaniline	<15000

Sample diluted 1:10 due to matrix interference

J = present but below detection limits

*Compound identified and quantitated as benzo(b)fluoranthene. Could be either isomer.

TABLE 5
(continued)

Sample Location: **Right 050**
Back 600

pH	Reactivity	Ignitability
6.0	(1)	(2)

(1) These soils do not react with water or with alkali. However, there is evolution of gas (most probably carbon dioxide) when treated with acid. The gas is not characterized.

(2) These soils are not ignitable when subjected to friction, moisture or open flame and are not classified as ignitable.

TABLE 5
(continued)

Sample Location: Right 050
Back 600

EP TOXICITY RESULTS

Organic Compounds	Detection Limit (mg/l)	Instrument	Method	Concentration mg/l
Metals				
Arsenic	<0.003	HGA A.A.	(1) - pg 175	0.010
Barium	<0.1	ICP	(1) - pg 180	0.2
Cadmium	<0.01	ICP	(1) - pg 180	<0.01
Chromium	<0.03	ICP	(1) - pg 180	< 0.03
Lead	<0.02	ICP	(1) - pg 180	<0.02
Mercury	<0.002	Cold Vapor A.A	(1) - pg 171	<0.002
Selenium	<0.003	HGA A.A.	(1) - pg 175	<0.003
Silver	<0.02	ICP	(1) - pg 180	<0.02
Chromium (+6)	<0.005	Colorimetric	(1) - pg 201	<0.005

(1) "Standard Methods for Examination of Water and Waste Water," 16th Edition, 1985.

TABLE 5
(continued)

Sample Location: Right 050
Back 600

Analytes	Method Detection Limit (mg/kg)	Instrument	Method	Concentration (Dry Wt)(mg/kg)
Lithium	2	A.A.	(1) - P.157	17
Titanium	<45	A.A.	(1) - P.162	86

(1)"Standard Methods for Examination of Water and Waste Water," 16th Edition, 1985.

TABLE 5
(continued)

Sample Location: Right 050
Back 600

Analytes	Detection Limit	Instrument	Method	Concentration (%)
Total Organic Carbon		Combustion and Absorption in Hydroxide	(1)	5.284
% Moisture		Balance	(2)	32

(1)Gravimetric Determination of Carbon in Sediment by Hydroxide Absorption: J. Sediment Petrology 38, 617-620 (1968).

(2)Standard Methods for Examination of Water and Wastewater, 16th Edition, 1985.

TABLE 5
(continued)

Sample Location: Right 050
Back 600

Organic Compounds	Detection Limit (ppb)	Instrument	Method	Concentration (ppb)
Aroclor-1016	<80	GC	Modified 8080[1]	<80
Aroclor-1221	<80	GC	Modified 8080[1]	<80
Aroclor-1232	<80	GC	Modified 8080[1]	<80
Aroclor-1242	<80	GC	Modified 8080[1]	<80
Aroclor-1248	<80	GC	Modified 8080[1]	<80
Aroclor-1254	<160	GC	Modified 8080[1]	<160
Aroclor-1260	<160	GC	Modified 8080[1]	<160

(1)Modified Method means the EPA Method may not be performed in exact specifications, i.e., the level of quality control specially outlined in the EPA Method. "Test Methods for Evaluating Solid Waste," SW-846, U.S. Environmental Protection Agency, 2nd Edition, 1982.

039650

TABLE 5
(continued)

Sample Location: Right 050
Back 600

(MODIFIED EPA METHODS 3540 & 8270)

COMPOUNDS	ug/kg(ppb)	COMPOUNDS	ug/kg(ppb)
2,4,6-trichlorophenol	<3000	hexachlorobutadiene	<3000
p-chloro-m-cresol	<3000	hexachlorocyclopentadiene	<3000
2-chlorophenol	<3000	isophorone	<3000
2,4-dichlorophenol	<3000	naphthalene	<3000
2,4-dimethylphenol	<3000	nitrobenzene	<3000
2-nitrophenol	<3000	N-nitrosodiphenylamine	<3000
4-nitrophenol	<15000	N-nitrosodipropylamine	<3000
2,4-dinitrophenol	<15000	bis(2-ethylhexyl)phthalate	<3000
4,6-dinitro-2-methylphenol	<15000	benzyl butyl phthalate	<3000
pentachlorophenol	<15000	di-n-butyl phthalate	<3000(J)
phenol	<3000	di-n-octyl phthalate	<3000
acenaphthene	<3000	diethyl phthalate	<3000
benzidine	<15000	dimethyl phthalate	<3000
1,2,4-trichlorobenzene	<3000	benzo(a)anthracene	<3000(J)
hexachlorobenzene	<3000	benzo(a)pyrene	<3000(J)
hexachloroethane	<3000	benzo(b)fluoranthene	<3000(J)*
bis(2-chloroethyl)ether	<3000	benzo(k)fluoranthene	<3000
2-chloronaphthalene	<3000	chrysene	<3000(J)
1-2-dichlorobenzene	<3000	acenaphthylene	<3000
1,3-dichlorobenzene	<3000	anthracene	<3000
1,4-dichlorobenzene	<3000	benzo(ghi)perylene	<3000(J)
3,3'-dichlorobenzidine	<6000	fluorene	<3000
2,4-dinitrotoluene	<3000	phenanthrene	3080
1,2-diphenylhydrazine	<3000	dibenzo(a,h)anthracene	<3000
4-chlorophenyl phenyl ether	<3000	indeno(1,2,3-cd)pyrene	<3000(J)
bis(2-chloroisopropyl)ether	<3000	pyrene	4300
fluoranthene	3400	2,6-dinitrotoluene	<3000
bis(2-chloroethoxy)methane	<3000	4-bromophenyl phenyl ether	<3000

NON-PRIORITY POLLUTANTS

benzoic acid	<15000	aniline	<3000
2-methylphenol	<3000	benzyl alcohol	<3000
4-methylphenol	<3000	4-chloroaniline	<3000
2,4,5-trichlorophenol	<3000	dibenzofuran	<3000
2-methylnapthalene	<3000	2-nitroaniline	<15000
3-nitroaniline	<15000	4-nitroaniline	<15000

Sample diluted 1:10 due to matrix interference

J = present but below detection limits

*Compound identified and quantitated as benzo(b)fluoranthene. Could be either isomer.

039650

TABLE 5
(continued)

Sample Location: Right 050
Back 600

pH	Reactivity	Ignitability
6.0	(1)	(2)

(1) These soils do not react with water or with alkali. However, there is evolution of gas (most probably carbon dioxide) when treated with acid. The gas is not characterized.

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