ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES

PHASE II INVESTIGATIONS

Volume II - Appendices

Tully Landfill
Town of Tully

Site No. 734011
Onondaga County

Prepared for:

New York State Department of Environmental Conservation

50 Wolf Road, Albany, New York 12233
Thomas C. Jorling, Commissioner

Division of Hazardous Waste Remediation
Michael J. O'Toole, Jr., P.E., Director

By:

ENGINEERING-SCIENCE

VOLUME II - APPENDICIES

ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES IN THE STATE OF NEW YORK

PHASE II INVESTIGATIONS - TULLY LANDFILL
NYS SITE NUMBER #734011
ONONDAGA COUNTY, NEW YORK

Prepared for:

DIVISION OF HAZARDOUS WASTE REMEDIATION
NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
50 WOLF ROAD
ALBANY, NEW YORK 12233-0001

Prepared by:

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JANUARY 1991

APPENDIX A

PHASE II FIELD PROCEDURES

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These procedures, utilized by Engineering-Science, Inc. field teams during the Phase II field investigations, are taken from the NYSDEC-approved "Quality Assurance Project Plan for the Phase II Engineering Investigations and Evaluations at Inactive Hazardous Waste Disposal Sites," dated October 1989.

DRILLING

The drilling procedures utilized were taken from "Guidelines for Exploratory Boring, Monitoring Wells Installation and Documentation of these Activities," as promulgated by NYSDEC. These procedures, as found in the project Work Plan and Quality Assurance Plan, were modified in the field with NYSDEC approval in response to site-specific conditions encountered.

All downhole drilling equipment and tools were steam-cleaned prior to beginning each well boring. The downhole equipment and tools were generally placed on sheets of plywood to limit cross-contamination. Drilling was accomplished with an ATV mounted Mobile-53 drill rig.

Generally, unconsolidated and poorly consolidated soil and rock materials were drilled with 4-1/4-inch inside diameter hollow-stem augers in wells GW-1 and GW-2 and 6-5/8-inch hollow-stem augers in well GW-3. Soil samples were collected at 5 foot intervals in wells GW-1 and GW-3 and continuously from 10 to 16 feet in well GW-2 with split spoons. Soil samples were visually classified in terms of moisture content, color, texture, density and structure. The soil samples were screened with a Photovac Tip II to detect the presence of volatile organic compounds. The soil cuttings were also monitored with the Photovac. The soil materials were left on the ground surface.

MONITORING WELL INSTALLATION

All wells were constructed with two-inch I.D. PVC riser pipe and 0.010-inch slotted screen. Well screens were 10 feet in length in wells GW-2 and GW-3 and well screens were 20 feet in length in well GW-1. All well materials were steam-cleaned prior to insertion in the borehole.

PVC well materials were set in place through the augers and quartz sand was backfilled around the well screen to a level of two feet above the screen. A bentonite pellet seal two feet thick was placed above the quartz sand and a cement/bentonite slurry was installed to the surface. A vented PVC cap was placed on the well pipe, and the well was secured with a locking four-inch inside diameter steel protective casing.

WELL DEVELOPMENT

Each well was developed by removing water from the well. Low hydraulic conductivities and slow well recharge did not allow development to a sediment free condition. Development methods included pumping with the rig pump and bailing with disposable bailers.

The sampling program at the Tully Landfill site consisted of groundwater, surface water, sediment and subsurface soil sampling. Samples were collected in accordance with the Quality Assurance Project Plan. In addition to the media sampled, two types of blanks were collected. A trip blank consisting of organic-free water was prepared by the laboratory and accompanied the sample bottle shipment. This blank provides a measure of the impact of the bottle preparation procedures and shipment on the samples. The trip blanks were analyzed for volatile organic compounds.

Wash blanks were also collected by pouring organic-free water provided by the laboratory over the sampling equipment as a measure of the field decontamination procedures. The wash blanks were assigned non-existent sample location designations and were analyzed for TCL compounds and TAL metals.

Sampling equipment was decontaminated by steam-cleaning prior to sampling at each location. After collection of the water samples, field tests were performed on an additional sample to determine pH, temperature, and specific conductivity. Field sampling records are presented in Appendix D.

GROUNDWATER SAMPLING

The static water level in the well was recorded from the top of the PVC casing prior to purging the well. Wells were purged by removing at least three well volumes of water with a disposable polyethylene bailer and dedicated polypropylene line prior to filling sample bottles. Sample bottles were supplied by Versar, Inc.

SURFACE WATER SAMPLING

Surface water samples were collected by using disposable bailers whose contents were poured into sample bottles supplied by Versar, Inc.

SEDIMENT SAMPLING

Sediment samples were collected with long-handled stainless steel spoons. Sample bottles were supplied by Versar, Inc.

FILL/SOIL SAMPLING

The subsurface soils were collected with a split-spoon sampler at 5 foot intervals during the drilling of monitoring wells GW-1 and GW-3. Split-spoon samples were composited by well for full TCL and TAL analyses. Well GW-2 was sampled continuously from 10 to 16 feet. No samples from well GW-2 were analyzed because Photovac Tip II detected no contamination.

AIR QUALITY MONITORING

Air quality monitoring for volatile organic compounds with a Photovac Tip-II photoionization meter was implemented during the drilling and well installations, and sampling events. Monitoring was performed as a health and safety measure. The meter was calibrated daily before use with a commercially-prepared 100 ppm isobutylene standard gas. Air quality in the breathing zone was determined by holding the intake of the instrument at head height for 30 seconds and recording the reading. During drilling, the split-spoon soil samples were held within several inches of the intake to test for organic vapors emanating from the soil samples. The air in the completed well was monitored by placing the intake over the well opening and removing the PVC cap. The intake was then placed into the well opening and readings were recorded in the field book.

APPENDIX B

GEOPHYSICAL SURVEY REPORT

TULLY LANDFILL

GEOPHYSICAL SURVEY METHODS AND RESULTS

NYSDEC PHASE II INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES

SITE ID NO. 734001

DJE/SY053.06/0000

TULLY LANDFILL

GEOPHYSICAL SURVEY METHODS AND RESULTS

GEOPHYSICAL SURVEY METHODOLOGY

A geophysical investigation was conducted at the Tully Landfill site in the Town of Tully, Onondaga County, New York. This investigation was part of the Phase II (Fourth Round) investigations and evaluations at inactive hazardous waste disposal sites in the State of New York, conducted by Engineering-Science, Inc. (ES) under a contract with the New York State Department of Environmental Conservation (NYSDEC). All geophysical surveys were completed prior to installation of groundwater monitoring wells at the site.

Electrical Resistivity

A Bison model 2350B resistivity meter was used for the electrical resistivity (ER) survey. This instrument has a resolution of one part in 10,000 maximum scale reading and an accuracy of $\pm 2\%$ per range setting. Typical measurements (in ohm-meters or ohm-feet) are indicative of the electrical resistance of the earth to conducting an induced electric current through metal electrodes placed in the ground. In general, a fresh-water aquifer will exhibit a relatively higher resistivity than a fresh water aquifer containing significant concentrations of polar organic molecules and/or ionized metals.

The ER surveys performed consisted of soundings and profiles. Resistivity soundings are indicative of vertical resistivity variations in the earth. Resistivity profiles are indicative of lateral variations in the earth's resistivity.

The ER soundings utilized the Modified Wenner Electrode Array (Carrington and Watson, 1981). in this method, the current electrodes, located furthest from the center of the array, are kept stationary while the potential electrodes, those closest to the center of the array, are moved away from the center in equal increments. The potential electrode distance closely approximates the depth of investigation into the subsurface. For example, a sounding with a potential electrode distance of 30 feet would indicate resistivity values at approximately 30 feet below the ground surface.

The ER profiles utilized the Standard Wenner Array (Bison, 1975). In this method, the current and potential electrodes are spaced at equal distances from one another. The depth of investigation is a plane of the subsurface approximately three-fourths to one times the electrode spacing. For example, an electrode spacing of 50 feet in the Standard Wenner Array investigates a plane of the subsurface approximately 30 to 50 feet deep.

SITE SPECIFIC METHODS AND RESULTS

The objectives of the electrical resistivity survey at the Tully Landfill site included defining the extent of detectable conductive plumes, delineating significant discontinuities, obtaining supplemental information on geology, and aiding in identifying locations for the placement of borings and monitoring wells.

This section describes the procedures used in conducting the ER survey at the Tully Landfill site and presents the field survey results. The findings of this study are based on interpretations of data acquired from indirect subsurface investigation methods and are, therefore, preliminary and subject to verification by direct methods, i.e., soil borings and monitoring wells.

Electrical Resistivity Survey - Soundings

This survey consisted of three soundings conducted to a depth of approximately 60 feet at the three well locations proposed in the project work plan. The locations of these soundings are shown on Figure 1. Sounding S-1 was performed northeast of the site in a small clearing north of West Hill Road. Sounding 2 was performed near the southwest corner of the site at the base of the landfill. Sounding 3 was performed at the base of the landfill near the middle of the southern property line.

The purpose of the soundings was to investigate vertical variations in subsurface resistivity and to relate these variations to subsurface lithology, depth to bedrock, and areas of possible subsurface leachate migration. This information is useful in determining monitoring well placement, depth, and screen location. The electrical resistivity sounding results are tabulated in Tables 1 thorough 3, and the sounding graphs are presented in Figures 2 through 4. Due to the lack of detailed on-site geological data and boring logs, the interpretation of the soundings are preliminary. The influence of lateral superficial variations in the resistivity sounding has not been assessed for this site because perpendicular sounding lines were not practical due to topographic limitations. In general, the sounding data indicate that groundwater may be present at a depth of 10 feet and bedrock may be found at a depth of 12 feet. However, weathered shale and siltstone bedrock is present in the stream bed and along the banks of the stream, indicating that in some areas depth to bedrock may be less than 12 feet.

Electrical Resistivity Survey - Profiles

The locations at which 23 profiles were performed are shown on Figure 1. The purpose of the profiles was to investigate the lateral variations in subsurface resistivity and, in particular, attempt to identify potential conductive plumes which may exist beneath the site. The electrical resistivity profile data are summarized in Table 4. The profile data were contoured to identify areas with low apparent resistivity. Low resistivity areas may indicate a conductive plume in the subsurface. The contoured profile data are presented on Figures 5 through 7. The profiles were performed to depths of 10, 20, and 40 feet. Background resistivity values for this site were established by selecting profile stations at locations which were upgradient from all suspected disposal operations. Readings were taken to establish the

background resistivity for each depth. The background resistivity for the Tully site for all three profile depths was determined to be greater than 390 ohm-feet.

One narrow band of moderately low resistivity (bounded by the 280 ohm-foot contour, shaded area on Figure 5) was identified at the 10-foot depth at the toe of the landfill along the southwestern portion of the site. The resistivity values in this area ranged between 170 and 280 ohm-feet.

At the 20-foot depth, the band of moderately low resistivity identified at the 10-foot depth has expanded to include a relatively large area of moderately low resistivity which trends from northeast to southwest across the site, approximately bounded by the 325 ohm-foot contour (shaded area in Figure 6). The resistivity values in this area ranged between 214 and 310 ohm-feet.

The moderately low resistivity areas identified in the shallower profile depths (10 and 20 feet) appears to be more restricted at the 40-foot depth (shaded area in Figure 7). The resistivity values in this area ranged between 240 and 280 ohmm-feet. These areas of moderately low resistivity may be associated with a conductive contaminant plume originating in the landfill and migrating toward the stream located southwest of the site.

Contouring for the resistivity profile data was accomplished using Golden Software's SURFER version 4.07 package. Data was input into a data file and gridded using the statistical method of inverse squares.

Recommendations

The following recommendations were made at the end of the geophysical survey, prior to the initiation of the drilling program.

- The placement of two of the three monitoring well couplets as proposed in the work plan, located in the vicinity of the three sounding stations, appears appropriate to intercept a conductive plume which may exist along the southern portion of the site, and provide a suitable upgradient groundwater monitoring location. The location of the well planned at S-2 should be moved 60 feet south to better intercept the possible contaminant plume along the southern portion of the landfill. Depths of shallow (overburden) and deep (bedrock) wells are specified in the work plan as 15 and 35 feet, respectively. The well depths may be reduced, based on actual subsurface conditions. Overburden may be significantly shallower than 15 feet. The bedrock well depth may be reduced approximately 25 to 30 feet in order to adequately screen the 15 to 25 foot depth.

REFERENCES

1. Carrington, T.J. and Watson, D.A., 1981. Preliminary Evaluation of an Alternate Electrode Array for Use in Shallow-Subsurface Electrical Studies. Groundwater, Vol. 10, No. 1, January-February.
2. Bison Instruments, 1975. Instrument Manual for Bison Earth Resistivity Meters. Bison Instruments, Inc., Minneapolis, MN.

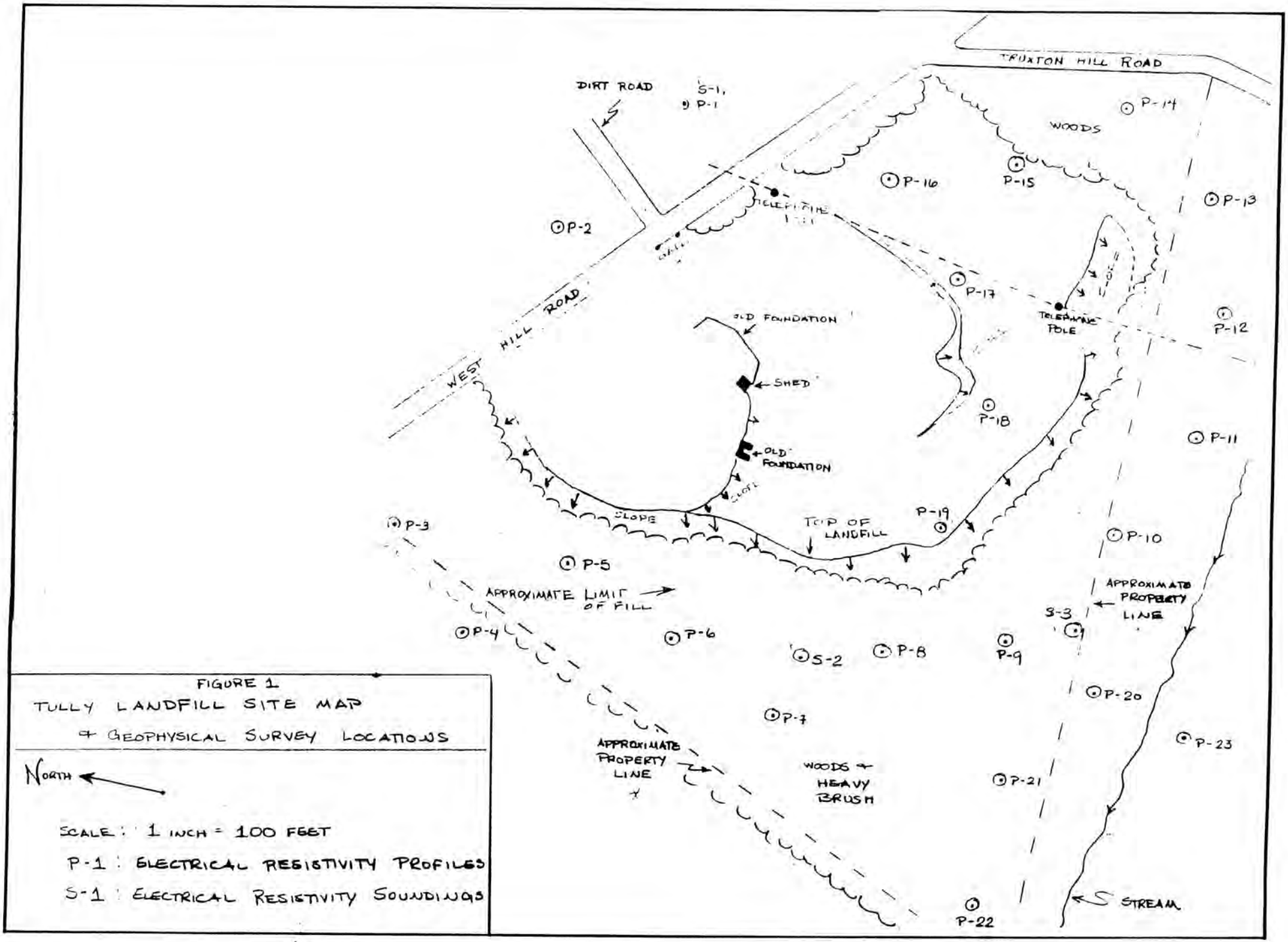


FIGURE 1

TULLY LANDFILL SITE MAP

& GEOPHYSICAL SURVEY LOCATIONS

North

SCALE: 1 INCH = 100 FEET

P-1 : ELECTRICAL RESISTIVITY PROFILES

S-1 : ELECTRICAL RESISTIVITY SOUNDINGS

FIGURE 5

APPARENT RESISTIVITY (ohm-Feet)

RESISTIVITY MODIFIED WENNER ARRAY

TULLY LANDFILL SI DATA

POTENTIAL ELECTRODE SPACING (FEET)

TOP OF WATER TABLE 10'

TOP OF SHALE BEDROCK 12'

WEATHERED ROCK ZONE ?

SOLID ROCK

FRACTURE ?

SOLID ROCK

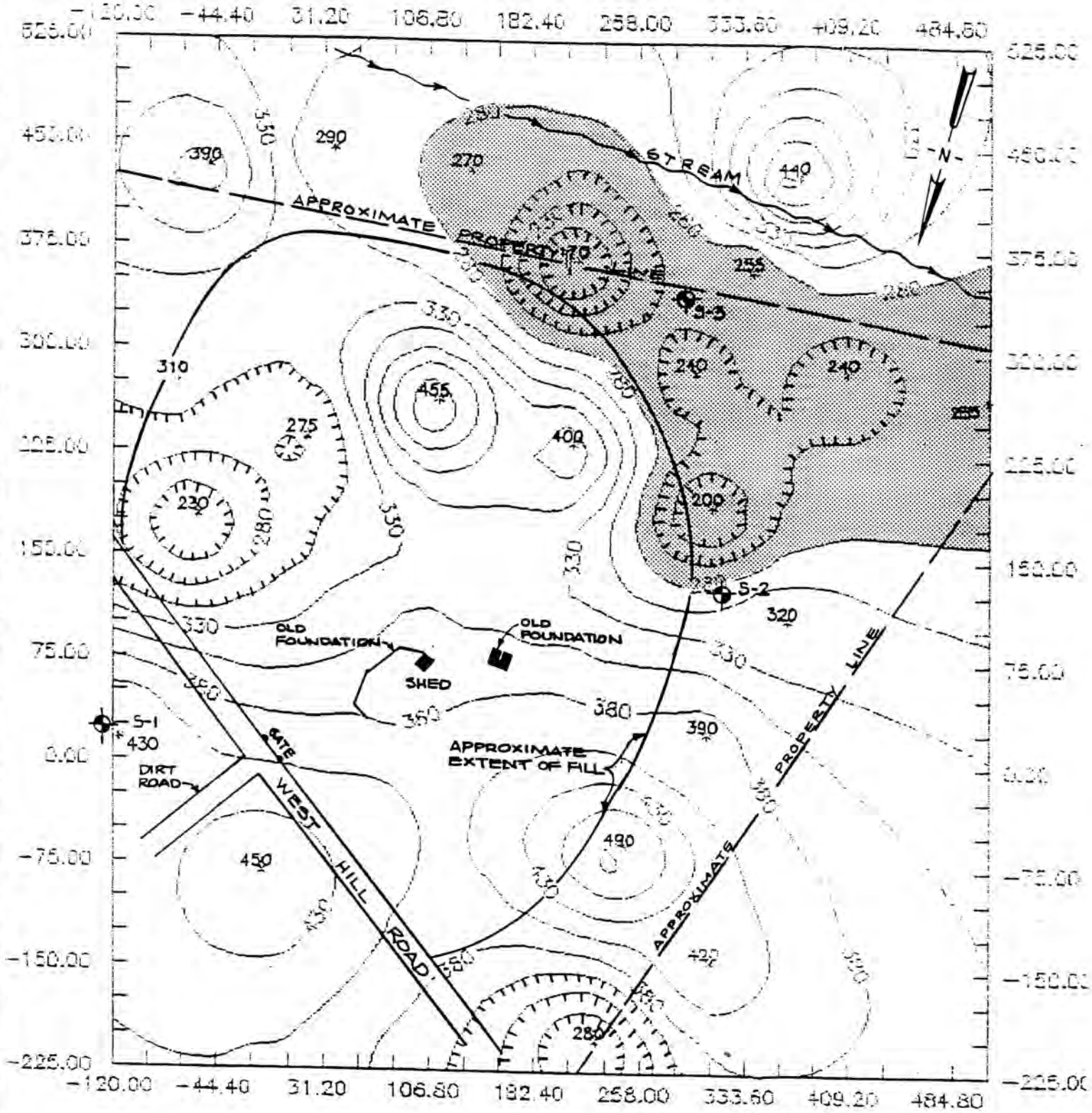
FIGURE 3
APPARENT RESISTIVITY (ohm-Feet

FIGURE 2

APPARENT RESISTIVITY (ohm/Feet

FIGURE 5

TULLY LANDFILL 10 FOOT PROFILE DEPTH



LEGEND

400 * PROFILE LOCATION

380 RESISTIVITY CONTOUR

AREA OF DECREASING RESISTIVITY

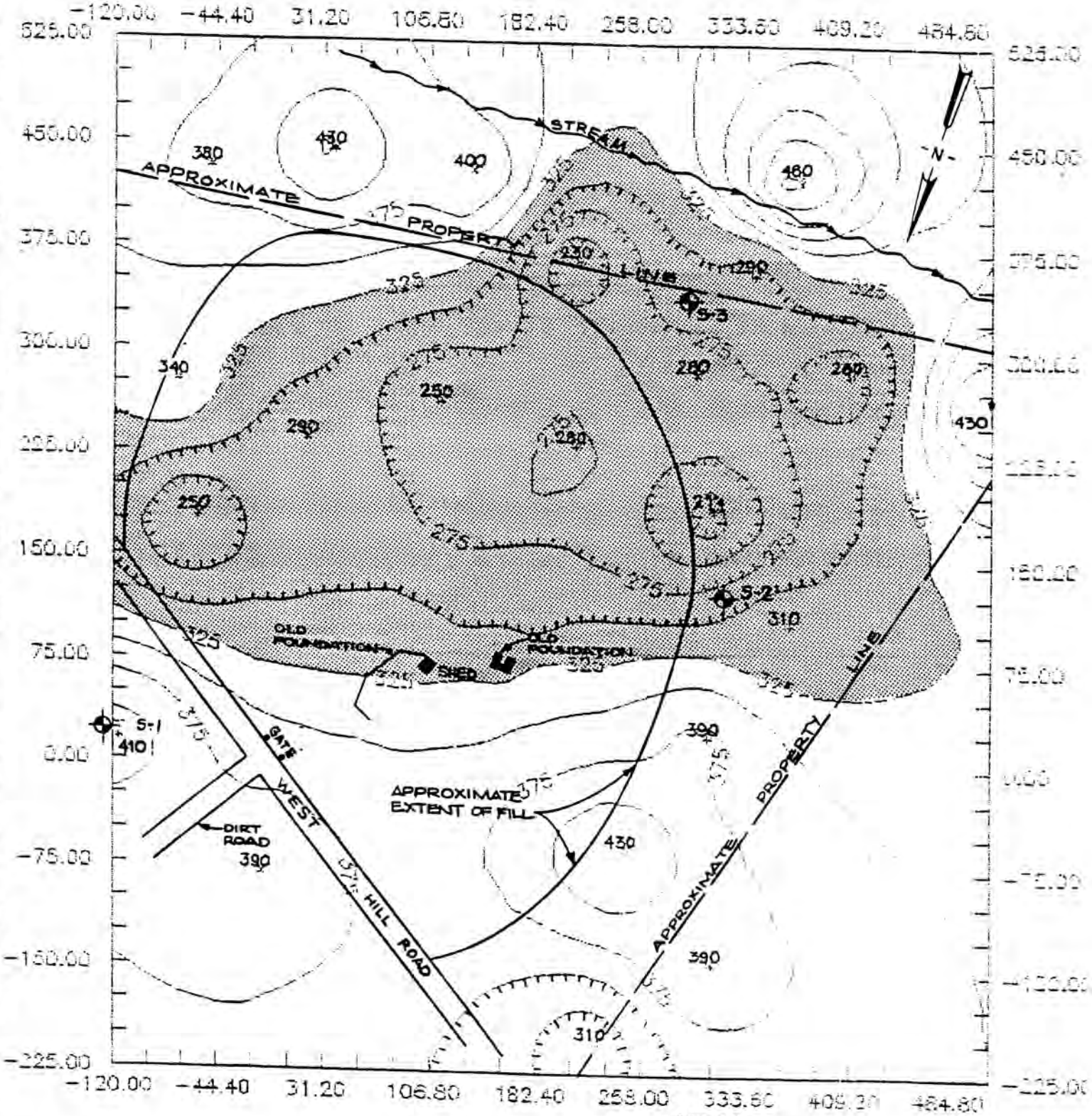
S-1 SOUNDING LOCATION

CONTOUR INTERVALS = 25 OHM FEE

NOTE: SHADING SHOWS AREA OF POSSIBLE PLUME

FIGURE 6

TULLY LANDFILL 20 FOOT PROFILE DEPTH



100 0 100 200 FT.

100'

NOTE: SHADING SHOWS AREA OF POSSIBLE PLUME

LEGEND

400 * PROFILE LOCATION

—380— RESISTIVITY CONTOUR

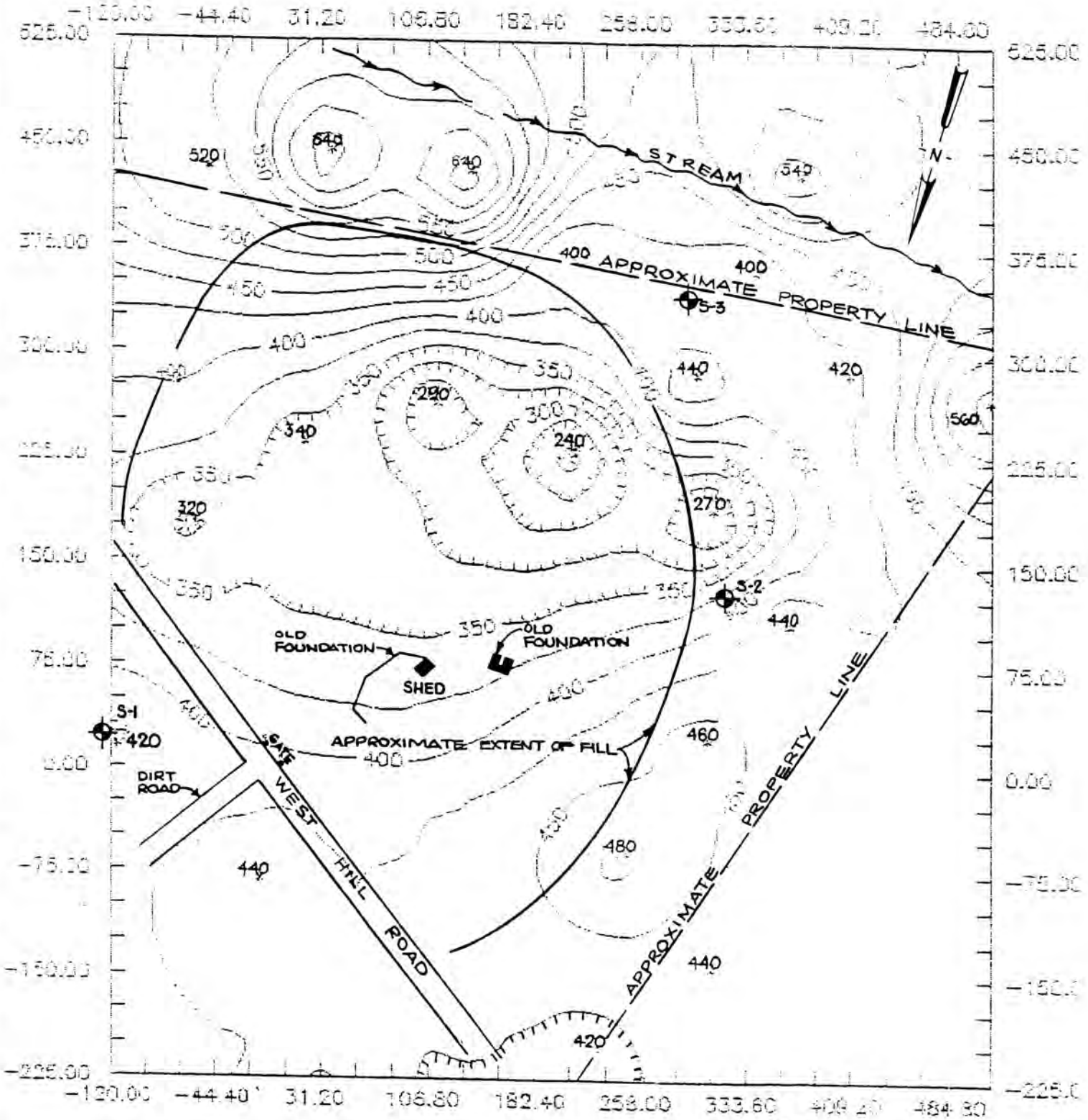
AREA OF DECREASING RESISTIVITY

S-1 SOUNDING LOCATION

CONTOUR INTERVALS = 25 OHM FEET

FIGURE 7

TULLY LANDFILL 40 FOOT PROFILE DEPTH



LEGEND

400 * PROFILE LOCATION

—380— RESISTIVITY CONTOUR

AREA OF DECREASING RESISTIVI

S-1 SOUNDING LOCATION

CONTOUR INTERVALS = 25 OHM F

TABLE 1

ENGINEERING-SCIENCE, INC
RESISTIVITY DATA SHEET
MODIFIED WENNER ARRAY

SOUNDING S-1

JOB NUMBER SY053.06 DATE AUGUST 21, 1989

SITE NAME TULLY LANDFILL C1 - C2 SPACING 120 FEET

OBSERVERS J BAKER, W LILLEY, K LEONARD DEPTH OF INVEST 60 FEET

COMMENTS SOIL CONDITIONS MOIST

TEST MODE RDNG 318.5 Ohm TEST MODE CURRENT 27.5 milliamperes

P1-P2 Electrode Spacing (Feet)	Dial Rdg (Ohm)	Scale Multiplier	Corrected Rdg (Ohm)	*K (Feet)	Apparent Resistivity (Ohm-Feet)
2	36.5	0.01	0.365	899.8	328.41
4	77.0	0.01	0.770	449.5	346.12
6	112.0	0.01	1.120	299.3	335.16
8	146.5	0.01	1.465	224.0	328.16
10	181.5	0.01	1.815	178.8	324.43
12	23.5	0.10	2.350	148.5	348.98
14	26.5	0.10	2.650	126.8	336.08
16	30.0	0.10	3.000	110.5	331.50
18	34.0	0.10	3.400	97.8	332.35
20	37.0	0.10	3.700	87.5	323.75
22	41.5	0.10	4.150	79.1	328.13
24	45.0	0.10	4.500	72.0	324.00
26	49.0	0.10	4.900	66.0	323.31
28	52.5	0.10	5.250	60.8	319.13
30	56.5	0.10	5.650	56.3	317.81
32	60.5	0.10	6.050	52.3	316.11
34	64.5	0.10	6.450	48.7	314.06
36	68.5	0.10	6.850	45.5	311.68
38	72.5	0.10	7.250	42.6	308.98
40	77.0	0.10	7.700	40.0	308.00

TABLE 2

ENGINEERING-SCIENCE, INC
RESISTIVITY DATA SHEET
MODIFIED WENNER ARRAY

SOUNDING S-2

JOB NUMBER	SY053.06	DATE	AUGUST 21, 1989
SITE NAME	TULLY LANDFILL	C1 - C2 SPACING	120 FEET
OBSERVERS	J BAKER, W LILLEY, K LEONARD	DEPTH OF INVEST	60 FEET
COMMENTS	SOIL MOIST, CLAYEY		
TEST MODE RDNG	319.0 Ohm	TEST MODE CURRENT	27.5 milliamperes

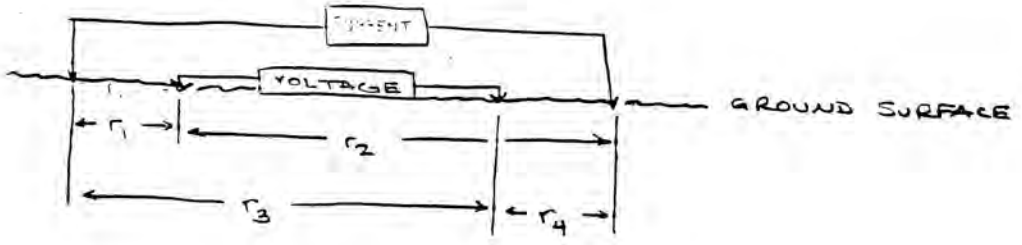
P1-P2 Electrode Spacing (Feet)	Dial Rdg (Ohm)	Scale Multiplier	Corrected Rdg (Ohm)	#K (Feet)	Apparent Resistivity (Ohm-Feet)
2	32.5	0.01	0.325	899.8	292.42
4	64.0	0.01	0.640	449.5	287.68
6	97.0	0.01	0.970	299.3	290.27
8	118.5	0.01	1.185	224.0	265.44
10	150.5	0.01	1.505	178.8	269.02
12	21.0	0.10	2.100	148.5	311.85
14	23.0	0.10	2.300	126.8	291.69
16	26.0	0.10	2.600	110.5	287.30
18	29.5	0.10	2.950	97.8	288.36
20	32.0	0.10	3.200	87.5	280.00
22	36.5	0.10	3.650	79.1	288.60
24	38.0	0.10	3.800	72.0	273.60
26	42.5	0.10	4.250	66.0	280.42
28	45.0	0.10	4.500	60.8	273.54
30	46.5	0.10	4.650	56.3	261.56
32	50.0	0.10	5.000	52.3	261.25
34	55.5	0.10	5.550	48.7	270.24
36	59.0	0.10	5.900	45.5	268.45
38	63.0	0.10	6.300	42.6	268.50
40	66.5	0.10	6.650	40.0	266.00

P1-P2 Electrode Spacing (Feet)	Dial Rdg	Scale Multiplier	Corrected Rdg (Ohm)	*K (Feet)	Apparent Resistivity (Ohm-Feet)
42	70.5	0.10	7.050	37.6	265.13
44	74.0	0.10	7.400	35.4	262.03
46	78.0	0.10	7.800	33.4	260.37
48	82.5	0.10	8.250	31.5	259.88
50	87.0	0.10	8.700	29.8	258.83
52	93.5	0.10	9.350	28.1	262.88
54	98.5	0.10	9.850	26.6	261.85
56	102.5	0.10	10.250	25.1	257.71
58	108.0	0.10	10.800	23.8	256.87
60	113.0	0.10	11.300	22.5	254.25

$$* \quad K = \left[\frac{1}{1/r_1 - 1/r_2 - 1/r_3 + 1/r_4} \right]$$

APPARENT RESISTIVITY = $2\pi R K$

WHERE $2\pi R$ = DIAL RDG × SCALE MULTIPLIER



$r_1 = r_4$ $\quad r_2 = r_3$ FOR MODIFIED WENNER ARRAY

TABLE 3

ENGINEERING-SCIENCE, INC
RESISTIVITY DATA SHEET
MODIFIED WENNER ARRAY

SOUNDING S-3

JOB NUMBER	SY053.06	DATE	August 21,1989
SITE NAME	TULLY LANDFILL	C1 - C2 SPACING	120 FEET
OBSERVERS	J BAKER, W LILLEY, K LEONARD	DEPTH OF INVEST	60 FEET
COMMENTS	SOIL MOIST, CLAYEY		
TEST MODE RDNG	318.0 Ohm	TEST MODE CURRENT	27.5 milliamperes

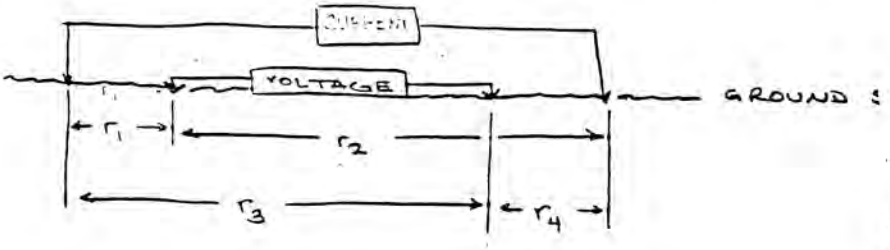
P1-P2 Electrode Spacing (Feet)	Dial Rdg (Ohm)	Scale Multiplier	Corrected Rdg (Ohm)	*K (Feet)	Apparent Resistivity (Ohm-Feet)
2	38.5	0.01	0.385	899.8	346.40
4	79.0	0.01	0.790	449.5	355.11
6	127.0	0.01	1.270	299.3	380.05
8	164.5	0.01	1.645	224.0	368.48
10	202.0	0.01	2.020	178.8	361.08
12	25.5	0.10	2.550	148.5	378.68
14	29.5	0.10	2.950	126.8	374.12
16	31.5	0.10	3.150	110.5	348.08
18	35.0	0.10	3.500	97.8	342.13
20	38.0	0.10	3.800	87.5	332.50
22	40.0	0.10	4.000	79.1	316.27
24	43.0	0.10	4.300	72.0	309.60
26	46.0	0.10	4.600	66.0	303.51
28	50.5	0.10	5.050	60.8	306.97
30	52.5	0.10	5.250	56.3	295.31
32	56.0	0.10	5.600	52.3	292.60
34	58.0	0.10	5.800	48.7	282.41
36	62.5	0.10	6.250	45.5	284.38
38	67.0	0.10	6.700	42.6	285.54
40	70.5	0.10	7.050	40.0	282.00

P1-P2 Electrode Spacing (Feet)	Dial Rdg (Ohm)	Scale Multiplier	Corrected Rdg (Ohm)	*K (Feet)	Apparent Resistivity (Ohm-Feet)
42	75.0	0.10	7.500	37.6	282.05
44	78.0	0.10	7.800	35.4	276.19
46	81.5	0.10	8.150	33.4	272.05
48	84.0	0.10	8.400	31.5	264.60
50	89.0	0.10	8.900	29.8	264.78
52	95.0	0.10	9.500	28.1	267.10
54	98.0	0.10	9.800	26.6	260.52
56	103.0	0.10	10.300	25.1	258.97
58	108.0	0.10	10.800	23.8	256.87
60	112.5	0.10	11.250	22.5	253.13

$$* \; K = \left[\frac{1}{1/r_1 - 1/r_2 - 1/r_3 + 1/r_4} \right]$$

APPARENT RESISTIVITY = $2\pi R K$

WHERE $2\pi R$ = DIAL RDG × SCALE MULTIPL



$r_1 = r_4$ $r_2 = r_3$ FOR MODIFIED WENNER ARRAY

Form B-1
Page 1 of

TABLE 4
TULLY LANDFILL RESISTVITY PROFILES

Station Location	Electrode Spacing (feet)	2π V/I (ohms)	Scale Multiplier	Corrected Reading (ohms)	Apparent Resistivity (ohm - feet)
P-1	10	43.0	1.0	43	430
P-1	20	20.5	1.0	20.5	410
P-1	40	10.5	1.0	10.5	420
P-2	10	45.0	1.0	45.0	450
P-2	20	19.5	1.0	19.5	390
P-2	40	11.0	1.0	11.0	440
P-3	10	28.0	1.0	28.0	280
P-3	20	15.5	1.0	15.5	310
P-3	40	10.5	1.0	10.5	420
P-4	10	42.0	1.0	42	420

NYSDEC Phase II
Form B-1
Page 1 of 6

AUGUST 22, 1989
CURRENT = 21.5
DIAL READING = ~~325~~ 312

TABLE 4
TULLY LANDFILL RESISTVITY PROFILES

Station Location	Electrode Spacing (feet)	2π V/I (ohms)	Scale Multiplier	Corrected Reading (ohms)	Apparent Resistivity (ohm - feet)
P-1	10	43.0	1.0	43	430
P-1	20	20.5	1.0	20.5	410
P-1	40	10.5	1.0	10.5	420
P-2	10	45.0	1.0	45.0	450
P-2	20	19.5	1.0	19.5	390
P-2	40	11.0	1.0	11.0	440
P-3	10	28.0	1.0	28.0	280
P-3	20	15.5	1.0	15.5	310
P-3	40	10.5	1.0	10.5	420
P-4	10	42.0	1.0	42	420

TULLY PROFILES

August 22,

Station Location	Electrode Spacing (feet)	2π V/I (ohms)	Scale Multiplier	Corrected Reading (ohms)	Apparent Resistivity (ohm - feet)
P-4	20	19.5	1.0	19.5	390
P-4	40	11	1.0	11.0	440
P-5	10	49.0	1.0	49.0	490
P-5	20	21.5	1.0	21.5	430
P-5	40	12.0	1.0	12.0	480
P-6	10	39.0	1.0	39.0	390
P-6	20	19.0	1.0	19.0	380
P-6	40	11.5	1.0	11.5	460
P-7	10	32	1.0	32	320
P-7	20	15.5	1.0	15.5	310

TULLY PROFILES

August 22, 1989

Station Location	Electrode Spacing (feet)	2π V/I (ohms)	Scale Multiplier	Corrected Reading (ohms)	Apparent Resistivity (ohm - feet)
P-7	40	11	1	11	440
P-8	10	20	1.0	20	200
P-8	20	107	0.1	10 7	214
P-8	40	67.5	0 1	6.75	270
P-9	10	24.0	1.0	24.0	240
P-9	20	13.0	1.0	13.0	260
P-9	40	11.0	1.0	11.0	440
P-10	10	17	1	17	170
P-10	20	11.5	1	11.5	230
P-10	40	10	1	10	400

TULLY PROFILES

August 22, 1959

Station Location	Electrode Spacing (feet)	2π V/I (ohms)	Scale Multiplier	Corrected Reading (ohms)	Apparent Resistivity (ohm - feet)
P-11	10	27	10	27.	270
P-11	20	20	1.0	20	400
P-11	40	16	10	16	640
P-12	10	29	1.0	29	290
P-12	20	21.5	1.0	21.5	430
P-12	40	16.0	1.0	16.0	640
P-13	10	39	1	39	390
P-13	20	19	1	19	380
P-13	40	13	1	13	520
P-14	10	34	1	34	340

August 22, 1984

TULLY PROFILES

Station Location	Electrode Spacing (feet)	2π V/I (ohms)	Scale Multiplier	Corrected Reading (ohms)	Apparent Resistivity (ohm - feet)
P-14	20	18	1	18	360
P-14	40	11.5	1	11.5	460
P-15	10	31.0	1.0	31.0	310
P-15	20	17.0	1.0	17.0	340
P-15	40	10.0	1.0	10.0	400.0
P-16	10	23	1	23	230 * on edge of land fill; hard material.
P-16	20	12.5	1	12.5	250 DITO
P-16	40	8	1	8	320 DITO
P-17	10	27.5	1	27.5	275 on sandy beach area with debris
P-17	20	14.5	1	14.5	290

TULLY PROFILES

August 22, 1979

Station Location	Electrode Spacing (feet)	2π V/I (ohms)	Scale Multiplier	Corrected Reading (ohms)	Apparent Resistivity (ohm - feet)
P-17	40	8.5	1	8.5	340
P-18	10	45.5	1	45.5	455 on landfill
P-18	20	12.5	1	12.5	250
P-18	40	7	1	7	280
P-19	10	40	1	40	400 on landfill
P-19	20	14	1	14	280
P-19	40	6	1	6	240

August 23, 1989

TULLY PROFILES

DIAL READING: 318
CURRENT = 27.5

Station Location	Electrode Spacing (feet)	2π V/I (ohms)	Scale Multiplier	Corrected Reading (ohms)	Apparent Resistivity (ohm - feet)
P-20	10	25.5	1	25.5	255
P-20	20	14.5	1	14.5	290
P-20	40	10	1	10	400
P-21	10	24.0	1	24	240
P-21	20	13.0	1	13	260
P-21	40	10.5	1	10.5	420
P-22	10	33.5	1	33.5	335
P-22	20	21.5	1	21.5	430
P-22	40	14.0	1	14.0	560
P-23	10	44	1	44	440

August 23, 1989

TULLY PROFILES

Station Location	Electrode Spacing (feet)	2π V/I (ohms)	Scale Multiplier	Corrected Reading (ohms)	Apparent Resistivity (ohm - feet)
P-23	20	23	1	23	460
P-23	40	13.5	1	13.5	540

APPENDIX C

GEOLOGIC DATA

-Grain-Size Analyses Results

- Boring Logs/Well Schematics and Well Installation Details

R&R
INTERNATIONAL, INC.

PROJECT: TULLY PROJECT - SYO-53.06 PROJECT NUMBER: 900306

MOISTURE (ASTM D-2216-80) AND GRADATION (ASTM D-422-63) ANALYSIS

BORING NUMBER	DEPTH (FT.)	MOISTURE PERCENT	Gradation (% Retained on Standard Sieve) #4	#10	#40	#100	#200	SILT	CLAY
GW-1	10.0	18.0	23.0	12.5	13.0	5.3	3.0	22.1	21.1
GW-2	10.0	10.8	40.8	6.7	7.6	3.8	2.4	22.0	16.7

Contractor: Rochester Drilling
Driller: Steve Kahn
Inspector: D. Nickerson
Rig Type: Mobile B-53
Drilling Method: 4¼" ID HSA

GROUNDWATER OBSERVATIONS

Water Level	6' TOC	5' TOC	6' TOC
Time	8 15	10 45	8 30
Date	5/4	5/7	5/9

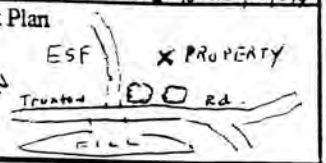
ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Tully Landfill NYSDEC
PROJECT NO. 5405 3.06.00

Weather: Clear, Cool 40°
Date/Time Start 5-3-90 8 30
Date Time Finish 5-7-90 14 45

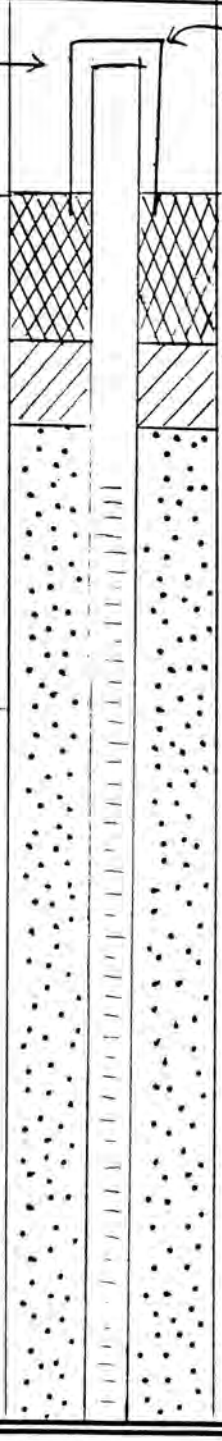
BORING NO. GW-1
Sheet 1 of 2
Location E.S.F. Sw. property directly across the Street approx. 50' E of entrance to the property

Plot Plan



Photovac Reading	Sample I.D.	Sample Depth	% Recovery	SPT	FIELD IDENTIFICATION OF MATERIAL
				2' split spoon	
					2' stick up → protective casing with lock
					ground surface ± 1028.5'
0		0-2'	15	4	fine, brown sand with organic debris, dry
				6	
				4	
				9	
0	GW-1	5-7'	20	9	brown fine sandy soil with some gravel a little silt, dry
				7	
				21	
				22	
0	GW-1	10-12'	95	14	greyish brown mixture of poorly sorted sediments including sand, silt, and gravel with a trace of clay, dry
				18	
				21	
				25	
0	GW-1	15-17'	40	21	grey mixture of unsorted sediments (same as above)
				21	
				36	
				40	

WELL SCHEMATIC



COMMENTS

STANDARD PENETRATION TEST
SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

SUMMARY
This well replaced GW-1 (1) - see Field notes attached

Contractor: Rochester Drilling
Driller: Steve Kana
Inspector: D. Nickerson
Rig Type: Mobile B-53
Drilling Method: 4¼" ID HSA

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Tully Landfill NYSDEC
PROJECT NO. SY053.06.00

Weather: clear cool 40°
Date/Time Start 5-3-90 8 30
Date Time Finish 5-7-90 1445

BORING NO. GW-1
Sheet 2 of 2
Location ESF (SU) property directly across the street from T: L.F Approx 30' E of property

Plot Plan

Photovac Reading	Sample I.D.	Sample Depth	% Recovery	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0	GW-1	20-22'	35	17	grey, densely packed unsorted sediments including sand, silt and fine gravel with a little clay, moist		
				23			
				24			
				33			
					24' (+168.33')		

STANDARD PENETRATION TEST

SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

SUMMARY grey, dense mixture of unsorted sediments interpreted as glacial till - till unit seems to become more dense with depth

GI - [redacted]

WELL INSTALLATION CHECKLIST
PHASE II INVESTIGATIONS

Site Name: Tully Landfill Date: 5-7-90
Job Number: SY053.06.00 By: D. Nickerson
Boring Number: GW-1

****

Depth of Hole: 24' Comments

Diameter of Hole: 8"

ALL MATERIALS INSPECTED PRIOR TO INSTALLATION?
Yes X No ____

SCREEN
Material: PVC Sch 40 2" ID
Slot Size: 0.01"
Length: 20'
Threaded: Yes X No ____

RISER PIPE
Material: PVC Sch 40 2" ID
Total Length of Well - Screen Length = 6' (includes 2' stick-up)
Threaded: Yes X No ____

END CAP
Material: PVC
Threaded: Yes X No ____

ALL JOINTS TEFLON TAPED: Yes ____ No X

TOTAL LENGTH OF WELL CASING (Includes screen and stick-up.) 26'

SAND PACK
Type/Size: #4 Q Rok
Amount (Calculated): 350 lb
Amount (Actual): 350 lb
Installed with Tremie: Yes ____ No X

BENTONITE SEAL(S):
Type/Size: bentonite pellets 3/8
Amount (Calculated): 25 lb
Amount (Actual): 25 lb
Installed with Tremie: Yes ____ No X
Secondary Seal(s) Used: Yes ____ No X
Explain: ____

Bentonite allowed to swell ____

✓

GW-1 12-

WELL INSTALLATION CHECKLIST
PHASE II INVESTIGATIONS

GROUT/CEMENT

Mixture (#Cement/#Bentonite): 188 lb cement

Mixture (Gal. water/#dry mix): ~10 gal. water / 94 lb grout

Amount (calculated): 25 gal

Amount (actual): 25 gal

Installed with TREMIE: Yes ___ No X

LOCKING PROTECTIVE CASING INSTALLED: Yes X No ___

Locked immediately after installation: Yes X No ___

Grout sloped at surface to allow run-off: Yes X No ___

Drain hole drilled prior to development: Yes X No ___

Stick-up: 2'

ANY FOREIGN OBJECTS LOST IN THE WELL: Yes ___ No X

If yes:

(1) What was lost:

(2) Depth:

(3) Stage of well installation:

(4) Was object retrieved: Yes ___ No ___

(All or part/how):

WELL CAPPED: Yes X No ___

WELL IDENTIFIED: Yes X No ___

DISPOSAL OF CUTTINGS:

Left in pile: ___

Spread out: X (Hnu reading: 0 ppm)

Containerized: ___

Other: ___

DISPOSAL OF FLUIDS:

Run off on ground surface: X

Containerized: ___

Other: ___

J. Nickerson

Engineering-Science Representative

5-8-90

Date

5/1/90 DAN.

7^{50} arrived on site
Steve Perrigo (NYSDEC) arrived shortly after - also Dean Stahl (Stearns & Wheeler) arrived 7^{55}

Waiting for Bill Lilley & Drillers

plan for today: drill and set upgradient well pair

8^{00} WDL arrives

8^{10} drillers arrive

8^{15} calibrated PID Tip II
NYSDEC #2
NO problems

8^{20} drillers setting up on GW ID, S location

8^{30} While setting rig on hole,
Drive head fell off of mast on drill

9^{00} drive head reinstalled

9^{30} Begin drilling GW-1D
5' dry sand and gravel, brown
split spoon sample taken 5-7'
to determine if we are at bedrock
silt & sand & little clay overlying shale bedrock at ≈ 6' depth
- No PID readings
- Auger refusal ~~at 8'~~ 8'
some shale & gravel in cuttings

10^{30} began rock coring to examine lithology
rock core begins at 8'6"
- ~~call Mike~~

10^{35} water hose busted

10^{50} up and drilling again

11:10 rock core bottom 14' 8"
rock core 8'6" to 14' 8"
recovery = 14"
≈ 3-4" gravel & clay
10-12"
≈ black siltstone/shale

11:20 coring down 5 more feet to establish whether or not we are in competent bedrock.

2nd Core sample:
14' 8" to 19' 1"
No recovery except some coarse gravel apparently hole is plugged up - will try augers again

12:30 break for lunch

13:10 resume augering on GW-1D

29

14:00 - after augering down to 30' below ground level - we will take a 2' split spoon sample to determine nature of sediments/rock.
Spoon sample contains till type material w/ silt, clay, and rounded & angular gravel.

Apparently a dense till unit, rather than bedrock occurs between 22 and perhaps 40' depth. (from resistivity data)

Drillers only have 30' of 6 1/2 and 4 1/4" augers - activities ended until more augers can be obtained

14:30 mike went to fill water tank (approx. 1000 gal.)

14:40 water level in bore hole is 25'

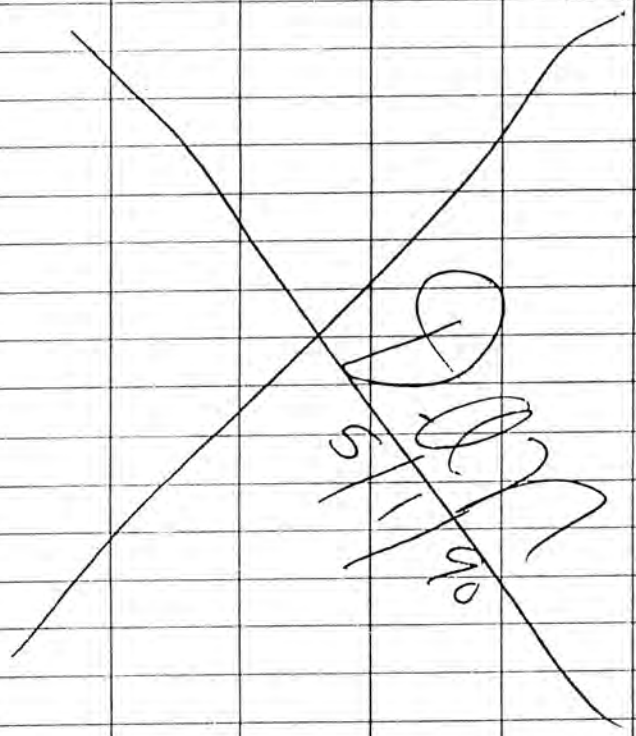
15:00 water level in borehole is 22.5'
Sounds like water may be running into the hole

- mike returned w/ water 15:00

Steve

13[15] left site calling his office to find out when they will be able to get the augers

[1?]:30 the augers will arrive approx. 8:30 AM tomorrow - will start again then



D.A.N. 5/2/90

8[00] arrived on site - JNB is also on site - waiting for drillers calibrating photovac and explosimeter.

photovac: NYSDEC # 2 (TIP II)
explosimeter NYSDEC # 1

8[30] drillers arrive on site waiting for augers

9[00] JNB went to make phone calls

9[15] took water level reading in "clay" well S. of upgradient well location = 6.25' below ground level

9:30 JNB returned to site. Drillers have said that they will have 26' of 6 1/4 and 4 1/4" augers to continue drilling

10[00] water level in boring GW-1D with augers in 36' ⇒ 5.0' below ground surface

10[40] taking split spoon sample

	Blow Ct.	% recovery	PID	H.S.
35-36'	35, 74,	35%	0	3.6

gray, dense till, moist — sample taken (GW ID 35-37')

	B.C.	% recovery	PID
40-~~43~~ 41.5'	43, 86, 58	35	0

gray-olive dense till, moist — Sample taken (GW-ID 40-42')

12[12] down 45' with augers drillers break for lunch

	B.C.	% recovery	PID
1[300] Split spoon 45-46.5'	32, 40, 57	65	0

gray olive dense till, moist to dry

1[40] auger refusal down to 49' below ground surface - will take split spoon sample from 49-51'

depth	B.C.	% recovery	PID
49-50.5'	92, 50, 100	60	0

gray-olive dense till moist to dry Sample taken GW-ID 49-51'

Since we are still in dense till at 50+ feet, JNB and DAN reviewed previous interpretations of resistivity sounding data and estimated that bedrock was probably also fairly deep in the downgradient location (approx. 35' estimated)

We will proceed to remove augers and grout in GW-ID and then install a shallow overburden well nearby Steve Perrigo (NYSDEC) has agreed to these steps

1[50] began removing augers from GW-ID

Steve Perry talked with Walter Dennick about our situation. He was in general agreement about the way we are proceeding.

16[00] augers completely removed from GW-1D

Supplies used: 6 bags cement
≈ 100 gallons
hole grouted to ≈ 6'
will let it settle overnight and finish grouting tomorrow.

16[55] - 17[00] Steam cleaned spoons

17[20] left site for the day

5/2/90 D.A.N.

5-3-90 D.A.N.

Weather: clear, cold 35°

7[30] arrived on site - drillers have not arrived yet.

Plan for today:
drill and set upgradient overburden well (GW-1S). move down to GW-2S and begin drilling / possibly set GW-2S at downgradient location.

Drillers: Steve Kahn
Helpers: Mike Wilson, Roger Bauer
Rig: Mobile 5B

8[00] calibrating monitoring equipment
equipment:
photovac tip II NYSDEC #2
explosimeter: NYSDEC #1

8[30] Roger is on site

9[15] driller setting up on GW-1S
will use 4.25" ID HSA

Contractor: Rochester Drilling
Driller: Steve Kahn
Inspector: D. Nickerson
Rig Type: Mobile B-53
Drilling Method: 4¼" ID HSA

GROUNDWATER OBSERVATIONS

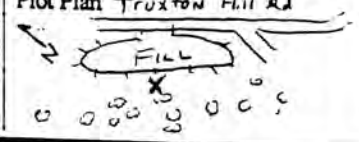
Water Level	15' TOB	3.6' TOC	
Time	1345	900	
Date	5/8	5/9	

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Tully Landfill NYSDEC
PROJECT NO. SY053.06.00

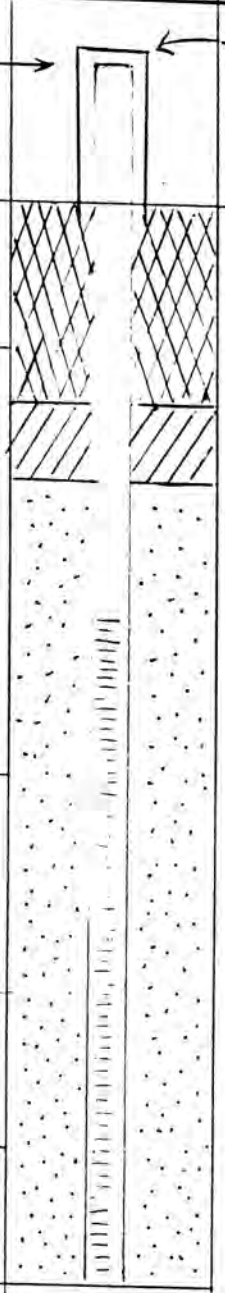
Weather: humid, cloudy, cool 55°
Date/Time Start 5-9-90 825
Date Time Finish 5-9-90 1630

BORING NO. GW-2
Sheet 1 of 1
Location W-SW side of fill in wooded area between fill and small creek in valley below
Plot Plan Truxton Hill Rd



Photovac Reading	Sample I.D.	Sample Depth	% Recovery	SPT	FIELD IDENTIFICATION OF MATERIAL
				SS	
0		0-2'	10	2	dark brown soil with a little silt, organic debris, moist
				6	
				4	
				8	
0		5-7'	40	5	light brown unsorted mixture of silt and fine sand with a little clay and small pebbles, moist
				8	
				11	
				11	
0		10-12'	40	91	Medium-coarse light brown gravel and silt with some sand, saturated
				33	
				39	
				46	
0		12-14'	65	32	light brown unsorted mixture of silt and clay with some small pebbles, compact moist
				39	
				41	
				50	
0		14-16'	65	27	Coarse angular gravel with some sand and silt, gray, moist
				35	
				46	
				47	
					16'

WELL SCHEMATIC



COMMENTS

STANDARD PENETRATION TEST
SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

SUMMARY

G1 - [redacted]

WELL INSTALLATION CHECKLIST
PHASE II INVESTIGATIONS

Site Name: Tully Landfill Date: 5-8-90
Job Number: SY053.06.00 By: D. Nickerson
Boring Number: GW-2

****

Comments

Depth of Hole: 16'

Diameter of Hole: 8"

ALL MATERIALS INSPECTED PRIOR TO INSTALLATION?
Yes X No ____

SCREEN
Material: PVC sch 40 2" ID
Slot Size: 0.01"
Length: 10'
Threaded: Yes X No ____

RISER PIPE
Material: PVC sch. 40 2" ID
Total Length of Well - Screen Length = 8' (includes 2' stick-up)
Threaded: Yes X No ____

END CAP
Material: PVC
Threaded: Yes X No ____

ALL JOINTS TEFLON TAPED: Yes ____ No X

TOTAL LENGTH OF WELL CASING (Includes screen and stick-up.)
18'

SAND PACK
Type/Size: #4 Q ROK
Amount (Calculated): 350 lb
Amount (Actual): 350 lb
Installed with Tremie: Yes ____ No X

BENTONITE SEAL(S):
Type/Size: pellets 3/8
Amount (Calculated): 25 lb
Amount (Actual): 25 lb
Installed with Tremie: Yes ____ No X
Secondary Seal(s) Used: Yes ____ No X
Explain: ____

Bentonite allowed to swell

GW-2 1g2 -

WELL INSTALLATION CHECKLIST
PHASE II INVESTIGATIONS

GROUT/CEMENT

Mixture (#Cement/#Bentonite): 1 Bg lb Cement

Mixture (Gal. water/#dry mix): ~10 gal water/94 lb cement

Amount (calculated): 25 gal

Amount (actual): 25 gal

Installed with TREMIE: Yes ___ No X

LOCKING PROTECTIVE CASING INSTALLED: Yes X No ___

Locked immediately after installation: Yes X No ___

Grout sloped at surface to allow run-off: Yes X No ___

Drain hole drilled prior to development: Yes X No ___

Stick-up: 2'

ANY FOREIGN OBJECTS LOST IN THE WELL: Yes ___ No X

If yes:

(1) What was lost:

(2) Depth:

(3) Stage of well installation:

(4) Was object retrieved: Yes ___ No ___

(All or part/how):

WELL CAPPED: Yes X No ___

WELL IDENTIFIED: Yes X No ___

DISPOSAL OF CUTTINGS:

Left in pile: ___

Spread out: X (Hnu reading: 0 ppm)

Containerized: ___

Other: ___

DISPOSAL OF FLUIDS:

Run off on ground surface: X

Containerized: ___

Other: ___

D. Nickerson

Engineering-Science Representative

5-9-90

Contractor: Rochester Drilling
Driller: Steve Kahn
Inspector: D. Nickerson
Rig Type: Mobile B-53
Drilling Method: 6 5/8" HSA

GROUNDWATER OBSERVATIONS

Water Level	12.75' Below Ground level		10.7' below ground level
Time	9:30		9:05
Date	5-4		5-9

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Tully Landfill NYSDEC
PROJECT NO. 5Y053.06.00

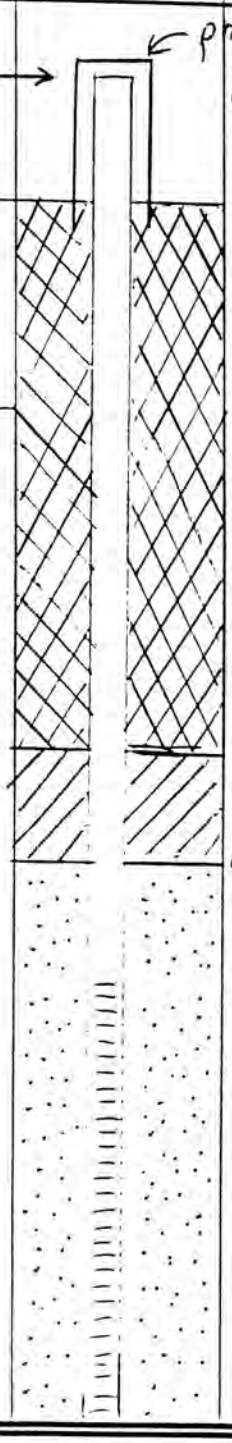
Weather: Sunny 60°
Date/Time Start 5-3-90 15 30
Date Time Finish 5-4-90 12 15

BORING NO. GW-3
Sheet 1 of 2
Location South side of fill area in wooded area between fill and small creek in valley below

Plot Plan

Photovac Reading	Sample I.D.	Sample Depth	% Recovery	SPT	FIELD IDENTIFICATION OF MATERIAL
				55	
0		0-2'	35	3	2" brown silty soil, dry
				4	6" Lt. brown fine to vi fine sand and silt with some gravel, dry to moist
				7	
				15	
0	TUL GW-3	5-7'	35	15	olive-grey dense, poorly sorted mixture of f. sand, silt and gravel, dry
				15	
				15	
				20	
6	TUL GW-3	10-12'	50	17	
				28	
				12	
				34	
1.4	TUL GW-3	15-17'	50	90	
				61	
				66	
				25	

WELL SCHEMATIC



COMMENTS

STANDARD PENETRATION TEST
SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

SUMMARY

Contractor: Rochester Drilling
Driller: Steve Kahn
Inspector: D. Nickerson
Rig Type: Mobile B-53
Drilling Method: 6 5/8" HSA

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			

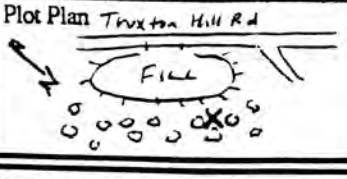
ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Tully Landfill NYSDEC
PROJECT NO. 5Y0S3.06.00

Weather: Sunny 60°
Date/Time Start 5-3-90 1530
Date Time Finish 5-4-90 1215

BORING NO. GW-3
Sheet 2 of 2
Location South side of fill in wooded sloping area between fill and small creek in valley below

Plot Plan Truxton Hill Rd



Photovac Reading	Sample I.D.	Sample Depth	% Recovery	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0	TILL GW-3	20-22'	1/2	14 18 22 24	▼ Grey medium - coarse gravel with some sand and silt, saturated 21.5'		

STANDARD PENETRATION TEST
SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

SUMMARY

WELL INSTALLATION CHECKLIST
PHASE II INVESTIGATIONS

GJ - [redacted]

Site Name: Tully Landfill
Job Number: SY053.06.00
Boring Number: GW-3

Date: 5-4-90
By: D. Nickerson

****

Depth of Hole: 21.5'

Diameter of Hole: 11"

Comments

ALL MATERIALS INSPECTED PRIOR TO INSTALLATION?
Yes X No ____

SCREEN
Material: Sch. 40 2" ID PVC
Slot Size: 0.01 "
Length: 10'
Threaded: Yes X No ____

RISER PIPE
Material: PVC Sch. 40 2" ID
Total Length of Well - Screen Length = 13.5' (includes 2' stick up)
Threaded: Yes X No ____

END CAP
Material: PVC
Threaded: Yes X No ____

ALL JOINTS TEFLON TAPED: Yes ____ No X

TOTAL LENGTH OF WELL CASING (Includes screen and stick-up.)
23.5'

SAND PACK
Type/Size: #4 Q Rok
Amount (Calculated): 500 lb
Amount (Actual): 500 lb
Installed with Tremie: Yes ____ No X

BENTONITE SEAL(S):
Type/Size: pellets 3/8
Amount (Calculated): 50 lb
Amount (Actual): 50 lb
Installed with Tremie: Yes ____ No X
Secondary Seal(s) Used: Yes ____ No X
Explain: ____

GW-312

WELL INSTALLATION CHECKLIST
PHASE II INVESTIGATIONS

GROUT/CEMENT

Mixture (#Cement/#Bentonite): 292 lb cement

Mixture (Gal. water/#dry mix): ~9gal water / 94 lb cement

Amount (calculated): 30 gal

Amount (actual): 30 gal

Installed with TREMIE: Yes ___ No X

LOCKING PROTECTIVE CASING INSTALLED: Yes X No ___

Locked immediately after installation: Yes X No ___

Grout sloped at surface to allow run-off: Yes X No ___

Drain hole drilled prior to development: Yes X No ___

Stick-up: 2'

ANY FOREIGN OBJECTS LOST IN THE WELL: Yes ___ No X

If yes:

(1) What was lost:

(2) Depth:

(3) Stage of well installation:

(4) Was object retrieved: Yes ___ No ___

(All or part/how):

WELL CAPPED: Yes X No ___

WELL IDENTIFIED: Yes X No ___

DISPOSAL OF CUTTINGS:

Left in pile: ___

Spread out: X (Hnu reading: 0 ppm)

Containerized: ___

Other: ___

DISPOSAL OF FLUIDS:

Run off on ground surface: X

Containerized: ___

Other: ___

D. Nichols

Engineering-Science Representative

5-8-90

APPENDIX D

LABORATORY ANALYTICAL DATA

LABORATORY ANALYTICAL DATA

Subsurface Soil Results

Groundwater Results

Surface Water Results

Sediment Results

QA/QC Results and Documentation

Each group noted above is organized by sample number. Results are listed in the following order: volatile organics, semivolatile organics, pesticide/PCBs and metals.

Data qualifiers can be found following this page.

Versar INC.

Data Qualifier Flags

J — For Target Compounds: This flag is used when mass spectral data indicates the presence of a compound but the result is less than the specified detection limit but still greater than zero.

For Non Target Compounds: This flag indicates that the concentration is an estimated value, assuming a 1 to 1 response with the internal standard.

B — This flag is used when the analyte is found in the blank as well as in the sample. It indicates possible/probable contamination and warns the data user to take appropriate action.

U — This flag states that the compound was analyzed for but was not detected. The number is the minimum attainable detection limit for the sample.

X or T — This flag states that the mass spectrum does not meet EPA CLP criteria for confirmation, but compound presence is strongly suspected.

E — This flag is used to indicate that the quantitation of the analyte is outside the linear calibration of the curve and that dilution was required in order to properly quantitate.

D — This flag is used to indicate the value for the target analyte was calculated from a dilution (see "E" flag above).

Y — This flag is used when a matrix spike compound is also confirmed present in the unspiked sample.

Flags excerpted from and established by the US EPA Contract Lab Program (CLP) protocol.

Qualifier Cross Reference List

For Metals

Qualifier	Type	Brief Explaination
B	C	Reported value is less than the Contract Required Detection Limit (CRDL) but greater than the Instrument Detection Limit (IDL)
U	C	Reported value is less than the IDL
E	Q	Reported value is estimated because of the presence of interference. An explanatory note will appear on the cover page if the problem applies to all samples or on a specific Form I - IN if it is an isolated problem
M	Q	Duplicate injection precision not met
N	Q	Spiked sample recovery not within control limits
S	Q	The reported value was determined by the Method of Standard Additions (MSA)
W	Q	Post digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance. (See Exhibit E of SOW 7/87)
*	Q	Duplicate analysis (Relative Percent Difference) not within contol limits
+	Q	Correlation coefficient for the MSA is less than 0.995
Please note that entering "S", "W", or "+" is mutually exclusive. There are no combinations of these qualifiers in the same field for an analyte		
P	M	Analysis done by inductively coupled plasma (ICP)
A	M	Analysis done by flame atomic absorption (AA)
F	M	Analysis done by furnace AA
CV	M	Analysis done by manual cold vapor AA
AS	M	Analysis done by semi-automated spectrophotometric
NR	M	The analyte is not required to be analyzed
NA	M	Not applicable

Type: C - Concentration Qualifier; Q - QC Qualifier; M - Method Qualifier;

For more detailed descriptions of each of these qualifiers, please to refer to EPA's Contract Laboratory Program's Statement of Work, 7/87

SUBSURFACE SOIL RESULTS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TULGW1

Lab Name: VERSAR INC. Contract: _____

Lab Code: _____ Case No.: 2679 SAS No.: _____ SDG No.: 1

Matrix: (soil/water) SOIL Lab Sample ID: 19456

Sample wt/vol: 5.0 (g/mL) G Lab File ID: U3572

Level: (low/med) LOW Date Received: 05/05/90

% Moisture: not dec. 11 Date Analyzed: 05/09/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene chloride	6	U
67-64-1	Acetone	11	U
75-15-0	Carbon disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon tetrachloride	6	U
108-05-4	Vinyl acetate	11	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Total xylenes	6	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TULGW1

Lab Name: VERSAR INC. Contract: _____

Lab Code: _____ Case No.: 2679 SAS No.: _____ SDG No.: 1

Matrix: (soil/water) SOIL Lab Sample ID: 19456

Sample wt/vol: 5.0 (g/mL) G Lab File ID: U3572

Level: (low/med) LOW Date Received: 05/05/90

% Moisture: not dec. 11 Date Analyzed: 05/09/90

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TUL-GW-1

Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2679 SAS No.: _____ SDG No.: 01

Matrix: (soil/water) SOIL Lab Sample ID: 19454

Sample wt/vol: 30.1 (g/mL) G Lab File ID: T2697

Level: (low/med) LOW Date Received: 05/05/90

% Moisture: not dec. 11 dec. ____ Date Extracted: 05/15/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/22/90

GPC Cleanup: (Y/N) N pH: 7.3 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
100-51-6	Benzyl alcohol	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	bis(2-Chloroisopropyl)ether	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
65-85-0	Benzoic Acid	1800	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	1800	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	1800	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TUL-GW-1

Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2679 SAS No.: _____ SDG No.: 01

Matrix: (soil/water) SOIL Lab Sample ID: 19454

Sample wt/vol: 30.1 (g/mL) G Lab File ID: T2697

Level: (low/med) LOW Date Received: 05/05/90

% Moisture: not dec. 11 dec. ____ Date Extracted: 05/15/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/22/90

GPC Cleanup: (Y/N) N pH: 7.3 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1800	U
83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	1800	U
100-02-7	4-Nitrophenol	1800	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	1800	U
534-52-1	4,6-Dinitro-2-methylphenol	1800	U
86-30-6	N-nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	1800	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
84-74-2	Di-n-butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	740	U
56-55-3	Benzo(a)anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)phthalate	370	U
117-84-0	Di-n-octyl phthalate	370	U
205-99-2	Benzo(b)fluoranthene	370	U
207-08-9	Benzo(k)fluoranthene	370	U
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenz(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TUL-GW-1

Name: VERSAR INC. Contract:

Lab Code: VERSAR Case No.: 2679 SAS No.: SDG No.: 01

Matrix: (soil/water) SOIL Lab Sample ID: 19454

Sample wt/vol: 30.1 (g/mL) G Lab File ID: T2697

Level: (low/med) LOW Date Received: 05/05/90

% Moisture: not dec. 11 dec. Date Extracted: 05/15/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/22/90

GPC Cleanup: (Y/N) N pH: 7.3 Dilution Factor: 1.0

Number TICs found: 13

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	4.17	190	J
2.		UNKNOWN	4.55	220	J
3.		UNKNOWN	5.03	3000	BJ
4.	3074-71-3	HEPTANE, 2,3-DIMETHYL-	5.22	300	BJ
5.	15869-93-9	OCTANE, 3,5-DIMETHYL-	5.27	220	J
6.		UNKNOWN	5.37	930	BJ
7.		UNKNOWN HYDROCARBON	5.52	670	BJ
8.		UNKNOWN	6.88	480	J
9.		UNKNOWN KETONE	7.30	220	BJ
10.	18641-71-9	3-HEPTANONE, 2,4-DIMETHYL-	8.22	710	J
11.		UNKNOWN	9.45	560	J
12.		UNKNOWN	34.12	220	J
13.		UNKNOWN HYDROCARBON	34.74	190	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TULGW1

Lab Name: VERSAR, INC. Contract:

Lab Code: VERSAR Case No.: ENGITULL SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 19454

Sample wt/vol: 30.14 (g/ml) G Lab File ID:

Level: (low/med) LOW Date Received: 05/05/90

% Moisture: not dec. 11.2 dec. Date Extracted: 05/15/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/23/90

GPC Cleanup: (Y/N) N pH: 7.3 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	4.5	U
319-85-7	beta-BHC	4.5	U
319-86-8	delta-BHC	4.5	U
58-89-9	gamma-BHC (Lindane)	4.5	U
76-44-8	Heptachlor	4.5	U
309-00-2	Aldrin	4.5	U
1024-57-3	Heptachlor Epoxide	4.5	U
959-98-8	Endosulfan I	4.5	U
60-57-1	Dieldrin	9.0	U
72-55-9	4,4'-DDE	9.0	U
72-20-8	Endrin	9.0	U
33213-65-9	Endosulfan II	9.0	U
72-54-8	4,4'-DDD	9.0	U
1031-07-8	Endosulfan Sulfate	9.0	U
50-29-3	4,4'-DDT	9.0	U
72-43-5	Methoxychlor	45	U
53494-70-5	Endrin Ketone	9.0	U
5103-71-9	alpha-Chlordane	9.0	U
5103-74-2	gamma-Chlordane	9.0	U
8001-35-2	Toxaphene	90	U
12674-11-2	Aroclor-1016	45	U
11104-28-2	Aroclor-1221	45	U
11141-16-5	Aroclor-1232	45	U
53469-21-9	Aroclor-1242	45	U
12672-29-6	Aroclor-1248	45	U
11097-69-1	Aroclor-1254	90	U
11096-82-5	Aroclor-1260	90	U

JA
5/23/90

INORGANIC ANALYSES DATA SHEET

FIELD SAMPLE NO.: TUL-GW-1

Client : ENGINEERING_SCIENCE_ Site: TULLY_LANDFILL_

Lab Name: VERSAR_INC. Control No.: 2679____ Code: ENGITULL Batch: 1_____

Matrix : SOIL_____ Lab Sample ID: 19452____

Level (low/med): LOW_____ Date Received: 05/05/90_

% Solids: __91.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11500		*	P
7440-36-0	Antimony	3.6	U	N	P
7440-38-2	Arsenic	11.2		SN	F
7440-39-3	Barium	50.0			P
7440-41-7	Beryllium	0.44	B		P
7440-43-9	Cadmium	0.82	U		P
7440-70-2	Calcium	58400		*	P
7440-47-3	Chromium	16.8		*	P
7440-48-4	Cobalt	12.3			P
7440-50-8	Copper	17.7		*	P
7439-89-6	Iron	25400		*	P
7439-92-1	Lead	18.2			F
7439-95-4	Magnesium	7690		*	P
7439-96-5	Manganese	887		*	P
7439-97-6	Mercury	0.098	U		CV
7440-02-0	Nickel	27.6		*	P
7440-09-7	Potassium	939			P
7782-49-2	Selenium	0.62	U	W	F
7440-22-4	Silver	0.53	B		P
7440-23-5	Sodium	127	B		P
7440-28-0	Thallium	0.21	U		F
7440-62-2	Vanadium	15.4			P
7440-66-6	Zinc	64.1		E*	P
	Cyanide	0.45	U	N	AS

Color Before: GREY_____ Clarity Before: _____ Texture: MEDIUM

Color After : YELLOW___ Clarity After: CLEAR_ Artifacts: _____

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TULGW3

Lab Name: VERSAR INC. Contract: _____

Lab Code: _____ Case No.: 2679 SAS No.: _____ SDG No.: 1

Matrix: (soil/water) SOIL

Lab Sample ID: 19457

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: U3573

Level: (low/med) LOW

Date Received: 05/05/90

% Moisture: not dec. 8

Date Analyzed: 05/09/90

Column: (pack/cap) PACK

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene chloride	5	U
67-64-1	Acetone	11	U
75-15-0	Carbon disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon tetrachloride	5	U
108-05-4	Vinyl acetate	11	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total xylenes	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TULGW3

I Name: VERSAR INC. Contract: _____

Lab Code: _____ Case No.: 2679 SAS No.: _____ SDG No.: 1

Matrix: (soil/water) SOIL Lab Sample ID: 19457

Sample wt/vol: 5.0 (g/mL) G Lab File ID: U3573

Level: (low/med) LOW Date Received: 05/05/90

% Moisture: not dec. 8 Date Analyzed: 05/09/90

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TUL-GW-3

Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2679 SAS No.: _____ SDG No.: 01

Matrix: (soil/water) SOIL Lab Sample ID: 19453

Sample wt/vol: 30.1 (g/mL) G Lab File ID: T2696

Level: (low/med) LOW Date Received: 05/05/90

% Moisture: not dec. 9 dec. ____ Date Extracted: 05/15/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/22/90

GPC Cleanup: (Y/N) N pH: 7.3 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
100-51-6	Benzyl alcohol	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	bis(2-Chloroisopropyl)ether	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
65-85-0	Benzoic Acid	1800	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	1800	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	1800	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TUL-GW-3

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2679 SAS No.: _____ SDG No.: 01

Matrix: (soil/water) SOIL Lab Sample ID: 19453

Sample wt/vol: 30.1 (g/mL) G Lab File ID: T2696

Level: (low/med) LOW Date Received: 05/05/90

% Moisture: not dec. 9 dec. ____ Date Extracted: 05/15/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/22/90

GPC Cleanup: (Y/N) N pH: 7.3 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1800	U
83-32-9	Acenaphthene	360	U
51-28-5	2,4-Dinitrophenol	1800	U
100-02-7	4-Nitrophenol	1800	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	1800	U
534-52-1	4,6-Dinitro-2-methylphenol	1800	U
86-30-6	N-nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	1800	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	720	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octyl phthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenz(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TUL-GW-3

Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2679 SAS No.: _____ SDG No.: 01

Matrix: (soil/water) SOIL Lab Sample ID: 19453

Sample wt/vol: 30.1 (g/mL) G Lab File ID: T2696

Level: (low/med) LOW Date Received: 05/05/90

% Moisture: not dec. 9 dec. ____ Date Extracted: 05/15/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/22/90

GPC Cleanup: (Y/N) N pH: 7.3 Dilution Factor: 1.0

Number TICs found: 12

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN HYDROCARBON	4.15	400	J
2.		UNKNOWN	4.55	400	J
3.		UNKNOWN HYDROCARBON	4.78	260	J
4.		UNKNOWN	5.05	3800	BJ
5.	3074-71-3	HEPTANE, 2,3-DIMETHYL-	5.22	690	BJ
6.		UNKNOWN HYDROCARBON	5.27	470	J
7.		UNKNOWN HYDROCARBON	5.37	1900	BJ
8.		UNKNOWN HYDROCARBON	5.52	1500	BJ
9.		UNKNOWN	6.87	150	J
10.		UNKNOWN KETONE	7.30	290	BJ
11.	18641-71-9	3-HEPTANONE, 2,4-DIMETHYL-	8.22	180	J
12.		UNKNOWN	9.45	220	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TULGW3

Lab Name: VERSAR, INC. Contract:

Lab Code: VERSAR Case No.: ENGITULL SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 19453

Sample wt/vol: 30.07 (g/ml) G Lab File ID:

Level: (low/med) LOW Date Received: 05/05/90

% Moisture: not dec. 8.7 dec. Date Extracted: 05/15/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/23/90

GPC Cleanup: (Y/N) N pH: 7.3 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	4.4	U
319-85-7	beta-BHC	4.4	U
319-86-8	delta-BHC	4.4	U
58-89-9	gamma-BHC (Lindane)	4.4	U
76-44-8	Heptachlor	4.4	U
309-00-2	Aldrin	4.4	U
1024-57-3	Heptachlor Epoxide	4.4	U
959-98-8	Endosulfan I	4.4	U
60-57-1	Dieldrin	8.7	U
72-55-9	4,4'-DDE	8.7	U
72-20-8	Endrin	8.7	U
33213-65-9	Endosulfan II	8.7	U
72-54-8	4,4'-DDD	8.7	U
1031-07-8	Endosulfan Sulfate	8.7	U
50-29-3	4,4'-DDT	8.7	U
72-43-5	Methoxychlor	44	U
53494-70-5	Endrin Ketone	8.7	U
5103-71-9	alpha-Chlordane	8.7	U
5103-74-2	gamma-Chlordane	8.7	U
8001-35-2	Toxaphene	87	U
12674-11-2	Aroclor-1016	44	U
11104-28-2	Aroclor-1221	44	U
11141-16-5	Aroclor-1232	44	U
53469-21-9	Aroclor-1242	44	U
12672-29-6	Aroclor-1248	44	U
11097-69-1	Aroclor-1254	44	U
11096-82-5	Aroclor-1260	87	U

QC
5/23/90

INORGANIC ANALYSES DATA SHEET

FIELD SAMPLE NO.: TUL-GW-3

Client : ENGINEERING_SCIENCE_ Site: TULLY_LANDFILL_

Lab Name: VERSAR_INC. Control No.: 2679____ Code: ENGITULL Batch: 1_____

Matrix : SOIL_____ Lab Sample ID: 19453____

Level (low/med): LOW_____ Date Received: 05/05/90_

% Solids: __88.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14300		*	P
7440-36-0	Antimony	4.6	U	N	P
7440-38-2	Arsenic	5.8		N	F
7440-39-3	Barium	74.3			P
7440-41-7	Beryllium	0.53	B		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	44900		*	P
7440-47-3	Chromium	20.2		*	P
7440-48-4	Cobalt	12.9			P
7440-50-8	Copper	17.4		*	P
7439-89-6	Iron	28500		*	P
7439-92-1	Lead	9.1			F
7439-95-4	Magnesium	8640		*	P
7439-96-5	Manganese	736		*	P
7439-97-6	Mercury	0.098	U		CV
7440-02-0	Nickel	30.3		*	P
7440-09-7	Potassium	1240			P
7782-49-2	Selenium	0.63	U	W	F
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	115	B		P
7440-28-0	Thallium	0.21	U		F
7440-62-2	Vanadium	18.1			P
7440-66-6	Zinc	61.0		E*	P
	Cyanide	0.49	U	N	AS

Color Before: GREY_____ Clarity Before: _____ Texture: MEDIUM

Color After : YELLOW___ Clarity After: CLEAR_ Artifacts: _____

Comments:

GROUNDWATER RESULTS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TUL-GW1

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: 2

Matrix: (soil/water) WATER Lab Sample ID: 21807

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: U3781

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ Date Analyzed: 05/25/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	4	BJ
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon tetrachloride	5	U
108-05-4	Vinyl acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total xylenes	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TUL-GW1

1 Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: 2

Matrix: (soil/water) WATER Lab Sample ID: 21807

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: U3781

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ Date Analyzed: 05/25/90

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TUL_GW_1

La. Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: B2

Matrix: (soil/water) WATER Lab Sample ID: 21799

Sample wt/vol: 800 (g/mL) ML Lab File ID: V5429

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/90

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	12	U
111-44-4	bis(2-Chloroethyl)ether	12	U
95-57-8	2-Chlorophenol	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
100-51-6	Benzyl alcohol	12	U
95-50-1	1,2-Dichlorobenzene	12	U
95-48-7	2-Methylphenol	12	U
108-60-1	bis(2-Chloroisopropyl)ether	12	U
106-44-5	4-Methylphenol	12	U
621-64-7	N-Nitroso-di-n-propylamine	12	U
67-72-1	Hexachloroethane	12	U
98-95-3	Nitrobenzene	12	U
78-59-1	Isophorone	12	U
88-75-5	2-Nitrophenol	12	U
105-67-9	2,4-Dimethylphenol	12	U
65-85-0	Benzoic Acid	62	U
111-91-1	bis(2-Chloroethoxy)methane	12	U
120-83-2	2,4-Dichlorophenol	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
91-20-3	Naphthalene	12	U
106-47-8	4-Chloroaniline	12	U
87-68-3	Hexachlorobutadiene	12	U
59-50-7	4-Chloro-3-methylphenol	12	U
91-57-6	2-Methylnaphthalene	12	U
77-47-4	Hexachlorocyclopentadiene	12	U
88-06-2	2,4,6-Trichlorophenol	12	U
95-95-4	2,4,5-Trichlorophenol	62	U
91-58-7	2-Chloronaphthalene	12	U
88-74-4	2-Nitroaniline	62	U
131-11-3	Dimethylphthalate	12	U
208-96-8	Acenaphthylene	12	U
606-20-2	2,6-Dinitrotoluene	12	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TUL_GW_1

La. Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: B2

Matrix: (soil/water) WATER Lab Sample ID: 21799

Sample wt/vol: 800 (g/mL) ML Lab File ID: V5429

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/90

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	62	U
83-32-9	Acenaphthene	12	U
51-28-5	2,4-Dinitrophenol	62	U
100-02-7	4-Nitrophenol	62	U
132-64-9	Dibenzofuran	12	U
121-14-2	2,4-Dinitrotoluene	12	U
84-66-2	Diethylphthalate	12	U
7005-72-3	4-Chlorophenyl-phenylether	12	U
86-73-7	Fluorene	12	U
100-01-6	4-Nitroaniline	62	U
534-52-1	4,6-Dinitro-2-methylphenol	62	U
86-30-6	N-nitrosodiphenylamine (1)	12	U
101-55-3	4-Bromophenyl-phenylether	12	U
118-74-1	Hexachlorobenzene	12	U
87-86-5	Pentachlorophenol	62	U
85-01-8	Phenanthrene	12	U
120-12-7	Anthracene	12	U
84-74-2	Di-n-butylphthalate	12	U
206-44-0	Fluoranthene	12	U
129-00-0	Pyrene	12	U
85-68-7	Butylbenzylphthalate	12	U
91-94-1	3,3'-Dichlorobenzidine	25	U
56-55-3	Benzo(a)anthracene	12	U
218-01-9	Chrysene	12	U
117-81-7	bis(2-Ethylhexyl)phthalate	12	U
117-84-0	Di-n-octyl phthalate	12	U
205-99-2	Benzo(b)fluoranthene	12	U
207-08-9	Benzo(k)fluoranthene	12	U
50-32-8	Benzo(a)pyrene	12	U
193-39-5	Indeno(1,2,3-cd)pyrene	12	U
53-70-3	Dibenz(a,h)anthracene	12	U
191-24-2	Benzo(g,h,i)perylene	12	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TUL_GW_1

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: B2

Matrix: (soil/water) WATER Lab Sample ID: 21799

Sample wt/vol: 800 (g/mL) ML Lab File ID: V5429

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/90

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TULGW1

Lab Name: VERSAR, INC. Contract:

Lab Code: VERSAR Case No.: ENGITULL SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 21791

Sample wt/vol: 980 (g/ml) ML Lab File ID:

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. dec. Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/06/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor Epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan Sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.51	U
53494-70-5	Endrin Ketone	0.10	U
5103-71-9	alpha-Chlordane	0.10	U
5103-74-2	gamma-Chlordane	0.10	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.51	U
11104-28-2	Aroclor-1221	0.51	U
11141-16-5	Aroclor-1232	0.51	U
53469-21-9	Aroclor-1242	0.51	U
12672-29-6	Aroclor-1248	0.51	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

qa
6/6/90

1

INORGANIC ANALYSES DATA SHEET

FIELD SAMPLE NO.

TUL-GW-1

Client : ENGINEERING-SCIENCE_ Site: TULLY_LANDFILL_

Lab Name: VERSAR_INC. Control No.: 2770____ Code: ENGITULL Batch: 2_____

Matrix : WATER_____ Lab Sample ID: 21775____

Level (low/med): LOW_____ Date Received: 05/19/90_

% Solids: ___0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10200			P
7440-36-0	Antimony	23.0	U		P
7440-38-2	Arsenic	5.9	B		F
7440-39-3	Barium	117	B		P
7440-41-7	Beryllium	2.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	76300			P
7440-47-3	Chromium	17.7			P
7440-48-4	Cobalt	6.1	B		P
7440-50-8	Copper	22.2	B		P
7439-89-6	Iron	22300			P
7439-92-1	Lead	4.0	B	S	F
7439-95-4	Magnesium	13900			P
7439-96-5	Manganese	776			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	23.9	B		P
7440-09-7	Potassium	9640			P
7782-49-2	Selenium	3.0	U	WN	F
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	3920	B		P
7440-28-0	Thallium	1.0	U	WN	F
7440-62-2	Vanadium	14.3	B		P
7440-66-6	Zinc	64.5			P
	Cyanide	10.0	U		AS

Color Before: BROWN_____ Clarity Before: CLOUDY Texture: _____

Color After : COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

_CYANIDE_LAB_SAMPLE_ID_NUMBER_IS_21783;_____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TUL-GW2

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: 2

Matrix: (soil/water) WATER Lab Sample ID: 21808

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: U3782

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ Date Analyzed: 05/25/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	5	B
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon tetrachloride	5	U
108-05-4	Vinyl acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total xylenes	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TUL-GW2

1 Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: 2

Matrix: (soil/water) WATER Lab Sample ID: 21808

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: U3782

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ Date Analyzed: 05/25/90

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TUL_GW_2

La Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: B2

Matrix: (soil/water) WATER Lab Sample ID: 21800

Sample wt/vol: 800 (g/mL) ML Lab File ID: V5445

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/11/90

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	12	U
111-44-4	bis(2-Chloroethyl)ether	12	U
95-57-8	2-Chlorophenol	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
100-51-6	Benzyl alcohol	12	U
95-50-1	1,2-Dichlorobenzene	12	U
95-48-7	2-Methylphenol	12	U
108-60-1	bis(2-Chloroisopropyl)ether	12	U
106-44-5	4-Methylphenol	12	U
621-64-7	N-Nitroso-di-n-propylamine	12	U
67-72-1	Hexachloroethane	12	U
98-95-3	Nitrobenzene	12	U
78-59-1	Isophorone	12	U
88-75-5	2-Nitrophenol	12	U
105-67-9	2,4-Dimethylphenol	12	U
65-85-0	Benzoic Acid	62	U
111-91-1	bis(2-Chloroethoxy)methane	12	U
120-83-2	2,4-Dichlorophenol	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
91-20-3	Naphthalene	12	U
106-47-8	4-Chloroaniline	12	U
87-68-3	Hexachlorobutadiene	12	U
59-50-7	4-Chloro-3-methylphenol	12	U
91-57-6	2-Methylnaphthalene	12	U
77-47-4	Hexachlorocyclopentadiene	12	U
88-06-2	2,4,6-Trichlorophenol	12	U
95-95-4	2,4,5-Trichlorophenol	62	U
91-58-7	2-Chloronaphthalene	12	U
88-74-4	2-Nitroaniline	62	U
131-11-3	Dimethylphthalate	12	U
208-96-8	Acenaphthylene	12	U
606-20-2	2,6-Dinitrotoluene	12	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TUL_GW_2

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: B2

Matrix: (soil/water) WATER Lab Sample ID: 21800

Sample wt/vol: 800 (g/mL) ML Lab File ID: V5445

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/11/90

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	62	U
83-32-9	Acenaphthene	12	U
51-28-5	2,4-Dinitrophenol	62	U
100-02-7	4-Nitrophenol	62	U
132-64-9	Dibenzofuran	12	U
121-14-2	2,4-Dinitrotoluene	12	U
84-66-2	Diethylphthalate	12	U
7005-72-3	4-Chlorophenyl-phenylether	12	U
86-73-7	Fluorene	12	U
100-01-6	4-Nitroaniline	62	U
534-52-1	4,6-Dinitro-2-methylphenol	62	U
86-30-6	N-nitrosodiphenylamine (1)	12	U
101-55-3	4-Bromophenyl-phenylether	12	U
118-74-1	Hexachlorobenzene	12	U
87-86-5	Pentachlorophenol	62	U
85-01-8	Phenanthrene	12	U
120-12-7	Anthracene	12	U
84-74-2	Di-n-butylphthalate	12	U
206-44-0	Fluoranthene	12	U
129-00-0	Pyrene	12	U
85-68-7	Butylbenzylphthalate	12	U
91-94-1	3,3'-Dichlorobenzidine	25	U
56-55-3	Benzo(a)anthracene	12	U
218-01-9	Chrysene	12	U
117-81-7	bis(2-Ethylhexyl)phthalate	12	U
117-84-0	Di-n-octyl phthalate	12	U
205-99-2	Benzo(b)fluoranthene	12	U
207-08-9	Benzo(k)fluoranthene	12	U
50-32-8	Benzo(a)pyrene	12	U
193-39-5	Indeno(1,2,3-cd)pyrene	12	U
53-70-3	Dibenz(a,h)anthracene	12	U
191-24-2	Benzo(g,h,i)perylene	12	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TUL_GW_2

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: B2

Matrix: (soil/water) WATER Lab Sample ID: 21800

Sample wt/vol: 800 (g/mL) ML Lab File ID: V5445

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/11/90

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TULGW2

Lab Name: VERSAR, INC. Contract:

Lab Code: VERSAR Case No.: ENGITULL SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 21792

Sample wt/vol: 1030 (g/ml) ML Lab File ID:

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. dec. Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/06/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor Epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan Sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.49	U
53494-70-5	Endrin Ketone	0.10	U
5103-71-9	alpha-Chlordane	0.10	U
5103-74-2	gamma-Chlordane	0.10	U
8001-35-2	Toxaphene	0.97	U
12674-11-2	Aroclor-1016	0.49	U
11104-28-2	Aroclor-1221	0.49	U
11141-16-5	Aroclor-1232	0.49	U
53469-21-9	Aroclor-1242	0.49	U
12672-29-6	Aroclor-1248	0.49	U
11097-69-1	Aroclor-1254	0.97	U
11096-82-5	Aroclor-1260	0.97	U

6/6/90

1

INORGANIC ANALYSES DATA SHEET

FIELD SAMPLE NO.

TUL-GW-2

Client : ENGINEERING-SCIENCE_ Site: TULLY_LANDFILL_

Lab Name: VERSAR_INC. Control No.: 2770____ Code: ENGITULL Batch: 2_____

Matrix : WATER_____ Lab Sample ID: 21776____

Level (low/med): LOW_____ Date Received: 05/19/90_

% Solids: ___0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5_	Aluminum__	2150	_		P_
7440-36-0_	Antimony__	23.0	U		P_
7440-38-2_	Arsenic___	3.0	U		F_
7440-39-3_	Barium____	129	B		P_
7440-41-7_	Beryllium_	2.0	U		P_
7440-43-9_	Cadmium___	5.0	U		P_
7440-70-2_	Calcium___	159000	_		P_
7440-47-3_	Chromium__	5.0	U		P_
7440-48-4_	Cobalt____	5.0	U		P_
7440-50-8_	Copper____	7.0	B		P_
7439-89-6_	Iron______	4640	_		P_
7439-92-1_	Lead______	2.0	U	W	F_
7439-95-4_	Magnesium_	25000	_		P_
7439-96-5_	Manganese_	1070	_		P_
7439-97-6_	Mercury___	0.20	U		CV
7440-02-0_	Nickel____	11.8	B		P_
7440-09-7_	Potassium_	6430	_		P_
7782-49-2_	Selenium__	3.0	U	WN	F_
7440-22-4_	Silver____	2.0	U		P_
7440-23-5_	Sodium____	44600	_		P_
7440-28-0_	Thallium__	1.0	U	WN	F_
7440-62-2_	Vanadium__	3.2	B		P_
7440-66-6_	Zinc______	20.5	_		P_
_____	Cyanide___	10.0	U		AS

Color Before: BROWN____ Clarity Before: CLOUDY Texture: _____

Color After : COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

_CYANIDE_LAB_SAMPLE_ID_NUMBER_IS_21784;_____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TUL-GW3

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: 2

Matrix: (soil/water) WATER Lab Sample ID: 21809

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: U3783

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ Date Analyzed: 05/25/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	5	B
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon tetrachloride	5	U
108-05-4	Vinyl acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total xylenes	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TUL-GW3

1 Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: 2

Matrix: (soil/water) WATER Lab Sample ID: 21809

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: U3783

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ Date Analyzed: 05/25/90

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TUL_GW_3

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: B2

Matrix: (soil/water) WATER Lab Sample ID: 21801

Sample wt/vol: 800 (g/mL) ML Lab File ID: V5430

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/90

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	12	U
111-44-4	bis(2-Chloroethyl)ether	12	U
95-57-8	2-Chlorophenol	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
100-51-6	Benzyl alcohol	12	U
95-50-1	1,2-Dichlorobenzene	12	U
95-48-7	2-Methylphenol	12	U
108-60-1	bis(2-Chloroisopropyl)ether	12	U
106-44-5	4-Methylphenol	12	U
621-64-7	N-Nitroso-di-n-propylamine	12	U
67-72-1	Hexachloroethane	12	U
98-95-3	Nitrobenzene	12	U
78-59-1	Isophorone	12	U
88-75-5	2-Nitrophenol	12	U
105-67-9	2,4-Dimethylphenol	12	U
65-85-0	Benzoic Acid	62	U
111-91-1	bis(2-Chloroethoxy)methane	12	U
120-83-2	2,4-Dichlorophenol	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
91-20-3	Naphthalene	12	U
106-47-8	4-Chloroaniline	12	U
87-68-3	Hexachlorobutadiene	12	U
59-50-7	4-Chloro-3-methylphenol	12	U
91-57-6	2-Methylnaphthalene	12	U
77-47-4	Hexachlorocyclopentadiene	12	U
88-06-2	2,4,6-Trichlorophenol	12	U
95-95-4	2,4,5-Trichlorophenol	62	U
91-58-7	2-Chloronaphthalene	12	U
88-74-4	2-Nitroaniline	62	U
131-11-3	Dimethylphthalate	12	U
208-96-8	Acenaphthylene	12	U
606-20-2	2,6-Dinitrotoluene	12	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TUL_GW_3

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: B2

Matrix: (soil/water) WATER Lab Sample ID: 21801

Sample wt/vol: 800 (g/mL) ML Lab File ID: V5430

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/90

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	62	U
83-32-9	Acenaphthene	12	U
51-28-5	2,4-Dinitrophenol	62	U
100-02-7	4-Nitrophenol	62	U
132-64-9	Dibenzofuran	12	U
121-14-2	2,4-Dinitrotoluene	12	U
84-66-2	Diethylphthalate	12	U
7005-72-3	4-Chlorophenyl-phenylether	12	U
86-73-7	Fluorene	12	U
100-01-6	4-Nitroaniline	62	U
534-52-1	4,6-Dinitro-2-methylphenol	62	U
86-30-6	N-nitrosodiphenylamine (1)	12	U
101-55-3	4-Bromophenyl-phenylether	12	U
118-74-1	Hexachlorobenzene	12	U
87-86-5	Pentachlorophenol	62	U
85-01-8	Phenanthrene	12	U
120-12-7	Anthracene	12	U
84-74-2	Di-n-butylphthalate	12	U
206-44-0	Fluoranthene	12	U
129-00-0	Pyrene	12	U
85-68-7	Butylbenzylphthalate	12	U
91-94-1	3,3'-Dichlorobenzidine	25	U
56-55-3	Benzo(a)anthracene	12	U
218-01-9	Chrysene	12	U
117-81-7	bis(2-Ethylhexyl)phthalate	12	U
117-84-0	Di-n-octyl phthalate	12	U
205-99-2	Benzo(b)fluoranthene	12	U
207-08-9	Benzo(k)fluoranthene	12	U
50-32-8	Benzo(a)pyrene	12	U
193-39-5	Indeno(1,2,3-cd)pyrene	12	U
53-70-3	Dibenz(a,h)anthracene	12	U
191-24-2	Benzo(g,h,i)perylene	12	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TUL_GW_3

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: B2

Matrix: (soil/water) WATER Lab Sample ID: 21801

Sample wt/vol: 800 (g/mL) ML Lab File ID: V5430

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. _____ dec. _____ Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/90

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TULGW3

Lab Name: VERSAR, INC. Contract:

b Code: VERSAR Case No.: ENGITULL SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 21793

Sample wt/vol: 1030 (g/ml) ML Lab File ID:

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. dec. Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/06/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor Epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan Sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.49	U
53494-70-5	Endrin Ketone	0.10	U
5103-71-9	alpha-Chlordane	0.10	U
5103-74-2	gamma-Chlordane	0.10	U
8001-35-2	Toxaphene	0.97	U
12674-11-2	Aroclor-1016	0.49	U
11104-28-2	Aroclor-1221	0.49	U
11141-16-5	Aroclor-1232	0.49	U
53469-21-9	Aroclor-1242	0.49	U
12672-29-6	Aroclor-1248	0.49	U
11097-69-1	Aroclor-1254	0.97	U
11096-82-5	Aroclor-1260	0.97	U

6/6/90

1

INORGANIC ANALYSES DATA SHEET

FIELD SAMPLE NO.: TUL-GW-3

Client : ENGINEERING-SCIENCE_ Site: TULLY_LANDFILL_

Lab Name: VERSAR_INC. Control No.: 2770____ Code: ENGITULL Batch: 2_____

Matrix : WATER_____ Lab Sample ID: 21777____

Level (low/med): LOW_____ Date Received: 05/19/90_

% Solids: ___0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5_	Aluminum__	3870	_		P_
7440-36-0_	Antimony__	23.0	U		P_
7440-38-2_	Arsenic___	3.0	U		F_
7440-39-3_	Barium____	123	B		P_
7440-41-7_	Beryllium_	2.0	U		P_
7440-43-9_	Cadmium___	5.0	U		P_
7440-70-2_	Calcium___	202000	_		P_
7440-47-3_	Chromium__	5.0	U		P_
7440-48-4_	Cobalt____	5.4	B		P_
7440-50-8_	Copper____	9.5	B		P_
7439-89-6_	Iron______	7410	_		P_
7439-92-1_	Lead______	2.5	B		F_
7439-95-4_	Magnesium_	44100	_		P_
7439-96-5_	Manganese_	484	_		P_
7439-97-6_	Mercury___	0.20	U		CV
7440-02-0_	Nickel____	10.0	U		P_
7440-09-7_	Potassium_	2450	B		P_
7782-49-2_	Selenium__	3.0	U	WN	F_
7440-22-4_	Silver____	2.0	U		P_
7440-23-5_	Sodium____	52700	_		P_
7440-28-0_	Thallium__	1.0	U	WN	F_
7440-62-2_	Vanadium__	3.0	U		P_
7440-66-6_	Zinc______	25.7	_		P_
_____	Cyanide___	10.0	U		AS

Color Before: BROWN____ Clarity Before: CLOUDY Texture: _____

Color After : COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

_CYANIDE_LAB_SAMPLE_IS_NUMBER_IS_21785;_____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TUL-GW4

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: 2

Matrix: (soil/water) WATER Lab Sample ID: 21810

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: U3784

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ Date Analyzed: 05/26/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	5	B
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon tetrachloride	5	U
108-05-4	Vinyl acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total xylenes	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TUL-GW4

Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: 2

Matrix: (soil/water) WATER Lab Sample ID: 21810

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: U3784

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ Date Analyzed: 05/26/90

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TUL_GW_4

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: B2

Matrix: (soil/water) WATER Lab Sample ID: 21802

Sample wt/vol: 800 (g/mL) ML Lab File ID: V5431

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/90

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	12	U
111-44-4	bis(2-Chloroethyl)ether	12	U
95-57-8	2-Chlorophenol	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
100-51-6	Benzyl alcohol	12	U
95-50-1	1,2-Dichlorobenzene	12	U
95-48-7	2-Methylphenol	12	U
108-60-1	bis(2-Chloroisopropyl)ether	12	U
106-44-5	4-Methylphenol	12	U
621-64-7	N-Nitroso-di-n-propylamine	12	U
67-72-1	Hexachloroethane	12	U
98-95-3	Nitrobenzene	12	U
78-59-1	Isophorone	12	U
88-75-5	2-Nitrophenol	12	U
105-67-9	2,4-Dimethylphenol	12	U
65-85-0	Benzoic Acid	62	U
111-91-1	bis(2-Chloroethoxy)methane	12	U
120-83-2	2,4-Dichlorophenol	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
91-20-3	Naphthalene	12	U
106-47-8	4-Chloroaniline	12	U
87-68-3	Hexachlorobutadiene	12	U
59-50-7	4-Chloro-3-methylphenol	12	U
91-57-6	2-Methylnaphthalene	12	U
77-47-4	Hexachlorocyclopentadiene	12	U
88-06-2	2,4,6-Trichlorophenol	12	U
95-95-4	2,4,5-Trichlorophenol	62	U
91-58-7	2-Chloronaphthalene	12	U
88-74-4	2-Nitroaniline	62	U
131-11-3	Dimethylphthalate	12	U
208-96-8	Acenaphthylene	12	U
606-20-2	2,6-Dinitrotoluene	12	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TUL_GW_4

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: B2

Matrix: (soil/water) WATER Lab Sample ID: 21802

Sample wt/vol: 800 (g/mL) ML Lab File ID: V5431

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/90

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	62	U
83-32-9	Acenaphthene	12	U
51-28-5	2,4-Dinitrophenol	62	U
100-02-7	4-Nitrophenol	62	U
132-64-9	Dibenzofuran	12	U
121-14-2	2,4-Dinitrotoluene	12	U
84-66-2	Diethylphthalate	12	U
7005-72-3	4-Chlorophenyl-phenylether	12	U
86-73-7	Fluorene	12	U
100-01-6	4-Nitroaniline	62	U
534-52-1	4,6-Dinitro-2-methylphenol	62	U
86-30-6	N-nitrosodiphenylamine (1)	12	U
101-55-3	4-Bromophenyl-phenylether	12	U
118-74-1	Hexachlorobenzene	12	U
87-86-5	Pentachlorophenol	62	U
85-01-8	Phenanthrene	12	U
120-12-7	Anthracene	12	U
84-74-2	Di-n-butylphthalate	12	U
206-44-0	Fluoranthene	12	U
129-00-0	Pyrene	12	U
85-68-7	Butylbenzylphthalate	12	U
91-94-1	3,3'-Dichlorobenzidine	25	U
56-55-3	Benzo(a)anthracene	12	U
218-01-9	Chrysene	12	U
117-81-7	bis(2-Ethylhexyl)phthalate	12	U
117-84-0	Di-n-octyl phthalate	12	U
205-99-2	Benzo(b)fluoranthene	12	U
207-08-9	Benzo(k)fluoranthene	12	U
50-32-8	Benzo(a)pyrene	12	U
193-39-5	Indeno(1,2,3-cd)pyrene	12	U
53-70-3	Dibenz(a,h)anthracene	12	U
191-24-2	Benzo(g,h,i)perylene	12	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TUL_GW_4

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: B2

Matrix: (soil/water) WATER Lab Sample ID: 21802

Sample wt/vol: 800 (g/mL) ML Lab File ID: V5431

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/90

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TULGW4

Lab Name: VERSAR, INC. Contract:

b Code: VERSAR Case No.: ENGITULL SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 21794

Sample wt/vol: 1030 (g/ml) ML Lab File ID:

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. dec. Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/06/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor Epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan Sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.49	U
53494-70-5	Endrin Ketone	0.10	U
5103-71-9	alpha-Chlordane	0.10	U
5103-74-2	gamma-Chlordane	0.10	U
8001-35-2	Toxaphene	0.97	U
12674-11-2	Aroclor-1016	0.49	U
11104-28-2	Aroclor-1221	0.49	U
11141-16-5	Aroclor-1232	0.49	U
53469-21-9	Aroclor-1242	0.49	U
12672-29-6	Aroclor-1248	0.49	U
11097-69-1	Aroclor-1254	0.97	U
11096-82-5	Aroclor-1260	0.97	U

6/6/90

1

INORGANIC ANALYSES DATA SHEET

FIELD SAMPLE NO.

TUL-GW-4

Client : ENGINEERING-SCIENCE_ Site: TULLY_LANDFILL_

Lab Name: VERSAR_INC. Control No.: 2770____ Code: ENGITULL Batch: 2_____

Matrix : WATER_____ Lab Sample ID: 21778____

Level (low/med): LOW_____ Date Received: 05/19/90_

% Solids: ___0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3530			P
7440-36-0	Antimony	23.0	U		P
7440-38-2	Arsenic	3.0	U		F
7440-39-3	Barium	123	B		P
7440-41-7	Beryllium	2.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	211000			P
7440-47-3	Chromium	5.0	U		P
7440-48-4	Cobalt	5.0	U		P
7440-50-8	Copper	11.7	B		P
7439-89-6	Iron	7440			P
7439-92-1	Lead	2.0	U	W	F
7439-95-4	Magnesium	46000			P
7439-96-5	Manganese	506			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	11.4	B		P
7440-09-7	Potassium	2280	B		P
7782-49-2	Selenium	3.0	U	WN	F
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	55200			P
7440-28-0	Thallium	1.0	U	WN	F
7440-62-2	Vanadium	3.0	U		P
7440-66-6	Zinc	23.0			P
	Cyanide	10.0	U		AS

Color Before: BROWN_____ Clarity Before: CLOUDY Texture: _____

Color After : COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

_CYANIDE_LAB_SAMPLE_ID_NUMBER_IS_21786;_____

SURFACE WATER RESULTS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TUL-SW1

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: 2

Matrix: (soil/water) WATER Lab Sample ID: 21811

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: U3785

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ Date Analyzed: 05/26/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	5	B
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon tetrachloride	5	U
108-05-4	Vinyl acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total xylenes	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TUL-SW1

1 Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: 2

Matrix: (soil/water) WATER Lab Sample ID: 21811

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: U3785

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ Date Analyzed: 05/26/90

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TUL_SW_1

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: B2

Matrix: (soil/water) WATER Lab Sample ID: 21803

Sample wt/vol: 800 (g/mL) ML Lab File ID: V5432

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/90

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	12	U
111-44-4	bis(2-Chloroethyl)ether	12	U
95-57-8	2-Chlorophenol	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
100-51-6	Benzyl alcohol	12	U
95-50-1	1,2-Dichlorobenzene	12	U
95-48-7	2-Methylphenol	12	U
108-60-1	bis(2-Chloroisopropyl)ether	12	U
106-44-5	4-Methylphenol	12	U
621-64-7	N-Nitroso-di-n-propylamine	12	U
67-72-1	Hexachloroethane	12	U
98-95-3	Nitrobenzene	12	U
78-59-1	Isophorone	12	U
88-75-5	2-Nitrophenol	12	U
105-67-9	2,4-Dimethylphenol	12	U
65-85-0	Benzoic Acid	62	U
111-91-1	bis(2-Chloroethoxy)methane	12	U
120-83-2	2,4-Dichlorophenol	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
91-20-3	Naphthalene	12	U
106-47-8	4-Chloroaniline	12	U
87-68-3	Hexachlorobutadiene	12	U
59-50-7	4-Chloro-3-methylphenol	12	U
91-57-6	2-Methylnaphthalene	12	U
77-47-4	Hexachlorocyclopentadiene	12	U
88-06-2	2,4,6-Trichlorophenol	12	U
95-95-4	2,4,5-Trichlorophenol	62	U
91-58-7	2-Chloronaphthalene	12	U
88-74-4	2-Nitroaniline	62	U
131-11-3	Dimethylphthalate	12	U
208-96-8	Acenaphthylene	12	U
606-20-2	2,6-Dinitrotoluene	12	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TUL_SW_1

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: B2

Matrix: (soil/water) WATER Lab Sample ID: 21803

Sample wt/vol: 800 (g/mL) ML Lab File ID: V5432

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/90

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	62	U
83-32-9	Acenaphthene	12	U
51-28-5	2,4-Dinitrophenol	62	U
100-02-7	4-Nitrophenol	62	U
132-64-9	Dibenzofuran	12	U
121-14-2	2,4-Dinitrotoluene	12	U
84-66-2	Diethylphthalate	12	U
7005-72-3	4-Chlorophenyl-phenylether	12	U
86-73-7	Fluorene	12	U
100-01-6	4-Nitroaniline	62	U
534-52-1	4,6-Dinitro-2-methylphenol	62	U
86-30-6	N-nitrosodiphenylamine (1)	12	U
101-55-3	4-Bromophenyl-phenylether	12	U
118-74-1	Hexachlorobenzene	12	U
87-86-5	Pentachlorophenol	62	U
85-01-8	Phenanthrene	12	U
120-12-7	Anthracene	12	U
84-74-2	Di-n-butylphthalate	12	U
206-44-0	Fluoranthene	12	U
129-00-0	Pyrene	12	U
85-68-7	Butylbenzylphthalate	12	U
91-94-1	3,3'-Dichlorobenzidine	25	U
56-55-3	Benzo(a)anthracene	12	U
218-01-9	Chrysene	12	U
117-81-7	bis(2-Ethylhexyl)phthalate	12	U
117-84-0	Di-n-octyl phthalate	12	U
205-99-2	Benzo(b)fluoranthene	12	U
207-08-9	Benzo(k)fluoranthene	12	U
50-32-8	Benzo(a)pyrene	12	U
193-39-5	Indeno(1,2,3-cd)pyrene	12	U
53-70-3	Dibenz(a,h)anthracene	12	U
191-24-2	Benzo(g,h,i)perylene	12	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TUL_SW_1

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: B2

Matrix: (soil/water) WATER Lab Sample ID: 21803

Sample wt/vol: 800 (g/mL) ML Lab File ID: V5432

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/07/90

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TULSW1

Lab Name: VERSAR, INC. Contract:

Lab Code: VERSAR Case No.: ENGITULL SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 21795

Sample wt/vol: 1030 (g/ml) ML Lab File ID:

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. dec. Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/06/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor Epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan Sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.49	U
53494-70-5	Endrin Ketone	0.10	U
5103-71-9	alpha-Chlordane	0.10	U
5103-74-2	gamma-Chlordane	0.10	U
8001-35-2	Toxaphene	0.97	U
12674-11-2	Aroclor-1016	0.49	U
11104-28-2	Aroclor-1221	0.49	U
11141-16-5	Aroclor-1232	0.49	U
53469-21-9	Aroclor-1242	0.49	U
12672-29-6	Aroclor-1248	0.49	U
11097-69-1	Aroclor-1254	0.97	U
11096-82-5	Aroclor-1260	0.97	U

JA
6/6/90

1

INORGANIC ANALYSES DATA SHEET

FIELD SAMPLE NO.

TUL-SW-1

Client : ENGINEERING-SCIENCE_ Site: TULLY_LANDFILL_

Lab Name: VERSAR_INC. Control No.: 2770____ Code: ENGITULL Batch: 2_____

Matrix : WATER_____ Lab Sample ID: 21779____

Level (low/med): LOW_____ Date Received: 05/19/90_

% Solids: ___0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5_	Aluminum__	228	_		P_
7440-36-0_	Antimony__	23.0	U		P_
7440-38-2_	Arsenic___	3.0	U		F_
7440-39-3_	Barium____	8.6	B		P_
7440-41-7_	Beryllium_	2.0	U		P_
7440-43-9_	Cadmium___	5.0	U		P_
7440-70-2_	Calcium___	15800	_		P_
7440-47-3_	Chromium__	5.0	U		P_
7440-48-4_	Cobalt____	5.0	U		P_
7440-50-8_	Copper____	2.0	U		P_
7439-89-6_	Iron______	335	_		P_
7439-92-1_	Lead______	2.0	U		F_
7439-95-4_	Magnesium_	2140	B		P_
7439-96-5_	Manganese_	13.4	B		P_
7439-97-6_	Mercury___	0.20	U		CV
7440-02-0_	Nickel____	10.0	U		P_
7440-09-7_	Potassium_	871	U		P_
7782-49-2_	Selenium__	3.0	U	N	F_
7440-22-4_	Silver____	2.0	U		P_
7440-23-5_	Sodium____	10400	_		P_
7440-28-0_	Thallium__	1.0	U	WN	F_
7440-62-2_	Vanadium__	3.0	U		P_
7440-66-6_	Zinc______	4.0	U		P_
_____	Cyanide___	10.0	U		AS

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After : COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

_CYANIDE_LAB_SAMPLE_ID_NUMBER_IS_21787;_____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TUL-SW2

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: 2

Matrix: (soil/water) WATER Lab Sample ID: 21812

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: W2580

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ Date Analyzed: 05/24/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	8	
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon tetrachloride	5	U
108-05-4	Vinyl acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total xylenes	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TUL-SW2

1 Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: 2

Matrix: (soil/water) WATER Lab Sample ID: 21812

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: W2580

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ Date Analyzed: 05/24/90

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TUL_SW_2

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: B2

Matrix: (soil/water) WATER Lab Sample ID: 21804

Sample wt/vol: 800 (g/mL) ML Lab File ID: V5448

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/11/90

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	12	U
111-44-4	bis(2-Chloroethyl)ether	12	U
95-57-8	2-Chlorophenol	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
100-51-6	Benzyl alcohol	12	U
95-50-1	1,2-Dichlorobenzene	12	U
95-48-7	2-Methylphenol	12	U
108-60-1	bis(2-Chloroisopropyl)ether	12	U
106-44-5	4-Methylphenol	12	U
621-64-7	N-Nitroso-di-n-propylamine	12	U
67-72-1	Hexachloroethane	12	U
98-95-3	Nitrobenzene	12	U
78-59-1	Isophorone	12	U
88-75-5	2-Nitrophenol	12	U
105-67-9	2,4-Dimethylphenol	12	U
65-85-0	Benzoic Acid	62	U
111-91-1	bis(2-Chloroethoxy)methane	12	U
120-83-2	2,4-Dichlorophenol	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
91-20-3	Naphthalene	12	U
106-47-8	4-Chloroaniline	12	U
87-68-3	Hexachlorobutadiene	12	U
59-50-7	4-Chloro-3-methylphenol	12	U
91-57-6	2-Methylnaphthalene	12	U
77-47-4	Hexachlorocyclopentadiene	12	U
88-06-2	2,4,6-Trichlorophenol	12	U
95-95-4	2,4,5-Trichlorophenol	62	U
91-58-7	2-Chloronaphthalene	12	U
88-74-4	2-Nitroaniline	62	U
131-11-3	Dimethylphthalate	12	U
208-96-8	Acenaphthylene	12	U
606-20-2	2,6-Dinitrotoluene	12	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TUL_SW_2

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: B2

Matrix: (soil/water) WATER Lab Sample ID: 21804

Sample wt/vol: 800 (g/mL) ML Lab File ID: V5448

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/11/90

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	62	U
83-32-9	Acenaphthene	12	U
51-28-5	2,4-Dinitrophenol	62	U
100-02-7	4-Nitrophenol	62	U
132-64-9	Dibenzofuran	12	U
121-14-2	2,4-Dinitrotoluene	12	U
84-66-2	Diethylphthalate	12	U
7005-72-3	4-Chlorophenyl-phenylether	12	U
86-73-7	Fluorene	12	U
100-01-6	4-Nitroaniline	62	U
534-52-1	4,6-Dinitro-2-methylphenol	62	U
86-30-6	N-nitrosodiphenylamine (1)	12	U
101-55-3	4-Bromophenyl-phenylether	12	U
118-74-1	Hexachlorobenzene	12	U
87-86-5	Pentachlorophenol	62	U
85-01-8	Phenanthrene	12	U
120-12-7	Anthracene	12	U
84-74-2	Di-n-butylphthalate	12	U
206-44-0	Fluoranthene	12	U
129-00-0	Pyrene	12	U
85-68-7	Butylbenzylphthalate	12	U
91-94-1	3,3'-Dichlorobenzidine	25	U
56-55-3	Benzo(a)anthracene	12	U
218-01-9	Chrysene	12	U
117-81-7	bis(2-Ethylhexyl)phthalate	12	U
117-84-0	Di-n-octyl phthalate	12	U
205-99-2	Benzo(b)fluoranthene	12	U
207-08-9	Benzo(k)fluoranthene	12	U
50-32-8	Benzo(a)pyrene	12	U
193-39-5	Indeno(1,2,3-cd)pyrene	12	U
53-70-3	Dibenz(a,h)anthracene	12	U
191-24-2	Benzo(g,h,i)perylene	12	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TUL_SW_2

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: B2

Matrix: (soil/water) WATER Lab Sample ID: 21804

Sample wt/vol: 800 (g/mL) ML Lab File ID: V5448

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/11/90

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TULSW2

Lab Name: VERSAR, INC. Contract:

b Code: VERSAR Case No.: ENGITULL SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 21796

Sample wt/vol: 1030 (g/ml) ML Lab File ID:

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. dec. Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/06/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor Epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan Sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.49	U
53494-70-5	Endrin Ketone	0.10	U
5103-71-9	alpha-Chlordane	0.10	U
5103-74-2	gamma-Chlordane	0.10	U
8001-35-2	Toxaphene	0.97	U
12674-11-2	Aroclor-1016	0.49	U
11104-28-2	Aroclor-1221	0.49	U
11141-16-5	Aroclor-1232	0.49	U
53469-21-9	Aroclor-1242	0.49	U
12672-29-6	Aroclor-1248	0.49	U
11097-69-1	Aroclor-1254	0.97	U
11096-82-5	Aroclor-1260	0.97	U

ga
6/6/90

1

INORGANIC ANALYSES DATA SHEET

FIELD SAMPLE NO.

TUL-SW-2

Client : ENGINEERING-SCIENCE_ Site: TULLY_LANDFILL_

Lab Name: VERSAR_INC. Control No.: 2770____ Code: ENGITULL Batch: 2_____

Matrix : WATER_____ Lab Sample ID: 21780____

Level (low/med): LOW_____ Date Received: 05/19/90_

% Solids: ___0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5_	Aluminum__	218	_		P_
7440-36-0_	Antimony__	23.0	U		P_
7440-38-2_	Arsenic___	3.0	U		F_
7440-39-3_	Barium____	14.4	B		P_
7440-41-7_	Beryllium_	2.0	U		P_
7440-43-9_	Cadmium___	5.0	U		P_
7440-70-2_	Calcium___	28000	_		P_
7440-47-3_	Chromium__	5.0	U		P_
7440-48-4_	Cobalt____	5.0	U		P_
7440-50-8_	Copper____	2.0	U		P_
7439-89-6_	Iron______	330	_		P_
7439-92-1_	Lead______	2.0	U	W	F_
7439-95-4_	Magnesium_	4130	B		P_
7439-96-5_	Manganese_	12.6	B		P_
7439-97-6_	Mercury___	0.20	U		CV
7440-02-0_	Nickel____	10.0	U		P_
7440-09-7_	Potassium_	1410	B		P_
7782-49-2_	Selenium__	3.0	U	WN	F_
7440-22-4_	Silver____	2.0	U		P_
7440-23-5_	Sodium____	13400	_		P_
7440-28-0_	Thallium__	1.0	U	WN	F_
7440-62-2_	Vanadium__	3.0	U		P_
7440-66-6_	Zinc______	5.1	B		P_
_____	Cyanide___	10.0	U		AS

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After : COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

_CYANIDE_LAB_SAMPLE_ID_NUMBER_IS_21788;_____

SEDIMENT RESULTS

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TUL-SED1

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: 2

Matrix: (soil/water) SOIL Lab Sample ID: 21820

Sample wt/vol: 5.0 (g/mL) G Lab File ID: U3755

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. 38 Date Analyzed: 05/24/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	16	U
74-83-9	Bromomethane	16	U
75-01-4	Vinyl chloride	16	U
75-00-3	Chloroethane	16	U
75-09-2	Methylene chloride	10	
67-64-1	Acetone	12	J
75-15-0	Carbon disulfide	8	U
75-35-4	1,1-Dichloroethene	8	U
75-34-3	1,1-Dichloroethane	8	U
540-59-0	1,2-Dichloroethene (total)	8	U
67-66-3	Chloroform	8	U
107-06-2	1,2-Dichloroethane	8	U
78-93-3	2-Butanone	16	U
71-55-6	1,1,1-Trichloroethane	8	U
56-23-5	Carbon tetrachloride	8	U
108-05-4	Vinyl acetate	16	U
75-27-4	Bromodichloromethane	8	U
78-87-5	1,2-Dichloropropane	8	U
10061-01-5	cis-1,3-Dichloropropene	8	U
79-01-6	Trichloroethene	8	U
124-48-1	Dibromochloromethane	8	U
79-00-5	1,1,2-Trichloroethane	8	U
71-43-2	Benzene	8	U
10061-02-6	Trans-1,3-dichloropropene	8	U
75-25-2	Bromoform	8	U
108-10-1	4-Methyl-2-pentanone	16	U
591-78-6	2-Hexanone	16	U
127-18-4	Tetrachloroethene	8	U
79-34-5	1,1,2,2-Tetrachloroethane	8	U
108-88-3	Toluene	8	U
108-90-7	Chlorobenzene	8	U
100-41-4	Ethylbenzene	8	U
100-42-5	Styrene	8	U
1330-20-7	Total xylenes	8	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TUL-SED1

1 Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: 2

Matrix: (soil/water) SOIL Lab Sample ID: 21820

Sample wt/vol: 5.0 (g/mL) G Lab File ID: U3755

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. 38 Date Analyzed: 05/24/90

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TULSED1

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: B2

Matrix: (soil/water) SOIL Lab Sample ID: 21818

Sample wt/vol: 30.1 (g/mL) G Lab File ID: T2855

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. 49 dec. ____ Date Extracted: 05/25/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/04/90

GPC Cleanup: (Y/N) N pH: 6.05 Dilution Factor: 1.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	680	U
111-44-4	bis(2-Chloroethyl)ether	680	U
95-57-8	2-Chlorophenol	680	U
541-73-1	1,3-Dichlorobenzene	680	U
106-46-7	1,4-Dichlorobenzene	680	U
100-51-6	Benzyl alcohol	680	U
95-50-1	1,2-Dichlorobenzene	680	U
95-48-7	2-Methylphenol	680	U
108-60-1	bis(2-Chloroisopropyl)ether	680	U
106-44-5	4-Methylphenol	680	U
621-64-7	N-Nitroso-di-n-propylamine	680	U
67-72-1	Hexachloroethane	680	U
98-95-3	Nitrobenzene	680	U
78-59-1	Isophorone	680	U
88-75-5	2-Nitrophenol	680	U
105-67-9	2,4-Dimethylphenol	680	U
65-85-0	Benzoic Acid	3300	U
111-91-1	bis(2-Chloroethoxy)methane	680	U
120-83-2	2,4-Dichlorophenol	680	U
120-82-1	1,2,4-Trichlorobenzene	680	U
91-20-3	Naphthalene	680	U
106-47-8	4-Chloroaniline	680	U
87-68-3	Hexachlorobutadiene	680	U
59-50-7	4-Chloro-3-methylphenol	680	U
91-57-6	2-Methylnaphthalene	680	U
77-47-4	Hexachlorocyclopentadiene	680	U
88-06-2	2,4,6-Trichlorophenol	680	U
95-95-4	2,4,5-Trichlorophenol	3300	U
91-58-7	2-Chloronaphthalene	680	U
88-74-4	2-Nitroaniline	3300	U
131-11-3	Dimethylphthalate	680	U
208-96-8	Acenaphthylene	680	U
606-20-2	2,6-Dinitrotoluene	680	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TULSED1

La Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: B2

Matrix: (soil/water) SOIL Lab Sample ID: 21818

Sample wt/vol: 30.1 (g/mL) G Lab File ID: T2855

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. 49 dec. ____ Date Extracted: 05/25/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/04/90

GPC Cleanup: (Y/N) N pH: 6.05 Dilution Factor: 1.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	3300	U
83-32-9	Acenaphthene	680	U
51-28-5	2,4-Dinitrophenol	3300	U
100-02-7	4-Nitrophenol	3300	U
132-64-9	Dibenzofuran	680	U
121-14-2	2,4-Dinitrotoluene	680	U
84-66-2	Diethylphthalate	680	U
7005-72-3	4-Chlorophenyl-phenylether	680	U
86-73-7	Fluorene	680	U
100-01-6	4-Nitroaniline	3300	U
534-52-1	4,6-Dinitro-2-methylphenol	3300	U
86-30-6	N-nitrosodiphenylamine (1)	680	U
101-55-3	4-Bromophenyl-phenylether	680	U
118-74-1	Hexachlorobenzene	680	U
87-86-5	Pentachlorophenol	3300	U
85-01-8	Phenanthrene	680	U
120-12-7	Anthracene	680	U
84-74-2	Di-n-butylphthalate	680	U
206-44-0	Fluoranthene	680	U
129-00-0	Pyrene	680	U
85-68-7	Butylbenzylphthalate	680	U
91-94-1	3,3'-Dichlorobenzidine	1400	U
56-55-3	Benzo(a)anthracene	680	U
218-01-9	Chrysene	680	U
117-81-7	bis(2-Ethylhexyl)phthalate	680	U
117-84-0	Di-n-octyl phthalate	680	U
205-99-2	Benzo(b)fluoranthene	680	U
207-08-9	Benzo(k)fluoranthene	680	U
50-32-8	Benzo(a)pyrene	680	U
193-39-5	Indeno(1,2,3-cd)pyrene	680	U
53-70-3	Dibenz(a,h)anthracene	680	U
191-24-2	Benzo(g,h,i)perylene	680	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TULSED1

Lab Name: VERSAR INC. Contract:

Lab Code: VERSAR Case No.: 2770 SAS No.: SDG No.: B2

Matrix: (soil/water) SOIL Lab Sample ID: 21818

Sample wt/vol: 30.1 (g/mL) G Lab File ID: T2855

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. 49 dec. Date Extracted: 05/25/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/04/90

GPC Cleanup: (Y/N) N pH: 6.05 Dilution Factor: 1.1

Number TICs found: 16

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	4.58	750	BJ
2.	3074-71-3	HEPTANE, 2,3-DIMETHYL-	4.68	410	BJ
3.		UNKNOWN HYDROCARBON	4.83	820	J
4.		UNKNOWN HYDROCARBON	5.00	820	J
5.		UNKNOWN	6.32	1800	J
6.		UNKNOWN KETONE	6.77	4900	J
7.	18641-71-9	3-HEPTANONE, 2,4-DIMETHYL-	7.68	9300	J
8.		UNKNOWN KETONE	8.13	620	J
9.		UNKNOWN	8.64	410	J
10.		UNKNOWN	8.94	5700	J
11.		UNKNOWN	30.06	340	J
12.		UNKNOWN	32.79	270	J
13.		UNKNOWN	33.17	340	J
14.		UNKNOWN HYDROCARBON	33.71	750	J
15.		UNKNOWN HYDROCARBON	36.21	1400	J
16.		UNKNOWN HYDROCARBON	39.77	340	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TULSED1

Lab Name: VERSAR, INC. Contract:

b Code: VERSAR Case No.: ENGITULL SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 21818

Sample wt/vol: 30.07 (g/ml) G Lab File ID:

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. 48.6 dec. Date Extracted: 05/25/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/04/90

GPC Cleanup: (Y/N) N pH: 6.05 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	7.8	U
319-85-7	beta-BHC	7.8	U
319-86-8	delta-BHC	7.8	U
58-89-9	gamma-BHC (Lindane)	7.8	U
76-44-8	Heptachlor	7.8	U
309-00-2	Aldrin	7.8	U
1024-57-3	Heptachlor Epoxide	7.8	U
959-98-8	Endosulfan I	7.8	U
60-57-1	Dieldrin	16	U
72-55-9	4,4'-DDE	16	U
72-20-8	Endrin	16	U
33213-65-9	Endosulfan II	16	U
72-54-8	4,4'-DDD	16	U
1031-07-8	Endosulfan Sulfate	16	U
50-29-3	4,4'-DDT	16	U
72-43-5	Methoxychlor	78	U
53494-70-5	Endrin Ketone	16	U
5103-71-9	alpha-Chlordane	16	U
5103-74-2	gamma-Chlordane	16	U
8001-35-2	Toxaphene	160	U
12674-11-2	Aroclor-1016	78	U
11104-28-2	Aroclor-1221	78	U
11141-16-5	Aroclor-1232	78	U
53469-21-9	Aroclor-1242	78	U
12672-29-6	Aroclor-1248	78	U
11097-69-1	Aroclor-1254	160	U
11096-82-5	Aroclor-1260	160	U

INORGANIC ANALYSES DATA SHEET

FIELD SAMPLE NO.: TUL-SED-1

Client : ENGINEERING-SCIENCE_ Site: TULLY_LANDFILL_

Lab Name: VERSAR_INC. Control No.: 2770____ Code: ENGITULL Batch: 2_____

Matrix : SOIL_____ Lab Sample ID: 21816____

Level (low/med): LOW_____ Date Received: 05/19/90_

% Solids: __62.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13300			P
7440-36-0	Antimony	6.0	U	N	P
7440-38-2	Arsenic	6.3		S	F
7440-39-3	Barium	58.9			P
7440-41-7	Beryllium	0.52	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	2260			P
7440-47-3	Chromium	16.6			P
7440-48-4	Cobalt	8.5	B		P
7440-50-8	Copper	11.9			P
7439-89-6	Iron	19300			P
7439-92-1	Lead	19.7		S	F
7439-95-4	Magnesium	2940			P
7439-96-5	Manganese	245			P
7439-97-6	Mercury	0.16	U		CV
7440-02-0	Nickel	18.9			P
7440-09-7	Potassium	1360			P
7782-49-2	Selenium	0.93	U	W	F
7440-22-4	Silver	0.52	U		P
7440-23-5	Sodium	88.8	B		P
7440-28-0	Thallium	0.31	U		F
7440-62-2	Vanadium	19.1			P
7440-66-6	Zinc	65.6		E	P
	Cyanide	0.74	U		AS

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After : COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

FORM I - IN

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TUL-SED2

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: 2

Matrix: (soil/water) SOIL Lab Sample ID: 21821

Sample wt/vol: 5.0 (g/mL) G Lab File ID: U3756

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. 27 Date Analyzed: 05/24/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	14	U
74-83-9	Bromomethane	14	U
75-01-4	Vinyl chloride	14	U
75-00-3	Chloroethane	14	U
75-09-2	Methylene chloride	7	U
67-64-1	Acetone	14	U
75-15-0	Carbon disulfide	7	U
75-35-4	1,1-Dichloroethene	7	U
75-34-3	1,1-Dichloroethane	7	U
540-59-0	1,2-Dichloroethene (total)	7	U
67-66-3	Chloroform	7	U
107-06-2	1,2-Dichloroethane	7	U
78-93-3	2-Butanone	14	U
71-55-6	1,1,1-Trichloroethane	7	U
56-23-5	Carbon tetrachloride	7	U
108-05-4	Vinyl acetate	14	U
75-27-4	Bromodichloromethane	7	U
78-87-5	1,2-Dichloropropane	7	U
10061-01-5	cis-1,3-Dichloropropene	7	U
79-01-6	Trichloroethene	7	U
124-48-1	Dibromochloromethane	7	U
79-00-5	1,1,2-Trichloroethane	7	U
71-43-2	Benzene	7	U
10061-02-6	Trans-1,3-dichloropropene	7	U
75-25-2	Bromoform	7	U
108-10-1	4-Methyl-2-pentanone	14	U
591-78-6	2-Hexanone	14	U
127-18-4	Tetrachloroethene	7	U
79-34-5	1,1,2,2-Tetrachloroethane	7	U
108-88-3	Toluene	7	U
108-90-7	Chlorobenzene	7	U
100-41-4	Ethylbenzene	7	U
100-42-5	Styrene	7	U
1330-20-7	Total xylenes	7	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TUL-SED2

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: 2

Matrix: (soil/water) SOIL Lab Sample ID: 21821

Sample wt/vol: 5.0 (g/mL) G Lab File ID: U3756

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. 27 Date Analyzed: 05/24/90

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TULSED2

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: B2

Matrix: (soil/water) SOIL Lab Sample ID: 21819

Sample wt/vol: 30.0 (g/mL) G Lab File ID: T2856

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. 27 dec. ____ Date Extracted: 05/25/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/04/90

GPC Cleanup: (Y/N) N pH: 7.02 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	470	U
111-44-4	bis(2-Chloroethyl)ether	470	U
95-57-8	2-Chlorophenol	470	U
541-73-1	1,3-Dichlorobenzene	470	U
106-46-7	1,4-Dichlorobenzene	470	U
100-51-6	Benzyl alcohol	470	U
95-50-1	1,2-Dichlorobenzene	470	U
95-48-7	2-Methylphenol	470	U
108-60-1	bis(2-Chloroisopropyl)ether	470	U
106-44-5	4-Methylphenol	470	U
621-64-7	N-Nitroso-di-n-propylamine	470	U
67-72-1	Hexachloroethane	470	U
98-95-3	Nitrobenzene	470	U
78-59-1	Isophorone	470	U
88-75-5	2-Nitrophenol	470	U
105-67-9	2,4-Dimethylphenol	470	U
65-85-0	Benzoic Acid	2300	U
111-91-1	bis(2-Chloroethoxy)methane	470	U
120-83-2	2,4-Dichlorophenol	470	U
120-82-1	1,2,4-Trichlorobenzene	470	U
91-20-3	Naphthalene	470	U
106-47-8	4-Chloroaniline	470	U
87-68-3	Hexachlorobutadiene	470	U
59-50-7	4-Chloro-3-methylphenol	470	U
91-57-6	2-Methylnaphthalene	470	U
77-47-4	Hexachlorocyclopentadiene	470	U
88-06-2	2,4,6-Trichlorophenol	470	U
95-95-4	2,4,5-Trichlorophenol	2300	U
91-58-7	2-Chloronaphthalene	470	U
88-74-4	2-Nitroaniline	2300	U
131-11-3	Dimethylphthalate	470	U
208-96-8	Acenaphthylene	470	U
606-20-2	2,6-Dinitrotoluene	470	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TULSED2

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: B2

Matrix: (soil/water) SOIL Lab Sample ID: 21819

Sample wt/vol: 30.0 (g/mL) G Lab File ID: T2856

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. 27 dec. ____ Date Extracted: 05/25/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/04/90

GPC Cleanup: (Y/N) N pH: 7.02 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	2300	U
83-32-9	Acenaphthene	470	U
51-28-5	2,4-Dinitrophenol	2300	U
100-02-7	4-Nitrophenol	2300	U
132-64-9	Dibenzofuran	470	U
121-14-2	2,4-Dinitrotoluene	470	U
84-66-2	Diethylphthalate	470	U
7005-72-3	4-Chlorophenyl-phenylether	470	U
86-73-7	Fluorene	470	U
100-01-6	4-Nitroaniline	2300	U
534-52-1	4,6-Dinitro-2-methylphenol	2300	U
86-30-6	N-nitrosodiphenylamine (1)	470	U
101-55-3	4-Bromophenyl-phenylether	470	U
118-74-1	Hexachlorobenzene	470	U
87-86-5	Pentachlorophenol	2300	U
85-01-8	Phenanthrene	470	U
120-12-7	Anthracene	470	U
84-74-2	Di-n-butylphthalate	470	U
206-44-0	Fluoranthene	470	U
129-00-0	Pyrene	470	U
85-68-7	Butylbenzylphthalate	470	U
91-94-1	3,3'-Dichlorobenzidine	950	U
56-55-3	Benzo(a)anthracene	470	U
218-01-9	Chrysene	470	U
117-81-7	bis(2-Ethylhexyl)phthalate	470	U
117-84-0	Di-n-octyl phthalate	470	U
205-99-2	Benzo(b)fluoranthene	470	U
207-08-9	Benzo(k)fluoranthene	470	U
50-32-8	Benzo(a)pyrene	470	U
193-39-5	Indeno(1,2,3-cd)pyrene	470	U
53-70-3	Dibenz(a,h)anthracene	470	U
191-24-2	Benzo(g,h,i)perylene	470	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TULSED2

La. Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: B2

Matrix: (soil/water) SOIL Lab Sample ID: 21819

Sample wt/vol: 30.0 (g/mL) G Lab File ID: T2856

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. 27 dec. ____ Date Extracted: 05/25/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/04/90

GPC Cleanup: (Y/N) N pH: 7.02 Dilution Factor: 1.0

Number TICs found: 13

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	4.58	430	BJ
2.	3074-71-3	HEPTANE, 2,3-DIMETHYL-	4.67	770	BJ
3.		UNKNOWN HYDROCARBON	4.83	1300	BJ
4.		UNKNOWN HYDROCARBON	4.98	1100	BJ
5.		UNKNOWN	6.33	10000	J
6.		UNKNOWN KETONE	6.75	3100	J
7.	18641-71-9	3-HEPTANONE, 2,4-DIMETHYL-	7.65	6200	J
8.		UNKNOWN KETONE	8.13	530	J
9.		UNKNOWN	8.94	5100	J
10.		UNKNOWN	12.80	430	J
11.		UNKNOWN	32.76	290	J
12.		UNKNOWN	33.67	190	J
13.		UNKNOWN HYDROCARBON	36.16	190	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TULSED2

Lab Name: VERSAR, INC. Contract:

Lab Code: VERSAR Case No.: ENGITULL SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 21819

Sample wt/vol: 30.03 (g/ml) G Lab File ID:

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. 26.6 dec. Date Extracted: 05/25/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/04/90

GPC Cleanup: (Y/N) N pH: 7.02 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	5.4	U
319-85-7	beta-BHC	5.4	U
319-86-8	delta-BHC	5.4	U
58-89-9	gamma-BHC (Lindane)	5.4	U
76-44-8	Heptachlor	5.4	U
309-00-2	Aldrin	5.4	U
1024-57-3	Heptachlor Epoxide	5.4	U
959-98-8	Endosulfan I	5.4	U
60-57-1	Dieldrin	11	U
72-55-9	4,4'-DDE	11	U
72-20-8	Endrin	11	U
33213-65-9	Endosulfan II	11	U
72-54-8	4,4'-DDD	11	U
1031-07-8	Endosulfan Sulfate	11	U
50-29-3	4,4'-DDT	11	U
72-43-5	Methoxychlor	54	U
53494-70-5	Endrin Ketone	11	U
5103-71-9	alpha-Chlordane	11	U
5103-74-2	gamma-Chlordane	11	U
8001-35-2	Toxaphene	110	U
12674-11-2	Aroclor-1016	54	U
11104-28-2	Aroclor-1221	54	U
11141-16-5	Aroclor-1232	54	U
53469-21-9	Aroclor-1242	54	U
12672-29-6	Aroclor-1248	54	U
11097-69-1	Aroclor-1254	110	U
11096-82-5	Aroclor-1260	110	U

INORGANIC ANALYSES DATA SHEET

FIELD SAMPLE NO.: TUL-SED-2

Client : ENGINEERING-SCIENCE_ Site: TULLY_LANDFILL_

Lab Name: VERSAR_INC. Control No.: 2770____ Code: ENGITULL Batch: 2_____

Matrix : SOIL_____ Lab Sample ID: 21817____

Level (low/med): LOW_____ Date Received: 05/19/90_

% Solids: __73.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	12100			P
7440-36-0	Antimony	5.8	U	N	P
7440-38-2	Arsenic	7.1			F
7440-39-3	Barium	64.3			P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	34800			P
7440-47-3	Chromium	14.4			P
7440-48-4	Cobalt	9.4	B		P
7440-50-8	Copper	13.7			P
7439-89-6	Iron	22600			P
7439-92-1	Lead	14.1			F
7439-95-4	Magnesium	7990			P
7439-96-5	Manganese	584			P
7439-97-6	Mercury	0.13			CV
7440-02-0	Nickel	22.4			P
7440-09-7	Potassium	1160	B		P
7782-49-2	Selenium	0.64	U		F
7440-22-4	Silver	0.50	U		P
7440-23-5	Sodium	143	B		P
7440-28-0	Thallium	0.21	U		F
7440-62-2	Vanadium	16.3			P
7440-66-6	Zinc	62.6		E	P
	Cyanide	0.31	U		AS

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After : COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

LEACHATE RESULTS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TUL-L1

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: 2

Matrix: (soil/water) WATER Lab Sample ID: 21813

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: W2579

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ Date Analyzed: 05/24/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon tetrachloride	5	U
108-05-4	Vinyl acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total xylenes	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TUL-L1

1 Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: 2

Matrix: (soil/water) WATER Lab Sample ID: 21813

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: W2579

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ Date Analyzed: 05/24/90

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TUL_L1

La Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: B2

Matrix: (soil/water) WATER Lab Sample ID: 21805

Sample wt/vol: 800 (g/mL) ML Lab File ID: V5449

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/11/90

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	12	U
111-44-4	bis(2-Chloroethyl)ether	12	U
95-57-8	2-Chlorophenol	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
100-51-6	Benzyl alcohol	12	U
95-50-1	1,2-Dichlorobenzene	12	U
95-48-7	2-Methylphenol	12	U
108-60-1	bis(2-Chloroisopropyl)ether	12	U
106-44-5	4-Methylphenol	12	U
621-64-7	N-Nitroso-di-n-propylamine	12	U
67-72-1	Hexachloroethane	12	U
98-95-3	Nitrobenzene	12	U
78-59-1	Isophorone	12	U
88-75-5	2-Nitrophenol	12	U
105-67-9	2,4-Dimethylphenol	12	U
65-85-0	Benzoic Acid	62	U
111-91-1	bis(2-Chloroethoxy)methane	12	U
120-83-2	2,4-Dichlorophenol	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
91-20-3	Naphthalene	12	U
106-47-8	4-Chloroaniline	12	U
87-68-3	Hexachlorobutadiene	12	U
59-50-7	4-Chloro-3-methylphenol	12	U
91-57-6	2-Methylnaphthalene	12	U
77-47-4	Hexachlorocyclopentadiene	12	U
88-06-2	2,4,6-Trichlorophenol	12	U
95-95-4	2,4,5-Trichlorophenol	62	U
91-58-7	2-Chloronaphthalene	12	U
88-74-4	2-Nitroaniline	62	U
131-11-3	Dimethylphthalate	12	U
208-96-8	Acenaphthylene	12	U
606-20-2	2,6-Dinitrotoluene	12	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TUL_L1

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: B2

Matrix: (soil/water) WATER Lab Sample ID: 21805

Sample wt/vol: 800 (g/mL) ML Lab File ID: V5449

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/11/90

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	62	U
83-32-9	Acenaphthene	12	U
51-28-5	2,4-Dinitrophenol	62	U
100-02-7	4-Nitrophenol	62	U
132-64-9	Dibenzofuran	12	U
121-14-2	2,4-Dinitrotoluene	12	U
84-66-2	Diethylphthalate	12	U
7005-72-3	4-Chlorophenyl-phenylether	12	U
86-73-7	Fluorene	12	U
100-01-6	4-Nitroaniline	62	U
534-52-1	4,6-Dinitro-2-methylphenol	62	U
86-30-6	N-nitrosodiphenylamine (1)	12	U
101-55-3	4-Bromophenyl-phenylether	12	U
118-74-1	Hexachlorobenzene	12	U
87-86-5	Pentachlorophenol	62	U
85-01-8	Phenanthrene	12	U
120-12-7	Anthracene	12	U
84-74-2	Di-n-butylphthalate	12	U
206-44-0	Fluoranthene	12	U
129-00-0	Pyrene	12	U
85-68-7	Butylbenzylphthalate	12	U
91-94-1	3,3'-Dichlorobenzidine	25	U
56-55-3	Benzo(a)anthracene	12	U
218-01-9	Chrysene	12	U
117-81-7	bis(2-Ethylhexyl)phthalate	12	U
117-84-0	Di-n-octyl phthalate	12	U
205-99-2	Benzo(b)fluoranthene	12	U
207-08-9	Benzo(k)fluoranthene	12	U
50-32-8	Benzo(a)pyrene	12	U
193-39-5	Indeno(1,2,3-cd)pyrene	12	U
53-70-3	Dibenz(a,h)anthracene	12	U
191-24-2	Benzo(g,h,i)perylene	12	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TUL_L1

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: B2

Matrix: (soil/water) WATER Lab Sample ID: 21805

Sample wt/vol: 800 (g/mL) ML Lab File ID: V5449

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/11/90

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 930-68-7	2-CYCLOHEXEN-1-ONE	7.63	10	BJ

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TULL1

Lab Name: VERSAR, INC. Contract:

Lab Code: VERSAR Case No.: ENGITULL SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 21797

Sample wt/vol: 930 (g/ml) ML Lab File ID:

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. dec. Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/06/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor Epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.11	U
72-55-9	4,4'-DDE	0.11	U
72-20-8	Endrin	0.11	U
33213-65-9	Endosulfan II	0.11	U
72-54-8	4,4'-DDD	0.11	U
1031-07-8	Endosulfan Sulfate	0.11	U
50-29-3	4,4'-DDT	0.11	U
72-43-5	Methoxychlor	0.54	U
53494-70-5	Endrin Ketone	0.11	U
5103-71-9	alpha-Chlordane	0.11	U
5103-74-2	gamma-Chlordane	0.11	U
8001-35-2	Toxaphene	1.1	U
12674-11-2	Aroclor-1016	0.54	U
11104-28-2	Aroclor-1221	0.54	U
11141-16-5	Aroclor-1232	0.54	U
53469-21-9	Aroclor-1242	0.54	U
12672-29-6	Aroclor-1248	0.54	U
11097-69-1	Aroclor-1254	1.1	U
11096-82-5	Aroclor-1260	1.1	U

6/6/90

1

INORGANIC ANALYSES DATA SHEET

FIELD SAMPLE NO.

TUL-L-1

Client : ENGINEERING-SCIENCE_ Site: TULLY_LANDFILL_

Lab Name: VERSAR_INC. Control No.: 2770____ Code: ENGITULL Batch: 2_____

Matrix : WATER_____ Lab Sample ID: 21781____

Level (low/med): LOW_____ Date Received: 05/19/90_

% Solids: ___0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	379			P
7440-36-0	Antimony	23.0	U		P
7440-38-2	Arsenic	3.0	U		F
7440-39-3	Barium	221			P
7440-41-7	Beryllium	2.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	166000			P
7440-47-3	Chromium	5.0	U		P
7440-48-4	Cobalt	5.0	U		P
7440-50-8	Copper	2.9	B		P
7439-89-6	Iron	36500			P
7439-92-1	Lead	2.0	U		F
7439-95-4	Magnesium	17900			P
7439-96-5	Manganese	3070			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	10.0	U		P
7440-09-7	Potassium	6470			P
7782-49-2	Selenium	3.0	U	WN	F
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	46500			P
7440-28-0	Thallium	1.0	U	WN	F
7440-62-2	Vanadium	3.0	U		P
7440-66-6	Zinc	28.2			P
	Cyanide	10.0	U		AS

Color Before: BROWN____ Clarity Before: CLOUDY Texture: _____

Color After : YELLOW___ Clarity After: CLEAR_ Artifacts: _____

Comments:

_CYANIDEMLAB_SAMPLE_ID_NUMBER_IS_21789;_____

QA/QC RESULTS AND DOCUMENTATION

-Field Blank

-Trip Blank

-Chain of Custody Forms

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TUL-FLDBLK

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: 2

Matrix: (soil/water) WATER Lab Sample ID: 21814

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: W2577

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ Date Analyzed: 05/24/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	4	J
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	7	
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon tetrachloride	5	U
108-05-4	Vinyl acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total xylenes	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TUL-FLDBLK

1 Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: 2

Matrix: (soil/water) WATER Lab Sample ID: 21814

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: W2577

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ Date Analyzed: 05/24/90

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TUL_FLD_BLK

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: B2

Matrix: (soil/water) WATER Lab Sample ID: 21806

Sample wt/vol: 800 (g/mL) ML Lab File ID: V5450

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/11/90

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	12	U
111-44-4	bis(2-Chloroethyl)ether	12	U
95-57-8	2-Chlorophenol	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
100-51-6	Benzyl alcohol	12	U
95-50-1	1,2-Dichlorobenzene	12	U
95-48-7	2-Methylphenol	12	U
108-60-1	bis(2-Chloroisopropyl)ether	12	U
106-44-5	4-Methylphenol	12	U
621-64-7	N-Nitroso-di-n-propylamine	12	U
67-72-1	Hexachloroethane	12	U
98-95-3	Nitrobenzene	12	U
78-59-1	Isophorone	12	U
88-75-5	2-Nitrophenol	12	U
105-67-9	2,4-Dimethylphenol	12	U
65-85-0	Benzoic Acid	62	U
111-91-1	bis(2-Chloroethoxy)methane	12	U
120-83-2	2,4-Dichlorophenol	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
91-20-3	Naphthalene	12	U
106-47-8	4-Chloroaniline	12	U
87-68-3	Hexachlorobutadiene	12	U
59-50-7	4-Chloro-3-methylphenol	12	U
91-57-6	2-Methylnaphthalene	12	U
77-47-4	Hexachlorocyclopentadiene	12	U
88-06-2	2,4,6-Trichlorophenol	12	U
95-95-4	2,4,5-Trichlorophenol	62	U
91-58-7	2-Chloronaphthalene	12	U
88-74-4	2-Nitroaniline	62	U
131-11-3	Dimethylphthalate	12	U
208-96-8	Acenaphthylene	12	U
606-20-2	2,6-Dinitrotoluene	12	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TUL_FLD_BLK

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: B2

Matrix: (soil/water) WATER Lab Sample ID: 21806

Sample wt/vol: 800 (g/mL) ML Lab File ID: V5450

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/11/90

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	62	U
83-32-9	Acenaphthene	12	U
51-28-5	2,4-Dinitrophenol	62	U
100-02-7	4-Nitrophenol	62	U
132-64-9	Dibenzofuran	12	U
121-14-2	2,4-Dinitrotoluene	12	U
84-66-2	Diethylphthalate	12	U
7005-72-3	4-Chlorophenyl-phenylether	12	U
86-73-7	Fluorene	12	U
100-01-6	4-Nitroaniline	62	U
534-52-1	4,6-Dinitro-2-methylphenol	62	U
86-30-6	N-nitrosodiphenylamine (1)	12	U
101-55-3	4-Bromophenyl-phenylether	12	U
118-74-1	Hexachlorobenzene	12	U
87-86-5	Pentachlorophenol	62	U
85-01-8	Phenanthrene	12	U
120-12-7	Anthracene	12	U
84-74-2	Di-n-butylphthalate	12	U
206-44-0	Fluoranthene	12	U
129-00-0	Pyrene	12	U
85-68-7	Butylbenzylphthalate	12	U
91-94-1	3,3'-Dichlorobenzidine	25	U
56-55-3	Benzo(a)anthracene	12	U
218-01-9	Chrysene	12	U
117-81-7	bis(2-Ethylhexyl)phthalate	12	U
117-84-0	Di-n-octyl phthalate	12	U
205-99-2	Benzo(b)fluoranthene	12	U
207-08-9	Benzo(k)fluoranthene	12	U
50-32-8	Benzo(a)pyrene	12	U
193-39-5	Indeno(1,2,3-cd)pyrene	12	U
53-70-3	Dibenz(a,h)anthracene	12	U
191-24-2	Benzo(g,h,i)perylene	12	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TUL_FLD_BLK

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: B2

Matrix: (soil/water) WATER Lab Sample ID: 21806

Sample wt/vol: 800 (g/mL) ML Lab File ID: V5450

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/11/90

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 930-68-7	2-CYCLOHEXEN-1-ONE	7.63	10	BJ

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TULFLDBLK

Lab Name: VERSAR, INC. Contract:

Lab Code: VERSAR Case No.: ENGITULL SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 21798

Sample wt/vol: 930 (g/ml) ML Lab File ID:

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. dec. Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/06/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor Epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.11	U
72-55-9	4,4'-DDE	0.11	U
72-20-8	Endrin	0.11	U
33213-65-9	Endosulfan II	0.11	U
72-54-8	4,4'-DDD	0.11	U
1031-07-8	Endosulfan Sulfate	0.11	U
50-29-3	4,4'-DDT	0.11	U
72-43-5	Methoxychlor	0.54	U
53494-70-5	Endrin Ketone	0.11	U
5103-71-9	alpha-Chlordane	0.11	U
5103-74-2	gamma-Chlordane	0.11	U
8001-35-2	Toxaphene	1.1	U
12674-11-2	Aroclor-1016	0.54	U
11104-28-2	Aroclor-1221	0.54	U
11141-16-5	Aroclor-1232	0.54	U
53469-21-9	Aroclor-1242	0.54	U
12672-29-6	Aroclor-1248	0.54	U
11097-69-1	Aroclor-1254	1.1	U
11096-82-5	Aroclor-1260	1.1	U

QA
6/6/90

INORGANIC ANALYSES DATA SHEET

FIELD SAMPLE NO.
TUL-FLD BLK

Client : ENGINEERING-SCIENCE_ Site: TULLY_LANDFILL_

Lab Name: VERSAR_INC. Control No.: 2770____ Code: ENGITULL Batch: 2_____

Matrix : WATER_____ Lab Sample ID: 21782____

Level (low/med): LOW_____ Date Received: 05/19/90_

% Solids: ___0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	12.0	U		P
7440-36-0	Antimony	23.0	U		P
7440-38-2	Arsenic	3.0	U		F
7440-39-3	Barium	2.0	U		P
7440-41-7	Beryllium	2.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	20.9	B		P
7440-47-3	Chromium	5.0	U		P
7440-48-4	Cobalt	5.0	U		P
7440-50-8	Copper	2.0	U		P
7439-89-6	Iron	8.0	U		P
7439-92-1	Lead	2.0	U		F
7439-95-4	Magnesium	5.0	B		P
7439-96-5	Manganese	2.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	10.0	U		P
7440-09-7	Potassium	871	U		P
7782-49-2	Selenium	3.0	U	N	F
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	120	B		P
7440-28-0	Thallium	1.0	U	N	F
7440-62-2	Vanadium	3.0	U		P
7440-66-6	Zinc	4.0	U		P
	Cyanide	10.0	U		AS

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After : COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
_CYANIDE_LAB_SAMPLE_ID_NUMBER_IS_21790;_____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TUL-TRPBLK

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: 2

Matrix: (soil/water) WATER Lab Sample ID: 21815

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: W2578

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ Date Analyzed: 05/24/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	5	
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon tetrachloride	5	U
108-05-4	Vinyl acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total xylenes	5	U

100104

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TUL-TRPBLK

1 Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: 2770 SAS No.: _____ SDG No.: 2

Matrix: (soil/water) WATER Lab Sample ID: 21815

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: W2578

Level: (low/med) LOW Date Received: 05/19/90

% Moisture: not dec. ____ Date Analyzed: 05/24/90

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FIELD SAMPLING RECORD

Site Tully Landfill Site No. SY053.06.00 Date: 5/17/90
Well GW-1

Samplers: Dale R. Dolph/ Bill D. Lilley/ of Engineering-Science
Tracey A. Weibezahl of E-S
Dean Stal of Stearns and Wheler.

Initial Static Water Level. . . . . 2.50'
(from top of well casing)

Evacuation:
Using: Submersible ____ Centrifugal ____
Airlift ____ Positive Displacement ____
Bailed X ____ Times

Well Volume Calculation:
2" Casing: 21.50 ft. of water x .16 = 3.44 gals.
3" Casing: ____ ft. of water x .36 = ____ gals.
4" Casing: ____ ft. of water x .65 = ____ gals.

Depth to intake from top of protective well casing 24' 24' - 2.50' = 21.50'
Volume of Water removed 10.32 Gals. (> 3 Well Volumes)

Sampling: Time 13:22 ____ a.m. X p.m.

Bailer Type: Stainless Steel ____
Teflon ____
From Pos. Dis. Pump Discharge Tube ____
Other Disposable Polyethylene ____

	No. of Bottles Filled	I.D. No.	Analyses
Trip Blank			
Field Blank - Wash/Atmospheric. (circle one)			
Ground-water Sample			

Physical Appearance and Odor Light brown with medium turbidity.

Refrigerate: Date 5/18/90/ Time 1200

Field Tests:

Temperature (C°/°F)	9.7°C	
pH	6.94	
Spec. Conduc (umhos/cm)	350	

Weather ____

Comments Wells were bailed 5/17/90.

FIELD SAMPLING RECORD

Site Tully Landfill Site No. SY053.06.00 Date: 5/17/90
Well GW-2

Samplers: DRD/WDL/TAW of Engineering-Science, Inc.
DEAN STAL of Sterns and Wheler

Initial Static Water Level. . . . . 2.31'
(from top of well casing)

Evacuation:
Using: Submersible ____ Centrifugal ____
Airlift ____ Positive Displacement ____
Bailed X 3 Times

Well Volume Calculation:
2" Casing: 13.69 ft. of water x .16 = 2.19 gals.
3" Casing: ____ ft. of water x .36 = ____ gals.
4" Casing: ____ ft. of water x .65 = ____ gals.

Depth to intake from top of protective well casing 16'
Volume of Water removed 6.57 Gals. (> 3 Well Volumes) 16' - 2.31' = 13.69

Sampling:
Time 0900 X a.m.
____ p.m.

Bailer Type: Stainless Steel
Teflon
From Pos. Dis. Pump Discharge Tube
Other Polyethylene Disposable

	No. of Bottles Filled	I.D. No.	Analyses
Trip Blank			
Field Blank - Wash/Atmospheric. (circle one)			
Ground-water Sample			

Physical Appearance and Odor Light brown with medium turbidity.

Refrigerate: Date 5/18/90 Time 1200

Field Tests:

Temperature (C°/°F)	9.3°C	
pH	6.86	
Spec. Conduc (umhos/cm)	920	

Weather ____

Comments ____

FIGURE 6.3

FIELD SAMPLING RECORD

Site Tully Landfill Site No. SY053.06.00 Date: 5/17/90
Well GW-3 and GW-4 (Dup.)

Samplers: DRD/TAW/WDL of E-S
Dean Stall of Stearns + Wheler

Initial Static Water Level. 6.15
(from top of well casing)

Evacuation:
Using: Submersible ____ Centrifugal ____
Airlift ____ Positive Displacement ____
Bailed X 3 Times

Well Volume Calculation:
2" Casing: 15.35' ft. of water x .16 = 2.456 gals.
3" Casing: ____ ft. of water x .36 = ____ gals.
4" Casing: ____ ft. of water x .65 = ____ gals.

Depth to intake from top of protective well casing 21.5' 21.5' - 6.15' = 15.35'
Volume of Water removed 7.368 Gals. (> 3 Well Volumes)

Sampling: Time 0945 X a.m. ____ p.m.

Bailer Type: Stainless Steel ____
Teflon ____
From Pos. Dis. Pump Discharge Tube ____
Other Polyethylene Disposable ____

	No. of Bottles Filled	I.D. No.	Analyses
Trip Blank			
Field Blank - Wash/Atmospheric. .(circle one)			
Ground-water Sample			

Physical Appearance and Odor Gray w medium turbidity.

Refrigerate: Date 5/18/90/ Time 1200

Field Tests:

Temperature (C°/°F)	8.4°C	
pH	6.88	
Spec. Conduc (umhos/cm)	1300	

Weather ____

Comments GW-4 is a duplicate of GW-3.

FIGURE 6.4

FIELD SURFACE SAMPLING RECORD

Site Tully Landfill Site No. SY053.06 Date: 5/18/90

Samplers: DRD / WDL / TAW of E-S
Dean Stal of Stearns + Wheler

SAMPLING: Time 1000 X a.m. ___ p.m.

Sample Type: Leachate #L-1

Sampling Method:

Depth of Sample:

Description of Sampling Point:

Drainage Direction:

Upstream From:

Downstream From:

Physical Appearance/Odor:

Wildlife Observed:

Sampling Description:

Suspended Matter:

Color/Stain:

Odor:

Other:

Texture:

Analyze for:

Refrigerated: Date: 5/19/90 Time ___ a.m. 1200 X p.m.

Field Tests:

Temperature (C°/°F)	9.0°C	Weather
pH	6.64	
Conductivity	940	

Comments:

FIGURE 6.4

FIELD SURFACE SAMPLING RECORD

Site Tully Landfill Site No. SY053.06.00 Date: 5/18/90

Samplers: TAW / DRD / WDL / of E-S, Inc
Dean Stal of Stearns + Wheler

SAMPLING: Time 1030 X a.m. ___ p.m.

Sample Type: Surface Water SW-1, Sediment SED-1

Sampling Method: Stainless steel beakers and spoons

Depth of Sample:

Description of Sampling Point:

Drainage Direction:

Upstream From:

Downstream From:

Physical Appearance/Odor:

Wildlife Observed:

Sampling Description:

Suspended Matter:

Color/Stain:

Odor:

Other:

Texture:

Analyze for:

Refrigerated: Date: 5/18/90 Time ___ a.m. 1200 X p.m.

Field Tests:

Temperature (C°/°F)	9.4°C	Weather
pH	7.87	
Conductivity	140	

Comments: Sediment collected from creek sediments.

FIELD SURFACE SAMPLING RECORD

Site Tully Landfill Site No. SY053.06.00 Date: 5/18/90

Samplers: DRD / WDL / JAW of Engineering-Science Inc.
Dean Stal of Stearns and Wheler

SAMPLING: Time 1100 X a.m. ___ p.m.

Sample Type: Surface water (SW-2), Sediment (SED-2)

Sampling Method: Stainless steel beakers and spoons

Depth of Sample: ___

Description of Sampling Point:

Drainage Direction: ___

Upstream From: ___

Downstream From: ___

Physical Appearance/Odor: ___

Wildlife Observed: ___

Sampling Description:

Suspended Matter: ___

Color/Stain: ___

Odor: ___

Other: ___

Texture: ___

Analyze for: ___

Refrigerated: Date: 5/18/90 Time ___ a.m. 1200 X p.m.

Field Tests:

Temperature (C°/°F)	9.5°C	Weather ___
pH	7.82	___
Conductivity	190	___

Comments: Sed #2 MS/MSD also collected.

Versar INC.

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME	INDUSTRIAL HYGIENE SAMPLE
SY053.06.00	Tully Landfill NYSDEC	Y / N

SAMPLERS: (Signature) David G. Nickerson (Printed) David Nickerson

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	TCL VOA	TCL BNA/PEST PCB	TAL METALS, CN						REMARKS
	5/3	1200	X		TUL-GW-1	3	✓	✓	✓						
	5/3	1900	X		TUL-GW-3	3	✓	✓	✓						

PARAMETERS

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
David G. Nickerson	5/4/90 4:00 PM	FED EXPRESS, SYRACUSE			
(Printed)		(Printed)	(Printed)		(Printed)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
(Printed)		(Printed)	5/5/90		

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (pink).

100006

INC.

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME
54053.06	NYSDEC Round 4 Phase II Tully SLF

SAMPLERS: (Signature)	(Printed)
Willen D. Lilley	William Lilley

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	VOA	Pest/PCB	BNA	Metals	CN-				REMARKS
Tully SW-1	5/18	10:30		✓	Upstream Surface Water	6									
Tully SW-2	5/18	11:00		✓	Downstream Surface Water	6									
Tully SED-1	5/18	10:30		✓	Upstream Sediment	3									
Tully SED-2	5/18	11:00		✓	Downstream Sediment	6									MS/MSD
Tully GW-1	5/18	8:30		✓	Upgradient Monitoring well GW-1	6									
Tully GW-2	5/18	9:00		✓	Downgradient well GW-2	16									MS/MSD
Tully GW-3	5/18	9:45		✓	Downgradient well GW-3	6									
Tully GW-4	5/18	9:45		✓	Downgradient well GW-4	6									
Tully L-1	5/18	10:00		✓	Leachate Sample	6									
Field Blank	5/18	8:30			Lab DI	6									
Trip Blank	5/18				Laboratory	2									

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Willen D. Lilley	5/18 / 1:00	Fed Ex			
(Printed)		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
			5/19/90 0900	
(Printed)		(Printed)		

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (pink).