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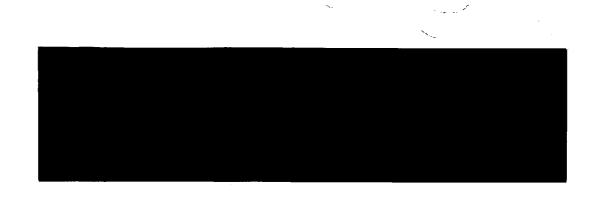
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FIELD INVESTIGATION TEAM ACTIVITIES AT UNCONTROLLED HAZARDOUS SUBSTANCES FACILITIES — ZONE I

NUS CORPORATION SUPERFUND DIVISION

10-27-89 **FINAL DRAFT** SITE INSPECTION REPORT MOTOROLA, INC. ARCADE, WYOMING COUNTY, NEW YORK PRESTOLITE PLANT SITE

PREPARED UNDER TECHNICAL DIRECTIVE DOCUMENT NOS. 02-8803-12 AND 02-8910-15 **CONTRACT NO. 68-01-7346**

FOR THE

ENVIRONMENTAL SERVICES DIVISION U.S. ENVIRONMENTAL PROTECTION AGENCY

OCTOBER 27, 1989

NUS CORPORATION SUPERFUND DIVISION

SUBMITTED BY:

DIANE TRUBE PROJECT MANAGER

REVIEWED/APPROVED BY:

SITE MANAGER

RONALD M. NAMAN

FIT OFFICE MANAGER

SITE NAME: ADDRESS

Motorola, Inc. 400 Main Street Arcade, New York 14009

EPA ID NO.: LATITUDE: LONGITUDE: NYD001931120 42° 31′ 53″ N 078° 25′ 45″ W

1.0 SITE SUMMARY

Motorola, Inc. is an active manufacturer of automobile and industrial electronic products. Prestolite Electric of New York, Inc. bought the facility from Motorola, Inc. in February 1988, but plant operations remain the same. The plant is located in a mixed commercial and residential area in the Village of Arcade, Wyoming County, New York. Its products include automobile charging systems, thick film voltage regulators, active and passive thick film networks, automotive and marine solid state ignition systems, automotive microprocessor engine management systems, proximity reluctance and ceramic sensor modules for automotive applications, electronic speedometers and odometers, feedback carburetor controls, ignition coils, and electronic engine governors. Metal finishing processes ancillary to these products include zinc and aluminum die casting and finishing; screw machining; metal stamping and machining operations; coil winding; compression molding of plastics; and metal washing, electroplating, and phosphatizing operations. The total area of the property is approximately 20 acres, but the alleged disposal area is only 3450 square feet.

From 1971 to 1976, effluent from the metal finishing operations was stored in an unlined surface impoundment adjacent to the raw chemical storage building. The effluent may have included varnishes, flux, flux thinners, isopropyl alcohol, hydrochloric acid, phosphoric acid, toluene, xylenes, trichloroethane, trichloroethylene, freon, epoxies, cutting oils, and metal grindings. Liquid and sludge were periodically removed from the impoundment, drummed, and hauled off site. Approximately-30-cubic yards of earth and sludge was excavated and removed from the disposal area on March 26, 1976. The site was subsequently filled in, graded, and seeded. Concurrent with this excavation was the installation of a process water treatment facility pursuant to the conditions of NPDES Permit No. NY0002267 originally dated May 1, 1974, about 10 yards east of the former disposal area. The water treatment facility has been in operation since 1976, when collection of effluent in the unlined surface impoundment was discontinued. The facility operates under RCRA ID No. NYD001931120.

The immediate vicinity of the Motorola, Inc. facility contains commercial establishments. The nearest residence is approximately 0.25 mile east of the former disposal area. The site is not fenced, so there is easy access. A small intermittent stream flows within 40 yards north of the site in a northwesterly direction toward Cattaraugus Creek 0.5 mile away. There is only slight potential for contaminant migration through surface water because the former disposal area is separated from the intermittent stream by a level access road, and there are no apparent drainage pathways over it. A fairly steep slope rises directly behind the site, so there is no surface runoff south from the disposal area. The location of the site within the boundaries of the Cattaraugus Creek basin may have a bearing on the potential for contamination of the drinking water in the area. The water table aquifer in the sand and gravel deposits underlying the basin is a very productive aquifer. More than 4,500 people within a 3-mile radius of the site obtain their potable supply from this aquifer. The Village of Arcade public supply well on Church St. is approximately 1800 feet away, and it appears to be downgradient of the site. The Village of Arcade mixed public supply system serves approximately 3,800 people. Another downgradient well is in the hamlet of Yorkshire more than 2 miles away. This well serves approximately 760 people.

The NUS Region 2 FIT conducted a Site Inspection (SI) at the Motorola, Inc. site on April 7, 1988. The SI included the collection of five soil samples from the alleged disposal area and one background soil sample. Readings above background on the Organic Vapor Analyzer (OVA) were observed in the auger hole at every location except that of the background sample. Groundwater tap samples were collected from the Arcade Village supply wells on Church Street (possibly downgradient) and Sullivan Street (upgradient). The water from these wells is mixed with water from a well in Sandusky, just over 3 miles southeast of the site, before it is distributed to the customers. A tap water sample was collected from a spigot on the Motorola water treatment building to compare the quality of the water in the mixed system to the water obtained from the individual wells. Since there appear to be no drainage paths from the disposal area to the intermittent stream, surface water samples were not collected.

Ref. Nos. 1-14

2.0 SITE INSPECTION NARRATIVE

2.1 EXISTING ANALYTICAL DATA

There had been no sampling at the Motorola, Inc. facility in Arcade, New York prior to the SI conducted by the NUS Corp. Region 2 FIT on April 7, 1988. Previous reports, such as a Preliminary Assessment completed by NUS Corp. in 1987, indicate that many drums of waste were removed from the site in the early 1970s and disposed of at other sites, some of which have been placed on the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database. The suspected wastes in these drums are the same as those suspected to have been disposed of in the surface impoundment.

Ref. Nos. 1, 2, 10, 11

2.2 WASTE SOURCE DESCRIPTION

The potential waste source at the Motorola, Inc. facility is an <u>inactive</u>, unlined surface impoundment in which effluent from metal finishing operations was stored during the years 1971 to 1976. Wastes stored in this area may have included varnishes, flux, flux thinners, hydrochloric acid, isopropyl alcohol, phosphoric acid, toluene, xylenes, trichloroethane, trichlorethylene, freon, epoxies, cutting oils, and metal grindings. Sludge and liquid were periodically drummed and hauled away as the impoundment filled up. Concurrent with the installation of a process water treatment facility in 1976, approximately 30 cubic yards of earth and sludge was excavated and removed from the disposal area, which was subsequently filled, graded, and seeded. These activities were completed under conditions of NPDES Permit No. NY0002267, originally dated March 1, 1974. The Motorola facility operates under RCRA I.D. No. NY0001931120. The NUS Region 2 FIT collected five soil samples from the alleged former disposal area and one background soil sample during an SI on April 7, 1988 to determine the presence or absence of contamination. Analytical results are presented in Section 4.0, Table 1, and Reference 16.

Ref. Nos. 9, 10, 11, 16

2.3 **GROUNDWATER ROUTE**

Potential contamination through groundwater migration appears to be the route of most concern at the Motorola, Inc. Site. Water can easily infiltrate the few feet of moderately permeable Tioga silt loams which cover the former disposal area and reach the Pleistocene sand and gravel deposits below. The Cattaraugus Creek basin is a feature of the Appalachian Uplands in which thick glacial ice-contact sand and gravels were deposited. This unit forms the water table aquifer, and it is hydraulically connected with Cattaraugus Creek. The permeability of this unit is estimated to be greater than 10⁻³ cm/sec. It is one of the best water-bearing units in the area, and is used by the local population for potable water. Unconsolidated sand and gravel deposits may be several hundred feet thick in the Cattaraugus Creek basin. The Village of Arcade owns public supply wells which are drilled into this unit at depths of approximately 50 feet below ground surface. Its Church St. well is approximately 1800 feet north-northeast of the site and appears to be downgradient of the site. This is the well nearest the Motorola Site. The Sullivan Street well is upgradient. In 1962, water level in the Sullivan Street well was reported to be 17 feet below ground surface. Pumping tests showed well yields of 305 gallons per minute (gpm) and 500 gpm in the Church Street and Sullivan Street wells, respectively. The Arcade Village public supply currently serves approximately 3,800 people. Net precipitation for the area is 11.5 inches.

The groundwater flows north from the site toward the creek, which flows west. Another possible downgradient well is the Yorkshire public supply well, which is located 2 miles west of the site in the Cattaraugus Creek basin. Approximately 760 people obtain their potable supply from the Yorkshire well. There may be private wells within the Cattaraugus Creek basin northeast of the site, which is upgradient. Most domestic wells in the area are in the uplands and draw water from till or bedrock, which is hydraulically connected with the aquifer of concern. Groundwater is used for irrigation and industrial purposes via the village supply wells previously discussed.

The NUS Region 2 FIT collected groundwater tap samples from the Arcade Village supply wells on Church St. (possibly downgradient) and Sulfivan St. (upgradient) during a site inspection on April 7, 1988. Since the public supply system receives some water from a well more than 3 miles from the site, a tap water sample was collected from a spigot on the Motorola water treatment building to compare the quality of water in the mixed system to that of water in the individual wells. Analytical results are presented in Section 4.0, Table 1, and Reference 16.

Ref. Nos. 1,3,5,6,7,8,13,14,15, 16

2.4 SURFACE WATER ROUTE

The potential for migration of contaminants through surface water is diminished greatly by the presence of the access road adjacent to the downslope side of the former disposal area. Although there is a slight grade between the site and the intermittent stream 40 yards north, no apparent drainage paths exist. Water seems to pond on the road, as well as on the disposal area, prior to seepage into the ground. The surficial Tioga silt loam is only moderately permeable, but it appears that much of the rainwater infiltrates the ground. The apparent percolation of rainwater into the ground instead of surface runoff indicates that the potential for surface water contamination is minimal. The 1-year 24-hour rainfall in this area is 2.1 inches.

The intermittent stream is a drainage path to Cattaraugus Creek and is not used in any way by the local population. Cattaraugus Creek, approximately 0.6 mile downstream of the site, is used for recreational purposes such as fishing and canoeing. There are no surface water intakes within 3 miles downstream of the site. There are no environmentally sensitive areas such as wetlands or critical habitats within a 3-mile radius of the site.

No surface water or sediment samples were collected since there are no physical site features evidencing drainage paths from the disposal area to the intermittent stream.

Ref. Nos. 1,3,7,13,15

2.5 AIR ROUTE

No readings above background were detected in the ambient air on the OVA or HNu prior to disturbance of the waste source during the site inspection conducted at the Motorola, Inc. Site. However, readings above background on the OVA were observed within the auger hole at each soil sample location in the alleged disposal area. Readings of 1000 ppm above background or greater were observed within the auger hole at the southeast corner of the disposal area. There were also readings of 8 ppm above background directly above the hole, and 1.5 ppm directly above soil collected from the hole. There were no readings above background in the breathing zone at any time, and there were also no readings above background on the HNu at any time during the SI. The soil in the disposal area appeared to be mostly fine-grained brown to light-brown topsoil with some organic material. There is no information available on the material used to fill the excavated area.

2.6 ACTUAL HAZARDOUS CONDITIONS

The Motorola, Inc. facility is not surrounded by any type of fence or barrier, and it appears that there is easy access to the property around the manufacturing plant as well as the former disposal area. All buildings on the property are kept locked. There have been no reported incidents or complaints relating to hazardous waste disposal at this site. It is possible, however, that the use of an unlined surface impoundment led to contamination of the soil in the area, and that migration led to contamination of the groundwater, which is used as a potable supply within a 3-mile radius.

No other actual hazardous conditions pertaining to human or environmental contamination have been documented. Specifically:

- Contamination has not been documented either in organisms in a food chain leading to humans or in organisms directly consumed by humans.
- There have been no documented observed incidents of direct physical contact with hazardous substances at the facility involving a human being or a domestic animal.
- There have been no documented incidents of damage to flora or to fauna that can be attributed to hazardous material at the facility.
- There is no documentation of storm drains on site.
- There is no direct evidence of release of a substance of concern from the facility to the groundwater.
- There is no demonstrated fire threat based on field observation.

Ref. Nos. 1,2,9,14

3.0 MAPS AND PHOTOS

Site Location Map

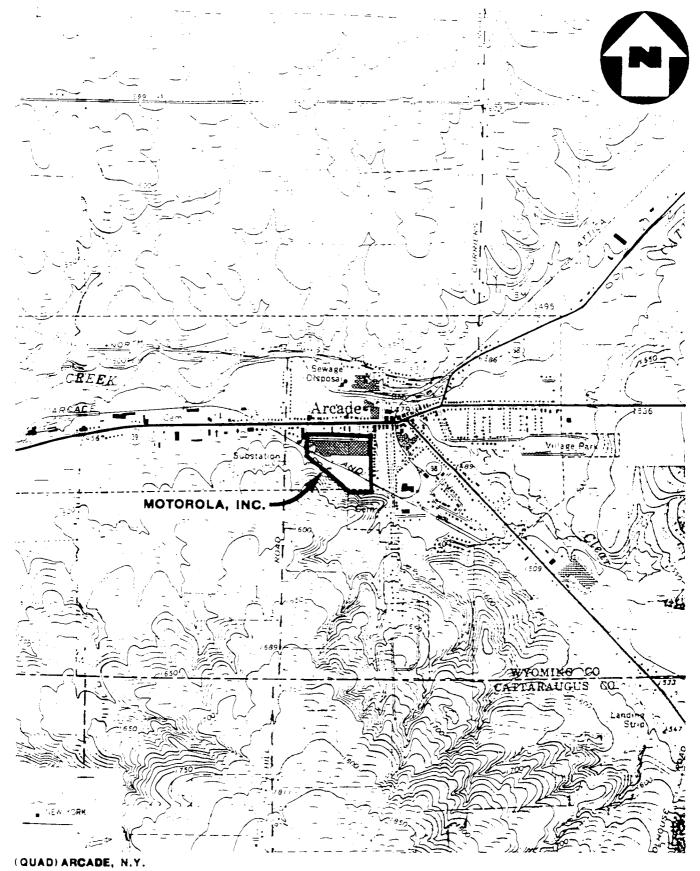
Site Map

Figure 1: Figure 2: Figures 3 and 4: Exhibit A:

Sample Location Maps

Photograph Log



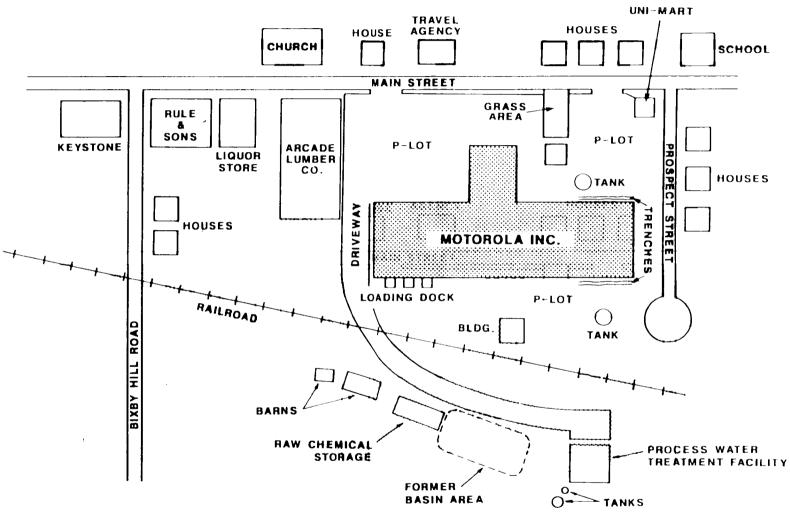


SITE LOCATION MAP MOTOROLA, INC., ARCADE, N.Y.

SCALE: 1" = 2000"







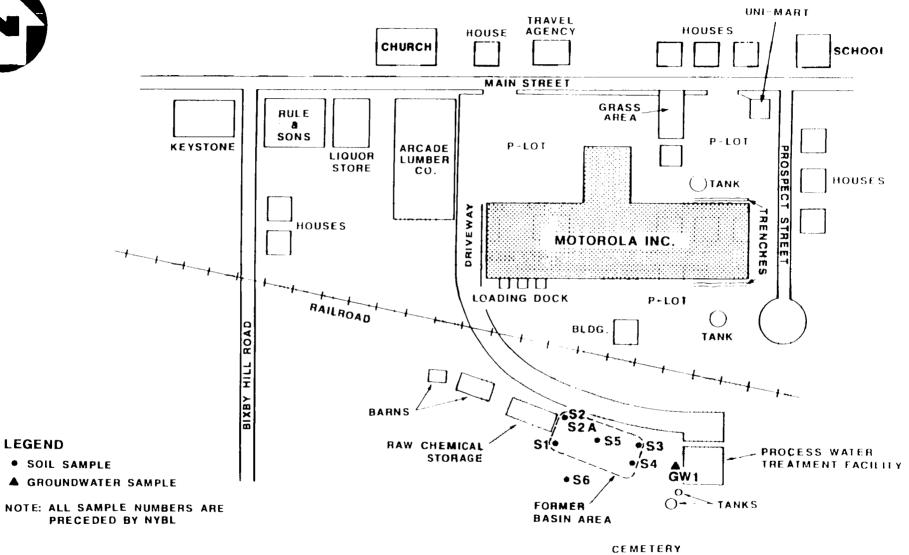
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SITE MAP MOTOROLA, INC., ARCADE, N.Y.

(NOT TO SCALE)



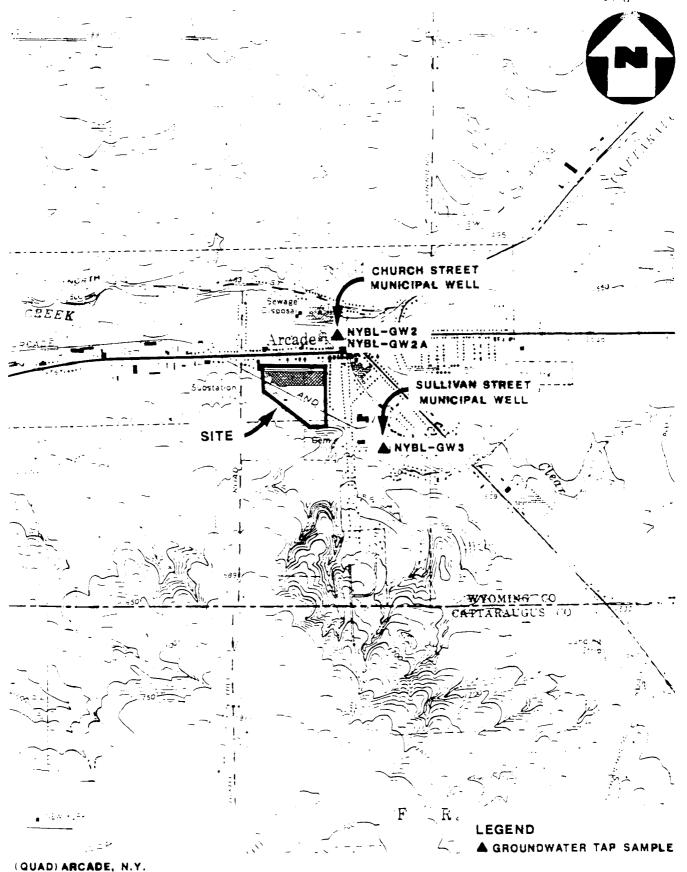




SAMPLE LOCATION MAP
MOTOROLA, INC., ARCADE, N.Y.

(NOT TO SCALE)





SAMPLE LOCATION MAP
MOTOROLA INC., ARCADE, N.Y.

SCALE: 1"= 2000"

FIGURE 4



EXHIBIT A

PHOTOGRAPH LOG

MOTOROLA, INC. ARCADE, NEW YORK

SITE INSPECTION: APRIL 7, 1988

MOTOROLA INC. ARCADE, NEW YORK APRIL 7, 1988

PHOTOGRAPH INDEX

Photo Number	Description	Time
1P-2	J. Murtaugh collecting groundwater tap sample NYBL+GW+1 from outside spigot against west face of process water treatment facility.	1050
1P-14	G. Gilliland collecting groundwater tap sample NYBL-GW-2 from the Arcade municipal supply well located on Church Street behind the village offices.	1507
1P-15	G. Gilliland collecting groundwater tap sample NYBL-GW-3 from the Arcade municipal supply well located in the playground on Sullivan Street.	1521
1P-3	D. Warner collecting soil sample NYBL-S-1, 15.6 feet east of the southeast corner of the chemical storage building.	1111
1P-4	J. Murtaugh collecting soil sample NYBL-S-2 , 10.2 feet east of the northeast corner of the chemical storage building.	1140
1P-5	D. Warner collecting soil sample NYBL-S-3, 54.4 feet east of the northeast corner of the chemical storage building.	1207
1P-6	J. Murtaugh collecting soil sample NYBL-S-4, 55.8 feet east of the southeast corner of the chemical storage building.	1255
1P-7	D. Warner collecting soil sample NYBL-S-5, 30.3 feet east and 5.9 feet north of the southeast corner of the chemical storage building.	1313
1P-8	J. Murtaugh collecting soil sample NYBL-S-6, 78.1 feet west of the southwest corner of the process water treatment facility.	1330
1P-9	Photo of the disposal area from Motorola's dirt access road facing southeast.	1409
1P-10	Photo of the disposal area from the dirt access road, facing southwest. The chemical storage building can be seen in the background	1411
1P-11	Photo of the process water treatment facility from the access road, facing southeast.	1414
1P-12	Photo of the creek and the pedestrian bridge.	1422
1P-13	photo of the creek bed, the bridge, and a portion of the manufacturing plant.	1423
	All photographs taken by Susan Kennedy.	



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MOTOROLA, INC., ARCADE, NEW YORK



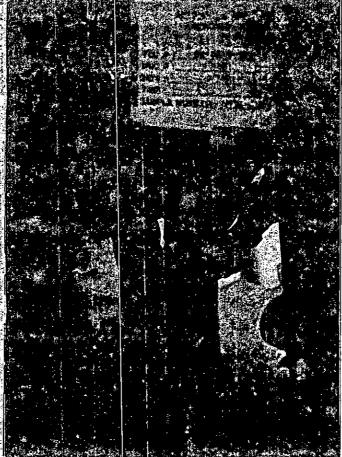
P-2 April 7, 1988 1050 J. Murtaugh collecting groundwater tap sample NYBL-GW-1 from outside spigot against west face of process water treatment facility.



G. Gilliland-collecting groundwater tap sample NYBL-GW-2 from the Arcade municipal supply well located on Church Street behind the village offices.

02-8910-15-SI

OTOROLA INC. ARCADE NEW YORK



April 7; 1988

G. Gilliland collecting groundwater tap sample NYBL-GW-3. Trom the Arcade municipal supply well located in the playground on Sullivan Street.



April 7, 1988
D. Marher collecting soil sample NYBL-S-1, 15.6 feet east of the

southeast corner of the chemical storage building.



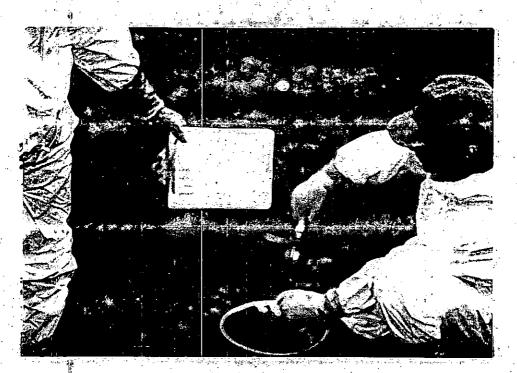
Rev. No. 0

MOTORCLA, INC., ARCADE, NEW YORK



April 7, 1988

J. Murtaugh collecting soil sample NYBL-S-2, 10.2 feet east of the northeast corner of the chemical storage building.



April 7, 1988

D. Warner collecting soil sample NYBL-S-3, 54.4 feet east of the northeast corner of the chemical storage building.

1P-5



MOTOROLA, INC., ARCADE, NEW YORK



1P-6
April 7, 1988
J. Murtaugh collecting soil sample NYBL-S-4, 55.8 feet east of the southeast corner of the chemical storage building.



April 7, 1988

D. Warner collecting soil sample NYBL-S-5, 30.3 feet east and 5.9 feet north of the southeast corner of the chemical storage building.

MOTOROLA, INC., ARCADE, NEW YORK



12-8

April 7, 1988

J. Murtaugh collecting soil sample NYBL-S-6, 78.1 feet west of the southwest corner of the process water treatment facility.



1P-9

April 7, 1988 1409
Photo of the disposal area from Motorola's dirt access road facing southeast.



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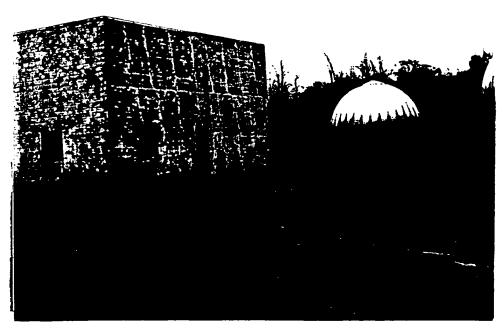
MOTOROLA, INC., ARCADE, NEW YORK



12-10

April 7, 1988

Photo of the disposal area from the dirt access road, facing southwest. The chemical storage building can be seen in the background.



3.11

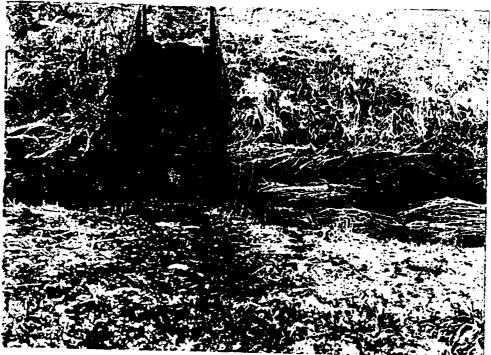
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MOTOROLA, INC., ARCADE, NEW YORK



1P-12 April 7, 1988 1422 Photo of the creek and the pedestrian bridge.



19-13 40ril 7, 1988 1423 Photo of the creek bed, the bridge, and a portion of the manufacturing plant.

4.0 SITE INSPECTION SAMPLING RESULTS

On April 7, 1988 the NUS Region 2 FIT conducted a Site Inspection (SI) at the Motorola, Inc. site. The SI included the collection of five soil samples from the alleged disposal area and one background sample. Figure 2 in section 3.0 provides a sample location map. Samples NYBL S-1 through S-5 were collected from within the former waste disposal area. Sample NYBL S-6 was collected as a background sample south of the disposal area.

Groundwater tap samples were collected from the Arcade Village supply wells on Church Street (possibly downgradient, NYBL-GW2 and GW2A) and Sullivan Street (upgradient, NYBL-GW3). The water from these wells mix with the water from a well in Sandusky. A tap water sample was collected from a spigot on the Motorola water treatment building (NYBL-GW1) to compare the quality of the water from individual wells to the mixed system water that is distributed to customers.

Analyses indicated that no contamination was detected in any groundwater samples. Analyses for 2-butanone, benzoic acid, and zinc did not pass EPA QA/QC standards.

Analyses of soil samples indicate the presence of toluene, Aroclor-1254, cadmium, lead, and cyanide in the on-site soils. The highest concentration of toluene was 21 ug/kg found in sample NYBL S-5, and the lowest concentration, found in sample NYBL-S1, was 7 ug/kg. The highest concentration of Aroclor-1254 was 1164 ug/kg found in sample NYBL-S3. The lowest, 91 ug/kg, was found in sample NYBL-S2. The highest concentration of cadmium was 1960 mg/kg in sample NYBL-S3 and the lowest concentration was 10 mg/kg in the background sample NYBL-S6. The highest concentration of lead was estimated to be 178 mg/kg in sample NYBL-S4 and the lowest concentration was 22 mg/kg in sample NYBL-S6. The highest concentration of cyanide was 3.66 mg/kg in sample NYBL S-1 and the lowest concentration, 0.78 mg/kg, was found in sample NYBL-S5. The results are summarized in Table 1.

Analysis of the background soil sample, NYBLS6, indicated that barium was present as an estimated value below Contract Required Quantitation Limits (CRQL) but above Instrument Detection Limits (IDL). Soil samples NYBL-S1-NYBL-S5 contained chromium and arsenic at concentrations similar to those in the background soil sample NYBL-S6. Soil and water analyses for 2-butanone and benzoic acid did not pass EPA QA/QC standards. Aroclor-1254 was present in soil samples NYBL-S2, NYBL-S5, but not in the background sample NYBL-S6.

5.0 CONCLUSIONS AND RECOMMENDATIONS

A listing site inspection is recommended for the Motorola Inc. site. This recommendation is based on analytical results from samples collected by NUS Corporation, Region 2 FIT on April 7, 1988, and on the following information that was acquired during the site inspection and subsequent report preparation:

- At least 4,500 people received potable water from municipal wells that are located within 3 miles of the site. The nearest potable well is located 1,800 feet north-northeast of the site and appears to be downgradient.
- The nearest residence is only 0.25 mile east of the former disposal area, an unlined surface impoundment. The site is not fenced in, so there is easy access, and, therefore, there is a potential for direct contact with hazardous waste by individuals who live in the area.
- Soil contamination with toluene, Aroclor-1254, cadmium, fead, and cyanide has been documented and may be attributable to the site.
- Contaminants that are present in soil particles found close to the surface may become airbone during dry and dusty conditions. There is no vegetation in the area of the contaminated soil.

Ref. Nos. 1-16

TABLE 1 SOIL SAMPLING RESULTS

Compoun ds Present Ab o ve CRQLs	Samples with Highest Concentration	Highest Concentration
Toluene	NYBL-S5	21 ug/kg
Aroclor-12 5 4	NYBL-S3	11 64 ug/kg
Cadmium	NYBL-S3	1 960 mg/kg
Lead	NYBL-54	17 8 E mg/kg
Cyanide	NYBL-S1	3.66 mg/kg

CRQL-Contract Required Quantitation Limit E - Indicates an estimated value

Ref. No. 16

6.0 REFERENCES

- 1. Field Notebook No. 0210, Motorola, Inc., TDD No. 02-8803-12, Site Inspection, NUS Corp. Region 2 FIT, Edison, New Jersey, April 7, 1988.
- 2. Preliminary Assessment Report, NUS Corp. Region 2 FIT, December 4, 1987, TDD No. 02-8710-78.
- 3. U.S. Department of the Interior, Geological Survey Topographic Maps, 7.5 minute series, "Arcade Quadrangle, N.Y.", 1966 photorevised 1971.
- 4. Telecon Note: Conversation between Nelson Schnabel, New York State Department of Environmental Conservation (NYSDEC), Region 9, and Gerald V. Gilliland, NUS Corp., December 2, 1987.
- 5. Telecon Note: Conversation between Larry Killburn, Superintendent of Public Works, Village of Arcade, and Donna Restivo, NUS Corp., December 2, 1987.
- 6. Telecon Note: Conversation between Larry Groves, Water Commissions of Yorkshire Township, NY, and Gerald V. Gilliland, NUS Corp., December 3, 1987.
- 7. U.S. Department of Agriculture Soil Conservation Service. Soil Survey of Wyoming County, New York, Abril, 1974.
- 8. Survey of selected organic compounds in aquifers of New York State, excluding Long Island. U.S. Geological Survey Water Resources Investigations 81-47.
- 9. U.S. Environmental Protection Agency Notification of Hazardous Waste Site, EPA Form 8900-1, Motorola, Inc., June 9, 1981.
- 10. NYSDEC memorandum from Mr. Christoffel to Mr. Buechi (both of NYSDEC), Subject: Motorola Sites in the Southern Tier, September 2, 1982.
- 11. Cattaraugus County Health Department memorandum form Mr. Halgas to Mr. McMahon (NYSDEC), Subject: Motorola Industrial Waste Disposal, October 3, 1978.
- 12. U. S. Environmental Protection Agency General Information Form 3510-1, Consolidated Permits Program, Motorola, Inc., November 14, 1980.
- 13. Telecon Note: Conversation between Larry Killburn, Superintendent of Public Works, Village of Arcade, NY, and Gerald V. Gilfiland, NUS Corp., June 29, 1988.
- 14. The New York State Water Resources Commission, Erie-Niagara Regional Water Resources Planning Board, Basin Planning Report ENB-3: Ground water resources of the Erie-Niagara basin, New York. A.M. La Sala, Jr., 1968.
- 15. Uncontrolled hazardous waste site ranking system, A user's manual, 40 CFR, Part 300, Appendix A, 1986.
- 16. U.S. EPA Contract Laboratory Program, Meta Trace, Inc. (Organic Analysis), Versar, Inc. (Inorganic Analysis), Case No. 9296, Laboratory Analysis from NUS Region 2 FIT Site Inspection conducted on April 7, 1988.

REFERENCE NO. 1

NUS CORPORATION

11

0210

MOTOROLA INC.
02-8803-12
SITE MANAGER - GERALD GILLIAND
LOGBOOK # 0210
MARCH 31, 1988

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TREATMENT PLANT.

SPOKE WITH MK EXCHERE ABOUT THE CUMPRIOT SITUATION.

FLICS. BOUVET AUT. BUS. + PLANT, 1500 PEOPLE,

AND MOTORIUM HAS IND YEARS TO FIND A

NEW FACILITY TO MOURTO.

Snown M. Farrey 4/21/19

7

LUB-DWATER OF THE PROPERTY, TO SECTION LEVEL B

RELUNIALS SANCE. THEY UP TO OUTSIDE SAUDT FIRST

AND TURN WATER ON TO ALLOW IT TO KIND FOR A FIFTEEN

MINISTES OR MORE TO BE ABLE TO LOCLECT UNL.

JM+ PW ARE ZIV-ZAULIM ABBUSS THE PROPERTY, TO

SEE IF AMY READINUS ARE DETECTED.

ABOVE BACKURWAD ON EITHER ILST SAMPLES LICL BE CULLECTED WITHOUT ARS PRATURY RAD PROTECTION AS 1050 JOHN THE CHUMN AS

PROPERTY SO HE CAN BETTER ACCOUNT THE AREA THAT WAS TEXCAUATED, BUT 15 NOT SME HOW MARTINED MUCH OF THIS PROPERTY. UAS THE ACTUAL LACOUN SITE. GO TEX PECIOE.

TO TAKE SIX SAM ARE ALL TOWETHEN.

H FROM THE CONNINS OF THE EXAMITED AWAR, ONE FROM THE CENTER, MAD

ONE FROM THE SLOPE BEHIND THIS AMPLE FOR BACKUROUND, THE GWITAP

SAMPLE WILL GE COLLECTED FIRST.

SEWELL 70-FORMED 4/7/88 JULIANY 1/2/1/27

12-53-12 MOTOROLATING

1044 - JM4 DW BEGIU (OLLECTIOS OF GWI) GU SCLEGUS MEA WITH AIK MONITORIUS INSTRUMENTS MOYLIADAUS ABUR BACKCHIOUND ORTELTED

1050: P2, SI AND O OF JM COLLECTION COMA.

1101: BELINI CONSCIONATION
(15) BEUIN (CLECTION OF SI - FINST MUEKFULL OF SIL augustus desen removes approximately 0.3 fout at soil off the top) Gold 4/11/38 PLACED DIFFERENCE OF DATE OF THE THAT
PLACED DIRECTLY INTO BOAT SAI TUBE WELL SET
- DIRECTER TOTO DOOL. SOIL TYPE DENVINET
BLOWN CLAY, SCIUPT CHAWE IN COLUMASED WITH
DEFIT THOM DK. BROWN TO LT. BROWN, MID
LEADILUS ABOUT BACKCHOUND DETECTED ON.
HAU OR DUA. (INITIALL MENOW ADAMOY 2 ADM -
LEURLED OFF - BEATHOUZUNE FIUR -NO
KEADING. AT APPROX. 2 FEET, WATER WAS
HIT. COLLECT SOIL HEXE SO AT THIS POPUL
11) DAS AVE TOST
UDAS AKE COLLECTED FIRST, PRIDETO
HUMULENI 121NU.

Summ. tonsof 4/7/88

63,52 MUTUREATING.
1111 PHOTO OF DOC 11 - CTIMES 1.

1112: GG INDICATES THAT A KEADING OF
APPROXIMATELY 8-10 PAM DETECTED FROM
WITHIN THE AUGEN HOLE. NO READINGS
DETECTED IN BREATHING SUNE.

MIS: STRUMU DOON OF SOLVEUT DETECTED IN THE

AIN - ML MCCASICILL SAYS IT'S FRON HEAT THEAT

FURNACE - MIXTURE OF NITHWENT NIATURE

GASSAS EMUINDAMENTINISIDE FURNACE.

SAMPLE COLLECTED 15.6 FRET SWITHWEST AT DILECT 450 AUGLE OF CHEMICAL STOMAGE BUILDPIAN OF 5E COMBEL OF BLOW.

1125: LOLATION OF 52 15 DETERMINED AP TO BE OFFTHE MORTH EAST CORNER OF THE BUILDING.

Susan m. Ferned 4/7/88 hulgfy 4/2 17

MUTURUL A INC.

1137. IM BELING ALLERING FOR SZ- THE FIRST AULEKFULL OF SOIL IS NOT USED, THE MUEKED SOL 1STRUM NOW DU IS PLICED DIRECTLY IUTO THE BOWL. NO KEADING DETECTED IN THE MULL HOLE ON THE BREATHING ZONE.

1131: SLIGHT FEARUS UN THE OUT FRAM WITHIN THE AUGER HOLE . FLUCTUATION BETWEEN 1 AW 2 PPM.

ENUUN 1135: SOIL COLLECTED FOR SZ AT A DENTH OF 1.8 FEEL

1140 P4 53 - PHOTO OF JM COLLECTIVE 52.

SOIL TYPE IN THIS LOCATION WISK IS CLA-1, PARK BROWN, BUT DRIER THAU THAT OF 51.

OF SOLURNT 1148: STROW ODOK IS STILL RUIDE IT, ALTHOUGH NO READINGS ARE DETRETED ON THE LASTRUMENTS. 1150: COMPLETED COLLECTIVE 52.

Sween meaned 4/1/88 Pully 4/1/11

SOIL SAMPLEZ WAS COLLECTED 10.2 FEET COLLECT.

AIR RAST OF THE MONTH EAST COMER OF THE

CHÉ BUILDANG PÉRANDILMIA AME THE MINTHEFET

COMER, FROM THE EAST FACE OF CHIMICAL

STONAGE BUILDING.

LOCATION S\$ LOCATE ST. Y FEET FROM THE

NE COMEN OF THE CHRMICAL STONAGE GUILDIAGE

AT A PERPINDICULAR ANGLE FROM THE EAST

OFTED FACE OF THE CHEM. STONAGE ANILOIM.

ANDER FULL OF SOIL IS NOT USED, THE KEST OF THE AUGENCE OF SOIL WILL BE PLACED DILECTLY INTO THE BOWL.

WATER IS LYING ON GROUND IN THIS DATE.

THIS SOIL TYPE IS SILTY LT BROWN CLAY.

NO REPOINES FROM WITHIN THE AUGENT HOLD,

BLEATH OUR ZOOL, OR BOWN OF SOIL.

B. STEINIEN OF KLUP WILL SAIT THIS SAMAE WITH US. HE HAS I 16 OZ. JAR (GLASS) TO FILL. (OLLECTED AT OXPTH CF 1.1 FOCT.

Siscer m. Fennes 4/9/88 My My 4/11/47

02-8803-12 MUTCHOLA INC.

1205: MO PERDINUS DETECTED ON THE FAM ON OUR
IN THE BRIGHTHIMG ZUNE, ON FROM WITHIN THE AUGER HUE
ON BOWL OF SOIL.

1207 - P5,54 PHOTO OF P.W. (WIECTING \$3

1211 - (ULLECTION OF \$3 COMPLETE.

1215 - JM+OW DECON SAMPLE BOTTLES AND MUSO DECON AUGERS AND BOWLS.

1218 PL. MACASKILL + B. BRUYERE LEAUR SITE TO GO TO LYNCH. B. STEINER REMAINS BEHIND TO CONTINUE OVERSEEING THE SAMPLE COLLECTION

1237: JM BELING COLLECTION SY - SOIL IN

THIS AMER IS SHOW BO SANDY AT A DEPTH

OF APPAUX. GIVENS. CULECTED 55.8 FEET

FROM THE SE CONNER OF THE CHEMIUM

STOKAGE BUILDING AT A PERPINDICULAR

ANDLE FRIM THE BUILDING RAST FACE.

SAMPLE COLLECTED AT A DEPTH OF 1.0 FEET. GW 47/84

Susan M. Kannedy 4/7/88 full Pay and 1/81

1240: LEAPHUS OF UP TO 25 PPA WERE DETECTED FROM WITHIN THE HOUR, ERADINUS, FLUKTUATED BETWEEN 10 + 25 PPA.

1242: NO MEADING DETECTED UFF OF SOIL IN

12-14. IM INDICATES THAT WITH THE THEO ALGERFACE
OF SOIL , TITE SAND HAS DISAPPEARED, SUIL
TYPE AT THIS DEPTH IS CLAY

OF DETECTS FIGDINUS OF APPROXIMATERY 7-8 PM DIRECTLY ABOUR THE AUDER MOLE. NO READONS ABOVE BACKUROUND DETECTED IN THE BREATHING ZUE, OF FROM THE SOIL IN THE BOWL. NO READING AT ALL ON THE HAW.

AFTER THE LAST ALLER WAS CLUTELED, GO STATED THAT THE READINUS PEGGED THEXTO SCALE OUTHE OVA FROM WITHIN THE HOLFITSKIF.
HOME OD READING IN THE BREATHING ZONE
OF FROM THE SOIL IN THE BULL NO

PRADINUS ON THE HOM

DSI: THE GG INDICATES THAT THE OUA

KEADINUS IN THE HOLE NOW EXCERD THE

X 100 SCALD. ALAIM, NO KEADINGS ELSEWHEET, ON OU THE HMU. THIS SAMPLE WILL

Susan M. Kerned 4/7/88 Puri Payano 4/11/19

1253: A LEADILY OF APPROXIMATELY 1.5 PPN WAS PINECTLY ABUR DETRETED UN THE OUA FRUM THE SOIL IN THE BOWL. JM BACKED UFF AND ALLWED SAMPLE SOL TO SIT FOR A MINUTE. READILUS PROPED WHEL SCREENED AUAIN, NO LEADING ELSEWHERE OR ON THE HNU AT ALL

1255: CONFICTION OF SM COMPLETE. 1256: COLLICTION OF SY WAPLETE 1306 SAMPLE LULATION FOR SS LOCATED 30.3

FERT RAST OF THE CHEM, STOYAUR BOW. AND 5,9. FEET NONTH OF THE SW CONVEY OF THE SAME BLOU.

1308 DW BELINS ALLERING FOR SAMPLE.

1309 READINUS BETWEEN 145 PPM DEFECTED ON THE OUA - MOHE ELSENHENE ON W HMU.

SOIL IN THIS AREA DRY SANDI WIT BEIND SOIL WITH DARKEN BITS OF HUMUS MIXED M. SAMPLE COLLECTED TO A DEPTH OF 1.5 FEET.

1310 PW BRUINS COLECTION 55, 1313 PHOTO OF DW (OLLE LTING SS (P7, 56) CRUITE 1316 CULRITION OF SS COMPLETE!

Sucu m-tenne 47/8 fruitflywyln/17

56 15 BEING COURCIED AS A BACKURUND SAMPLE AWAY FILLM THE SUSPECTED DISPOSAL ANEA, IT IS CULLIFICTED UP SLOPE OF THE EXCAUATED AREA AND 78.1 FEET FRUNTHE SW CORNEL OF THE WWTP AT A PERP. ANULY TO THE WEST FALC UF THE THEATMENT PLANT.

1318: SOIL HERE IS DRY, LIUHTERIN LOUGH THAN THE OTHER LUKATIONS, CLAM. SOIL GETS LILITER AND SANDIER WITH DEPTH (APPROX 1 FOUT) NO MEADINUS ABOVE BACKGROUND ON HOU OF WA THIS SAMPLE WILL BE SPLIT WITH B STEINER.

13)7 JM BELIND COLECTION S6. NO LEADINGS WERE DETECTED ON THE HMY OK THE OVA.

1330: P7 56, P8, 57 616

PHOTO OF JM COLLECTIVE Sto.

COLLECTION OF SG COMPLETE.

1340: FOM MICASHILL LEAVIS SITE DW +JM BELIN DELONDING ESUIPAENT.

Susan M. Kennede . 4/7/88. Childy 4/11/19

1350: GG4SK LEAVE SITE TO KETUKN TO AKLADE UFFILES AND INGUINE ABOUT TAKING THE COMMUNITY DUELLS

BS2: Anglus AT VILLAUR OFFACES TO SEE IF LAKINY
KILL BURN IS IN - THE KRCEPTION HOT FORD SHID HE
WILL BE BACK WITHIN AN HOME.

1403: St 466 FETURN TO MOTOROLA FACILITY, WHERE DOWN IM ARE CLEANING UP DECONARRA AND B.T. IS FINISHING SAMPLE MANAURMENT WORK.

1409. PS 54 - PHOTO OF DISPOSAL AREA FROM

COMPANY'S DIAT ACCESS RUND FACILIC SOUTH
RAST

1411: PM STO - PHOTO OF DIBPOSAL ANKA FROM

(UMPAUM'S DIFT PISABORE AND FACILLE

SOUTH WEST. CHEMICAL STORAUE BYILDING (AD

BE SEEN IN THE BACKCRONION

PLANT FROM THE KUND, FALLY SOUTH EAST

Susan M. Lennedy 4/1/88 Push lyn 4/1/14

01-9503-12 MOTOWNA, INC.

THERE IS A SMALL CHEEK APPROXIMATELY 250 FLET MONTH OF THE DISPOSAL AREA THAT IS FLOWING IM A WESTERLY DINECTION. THERE ARE W APPARENT DRAWAUF PATHS FROM THE ARED PROPOSAL AREA TO THE CHERIC. THE DIST DINEWAY AND A SMALL LAWN AREA SIDEMATE THE DISPOSAL AREA FROM THE CFEEK. THIS LAMD IS RELATIVELY FLAT.

THERE IS A SMALL PEDESTRIAN BRIDGE WERE THE CHERK, BEYOUD WHICH STANDS THE MAIN MANUFACTURE PLANT, AND KETRACKS.

1422: PHOTO OF CREEK AND PEDESTRIAN BRIDE: (PIZSII)
1473' PHOTO OF CREEK BED, BRIDGE, AND PORTION (PIZZIZ)
OF THE MANYFACTURIUM PLANT.

SOUTH OF THE DISPOSAL SITE LIE FIREWS THAT SLOPE UPWAND FOR SEVERAL HUNDRED FEET BEYOND THAT LIES FIELDS, APPROXIMATELY 15-20... ACKES, THAT IS OWNED BY THE FACILITY.

THE PRHIMETIEN OF THE SITE IS NOT SECURED WITH A FEULE. THE PROPERTY IS EASILY ACCESSIBLE FROM ALL DIRECTIONS.

Susan M. Lenseds 4/1/88 Aul Pyw 4/21/85

THERE ARE ILESIDEYLES APPROXIMATELY 1/4 MILE MORTHURSTOF THE FACILITY.

1433: LEAVE MUTOWLA FOR DAY.

GU 154 GO IN BUILDOUTD SEE IF LARRY KILLBURD

1445 KETYMED, LECKPTIONIST SAID HE IS NOT
BACK YET. WHILE NETYMOND THE VEHICLE,
VATER OPERATOR

PAY KILLIAM PURES UP, WHO HAD THE KEYS TO

THE STANTS THE PUMP FOR THE CHURCH
STREET WELL, WHICH TO DIM P THE PUMP HOUSIL

15 ATTACHED TO THE BACK OF THE COUNTY BUILDING,
THE ALSO ACTIVATED THE SULLIVAN STREET LIELL

50 IT WOULD BE FRAM TO SAMPLE UHEN WE APPLIED.

Bos ST, D

1505 - GG. BEGINS COLLECTIVE GW2

1507 - PHOTO OF GG. COLECTIVE GWZ P14, 513

1510 - COLLECTION OF GW2 COMPLETE.

Swan M. Kessed 4/7/88 [hd faw 4/21/18

1512 - LEAVE PHISTO ANCADE VILLAUE OFFICIS,
FULLOW FLAT FILLIAN TO SULLIED STREET
WELL.

15 16 AKHUR AT SHULLING STREET WELL

1518- GG BRUIUS CULECTION OF GW3

1521 - FHOTO OF GO. (GLECTING GW-3 PIS, S14
1523 - COLECTION OF GW-3 COMPLETE.
1524 - A'LL PENSONNEL LEAVE THE SULCIUM ST
WELL AND GO BACICTO MOTELTOWAIT FOR FEDERAL
EXPLESS TO DICK UP SAMPLES.

1621 - ALHUR A.T. MUTEL.

1707 - FED EX ARRIVES AND PICKS UP SAMPLES.

Susan m. Leaner 4/7/88 And ap 4/1-184

02-5303-12 Motorola, Inc.

Organics Lab MetaTRACE, Inc. 13715 Riler Trail North 1 Earth City, MD, 63045 Attn: Walter Dotson (314) 298-8566 Arbill # 7195200493

Inorganics Lab Versar, Inc. 6850 Verser Center P.O. Box 1549 Springfield, VA 22151 AHn: Janet Beckman (703) 642 - 6816 Airbill #7195200504

	NUS Sample#	Organic TRE	Inorganic TR#	Time
	NYBL-C'W-1*	BR 351	MBN 903	1044
	- GW-7	BR 352	MBN 904	/S//
Soil	-GW-JA+	BR 353	MBN 905	1507
Sample Bepth	-GW-3	BR 354	MBN 906	1518
2.1-	<u> </u>	BR 435	MBN 907	1111
1.8'		BR 436	MBN 908	1140
, V	-s'-2Att	BR 437	MBN 909.	1142
p. 1' -	-5-3	BR 438	MBN 910	1172
1.0'	5-4	BR 439	MBN 911	1201
1.5'	-5-5	BR 444	MBN 914	
1.0'	5-6	BR 445	MBN 915	1313
	- Rin - 1	BR440	MBN 912	1330
20	· Rin-2	BR 441	MBN 913	1055
	-T6K-1	BR 442	, · -	1105
	. 710	DIC 1/3	N/A	N/A

* Indicates sample was designated for matrix spike (Ms) and matrix spike diplicate (MSD) analysis + Deplicate of sample no. NYBL-GW-2. H Diplicate of sample no. NYBL-45-2. Note: Sample locations are described in the text of this logbook.

and V. Coll D4/31/24 Chistay 4/2/10

Phoro #	I.me	Description
18.2	1050	IM collecting GW-1 from outside spigot against west time of process where treatment facility.
1P-3 18-2	1111	DW collecting \$-1, 15.6' east of the southeast women of the chemical storage building.
iP-4 14-3	1140	SM collecting \$-2, 10.2 east of the northeast corner of the chemical storage building.
18-4°	1207	DW collecting \$-3,54.4' east of the northeast winer of the chemical storage building.
1P-6 1\$.5	1255	IM collecting \$-4,55.8' east of the southeast corner of the chemical storage building.
1P-7 19-6	1313	DW collecting \$-5, 30.3 east and 5.9 north of the southeast women of the chemical storage building.
1P-8 1\$-7	1330	SM collecting \$-6, 78.1' west of the southwest corner of the process water treatment facility.
1P-9 1\$-8	1409	Photo of the disposal area from Motorola's dirt access road, facing southeast.
18-9	1411	Photo of the disposal area from the dirt access road, facing southwest. The chemical storage building can be seen in the buckground.

Gerall V. Cillion J 4-21-88 That Pan upilos

Photo *	Time	Description
19-11	1414	Photo of the process water treatment facility from the list access road, foring southeast.
18-11	1432	Photo of the creek and the pelestrian Studge.
18-13	1423	Photo of the creek bed, the bridge, and a portion of the munufacturing plant.
18-14 18-13	. 1507	66 collecting GW-D from the Arcade municipal supply well on Church St., behind the village offices.
18-14	1521	GG collecting GW-3 from the Arcade municipal supply well located in the playground on Sullivan St.

All photographs were taken by S. Kennedy on April 7,1988.

JM - Joe Murtaugh

DW - Dudley Warner

GG - Gerry Gilliland

Gend V. Gillel / 4-21-88

Meri Papi

REFERENCE NO. 2

PRELIMINARY ASSESSMENT MOTOROLA, INC.

PREPARED UNDER

TECHNICAL DIRECTIVE DOCUMENT NO. 02-8710-78 CONTRACT NO. 68-01-7346

FOR THE

ENVIRONMENTAL SERVICES DIVISION U.S. ENVIRONMENTAL PROTECTION AGENCY

DECEMBER 4, 1987

NUS CORPORATION SUPERFUND DIVISION

SUBMITTED BY:

REVIEWED/APPROVED BY:

DONNA J. RESTIVO PROJECT MANAGER

RONALD M. NAMAN

FIT OFFICE MANAGER



POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT

02-8710-78-PA Rev. No. 0

Motorola, Inc.	<u> </u>	NYD001931120
Site Name		EPA Site ID Number
400 Maio Ca		
400 Ma in S treet, <u>Arcade, Wyoming</u>	1.Co. NY 1400B	
Address	CO., NY 14009	02-8710-78 TDD Number
		100 Number
· · · · · · · · · · · · · · · · · · ·		
Date of Site Vis	sit: Off-Site Reconnaissance No	vember 10, 1987
SITE DESCRIPTI		
Treatment Facility The plant produ fabricating proces in November 1981 1976 wastes were collected from a finishing operatio Process Water Tre excavated from th been filled in, gra	g County, New York. Behind the a Filter Cake Storage Area, a Hoces automobile and industrial ses ancillary to these products. It is Prior to 1981 disposal method handled on site in a 3450ft2 important beattling basin through which the flowed; no liner is known the atment Facility in 1976, appropriate area and disposed of. The area ded, and seeded with grass. Modes	ed in a commercial and residential section of the manufacturing plant is the Process Water azardous Waste Storage Area, and two barns. I electronic products, and conducts metal A RCRA 3001 permit was granted to Motorola ds on site were not regulated. From 1971 to appoint the general effluent from Motorola's metal to be present. Prior to the installation of a eximately 30yd ³ of earth and sludge were a where the material had been deposited has otorola has designed an EPA-approved, longuis Waste Storage Areas. (Continued)
PRIORITY FOR F	FURTHER ACTION: High _	Medium \underline{X} No Further Action
RECOMMENDA	TIONS	
to the environmen	of for further action is recomment had occurred during past operate are two community wells with	nded for this site to determine if any releases perations. Groundwater is used for drinking hin 1 mile of the site.
Prep ar ed by:	Donna J. Restivo of NUS Corporation	Date: December 4, 1987

CONT'D

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT

32-8710-78-PA Rev. No. 0

SITE DESCRIPTION

Groundwater is used for drinking purposes in the area, and there are two community wells within 1 mile of the site.

EPA

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT

+. +DENTIFICATION						
31AT2:0	02 SITE NUMBER					

		LOCATION AN	ND INSPECTION I	INFORMATION 015	TATE 02 SiTE A	IUMBER 931120
H. SITE NAME AND LOCA						
01 SITE NAME (Legal, comm	an or descriptive name of site	02 STREET, RO	OUTE NO , OR SPECI	FIC LOCATION IDENTIFIER		
Mittorola.inc		100 Main \$	'ee:			
-03 C+TY		04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY	08 CONG
	-	_			CODE	DIST
-7:3de		1,×	:009	Wildming	2.	1.
09 COORDINATES		†				
LATITUDE	LONGITUDE					
421 <u>31 58</u> 1	<u>078</u> ° 25′ <u>43</u> ° №					
10 DIRECTIONS TO SITE (Starting from peacest bubble in					
	in Arc ade, Rt e 39 is the same a		otalic at 208 Main St			
		Strong Metal Motors	हिनो कि वर्षच्याच्या कर्ता.			
III. RESPONSIBLE PARTIE	ς					
01 OWNER ((f known)			02 STREET (Busine	ess, mailing, residential)		
Motorgia inc			400 Main Street	ss, mailing, residential)		
03 CITY		LOASTATE		1 22 75 57 20 5	"	
=1 Nae		04 STATE	05 ZIP CODE	06 TELEPHONE NUN	1BER	
D7 OPERATOR Withnown and	a metacoar ream alabar.		:4009	-775)492-72]4		
OF C. THE OWN FROM STATE	3 different from owners		08 STREET /Business	s mailing residential)		
	· · · · · · · · · · · · · · · · · · ·					
09 CITY	i .	04 STATE	11 ZIP CODE	'2 TELEPHONE NUM	VIBER	
·						
13. TYPE OF OWNERSHIP						 .
A. PRIVATE	_ 8. FEDERAL:		_ C.STATE	_ D. COUNTY	_ E. MUNICIPAL	L
E ATUED.	-	ncy name)				
_F UTHER:	(5		_ G. UNKNOWN			
14 O144-5000000 A TOBA	(Specify)					
14 OWNER/OPERATOR N						
CALTERA	BCEIVED: <u>11/19/80</u>		D WASTE SITE (CERCLA	A 103c) DATE RECEIVED:		_ C. NONE
IV. CHARACTERIZATION				∵0	NTH DAY YEAR	
31 ON SITE INSPECTION						
YES DATE:		BY (Check all that a	EPA CONTRACTOR	CCTATC	3.05//53.60//58	
	-	E. LOCAL HEALTH		_ C.STATE _ C	OTHER CONTRA	ACTOR
. NO		COCALTICALTII	OFFICIAL	_ r Oinen	(Specity)	
		CONTRACT	TOR NAME(S):		'specity/	
02 SITE STATUS (Check one)			03 YEARS OF OP	SERATION!		
A. ACTIVE	B.INACTIVE _ C. L	UNKNOWN	1	Unknown Still Active	ı	LINIK NIONA(A)
				GIANING YEAR ENDING YEA		UNKNOWN
04 DESCRIPTION OF SUBS	TANCES POSSIBLY PRES	SENT, KNOWN, O				
Gastes nauled from Mot oro l	a include varnishes, fluxes, flu-		-conos, hydrochloric acid, p	phosphoric acid, toluene, «viene, tri	chloroethane. (See 4t)	(achment)
DESCRIPTION OF POTE						
				av nave been dumbed, stored, ör tri	eared on site - (See 4)	ttarhment1
V. PRIORITY ASSESSMEN						
		nedium is checked, con	nniete Part 2 - Waste Inton	mation and Part 3 - Description of F	******* Conditions :	(acidente)
_ A, HIGH	± B. MED‡UM		C. LOW		NONE	на псивенсы
inspection required pro mp t	:: (Inspection required:	_		(No further action needed, comp		n formi
VI. INFORMATION AVAILA	ABLE FROM					
31 CONTACT	02	OF (Agency-Organizat	tioni		08 TELEPHONE	AT IN A D E D
Drana Messina		IJ S EPA Region 2, E			(201) 321-6776	
04 PERSON RESPONSIB LE	EOR SITE INSPECTION &					
Signal Restivo	101131121143126110141	S EPA		ZATION 07 TELEPHONE NO	UMBER 08 D	ATE
		1 . 3 . 5 . 5	1 Yius Carp	. 6 (381) 330 6105		130101

02-8710-78-PA

Rev No ()

ATTACHMENT

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT PART 1 - SITE INFORMATION AND ASSESSMENT

02-8710-78-PA Rev. No. 0

194. DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED to chloroethylene, Frech, epokies, and cutting diss

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

Croundwater is used for drinking purposes in the area. There is a potential for contamination or groundwater, surface water, air, and sold. There is a sold potential for direct contact, firelexplosive conditions, worker exposure injury, and damage to thord rauna.

FPΔ

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT

1. IDENTIFICATION					
DISTATE	02 SITE NUMBER				
	7.55.004.004				

- I -		PAR	T 2 - WA	STEINFO	ORMAT	ION	0:5	TATE	02 SITE NUMBER
H. WASTE STA	TES, QUANTITIES, AND C			<u></u>				1,7	1.30/93/1/21
	STATE S (Che ck all that apply)			ITITY AT SIT	rc	031000556			
				aste quantities	ĺ	US WASTECH	1AKACTEKISTIK	.\$⊣Chec⊭	all that apply:
= 4 SOLID	_ E SLURRY , F.NE S = <u>k</u> F. LiQUID	ופטרי	It be indepen	наеті)	!	! <u>₹</u> a foxic	_ :	,C.,8.€	i righth solate
C SLUDGE	_ G. GAS					_ 3 CORROS	10.2E _ 2	NEECTIQ:	25 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
3 3 Tues			TONS			0.945/04	.crus;	FLENMA	8LE _ * REACTIVE
OTHER _	(SPECIFY)		YARDS			, _ 0 PERS ST	rewr =	rti ^ m*≃al	E PACOMPATRUE
·····	·	NO. OF E		<u> Joka</u>	<u>0wn</u>				_ W NOTAPP CABL
HI. WASTE TYP	E								
CATEGORY	SUBSTANCE NAME	<u> </u>	01 GRO	OSS AMOUN	UT 02	UNIT OF MEAS	URE 03 COM	MENTS	
SLU	SLUDGE		Jni	ikacwn					
OLW	OILY WASTE		<u> </u>						
SOL	SOLVENTS		<u> </u>						,
PSD	PESTICIDES	······	<u> </u>						
ာငင	OTHER ORGANIC CHE	MICALS	.0+	KOONA					
100	INORGANIC THEMICA	LS	tjax	knowa					
GD	ACIDS	<u> </u>							
3AS	8 4\$ E\$								
MES	HEAVY METALS	·				-			
IV. HAZARDOU!	S SUBSTANCES (See Append	zix far mast frei	quently cited	d CAS Number	1)		<u> </u>		
01 CATEGORY	02 SUBSTANCE NAME	03 CAS NI	UMBER	04 STORAG	GE/DISPC	DSAL METHOD	05 CONCENT	RATION	06 MEASURE OF CONCENTRATION
ಾಂ	sapropyt alcondi	57-53-0		Drums	————		Jakaowa		
-co <u>-</u>	→• a rochioric ac a	7647-01-0		- Cirums			Thenown		
4 CD	Prosphonic ici a	1554-38-2		2 rums			пелфил		
700	Thuese	103-88-3		Srums			an-nown		
ncc	r.iene	330-20-7		Orums			√n+newn		
occ	^{or c} niorcethane	71-55-6		9rums			3nknown		
acc	"richior oe thylene	/9-01-6		Orums			Griknown		
" SEEDSTOCKS	S (See Appendix for CAS Numbers								
									
CATEGORY	J' FEEDSTOCK NAN	<u>√1E 02</u>	CASNUM	ABER (CATEGOR	RY 91	FEEDSTOCK N	AME_	02 CAS NUMBER
FDS					FDS				
					FDS				
FOS									
FDS					<u>FDS</u>				_

POTENTIAL HAZARDOUS WASTE SITE I. IDENTIFICATION PRELIMINARY ASSESSMENT 01 STATE | 02 SITE NUMBER PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS (0.1931.20 II. HAZARDOUS CONDITIONS AND INCIDENTS 01 2 A. GROUNDWATER CONTAMINATION 02 OBSERVED (DATE _____) 2 POTENTIAL _ ALLEGED 03 POPULATION POTENTIALLY AFFECTED: 1200 04 NARRATIVE DESCRIPTION There is a potential for groundwater contamination if any nazardous materials were dumbed istored for treated on site. Groundwater is used for drinking in the area. There are two community wells within 1 mile of the site 01 _ S SURFACE WATER CONTAMINATION 02 _ OBSERVED (DATE ____ CEDELLA _ ALLEGED There is a outential for surface water contamination of any hazardous materials were dumbed, stored, or created to site. There is an intermittant creek pening (ny tao) to which runs to Cattaraugus Creek 0.5 mile away 01 C. CONTAMINATION OF AIR 02 ___OBSERVED (DATE: POTENTIAL _ ALLEGED ___ 04 NARRATIVE DESCRIPTION There is potential for air contamination as the site is active, and it is not known if any hazardous materials are on site. 01 (D FIRE EXPLOSIVE CONDITIONS 02 ___ OBSERVED (DATE: ___ _____ POTENTIAL __ ALLEGED 03 POPULATION POTENTIALLY AFFECTED: 1968 04 NARRATIVE DESCRIPTION There is a potential for tire explosive conditions as the site is active, and it is not known if any hazardous materiars are on site 01 & E DIRECT CONTACT 02 __OBSERVED (DATE: _____) & POTENTIAL _ ALLEGED 03 POPULATION POTENTIALLY AFFECTED: _ 04 NARRATIVE DESCRIPTION 1968 There is potential for direct contact if any hazardous materials were dumped, stored, or treated on site. The area surrounding the site is unlighted and easily accessible 01 F CONTAMINATION OF SOIL 02 __OBSERVED (DATE: _____ POTENTIAL __ALLEGED 04 NARRATIVE DESCRIPTION Ingreis a potential for contamination of soil due to the impoundment recities period the site not being droberly closed in 1916. 01 (G. DRINKING WATER CONTAMINATION 02 __OBSERVED (DATE: _____) & POTENTIAL __ALLEGED 03 POPULATION POTENTIALLY AFFECTED: 1200 04 NARRATIVE DESCRIPTION There is a potential for drinking water contamination if any hazardous materials were dumbed, stored, or treated on site. Groundwater is used for drinking in the area 01 : H WORKEREXPOSURE/INJURY 02 __OBSERVED (DATE: ______) : POTENTIAL __ALLEGED 03 WORKERS POTENTIALLY AFFECTED: ________ 04 NARRATIVE DESCRIPTION There is a potential for worker exposure/injury; the site is an active facility. | POPULATION EXPOSURE/INJURY | 02 OBSERVED (DATE: _ 01 +) Y POTENTIAL _ ALLEGED 03 POPULATION POTENTIALLY AFFECTED: 4338 04 NARRATIVE DESCRIPTION

There is a potent all for population exposure/injury due to contamination or groundwater, surface water, air, and soil, as well as direct contact, stretexplosive conditions, and

worker exposure. Groundwater is used for drinking purposes.

POTENTIAL HAZARDO PRELIMINARY AS	CCCCCACAIT	I. IDENTIFICATION
PRELIMINARY AS	S CONDITIONS AND INCIDENTS	01 STATE 02 SITE NUMBER
II. HAZARDOUS CONDITIONS AND INCIDENTS . CONTINUED)		1401931120
01 <u>;</u> ; DAMAGE T O FLORA 04 NARRAT VE DESC R IP TIO N	02 _ OBSERVED (DATE:	_) POTENTIAL _ ALLEGED
There is a octential f or da ma ge to floral if any hazardous materials were dur	mbed, stored is created on site	
01 / K. DAMAGE TO FAUNA 94 NARRATIVE DESCRIPTION (Include name(s) at species)	02 _ OBSERVED (DATE:	_) POTENTIAL _ ALLEGED
There is a potential f or c am ag e to faunalitiany hazardous materials were dum	moed, stored, or treated on site	
91 : L. CONTA MI NATION OF FOOD CHAIN 94 NARR A TIVE DES CR IP TIO N	02 _OBSERVED (DATE:	_) POTENTIAL ALLEGED
There is a loctential for contamination of the food chain lift is not known what proaccu m ulate	at wastes, it any, are present on site or whether the	P contaminants which may be present will
01 c M UNSTABLE CONTAINMENT OF WASTES Saids, Runoff Standing liquids, Leaking drums; 03 POPULATION POTENTIALLY AFFECTED: 1968	02 _ OBSERVED (DATE:	_ POTENTIAL _ ALLEGED
There is a potential for the unstable containment of wastes of hazardous mate		ife is no evidence of a liner being present
01 L V. DAMAGE TO OFF-SITE PROPERTY 04 NARRATIVE DESCRIPTION	02 _OBSERVED (DATE:	_) _ POTENTIAL _ ALLEGED
There is a potential f or damage to offisite property if hazardous materials, we	ere dumided, stored, or treated on site, and there w	ras no method of containment.
01 CONTAMINATION OF SEWERS, STORM DRAINS, WWTFs	02 _ OBSERVED (DATE:)) c POTENTIAL _ ALLEGED
04 NARRATIVE DESCRIPTION There is a dotential for contamination of sewers and/or storm drains as the site	te is an active facility, and there are sewers and stor	fm drains in coe area
01 C P ILLEGAL/UNAUTHORIZED DUMPING 04 NARRATIVE DESCRIPTION	02 _OBSERVED (DATE:)) POTENTIAL _ ALLEGED
There is a potential f or Hegaliunauthorized dumping, there are no tences are	Ound the site	•
05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLE	.EGED HAZARDS	
There are no other kn ow n, pot ential, or alleged hazards		
III. TOTAL POPULATION POTENTIALLY AFFECTED: 4338		
IV. COMMENTS		
`vane		
V. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sa		
U.S. Department of the interior, G eological Survey Fopographic Map. 7.5 minute s	series, Arcade Quadrangle, N.Y. 1966, revised 1979	
Felecon note: Conversati on pe tw een Larry Killburn, Arcade Vidage Offices, and E	Echna Restivo, NUS Corporation, December 2, 1987	· !
Thew York State Gepartm ent of Health, New York State Atlas of Community Water 	at System Sources, 1982 (See Attachment)	

ATTACHMENT

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT PART 3 - DESCRIPTION OF HAZARDOUS CONTITIONS AND INCIDENTS

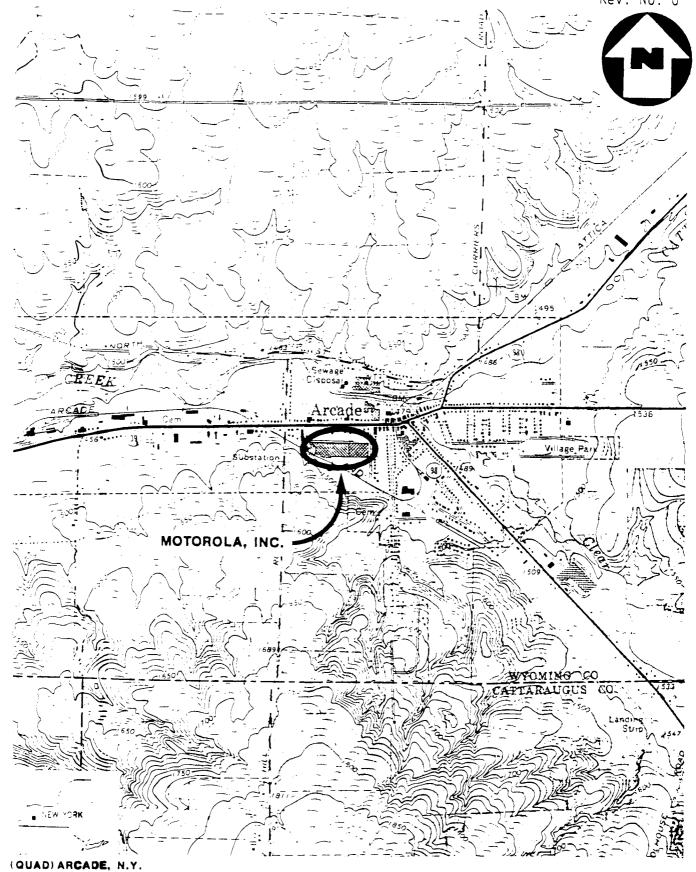
02-8710-78-PA Rev. No. 0

V. SOURCES OF INFORMATION (Cité specific references, e.g. state files, sample analysis, reports)

, \$1894 Notification of Hazardous Waste Site, Motorgia, Inc., June 9, 1981.

Teleconingte: Conversation between carry Groves, Water Commissioner of Yorkshire Fownship and Gerald Giftiand, MUS Corporation, December 3, 1987

APPENDIX A
MAPS AND PHOTOGRAPHS

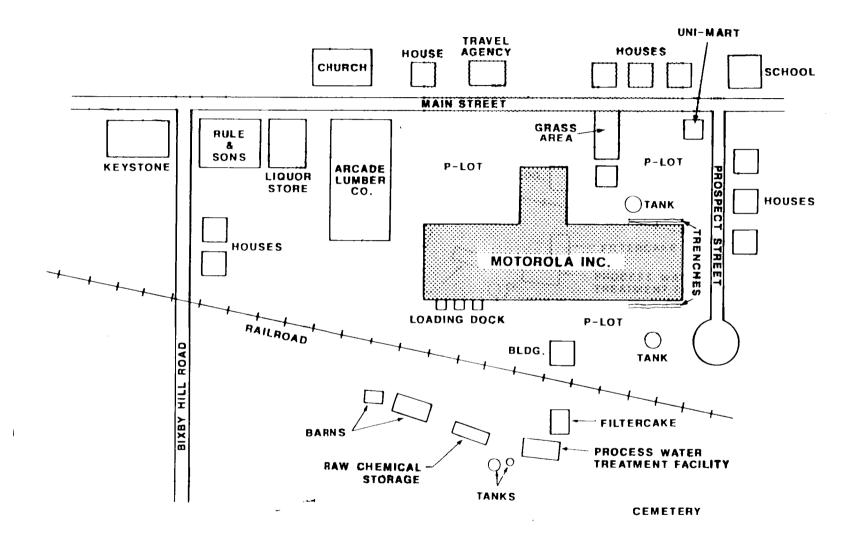


SITE LOCATION MAP MOTOROLA, INC., ARCADE, N.Y.

SCALE:1"= 2000"







SITE MAP MOTOROLA, INC., ARCADE, N.Y.

(NOT TO SCALE)



MOTOROLA, INC. ARCADE, NEW YORK 02-8710-78 NOVEMBER 10, 1987

PHOTOGRAPH LOG

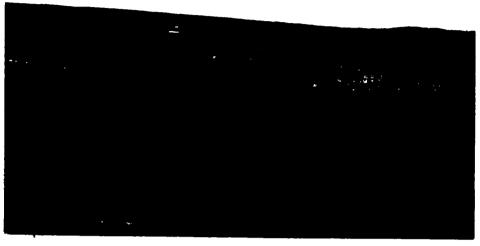
MOTOROLA, INC. ARCADE, NEW YORK 02-8710-78 NOVEMBER 10, 1987

PHOTOGRAPH INDEX

Photo Number	Description	Time
1P-14	From Bixby Hill Road, facing the back of the site. P hotographer: Robert Nies	1325
1P-15	Facing the site from Main Street, the front of the b uilding. P hotographer: Donna Restivo.	1328



MOTOROLA INC., ARCADE, NEW YORK



1P-14 November 10, 1987 1325 From Bixby HillRoad, facing the back of the site. Photographer: Robert Nies.



November 10, 1987

Facing the site from Main Street, the front of the building.
Photographer: Donna Restivo.

APPENDIX B
BACKGROUND INFORMATION

		TELECON VO
CONTROL NO	12/3/57	TIME
DISTRIBUTION:	[] 3/3/5/	0905
etween: Nelson Sch	OF:	PHONE
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3/28/81.		wi in it was received
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RCRA Pai	lity under EPA II	
notified on 8/	11/80 and their Pa	it A was received on
1/19/80. Mod	orde just recently	closed out their Foc.
long-cerm sto	age area in who	ich they were storing wastes
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T WARDS ON	are site.	
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TION ITEMS:		
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TION ITEMS:		
		



New York State Department of Environmental Conservation

MEMORANDUM

10:

Peter Buechi

FROM:

Thomas Christoffel

SUBJECT:

Motorola Sites in the Southern Tier

DATE:

September 2, 1982

Wastes were hauled from the Motorola facility in Arcade, New York, to the locations listed below. Included in these wastes were varnishes, fluxes, flux thinners, isopropyl alcohol, hydrochloric acid, phosphoric acid, toluene, xylene, trichloroethane, trichloroethylene, freon, epoxies and cutting oils. These materials are listed in literature as being mildly to moderately toxic.

The following is the list of known disposal sites for the industrial waste from Motorola in Arcade:

Previty Auto Wrecking, Galen Hill Road - Approximately 1000 drums were disposed at this site. These drums were emptied by Mr. Previty onto his property.

Tidd's Junkyard, Route 72, Yorkshire Corners - Approximately 600 drums were deposited at this site. An analysis of samples taken from this site revealed the presence of chlorinated solids, chlorinated solvents, flammable solids, acids, oil and a number of other materials. Fifty (50) percent of the barrels at Tidd's reportedly have been opened.

Town of Machias Gravel Pit, Very Road - Approximately 600 drums were placed at this site. It has been reported that half of these barrels were opened, and the oils were spread on county roads, but this has not been verified. The gravel pit is near Bird Swamp.

Norman Rogers, California Road, Delavan - 100 drums used for ${\it fil}$ on this property.

Camp Arrowhead, Route 16 - Reportedly 20 drums delivered here from a Mr. Tillinghast from Tidd's Junkyard, which were labor wife buried.

Boehmer Site, Route 16 - 13 barrels were buried 225 feet from the County Infirmary well.

An unknown quantity of waste in a ravine on the south side of Route 242, west of Route 16. Waste was spilled here.

It is recommended that these sites be investigated under the State Superfund Act, to determine their potential threat to health and the environment. Most of these sites are in the vicinity of waterways. The sites should be investigated in the order they are listed in this memo.

Mon JERCL

SEPA Notification of Hazardous Waste Site

United States Environmental Protection Agency Washington DC 20460

This initial notification information is required by Section 103(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and must which applies.

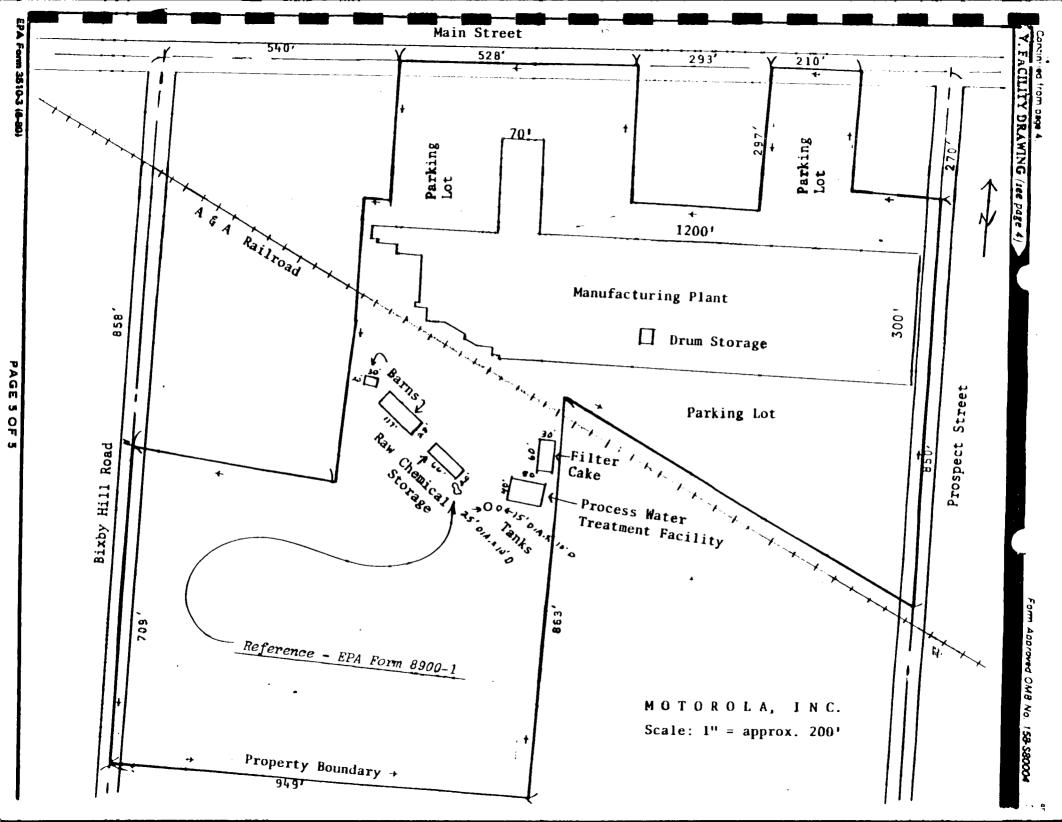
Form Approved OMB No . J00-0138 EPA Form 8900-1

Please type or print in ink. If you need additional space, use separate sheets of

NY5 000 00/ 2/7

	,			01 - 0	1		. • •	• •	
A	Person Required to Notify:			-					
	Enter the name and address of the person or organization required to notify.		me	Motorola,	Inc.				
	or organization required to notify.	Str	eet	400 Main S	Street				
		<u>Cin</u>	ν	Arcade,		State	NY	Zip Code	14009
В	Site Location:								
	Enter the common name (if known) and		me of Site	Motorola,	Inc.				
	actual location of the site.		eet	400 Main S				-	
		==	Arcado						
	NYD001931120	Cin	, Alcade	County	Wyoming	Syste	NY	Zip Code	14009
C	Person to Contact:								
	Enter the name, title (if applicable), an business telephone number of the per-		me (Last, First and T	FRIED Vought,	John H.,	Facil	ity E	ngineer	
	to contact regarding information	Pho	ne	716-492-	1234				
	submitted on this form.							-·	<u></u> -
<u> </u>	Dates of Wests Handley								
	Dates of Waste Handling:								
	Enter the years that you estimate wa treatment, storage, or disposal began	iste i and <u>Fror</u>	m(Year) 1971	To (Year)	March	1976			
	ended at the site.								
_	Waste Type: Choose the option y	rou profes	<u> </u>						
_									
	Option I: Select general waste types you do not know the general waste to encouraged to describe the site in Ite	VIDE OF SOLL	FC00 VOIL 050	t mesource (This option i Conservation (40 CFR Pa	and Re	ble to p covery	ersons fam Act (RCRA)	iliar with the Section 3001
	General Type of Waste: So	urce of Wi	isto:		ype of Wast				
			the appropriate	EPA has as	ssigned a for	ur-digit r	number	to each ha	zardous waste
	overlap. Check each applicable	AUS.		appropriate	e regulation: four-digit n	s under umber i:	Section	3001 of R	CRA. Enter the
	category.			the list of !	hazardous w	astes an	d codes	s can he ob	tained by
	1 □ Organics	m seinin.		located.	the EPA Reg	lion serv	ring the	State in w	thich the site is
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		☐ Textiles		F006]		
	· · · · ·	☐ Fertilize		ļ	\				
		☐ Paper/F	•						
		☐ Leather		ļ				-	
	7. Bases 7.		eel Foundry		 - -	. .		— ——	
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;	Waste Quantity:	Facility Type	Total Facility Waste Amount
	Place an X in the appropriate boxes to	1. 🗆 Piles	810
	indicate the facility types found at the site.	2. Land Treatment	cubic feet 810 C
	In the "total facility waste amount" space give the estimated combined quantity	3. 🗆 Landfill	gailons
	(volume) of hazardous wastes at the site	4. 🗆 Tanks	Total Facility Area
	using cubic feet or gallons.	5. 21 impoundment	square feet 3450 S
	In the "total facility area" space, give the estimated area size which the facilities	 Underground Injection Drums, Above Ground 	
	occupy using square feet or acres.	8. Drums, Below Ground	âcres
		9. Other (Specify)	
 ì	Known, Suspected or Likely Releases	to the Environment:	
	Place an X in the appropriate boxes to indic or fikely releases of wastes to the environm	ate any known, suspected	☐ Known ☐ Suspected ☑ Likely ☐ None
	Note: Items Hand I are optional. Complete hazardous waste sites. Although complete	ng these items will assist EPA and State ng the items is not required, you are end	and local governments in locating and assessing couraged to do so.
ł	Sketch Map of Site Location: (Option	See attached Plot Plan	
	Sketch a map showing streets, highways, routes or other prominent landmarks near	see attached Flot Flan	
	the site. Place an X on the map to indicate		· •
	the site location. Draw an arrow showing the direction north. You may substitute a		•
	publishing map showing the site location.	and the second	
			Section 1 Section 2 Secti
	,		
	Description of Site: (Optional)		
	Describe the history and present conditions of the site. Give directions to	This material was sludge w	hich was periodically
	the site and describe any nearby wells.	collected from a settling	
	springs, lakes, or housing. Include such information as how waste was disposed	general effluent from Moto	
	and where the waste came from. Provide any other information or comments which		•
	may help describe the site conditions.	operations flowed, prior to	
	Motorola's Process Water Treat	ment Facilities, pursuant to	the conditions of our NPDES
	Permit No NY 000 2267, origina		
	plans, approximately 30 yd3. o	f earth and sludge were except	vated from the area and
	disposed of in a manner approve		
	Conservation. This took place		
	the area where the material had	d been deposited has been fi	lled in, graded, and seeded
	with grass.		
	Signature and Title:		
	The person or authorized representative	Name Motorola, Inc.	
	(such as plant managers, superintendents, trustees or attorneys) of persons required		Ø Owner, Present
	to notify must sign the form and provide a	Street 400 Main Street	Owner, Past
	mailing address (if different than address in item A). For other persons providing		□ Operator Present
	notification, the signature is optional.	City Arcade, State	NY Zip Code 14009
	Check the boxes which best describe the relationship to the site of the person	MAN COLOR	☐ Other
	required to notify. If you are not required to notify check "Other".	Signature (me	
	- Comy and Other .	Aymond A. Emery, F	Mant Manager



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FORM

HAZARDOUS WASTE PERMIT APPLICATION

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B. REVIS	ED APP	LICATI	ON (p	lace an	"X" below	and co	mple	ete Itai	m fab	ove;					2. 74	CILIT	Y HAS	<u> </u>			
III. PROC	III. PROCESSES - CODES AND DESIGN CAPACITIES A. PROCESS CODE - Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are precised enter the code for the code of the same provided by the same provided to the																				
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II. PROCESSES (continued)	ii		P	२०८	ESS	ES	(con	rinued	1
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C. SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESSES (code "TO4"). FOR EACH PROCESS ENTERED HERE The hydrogen ion concentration of the applicable effluent streams is adjusted to an alkalinity which will effect the precipitation of the insoluble metal hydroxides (Line 1, T04, 545,000 liters/day). The effluent is subsequently accumulated (Line 2, T01, 545,00) liters/day), coagulated and agglomerated with organic and inorganic additives to enable clarification of the effluent stream(Line 3, TO4, 545,000 liters/day), in preparation for a polishing filtration process (Line 4, TO4, S45,000 liters/day). The resultant filtrate is neutralized (Line 5, TO4, 545,000 liters/day), and accumulated for blending of the neutralizing compounds with the effluent stream (Line 6, T01, 545,000 liters/day, then discharged to a surfac waterway (Line 7, T04, 545,000 liters/day). The resultant filter cake and sludges are dewatered with a filter press (Line 8, T04, 900 liters/hour). The objective of this treatment is to remove heavy metals and other contaminents, such as, but not limited to, oil and grease, suspended soli and surfactants, from a Point Source Discharge operating under and NPDES Permit No. NY 000 2267.

Also, cadmium and copper electroplated ware, emerging from cyanide-containing plating baths, is immersed in a chlorinated treatment wash (Line 9, TO1, 6,800 liters/hour). The cyanidecontaminated treatment wash is allowed reaction time to complete the chemical destruction of cyanides (Line 10, T01, 108,800 liters/day). The objective of this treatment is to chemically destroy the cyanides used in electroplating processes, to prevent their release into the environment in the effluent streams described above.

IV. DESCRIPTION OF HAZARDOUS WASTES

- A. EPA HAZARDOUS WASTE NUMBER Enter the four-digit number from 40 CFR, Subpert D for each listed hezardous waste you will handle. If you handle hazardous wastes which are not fisted in 40 CFR, Subpart O, enter the four-digit number(s) from 40 CFR, Subpart C that describes the characteristics and/or the toxic contaminants of those hezardous wastes.
- B. ESTIMATED ANNUAL QUANTITY For each listed weste entered in column A estimate the quantity of that weste that will be handled on an annual basis. For each characteristic or toxic contaminent entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.
- C. UNIT OF MEASURE For each quantity entered in column 8 enter the unit of measure code. Units of measure which must be used end the appropriate

ENGLISH UNIT OF MEASURE CODE	METRIC UNIT OF MEASURE CODE
POUNOS	KILOGRAMSK
TONS	METRIC TONS

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:

For listed hazardous waste: For each fisted hazardous waste entered in column A select the code/s/ from the first of process codes contained in Item III to indicate how the waste will be store" treated, and/or disposed of at the facility.

For non-listed hazardous wastes: For each characteristic or toxic contaminent entered in column A, select the code(s) from the list of process codes contained in Item III to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant,

Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER - Hezerdous wester that can be described by nore than one EPA Hazardous Weste Number shelf be described on the form as follows:

- 1. Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns 8,C, and D by estimating the total annual quantity of the waste and describing all the process as to be used to treet, store, and/or dispose of the weste,
- In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column 0(2) on that line enter "included with above" and make no other entries on that fine.
- Repeat step 2 for each other EPA Hazardous Waste Number that can be used to describe the hazardous waste.

EXAMPLE FOR COMPLETING ITEM IV (shown in line numbers X-1, X-2, X-3, and X-4 below) -- A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-disted wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

H			B FCTIMATER AUDITAL		OP MEA-		O. PROCESSES													
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Continued from the front.		
IV. DESCRIPTION OF HAZARDOUS WASTES (co	intinued	
E. USE THIS SPACE TO LIST ADDITIONAL PRO	CESS CODES FROM ITEM D(I) ON PA	AGE J.
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/	F6:A 55 F6:A 56	
SEA LO NO (antes from page 1)		
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FNYD00193112036		
V. FACILITY DRAWING		
All existing facilities must include in the space provided on VI. PHOTOGRAPHS	page 5 a scale drawing of the facility (see instr	ructions for more detail).
All existing facilities must include photographs (eer.	ist or ground-level) that clearly delineat	e all existing structures; existing storage,
treatment and disposal areas; and sites of future sto	rage, treatment or disposal areas (see inst	tructions for more detail).
VII. FACILITY GEOGRAPHIC LOCATION LATITUDE (degrees, minutes, & seconds)		CITION (dagger minutes & constant
	CON	GITUDE (degrees, minutes, & seconds)
4 2 3 1 5 4 0		017 8 2 5 3 7 6
VIII. FACILITY OWNER		
A. If the facility owner is also the facility operator as skip to Section IX below.	listed in Section VIII on Form 1, "General Inf	ormation", place an "X" in the box to the left and
B. If the facility owner is not the facility operator as I	istad in Castian VIII on Form 1	. Anthonius Issues
		· · · · · · · · · · · · · · · · · · ·
1	LITY'S LEGAL OWNER	Z. PHONE NO. (area code & no.)
E		11 19 - 11 19 - 11 19
1. STREET OR P.O. BOX	4. CITY OR TOWN	S. ST. S. ZIP CODE
F	Ğ	
IX. OWNER CERTIFICATION	45 118 14	49 41 42 42 1
I certify under penalty of law that I have personally	examined and am familiar with the info	rmation submitted in this and all attached
documents, and that based on my inquiry of those is submitted information is true, accurate, and comple	ndividuals immediately responsible for o	btaining the information, I believe that the
including the possibility of fine and imprisonment.	ne. I am aware that there are pgmrtcant p	omaines for submitting raise information,
S. NAME (print or type) Joseph C. Rygiel, Vice President &	M. SIGNATARE	C. DATE SIGNED
Director of Alternator Business	Ment (U) Karal	11-14-80
X, OPERATOR CERTIFICATION	May	1/1-14 00
certify under penalty of law that I have personally	Promined and am families with the infe	omation cultimisters in this and all assaulted
documents, and that based on my inquiry of those is	ndividuals immediately responsible for o	btaining the information, I believe that the
submitted information is true, accurate, and comple including the possibility of fine and imprisonment.	te. I am aware that there are significant p	penalties for submitting false information,
1		
A. NAME (print or type)	8. SIGNATURE	C. DATE SIGNED

EPA Form 3510-3 (8-80)

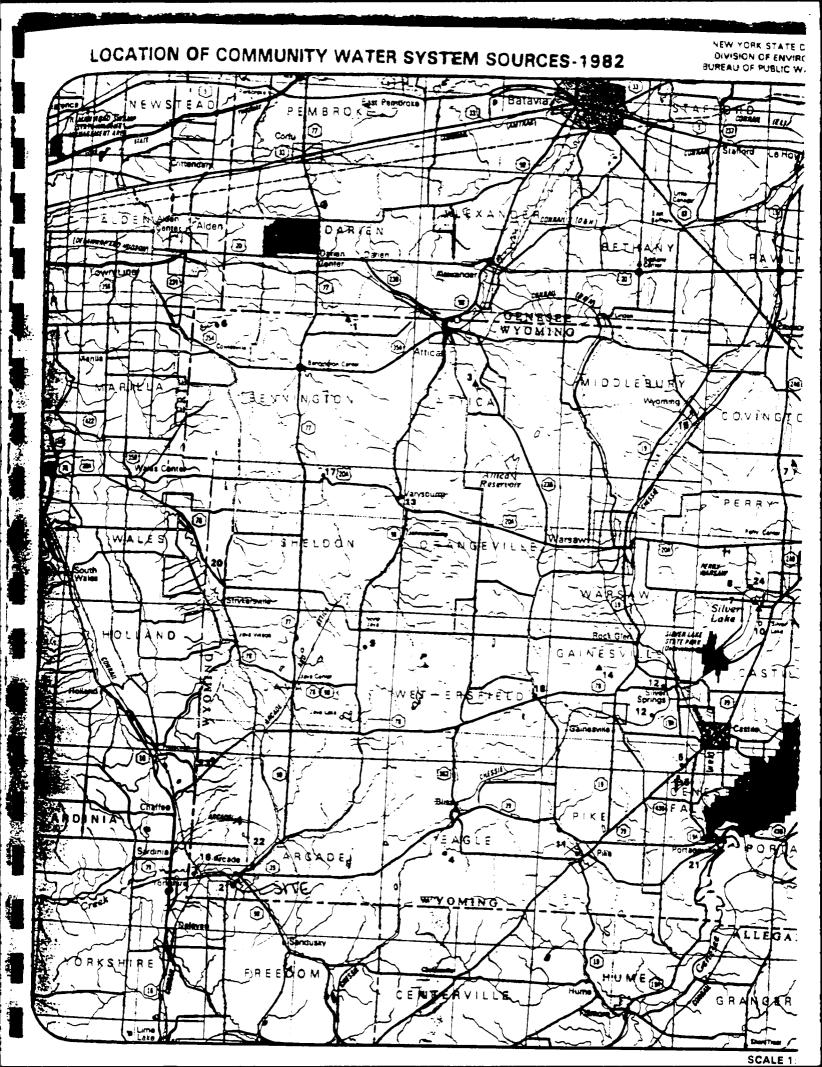


ISION OF ENVIRONMENTAL PROTECTION

BUREAU OF PUBLIC WATER SUPPLY PROTECTION

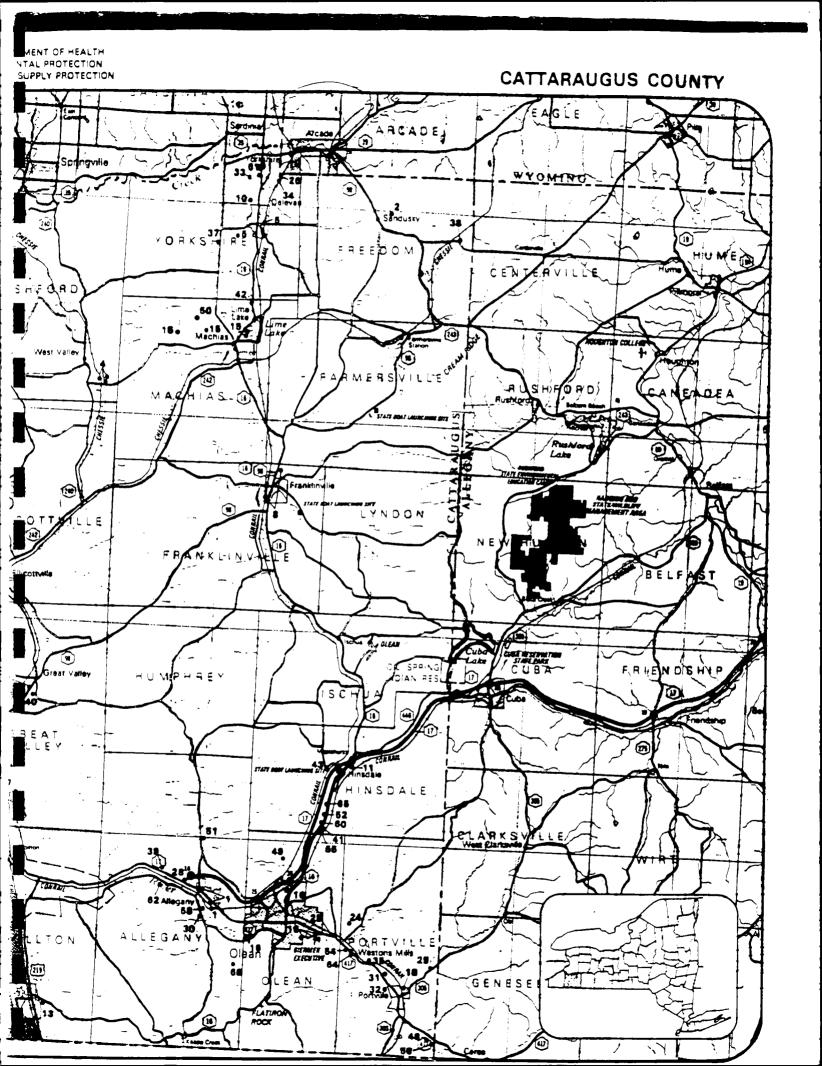
WYOMING COUNTY

10 #0	COMMUNITY WATER SYSTEM	POPULATION	SOURCE
Munic	cipal Community		
1	Akron Village (See Erie Co. Pg. 6).		Akron Reservoir
2	Arcade Village (See also No. 2 Cattaraugus Co, Page 4)	2052.	, Wells Craw Creek Reservoir
3	Attica Village.	364.	.Weils
4	Attica Village. Bliss Water Supply. Castile Village.	1135.	Wells
כ			
6	Highland Glens.		Take LaGrange, Stiver Lake
7	LeRoy Village (Genesee County Pg. 6 Mt. Morris Village (Livingston Co.	Pg 10)	Silver Lake
8	Mt. Morris Village (Livingston Co. North Java Water District	295	, Wells
9	North Java Water District. Perry Village.	. 3501	Silver Lake
10	Perry Village. Pike Village Water Supply.	367	, we it's
11	Pike Village Water Supply	801	, Wet is
12	Varysburg Water District #1	310	Wells
14	Varysburg Water District #1	3594	. Uatra Creek
15	Warsaw Village. Wyoming Public Water Supply	507	.we115
Non-	Municipal Community		
		80	. We I I 5-
16	Birchwood Court. Buffalo Hill Trailer Park.	65	.Wells
17	Buffalo Hill Trailer Park. Hermitage Meadows Mobile Home Park	48	.We115
18 19	Hermitage Meadows Mobile Home rain Hilltop Acres Inc.	42.	, W61 (S
20	Hilltop Acres Inc. Hogan's Apartments	, 40	Wells
21	Hogan's Apartments. Letchworth Court Mobile Home.	, , ,42, ,	, NOTES Walter
22	Open Gate Trailer Court		Upils
23	Open Gate Trailer Court	35	Wells
24	Triton Valley Estates		



CATTARAUGUS COUNTY

10 NO	COMMUNITY WATER SYSTEM	POPULATION	SOURCE
Munic	cipal Community		
1	Allegany Village	2200	. We ! ! \$
2 3	Cattaraugus Village	1200	. Wells (Springs)
4 5	Crystal Water Company (West V. Delevan V il la ge	alley)600	, We 1 1 5
6	East Randolph Village	1200	.Weils
7 8	Ellicottville Village Franklinville Village	1100	.Wells
9	Gowanda Village	3500	.Paint Peter Brook Reservoir, Wells
10 11	Grove St reet Water Supply Hinsdale Water District		
12	Jimersontown Resettlement	250	.Wells
13 14	Limestone Village Little Valley Village		
15	Machias Water District	1000	.Wells (Springs)
16 17	Olean City		
18	Portville Village	1300	.Wells
19 20	Randolph Village		
21	South Dayton Village	700	. We I I S
2 2	Steamburg Resettlement Area.	200	. ₩e1 t. s
Non-A	Aunicipal Community		
23	Allegany State Park	45	.Well.s
24 25	Barbers Trailer Ranch Burton's Trailer Court	50 . .	.Wellis
26	Chartie Browns Trailer Court,	NA	. We i Fig
27 28	Chase's Trailer Park Colonial Village		. We I I's
29	Country Corners Trailer Park,	80	.Wells
30 31	Country Squire Mobile Court. Deans Trailer Court		
32	Deer Pen Mobile Home Park	24	. Weills
33 34	Dumar Trailer Court Elliott's Apartments	, . , NA	, We I 1135 . We I 1135 a
35	Five Acres Trailer Park	23	. We I II s
36 37	Forestry Camp 2	60 35	. We ! 11:55
38	Freedom Park	14	.Well's
39 40	Green Valley Estates	NA	. Wet lis
41	Happy Da ys Mob ile Court	33	.Wellis
42 43	Highland Park Village	150	. We ! !! S
44 45	Hoag's Mobile Manor Sec # 1.	24	. We \$
46	Hoag's Mobile Manor Sec # 2. Hoag's Mobile Manor Sec # 3.	30 130	.Weilis
47 48	J.N. Adam Developmental Center Joles Mobile Home Court.	r 550	. We I II's
49	Kent's Trailer Park	20	. We ! !! \$
50 51	Lazy B Ranch	45	Well's
5 2	Longacres Mobile Court. Mac Haven Mobile Park.	15	Wells
53 54	Muzi's Trailer Park	17	UATHE
5 5	Pines Trailer Park. Pleasant Valley Mobile Court.	7.6	Wellie
5 6	Prosser Momes.	3.6	Wells
57 58	Seneca Trailer Park. Sherwood Mobile Home Court.	5.lt	Valite
5 9	Statomas irmiler Park	11.2	UAIHE
61	Sweet Mountain Trailer Park. Tyin Lakes Mobile Homes.	3300	Liaine (
62 63	Valley view Estates	20	Waile
64	Weber's Mobile Home Court. White Birch Trailer Court.	<i>-</i>	time ii m
6 5 6 6	WILLS CONTROLL MODILE CONTR	24	\ ?
00	Woodiswn Mobile Home Court.	25	, WO FITS



MOTOROLA, INC.

Lat: 42°31'58''W Long: 78°25'43'W

Data with of Dataset: Wigh. Number of Records = 6

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PRELIMINARY ASSESSMENT OFF SITE RECONNAISSANCE INFORMATION REPORTING FORM

Date: NOV. 10, 1987	
Site Name: Motorcia, Inc.	TDD: <u>02-8710-78</u>
Site Address: 400 Main St. Street, Box, etc.	
Hrcade	
Gounty Vack	
State 9012	
NUS Personnel: Name Donna Restivo Bob Nies : Hikand DRIIBIBO	Discipline Toxicologist Geologist
Weather Conditions (clear, cloudy, rain, snow, etc.) Partly Cloudy, 3-35° F	··.):
Estimated wind direction and wind speed: 5 m	no Westerly
Signature: John C. Flativo Countersigned: (Shels Min	Date: 11/10/87 Date: ((//0/8 >

Site Na n	ne: <u>Motorola, Inc.</u>	TDD: <u>02-871</u>	0-78
Site Ske	tch:		
India Prov	cate relative landmark locations (str vide locations from which photos are	eets, buildings, streams, etc.). taken.	
	t.		
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Cemetery	tields	1P.14	
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and tank by	P-lot		
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THE TOTAL	17 thus trained thurch	· .	
Signature:	Dona Rostiro	_ Date:	
Countersig	gned: Mobile In. 11	_ Date: 11/16/87	

Date: Nov. 1987
Site Name: Motorola, Inc. TDD: 02-8710-78
Notes (Periodically indicate time of entries in military time):
1325 Motorcia appears to be mostly officer
although in the rear is a warehouse-like
hui Nim
are trenches on both sides of the
warehouse bldg; he one in the back contained
warehouse bldg; none in the back contained
The area around Motorola is a
Mixed residential & commercial area.
There is fields & a cemetery in the back.
There are fire hydrants on the street.
1330 There is a water (?) tank behind the
building & a compressor (?) tankinthe front.
The compressor tank had ice around it's
pipes. The site is an active facility
Signature: Formal Rosturo Date 10/10/27
Countersignature: Achel 91 Min Date: 11/0/87

Date:	
Site Name: Motorola, Inc.	
Notes (Cont'd):	
Attack additional sheets if necessary. Pro and countersignature on each.	vide site name, TDD number, signature,
Signature:	Date:
Countersignature:	

Date: NOV. 10, 1987	
Site Name: Motorola, Inc	TDD: <u>02-8710-78</u>
Photolog:	
Frame/Photo Number Date Time 10-14 11/10/87 1325 1P-15 11/10/87 1328	Photographer Description B. Nies From Bixby Hill Rl Back of site D. Restivo Front of building
·	- TOIR OF DOING!
Attach additional sheets if necessary. Fand countersignature on each.	Provide site name, TDD number, signature,
Signature: Johna Pestur	Date: 11/10/87
Countersignature: Hobel 1/1-	Date: (1/10/0)



MOTOROLA INC.

Automotive Products Division

October 10, 1983

Mr. Conrad Simon
Director, Air & Waste Management Division
U. S. Environmental Protection Agency, Region II
26 Federal Plaza
New York, NY 10278

Re: Your Request for Information, Closure Plan - NYD 001931120

Dear Mr. Simon:

This letter is in reply to your recent Request for Information, addressed to my attention. I am enclosing a copy of Motorola's Closure Plans for our waste storage areas, as well as Closure Cost estimates, as they were previously filed with your office under our Corporate Financial Test Letter.

There was no "Certification of Answers to Request for Information" document enclosed with your letter. Consequently, in a telephone conversation inquiring about this omission, I was told by a Miss Harper, at (212)- 264-3408, to disregard that paragraph in your letter. Therefore, we are not including that form with this letter.

We trust that this satisfies your needs. If there are any further questions about this matter, please call me at (716)-492-1234.

Sincerely yours,

John H. Vought, Facility Engineer

10/18

Buken F



Automotive Products Division

CLOSURE PLAN - HAZARDOUS WASTE STORAGE AREA

DESCRIPTION

The design capacity for the Storage Area is one hundred twenty (120) 55 gallon drums. However, in the event of cassation of all manufacturing activities, it is anticipated that the collection of all in-plant satellite waste accumulations would temporarily exceed that quantity. Therefore, the closure plan encompasses the disposal of one hundred sixty (160) drums of possible waste material (two truckloads). The lack of available space effectively prevents the possibility of a major expansion of the facility at this location. The life of the Storage Area is estimated to be 50 years.

CLOSURE

After proper disposition of all containerized hazardous waste, the Storage Area would, upon closure, mainly require decontamination of the flooring to remove any hazardous residues remaining from spills or accidents within the facility. The area surrounding the facility is concrete. Therefore, no post closure further considerations in or around the facility should be needed.



Automotive Products Division

CLOSURE PLAN - FILTER CAKE STORAGE AREA

DESCRIPTION

The Filter Cake referred to is a waste product of the Process Water Treatment Facility, which treats Metal Finishing wastewaters by clarification and filtration, under NPDES Permit No. NY 0002267, issued jointly by Region II of the USEPA and the New York State Department of Environmental Conservation. The Permit expires April 1, 1987. The waste material is stored out of doors, in plastic containers, in an area adjacent to the Treatment Facility building. It is retained until sufficient quantity to warrant trucking to an approved secure landfill is accumulated. The design capacity is for an amount of containerized waste equivalent to one truckload (approx. 40,000 lbs.).

CLOSURE

After proper disposition of all containerized waste, the Storage Area would, upon closure, mainly require decontamination by means of removal of the top 12 inches of the fill material, and suitably disposing of that material in an approved secure landfill. Since the waste as it is generated is in a stable condition, no post closure further considerations in or around the area should be needed.



Automotive Products Division

CLOSURE COSTS - HAZARDOUS WASTE STORAGE AREAS

SUBPART A - IN-PLANT HAZARDOUS WASTE STORAGE AREA 100.1 Disposal of (2) truckloads (160 drums) of waste from HWSA, including transportation 100.2 Cleanup and decontamination of HWSA	\$7,800 1,600
SUBPART B - PROCESS WATER TREATMENT FACILITY, FILTER CAKE STORAGE AREA	
Disposal of (1) truckload (40,000 lb.) of containerized filter cake from FCSA	2,800 300 1,200
containerized lifety for above 101.2 Handling (loading truck) for above	1,500
101.2 Handlins (1) 101.3 Transportation for above	3,360
101.4 Cleanup of FCSA 101.5 Disposal of rubble and fill from demolition	1,100
101.5 Disposal of Table 101.6 Transportation for above	·
	ī
SUBPART C - ADMINISTRATION AND PROFESSIONAL	
SUBPART C - ADMINISTRA	2,400
102.1 Arcade Plant Administration 102.1 Registered Professional Engineer - pre- planning, site work, and final approval	3,000 \$25,060
20% contingency	5,012
TOTAL	\$30,072

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	•	INTERN	AL CHECKLIST				
1.	Interim Regu	latory Requir	ements				
	A. (1) FORM	1 MISSING					
	(2) FORM	3 MISSING					
	B. POSTMARK	after NOVEMB	ER 19, 1980	•	<u> </u>	Valid	_
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MOTOROLA INC.

Automotive and Industrial Electronics Group

July 6, 1984

Ernest A. Regna Chief, Solid Waste Branch Air and Waste Management Division U.S. Environmental Protection Agency, Region II 26 Federal Plaza New York, NY 10278

Motorola, Inc. Re:

EPA I.D. No. NYD001931120

Dear Mr. Regna:

With this letter we are enclosing a completely revised closure plan for our facility at 400 Main St., Arcade, NY 14009. We would like to thank you for the extension of time granted for us to fulfill these requirements.

1 Chouse to considering

It is our intention to fully comply with all the requests in your letter dated May 15, 1984. Consequently, please do not hesitate to contact me at 716-492-1234 if there are any questions, or if we have inadvertently failed to address any of the issues involved. We trust this meets with your approval.

Sincerely yours,

MOTOROLA, INC.

John H. Vought

Facility Engineer

Dr. Baker-R. Emery G. Wallace



MOTOROLA INC.

Automotive and Industrial Electronics Group

CLOSURE PLAN

FACILITY EPA ID NO.:

NYD001931120

Owner/Operator:

Motorola, Inc.

Address & Phone:

400 Main St., Arcade, NY 14009

716-492-1234

Facility Address:

400 Main St., Arcade, NY 14009

Facility Operation:

Generator-Storage Facility

Facilty Contact:

John H. Vought, Facility Engineer

CLOSURE (GENERAL) 1

The purpose of maintaining a closure plan and a closure estimate is to ensure that, should operations cease at this facility, the facility will be closed in a manner that will minimize the need for further maintenance and eliminate the possibility of hazardous waste, hazardous constituents, leachate, contaminated rainfall, or waste decomposition products from post-closure escape into the ground water, surface water, or atmosphere. The plan will ensure that all steps have been taken to eliminate any significant threat arising from these wastes to human health or the environment.

Motorola, Inc. will maintain an on-site copy of the approved closure plan and all revisions to the plan until the Certification of Closure Completeness has been submitted and accepted by USEPA, Region II. Motorola, Inc. will notify the Regional Administrator at least 180 days prior to the date final closure is expected to begin. It is expected that the actual date of this occurence will not be before January 1, 2084. Closure will begin at a time not more than 30 days after the final acceptance of waste. Within 90 days after

the final acceptance of waste, all waste will be removed and disposed of according to accepted practices. All closure activities will be completed within six months of receiving the final volume of wastes, unless due to unusual contingencies, the United States Environmental Protection Agency's (USEPA) Regional Administrator (RA) approves a longer period. Closure will be completed, from the standpoint of the Technical Requirements, when the closure has been certified, in accordance with the closure plan, by a registered Professional Engineer (see section entitled Closure Certification). Should closure become imminent, the closure plan will be sent to the USEPA RA at least six ,onths before closing is initiated. The RA will modify, approve, or disapprove the plan within three months of it's receipt and provide this facility the opportunity to submit written comments. The expected scenario for closure would be as follows, once closure is anticipated:

- 1). Closure plan submitted to USEPA for review
- 2). USEPA approves plan: 3 months from date of #1
- 3). Final date wastes produced at facility: 6 months from date of #1
- 4). Final date for removal and disposal of wastes: 9 months from date of #1
- 5). Final date for decontamination of facility: 9 months from date of #1
- 6). Closure completion (as certified by registered Professional Engineer): 12 months from date of #1

Partial closure was not considered in this plan inasmuch as the provisions incorporated into the Federal Regulations were primarily intended for landfills and surface impoundments, in which portions of landfill sites are expected to be capped (closed) as they are filled, or impoundments are closed during the "normal course of operations". In addition, this closure plan does not include any on-site pre-treatment, inasmuch as all wastes will be removed and disposed of. If any of the assumptions about the conditions of the facility, or any facility procedures change, which change could impact the closure plan, the plan and estimates will be revised to reflect those assumptions and procedures.

Page 3 CLOSURE PLAN EPA ID NO. 001931120

ESTIMATE OF MAXIMUM EXTENT OF OPERATIONS

Maximum closure inventory is a hypothetical inventory incorporating the maximum amount of waste in storage at any time in the life of the facilty, including all inventory that will presumably accumulate during normal conditions. The plan and estimate does not, however, include provisions for highly unusual conditions. If unusual circumstances are encountered which cause the actual operations to exceed the maximum expected extent of operations, the plan will be re-examined to see if the estimates should be increased, or if not, that the change in conditions was caused by an unlikely contingency, and this fact will be justified to the USEPA RA, without revision to the plan and estimate.

The manufacturing facility is approximately 350,000 ft², with the waste handling and storage areas approximately 2,600 ft² in size (see Attachment A). The waste storage areas consist of (1) drum storage area of 800 ft², in the factory proper, and (1) outdoor containerized waste storage area for filter cake, which is 1,800 ft² in size. The wastes are primarily electroplating process wastes, halogenated solvent wastes, and lesser quantities of assorted other wastes, as are enumerated in our August 1, 1980 application for Interim Status, and the accompanying Attachment B, "Estimate of Wastes on Hand at Closure".

The methodology used to obtain the hypothetical figure explained above was to select the highest inventory of each waste stream over the last twelve months, since this would most accurately reflect the current level in our manufacturing operations at any one time, as evidenced by our manifested waste shipments from this site. See Attachment B.

Page 4
CLOSURE PLAN
EPA ID NO. NYD001931120

DISPOSAL OF WASTES

As previously stated, all wastes will be removed and disposed of within three months from the initiation of closure. In addition to the maximum amount of wastes held in drums and other containers, all affected facility equipment (pumps, tanks, hoses, tools, etc.) will be decontaminated by removing all hazardous waste and residues (cleaning wastes will be retained and containerized for disposal), or the equipment and appurtenances themselves will be physically, removed and disposed of as hazardous waste. This would include concrete flooring in the factory drum storage area, if testing proves it necessary, and any soil which might be found contaminated in the filter cake storage area. Prior to removing soil, a limited number of soil analyses would be made to determine the extent of soil contamination, if any. These tests (EP Toxicity, metals, or organics, as determined by the Professional Engineer) are included in the plan, as well as, for the sake of worst case conditions. the physical removal of some soil to an acceptable secure landfill site. The volume of soil to be disposed of is determined by the potential surface area affected, and the depth of the contamination. The total volume is then expressed as cubic yards, and for cost purposes, as tons. No consideration will be given at the time of closure, to building a landfill on-site to dispose of wastes.

CLOSURE CERTIFICATION

Two certifications will be provided as a final step in the technical closure requirements. First, Motorola, Inc. will certify that closure of this facility has been done in accordance with this closure plan. Additionally, an independant Professional Engineer will certify that closure has been done, to the best of his knowledge, in accordance with the specifications of the approved closure plan. It is estimated that the selected Professional Engineer will make bi-weekly inspections during closure, and additionally, be on site during any critical periods of closure.

Page 5 CLOSURE PLAN EPA ID NO NYDO01931120

CLOSURE ESTIMATE

The goal of the closure cost estimate is to ensure that if at any time, this facility had to begin closure for reasons unrelated to a catastrophe at the site, the costs of the closure would not exceed the cost estimate. The estimate does not have the kind of detail and accuracy appropriate to a contractor preparing a bid for a job, inasmuch as this closure is for a hypothetical task that is to take place in the rather distant future.

With regard to rendering the facility "non-hazardous", estimates are of primarily two types - the costs for decontamination of equipment, and those for removal of wastes, contaminated materials, and waste cleaning fluids and residues. Costs for decontamination of equipment are based on the knowledge and experience of this facility's Facility Engineer. Costs for disposal of wastes (including contaminated equipment, cleaning fluids, and residues) are based on the prevailing disposal costs experienced in the present day-to-day operations. Estimates for contaminated soil are based on prevailing charges per ton to a secure landfill.

The estimates for the Professional Engineer's certification are based on six months of service, with visits approximately twice a month, and an additional four visits during critical periods, with each inspection lasting four hours, plus travel time. Inasmuch as all wastes will be removed and the facility completely decontaminated, the inspection services are not expected to be needed subsequent to completion of closure.

The estimate contains a contingency factor to account for unforeseen events that might increase costs. Utilizing the standard engineering contingency range of 15-25%, the middle limit of 20% was utilized, for complete coverage.

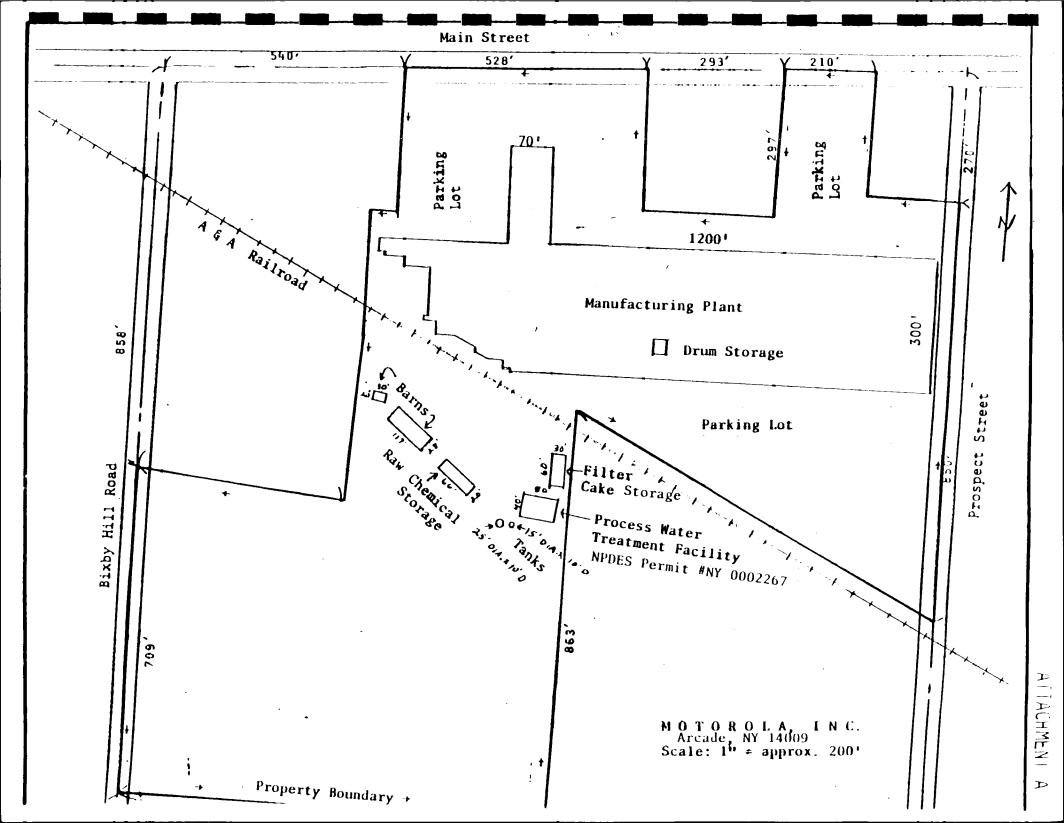
Page 6 CLOSURE PLAN EPA ID NO. NYD001931120

Revisions will be made to the cost estimate whenever changes are made in the closure plan, if required. As an example, if the closure plan estimate of waste inventory is exceeded during normal operation, the plan will be revised, as well as the estimate. In addition, assuming that hazardous waste disposal/contamination cost increases are consistent with overall inflation, the closure cost estimate will be updated annually by utilizing an inflation factor which is calculated by dividing the latest published annual Deflator by the Deflator for the previous year, utilizing annual data.

Prepared by: John H. Vought, Facility Engineer

Motorola, Inc. 400 Main St., Arcade, NY 14009

July 5, 1984



ESTIMATED WASTE ON HAND AT CLUSURE

WASTE DESCRIPTION	NO. OF DRUMS	EPA WASTE NO.	DISPOSAL COST	ITEM TOTAL	
1,1,1-trichloroethane	2	F002	\$ 24	\$ 48	
<pre>1,1,1-trichloroethane (non-recoverable)</pre>	2	F002_	83	166	
Trichloroethylene	2	F001	30	60	
Acetone	2	F003	30	60	
Spent hydrochloric acid	. 2	D002	41	82	
Waste alkaline liquid (sodium hydroxide)	12	D002	40	480	
Waste alkaline liquid sludge (sodium hydroxide)	, 2	D002	83	166	
Halogenated solvents (Freons)	17	F002	83	1411	
Flux & thinner (isopropyl alcohol)	5	D001	70	350	
Isopropyl alcohol	1	D001	43	43	
Flux sludge (Still bottoms)	2	F002	83	166	
Methylene chloride	10	F002	83	830	
	59 Drums			\$3862 Drum Tot Cost	a I
Filter cake	15 tons	F006		3100	
				\$6962 Grand To	tal

SCHEDULE FOR FINAL CLOSURE

HAZARDOUS WASTE STORAGE AREA (HWSA) - FILTER CAKE STORAGE AREA (FCSA)

									Da	iys									
	•	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
l.	Receive approval of closure plan	xxxx		ļ											1				
2.	Collect & process all drummed waste in facilty		XXX																
3.	Manifest drums to TSDF		X)	хх	Í	ĺ			-	j				1		1			ļ
4.	Dismantle & decontaminate HWSA			xxxx	1	1	}	Í	•										
	Analyze washwater for toxics & organics				XXXX	XXXX													
	If high, repeat decontamination & re-analyze						XXXX	XXXX											
7.	Process all remaining wastewater				xxxx	XXX	}							Ì					
	Manifest (1) truckload of filter cake to TSDF		i			X)	хх												
	Sample & test soil at FCSA for EP Toxicity, organics						XX	XXXX	XX										
10.	Excavate soil	ĺ							XXX	XXX	4								
	Manifest soil to TSDF (secure landfill)										XXXX								
12.	Repeat Item 9			İ								XXXX	XXXX				- [}	
13.	Replace excavated soil with hard fill, level to grade													xxxx					
	Submit certification to Regional Administrator														xxxx	xxxx			

	ITEM		COST
1.	Final Inventory Disposal of Drummed		
	Waste (Attachment B) ₁		3,860
2.	Dismantling & Decontamination of HWSA		
	Wastewater analysis (floor wash and rinsate)	300	
	Wastewater disposal (approx. 200 gal.);	160	
	Labor & miscellaneous - dismantle fence, decontaminate floor (48 man hours)	960	
			1,420
3.	Disposal of 1 Truckload (40,000 lb.) of		
	Bagged Filter Cake from FCSA2	2,800	
	Handling (loading truck) for above	300	
	•		3,100
4.	Soil Analysis & Disposal - FCSA		
	<pre>(8) tests for EP Toxicity (4 initial, 4 final), at \$250 each</pre>	2,000	
	Test for organics, at discretion of P.E.	2,000	
	Excavate FCSA (30 x 60 x 1' deep = 67 yd ³), load dirt into dump trailer for disposal	1,500	
	Disposal of excavated dirt (63T x \$60/T) ₂	3,780	
	Transportation to secure landfill ₂	700	
	Replace excavated soil with hard fill		
	& level grade - labor & material	400	
			10,380

⁻ Removed by truck to Frontier Chemical Waste Process, Inc., Niagara Falls, New York, distance of 65 miles.

^{2 -} Removed by truck to Cecos International, Niagara Falls, New York, distance of 65 miles.

5. Final Closure Certification

6. Plant Management & Administration

Professional Engineer - 16 site visits @ \$475 each

7,600

26,360 Sub Total

4,000

20% contingency

6,070

\$36,430

UNITED STATES DEPARTMENT OF THE INTERIOR GEOLOGICAL SURVEY





ARCADE QUADRANGLE NEW YORK 7.5 MINUTE SERIES (TOPOGRAPHIC)

	ROAD CLASSIFICATION
Heavy-duty	Light-duty
Medium-duty	Unimproved dirt seesess
	State Route
	1

QUADRANGLE LOCATION

NEW YORK

ARCADE, N. Y.

N4230-W7822.5/7.5

1966 PHOTOREVISED 1979 AMS 5369 III SW-SERIES V821

SITE LOCATION MAP MOTOROLA, INC., ARCADE, N.Y.

SCALE: 1" = 2000"



VUS CORPORATION				TELECON NO
ONTROL NO.	OAT		TIME	
ISTRIBUTION:		12/3/87		0905
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Nelson Sch	nabel	NYSIDEC	-Region 9	1716)847-460
Gerald V.	6:111	n		,
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AND	Office	5 1716) 492-11
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DISCUSSION: 1	TIVO	
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CONTROL NO. DISTRIBUTION:	OATE: 12/3/87	1645 EST
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Larry Groves - Water	Commissioner Yorkshire	Township, NY (716) 492-264.
Gend V. G	illitand	· NU
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years old. It	E serves 200 R	miles in Glashine
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CTION ITEMS:		

SOIL SURVEY OF

Wyoming County, New York





United States Department of Agriculture Soil Conservation Service In cooperation with Cornell University
Agricultural Experiment Station

Issued April 1974

SOIL SURVEY 180

Included with this soil in mapping were spots of Alden, Appleton. Dalton. Ellery, and Lyons soils. Areas of Alden soils that have a mucky surface layer are indicated on the soil map by the symbol for wet spot or drainageways. Drier Appleton soils were included in mapping in the northern part of the county along with similar, but finer textured. Lyons soils. Also included were somewhat poorly drained Dalton soils in adjacent areas to the south. Ellery soils are similar, but they are finer textured and have a

Undrained areas of Sun soils are suited mainly to pasture or trees. If adequately drained and properly managed, this soil is suited to most crops commonly grown in the county, including cash crops. This soil is well suited to pond sites and wildlife marshes. Capability unit

IVw-2: woodland suitability group 4w2.

Teel Series

The Teel series is made up of deep, moderately well drained to somewhat poorly drained medium-textured soils that are slightly acid to neutral. These nearly level soils are along the large meandering creeks and rivers in the northern half of the county. They formed in alluvium.

In a representative profile the surface layer is very dark gravish-brown silt loam 10 inches thick. The subsoil is friable silt loam that is neutral in reaction and that extends from a depth of 10 down to 38 inches. The upper part, from a depth of 10 down to 18 inches, is dark grayishbrown. The middle part, from a depth of 18 down to 24 inches, is brown to dark brown with grayish-brown mottles. The lower part, from a depth of 24 down to 38 inches, is grayish brown with faint and distinct mottles. The substratum, to a depth of 60 inches or more, is friable, dark grayish-brown silt loam that is faintly mottled and neutral.

Teel soils are subject to annual flooding and remain under water from 2 to 4 days in places. The water table is governed by the water level of the adjacent stream and persists at a depth of 18 to 24 inches for significant periods. During the growing season, rooting depth extends to a depth of 30 inches or more in places. Permeability is moderate in the root zone. Available water capacity is high. Reserves of nitrogen, phosphorus, and potassium are medium. Lime needs are low. These soils respond well to management and are easy to manage. Seasonal wetness and the hazard of flooding are the main limitations to

Representative profile of Teel silt loam in a cultivated field in the town of Middlebury, three-tenths mile east of junction of School Road and State Route 19, 40 feet south of School Road:

Ap-0 to 10 inches, very dark grayish-brown (10YR 3/2) silt loam, gray to light gray (10YR 6/1) when dry; moderate, medium, granular structure; friable; many

B22-18 to 24 inches, brown to dark-brown (10YR 4/3) silt loam; common, medium, faint, grayish-brown (10XR weak, medium, subangular blocky 5/2) mottles; structure; friable; common roots; many fine pores; neutral; clear, smooth boundary. B3-24 to 38 inches, grayish-brown (10YR 5/2) silt loam common, fine, faint, rellowish-brown (10YR 5/4) and distinct brown (7.5YR 5/4) mottles; very weak coarse, prismatic structure; friable; few roots in upper part; many fine pores; neutral; gradual, smooth boundary.

C-38 to 60 inches, dark grayish-brown (10YR 4/2) silt loam. common, medium, faint, dark rellowish-brown (107B 4/4) mottles; massive; friable; common fine pores;

neutral.

The solum ranges from 24 to 40 inches in thickness, Car. bonates are at a depth of more than 40 inches. Bedrock is at a depth of more than 6 feet. The solum ranges from slightly acid to neutral in the upper part and from neutral to mildly alka. line in the lower part. It is dominantly silt loam but ranges to fine sandy loam. Coarse fragments generally are absent. The solum has a hue of 7.5YR to 2.5Y, a value of 3 to 5, and a chroma of 2 or 3.

The B horizon has very weak to moderate subangular blocky

or prismatic structure.

The C horizon is similar to the B horizon in texture. Distinet mottles are in this horizon. It generally is massive or has platy structure. Reaction ranges from neutral to mildly alka-

line. Teel soils are closely associated on flood plains with well drained Hamlin soils and the wetter Walkill and Wayland soils. They are also near shaly, well drained to moderately well drained Herkimer soils on adjacent alluvial fans.

Teel silt loam (Te) .- This is the only Teel soil mapped in the county. It is nearly level and is on the flood plains of the larger streams. Individual areas occupy narrow strips within the flood plains and generally are 10 to 50 acres in size. It is subject to annual flooding, generally

early in spring. Included with this soil in mapping were areas of Hamlin. Herkimer, and Wayland soils. Hamlin soils were on thicker and slightly elevated deposits near the stream. Wetter Wayland soils were in depressions and low areas along the flood plain, and they receive seepage water from higher adjacent soils. Also included, along the fringe areas of Herkimer fans, were some areas of Teel soils that have coarse fragments in the substratum. Areas of soils that are slightly wetter than this one were also included.

This Teel soil is very well suited to crops because it is easy to cultivate and is free of stones. It is used mainly for cash crops and crops used in support of dairying. Natural fertility is high. Periodic flooding and a seasonal high water table are the major limitations to use. Where artificial drainage is needed, outlets are difficult to establish. Streambank erosion is a hazard in some areas. This soil is an excellent source of topsoil. Capability unit IIw-4; woodland suitability group 203.

Tioga Series

11221 The Froga series is made up of deep, well-drained, medium-textured soils that formed in alluvium. These nearly level soils are on flood plains along the larger tributary streams in the narrower valley areas. Reaction in these soils is dominantly medium acid.

B21—10 to 18 inches, dark grayish-brown (10YR 4/2) wilt be In airepresentative profile the surface layer is very dark loam; weak, fine, subangular blocky structure; fria- 1 graysh brown silt loam. 9 inches thick. The subsoil, to a ble; common fine and medium roots: many fine nores: ble; common fine and medium roots; many fine pores; mental; gradual, smooth boundary.

to 24 inches, brown to dark-brown (10YR 4/3) silt loaner The upper part of the substratum, from a depth of the substratum. 24 down to 42 inches, is dark grayish-brown, friable, slightly acid silt loam. It has some mottling. Between depths of 42 and 50 inches or more, the lower part of the

substratum is gravish-brown very gravelly loamy sand

that is slightly acid.

Tioga soils are subject to occasional flooding. The water table generally is at a depth of more than 2 feet, except during periods of flooding. It is governed by the water level of the adjacent streams. Rooting depth generally is unrestricted. Available water capacity is high. Permeability is moderate in the silty part and rapid in the underlying sand and gravel. Natural fertility is medium. These soils respond well to good management. Flooding is the main limitation for farming, but it rarely occurs during the growing season.

Representative profile of Tioga silt loam in a cultivated area 11/2 miles southeast of village of Arcade, 100 feet north of Bray Road, 500 feet east of its junction with State

Route 98:

Apr-0 to 9 inches, very dark grayish-brown (10YR 3/2) silt loam, light brownish gray (10YR 6/2) crushed and dry; moderate, medium, granular structure; friable; many fine roots; medium acid; clear, smooth bound-

B-9 to 24 inches, brown (10YR 4/3) silt loam; weak, fine, subangular blocky structure: friable: common fine roots: many fine roots; medium acid: clear, smooth bound-- It dry.

C1-24 to 42 inches, dark grayish-brown (10YR 4/2) silt loam; few, medium, distinct, yellowish-brown (10YR 5/4) and dark yellowish-brown (10YR 4/4) mottles; massive; friable; few fine roots; porous; slightly acid; clear, wavy boundary, i

IIC2-42 to 50 inches, grayish-brown (10YR 5/2) very gravelly loamy sand; single grain; loose; stratified; slightly

The solum ranges from 15 to 30 inches in thickness. Gravelly layers are at a depth of more than 40 inches. Coarse fragments are lacking or few between depths of 10 to 40 inches. The solum is strongly acid or medium acid in the upper 20 inches and is slightly acid or neutral at a depth of less than 40 inches. The Ap horizon has a hue of 10YR to 2.5Y, a value of 3 to

5, and a chroma of 2 or 3. The B-horizon has a hue of 2.5Y to 7.5YR, a value of 4 or 5, and a chroma of 2 to 4. This horizon lacks mottles to a depth of 30 inches. It is silt loam, fine sandy loam, or loam and has very weak to weak, blocky or moderate, granular structure. Consistence is very friable to friable.

Tioga soils are similar to and near Allard soils, which are on higher stream terraces that do not flood. They lack the sandy or gravelly C horizon within a depth of 20 to 40 inches of the surface that is characteristic of Allard soils. These soils are similar to Hamlin soils but are more acid in the upper 20 inches. They are commonly near wetter Papakating and Wayland soils on flood plains.

Tioga silt loam (Ig).—This is the only Tioga soil mapped in the county. It is nearly level and is on flood plains adjacent to streams in the southern part of the county. These streamed drain the more acid uplands of the plateau. Individual areas range from 20 to 50 acres or more in size.

Included with this soil in mapping were small areas of similar, but moderately well drained, soils along outer margins of the flood plain. Also included were many spots where stratified sand and gravel is within a depth of 20 to 40 inches. aba şir

Most areas of this Tioga soil are cleared and farmed at a rather high level of intensity. Potatoes, corn, grain, and hay are the main crops. This soil has no surface stones, so tillage and harvesting operations are not restricted. Streambank erosion is a hazard in places. Capability unit I-2; woodland suitability group 203.

Tuller Series

The Tuller series is made up of shallow, somewhat poorly drained and poorly drained, medium-textured soils. These soils are strongly acid. They formed in mixed sandstone and shale till. They are nearly level to gently sloping and are on uplands associated with Arnot and Lordstown soils, mainly in an area extending from the central through the northern and northwestern parts of the county.

In a representative profile the surface layer is very dark grayish-brown channery silt loam 8 inches thick. The subsurface laver is 2 inches of distinctly mottled, light brownish-gray channery silt loam. The subsoil, from a depth of 10 down to 17 inches, is friable, distinctly mottled, dark grayish-brown very channery silt loam. The surface and subsurface layers and the subsoil are strongly acid. Hard. gravish-brown sandstone bedrock is at a depth of 17 inches.

Tuller soils have a seasonally high water table. The rooting depth is confined to the 10 to 20 inches above the bedrock. The plow layer is porous but contains many flat stone fragments that interfere with tillage operations in places. Available water capacity generally is low to very low but varies with the depth to bedrock. Permeability is moderate in the soil mantle. Lime needs are high for most crops. Natural fertility is low to medium.

Representative profile of Tuller channery silt loam, 3 to 8 percent slopes, in a cultivated field in the town of Bennington, 21/2 miles southeast of village of Bennington, near junction of Hoover and French Roads:

Ap-0 to 8 inches, very dark grayish-brown (10YR 3/2) channery silt loam; moderate, medium, granular structure; friable; many fine roots; 30 percent coarse fragments; strongly acid; abrupt, smooth boundary.

A2g-8 to 10 inches, light brownish-gray (10YR 6/2) channery silt loam; many, fine, distinct, yellowish-brown (10YR 5/6) mottles; weak, fine, subangular blocky structure; friable; common fine roots; 35 percent coarse fragments; strongly acid; clear, wavy bound-

B2g-10 to 17 inches, dark grayish-brown (2.5Y 4/2) very channery silt loam; many, medium, distinct, light brownish gray (10YR 6/2) and yellowish-brown (10YR 5/8) mottles; weak, medium, subangular blocky structure; firm: few fine roots; 40 to 45 percent coarse, fragments; strongly acid: abrupt, smooth boundary.

R-17 inches +, hard grayish-brown sandstone.

The solum thickness ranges from 10 to 20 inches and corresponds with the depth to bedrock. The content of coarse fragments, mainly flat sandstone, ranges from 35 to 50 percent The solum ranges from very strongly acid to strongly acid. It has a bue of 10YR or 2.5Y.

The Ap horizon has a value of 3 or 4 and a chroma of 2 or 3. The A2 horizon, if present, has a chroma of 2 or less and a value of mainly 6. Mottles are few to many and distinct. The

A2 horizon is loam or silt loam.

The B horizon has a value of 4 or 5 and a chroma of 2 or 3. Ped faces have a chroma of 2 or less. Mottles are few to many and distinct. This horizon has weak to moderate subangular blocky to weak prismatic structure. It is loam or silt loam. The underlying bedrock is mainly fractured sandstone that

is commonly interbedded with shale.

Tuller soils are commonly associated with the moderately well drained to well drained, shallow Arnot soils and the moderately deep, well drained Lordstown soils that formed in similar material. Tuller soils are also near Ellery, Erie, and Volusia soils. These soils are deeper than Tuller soils, and they have a fragipan, which is lacking in Tuller soils.

Tuller channery silt loam, 0 to 3 percent slopes (TuA).—This soil has a profile similar to that described as representative for the series, but runoff generally is slower. matter. Keeping tillage to a minimum also helps to preserve soil structure.

CAPABILITY UNIT 1-2

This unit consists of deep, well-drained, nearly level, medium-textured soils on flood plains. These soils are in the Hamlin and Tioga series. They are free of stone fragments.

Permeability in these soils is moderate in the root zone, which generally is unrestricted. The available water capacity is high. Hamlin soils are slightly acid to neutral in the surface layer, and Tioga soils are strongly acid to medium acid. These soils are subject to flooding, but they rarely are flooded during the growing season. The most serious hazard of flooding is in the Oatka and Tonawanda Valleys.

The soils in this unit are easy to work and can be tilled early in spring. They are well suited to all crops grown in the county, including vegetables. They are well suited to deep-rooted crops. Generally, these soils are more suitable for intertilled crops than for pasture. They respond well to good management and are among the most productive soils in the county. They are suited to irrigation because of nearness to a source of water, depth, and permeability. Irrigation water can be applied at a moderate rate. Moderate amounts of lime and some phosphorus and potassium are needed on Tioga soils for good crop response.

Row crops can be grown for several years if the content of organic matter is maintained and if soil structure is preserved. Minimum tillage coupled with annual use of crop residue and cover crops or occasionally growing a sod crop helps to maintain the content of organic matter and preserve soil structure.

CAPABILITY UNIT II-1

This unit consists of deep, generally well-drained, gently sloping, medium-lime to low-lime soils in the Herkimer, Lansing, and Madrid series. All the soils are well drained, except for Herkimer soils, which are well drained to moderately well drained. Few to moderate amounts of pebbles and shale fragments are on the surface of these soils.

Permeability in the root zone, which extends to a depth of 24 to 30 inches or more, is moderate to moderately rapid in the Herkimer soils, and moderate in the Madrid and Lansing soils. The available water capacity is moderate to high. Natural fertility is medium to high in the Herkimer and Lansing soils and low in the Madrid soils. The hazard of erosion is slight to moderate.

The soils in this unit are well suited to most forage and field crops commonly grown in the county. They are among the better suited soils for farming. They are easy to till and can be used for all kinds of crops. Forage mixtures with deep-rooted legumes grow very well. Vegetables can also be grown, but stoniness interferes with the operation of some machinery in places. Crops respond to applications of lime and fertilizer. Applications should be based on crop needs.

The soils in this unit should not be continuously cultivated to row crops; however, they can be cultivated frequently if erosion is controlled. Contour stripcropping, grassed waterways, and other measures are needed to help, control erosion if row crops are grown on long or steep; slopes. Diversions can be constructed on long slopes if the soils are used intensively for row crops. Crops that provide a cover in winter help to maintain a good soil structure. Keeping tillage to a minimum on short, complex slopes

and using crop residue with no-plow tillage help to control erosion. The supply of water for irrigation is limited in places, but these soils take in water at a moderate to rapid rate.

CAPABILITY UNIT II-2

This unit consists of deep and moderately deep, generally well-drained, gently sloping, medium-textured, low lime to very low lime soils. These soils are in the Bath, Lordstown, Manlius, and Valois series. All the soils are well drained, except for the Manlius soils, which are well drained to excessively drained. These soils have moderate amounts of gravelly, shaly, and channery fragments on the surface.

Bedrock is at a depth of 20 to 40 inches in the Lordstown and Manlius soils, and this is generally the range of depth of root penetration in the soils of this unit. Premeability in these soils is mainly moderate, but it ranges to moderately rapid in the Valois soils. The available water capacity is moderate to low. The hazard of erosion is moderate.

The soils in this unit are well suited to crops commonly grown in the county, but the restricted root zone hinders crop growth in places. Lime is needed for most crops, especially legumes. Crops respond well to applications of fertilizer. Fragments on the surface of these soils interfere with the operation of precision machinery needed for cultivation of fine-seeded crops, but transplanted crops grow well.

These soils should not be continuously cultivated, and, unless measures to control erosion are used, sod-based cropping systems are needed. Contour tillage, contour stripcropping, and the use of diversions to break long slopes help to control erosion and loss of water. Measures are needed to increase infiltration, mainly during the growing season. Crops that provide winter cover are helpful. Keeping tillage to a minimum and using crop residue help to control erosion.

CAPABILITY UNIT II-

This unit consists of deep, well-drained, gently sloping, medium-textured soils. These soils are in the Allard and Arkport series.

Permeability generally is moderate to rapid in the root zone, which extends to a depth of 24 inches or more. Available water capacity is moderate to high in the Allard soils and moderate to low in the more sandy Arkport soils. All soils in this unit are very erodible. Natural fertility is low to medium. The content of organic matter is low.

The soils in this unit are well suited to crops and pasture. These relatively stone-free soils are well suited to vegetable crops. In nonirrigated areas deep-rooted crops grown in a cropping system are better suited than other crops. In places shallow-rooted crops need supplemental irrigation. Slopes limit use of precision machinery in some areas. These acid soils need lime and fertilizer if they are used for crops. Applications of lime and fertilizer should be based on crop needs, as indicated by tests.

If these soils are cultivated, measures are needed that help to control erosion. Contour tillage and contour strip-cropping are effective, but terraces can be constructed if the soils are used intensively. Keeping the areas protected most of the time helps to control soil blowing and water erosion. Returning crop residue to the soil, growing sod crops in a cropping system, and growing crops that provide winter cover are ways to maintain desirable soil struc-

SURVEY OF SELECTED ORGANIC COMPOUNDS IN AQUIFERS

OF NEW YORK STATE EXCLUDING LONG ISLAND

By Roy A. Schroeder and Deborah S. Snavely

U.S. GEOLOGICAL SURVEY

Water Resources Investigations 81-47

Prepared in cooperation with the NEW YORK STATE DEPARTMENT OF HEALTH



UNITED STATES DEPARTMENT OF THE INTERIOR

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CONVERSION FACTORS AND ABBREVIATIONS

The following factors may be used to convert inch-pound units of measurement to the International System of Units.

Multiply	<u>by</u>	To obtain
inch (in)	2.540	centimeter (cm)
foot (ft)	3.048×10^{-1}	meter (m)
mile (mi)	1.609	kilometer (km)
degree Fahrenheit (°F)	5/9(°F-32)	degree Celsius (°C)

Abbreviations used in the text of this report include:

mg/L, milligrams per liter µg/L, micrograms per liter mL, milliliter µL, microliter µg, micrograms

Table 8.--Description of site locations (Continued)

Site 30

Well owner: Village of Cuba, Allegany County

Date sampled: November 15, 1978

Owner's well identification: Bicentennial Well (new well)

Well location: 42°12'55" N lat.; 78°16'22" W long.

Quadarangle: Cuba, N.Y.

Well data:

Construction: drilled in 1978

Depth: about 70 ft

Finish: screened in sand and gravel

Site-selection criteria:

To compare the organic content of this water to that from the wells in the fertilizer processing plant area (sites 27 and 28).

Remarks: Village owns two other drilled wells in sand and gravel.

Reference: Frimpter (1974).

Site 31

Well owner: Village of Arcade, Wyoming County

Date sampled: November 16, 1978

Owner's well identification: Church Street Well

U.S. Geological Survey number: 232-825-1

Well location: 42°32'06" N lat.; 78°25'30" W long., about 150 ft south of

Cattaraugus Creek

Quadrangle: Arcade, N.Y.

Well data:

Construction: drilled in 1953

Depth: 53 ft

Casing: 12-in., 10-in., and 8-in. diameter casing to a depth of 44 ft Finish: 10-in. diameter, 100-slot screen from 44 to 49 ft and packed

in sand and gravel

Site-selection criteria:

To determine the quality of water infiltrated from Cattaraugus Creek.

Table 8. -- Description of site locations (Continued)

Site 31 (cont.)

Remarks: Aquifer is in hydraulic contact with Cattaraugus Creek. The Village

owns three other wells in the same aquifer.

Reference: La Sala (1968).

Site 32

Well owner: Village of Springville, Erie County

Date sampled: November 16, 1978

Date resampled: March 9, 1979 (nonvolatiles only)

Owner's well number: 2

U.S. Geological Survey number: 230-840-3

Well location: 42°30'54" N lat.; 78°40'14" W long., about 100 ft north of

unnamed stream

Quadrangle: Springville, N.Y.

Well data:

Construction: drilled in 1942

Depth: 159 ft

Casing: 18-in. and 10-in. in diameter

Finish: screened with 10-in. diameter, 100-slot from 144 to 149 ft,

80-slot from 149 to 159 ft and packed in sand and gravel

Site-selection criteria:

To compare the organic content of this water with water from a site to the greater Buffalo area (site 33) and a site further away from Buffalo (site 31).

Remarks: Aquifer is in hydraulic contact with the stream. Village owns

another well in the same aquifer.

Reference: La Sala (1968).

<u>Site 33</u>

Well owner: Village of North Collins, Erie County

Date sampled: November 16, 1978

Owner's well number: 4

Table 2.--Results of gas chromatograph/mass spectrometer analysis for

		Grou	лр 1			· · - · · ·		Group					Gro	up 3	
	(t	rihalo	forms)			(s.	aturat	ed hal	ocarbo	ns)		(unsat	urated	haloc	arbons)
Well site	Chloroform	Dichlorobromomethane	Chlorodibromomethane	Bromoform	Methylene chloride	1,1,1-Trichloroethane	Carbon tetrachloride	Trichlorofluoromethane	1,1-Dichloroethane	1,1,2,2-Tetrachloroethane	1,2-Dichloropropane	1,1-Dichloroethylene	1,2-trans-Dichloroethylene	Trichloroethylene	Tetrachloroethylene
27B 28 28 29 30		 ,	 	 	2.3 4.0 13 5.2 8.8		 	1.5	3.9 9.5 	 		 	 	2.1	
31 32 33 34 35			\ 	 	5.0 5.1 1.8 27 16	 14	 0.9	0.4 5.1	 4.5	 			 8.7	 11	
36 37 38 39 40		 	 	 	27 34 29 12 31	1.3 1.0	 1.0	4.4 3.8 2.8 1.7	 	 		 	1.6	 	
41 41 42 43 44		 	 	 	0.7 1.7 1.8 1.0	 	 	 	 			 	 	 	
45 46 46 47 48	5.5 0.5	3.5	 	 	2.5 12 24 0.5	0.1	 	4.2 0.4 4.1 1.2	 		0.4	 		 	
32 32 34 40 37	* * * 0.8	* * * 0.9	* * 	* * * 	* * * 2	* * 0.6	* * 	* * * 	* * 	* * 	* * *	* * 	* * *	* * 	* * * 0.6
35 13C 13E 49	12 1.7 1.5 18	7.8 	13	2.9 	53 320 210 29	18 	3.6 	 	 	 	 	1.3	 	16 2.1 0.7 13	3.0 1.0 0.2

^{*} Indicates volatile fraction not analyzed.

priority pollutants in New York State ground-water samples, 1978-79 (continued)

		Group (enzene:		Grou (phen			(Grou phthal					Grou (PA		
Well site	Benzene	Toluene	Ethylbenzene	Phenol	2,4,6-Trichlorophenol	Dimethyl phthalate	Diethyl phthalate	Dibutyl phthalate	Dioctyl phthalate	Butylbenzyl phthalate	bis(2-Ethylhexyl) phthalate	Anthracene/phenanthrene	Pyrene	Fluorene	Fluoranthene
27B 28 28 29 30	0.7 	10 6.6 5.0 4.4 7.2	4.4 	 		 	0.3	0.3 0.2 0.2 0.4	 	0.1 2.6 0.9	3.4 2.8 12 56 6.7	0.3 0.1 0.1 0.1			
31 32 33 34 35		7.2 2.8 10 3.5	 	 0.2		 4.1	0.7 1.2 0.9 1.4	0.8 0.9 14 470 16 4.2	8.0 0.2 00 15	38	5.3 170 3.0 1.9	0.2 0.1 0.1 21 2.3	 0.1		 0.3
36 37 38 39 40		0.6 0.8 0.6 1.2 0.3	 	0.2	 	1.1 1.1 0.8 1.2 0.4	 	0.8 1.6 1.0 1.0	1.7 0.4 0.2	1.5 0.3	20 4.6 9.1 2.0 3.5	0.4 0.4 0.3 0.4 0.2			
41 41 42 43 44	0.2 0.5	0.8 0.6 0.8 0.6 0.6	0.1	 				1.2 0.4 2.3 		 	0.7 1.4 0.8 2.0	 	 		
45 46 46 47 48	0.1 3.9 1.5	0.6 2.8 7.3 1.6	0.04 0.1 	 0.05	 		0.3	1.9 0.98 0.5 1.2 0.2		1.5 4.5	 0.64 5.1 7.2 5.5	0.2			
32 32 34 40 37	* * 	* * 	* * 	 ** **	 **	 **	1.2 2.0 1.9 **	2.3 1.5 2.4 **	 **	0.2 0.2 0.4 **	4.3 3.1 3.2 **	1.4 1.1 0.2	 ** **	 **	 **
35 13C 13E 49	1.5 0.6 2.6	7.4 3.1 6.6	0.7	** ** **	** ** **	** ** ** 	** ** ** 0.2	** ** ** 0.1	** ** **	** ** ** 0.1	** ** ** 5.9	** ** ** 0.2	** ** **	** ** **	** ** **

^{**} Indicates extractable fraction not analyzed.

Form Approved OMB No. 2000-0138 EPA Form 8900-1

BEPA Notification of Hazardous Waste Sicol

United States Environmental Protection Agency Washington DC 20460

This initial notification information is required by Section 103(c) of the Compre- additional space, use separate sheets of required by Section 103(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and must which applies. sation, and Liability Act of 1980 and must which applies. be mailed by June 9, 1981.

Please type or print in ink. If you need

1145 000 00/ 2/7

Ī	Person Required to Notify:									
	Enter the name and address of the	e person	Name		Motorola,	Inc.				
	or organization required to notify.		Street		400 Main	Street				
			City		Arcade,		State	NY		14009
-	Site Location:						31218		Zip Code	
	Enter the common name (if known	n) and	Name of	Site	Motorola,	Inc.				
	actual location of the site.	,	Street		400 Main					
	NYD001931120		City	Arcade	County	Wyoming	State	NY	Zip Code	14009
;	Person to Contact:								E-p C004	
	Enter the name, title (if applicable)	, and	Name (L	ast, First and T	New Yought,	John H.,	Facil	ity 1	Engineer	
	business telephone number of the to contact regarding information	person	Phone		716-492					
	submitted on this form.				710 452	1234				
_	Dates of Waste Handling:							·		
	Enter the years that you estimate value treatment, storage, or disposal beginned at the site.	vaste an and	From (Ye	er) 1971	To (Year)	March	1976			
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_	Waste Type: Choose the option	you pr	efer to c	complete						
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	MOUNTCALION OF MAZARGOUS WASSES	. Side I WO	•								
F	Waste Quantity:	Facility Type	Total Facility Waste Amount								
i	Place an X in the appropriate boxes to indicate the facility types found at the site.	1. 🗆 Piles 2. 🗆 Land Treatment	cubic feet 810 C								
	In the "total facility waste amount" space	2. □ Land (reatment) 3. □ Landfilt	gallons								
•	give the estimated combined quantity (volume) of hazardous wastes at the site using cubic feet or gallons.	4. 🗆 Tanks	Total Facility Area								
		5. 🗹 impoundment	square feet 3450 S								
Ì	In the "total facility area" space, give the estimated area size which the facilities	 ☐ Underground Injection ☐ Drums, Above Ground 	2420 Q								
	occupy using square feet or acres.	8. D Drums, Below Ground	acres								
		9. Other (Specify)									
G	Known, Suspected or Likely Releases	to the Environment:									
ł	Place an X in the appropriate boxes to indica or likely releases of wastes to the environment	Ite any known, suspected	☐ Known ☐ Suspected ☑ Likely ☐ None								
} 	Note: Items Hand I are optional. Completine hazardous waste sites. Although completing	g these items will assist EPA and State g the items is not required, you are enc	and local governments in locating and assessing ouraged to do so.								
H	Sketch Map of Site Location: (Options	See attached Plot Plan									
	Sketch a map showing streets, highways, routes or other prominent landmarks near the site. Place an X on the map to indicate the site location. Draw an arrow showing the direction north. You may substitute a publishing map showing the site location.	See attached Flot Flan									
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1											
1	Description of Site: (Optional)										
	Describe the history and present	This material was sludge wh	ich was papiadies 11.								
İ	conditions of the site. Give directions to the site and describe any nearby wells, springs, lakes, or housing. Include such collected from a settling basin through which the										
	information as how waste was disposed and where the waste came from. Provide	general effluent from Motor	ola's metal finishing								
	any other information or comments which may help describe the site conditions.	operations flowed, prior to	the installacion of								
	Motorola's Process Water Treatm	ent Facilities, pursuant to	the conditions of our NPDES								
1											
Ì	Permit No NY 000 2267, originally dated May 1, 1974. As a part of our construction plans, approximately 30 yd3. of earth and sludge were excavated from the area and										
	disposed of in a manner approved by the New York State Department of Environmental										
•	Conservation. This took place on March 26, 1976. As a result of that building program, the area where the material had been deposited has been filled in, graded, and seeded										
1	with grass.)	arposited has been 111	and seeden								
ا											
J	Signature and Title:										
	(such as plant managers, superintendents,	Name Motorola, Inc.	Owner, Present								
ı	trustees or attorneys) of persons required	Streen 400 Main Street	Owner, Past								
	mailing address (if different than address		☐ Transporter								
	Troundation, the signature is oblighter.	City Arcade, State	NY Zip Code 14009								
	Check the boxes which best describe the relationship to the site of the person	mare mare	☐ Other								
	required to notify. If you are not required	Signature framework me									
1	to notify check "Other".	Paymond A. Emery, P	Mant Manager								
		-									



New York State Department of Environmental Conservation

MEMORANDUM

TO:

Pet**er** Buechi

FROM:

Thomas Christoffel _

SUBJECT:

Motorola Sites in the Southern Tier

DATE:

September 2, 1982

Wastes were hauled from the Motorola facility in Arcade, New York, to the locations listed below. Included in these wastes were varnishes, fluxes, flux thinners, isopropyl alcohol, hydrochloric acid, phosphoric acid, toluene, xylene, trichloroethane, trichloroethylene, freon, epoxies and cutting oils. These materials are listed in literature as being mildly to moderately toxic.

The following is the list of known disposal sites for the industrial waste from Motorola in Arcade:

Previty Auto Wrecking, Galen Hill Road - Approximately 1000 drums were disposed at this site. These drums were emptied by Mr. Previty onto his property.

Tidd's Junkyard, Route 72, Yorkshire Corners - Approximately 600 drums were deposited at this site. An analysis of samples taken from this site revealed the presence of chlorinated solids, chlorinated solvents, flammable solids, acids, oil and a number of other materials. Fifty (50) percent of the barrels at Tidd's reportedly have been opened.

Town of Machias Gravel Pit, Very Road - Approximately 600 drums were placed at this site. It has been reported that half of these barrels were opened, and the oils were spread on county roads, but this has not been verified. The gravel pit is near Bird Swamp.

Norman Rogers, California Road, Delavan - 100 drums used for fill on this property.

Camp Arrowhead, Route 16 - Reportedly 20 drums delivered here from a Mr. Tillinghast from Tidd's Junkyard, which were labor wife buried.

Boehmer Site, Route 16 - 13 barrels were buried 225 feet from the County Infirmary well.

An unknown quantity of waste in a ravine on the south side of Route 242, west of Route 16. Waste was spilled here.

It is recommended that these sites be investigated under the State Superfund Act, to determine their potential threat to health and the environment. Most of these sites are in the vicinity of waterways. The sites should be investigated in the order they are listed in this memo.

Mon Jækcl

P.O. BOX 573, OLEAN, NY 14760 MEMORANDUM

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TO

Jack McMahon, DEC - BRO

. DATE: October 3, 1978

FROM

Chester Halqas

SUBJECT:

Motorola Industrial Waste Disposal

The following is a report on our activities concerning the subject waste from the Motorola plant in Arcade which found its way to various locations in north-eastern Cattaraugus County.

On September 19, 1978, Mr. Dan Pascarella of our office observed 97 drums on the old Machias Town sanitary landfill site. He investigated the matter and wrote the attached report which was referred to Kevin Hintz of your Department. On or about September 25th, Mr. Reisner of this office brought to my attention that more drums were in the area. I then contacted Mr. George Wyllie, chief industrial engineer at Motorola, to more specifically determine the nature of the wastes.

Through subsequent field investigations by Messrs. Pascarella and Reisner, it was determined by September 29, 1978, that approximately 2500 drums of industrial waste from Motorda had been placed in Cattaraugus County by three unregistered waste haulers at the following locations.

Prior to May of 1976, apparently all of the wastes had been hauled by Community Disposal Services to their landfill in Erie County. At that time, they went out of business and waste was then hauled by William Ballard, Osmon Road, Freedom Town. Cattaraugus County (492-2113) from May 1976 to May of 1977. During that time, he took approximately 1,000 drums which were given to the Previty Auto Wrecking yard on Galen Hill Road, Freedom Town, which is located approximately $\frac{1}{2}$ mile south from the intersection with Route #98. All of these drums had been emptied by Mr. Previty on his property. He has a private well for his house and business on the property. No other water supplies are in the immediate area, and it is doubtful if any appreciable amount of waste found its way into Clear Creek, a protected trout stream, approximately $\frac{1}{2}$ mile to the north of the dumping site. Reportedly, the waste materials were used to oil roads, and the drums were used to support junk cars.

From May 1977 to March 1978, approximately 1,000 drums were taken by a Donald Tillinghast, 18 Yacht Club Drive, Machias (353-8826) to the following locations: From May to winter, approximately 600-800 drums were deposited attidds Junkyard on County Road #72, several hundred yards west of the Big N Plaza at Yorkshire Corners. Mr. Tidds reported that he gave away approximately 100 of these drums which are unaccounted for except for 20 which went to Michael Wolfer in Delevan. Approximately 50% of the drums at Tidds Junkyard had been spilled or opened and a considerable amount of spillage exists on the property. Nearby residences and businesses are served by the Yorkshire Town public water supply, and there appears to be no threat from a water supply standpoint. The site of the drums is very flat and it is doubtful if appreciable amounts of the waste got into Cattaraugus Creek which is approximately imile away. Apparently the winter weather precluded dumping of the drums at Tidds Junkyard and reportedly Mr. Tillinghast gave 20 drums t&Camp Arrowhead on Route #16, Yorkshire Town, which were later buried. He also gave approximately 100 drums to Norman Rogers who used them for fill on his property, approximately 1 mile east of the Village of Delevan on California Road. 13 drums were given to terwilliger Excavation in Franklinville which are still intact, and 13 drums were dumped on the Boehmer property on Route #16, Machias, directly across

well. At the Boehmer site, more than half of the drums had been spilled. It is further reported that some unknown quantity of drums were dumped and covered in afravine on the south side of Route #242 just west of its junction with Route #16. In addition, 97 drums had been dumped at the aforementioned Machias landfill site, which is no longer in operation there. A number of the drums had been spilled and significant amount of spilled wastes are on the site. Fortunately, except for the water supplies mentioned above, no other water supplies appear to be possibly affected, and the aforementioned spillages are not in locations where appreciable overland flow of the wastes to streams would occur.

From March 1978 to the end of September when Motorola discontinued allowing private haulers to take these wastes, approximately 600 drums were taken by a Dan Griswold, Reynolds Road, Franklinville (676-2403) to the Town of Machias gravel pit on Very Road, located approximately one mile south of the intersection of Very Road and County Road #16, which is slightly more than two miles directly west of the hamlet of Machias. At this location, approximately one-half of the drums had been emptied, and it is reported that the Town of Machias used these waste materials in oiling some of the Town roads. However, we have been unable to verify this report, and the Town Supervisor has stated that she knew nothing of the storage or the use of this material.

On Thursday, September 28th, the writer toured several of the sites with Messrs. Vought and Wyllie of Motorola and Mr. Reisner of this office. The Motorola representatives indicated that most, if not all, of the drums came from their plant. The drums are mainly identified by the product that they contained when they were shipped to Motorola and are largely characterized by the names of the chemicals, e.g. Magnoli. Chemical, chlorothane, freon, etc. The newer drums have waste labels affixed to them by Motorola.

Motorola uses the following products which may in some part be discarded as industrial waste: Machining oils (Hamidraw D21-HV, GM Industries Limited 991, and HM 1301 DC), epoxies, epoxy solvent (Dibutylphthalate), flux, flux thinner (Alpha Metals 810), degreasers, polyurethane varnishes, Tolune, Xylene, Freon, dilute hydrochloric acid, metal grindings and metal. Motorola is to prepare a report stating the relative amounts of these products which may find their way into the industrial waste.

Investigation with suppliers and manufacturers revealed that many of the products are proprietary and that the exact content was not revealed to Motorola. The contents as reported by the suppliers and manufacturers are:

Hamidraw D21-HV - Harry Miller Corp., Philadelphia, PA (215-324-4000). Sulfonated petoleum oil 19.6% by weight; petroleum oil, 19.4%; chlorinated petroleum wax, 4.5%; lead tallate solution, 19.7% (75% kerosene and 25% lead tallate. % lead in lead tallate is 42%); Butyl Carbitol, 3% (the solution has a pH of 9.5 and the manufacturer advises handling with care. D21-HV is used in its undiluted form and also a 50% dilution with water at Motorola.

HM 1301 DC is also made by Harry Miller Corp. and contains: Mineral Oil, 65%; sodium petroleum sulfonate, 14%; lead tallate, 19%; ethyloxylated alcohol, 2%.

Olean, New York, who reports that the epoxy resin is approximately a 400 molecular weight diglycidyl ether of bisphenol A plus 5% cresyl glycidyl ether. The hardener is a polyoxypropylene diamine.

The machine oil 991 supplied by GM Industries Limited in Tonawanda (693-6050) consists of the following: Tall oil, 10%; polysperm oil, 3%; sodium petroleum sulfonates, 7%; stearic acid, .3%; triethanolamine, 4.5%; hexylene glycol, 4%; Union Carbide U con L8 65, 2% (a proprietary compound which is a poly alkaline glycol); pine oil, .5%; emulsifier, .5%, chlorinated paraffin wax, 2%; petroleum oil, 15%; tetrasodium EDTA, .75%; biocide solution, 1.4% (solution of 18.5% 2' dihydroxy; 5' 5' dichloro-diphenyl methane, 6.7% of 50% sodium hydroxide and the rest water); Blue dye, .015%; water, 45.5%.

The flux is Alpha Metals, New Jersey (201-434-6778) and consists of a gum resin. an organic activator and a terpine alcohol solvent blend. The flux thinner is Alpha Metals 810 and a blend of alcohol and terpine solvent. No one was available who could give an exact formulation.

The degreasers used are trichloroethene and trichloroethylene.

The waste also contains metal grindings and machining wastes together with paper cups and rags, presumably from the epoxy casting process.

A literature review of the toxicity of the above chemicals indicates that practically all of them are mildly to moderately toxic, except for the biocide and lead. Fortunately, most of the spillage has occurred in environmentally insensitive areas except for the possible involvement of two water supplies. This Department plans to sample these two supplies together with any others that may be reasonably close to the two spillages, and have the samples analyzed for lead. It is the writer's opinion that lead will travel to the ground waters more quickly than any of the other chemicals and that it would therefore be a good indicator chemical.

In the writer's opinion, the spillages present a moderate environmental hazard that at this time, aside from the possible aforementioned affect on water supplies, poses no public health problem because of the remoteness and nature of the sites. The question of what to do with the spillages is therefore more properly the responsibility of the Department of Environmental Conservation, as is the matter of the three unregistered industrial waste haulers.

There are approximately 800 intact drums of Motorola's industrial waste at the aforementioned sites. Because of their nature and the potential deleterious environmental effects, they should be moved to a satisfactory disposal area. In this regard, this office has requested Motorola to move the intact drums. It is anticipated that they will be making a decision in the very near future.

Although ignorance of the exact nature of these chemicals is not a good excuse, it must be pointed out that in the opinion of the writer, neither Motorola nor the three haulers had any good indication as to the wastes! actual content.

CRH:PM

Attachment

CC: Machias Office

William Bruyere, Plant Manager, Motorola

Dr. Moss

ARCADE

EPA Form 3510-1 (6-80)

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GROUND-WATER RESOURCES OF THE ERIE-NIAGARA BASIN, NEW YORK



Prepared for the
Erie-Niagara Basin Regional Water Resources
Planning Board

by

A. M. La Sala, Jr.

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

in cooperation with

THE NEW YORK STATE CONSERVATION DEPARTMENT DIVISION OF WATER RESOURCES

STATE OF NEW YORK
CONSERVATION DEPARTMENT
WATER RESOURCES COMMISSION

Basin Planning Report ENB-3 1968

GROUND-WATER RESOURCES OF THE ERIE-NIAGARA BASIN, NEW YORK

By A. M. La Sala, Jr.

ABSTRACT

The Erie-Niagara basin, New York, borders Lake Erie and the Niagara River and includes the principal part of their drainage basin in New York. The area extends from the Cattaraugus Creek basin on the south to the Tonawanda Creek basin on the north. The northern part of the area and a narrow belt along Lake Erie are in the Erie-Ontario Lowlands, a region of low relief. The remainder of the area lies in the Appalachian Uplands, an area of considerable relief.

The principal water-bearing formations in the area are glacial sand and gravel deposits; the Camillus Shale, which contains interbedded gypsum; a limestone aquifer unit consisting of the Onondaga Limestone, Akron Dolomite, and Bertie Limestone; and the Lockport Dolomite. A number of thick and permeable sand and gravel deposits lie in valleys of the upland region and will yield supplies of 500 to 1,400 gpm (gallons per minute) to individual wells that are properly constructed. Several communities now obtain public water supplies from such deposits. The Camillus Shale, limestone unit, and Lockport Dolomite vary widely in water-bearing characteristics. Generally, only small to moderate supplies (less than 50 gpm) are available from these formations. However, where the waterbearing openings have been widened by solution of gypsum and carbonate minerals, the rocks provided large supplies. In and near Buffalo and Tonawanda, the Camillus Shale yields 400 to 1,200 gpm to individual wells, and the limestone unit yields as much as 300 gpm but more usually 100 gpm. The Lockport Dolomite does not yield more than 90 gpm to individual wells in the area. Data from nearby areas indicate the Lockport only occasionally yields as much as 100 qpm. Only small yields from wells, about enough for individual domestic supplies, can be obtained from shale, lake deposits, and till.

Average annual recharge to the sand and gravel deposits in the upland region ranges from about half a million to 4 million gallons per day per square mile. As the larger deposits are each several square miles in extent, the potential for development is large. To this potential should be added infiltration from streams that could be induced by pumping large quantities of ground water.

The quality of ground water in the Appalachian Uplands is marked by a high hardness but generally not by other unfavorable characteristics. The ground water in the Erie-Ontario Lowland generally is harder and otherwise poorer in quality, being high in dissolved solids. The water in the Camillus Shale is objectionably high in sulfate and, in some areas, chloride. The chloride may be dissolved out of deeply buried salt beds by water circulating through a regional flow system from a recharge area in the Appalachian Uplands to a discharge area along Tonawanda Creek. Shallow ground water in carbonate rocks and sand and gravel deposits locally has been polluted by septic tank effluent.

INTRODUCTION

PURPOSE AND SCOPE

This report presents the results of an investigation by the U.S. Geological Survey conducted for the Erie-Niagara Basin Regional Water Resources Planning Board. The area of study, called "Erie-Niagara basin" in this report, extends from the Cattaraugus Creek basin on the south to the Tonawanda Creek basin on the north, and includes Grand Island as shown in figure 1.

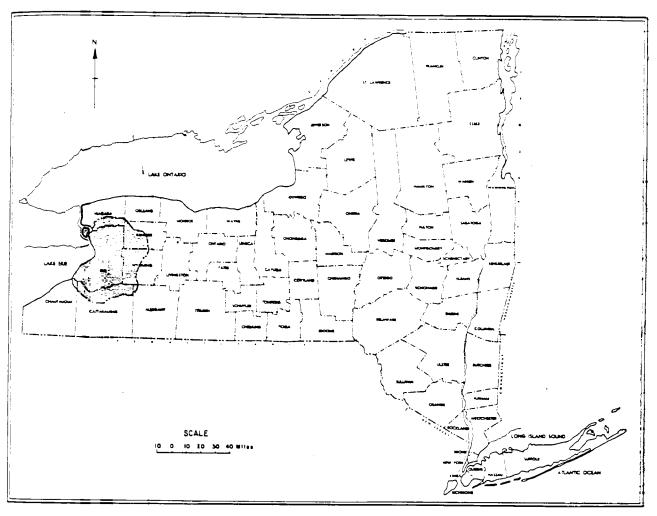


Figure 1.--Location map of the Erie-Niagara basin.

GEOLOGY AND TOPOGRAPHY

The Erie-Niagara basin is underlain by layers of sedimentary bedrock which are largely covered with unconsolidated deposits. Descriptions of the various bedrock units are given in figure 2. The bedrock consists mainly of shale, limestone, and dolomite; the Camillus Shale contains a large amount of interbedded gypsum. All the bedrock units were built up by fine-grained sediments deposited in ancient seas during the Silurian and Devonian Periods and, therefore, are bedded or layered. The dip of the rocks (inclination of the bedding planes) is gently southward at from 20 to 60 feet per mile, but the average dip is between 30 and 40 feet per mile. The dip is so gentle that it is hardly perceptible in outcrops.

The unconsolidated deposits are mostly glacial deposits formed during Pleistocene time about 10,000-15,000 years ago when an ice sheet covered the area. The glacial deposits consist of: (1) till, which is a nonsorted mixture of clay, silt, sand, and stones deposited directly from the ice sheet; (2) lake deposits, which are bedded clay, silt, and sand that settled out in lakes fed by the melting ice; and (3) sand and gravel deposits, which were laid down in glacial streams. The glacial sand and gravel deposits are of both the ice-contact and outwash types, as will be explained later in the report. The glacial deposits generally are less than 50 feet thick in the northern part of the basin. They are considerably thicker in some valleys in the southern part and reach a maximum known thickness of 600 feet near Chaffee. Other unconsolidated deposits are alluvium formed by streams in Recent times and swamp deposits formed by accumulation of decayed plant matter in poorly drained areas.

Relief of the present land surface is due to preglacial erosion of the bedrock and subsequent topographic modification by glaciation. In contrast to the southward dip of the rocks, the land surface rises to the south largely because preglacial erosion was more vigorous in the northern part of the basin. The shale in the southern part of the basin is somewhat more resistant to erosion than the rocks in the northern part of the basin but not significantly so. Figure 3 shows the relationship of the topography and rock structure and delineates the two topographic provinces of the basin: the Erie-Ontario Lowlands and the Appalachian Uplands. The rocks crop out in belts which trend generally east-west. The bedrock geologic map, plate 2, shows that the outcrop belts bend around to the southwest near Lake Erie. They assume this direction mainly because relatively intense erosion in the Erie-Ontario Lowland near Lake Erie has exposed the rock at lower elevations than farther east. The Lockport Dolomite and the Onondaga Limestone, because they are relatively resistant to erosion, form low ridges in the northern part of the basin. Tonawanda, Murder, and Ellicott Creeks descend the escarpment of the Onondaga at falls and cataracts.

In the hilly southern half of the basin (the Appalachian Uplands), preglacial valleys, deepened by glacial erosion, are cut into the shale. The valleys are partly filled with glacial deposits so that some of the present streams flow 200 to 600 feet above the bedrock floors of the valleys as shown in figure 3.

Sur tar	C1	6-		Thickness		7				
System	Series	Group	Formation	in feet	Section					
		Conneaut Group of Chadwick (1934)		500		Shale, SiltStone, and fine-grained sandstone. Top is missing in area.				
			Undivided	500		Gray shake and siltstone, interbedded, rection broken to save space.				
	Upper	Canadaway Group of Chadwick (1933)	Perrysburg	400. 450		Gray to black shale and gray sitistone containing many cones of calcareous concretions. Lower 100 feet of formation is olivergray to black shale and interbedded gray shale containing shalfy concretions and pyrite.				
Devonian	١		Java	90-		Greenish-gray to black shale and some interbedded imestone and zones of calcaraous nodules. Small masses of pyrite occur in the lower part.				
e G	,	i.	West Falls	100. 520		Black and gray shale and light-grey sitistone and sandstone. The lower part is patralitarous. Throughout the formation are numerous zones of calcareous concretions, some of which contain pyrite and marcasite.				
			Sonvea	45-85		Clive gray to black shale.				
			Genesee	10-20		Dark-gray to black shale and dark-gray timestone.				
			Moscow Shale Eudlowville Shale	12-55 65-130		Aeds of nodurar pyrite are at base. Gray, soft shale. Uray, soft, bissite shale and timestone beds at top and bottom.				
	Middle	Hamilton	Skaneateres Share Marcellus	60. 9 0		Univergray, gray and black, fissife shate and some datcareous begs and pyrite. Gray timestone, about 10 feet thick is at the base.				
		Unconformity	Shale Onondaga Limestone	108		Black, dense fissile share. Gray immestone and cherty limestone.				
		Oncomormity	Akron Dolomite	8		Greenish-gray and buff line-gratned dotomite.				
	. }	-	Bertie Limestane	50-60		Gray and brown dolomite and some interbedded share.				
Silurian	Саунда	Salina	Camillus Shale	400		Gray, red, and green thin-bedded shale and messive mutistone Gyosum occurs in beds and tenses as much as 5 feet thick. Subsurface information indicates dolomite for perhaps, more correctly, magnesiannine mudrocklis interbedded with the shall isnown scienatically in section. South of the outcop alea, at depth, the formation contains thick salt beds.				
	Niagara		Lockpart Dolomite	150		Dark-gray to brown, massive to thin-bedded dolomite, locally containing algal reaf and gypsum nodules. At the base are light-gray limestone (Gasport Limestone Member) and gray shally dolomite (DeCew Limestone Member).				
-	- ·									

Figure 2.--Bedrock units of the Erie-Niagara basin.

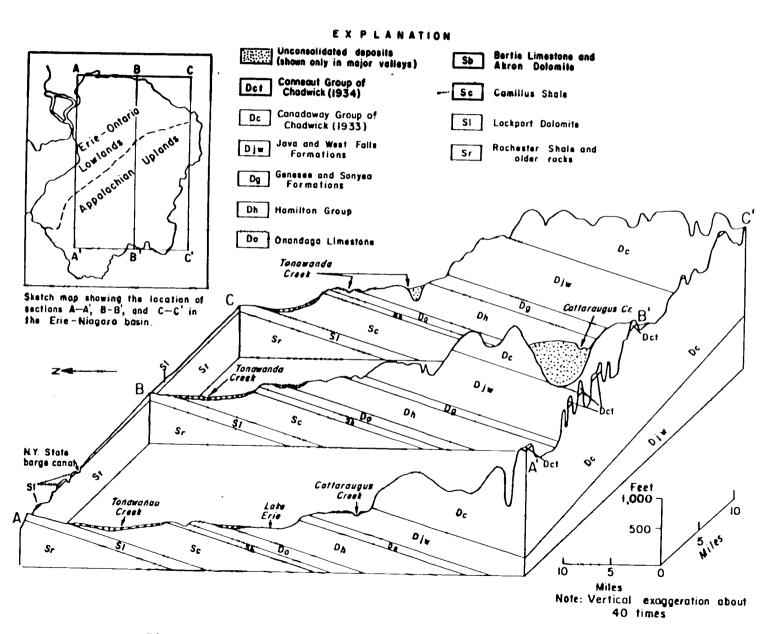


Figure 3.--Fence diagram of part of the Erie-Niagara basin.

OCCURRENCE OF WATER IN UNCONSOLIDATED DEPOSITS

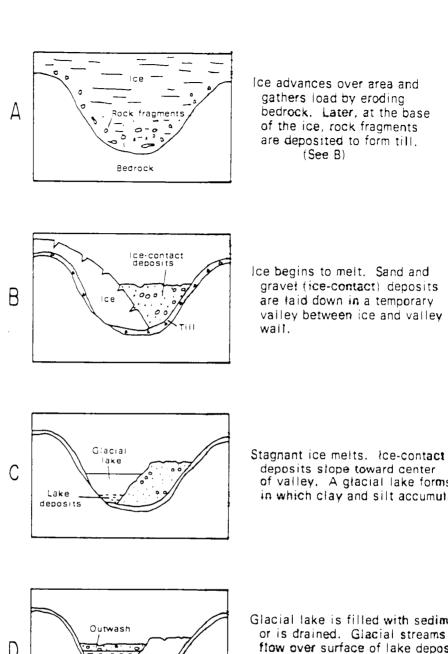
The unconsolidated deposits overlie the bedrock units previously discussed and consist of a variety of granular material. The bulk of the unconsolidated deposits are glacial in origin and include till, lake deposits, and sand and gravel deposits. The materials laid down since glaciation are thin and consist of alluvium and swamp deposits.

The deposits vary in their hydrologic characteristics because of differences in their lithology and thickness and because of their distribution and spatial relationships to one another. Plate 3 is a geologic map showing the division of the unconsolidated deposits into several groups on the basis of their origin. The distribution of these groups at the surface is readily apparent from the map. An understanding of the geologic processes that formed the deposits allows their subsurface distribution to be inferred. The map, therefore, can be read in three dimensions through proper interpretation.

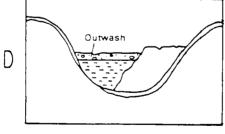
An explanation of the origin and general features of the several types of deposits is given in figure 8. When the ice sheet advanced over the area, the ice tore and abraded the bedrock surface. The hills were somewhat reduced and rounded and the valleys were deepened. Some of the rock material eroded from the bedrock was redeposited by the ice and forms the poorly sorted mantle material that is called till (fig. 8A). Eventually, the ice began to wane with a change in climate. As the amount of snow nourishing it decreased, the ice sheet thinned. It had difficulty maintaining flow over rough topography along its marginal zone. The margin became scalloped, and some marginal zones grew so thin that they stagnated. These zones separated from the ice sheet and wasted away in place.

The sequence of deposition in an upland valley during retreat generally followed a particular order. A temporary valley was formed between the wasting ice and the rock wall of the valley. Melt water from the ice sheet, which at times of rapid melting was released in enormous quantities, flowed through the valley away from the retreating ice sheet. The melt water carried a heavy load of sediment washed out of the ice. It deposited sediment, mainly sand and gravel, and began to fill up the valley. This type of sand and gravel deposit is an ice-contact deposit (fig. 88). In southward drained valleys, ice-contact deposits could form at low levels, even in the valley bottoms. In northward drained valleys, because of the divide to the south, the ice-contact deposits could form only high on the sides of the valley above the level of melt-water lakes impounded to the level of the spillway over the divides.

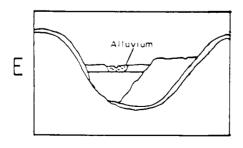
As the ice sheet melted back, a lower outlet for the melt water was uncovered. The melt-water stream was diverted from the ice-contact deposit. As the stagnant ice mass bordering the ice-contact deposits continued to melt away, the sand and gravel held up by the ice mass subsided toward the center of the valley. A lake formed in the open area left by the ice as it melted (fig. 8C). In a southward drained valley, the lake would be caused by a dam of earlier glacial deposits across the valley, perhaps part of the ice-contact deposits. In a northward drained valley, the lake would be formed between the divide to the south and the ice sheet to the north. Fine-grained sediments (clay, silt, and fine sand) settled out



deposits slope toward center of valley. A glacial lake forms in which clay and silt accumulate.



Glacial lake is filled with sediment or is drained. Glacial streams flow over surface of lake deposits and lay down sand and grave! deposits.



Recent stream cuts into glacial deposits and lays down alluvium consisting of silt, sand and gravel.

Figure 8.--Origin of unconsolidated deposits.

in the lake and gradually filled it (fig. 8D).

Eventually the lake deposits built up to the threshold of the dam, or the dam was cut away by the water spilling over it, or the ice sheet retreated northward opening up the valley. Streams could then flow over the surface of the lake deposits and lay down a second sand and gravel deposit, an outwash deposit (fig. 8D). The sources of the stream waters were the wasting ice sheet (particularly so in southward drained valleys), small masses of wasting ice remaining in tributary valleys, and precipitation. The thickest and most extensive outwash deposits were formed in southward drained valleys and in zones peripheral to the ice sheet. With time, the ice sheet retreated still farther northward, the glacial streams ceased to flow, and glacial deposition came to an end.

As the ice sheet retreated farther north, the climate more nearly approached that of the present. A drainage system developed in response to precipitation. Streams began to incise channels into the deposits. Vegetation took hold as the weather warmed and helped stabilize the slopes. In time, with a change in regimen, the streams began to lay down alluvium (fig. 8E).

The sequence of events discussed above and shown in figure 8 is generalized. Nevertheless, it is useful in understanding the occurrence of the unconsolidated deposits, particularly in valley areas where they constitute an important source of ground water. In the following sections the lithology and water-bearing characteristics of each of the major types of deposits in the Erie-Niagara basin will be discussed.

TILL

As shown in plate 3, till is the most widespread of all the unconsolidated deposits in the Erie-Niagara basin. Till is essentially a nonsorted material whose character depends principally upon the types of rocks over which the ice passed and the vigor with which the ice crushed and abraded the rock. Till overlying the shale is dark gray and clayey or silty. In some areas, mainly on hillsides and terraces south of Cattaraugus Creek, part of the till is stony material. Till on the soluble rocks is light red and silty; in some morainic ridges it is mostly fine sand.

Thickness of the till varies considerably from a thin cover of 2 or 3 feet to more than 200 feet along the divides between Cattaraugus Creek and the northwestward flowing streams, such as Tonawanda, Buffalo, and Eighteenmile Creeks. On flat terraces mapped as till in Buttermilk Creek valley, the stony till is as much as 30 feet thick.

Only small supplies of water are available from till. The permeability of till is so small that wells with large wall areas are required to obtain even small supplies. This requirement for a large wall area is met by digging large-diameter wells.

LAKE DEPOSITS

Lake deposits consist of horizontally bedded clay, silt, and sand. They form a thin skin over till and bedrock in the Erie-Ontario Lowlands, but reach thicknesses of 300 feet or more in some valleys in the uplands. Thick sequences of clay (such as penetrated by well 229-842-1 mear Springville) are so impermeable as to yield no water to wells. The lake deposits also contain thick sections of water-bearing fine sand in the major valleys of the Appalachian Uplands. This fine sand is called quicksand because it moves into wells. Small supplies can be developed from the fine sand by careful well construction, but usually these deposits are not utilized as sources of water.

GLACIAL SAND AND GRAVEL DEPOSITS

Glacial sand and gravel deposits include the ice-contact and outwash deposits shown in plate 3. In addition, deltaic deposits are present within the area. A prominent delta (lat 42°30', long 78°56') west of Collins. composed of sand and gravel, was built out from Clear Creek into a lake that occupied the Erie-Ontario Lowlands. Another delta (lat 42°50', long 78°34') was formed by Little Buffalo Creek, northeast of Marilla. These deltas are shown arbitrarily in plate 3 as ice-contact deposits. Deltaic deposits, presently concealed, probably interfinger with glacial lake demosits in the major valleys of the Appalachian Uplands where tributary streams deposited coarse-grained sediments in lakes. Subsurface data indicate queltaic deposits interfinger with lake deposits near the junction of Trow and Tonawanda Creeks south of the Attica State Prison. The sand amd gravel deposits occur principally in the valleys of the Appalachian umlands with only scattered, minor occurrences elsewhere. The relationshix of the sand and gravel to the other unconsolidated deposits and to the bearock is shown in figure 8. Where the deposits are thick and water bearing, they constitute the best aquifers found in the Erie-Niagara basin.

Lithology and thickness

The glacial sand and gravel deposits exhibit a variety of textures and sedimentary structures but they all are marked by stratification and a high degree of sorting. Characteristic of the deposits are horizontal beds of well-sorted sand, lenticular beds of cobble and boulder gravel, and scattered beds and lenses of open-work gravel. These various materials are interbedded in varying proportions, though boulder gravel is not present in most outwash deposits.

The deposits form thick fills in valleys of the upland section. In the valley bottoms the saturated thickness of the deposits exceeds 100 feet at many places. Thick deposits underlying terraces along the valley walls are to a large extent above the saturated zone. Buried sand and gravel deposits 10 to 40 feet thick underlie lake deposits in some vælleys.

The thickness of the sand and gravel deposits can be inferred from the surficial geologic map (pl. 3) and the data on wells (table 6). The sand and gravel mapped as ice-contact deposits extends downward to till or bedrock. Till forms only a thin cover on the bedrock in most valleys, so the depth to bedrock can be assumed to be the thickness of the ice-contact deposits. The sand and gravel deposits mapped as outwash, on the other hand, are generally thin and overlie lake deposits in most valleys. The outwash deposits are thinnest wherever lake deposits are mapped in narrow bands along the edge of outwash terraces or as small areas within larger areas of outwash.

A thick outwash deposit of high permeability lies in the Tonawanda Creek valley south of Batavia. This outwash deposit contains open-work gravel which enhances its permeability. In addition its saturated thickness exceeds 70 feet. This is the most permeable large deposit known in the study basin.

The sand and gravel deposits that underlie lake deposits in the major valleys are not mapped. The location and thickness of these deposits are known only from subsurface data. The only such deposit developed for large ground-water supplies is at Gowanda. Small to moderate capacity public-supply wells are also developed from buried sand and gravel deposits at Holland, Varysburg, and at Hamburg for the Biehler Meadows development.

Hydraulic properties

Coefficients of transmissibility of the sand and gravel deposits given in table 4 were estimated on the basis of reported specific capacities of larger yield wells using graphs given by Walton (1962, p. 12-13). If the screened interval is small in relation to the thickness of the aquifer, the computed transmissibility applies mainly to the materials opposite the screen. The position of the aquifer and the depth of the screened interval are given to allow evaluation of these factors. The transmissibilities computed for some wells may be misleading because the drawdowns may have been affected by infiltration from streams. The transmissibility of the aquifer at well 259-809-1 is phenomenally high. Various wells drilled for the city of Batavia also had specific capacities that indicated similarly high transmissibilities. Yet, the transmissibilities computed from the specific capacities of wells 258-809-1 and 259-809-7 are an order of magnitude less. Irregularly distributed zones of open-work gravel in these deposits may account for this disparity.

Yields of wells

The yields of wells in the sand and gravel deposits vary greatly depending on the permeability and saturated thickness of the deposits and on well construction. Most wells for domestic supply are 6-inch diameter drilled wells with open-end casings. Such wells have low yields because they are necessarily inefficient; this type of construction is cheap and is adequate for household supplies. Wells drilled for public supplies are constructed for high efficiency and give a representative picture of the availability of water in the sand and gravel deposits. Efficient

Table 4.--Specific-capacity tests of wells finished in sand and gravel deposits

Well	Pumping rate	Drawdown	Specific capacity	aqu (fee	tion of uifer t below surface)	Screened interval	1
	(gpm)	(feet)	(gpm/ft)	Тор	Bottom	(feet below land surface)	bility (gpd/ft)
227- 856 - 1	545	92	5.9	332	377	336-376	12,000
-4	517	81.3	6.4	301	347	303-333	12,000
229- 822-1	425	30.5	13.9	1/ 24	75	64-74	17,000
229- 856-1	150	9.5	15.8	1/ 19	35	30-35	18,000
230-840-1	830	25	3 3	100	157	119-138	40,000
231- 825-1	150	3	50	1/ 16	48	38 -4 8	55,000
2	502	7.1	7 1	1/ 17	49	39-49	100,000
2 32- 82 5- 1	305	6.9	44.2	1/7	>53	44-49	60,000
2 34- 85 6- 3	254	19.3	13.1	1/ 11	>35	25 - 35	15,000
2 38- 83 2- 1	300	33	9.1				20,000
2 38- 85 5- 1	130	42.7	3.0	43	58	47 - 57	4,500
- 2	137	12.6	10.9	<u></u>	24	19-24	13,000
2 39- 8 53- 1	115	42.4	2.7	47	54	4 9- 54	3,500
2 46- 8 36- 1	690	46.5	14.8	40	>112	75 - 105	20,000
-2	700	102	6.9	72	>132	121-131	10,000
2 54- 8 29- 1	220	11.1	19.8	<u>ル</u> 9	>34	29-34	25,000
2 58- 8 09- 1	456	12.8	35.6	1/ 26	>49	4 1 - 49	40,000
2 59- 8 09- 1	600	1.5	400	1/ 15	>64	4 0- 60	600,000
- 7	200	4.4	45.6	1/ 14	>60	5 0- 60	60,000

 $oldsymbol{\mathcal{U}}$ For a water-table aquifer, the depth to the water table is given.

wells yield 500 to 600 gpm from sand and gravel deposits in most valleys in the Uplands. The highly permeable outwash deposits in Tonawanda Creek valley provide yields of 1,000 to 1,400 gpm. Wells with these yields cannot be developed everywhere in the sand and gravel deposits. It is necessary to locate a sufficient thickness of water-saturated coarsegrained material (generally 10 to 20 feet), in which a screen can be set. Several test holes may be needed to locate the required aquifer materials. The success of communities and industries in developing large-yield supplies from sand and gravel deposits indicates that the relatively thick zones of permeable materials needed for well development are abundant.

ALLUVIUM AND SWAMP DEPOSITS

Some alluvium lies along all streams. Larger streams have built flood plains or terraces of alluvium consisting of silt, sand, and gravel. In most of the smaller streams with steep gradients, the alluvium is a bed deposit of gravel. The gravelly alluvium along Cattaraugus Creek is tapped for small supplies at places by means of driven and dug wells. Alluvial deposits otherwise are not significant sources of water.

Swamp deposits of muck and sediments lie in poorly drained areas. They generally mark areas of ground-water discharge. Because of their generally low permeability, they are not a significant source of water.

GROUND-WATER HYDROLOGY

The quantity of ground water in storage in the Erie-Niagara basin is enormous. Its magnitude can be roughly calculated as follows. Assume that the saturated zone available for development is 100 feet thick (it is certainly much thicker in many parts of the area) and that the porosity of the water-bearing formations is 10 percent (the porosity of much of the glacial deposits is higher but that of the bedrock is lower). These assumed figures indicate that storage in the ground-water reservoirs is equivalent to about 10 feet or 120 inches of water spread over the entire area, or about 2 billion gallons per square mile.

Ground water is added to storage intermittently as precipitation infiltrates the ground and percolates to the zone of saturation. This process is called recharge. It is obvious that if water were not also discharged from the ground, the ground would be water logged. Water moves through the saturated zone and discharges to the surface, generally to a stream, but in some places to springs or swamps. In its travels, a second type of ground-water discharge occurs. Plants whose roots extend to the saturated zone extract ground water from the ground and discharge it to the atmosphere as water vapor. Discharge equals recharge, except as relatively small changes in ground-water storage occur from year to year.

The estimate of 120 inches of ground water in storage is about 3 times the average annual precipitation and about 10 times the annual groundwater discharge. The replacement of water in storage obviously occurs at a slow rate. Despite this slowness, the ground-water reservoirs must be studied as dynamic systems. The usefulness of ground-water storage in providing supplies during periods of deficient precipitation is apparent. The reservoirs also function as conductors and transmit a considerable part of the water available for development from recharge areas to discharge areas. When ground water is pumped out of the ground, water moving through the reservoir is diverted toward the center of pumping. Natural discharge, and thereby streamflow, is ultimately reduced. Streamflow may also be reduced by a diversion of water from the stream into the ground as natural gradients are reversed due to pumping. Ideally, an understanding of the operation of ground-water reservoirs as part of a hydrologic system is needed in order to evaluate available ground-water supplies and the effects of their development on the total water regimen.

MOVEMENT OF GROUND WATER

How ground water moves from the point where it enters the saturated zone to the point where it is discharged is illustrated in figure 9. The most striking features of ground-water movement are the curvature of the lines of flow and the upward movement of the water as it approaches the the discharge area. The upward flow of ground water may seem at variance with the behavior of water at the surface where water always flows downslope. Water at the surface flows downslope because it follows a

hydraulic gradient that results from gravity. Ground water likewise follows a hydraulic gradient, but the gradient results from head as well as gravity. The equipotential lines in figure 9 are lines of equal head. The ground-water gradient and, hence, the direction of ground-water flow, is at right angles to the equipotential lines. Theories of ground-water flow are set forth by Hubbert (1940) and Toth (1962a, 1962b).

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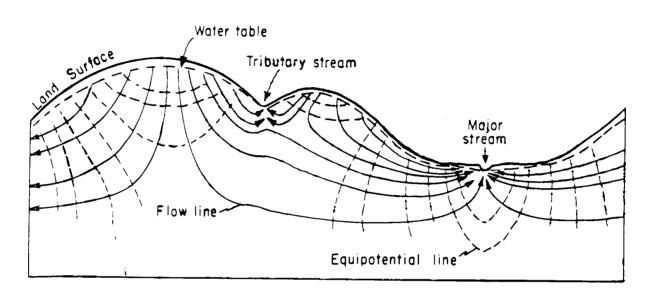


Figure 9.--Ground-water flow in a part of the Appalachian Upland section.

— The paths of ground-water flow are generalized in figure 9. Ground-water flow concentrates in the more permeable zones in the unconsolidated deposits and follows the open fractures in bedrock. In detail, then, the paths of movement are irregular. Flow lines flatten out with depth because the permeability of the rocks decreases with depth and vertical circulation is restricted.

As can be seen from figure 9, minor flow systems can exist within a major system. Many small tributary streams draining hill slopes probably are fed by ground water discharging from minor flow systems. Figure 9 shows that only part of the water that infiltrates to the water table within the tributary drainage basin discharges within the basin. Water that infiltrates near the divide joins the major flow system and discharges to the main-stem stream. Furthermore, as the water table declines, its relief with respect to the tributary stream is considerably reduced and the amount of water moving through the minor flow system is substantially decreased. In the summer, as the water table falls, the amount of water moving through the minor flow system may be less than the evapotranspiration near the stream and the stream may dry up. The nature of the flow system explains why many tributary streams dry up in the summer even though the water table on the hill slopes remains at higher altitudes than the streambeds.

Differences in water levels among wells are also explained in the light of the flow system. Heads decrease with depth beneath recharge areas. Therefore, as a well in a recharge area is drilled deeper and deeper, its water level declines. Conversely, heads increase with depth beneath discharge areas and as a well is drilled deeper its water level rises.

CHANGES IN STORAGE

The ground-water reservoirs of the Erie-Niagara basin undergo seasonal changes in storage that are typical of the northeastern United States. A change in storage is brought about when recharge and discharge occur at different rates. Storage is almost always changing because recharge and discharge are equal only as a transient condition. The pattern of storage fluctuations is shown by the hydrographs in figure 10. The hydrographs are plots of water levels in selected wells that are unaffected by pumpage and, therefore, indicate, in a qualitative sense, fluctuations in storage.

What brings about the seasonal fluctuations in ground-water storage? Ground-water discharge is a continuing process. Its rate varies with the volume of water in storage because the higher the water levels in the ground, the steeper is the gradient to the streams and hence the higher is the discharge. The rate of decline of water levels in wells decreases as the levels drop. This fact is reflected in the hydrographs (fig. 10). Recharge is intermittent because it can occur only as a result of rain or snowmelt. Because precipitation is rather uniformly distributed throughout the year, there is year-round potential for recharge. The hydrographs show, nevertheless, that recharge is negligible from late spring to early fall. A third variable, evapotranspiration, fluctuates seasonally and is responsible for the observed seasonal lack of recharge.

The potential evapotranspiration shown in figure 11 is computed by the method of Thornthwaite and Mather (1957). During the growing season, evapotranspiration exceeds precipitation. Soil water is needed to supplement the demand made by plants so that a deficiency of soil moisture generally develops. During the middle part of the growing season, most of the precipitation that infiltrates is held in the soil. Only, during an exceptionally wet period during the summer will the field capacity of the soil be exceeded so that infiltration can reach the water table.

Several characteristics of the ground-water regime are indicated by the water-level hydrographs (fig. 10):

(1) The zone of aeration acts as a reservoir and, where either thick or in fine-grained material, yields water slowly to the saturated zone. This dampening of increments of recharge is shown by the hydrograph of well 238-844-4, which penetrates a sand and gravel deposit containing water under water-table conditions. Infiltration into the soil occurs in discrete increments, yet the water level in the well rose gradually through periods of several days to 1 1/2 months.

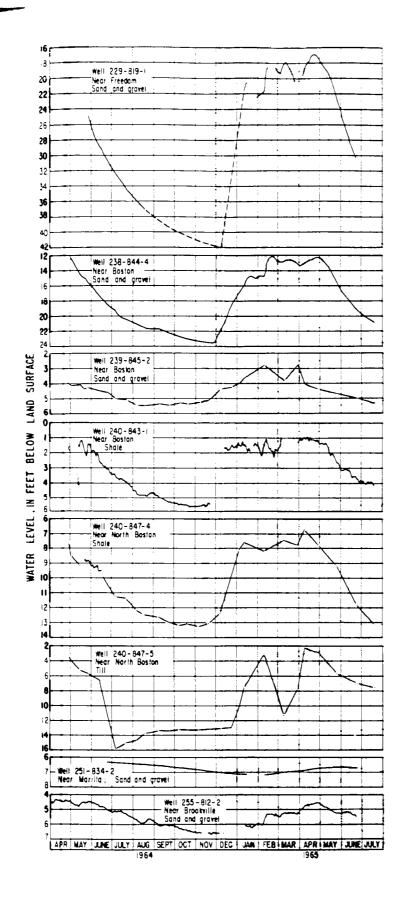


Figure 10.--Water levels in observation wells. A continuous record is shown by a solid line. A record obtained by periodic measurements is indicated by a dot for the measurement and intervening straight lines. Estimated water levels are shown by dashed lines.

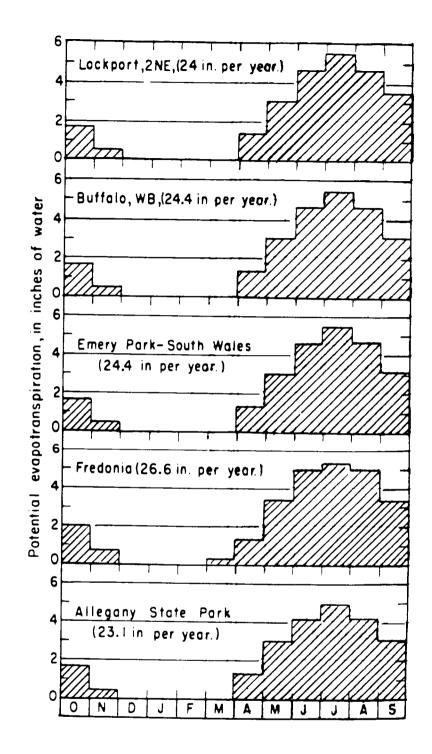


Figure 11.--Normal monthly potential evapotranspiration at climatological stations in and near the Erie-Niagara basin.

(2) Changes in storage are brought about by the percolation of streamflow into the ground as well as by the discharge of ground water to streams. The sand and gravel deposits near Freedom penetrated by well 229-819-1 (fig. 10) are recharged

by tributaries of Cattaraugus Creek. The headwaters of the stream near the well are perennial, but in the summer the streamflow percolates into the ground upstream from Freedom. At base flow a steady recharge is received from the stream, but this is considerably exceeded by discharge from the aquifer through subsurface flow down the vailey. The hydrograph for the well is discontinuous, but it is apparent that sharp increments of recharge were received by the aquifer in January, February, and March of 1965. These rapid rises in level are at variance with those of well 238-844-4, discussed previously, and probably were caused by recharge from the stream when it flowed at high stages.

- and hydrology of the area require that the bedrock be recharged mainly by downward percolation from till on hilltops. Water-level fluctuations in the two units can be expected to be of different magnitudes because of differences in water-bearing properties. Where the recharge area of the bedrock is remote, the fluctuations in the two units may also be somewhat out of phase, as is shown by the hydrographs for wells 240-847-4 and -5.
 - (4) Wells in water-table aquifers close to streams show a narrow range of fluctuation. From April 27, 1964, to July 19, 1965, the water level in well 239-845-2 (measured bimonthly) fluctuated through a range of only 2.7 feet. Near streams, water-table aquifers receive water traveling along flow paths from recharge areas, but they also discharge water to the stream. The net effect is that there is little change in ground-water storage in the aquifers near streams. The water-level fluctuation at the well is due to the rise and fall of the stream stage, to recharge by direct infiltration, and to discharge by evapotranspiration in the immediate vicinity of the well.
 - (5) Wells in deposits that are remote from the recharge area have gradual fluctuations in water level that are usually out of phase with the trend of water levels in wells closer to areas of recharge. The hydrograph of well 251-834-2 is smooth, and the trend of the water level in the well lags the seasonal trends shown by other observation wells. This lag represents the time required for water to move from the recharge area to the well. The water-level fluctuations in the well are of a small magnitude because ground water from the deposits is discharging to a small stream 600 feet to the northwest.
 - (6) Confined aquifers undergo the same pattern of seasonal storage changes as water-table aquifers. However, water levels in wells in confined aquifers have many minor fluctuations of short duration that are superimposed on the seasonal ones, as is shown by the hydrographs of wells 240-843-1 and 255-812-2. The small, irregular pressure changes apparent on the

hydrographs are probably due to changes in atmospheric pressure. An increase in atmospheric pressure drives the water level down in a well tapping a confined aquifer. The water level in the well recovers as the atmospheric pressure decreases. The physical explanation of this phenomenon is given by Ferris and others (1962, p. 83-85). Thus, minor fluctuations of a diurnal (daily) nature observed in such wells are not indications of changes in storage, as are the longer term fluctuations.

GROUND-WATER DISCHARGE

The flow of water through the saturated zone is described by Darcy's Law:

Q = TIL

where: Q is discharge in gallons per day,

T is transmissibility in gallons per day per foot,

I is the hydraulic gradient in feet per foot,

L is the width, in feet, of the cross section through which discharge occurs.

This law can be applied to the Erie-Niagara basin in the general fashion shown in figure 12. If d (the distance from the stream) is constant, h (the height of the water table above the stream) is directly proportional to Q (the ground-water discharge to the stream). The depth to the water level in a well at a distance, d, is complementary to h, and therefore is inversely proportional to Q. Darcy's Law, therefore, suggests that a relationship can be developed between ground-water levels in wells and that portion of streamflow derived from ground-water discharge.

In periods of sustained dry weather, streams are supplied only by ground-water discharge. At other times, the stream is supplied also by overland runoff. On a hydrograph of a stream-gaging station, the periods of base flow (essentially ground-water discharge) are characterized by gentle recessions in flow. The periods of overland runoff are characterized by sharp increases in flow followed by steep recessions.

The relationship between ground-water levels and streamflow can be determined by plotting ground-water levels against average daily streamflow for periods when base flow was occurring. A typical plot is shown in figure 13. A curve can be drawn through the points. Points falling to the right of the curve do so because the stream was not truly at base flow on the days chosen. The graph is a curved line because the saturated thickness of deposits contributing ground water to the stream shrinks as ground-water storage is depleted.

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Well number	County	Owne r	Year com- pla- ted	Type of wall	Depth of well (feet)	Diameter (Inches)	Depth to bedrock (feet)	Water-bearing material	Altitude above sea level (feet)	Below land surface (feet)	Date	Method of Ilft	Estimated pumpage or flow (gaillons per day)	Use	Remarks
228-839-1	Cattaraugus	F, Waterstram		Dug	11.0	48		Sand and gravel	1,330	9.0	10-21-61	Sw		F	
2 28-840-1	do.	f. Felton	a 1958	Drv	12.4	1 1/4		do.	1,280	p10.0	10-24-61			A	About 1 ft away from driven well used for form supply.
-2	do.	H. Kellay		Drl	53.1	6		Shala	1,370	p12,4	4-20-62	J∎t		D, Ag	fron; supplies a chicken farm.
-3	do.	French	1961	Dri	54.4	6	32	do.	1,370	3.9	4-20-62			U	Yield 3 gpm beller test (r).
228-846-1	Erle	D. Bylble	1955	Dug	8.6	24		Send and gravel	1,230	6.8	5-29-63	Sw	450	٥	Anal; temp 48.0.
228-8 51-1	do.	B. Skuse	1932	0-1	r 110	6	••	Shele	1,120			Jet	1,500	F	Anal; Iron.
228-857-1	Catteraugus	Senece Nation of Indians	1964	0 r 1	298	8	78	do.	870	111.3	8-26-64	••		A	Gas; yield less than 1 gpm (r); "shot" with 39 sticks of dynamite which did not improve yield.
-2	do.	do.	1964	Drl	447.6	8	a 70	do.	870	442.7	8-26-64		**	A	Temp 55.4; yield is negligible; "shot" with 39 sticks of dynamita which did not improve yield.
229-819-1	do.	Earl Thomas Estate	a1920	0 r 1	17.9	6	••	Sand and gravel	1,820	21.6	5-13-64	Dw M		A	ow.
-2	do.	do.		Dug	35.0	36		do.	1.820	21.0	5-13-64			A	Goes dry.
3	do.	C. Owens	1947	Orl	39.2	6		do.	1.815	20.4	5-15-64) e L	100	D	Anal; perennial supply,
229-822-1	do,	Village of Arcade	1954	Drl	r75.9	18, 12		dio.	1,660	r23.5	10-11-54	Tur	600,000	PS	Screen, I2-inch dimmeter, 100-slot, from 65,9-75,9 fi gravel packed; yleld 425 gpm; on initial test, swl 21,0 ft, dd 30.5 ft; pumpage rate is prior to addition of well 231-825-2 to Arcade system.
-2	do.	do.		Dri	r54	12		da.	1,660			Iur	15,000	PS	Screen; yield 60 gpm; supplies community of Sandusky.
229-841-1	Erie	A. Gentner		Oug	16.6	24		do.	1,360	13.3	5- 7-64	2m		F	
229-842-1	do.	do.	1959	Drl	r325	6			1.340					A	Dry hole; send and gravel 0-15 ft; clay and send 15-325 ft; filled with trash.
229-846-1	do.	D. Kessler	1953	Dug	11.0	30, 12		Sand	1,400	2.0	5-29-63	Sw	200	D	Anal; temp 46.0; yield about 10 gpm pump tast.
229-849-1	do.	Town of Collins, Weter District No. 3	1959	Drl	r60	10, 6		Sand and gravel	1,220	Flow			40,000	PS	Flows about 30 gpm through header 3 ft above tS Into main of water system; flow provides sufficient supply for weakdays; screen, 6-inch diameter, 100-slot, 51-60 ft.
-2	do.	do.	1959	Drl	r56	18, 10		do.	1.220	Flow		Tur		P\$	Iron; screen, 18-inch diameter, 100-slot, 51-56 ft; grävet packed; yteld 150 gpm; generally pumped only on weekends,
229-856-1	do.	Town of Collins, Water Districts Nos, 1 & 2		Drl	r35	18, 10		da.	820	r19	4-16-58	Tur		PS	Screen, 18-Inch diemeter, 100-slot, 30.3-35.3 ft; gravel packed; pumping test, 150 gpm, dd 9.5 ft.
229-857-1	do.	M. Gates	1964	Drl	r42	6		Sand	820	31	9-14-64			0	Screen, 5-inch diameter, .030-slot, 32-42 ft; yield 10 gpm balter test with no appreciable drawdown.
230-829-1	Cattaraugus	W. Delaney	1962	Dri	r244	8, 6, 4		Gravel	1,400	r+30	2-11-63		3,000	f	Anal; H25; supplies house and barn by artesian pressure; when drilled flow was 200 gpm, estimated by drillar,
230-833-1	, Erio	E. Korowski	1954	Drl	56.2	6		Sand	1,265	40.6	8- 5-64	Jet	100	D	Anal.
230-835-1	do.	R. King	1955	Orl	57.B	6		Sand, silt, clay	1,245	⊕ 2	8- 5-64			A	Yield is inadequate for domestic supply.
-2	Cattaraugus	W. Winkey		Dug	20.2	36		Sand and gravel	1,390	17.9	8- 6-64	Sw		F	
230-837-1	Erla	t, Rumfola	a1941	Orl	33.7	6		Gravel	1,365	14.7	8- 5-64	Sw	3,500	F	Anal; cased to 40 ft; partly backfilled with crushed stone,



Table 6, -- Records of selected wells in the Eric-Niagara basin (Continued)

	Well number	County	0	Year com- ple-	Type	Depth of	· · · · · · · · · ·	Depth to	Water-bearing	Al titude above see	Water Below Land	rlevel	Me thod of	Estimated pumpage or flow	-	
	230-838-1		0-ner	ted	₩e11	(feet)	(Inches)	(feet)	material	fevel (feet)	surface (feet)	Dete	Hft	(pallons per day)	Use	Romerks
			B. Mooney		Drv	14.1	1 1/4		Sand and grave?	1,380	3.8	5- 6-64			Α	OW,
	230-840-1		Village of Springville		Del	r139	18, 6	••	do.	1,350	16	7-31			A, PS	Originally finished with shutter screen, 12-inch diemeter from 121-135 ft; pumping test 830 gpm, dd 25 ft; gravel packed liner with 6-inch diemeter screen from 119.5-135 ft, then installed to reduce amount of sand pumped from well; abendoned about 1946 because of sand pumping.
		·	do.	1944	Drl	r137	18, 12		do.	. 350	~p r27	1-29-63	Tur	200,000	PS	H ₂ S; pumping rate 630 gpm; screen, 12-inch diameter from 122-137 ft; gravel packed; pumping test on 8-5-44, 672 gpm, swi 27.4 ft, dd 16.4 ft after 8 hours pumping (swi at this time probably was affected by pumping from wells 230-840-1 and -3).
	-3		do.	1942	Orl	r159	18, 10		do,	1,350	p31.5	1-29-63	Tur	200,000	PS	H ₂ 5; pumped at 600 gpm; screan, 10-inch diameter, 100-slot from 144-149 ft; 80-slot from 149-159 ft; gravel packed; pumping test 5-14-42, 513 gpm, and 37.7 ft, dd 20.6 ft (swill probably affected by pumping of well 230-840-1).
	230-842-1	do.	G. Kroll	1962	0r1	125	6	19	Shale	1,335	p46	7-28-64	Jet	200	D	Anal; fron; yield f gpm (r).
	230-843-1	do.	C. Hunt	1964	Orl	r330	6, 4		Sand	1.385	199	8-11-64			D	Yield 5 gpm (r); casing backfilled with washed gravel to 310 ft.
	230-845-1	do.	F. Schue	1961	Drl	37.9	6		Grevel	1,390	20.6	8-28-64	Sw	200	D	Yield 5 gpm.
92	230-856-1	do.	Town of Collins, Water Districts Nos, 1 6 2	1948	DrI	r42	18, 10		da.	835	r17	1948	Tur		PS	Pumping rate 150 gpm; construction details are reported to be similar to those of well 229-856-1.
ı	-2	do.	Dan Gernatt Gravel Products, Inc.	a1956	Orl	r36			Sand and gravel	830			Tur	100,000	r	Anal; supplies gravel plant, use is seasonal; yield 400 gpm.
()	-3	do.	do .	1962	Ort	30.3	18		do.	840	3.7	8-12-64	Tur	2,000	ı	Anal; supplies cleaner at asphalt plant, use is seasonal; casing perforated from 26-30 ft; pumping test, 150 gpm, swi 4 ft, dd 7 ft.
Julian St		Wyoming	Village of Arceds	1962	Drl	rSO	12		Gravel	1,490	r16	3-26-62			Ţ	Screen and gravel pack, 38-48 ft; pumping test, fSO gpm, sw1 16 ft, dd J.
	-2		do.	1962	Drl	r49	20, 12		Sand and gravel	1.490	r17	11-28-62	Tur		(PS)	Screen, 12-Inch diameter, 100-slot, 39-49 ft; gravel packed; pumping test 500 opm, swl 17 ft, dd 7.1 ft after 24 hours pumping.
·		Cattaraugus	M, Schaper	1956	Dri	200	6		do.	1,355	10.5	8- 7-64	Jet	300	Ó	On same property two wells, 60 ft deep, penetrated clay and were dry; a well 400 ft deep flowed but yielded sulfurous water and was destroyed.
	-2		Ç, Kimş	1959	Orl	450	6	454	do.	1.375	Flow	8- 7-64	Sub	3,000	F	
	231-831-1	Erle	W, Schlener	1962	Drv	r22	1 1/4		do.	1,410			Sw	400	D	
	231-833-1	do.	A. Zisser	1964	Drl	280	6. 4		Sand	1,390	8.1	8- 5-64	Sub		D	Yield 2 1/2 gpm (r).
	-2	do.	J. Rung	1959	Drl	59.3	6		Gravel	1,430	39.7	8- 5-64	Ja t	350	D	Anal; yield about 25 gpm baller test.
	-3	do.	C. Butler	1962	Dri	94,4	6		do .	1,430	p47.2	8- 5-64	Jet	3,000	F	fron; cased to 150 ft (r, driller); yield 25 gpm bafler test when drilled; yield was inadequate in summer 1964; well may be partly filled in with sand entering at bottom of casing.
	231-835-1	do.	P. Schuster	1958	Orl	99 .7	6		Sand and gravel	1,445	p90.8	8- 6-64	\$ub	100	D	Anal,
ł	231-838-1	do.	G. Loncasty		Drv	17.6	1-1/4		do.	1,400	3.5	5-12-64			A, Ag	Screened from 14.9-17.6 ft; Ow,
	231-839-1	do.	K. Ploetz	1956	Orl	29.0	6		do.	1,400	18.8	5- 6-64	Jet	200	0	

	Wall number	County	Owner	Year com- pte- ted	Type of well	Depth of well (feet)	Diameter (inches)	Depth to bedrock (feet)	Water-bearing material	Altitude above sea level (feet)	Below land surface (feet)	r Jevel Date	Method of lift	Estimated pumpage or flow (gallons per day)	Use	Remarks
	231-844-1	Eria	H. Kobier	1961	Drv	12			Sand and gravel				Sw	150	D	Iron,
	231-8 58-1	do.	Seneca Nation of Indians	1964	Drl	288	8, 6	••	••	810				•	T	Casing stuck in hole; sand, 0-130 ft; sandy clay, 130-230 ft; sand and gravel, 230-288 ft.
	-2		do.	1964	Drl	385	8	366	Shale	810	94	3-65			D	Water-bearing zone at 370 ft; pumping test, 23 gpm, dd 156 ft.
	231-900-1	Cattaraugus	da.	1964	Drl	76.9	8	50	do.	715	31.1	8-12-64			D	Bailer test, 25 gpm, swl 35 ft, dd 25 ft (r).
71 1 KL	-2	do.	do.	1964	Drl	76.1	8	49	do.	715	29.8	8-12-64			D	Do.
ChurchSt.	232-825-1		Village of Arcade	1953	Drl	r53	12, B, 10		Sand and gravel	1.480			Tur	650,000	(PS)	Anal; screen, 10-inch diameter, 100-slot, from 44-49 ft; gravel packed; pumping test of 11-53, 305 gpm, swl 7.1 ft, dd 6.9 ft.
	232-827-1		do.	1961	Drl	r149	10, 8,		do.	1,460	Flow	*		**	X, T	Temp 49 (r) 8-16-61; screen, 6-inch diameter, 125-slot, 139-144 ft; flow 60 spm (r); pumping test 185 spm, water level 29,7 ft after 24 hours pumping.
	232-928-1	Erle	K. Vartz	1958	Ori	28. 7	6		Gravel	1.435	18.3	6-25-64	Ş		Ç	
	232-830-1	do.	N. Hogen	1963	Orl	1.75	6		Sand and gravel	1,405	11.4	8-11-64	Sub	150	D	Anal; H ₂ S.
	232-831-1	do.	P. Loggans	1961	Drl	r87	r6		da,	1,435	r 32		Jet	100	D	Anal.
1	232-838-1	do.	R. Schwelkert	*1963	Drl	129	6		Sand	1,430	32.6	5~ 5-64			۵	
93	232-839-1	do.	F. Knowl ton		Dug	21	30		Sand and gravel	1,400	17.7	5- 7-64			A	Woll has been partly backfilled by Owner.
ı	232-857-1	do.	Seneca Nation of Indians	1964	Drl	r 76	8	14	Shale	845	5.8	8-12-64			D	Original depth 48.1 ft; no improvement in yield after deepening; yield 7.5 gpm baller test; cased to 27 ft because of caving shale; water enters at bottom of casing.
	-2	do.	do.	1964	Drl	50.8	8	16	do.	840	6.1	8-12-64			D	Gas; caving shale; casing slotted from 27-30 ft and set into shale and gravel packed.
	-3	do.	do.	1964	Drl	55.7	8	16	do.	845	6.3	8-12-64			D	Gas; yield 1.5 gpm baller test; water enters from caving shafe at 28 ft.
	-4	do.	dq.	1964	Qrl	r148	8	14	do.						٨	Yield less than 2 gallons per hour.
	233-828-1	do.	Chafee Water Works, Inc.	▲1900	0.1	20.4	8		Sand and gravet	1,460	13.5	2-11-63	Şw	15,000	P\$	Pumping rate is about 100 gpm.
	-2	do,	Greatwood	1960	Dri	\$0.7	6		Sand	1,435	20.0	6-25-64	Sub	100	D	Yield 40 gpm.
	233-838-1	do.	Miller	1963	Orl	86.5	6	45	Shele	1,455	18.6	5- 7-64			A	Yield is a few gallons per minute,
	-2	do.	do,	1963	Orl	55.6	6		Sand and gravel	1,450	29.0	5- 7-64			F	
	-3	do.	do,	1960	Orl	101.9	6		Shele	1,460	46.6	5-12-64			A, F	Insufficient yield; OM,
	-4	do.	R. Wiede	1959	Drl	126.3	6		do.	1,440	24.0	11- 8-64	Jot	150	D	Anal; iron; H ₂ S; can be pumped dry.
	233-839-1	da.	J. Buzak	1963	Orl	r578	7		Gravel	1.430	r 200	4- 3-63	Sub	250	0	Anal; gas; fron
	233-840-1	do.	D. Zittel	1960	Dug	r 1 B	24		do.	1.435	r16		Sue	4,000	F	Use Includes 2,000 gpd for cooling.
	233-844-1	do.	J. Pharner		Ori	55.5	6		Shata	1,470	27.0	7-28-64			ø	
	234-823-1	Wyoming	W. Lewandowski	a1935	Orl r	3,403	12		Shale?	1,600	Flow			2,000	GT	Anal; gas; salty taste; temp 53.8, 5-4-64; flow 1-2 gpm, 6.5 It above LS, 5-4-64; water is presumed to enter well through break in casing at relatively shallow depth.

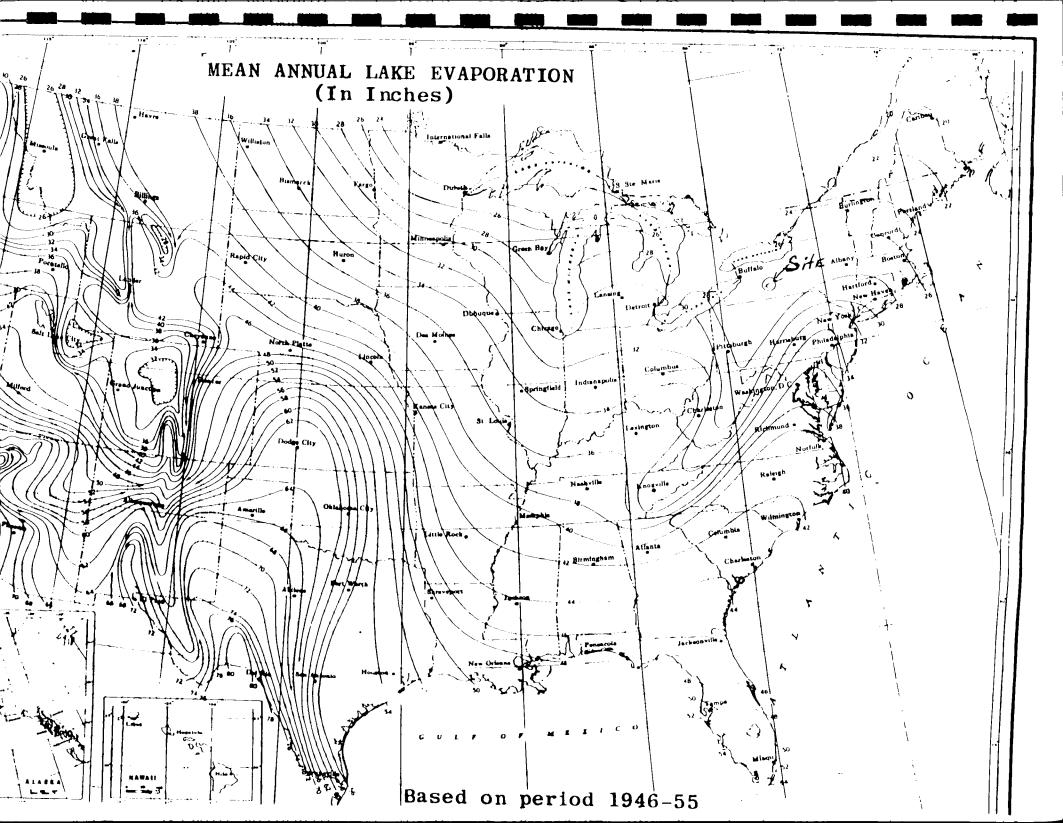
REFERENCE NO. 15

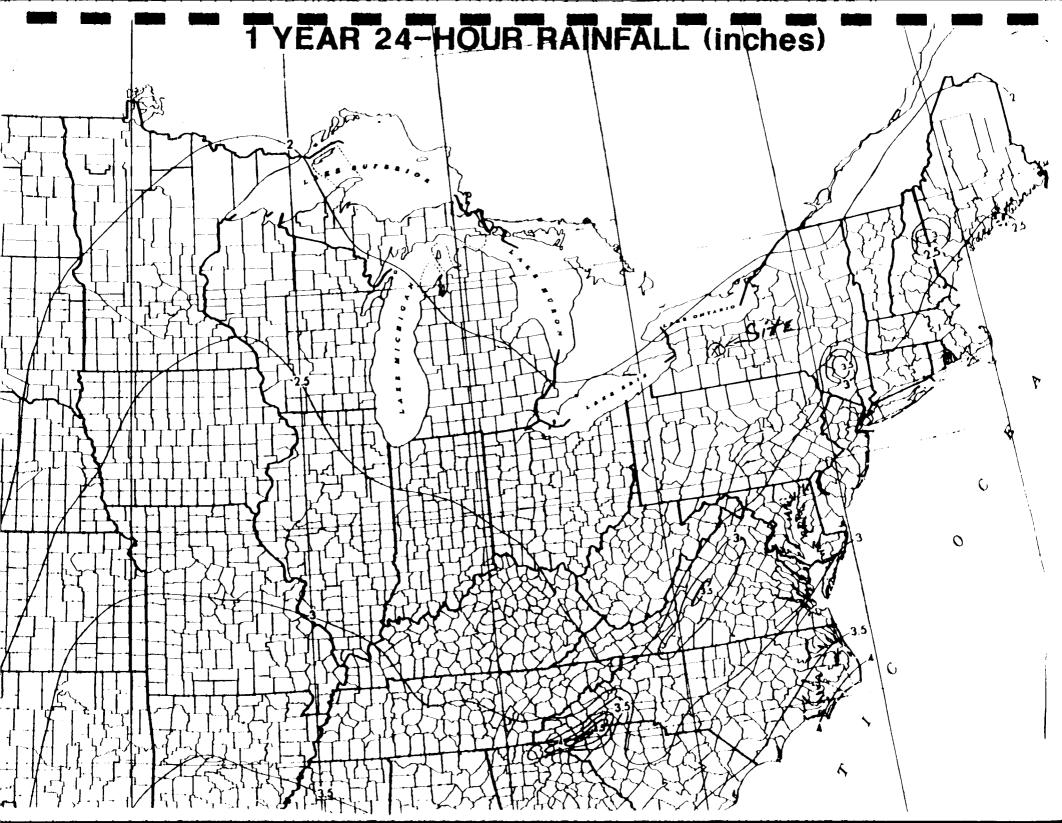
Uncontrolled Hazardous Waste Site Ranking System

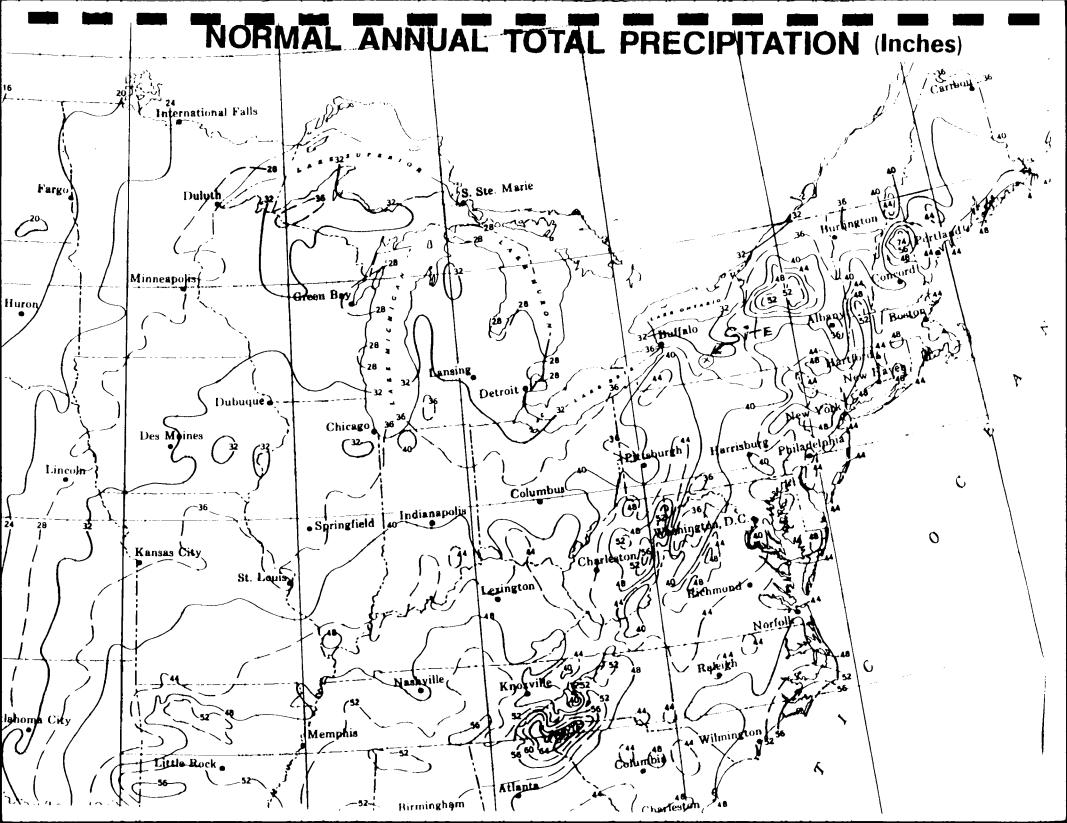
A Users Manual (HW-10)

Originally Published in the July 16, 1982, Federal Register

United States
Environmental Protection
Agency







REFERENCE NO. 16

SITE NAME: MOTOROLA, INC. TDD#: 02-8803-12 SOMELING DATE: 04/07/88 EPA CASE NO.: 9296 LAR; METATRACE, INC. VOLATILES Sample 10 No. INYRL-6N-1 (MS/MSD) NYRL-6N-2 NYRL-6N-29 (DUP) NYRL-6N-3 NYRL-5-1 (MS/MSD) NYRL-5-2 NYPL-S-2A (DUP) NYPL-S-3 NYBL-5-4 NYPL-5-5 NYBL-S-6 NYBL-RIN-1 NYBL-RIN-2 NYBL-TBLK-I Traffic Report No. BR351 RR352 BR353 BR354 BR435 BR436 BR437 RR438 BR439 PR444 **BR445** BR440 **PR441** BR442 Matrix WATER WATER WATER WATER **501L** SOIL SOIL **501**L **901L** 501L SOIL MATER WATER MATER Units ug/L ug/L uq/L ug/L ug/L ug/kg uq/kq ug/kg uq/kq uq/kq uq/kg ug/kg ug/L ug/L Dilution Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 Percent Moisture 26 55 55 25 31 24 24 Chloromethane **Proposethane** Vinyl Chloride Chloroethane Methylere Chloride Acetone Carbon Disulfide 1,1-Dichtereethene 1,1-Dichloroethane Trans-1,2-Dichloroethene (total) Chloroform 1,2-Dichlercethane 2-Putanone 1, 1, 1-Trichlorgethane Carbon Tetrachloride Vinyl Acetate **Promodicatoromethane** 1,2-Dichloropropane cis-1, 3-Dichloropropene Trichloroethene **Dibrosochlorosethane** 1, 1, 2-Trich Inroethane Penzene j trans-1,3-Dichloropropene Bromoform 4-Methy 1-2-Pentanone 2-Hexanone Tetrachloroethene Toluene 7 21 1, 1, 2, 2-Tetrach Inroethane Chlorobenzere Ethylbenzene Styrene Tylenes (Total)

MOTES:

Blank space - compound analyzed for but not detected

- 8 compound found in lab blank as well as sample, indicates possible/probable blank contamination
- E estimated value
- J estimated value, compound present below CRGL but above IDL
- R analysis did not pass EPA 9A/9C
- N Presumptive evidence of the presence of a compound, but can't be identified

NR - analysis not required

Detection limits elevated if Dilution

SITE NAME: MOTOROLA, INC. TODO: 02-8803-12

SAMPLING DATE: 04/07/88

EPA CASE NO.: 9296 LAB: METATRACE, INC.

SEMI-VOLATILES Sample ID No.	I Inybl-	BN-1 (MS/NS	SD) NYBL -GM -2	NYBL-6N-29 (DU	IP) NYBL -GN- 3	NYBL-S-1 (MS/MS	(D) NYBL-S-2	NYBL-S-29 (DUI	P) Nyal -s-3	NYBL-S-4	NYRL-S-5	NYBL-S-6	MYDI _DTN_	I MVDI _DTM_	2 NYBL-TBLK-1
Traffic Report No. Matrix Units Dilution Factor Percent Noisture		BR351 MATER ug/L 1.00	BR352 MATER ug/L 1.00	BR353 MRTER ug/L 1.00	B9354 MATER ug/L 1.00	BR435 SDIL ug/kg 1.00	BR436 SOIL ug/kg 1,00	BR437 SOIL ug/kg 10. 0	BR438 SOIL ug/kg 10.0	BR439 SOIL ug/kg 10.0	BR444 SOIL ug/kg 1.00	BR445 SDIL U ŋ/kg 1.00	BR440 MATER Ug/L 1.00	BR441 MATER Ug/L 1.00	BR442 MATER Ug/L N/A
	·ii					26	22	22	25	31 		24 	- -		N/A
Pentachlerophenol Phemanthrene Anthracene	 		·				. _J	-							NER Ser Mer
Di-mbutylphthalate Fluoranthene Pyrene	 						j j						В		HR HR
Butylbenzylphthalate 3.3'-Dichlorobenzidine Benzo(a)anthracene	† 						-								NR NR NR
Chrysene bis(2-Ethylhexyl)phthalate Di-n-octylphthalate	ł †						J					Ð	B	B	神
Benzo(h) fluoranthene Benzo(k) fluoranthene	İ						1		J						MR MR MR
Benzo(a) pyrene Indeno(1,2,3-cd) pyrene Di benz (a,h) anthracene	1														NR NR
Benzo(q, h, i) perylene	t														MR MR

NOTES:

Blank space - compound analyzed for but not detected

- 8 compound found in lab blank as well as sample, indicates possible/probable blank contamination
- E estimated value
- J = estimated value, compound present below CROR, but above IDL
- R ~ analysis did not pass EPA DA/QC
- N Presumptive evidence of the presence of a compound, but can't be identified

MR - analysis not required

Detection limits elevated if Dilution

Factor)1 and/or percent moisture 10%

STITE MANE: MOTOROLA, INC.

1004: 02-8803-12

SAMPLING DATE: 04/07/88

EPA CASE NO : 9296 LAB: METATRACE, INC.

SEMI-VOLATILES	1										•			
Sample 1D No.	INYBL-GN-1 (MS/MS	SD) NYPL-6M-2	NYRL- cu -2a(du	P) NYRL -GN -3 1	NYPL-S-1 (MS/MSD)	NYBL-S-2	NYRL-S-2A (DUP)	NYRL-S-3	NYPL -5-4	NYRL-S-5	NYBL-5-6	NYBL-RIN-1	NYRL-RIN-	2 NYBL-TBLK-1
Traffic Report No.	I BR351	BR352	PR353	PR354	BR435	BR436	BR437	BR438	BR439	BR444	BR445	BR440	BR441	BR442
Matrix	I WATER	WATER	MATER	MATER	501F	50 1L	501L	S01L	SOIL	S01L	501L	MATER	MATER	WATER
Units	l ug/L	սգ/Լ	սդ/Լ	սդ/Լ	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	uq/kg	ug/L	ug/L	ug/L
Dilution Factor	1 1.00	1.00	1.00	1.00	1.00	1.00	10.0	10.0	10.0	1.00	1.00	1.00	1.00	W/A
Percent Moisture	l				26	55	55	25	31	24	24			N/A
	• • • • • • • • • • • • • • •		•											N/H
Pheno I	ŧ													NR
bis(2=Chlorcethy))ether	I						~							NR
2-Chlorophenol	1					P **								MO
1, 3-Dichlorobenzene	I													MED.
1,4-Dichlorobenzene	i													MD MD
Benzyl alcohol	I													MID.
1.2-Dichlorobenzene	ı													MD.
2-Methy)phenol	ı													MET.
his(2-Chloreisopropy1)ether	1													MAN.
4-Methylphenol	i													101
N-Nitroso-di-n-dipropylamine	1													1987
Hexachloroethane	i													MR
Nitrobenzene	i													NR
Isophorone	ì													MR
2-Nitrophenol	1													NR
2, 4-Dimethylphenol	, 1													NR
Benzoic acid			ь.	_	_	_								MR
bis (2-Chloroethoxy) wethane	1	R	R	R	R	R								1407
2,4-Dichlorophenol	,													MR
														NE
1, 2, 4-Trichlorobenzene Naphthalene	1													NF
														MR
4-Chloroanitine	1													167
Hexachlorobutadiene	,													MR
4-Chioro+3-Methylphenol	ř													NR
2-Methy inaphthalene	!													MP.
Hexachlorocyclopentadiene	1													MR
2, 4, 6" Trichlorophenol	ı													NR.
2,4,5-Trichlorophenol	l													MI
2-Chloronaphthalene	I													NET
2-Mitroaniline	1													NR
Dimethylphthalate	ı													ME
Acenaphthy lene	1													100
2,6-Dinitrotoluene	1													NER.
3-Nitroaniling	t													140
Acenaphthene														1987 MBD
2,4-Dinitrophenol	1													1987 1980
4-Nitrophenol	1													PRIT.
Dibenzofuran	1													1987 1987
2, 4-Dinitrotoluene	ı													PREF
Diethylphthalate	1													PRF
4-Chlorophenyl-phenyl ether	- 													197
Fluorene	i													MR
4-Nitroaniling														ME
4,6-Dinitro-2-methylphenol	1													MIR
N-mitrosodiphenylamine														NR
														MR
4-Bromopheny1-pheny1 ether	1													MIR
Hexach Lorobenzene	1													MB

SITE NOME: MOTOROLA, INC. TODA: 02-8803-12 SEMPLING DATE: 04/07/88

EPA DASE NO.: 9296 LAB: METATRACE, INC.

PESTICIDES	1													
Sample ID No.	INYBL-GN-1 (MS/MS	STD) NYTBU,-GNI-2	NYBL-GN-29 (DUE) NYBL-GM-3	NYBL-S-1 (NS/NS	(I) NYRL-S-2	MYBL -5-29 (DUP)	MVTN -C-1	NYBL-S-4	NYBL-S-5	NYBL-S-6	AVD:DIM	NVDI_DIN_:	2 NYBL-TBLK-1
Traffic Report No.	I BR351	BR352	BR353	BR354	BR435	BR436	BR437	BR438	BR439	BR444	BR445	BR440	GR441	BR442
Matrix	i water	WATER	MATER	WATER	SOIF	90 IL	SOIL	SOIL	501L	SOIL	501L	MATER	WATER	MATER
Units	l ug/L	սց/Լ	ug/L	uq/L	ug/kg	ug/kg	ug/kg	ug/kg	uq/kg	ug/kg	ug/kg	uq/L	uq/L	merica
Dilution Factor	1 1.00	1.00	1.00	1.00	10.0	1.00	10.0	10.0	10.0	10.0	10.0	1.00	1.00	N/A
Percent Moisture	l				26	22	55	25	31	24	24			N/A
alpha-BHC									******					MD
beta-BMC	1	-			•		_							MID.
delta-BHC	I													1971 MED
gasma-BHC ((.indane)	1													160
Heptachior	I													MD
Aldrin	ŧ						•							MD
Heptachlor epoxide	1													MD
Endosulfan I	1													ME
Dieldrin	1													146
4, 41 -DDE	•													
Endrin	1													
Endosulfan II	ı													MD
4, 4' -DDD	1													ND
Endosulfan sulfate	1													MC
4, 4' -DDT	t													100
Methoxychlor	1													····
Endrin ketone	1													MD
alpha-Chlordane	1													- No.
gassa-Chlordane	1													
Toxaphene	f.													
Aroctor-1016	r													
Aroctor-1221	i i													100
Anoclar-1232	F													-
Aracian=1242	1													700 1000
Aroctor-1248	1													
Aroctor-1254	I .					91 E	197	1164	187	479				
Aroclor=1260	•					,, ,	• • • • • • • • • • • • • • • • • • • •	1101	101	473				NOT.

NOTES:

Blank space - compound analyzed for but not detected

- B compound found in lab blank as well as wample, indicates possible/probable blank contamination
- E estimated value
- J estimated value, compound present below CROL but above IDL
- R analysis did not pass EPA QA/QC
- N Presumptive evidence of the presence of a compound, but can't be identified

NR - analysis not required

Detection limits elevated if Dilution

Factor) | and/or percent moisture 10%

TDD0: 02-8803-12 SAMPLING DATE: 04/07/88 EPA DASE NO.: 9296 LAB NAME: VERSAR, INC.

IMORGANICS Sample ID No. Traffic Report No. Matrix Units	į	L-GN-1 (MS/MSD MBN903 MATER ug/L	MATER ug/L	NYRL-GN-28(DUP) MBN905 HRTER ug/L	MEN906 MATER ug/L	M9N907 901L mg/kg	NYBL-5-2 MBN908 SOIL Mg/kg	NYBL-S-29 (DUP) MBN909 SOIL mg/kg	NYBL-5-3 MBN910 SOIL mg/kg	NYBL-S-4 NBN911 SOIL mg/kg	NYBL-S-5 FBN914 SOIL mg/kg	NYBL-5-6 MBN915 SOJL mg/kg	NYBL-RIN-! MBN912 WATER Ug/L	NYBL-RIN-2 MBM913 MRTER ug/L	NYBL-TBLK-1 N/A N/A 44/L
fint i mony	!					13000	15000	10700	15000						
Arsenic							10000	10700	15000	19800	14000	13400			NR
Barium	:		_			14 E	18 E	13 E	10.5						MR
Beryllian	;	J	J	J	J	82	125	84	19 E 166		50 E	14 E			MR
Cadmium						J .	j	,	100	119	145	J .	J	J	MR
Calcium	,	E2800				900	815	443	. 1960	J	J				NR
Chromium	;	52800	56000	56300	76000	2890	3720	4920	6770	241	976	10			MR
Cobalt	i					17	20	14	6770 21	8570	5170	J	J	J	MR
Copper	i					J	15 E	1	16 E	. 38	24	15			MIR
Iron	i	•				R	R	Ř	10 E	J	J	J	j		MR
Lead	i					25 300	31700	23400	30900	K CEROO	R The sec	R			MR
Magnesium	i	8920	DEPA			33 E	58 E	42 E	152 E	25800	29100	24700	J		NR
Hanganese	i	вжо	9530	9590	11700	3460	4100	3180	3560	178 E 7760	74 E	22 E			MR
Mercury	· · ·		,		j	582	1320	529	2420		4400	3180		j	MR
Nickel	,							•	CTCU	512	859	563		J	MR
Potassium	i	7	•			21	24	20	20	~					HR
Selenium	i	•	J		j	1520	1670	J	1500	26 2350	. 26	20			MIR
Silver	i							-	1300	5330	J	1520			MR
Sodium	i	1	9740												MR
Thallium	i	-	3/40	9690	9100	R	R	R	R	R	R	_			MR
Vahadium	i								••	n	M.	R	J	J	MR
line	ı	R	R			21	26	17	25	29	27				NR
Cyanide	i	••	R	R	R	328 E	420 E	261 E	528 E	1700 F	23	20			MR
NOTES:	,					3.66	R	R	3.35	1100 E	796 E 0.78	59 E	j	28	NAT NAT

NOTES:

Plank space - compound analyzed for but not detected

E - estimated value

J - estimated value, compound present below CRDL but above IDL

R - amalysis did not pass EPA 09/00

NR - analysis not required

U.S. ENVIRONMENTAL PROTESTION ABEHAY SAMPLE MANAGEMENT OFFICE P.O. BOX 818 - ALEXANDRIA, VA 22313 703/557-24**9**0 FTS:8-557-2490

DATE: 5/05/88

COVER PAGE INDRGANIC AMALYSES DATA PACKAGE

G.O. REPORT: 194 - 195

LAB MAME: VERSAR, INC.

984 NO.: 755

CASE NO.: 9296

FROJECT NO.: 5027.0000

SAMPLE NUMBERS

EPA NO.	LAB ID HO.	EFA NO.	LAB ID NO.
MBN 907	47934	BOE NAM	47935
MBH 309	47936	MBN 911	47937
MBN 914	47938	MBN 915	47939
MBN 310	48014	MEN 903	47922, 47928
17BN 304	47923, 47929	MBN 905	479 24, 47930
MEN 306	47925, 47931	MBN 912	47926, 47932
MBN 913	47927. 49733		

COMMENTS: THE ZINC AND COPPER VALUES FOR THE SOIL MATRIX HAVE REER FLAGGED

WITH E'S DUE TO THE SERIAL DILUTION;

ICP INTERELEMENT AND BACKBROUND CORRECTION APPLIED? YES. CORRECTIONS APPLIED BEFORE GENERATION OF RAW DATA.

FOOTHOTES:

HR - HOT REQUIRED BY CONTRACT AT THIS TIME FORM I:

- VALUE IF THE RESULT IS A VALUE GREATER THAN OR EQUAL TO THE INSTRUMENT DETECTION LIMIT BUT LESS THAN THE CONTRACT REQUIRED DETECTION LIMIT, REPORT THE VALUE IN BRACKETS (I.E., [10]). INDICATE THE ANALYTICAL METHOD USED WITH P (FOR ICP/FLAME AA) OR F (FOR FURNACE).
- INDICATES ELEMENT WAS ANALYZED FOR BUT NOT DETECTED. REPORT . WITH THE DETECTION LIMIT VALUE (E.G., 100).
- INDICATES A VALUE ESTIMATED OR NOT REPORTED DUE TO THE PRESENCE OF INTERFERENCE. EXPLANATORY NOTE INCLUDED ON COVER PAGE.
- INDICATES VALUE DETERMINED BY METHOD OF STANDARD ADDITION
- INDICATES SPIKE SAMPLE RECOVERY IS NOT WITHIN CONTROL LIMITS.
- INDICATES DUPLICATE ANALYSIS IS NOT WITHIN CONTROL LIMITS.
- INDICATES THE CORRELATION COEFFICIENT FOR METHOD OF STANDARD ADDITION IS LESS THAN 0.995

- DILUTION FACTOR

- SD - SAMPLE USED FOR ICP SERIAL DILUTION
- INDICATES DUPLICATE INJECTION RESULTS EXCEED CONTROL LIMITS

INDICATE METHOD USED: P FOR ICP; A FOR FLAME AA; AND F FOR FURNACE.

Inorganics Laboratory Response to Contract Compliance Screening

aboratory: Versar, Inc.

Contract: 68-01-7317

Date: May 25, 1988
Case: 9296 QC 194-195

Criterion: Comments

B1 | The potassium value for sample MBN 915 has been corrected and the lamended Form I is enclosed.

B2 | The manganese value for samples MBN 906 and MBN 913 have been corrected and amended Form I's are enclosed.

B3 | The cyanide value for sample MBN 914 has been corrected and the lamended Form I is enclosed.

- 2 4

Prepared by: 7kW

MAMPLE M	: DONTRACT Anagement 818 - Ale 2490 FTS:	OFFICE ENGMAX	I LA, VA	. 223			: SAM : M	ФЦЕ МО. : ВМ 903 :
			INORG	AHIC	AMALYSI	S DATA		5/05/88
BMAR BAN	VERSAR	INC.				€ fil	SE NO.	9296
୍ତିଆ ମାଠି.	785					LA	H RECEIPT D	ATE 4/08/88
- Ames san,	LE 10. HO.	47928	 2, 479	28		ЯĐ	REPORT HO.	194 - 195
ROJECT-	TASK 502	27.0000)			RA	тсн	194
				זיכי ז'זי	ENTIFIE	TO ANTO HI		
		- -			 	וו מאא מ	EMBUKED	
NTHEONO	:ATION:	LOW	X		MEDIUM		HIG	н
TATRIX:	WATER	Х	 SO	IL.		WIFE		
			_		UG/L			
1. 0	H_UMIM UM	i	8.0 U	1 20		13.	MAGNESIUM	8920.
2. A	YNDMITHA		22. U	12)		14.	MANGANESE	2.0 Ú
3. A	RSEMI C		10. ប	F		15.	MERCURY	o.
4. B	ARIUM	C C	53.]	121		16.	HICKEL	16. U
5. F	ERYLL IUM	·	1.0 บ	15		17.	POTASSIUM	0 1790.3
6. C	ADETU m		4.0 U	}±;		18.	SELENIUM	5.0 U
7. 0	CALCIUM	528	300.	(E)		19.	SILVER	2.0 U
9. C	CHROMI u m		7.0 U	121		20.	SODIUM	. 0 4610.3
9. 0	COBALT		5.0 บ)E1		21.	THALLIUM	10. U
10. 0	OPPER	Ξ	13.3	121		22.	VANADIUM	4.0 U
11. 1			13. U			23.	ZINC	1.12.
12. L			5.0 U	1=				
 C	CYANIDE							
—	TOOTHO T ES:	SEE CO	OVER P	AGE.				
			r.m+ 0	EN ESC	S: CLART	TY - CL	EAR: SD:	
	COMMENTS: (JOLUR -			,			

U.B. EPA CONTRACT LABORATORY PROGRAM SAMPLE MANAGEMENT OFFICE : SAMPLE NO. P.O. BOX 818 - ALEXANDRIA, VA. 22313 MBN 304 703/557-2490 FTS: 8-557-2490 DATE 5/05/88 INORGANIC ANALYSIS DATA SHEET AB HAME VERSAR INC. CASE NO. 9296 ------785 SOW HO. LAB RECEIPT DATE 4/08/88 -----LAB SAMPLE ID. NO. 47923, 47929 QC REPORT NO. 194 - 195 PROJECT-TASK 5027.0000 BATCH 194 ELEMENTS IDENTIFIED AND MEASURED CONCENTRATION: LOW X MEDIUM HIGH MATRIX: × WATER SOIL WIFE UG/L I. ALUMINUM 8.0 U 13. MAGNESIUM 9530. p ------2. ANTIMONY 14. MANGANESE £ 3.91 2**2.** U 3. ARSENIC 15. MERCURY -----4. BARIUM 5. BERYLLIUM 17. POTASSIUM - C 2160.3 18. SELENIUM S6000. 19. SILVER 20. SODIUM . 9740. 9. COBALT 21. THALLIUM 10. COPPER 22. VANADIUM 11. IRON 23. ZINC 1 7.51 E) 18. LEAD CYANIDE FOOTHOTES: SEE COVER PAGE.

LAR SHEERUTSOR

COMMENTS: COLOR - COLORLESS; CLARITY - CLEAR;

Enta Fox for
JANET BECKMAN

00003

U.S. EPA CONTRACT LABORATORY PROGRAM SAMPLE MANAGEMENT OFFICE : SAMPLE NO. : P.O. BOX 818 - ALEXANDRIA, VA. 22313 MRH 305 703/557-2490 FTS: 8-557-2490 DATE 5705788 INORGANIC ANALYSIS DATA SHEET LAB HAME VERSAR IHC. CASE NO. 9296 7**8**5 3**4W** Mü. LAB RECEIPT DATE 4/08/88 ------LAB SAMPLE ID. NO. 47924, 47930 QC REPORT NO. 194 - 195 PROJECT-TASK 5027.0000 BATCH 194 ELEMENTS IDENTIFIED AND MEASURED CONCENTRATION: LOW X MEDIUM HIGH MATRIX: WATER Х SOIL WIFE UG/L 1. ALUMINUM 1 8.0 U P 13. MAGNESIUM 9590. P 2. ANTIMONY 22. U 14. MANGANESE 2.0 U 3. ARSENIC 15. MERCURY 4. BARIUM S. BERYLLIUM 17. POTASSIUM 1700. U 18. SELENIUM 7. CALCIUM 56300. 19. SILVER 8. CHROMIUM 20. SODIUM 9. COBALY 21. THALLIUM 22. VANADIUM 23. ZINC FOOTHOTES: SEE COVER PAGE. COMMENTS: COLOR - COLORLESS; CLARITY - CLEAR; 00004

LAB SUPERVISOR ELLE FOX for
JANET BECKMAN

. 1. A some TA, 11 Cables Tibe Sections BAMBLE MAMAGEMENT OFFICE : SAMPLE NO. : 1.0. BOX 318 - ALEXANDRIA, VA. 22313 MBN 306 03/33/-2:90 FT**3:** 8-557-2490 DATE 5/05/88 INDREAMIE AMALYSIS DATA SHEET LAB WAME - NERSAR INC. CASE NO. 9296 LAB RECEIPT DATE 4/08/38 LAB CARREL ID. MO. 47925, 47931 QC REPORT NO. 194 - 195 PROJECT-TASK 5027.0000 ROTAR 194 ELEMENTS IDENTIFIED AND MEASURED MUIDEM X WOJ : MOUTERTEGOND HIGH -----SOIL MATER WATER X WIRE UG/L i. Augustain (8.0 g p 13. MAGNESIUM 11700. 2. ARTIMONY 14. MANGANESE 3. ARBENI**S** E 131.3 @ 17. POTASSIUM (1880.) 18. SELENIUM 20. SUDIUM 9100. 21. THALLIUM 10. COPPER CE. VANADIUM

FOOTMUTES: SEE COVER PAGE.

COMMENTS: COLOR - COLORLESS; CLARITY - CLEAR;

00005

LAB SUPERVISOR COLCRET FOR 200

SAMPLE P.O. B	MANAGE men Ox 818 — Al	C LABORATOR C OFFICE LEXANDRIA, D: 8-557-24	VA. 2				: MEN	NC. 907	:
		OHI	RGANI	C ANA	LYSIS DA	ITA S	DATE :	5/05/88	
- 	ME VERSAF						 BE NO. 9298	S	
8 0W NO	. 785						HECEIPT DATE		
LAB SAI	MPLE ID. NO	J. 47934					REPORT NO. 194		
PROJEC	T-TASK 5(727.0000				KA]	 194		
									
		ELEM 	EHTS 	IDEHT	IFIED AN	ID ME	EASURED		
CONCEH.	TRATION:	LOW	X	ME	DIUM		HIGH		
MATRIX	: WATER		SOIL	X	WIPE				
	5 1 1 1 ha 7 1 1 4 4 ha	1 2000			DRY WEI				
		13000.					MAGNESIUM		
•		5.6 					MANGANESE		<u>.</u> .
ਹੈ .	ARSENI c 	14.	77	F		-	MERCURY		_
44 <u>.</u> .	BARIUM	32.		F1		16.	NICKEL	21.	- -
5.	BERYLL I UM	0.61	<u> </u>	<u>j2</u> :		17.	POTASSIUM	1520.	;=
6.	CADMIUM	900.		124		18.	SELENIUM	1.3 U	ļ: _
7.	CALCIUM	2890.		Ŀ,		19.	SILVER		- F-
8.	CHROMI U M	17.	*	j±:		20.	SODIUM	-E-70.3	- -
9.	COBALT	£ 9.5	3 J	 21			THALLIUM		
10.		100.	×E	<u> </u>	-	22.	VANADIUM		- 4
11.	IRON :	25300.	 *∗	124		23.	ZINC		<u>.</u> E 15
12.	LEAD	33.	И	F		•	PERCENT SOLIDS	78.3	-
	CYANIDE	3.66	<u>-</u>			•			~
	FOOTHO T ES:	SEE COVER	FAGE						
	COMMENTS:	COLOR - BR	OWN;	TEXTU	RE - MED	IUM:	DF OF 5 FOR F	PB;	
								~ 0000	3
				 AB SU	PERUTSOR	<u> </u>			

.O. B(М ШОАИАМ — 818 ХС	ACT LABORAT ENT OFFICE ALEXANDRIA FTS: 8-557-	à, VA. :			ଜମନ୍ତ : ଅମ :	LE MO. :
			(NORGAN)	10 ANAL	YSIS DATA	DATE SHEET -	5/05/88
-18 MAR	ME VER					SE NO. 9	
JW NÜ.	···· •• ··· •• ··· •• ··· •• ··· •• ··· •• ··· •• ••					B RECEIPT DA	
18 E E	MPLE ID.	HO. 47935				REPORT NO.	
KOJEC1	T-TASK	5027.0000					
					FIED AND M		
ЭИСЕИ.	TRATION:	FOM -	X	MED -	IUM	HI G H	
XIRTA	: WAT	ER j	SOIL	X 	WIFE		
		(MG/KG	DRY WEIGHT		
1.	ALUMIN u i	n i 1500	00.	1 2)	13.	MAGNESIUM	4100.
2.	ANTIMO N	Υ 5	5.9 UN ²	F	14.	MANGANESE	1320.
3 .	ARSENI C	 	.8. N	* F	15.	MERCURY	0.13 U
		13		(2)	16.	MICKEL	24.
	BERVLL I	BIM E O.		į2)	17.	PUISSATOR	1670.
6.	CADMIU	8:	.5.	(P)	18.	SELENIUM	1.3 U
7.	CALCIUM	378	20.	j2)	19.	SILVER	0.53 U
e.	CHROMI U I	T 2	20. *	\$ZI	20.	SODIUM .	£ 72.3
э.	COBALT		5.	12)	21.	THALLIUM	2.7 UN
10.	COPPER	1	}}}	- 	22.	PIUIGAHAV	ae.
11.	IRON	3170	ю. ж	j 2)	23.	ZINC	420. E
12.	LEAD		88. N.	F 3		PERCENT SOL	IDS 75.0
•	CYANIDE		79===				
•	FOOTHO T I	ES: SEE COV	VER FAGI	E •			
	COMMENT	s: color -	BROWH;	TEXTUR	E - MEDIUM	; DF OF 10 F	OR FB;
							00009

SAMPLE P.O. BO	MANAGEMENT Ox 818 — Ali	LABORATORY OFFICE EXAMDRIA, VA : 8-557-2490	PROGRAM 4. 22313	kim I	: SAMPI : Mbi	E NO. :
		INORG	JAMIC AMAL	YSIS DATA	DATE SHEET	5/05/88
LAB NA!	ME VERSAR	INC.		CA	SE NO. 9:	296
53W MO.	. 785			LA	B RECEIPT DAT	TE 4/08/88
LAB SAI	MPLE ID. HO	. 47936		QC	REPORT NO. :	194 - 195
PROJECT	T-Task 5 00	27.0000		БА	 TCH 1'	 94
	· ·	ELEMEN	ITS IDENTI	IFIED AND M	EASURED	
CONCEH.	TRATION:	LOW X	MEI)IUM	HIGH	
	: WATER		TE X			
		(MG∕KG	DRY WEIGHT		
1.	ALUMIN um	1 10700.	;:·	13.	MAGNESIUM	3180. F
2.	ANTIMONY	5.5 ປ	N TH	14.	MANGANESE	529. P
		13.		15.	MERCURY	0.12 U
4.	BARIUM	84.)D)	16.	HICKEL	20. P
11= 121 H	BERTLLIUM	1 0.371	p.	17.	POTASSIUM	E 848.3 P
6.	MUINGAD	443.	P	18.	SELENIUM	1.2 U F
7.	CALCIUM	4920.	p ——	19.	SILVER	0.50 U P
.	CHROMIUM	14.	* P	20.	SODIUM .	-E-38.]
⁄3 .	COBALT	E 8.73	J P	21.	THALLIUM	2.5 UN JF
10.	COPPER	-80	±€Ρ	22.	VAHADIUM	17. P
11.	IRON	23400.	* 15	23.	ZINC	261. E P
	LEAD	42 .	N F		PERCENT SOL	DS 80.3
		2./91	- ·		· · · · · · · · · · · · · · · · · · ·	
	FOOTHOTES:	SEE COVER.F	AGE.			
	COMMENTS:	COLOR BROW	IN; TEXTUR	RE - MEDIUM	; DF OF 5 FO	R AS, FE;
						00010
		-	LAR SUF	PERVISOR E	new Fo	x don

SAMPLE P.O. BO	PA CONTRACT - Mahagement Ox 818 - Al 7-2490 - Fts	OFFICE EXANDRIA,	VA. 8				: SAMPLE : MBN :		:
							DATE !		
		INC	IRGAN]	C ANAL	LYSIS DAT	A SH	EET		
LAB MAI	ME VERSAR 	INC.				CASE	NO. 929	5 	
SOW NO.	. 785	· · · · · · · · · · · · · · · · · · ·	-			_AB	RECEIPT DATE	4/12/88	
LAR SAI	MPLE ID. HO	48014	_			RC F	EPORT NO. 19	4 - 195	
PROJECT	T-TASK 50	27.0000	_			BATO	H 195		
		ELEr	IEHTS	IDEHT:	IFIED AND	MEA	SURED		
COHCEH.	TRATION:	LOW	X	MEI -	muic		HIGH		
MATRIX	: WATER		SOIL	Х	WIFE				
		ŧ		MG/KG	DRY WEIG	нт			
1.	ALUMIN U M	1 15000.		1 5	1	3. M	AGHESIUM	3560.	Ţ.
2.	ANTIMONY	5.9	UN	יבן בי	1	4. 17	ANGANESE	2420.	
•	ARSENIC				1	 5. M	ERCURY	0.13 U	· -
4.	BARIUM	166.		JD1	1	 6. N	ICKEL	20.	; <u>-</u> .
5.	BERYLLIUM	0.76	ב	P	1	7. P	OTASSIUM	1500.	. -
6.	CADMIUM			1 21	1	8. S	ELENIUM	1.3 U	- F
7.		£770.		1 01	1	Э. S	ILVER	0.54 U	12,
8.	CHROMIUM	21.	*	ţ:	2	o. s	opium -	E-166-3-	_ _ =
· · · · · · · · · · · · · · · · · · ·	CORALT	16.	T	J2*			HALLIUM		-
10.	COPPER -						ANADIUM	25.	-
11.		30900.		121	2	3. Z	INC	52 8.	E P
	LEAD	152.		7=		ţ:-	ERCENT SOLID	 5 74.7	,
		3.39	5						_
	FOOTNO TES:		PAGE	Ε.			:		
	COMMENTS:	COLOR - BF	COMH;	TEXTU	RE - MEDI	UM;	DF OF 20 FOR	PB; DF OF	
	5 FOR AS;	SD;						000	4
							To Fox		,

SAMPLE P.O. B	MANAGEMENT OX 818 - AL	C LABORATORY P DEFFICE LEXANDRIA, VA. 3: 8-557-2490	ROGRAM	ikm i		SAMALE: MBN 9	NC. 11	:
		ІМОКОР	AMIC AMA	LYSIS DA	TA SHEET	DATE 5	/05/88	
LAI MA	ME V e rsaf	CINC.			CASE HO.	୨ଥ୨ଧ		
SOW MO	. 785	5			LAB RECE	IPT DATE	4/08/88	
LAB SA	MPLE ID. HO	0. 47937			QC REPOR	 194 NO. 194	- 195	
PROJEC	T-TASK 50	027.0000			BATCH	194		
		ELEMENT 	S IDENT	IFIED AN	D MEASURE	D		
COMCEN	TRATION:	LOW X	ME	DIUM		HIGH		
MATRIX	: WATER	501	L X	WIFE		_		
		1	MGZKG	DRY WEI	3HT			
1.	ALUMI N UM	19800.				SIUM	7760-	
		6.5 UN				NESE		-
		16. h	_			RY		_
		119.	-	:	 16. NICKE		26.	_
5.	BERYLLIUM	0.613	10	:	 17. POTAS	SIUM	2300.	. ===
Ğ.	Cadmiun	241.) <u></u> <u>-</u>	:	 18. SELEN	nu I	1.5 U	 -
7.	CALCIUM	8570.)D)	:	19. SILVE	R	0.59 U	-
8.	CHROMIUM	38. *	. — рі	ć	 20. SODIU	M *	 - 109.3 स	- :
3.	COBALT	C 8.23	P			IUM	3.0 UN	-
10.	COPPER	2580.	E-F	2	TTTTT		29.	-
11.	IRON	25800. *	<u>-</u>	í	23. ZINC		1700.	 IE. I
	LEAD	178. N	ــ ایم		PERCE	NT SOLIDS	67.5	_
	CYANIDE	0.74 U			<u></u>			-
		SEE COVER PA		RE - MED	IUM; DF O	F 20 FOR 1	PB;	
							0001	1
			LAB SU	PERVISOR -		NET BECKM	C '	

tiantelli tean e.j. 2002 3	ACE MEN 13 - A	T LABORATORY F DEFICE LEXANDRIA, VA. G: 8-357-2490	_		: 3AMH-1.	 E NO. 914	:
		INORGA	TSYLAMA DIM	S DATA S	DATE	5/05/88	
LAB MAME	VERSA				38 NO. 925) a	
 36W MB.					HELEIRT DATE		
 					REPORT NO. 13		
PROJECT-TA:							
				¥ F4 1	CH 194		
		ELEMENT	S IDENTIFIE	AND ME	ASURED		
COMCEMBRAT:	164:	LOW X	MEDIUM		HIGH		
MATRIX:			 L X .	 JIPE			
			MG/KG DRY	WEIGHT			
		1 14000.		1.3.	MAGHESIUM 	4400.	_ (i
		5.7 UN		14.	MANGANESE	859.	;: _
3. nrai	EN 1 3 	20. N		15.	MERCURY	0.13 ೮	
4. B9R.	illia 	145.	(13. -	HICKEL	26.	
5. GERY	/LL1Uin	0.631	(P	17.	POTASSIUM	L 1040.1	ï
6. OAD!		976.	;=) 	13.	SELENIUM	1.3 U	- 13
	orum 		;p	19.	GILUER	0.52 U	-
	on I Uim	24. *	j5) 	20.	SOD IUM	20.3	<u>-</u>
	AIL T	1 9.41	 F	21.	THALLIUM	2.6 Unj	J
10. CORM		633.	-	22.	บกหลอไปแ	23.	- !=
11. 170		29100. *	 μ"> 	- 23.	ZINC	796. E	- <u>-</u>
12. LEAC		74. N	JF G	_	PERCENT SOLID	96.9	-
		0.78	_				-
F001	NOTES:	SEE COVER PA	- GE.				
0011	TENTS:	COLOR - BROWN	; TEXTURE -	MEDIUM;	DF OF 20 FOR	PB;	
800 and and any an	** *** *** *** *** ***					000	12

FOOTNOTES: SEE COVER PAGE.

COMMENTS: COLOR - BROWN; TEXTURE - MEDIUM; DF OF 4 FOR PB;

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LAB SUPERVISOR E TO TOX

	PA CONTRA(FORM ROGRAM	I		• • • • • • • • • • • • • • • • • • • •
0.0. B	- MANAGE m ei 0x - 818 + 7 7-2490 - Fi	ALEXANDRI	IA, VA.	22313		: 	LE MO. : M 912 :
			្រ	MIC OHOLYC	TO BATA	DATE SHEET -	5/05/88
- 0.8 - L- 0.1	en it i i i e t e i e i e		TROMON	NIC HUMETS			
	ME VERSA					SE NO. 9	
	. 78					R RECEIPT DA	
	MPLE ID. H			2	QC	REPORT NO.	194 - 195
'ROJEC'	T-TASK 5	5027.0000) :-		BA	TCH 1.	94
		£	ELEMENT	S IDENTIFI	ED AND M	EASURED	
ONCEN.	TRATION:	LOW	×	MEDIU	M	Н І GН	
MIRIX	: WATER	× ×		 L 	WIFE -		
		ı		UG/	L		
1	ALUMINUM	i	8.0 U	12,	13.	MAGNESIUM	10. U
2.	ANTIMONY	•	2 2. U	- II:	14.	MANGANESE	2.0 U
•	ARSENI C		10. U	-	15.	MERICURY	0.2 U
4.	BARIUM	€	3.31	 j:-	16.	NICKEL	16. U
: :3.	BERYLL i or	1	1.0'0	191 -	17.	MUISSATOR	1700. U
6.	CADMIUM		4.0 U	t:,	13.	SELENIUM	5.0 0
7.	CALCIUM	L 3	868.]	 	19.	SILVER	2.0 U
8.	CHROMI U M		7.0 U	 	20.	SODIUM	E 364.3
9.	COBALT			-	21.	THALLIUM	
10.	COPPER		5.0 U	- 32)	22.	VANADIUM	4.0 U
11.	IRON			— (2)	23.	ZINC	0 14.3
12.	LEAD		5.0 U	- 1 ⁻			
-	CYANIDE		10. U	···			
-	FOOTHOTES	3: SEE CC	VER PA	- GE.			
						= n =	
	COMMENTS:	: COLOR -	- COLORI	LESS; CLAR	ITY - CL	EAR;	

PARAGET LABORATERY PRESNAM BEATHER OF THE SEPTEMENT OF FRECE : SAMPLE NO. .: Á.J. COK 913 - ALEXANDRIA, VA. 22313 MEN 913 13/GU/-E+F/ F73: 8-557-2490 DATE 5/05/83 INORGANIO AMALYSIS DATA SHEET LAS MAME VERSAR INC. CASE NO. 9296 30% MO. 795 LAB RECEIPT DATE 4/08/98 .A. Cadhle ID. NO. 47927, 47933 QC REPORT NO. 194 - 195 RUJUST-TASK 5027.0000 BATCH 194 ELEMENTS IDENTIFIED AND MEASURED SHCCOTRATION: LOW X MEDIUM HIGH MATRIK: WATER X SOIL WIPE UG/L i. ALUMINUM 🐪 8.9 y p 13. MAGNESIUM C 10.1 2. GHTIMONY 14. MANGANESE [3.6] 3. ARSENIC 15. MERCURY 17. POTASSIUM 18. SELENIUM 20. SDDIUM E 430.1 21. THALLIUM ER. VANADIUM 23. ZINC FOOTHOTES: SEE COVER PAGE. COMMENTS: COLOR - COLORLESS; CLARITY - CLEAR;

LAB SUPERVISOR CULL FOR YOU JAMET BECKMAN

STANDARD OPERATING PROCEDURE

Page 27 of 17

Title: Evaluation of Metals Data for the

Contract Laboratory Program

Appendix A.2: Data Acceptability Natrative

Date: Feb. 1965 Number: HW-2 Revision: 7

, _	9296 Size Motorola Inc. Marrix: Soil 7
	Lab VSRSAR Water 6
	Other
	Are all data of acceptable quality? Yes No
	If no, list exceptions with reason(s) for rejection or qualification as estimated value (J).
	if The tollowing analytes were qualibred
	as estimated (blugged with 'I') because
•	Service dilution do recovery is greater than
•	10 10 but less than 100 10.
-	Na, (0 -> All soil Samples.
-	2) The following analytes were qualifie
-	as estimated (Magged with 'I') because
-	Spike securry is less than 75 90
-	Sb. As. Th -> All Soil Sumples.
•	(AS 13 a/so estimated due to
-	coefficient of coppelation is less the 0.995 in
•	MSA)
•	21 The following and the Was gualibried
-	3) The following analyte was qualified as estimated (blassed with IT') because
•	SPIKE SECWERT IS greater than 125 90
-	and data not blassed with a "V".
-	Ph -> All Soil Samples.

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Title: Evaluation of Metals Data for the

Contract Laboratory Program

Appendix A.2: Data Acceptability Narrative

Date: Feb. 1909 Number: HW-2 Revision: 7

4) The following analyte was rejected because
RPP is greater than 100 90 where sample and
duplicate are both greater than 5x CRPL.
cu -> All Suil Sumples.
5) The following analytes were rejected
because fieldblank was Dar IDL and the
Sample concentration was less than skilled-
blank value but not blassed with a "U".
- Zn -> MBN-903-MBN-906.
Na -> All Sout BAMPLES.
(NO is previously estimated due to other OC criteria) The rejected duty is not usuble at all
"chiteria) The rejected dut is not usuale as
A.2.2 Contract Problems/Non-compliance
* Special Quantitation Procedure was not
followed for the MSA analysis. The samples
should have been quantitated with 3 Spires
at 50, 100 8 150 90 at the Sample
absorbance. NO ACTION TAKEN.
(P.T.C.)
Date:
MMB Reviewer: Signature
ntractor Reviewer: Aurth Sumbaly Date: 06-88
Signature
Verified by: Date:

Page 11 of 17

Title: Evaluation of Metals Data for the

Contract Laboratory Program

Appendix A.2: Data Acceptability Narrative

Date: Feb. 1968 Number: HW-2 Revision: 7

	6)	110	Lallas 1.	519	amult to	2 1118	Reje	cted
	bacc	1150	for fix	old a	uphrate	the	drift	REMLE
	betwee	$^{\circ}$ n \mathcal{L}	MPIE a	ind	dupira	te is	gre	ater
	Hour	9×(R	101_ 1.Hr	180	RUMPLE	cina	103	
	duplice	ute i	's less	Hr	un 5×	CROL_	bet	greate
_	Hacen	1201	•					
	(N -	\longrightarrow	MBN -	-908	-909.			
_		(
		i						
_								
A • 2 • 2	Contract P	roblems/Nor	n-compliance					
_								
	B Reviewer:					Date:		
	•	Signatur		-160	1		06-0	8-58
	B Reviewer:	Signatur	ta Su	Nbal	1		06-0	8-88 UC

Total Review CLP DATA ASSESSMENT Report Functional Guidelines For Evaluating Organics Analysis (GC and GC/MS Analysis)

#Case 9)96 #SDG BR 35 | Lab Meta-Truce Site Motorofu Inc.

DATA ASSESSMENT

and the control of the second

The new functional guidelines for evaluating of organic applied.

all Data are valid and acceptable except those analytes that have been qualified with a "J" (estimated), "U" (non-detects) "R" (unusable), "N" (presumptive evidence of presence of material) or "NJ" (presumptive evidence of the material at an estimated value). All actions are detailed on the attached sheet.

Contract problems/Non-Compliance	
1- presence of a very longe peak in the pest/12012 fraction.	
2- Some Samples yulded high surrogate Recovery.	<u></u>
2. Some Samples gulded kigh surrogate Recovery. 3. Internal standards for some samples gulded an occasion	
outside ac limits.	
4- In the BN/A Fraction, the lab used 50 ppb standard from the initial Colil as Continuing Calibration and used the RRF for quantitation.	brakion
Reviewer's Monmouds. Hamio Date: 9/12/88 Verified By: Herryk Karus Date: 12/12/58	
Verified By: Serge Karras Date: 12/12/58	
C:CLPDATA	

DATA ASSESSMENT

1. Tuning and performance criteria are established to ensure mass resolution, identification, to some degree, sensitivity. These criteria are not sample specific; conformance is determined using standard materials. Therefore, these criteria should be met in all circumstances. Tuning standard for volatile organics is Bromofluorobenzene, and for semivolatiles in Decafluorotriphyenylphosphine.

If mass calibration is in error, all associated data will be classified as unusable "R."

All Mass Calibration was done satisfactorily.

DATA ASSESSMENT

- 1. Quality Assurance (QA) blanks (i.e., method, trip, field and water blanks) are prepared to identify any contamination which may be introduced into samples during sample preparation or field activity. Method blank measure laboratory contamination, trip blanks measure cross-contamination of samples during shipment, field banks measure cross contamination of samples during field decontamination and water blanks measure potential contamination introduced by the distilled water used during decontamination of field equipment. If the concentration of the analyte is less than 5 times (10 times for the commen-contaminents) the analytes are qualified as non-detects "U". The following analytes in the samples shown were qualified with "U" for this reason:
- a) Method blank contamination

 methylene chloride qualified with "" in: BR437, BR438, BR439.

 Di-n-Butyl phthalate qualified with "" in: BR351, BR352, BR353, BR435

 BR436, BR437, BR440, BR445.

 - c). Field or rinse blank contamination

Acetone qualified with "U" in . BR352, BR353, BR354, BR435, BR436, BR439, BR444, BR438, BR437.

d). Water blank contamination

None

Data Assessment

2. Holding time: The amount of an analyte in a sample changes with time due to chemical instability, degradation, volatization, etc. If the specified holding time are exceeded, the data may not be accurate. Those analytes detected in the samples will be qualified as estimated "J". The non-detects values sample quantiation limits will be flagged as estimated "J" or "R" unusable if the holding time are grossly exceeded.

The following actions were taken in the samples and analytes shown due to exceedence of holding time.

and the second of the second o

All Samples in all fractions were extracted and analyzed within the required holding time.

Calibration

Satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable quantitative data. Initial calibration demonstrates that the instrument is capable of acceptable performance in the beginning and continuing calibration checks document satisfactory daily instrument performance. The measure parameters are

- a) Response Factor (RF)
 Response factor measures the instruments response. The
 response factor for TCL Compounds must be > .05 either in
 the initial or continuing calibration. A value < .05
 indicates serious detection and quantitation errors.
 Analytes detected in the sample will qualify with "J"
 while non-detects will be qualify with "R".
- 2. Butanone was qualified with "R" in: BR351, BR352, BR353,
 BR354, BR435, BR436, BR437, BR438, BR439, BR444, BR445, BR440,
 BR441, BR442.

Benzoic acid qualified with "R" in: BR352, BR353, BR 435.

BR 436, BR 354.

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Data Assessment

3. Calibration

b) percent relative standard deviation and percent difference. percent relative standard deviation *RSD is calculated from the initial calibration and is used to indicate the stability of the response factor over increasing concentration. Percent difference compares the response factor from the continuing calibration with the mean response factor RRF from the initial calibration *D reflects the instrument daily performances. *RSD must be < 30* and *D must be <25*. A value outside these limits indicates potential detection and quantitation errors. For this reason all positive results are flagged as estimate "J" and non-detects as "UJ". If there is gross exceedence of *RSD or *D the non-detects may qualify with "R".

The following analytes exhibited 1/RSD and for 100 criteria, but no action was taken since all results were negative. Metholene Miride: BR 351 to BR 354, BR 435 to 438, BR 441, BR 442, BR 444 2-Hexanone 4. Methy/2- pentanone: BR 435 to BR 438, BR 444, BR 440 DL Uiny/ acetate : BR 351 to 354 , BR 435 to 438 , BR 441 , BR 442 , BR 444. 1,1,2,2 tetrachloroethone: BR 435 to 438, BR444 Carbon disulfiche: AR 351 to 354, BR 440 to BR 442 Trans 1,3 - dichluropropere: BR 440DL Chloromethone: 88440 OL Bromomethane: BR435 to BR438, BR4400L, BR435 MS/MSD 2- Butanene: BR 440 DL Benzoic Acid: BR 352 to 354, BR 435, BR 436, BR 445

2,4. Dinitrophon Q:

4,6.Dinitro-2-Methulphonal: 82352, 82354, 82435, 82436, 82445 his(2-ethulhexyl)phthalate: 8245

The second of th

Chloroethone: BR440DL

Data Assessment -

5. All samples are spiked with surrogate compounds prior to sample preparation in order to evaluate laboratory performances and efficiency of the technique. If the measured surrogate concentrations are outside of contract specifications, results for related analytes may be qualified. The following qualifications were applied to the samples and analyte shown for this reason:

Sample No: BR 437, yielded high recovery for the Suirogate Compounds phenol-d6 and 2-Fluorobiphenyl. No action.

In Sample No: BR 444, Terphenyl-d14 yielded high recovery. No action.

7. Internal standards performance

Internal standard (IS) performance criteria ensure that GC/MS sensitivity and response is stable during every run. Internal standard area count must not vary by more than a factor of two (-50 to + 100%) from the associated—calibration standard. The retention time of the internal standard must not vary more than +30 seconds from the associated calibrated standard. If the area count is outside—50% or +100% of the associated standard, all the positive results for compounds quantitated using that "IS" are flagged as estimated "J", all non-detects as "UJ" or as "R" if there is a severe loss of sensitivity.

If an internal standard retention time varies by more than 30 seconds, the reviewer will use his or her professional judgment for partial or total rejection of the data of that sample fraction.

The following actions was taken because of the internal standard

- a) Chrysene diz yielded on alex Count outside of Occ limits, all Corresponding Tel Compounds were qualified with "UJ" in BR 354
- b) Chrysene-d12 and perylene.d12 yielded an Area count outside Oc limits in BR 438. All the corresponding TCL Compounds were qualified with "UJ".
- C) Phenonthrone -c/10, Chrysono -c/12 and perylone -c/12 yielded on area Count outside of Oc limits in BR 439, BR 444.

 all Corresponding TCL Compounds were qualified with "UJ"

1.5986

8. This package has Reextraction, Reanalysis or dilution. After reviewing the QA results, the following Form 1's are identified to be use.

pest- DCB Fraction: BR 435 and BR435DL 82435 BR 437 BR 437 DL BR 437 BR 438 BR 4380L BR 438 BR 439 BR 439 OL BR 439 BR 444 BRUYUDL BR 444 BR 445 BR 445 DL

System performance:

In the pest/ RCB fraction, the GC Chromotograms showed a very large peak in all soil Samples which interferes with the first 6 analytes a alpha. BHC, Beta-BHC, Delta-BHC, gamu-BHC, Heptochlor and aldrin. This peak disapears in Case of runaming the Samples at 10 times dilution. For this Neason, the detection limits for these analytes lawied to times as shown in Form 1: for the following Samples:

BR 437, BR 438, BR 439, BR 435, BR 444, BR 445.

Arodor 1254 qualified with J' in BR 436, BR 437,
BR 439 because their values were below detection
limits.

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Region	-4-

ORGANIC REGIONAL DATA ASSESSMENT

	NO. 9296		Motol		<u> </u>
LAB	DRATORY Meta-Trace	NO. OF S MATRIX	AMPLES/	75	
SDG	# <u>BR35</u>	REVIEW:	ER (IF NOT	ESD)	ESAT
SOW#	·	•		Mahmou	,
DPO:	ACTION FYI	COMPLE	TION DAT	E <u> </u>	12-88
	DATA ASSE	SSMENT SU	MMARY		
		VOA	BNA	PEST	OTHER
1.	HOLDING TIMES				
2.	GC/MS TUNE/INSTR. PERFORM.				
3.	CALIBRATIONS	_M_	\underline{M}		
4.	BLANKS	X	<u> </u>		
5.	SURROGATES) ————————————————————————————————————	
6.	MATRIX SPIKE/DUP			M	
7.	OTHER QC			·	•
8.	INTERNAL STANDARDS		<u> </u>		
9.	COMPOUND IDENTIFICATION			<u>M</u>	
10.	SYSTEM PERFORMANCE				
11.	OVERALL ASSESSMENT				
N Z X	 Data had no problems/or qualified due Data qualified due to major problems. Data unacceptable. Problems, but do not affect data. 				•
ACTI	ON ITEMS: 1- Internal Standows	ds in	LL BNI	A Andu	sis inconsistence
ind	icate patential Quantitatio	m proble	ms. 2.	- pest/	pep
	traction was highly Co				
•	AS OF CONCERN:			<u></u> ,	
, , , , , , , ,	10 01 001 001 11 11 11 11 11 11 11 11 11				
		<u></u>			
NOTA	BLE PERFORMANCE:				
	4		#Listers	jak president	

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REVISED 6/13/88

CASE NARRATIVE

Laboratory Name: metaTRACE, Inc.

13715 Rider Trail North Earth City, MO 63045

Contract Number: 68-01-7417

SDG: BR351

Case Number:

9296

Lab Code: meta

EPA Sample Numbers:

metaTRACE Sample #:

BR435	AA10833
BR435MS	AA10834
BR435MSD	AA10835
BR436	AA10836
BR437	AA10837
BR438	AA10838
BR439	AA10839
BR444	AA10840
BR445	AA10841
BR351	AA10842
BR351MS	AA10843
BR351MSD	AA10844
BR440	AA10845
BR441	AA10846
BR442	AA10847
BR352	AA10848
BR353	AA10849
BR354	AA10850

General:

Seven soil and six water samples for full TCL analysis and one water for VOA only for Case 9296 were received on 4/8/88, by the metaTRACE Sample Custodian. All samples were received in good condition. Samples were logged into the metaTRACE LIMS sample tracking system and assigned the unique identifiers listed above.

Volatile Analysis:

Samples were analyzed on 4/11/88, 4/13/88 and 4/14/88. All contract QC was within limits for all samples, method blanks, and MS/MSDs; except for two percent recoveries in the MS/MSD. No corrective action was taken. One sample BR440, required dilution, both sets of data have been submitted.

Extraction:

All samples were extracted for BNAs and pesticide/PCBs on 4/13/88. GPC column clean-up was not performed. No problems were

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encountered for the semi-volatiles.

Semi-volatile Analysis:

Semi-volatile extracts were analyzed on 4/15/88, 4/17/88 and 4/22/88. Surrogate spike recoveries were within contract criteria for all samples, blanks, and MS/MSDs. 15 of 156 internal standard areas were outside the -50 to +100 area window criteria. In every case, one or more of the last three internal standards were involved. metaTRACE has been working with H-P Technical Engineers to address this problem. Studies that have been conducted here at metaTRACE indicate that the apparent instability of the internal standards is due to the design of the HP MSD system and is independent of sample matrix. The laboratory is not in a position to reanalyze every sample when internal standards fail to meet criteria. No additional problems were encountered.

Pesticide Analysis:

The pesticide extracts were analyzed on 4/16/89, 4/17/88 and 4/20/88 by the following procedures:

- Primary analysis: HP+5890-3A with a 6ft X 2mm ID glass column packed with 1.5% SP-2250/1.95 % SP-2401.
- O Confirmation analysis: HP-5890-3B with a 6ft X 2mm ID glass column packed with 3% SP-2100.

The Nelson chromatography software used to reduce the raw data uses processed run time and not necessarily the exact time and date injected. The actual date and time of injection are taken from the HP-3390A integrator.

Pesticide Blank:

The pesticide portion of the soil method blank had a large contaminant peak earily in the chromatogram. This containination was also present in all soil samples. All of the soil samples required dilutions. The containination problem was traced to a plastic (non-Teflon) filtering apparatus that was used during the sodium sulfate drying step with methylene chloride. Due to the expiration of holding times the samples were diluted and not reextracted. The filtering device has since been replaced, and the technician given additional training. Individual analytes effected by the contamination are annotated with a "D" on each form I. Each sample has a Form I and data for the dilution.

Surrogate Recovery:

DBC recovery was within contract criteria for all samples, blanks, and MS/MSDs. The contaiminant in the soil MS/MSD caused problems with % Recoveries and RPDs on most of the spiked compounds.

Diskette Deliverable

metaTRACE has submitted the diskette in Format B, using the EPA Cincinnati software. There is a problem with the way this software rounds off numerical data that cannot be fixed by the laboratory. This difference in rounding results in diskette analytical results that differ from the raw data submitted from the GC/MS outputs. Neither HP or EPA have taken steps to correct this problem.

Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

enneth J. Gaughman

Froject Administration

1A V**OLATILS** ORGANICS ANALYBIS DATA SHEET

LAG MAME: metaTRACE

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CONCENTRATION UNITS (UG/L OF UG/KE): UG/L

CAG NUMBER	COMPOUND	Q
T4-87-7	Chtorone (bane	10 U
74-03-7	Det was a see	10 U
75-74-4	What Chicanae	10 U
15-00-5	Chiomoethane	170 AJ
7 5-09- 2	Methylene Chloride	5 Ú
67-64-1	Acetione	10 U
75-15-0	Carbon Disalfide	<u> </u>
7 5- 35-4	1,1-Didhloroethene	5 0
7 5- 34 - 3	1.1-Dichloroethane	5 ()
5 40-59 0	1,2-Dichlorpethene (TOTAL)	5 Ú
5 7-66- 3	Chleratorm	5 Ú
107-06-2	1.2-0ichlordethame	5 (1)
7 8-9 3-3	2-Putanone	10 4
7 1-55- 6	1,1,1-Trichloroethane	່ ສົມ ໃ
5 6- 23-5	Carbon Tetrachloride	5 U
108-05-4	Vinyl Acetate	10 U.
75-27-4	Bromodichloromethane	, 5 U
7 8-87- 5	1,2-Dichloropropane	5 U
10061-01-5	CIS-1,3-Dichloropropene	5 U
79-01-6	Trichloraethene	5 U
124-48-1	Dibromochloromethane	5 U
7 9- 00-5	1,1,2-Trichloroethane	5 U
71-43-2	Benzene	5 U
10061-02-6	TRANS-1,3-Dichloropropene	5 U
7 5- 25-2	Bromoform	5 U
108-10-1	4-Methvl-2-Pentanone	10 U
59178-6	2-Hexanone	10 JU
127-18-4	Tetrachloroethene	5 U
1 08-88- 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	Xylenes (TOTAL)	5 U

TAR HAME: metaTRACE CONTRACT: 68751-7417

LAS COPO: meta — CASE NO: PSPA — EAS NO:NA — SDG NO:

88351

MATRIX (SOIL/WATER): WATER LAB SAMPLE 10:AA10848

SAMES & WITZOL: 5 (8/ML): ML CAR FILE ID: >CSSSS

LEVEL:

LOW DATE RECEIVED: 04-08-88

PERCENT MOISTURE:

0 % DATE ANALYZED:04-13-88

COLUMN (PACK/CAP):

PACK DILUTION FOTE: 1

CONCENTRATION UNITS (UG/L OR UG/kG): UG/L

CAS N UM BER	COMPOUND	Q)
	THE STATE SHAPE AND A THE PARK AND A	100 000 000
74- 0 7-3 (Chloromethane	1.0
74 674	Bromumethane	1.0 ()
7-5- (1) -A	Vinvl Chlomide	1270 (1)
73 - 0 0 -7	Chloroethane	\$ 0.000
$\sum_{i=1}^{n} A_i = \sum_{i=1}^{n}	Methylena Chlorida	F 12
67-64 -1 -	Acetone	5: #U
75-15-0	Carbon Disulfide	5 1
7 5-35- 4	1,1-Dichloroethene	5 U
75-34 - 3	1,1-Dichloroethane	5 U
340-5 9 -0	1,2-Dichlarcethene (TOTAL)	5 :
57-65-3	Chloroform	5 U
(97 - 04-2	$1,2 ext{-Dichloroethane}$	5 11 _
7 8-9 3 -3	2-Butanone	in in the self of
71-55-6	1,1,1-Trichloroethane	5 U ,
56-23-5	Carbon Tetrachloride	5 (1
1.08 - 0 5- 4	Vinyl Acetate	10 U
75-27-4	Bromodichloromethane	์ 5 ป
7 8-8 7-5	1,2-Dichloropropane	5 U
100 61- 01-5	CIS-1,3-Dichloropropene	5 U
79-01 -6	Trichloroethene	5 U
124-48-1	Dibromochloromethane	5 U
79- 0 0-5	1,1,2-Trichloroethane	5 1)
71- 4 3 -2	Benzene	5 U
100 61- 02-6	TRANS-1,3-Dichloropropene	5 U
75- 2 5-2	Bromotorm	5 U
108-10-1	4-Methyl-2-Pentanone	10 U
591-7 8 -6	2-Hex anone	10 U
127-18-4	Tetrachloroethene	5 U
108 -88 -3	Toluene	5 U
108 - 9 0 -7	Chlorobenzene	5 U
100-41-4	Ethylbenzene	5 U
100-42-5	Styrene :	5 U
1000 - 20 - 7	Xylenes (TOTAL)	5 U

LA VOLATILE ORGANICS ANALYSTS DATA SHEET

CAB NAME: BETATRACE EPA SAMPLE NUMBER: BR353 CONTRACT: 68-01-7417

THE COME: Weta CASE NO: 9296 SAS NO:NA SDG NO: BRZ51

MATRIX (COIL/WATER): WATER LAB SAMPLE ID: AA10849

SAMPLE WIZZOL: 5 (GZME): ML LAB FILE ID: \$65357

LEVEL: LOW DATE RECEIVED: 04-08-88

PRECENT MOISTURE: 0 % DATE ANALYZED:04-17 88

COLUMN (MACK/CAP): MACK DILUTION FOTE: 1

CONCENTRATION UNITS (UG/L OR UG/KG): UG/L

CAS NUMBER	COMPOUND	Q
74 - 6 7 - 7		
74-97-3	Chlomaethana	140 (1
755- () (- 4	ស៊ីពល់គេលាគេប៉ាងនាក់គ	1 (3 - 13
75-00 7	Minyl Chlorade	$\{\mathcal{L}_{i}, \mathcal{L}_{j}\}$
기 의 기타면 기 (1) 기 기 의 - 이 아 - 인	Chilompethane	1 <u>0</u> U
57-54-1	Mathylana Chlorida	5 U
- 07 15年0 - 7年- 1 5年0	Acetare Constant and the state	TI XU
75-35-4	Carbon Disulfide	5 U
75-34-3	1.1-Dichloroethene	<u>5</u> U
5 4 0-5 9 -0	1,1-Dichloroethane	5 U
57~66+3	1,2-Dichloroethene (TGTAL)	5 ម
- 24 magning 107-466-13	Chloroform	5 U
78- 7 8-3	1,2-Dichloraethane	5 U
71- 5 5-6	2-Butanone	10 U K
56- 2 3-5	1,1.1-Trichloroethane	5 U
108-05-4	Carbon Tetrachloride	5 U
75- 27-4	Vinyl Acetate	1 <u>0</u> U
78-87-5	Bromodichloromethane	. 5 U
100 6 1-01-5	1,2-Dichloropropane	5 U
79-01-6	CIS-1,3-Dichloropropene	5 U
124-4 8- 1	Trichloroethene	5 U
79-00-5	Dibromochloromethane	5 U
71-43-2	1,1,2-Trichloroethane	5 U
	Benzene	5 U
100 61-0 2-6 75- 2 5-2	TRANS-1,3-Dichloropropene	5 U
108-10-1	Bromoform	5 U
591-78-6	4-Methyl-2-Pentanone	10 U
127-18-4	2-Hexanone	10 U
108-88-3	Tetrachloroethene	5 U
108-90-7	Toluene	5 U
100-41-4	Chlorobenzene	5 U
100-47-5	Ethylbenzene	5 U
	Styrene	<u> </u>
1370-20-7	Xylenes (TOTAL)	5 U

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LAR NAME: MATATRACE	00%	A CAMPLE NUMBER CONTRACT:	,	
1800 1 0008; m. t.	क्षांद्र ५ क्षेत्रका	SOM NOTHE	SDG NO:	PH/751
MATCHE SOUL MATCH:	ORATE(R	LAG SAMMUM)	0:AA10850	
TAMPLE WYSUM:	The growth that only	TAR FILE (No.	3 0 (758)	
uewe.:	(ii) w	CATE HERELY	(D:04-03-69	
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COLUMN FAIR THE	PACC	DILUTION FOT	rice:	t
COMCCD)	TRATION UNITS	************************** 34\5U_190_190_1\5011	:	<i>चित्रक्रकत्</i> च.
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한통 (1 14) +-5	Object to any	1.00 (1.1
1.5 · O = 12	Please the control of the	<u> </u>
7-54-1	Acetane	15 \$ U.
75. 1 50	Carbon Dighlfide	s []
7.7 - 7.7 - 4	t.1-Dichlorosthena	5 6
기 등 -조 리 -조	1,1-D)chlorowthane	5 U
946-95-0	1.2 Dichloroethene (TOTAL)	5.0
√ 7 £6-₹	Objectors	5. 11
107-64 D	1,2.Dichloroethane	5 0
79.45 T. T.	2-Butanone	10 U R
7 1-5 5-3	t, t. trTrichtoroethane	5 0
55-07-5	Carbon Tetrachlonide	5 (
105-05-4	Vinyl Acetate	1.0 (.)
75-27-4	Bromodichloromethane	· 5 U
7 55 7-5	t.Z-Dichloropropane	5 U
10061-01-5	CIS-1,J-Dichlorupropene	5 U
7 9- 01-6	Trichloraethene	5 U
124-48-1	Dibromochloromethane	5) U
79-00-5	1,1.2-Trichlordethane	5 U
71-43-2	Benzene	5 U
1006102-6	TRANS-1,3-Dichloropropene	5 U
7 5-2 5-2	Bremaform	5 U
106-10-1	4-Methyl-2-Pentanone	10 U
591-78-6	2-Hexanone	1 (0 L)
127-13-4	Tetrachloroethene	5 U
1 08- 88-3	Toluene	5 U
108-90-7	Chlorobenzene	5 U
100-41-4	Ethvlbenzene	<u>e</u> ; U
100-42-9	St.ymene	5 L
1030-20-7	Yylenws (TOTAL)	F) (1

AD NAME: New TRACE

CONTRACT: SERVI-14; /
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CONCENTRATION UNITS (UG/L OF UG/KG):UG/kg

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5.4.5-5.5	1 2 Destrict dechang	구 ()
,	Chill on of Conne	7 ::
1 - 7-60, -5	i.Poriobloroethane	₩ 1 ••
기의 -약 중 - 중	2-Butanone	7 11
71-55-5	1.1.1-Trichloroethane	14 UK
%a+22-5	Carbon Tetractilonide	7 19 7
10 3-0 5-4	Vinyl Acetate	7 U
75-27-4	Bromodichloromethane	14 U '7 C
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	
108-10-1	4-Methvl-2-Pentanone	14 U
39 1-73-6	2-Hexanona	14 (1
127-13-4	Tetrachloroethene	7 U
10 8-6 8-3	Toluene	7
108-90-7	Chlorobenzene	7 U
100-41-4	Ethylbenzene	7 Ü
100-40-9	Shynane	2 Ū
17 50- 76-7	Xvlanes (TATAL)	7 ()

FORM (VOA

VOLATILE ORGANICS ANALYSIS DATA SHEET

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75 - 25-2	Bromoform	<u> </u>
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VOLATILE ORDANICS ANALYSIS DATA SHEET

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1A VOLATILE DRGANTOS ANALYSIS DATA SHEET

LAC CODE: westatracci Case No: 9,776 AS 10:10A SDG NO: 0005.

PRETERIX (SUI) A MATERY: NO. LATE SAMPLE 10:AA10859

SHARLE WILLIAM S (GAME): B LAB FOR ID: >CINGS

LOW DATE RECEIVED: 04-03-09

PREFECTION PROTESTURAL: TELESCOPE ANALYZED:04-14 88

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CONCENTRATION UNITS (MG/L OR UG/40): UG/15

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7:-55-6 1.1.t-Trichlorosethese 7:0 56-03-5 Carbon Tetrachloride 7:0 108-05-4 Vinyl Acetate 1:0 75-27-4 Bromodichloromethane 7:0 78-07-5 1,2-Dichloropropane 7:0 100-1-01-5 CIS-1,3-Dichloropropene 7:0 124-48-1 Dibromochloromethane 7:0 124-48-1 Dibromochloromethane 7:0 79-00-5 1,1.2-Trichloroethane 7:0 71-43-2 Benzene 7:0 10061-02-6 TRANS-1,3-Dichloropropene 7:0 75-25-2 Bromoform 7:0 108-10-1 4-Methyl-2-Fentamone 13:0 127-10-1 13:0			·
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10 8-38- 3 Toluene			
108-90-7 Chiorobenzene zu		Chiorobenzene	
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dispersion of Stylena			
1030-50-7 Cylenes (TOTAL)	1 7 조 하는 휴라7	Cylones (TOTAL)	

TOLATILE ORGANIOS ANALYSIS DATA SHEET.

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CONCENTRATION UNITS (UG/L OF UG/RG): UG/RG

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	Carton, Drandings	7 0
75 - 77 - 4	l.1-Dicblorcentena	7 1,1
75-34-0	l,1-Dictluroethane	7 U
549- 5 9-6	1,2-Dichlogoetheas (FOTAL)	7 U
	Chlumpform	7 U
107:06:7	1.2-Dichloroethane	7 U
<u> </u>	7-But anone	13 U 🗸
71 - 55-6	1,1,1-Trichlomoethane	7 (1)
55 · 23 - 5	Carbon Tetrachlomide	7 1.1
108-05-4	Vinyl Acetate	13 U
75 -27-4	Bromodichloromethane	7 tr
76 -37- 5	1,2-Dichloropropane	7 U
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79 -01-6	Trichloroethene	7 Ü
124-48-1	Dibromochloromethane	7 U
7 7-00-5	1,1,2-Trichloroethane	7 U
71-43-2	Renzene	7 Ü
1006 1-0 2-6	TRANS-1,I-Dichloropropene	7 U
75 - 25-2	Bromoform	7 U
108-10-1	4-MethyI-2-Pentanone	13 U
591-78-6	2-Hexanone	13 U
127-18-4	Tetrachloroethene	7 U
108-88-3	Toluene	7 Ü
108-90-7	Chlorobenzene	7 U
100-41-4	Ethylbenzene	7 [1
196-42-5	Styrene	7 U
1270 20-7	XVlenes (DTAL)	7 (1
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FORM I VOA

VOLATILE ORGANICS ANALYSTI DOLG SHEET

to the State (XII) - Alext A t P ACE	f fris	្តែមាមីក៏ ដូចជាតិស៊ីស ប្រសាធិក្សាប៉ុស្ស៊ី៖		
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107 ma - 2	1,2-Clohloroethane	5.3
70 - 9 7 - 7	I - Duternous	H. H.
71- 5 5-6	1,1,1-TrickCompethiene	et op '
74-77-7	Lastron Tetrachijonida	0 11
(기명 ~ 이동-4	Vinyl Acetate	10 U
75-27-4	Bromodichlorowethane	5.0
73- 8 7 -5 1	1,2-Dichloropropane	5 U
10061-01-5	CIS-1,7-Dichloropropes	5 U
79- 01-6	Trichloroethere	5 U
174-48-1	Dibromochloromethan#	5 U
7'9'- 0 0+5	1,1,2-Trichloroethane	출
71-45-2	Denzene	<u>5</u>) <u>(</u> i
100 61-0 2 -5	TRANS-1.J-Dichloropropens	5 U
75 -25-1	Bramafarm	5 U
108-10-1	4-Methyl-2-Pentanone	10 0
501 • 7 8- 6	2-Hexanone	100
127-13-4	Tetrachioroethene	5 ()
108-86-7	Toluena	7 U
108-90-7	Chlorobenzene	5 U
1 (1) -414	Ethv1benzene	Si 11
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CONCENTRATION UNITS (UGA. OR USZEG):UGAL

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75- 55 -4	I. 1-0: mblompethes	5 ()
7 4	1.1-Duchlumoethane	ສົ ບໍ
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	Chilorofera	E. U
107-06-0	1.2-District or cethane	ĒŪ
77-93-3	ਹੈ ਜ਼ਿੰਦਿਸ਼ ਕਰਵਾਜ਼ਤ	ÖÜR
^{7 9} 56	1,1.1-Thichloroethane	5 0
5-1-13-5	Carbon Tetrachionide	5 U
103- 05-4	Vinyl Adebate	10 U
75-2 7-4	Bromodichloromethane	່ 5 ປີ
78- 3 7- 5	1,2-0ichloropropane	2 U
10081-01-5	CIS-1,3-Dichloropropene	5 Ū
79-01-6	Trichlorsethene	5 U
104-48-1	Dibromochloromethane	5 U
79-0 0- 5	1,1,2-Trichloroethane	5 U
71-43-2	Benzene	5 U
10061-02-6	TRANS-1,3-Dickloropropene	5 U
75-2 5- 2	Bramoferm	5 U
108-10-1	4-Methyl-2-Rentanone	tō ū
591- 78-6	2-Hexanone	10 U
127-18-4	Tetrachloroethene	5 U
108- 8 8-3	Toluene	5 U
109- 9 0- 7	Chlorob e nzene	5 U
100-41-4	Elthylbanzene	5 U
1700年4月 年	Stynene	5 U
1770-24-7	Aylanes (TATAL)	5 U
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JA VOLATILE OFFANIOS ANALYSIS VATA SHOEF

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107-04-7	t.∏−Ðrotilara⊵theræ	5 U a
7 8 -93-5	Particular march	$_{1}$, $_{2}$, $_{3}$, $_{4}$, $_{6}$
71-55-6	1.1.1: Trichlormethane	٤
74-37-b	Cambon Todycathlonide	5 C
1 ()년 ~() [5~4]	Vinyl Acetata	101 (1
75 7 7-4	Bromodichluromethane	. 5 Ü
7 837 5	1,2-Dichlorophopane	5 U
10051-01-5	CIS-1.U-Dichloropropene	5 U
79-01-6	Trichloraethene	5 11
124-48-1	Dibromochloromethane	5 14
7 9 -00-5	1.1.2-Trichloroethane	5 U
71-43-2	Benzene	77 U
10061-02-6	TRANS-1.3-Dichloropropene	5 U
7 5-25- 2	Bromotorm	5 U
108-10-1	4-Methvl-2-Pentanone	10 (1
591-78-A	2-Hex andne	10 U
127-18-4	Tetrachloroethene	5 U
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103-90-7	Chlorobenzene	5 U
100-01-4	Fifth: althernasene	57.
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FORM I SV-1

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was of the conflict professors	West TE	LAB CAMPUR ID:AA: 0545	
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. d310T0 bgT DHC:RA	DEC: NA	DATE CATRCTED: 04-13-88	
Az Méső lek (űmejek Züben Zékond)	:SERT	DATE AMALYTED: 04: 15-58	
977 (1608 (Y/N): N	•	OILUTION FOR:	t

COMCENTRATION UNITS (US/L OF US/16):US/C CASCARDED ON COMPOSITE AMERICAN TONETOWN LEDG. ST TO IT As as entered to be ever 51-00-6 J.4-Derelloughered 100 -02 7 4 Nitrophenol 761 (1 1770/44 F. Dateborsefor and 10000 121-14-2 2.4 Distrotaluens 177 L 54-64 2 Diethylphinalale 500 11 7005-12-1 4-Onlocophenyl-phenylether 15-11 RO-77 7 Floorene 10 0 100 -01-6 4-Nitroanstine (Str) (1 574-53-1 4,6-D) notico (2-Methylphens) 30 4 36-30-a N-Nitrosidiphenylamine 10 11 101-85-3 4-BromophenvI-prenylether 14. 14 118-74-1 Hexachlorobenzene 10 11 87-86-5 Fentachlorophenol 50 U 85-01-8 Phenanthrene 10 U 120-12-7 Anthracene 10 U 102 RUL 84-74-2 Di-N-Butylphthalate 206-44-0 Fluoranthene 10 U 129-00-0 Eyrene 10 U 85-68-7 Butylbenzvlphthalate 40 U 91 - 94 - 13,3'-Dichlorobenzidine 20 U Benzo(a) Anthracene 56-55-7 10 U 218-01-7 Chrysene 10 U 117-81-7 bis(2-Ethylhexyl)Phthalate 10 0 117-84-0 Di-n-Octvlphthalate 10 U 205-99-0. Benzo(b)Fluorathene 10 U 207-08-9 Benzo(k)Fluorathena 10 U 50-72-8 Benzo(a) Pyrene 10 U 193-39-5 Indend(i,D,T-ad)fyrene 10 U 50-70 3 Dibenzo(a.h)Anthracene 10 U 191-24-2 Benzo/g,h,i)Perylene 10 U CORM I BV-2

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70 S9-1	Leophonone	1-5-12
중요는 가입니다	2-Nitrophenol	10 U
106-44-5	Z,4-Dimethylphenol	10 U
6.88 - 8.0 - A	Deniels Acid	10 6
11 - 91 - 1	bis(2-Chloropthown) Mathama	50 D R
120-83-0	2.4-Dichlerephenol	(0.1)
120-83-2	1,2.4-Trichlorobenzens	100 (4
91-25-3	Maghthalone	10 U
105-47-3	4-Chieroaniline	10 0
87-65-J	Hexachlorohid adipada	10 ()
59-50-7	4-Coloro : T-Methylphenol	10 0
71-19-3	2-Methylnaphthalene	10 U
105-47-8	he-achlorocyclopentadiene	10 0
88 05 1	2.4,5-Truchtorophenol	ा 🔅 👍
75-95-4	2,4,5 Trichtorphenol	(O) (J
91-58-7	2-Chloromaphthalene	50 U
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88-01-8 Phenanthrene
120-12-7 Anthracene
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                                                                                 84-74-2 Di-N-Butylphthalate
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                                                                                 206-44-0 Fluoranthene
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Benzo(a)Anthracene
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                                                                                 218-01-9 Chrysene
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                                                                               117-81-7 bis(2-Ethylhexyl) Phthalate
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                                                                               117-84-0 Di-n-Octylphthalate
                                                                                                                                                                                                                                                                                                                         10 0
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207-08-9 Benzo(k) Fluorathene
50-32-8 Benzo(a) Fyrene
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                                                                                 19: 24-2 Benzoka.h.t)Perylane
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namett to brooms: 1000 =57ML): Mi.	tas file (0: > 0:4:3
(FOURILE : Linu	DATE FRICEINCD:04- 08-50
TOTOLOTS FOR DEC: NA DEC: NA	DATE EXTROTED: 04-10-88
ALABAM THE COMPACTION PROMISE SEEDS	Bare AMALYZED:04-16-28
THE CHANGE OF MELTINE DISCOURSE THE	DILUTION FOTH: 1

CONCENTRACION FERNOS VERSOS OR MOZEGES

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하나 사용을 가고 살아.	4-Chionophonyl-phenylether	(() () ()
56-73-7		₹ ÇK - £ }
	4-Nitroaniline	55(0 U)
5.74~ 5.1~ 1	0,5-Dinitro-2 Mathylphenol	5(6) [1]
36-30-6	M-Nitrosidiphenylamine	10.11
101-55-1	4 Bromophenyl-phenylether	1.40 t.e
118-74-1	Hexachlorobenzene	10 U
97-94 - 5	Fentachlorophenol	50 U
- 85-01-8	Phenanthrene	
	Anthracene	tó Ü
	Di-N-Butylphthalate	102 XU
206-44-0	Fluoranthene	10 U
129-00-0	fyrene	1.0 Ü
85-68-7	Butylbenzyiphthalate	10 0
91-94-1	্র,র'∺Dichlorabengidine	30 Ü
54-55-3	Benzo (a) Anthracene	10 0
218-01-9	Shrysene	10 Ü
117-81-7	bis(2-Ethylhexyl)Phthalate	10 U
117-84-0	Dimomüctylphthalate	10 U
205-99-2	Benzo(b)Fluorathene	10 U
207-08-9	Benzo(k) Fluorathene	10 U
- 10	Senzo (a) Fyrene	10 U
	Todeno(1.7,7 cd)Ayrene	10.0
	Ti Senzo (a.h.) Arteracene	10.0
		10.11
よりよで 編件で 益	Genzo(g,h,i) Ferylene	3.53 (3
	FORM I SV-2	

EPA SAMPLE NUMBER: BR354

LAR MAME: MetaTRACE

CONTRACT: 68-01-7417

LAB CODE: meta CASE NO: 9276

SAS MO:NA SDG NO:

BR351

MATER LAB SAMPLE 10: AA10850

SAMPLE WINDOL: LOOO (G/ML): ML LAB FILE ID: >02419

LEVEL:

上口は

DATE RECEIVED: 04-06-88

% MOISTR NOT DEC:NA

DEC: NA DATE EXTROTED: 04-13-88

EXTRACTN (Sepf/Cont/Sonc):SEPF DATE ANALYZED:04-16-88

GPC ELMUP (YZN): N pH: NA OILUTION FCTR:

的对象分 气气管大中的生态 野鸟战人重新 家族城族城市安徽城城市安徽城市的安徽城城市西南南城城城城市港南省城市城城城市城城城城城城城市

CONCENTRATION UNITS (UGVL OR UGVKG):UGVL	(法乘水水水火水火水)。
FAS NUMBER COMMOUND	40 5-6-98 5-6-10
198-95-0 Firenol	
1 1 - 44-4 historians - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	ن دا
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70-00-1 1.7-Dicbi	10 U
- 79 79 77 2 3 5例前我国家长语家大概	10 U
108-60-1 bis/0.051	10 U
TO THE THE TOP OF CAR AND AND AND AND AND AND AND AND AND AND	±១០.
P21-64-/ N-Nitroso-Di-n-Propylamina	10 U
<u> </u>	10 ប
98-95-3 Nitrobenzene	10 U
78-59-1 Isophorone	10 U
88-75-5 2-Nitrophenol	10 U 10 U
106-44-5 2,4-Dimethylphenol	10 U
- Goldon Menzair Aria	50 U R
111-91-1 bis(2-Chluroethoxy) Methane	10 0
****	10 0
120-83-2 1,2,4-Trichlorobenzene	10 U
1 TO WARDINALANA	10 U
106-47-8 4-Chloroaniline	10 U
87-68-3 Hexachlorobutadiene	to B
59-50-7 4-Chloro-3-Methylphenol	10 Ü
71-20-3 2-Methylnaphthalene	10 Ü
196-47-8 Hexachlorocyclopentadiene 88-96-2 2.4.6-Trichloroppopel	10 U
	10 U
95-95-4 2.4.5-Trichlorophenol 91-58-7 2-Chloronaphthalene	50 U
38-74-4 2-Nitroaniline	to u
131-11-3 Dimethyl Pothalate	50 U
208-96-8 Acenaphthylene	to u
606-20-2 2,6-Dinitrotaluene	10 U
FORM: In SVH1(以) 网络沙拉克 一种 通過多少學院	10 U
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EPA SAMPLE NUMBER: BRS54

LAB NAME: metaTRACE

CONTRACT: 68-01-7417

LAB CODE: meta CASE NO: 9296 SAS NO:NA SDG NO: BR351

MATRIX (SDIL/WATER): WATER LAB SAMPLE ID: AA10850

SAMPLE WT/VOL: 1000 (G/ML): ML LAB FILE ID: >D2419

LEVEL: DATE RECEIVED:04-03-88

% MOISTR NOT DEC: NA DATE EXTROTED: 04 -13-88

EXTRACTN (Sepf/Cont/Sonc):SEPF DATE ANALYZED:04-16-06

GEC CLINUR (Y/N): N pH: NA DILUTION FOTR:

CONCENTRATION UNITS (UCVL OR UCVKG):UG/L

	TO COUNTY OF COUNTY OR MONKED : MONEY	•
to the transfer of the second	COMPOUND	WATER SHUTT
199-00-0	T Nitroaniline Acenaphthene 2,4-Dinitrophenol	fore 0
37-77	- Witroaniline	50 B
51-78-5		iõü
100-02-7	4-Mitrophenol	Số Ç
	ormitrophenol Dibenzofuman	50 Ú
121-14-7	9.4 m	10 0
84-66-2	2.4-Dinitrotoluene	<u> အိပ် ပြ</u>
7005-72-	Diethylphthalate	50 U
86-73-7	3 4-Chlorophenyl-phenylether	10 U
100-01-6	. rabi elle	10 U
534-52-1		ຮັດ ປ
86-30-6	TO POUR SING ATRIBUTION LABOR ST	30 U
101-55-3	" " " Crusidiphenvlamina	10 U
118-74-1	- promophenyl-phenylathae	10 0
- 87-86-5	- Perachiorobenzene .	10 0
85-01-8		50 U
120-12-7	Fhenanthrene	10 U
84-74-2	with acene	10 U
206-44-0	· · · · · · · · · · · · · · · · · · ·	30 U
129-00-0	FIUOMANTAANA	10 U
85-68-7		10 U UJ
91-94-1		10 0
56-55-3	3,3'-Dichlorobenzidine	30 U
218-01-9	- Denzo(a)Anthracene	10 U
117-81-7	Chrysene	10 U
117-84-0	bis(2-Ethylhexyl)Fhthalate	10 U
205-99-2	Di-n-Uctylphthalate	10 U
207-08-9	Benzo(b)Fluorathene	10 U
50-32-8	Benzo(k)Fluorathene	10 U
	Benzo(a) Pyrene	10 U
53-70-3	Indeno(1,2,3-cd)Pyrehe	10 U
191-24-2	bidenzo(a,h)Anthracena	វេហា ២
171-24-2	Benzo(g,h,i)Perylene	10 U
	FORM: T: CU O	10 0

EPA SAMPLE NUMBER & BR435

LAD NAME: metaTRACE

CONTRACT: 60-01-7417

LAS CODE: meta CASE NO: 9276 SAS NO:NA SDG NO: BR351

MATRIX (SOIL/WATER): SOIL LAB SAMPLE ID: AA10833

SAMPLE WY/VOL: 30 (G/ML): G LAB FILE ID: 202421

LEVEL:

LOW DATE REDEIVED:04-08-08

% MOISTR NOT DEC: 26 % DEC: NA DATE EXTROTED:04-17-88

EXTRACIN (Sepf/Cont/Sonc):SONC DATE AMALYZED:04-16-88

GRO CLAUP (Y/N): N pH: NA DILUTION FOTR:

CONCENTRA	TION UNITS (US/L OR US/KG):US/KG S	110 5	-6-5K
DAS, NUMBER	COMPOUND	271+ .	£)
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(한 년 - 연변 - 12 -		446	
	bie/-Z-Chloroethyl)Sthar	44G 446	
	2-⊂blorophenol 1,7-Dichlorobenzene	446	
	1,4-Dichlorobenzene	446	
	Renzvi Alcohol	445	
	1,2-Dichlorobenzene	446	
	2-Methylphenol	446	
1004007	bis(2-Chloroisopropyl)Ethe	146	
	4-Methylphenol	446	
	N-Nitroso-Di-A-Fropylamine	446	
	Hexachloroethane	446	U
	Nitrobenzene	446	U
	Isophorone	446	U
	2-Nitrophenol	446	Ü
	2,4-Dimethylphenol	446	U.
	Benzoic Acid	446	UR
	bis(2-Chloroethoxy) Methane	445	n,
	2,4-Dichloraphenal	446	U
	1,2,4-Trichlorobenzene	446	
	Naphthalene	446	U
	4-Chloroaniline	446	Ú.
	Hexachlorobutadiene	446	
	4-Chloro-3-Methylphenol	446	
	2-Methylnaphthalene	446	
	Hexachlorocyclopentadiene	446	
88-06-2	2,4,6-Trichlorophenol	446	
95-95-4	2,4,5-Trichlorophenol	2162	
91-58-7	2-Chloronaphthalene	446	
	2-Nitroaniline	2162	
131-11-3	Dimethyl Phthalate	446	
	Acenaphthylene	446	
	2,6-Dinitrotaluene	446	U
and the second second	FORM L. SV-1		

EPA SAMPLE NUMBER: 8R435

LAR MAME: metaTRACE CONTRACT: 68-01-7417

LAS CODE: meta CASE NO: 7276 SAS NO:NA SDG NO: BR351

MATRIX (SDIL/WATER): SOIL LAB SAMPLE 10:AA10833

SAMPLE WIZVOL: 30 (G/ML): G LAB FILE ID: >D2421

LEVEL: LOW DATE RECEIVED: 04-05-88

% MOISTR NOT DEC: 26 % DEC: NA DATE EXTROTED:04-13-88

EXTRACTN (Sepf/Cont/Sonc):SONC DATE ANALYZED:04-16-68

GPC CUNUP (Y/N): N pH: NA DILUTION FCTR: 1

CONCENTRATION UNITS (UG/L OR UG/KG): NG/KG 50.1 5.6.5 CAS NUMBER COMPOUND 199 09 2 - 3 Mitroaniline 39-32-9 - Adamaphthene 2160 H 446 U 51-38-5 2,4-Dinitrophenol 2162 U 100-02-7 4-Nitrophenol 132-64-9 Dibenzefuran 2162 U 446 11 2162 U 121 44-2 2.4-Dinitrataluene 2162 U 84-66-2 Diethylphthalate 7005-72-3 4-Chlorophenyl-phenylether 446 U t00-01-6 4-Nibroaniline 534-52-1 4 / 5 446 U 446 U 2162 U 534-52-1 4.6-Dinitro-2-Methylphenol 86-30-6 N-Nitrosidiphenylamine 101-55-3 4-Eromophenyl-phenylether 446 U 446 U 446 U 118-74-1 Hexachlorobenzene 87-86-5 Fentachlorophenol 85-01-8 Phenanthrene 120-12-7 Anthracene 2162 U 446 U 446 U 120-12-7 Anthracene 514 #U 84-74-2 Di-N-Butylphthalate 446 IJ 206-44-0 Fluoranthene 446 1 129-00-0 Pyrene 85-68-7 Butylbenzylphthalate 446 U 892 U 91-94-1 3.3'-Dichlorobenzidine 446 U 56-55-3 Benzo(a)Anthracene 218-01-9 Chrysene 446 U 459 **FM** 117-81-7 bis(2-Ethylhexyl)Phthalate 446 U 117-84-0 Di-n-Oct**ylphthal**ate 205-99-2 Benzo(b)Fluorathene 207-08-9 Benzo(k)Fluorathene 50-32-8 Benzo(a)Pyrene 446 U 446 U 446 U 193-39-5 Indeno(1,2,3-cd)Pyrene 446 U 446 U 53-70-3 Dibenzo(a,h)Anthracene 191-24-2 Benzo(g,h,i)Perylene 446 U

FORM I SV-2

ERA SAMPLE NUMBER: BR436

FAR NAME: metaTRACE

CONTRACT,

60 (4) (4) (

LAB CODE: meta CASE NO: 7295 SAS NO:NA SDS NO:

1/10/35/1

MATRIX - SOIL/WATER): SOIL LOD SAMPLE UNHALAGA

SAMPLE WIZVOL: 30 (GZML): G LAB FILE 1D: >D2424

LEVEL:

COM.

DATE RECEIVED:04-03-88

MOTOTO NOT DEC: 22 % DEC: NA DATE EXTROTED:04-17-83

EXTRACTO (Sep (/Cont/Sone):SONC DATE ANALYZED: 04-10-36

OPC CLIMUP (Y/N): N pH: NA DILUTION FOTR:

CONCENTRATION UNITO (US/L OR US/86):US/85

CAS MUMBER	COMPAGNA	sar e
The second secon		·
iqa 95-2	Thereo.	44 M 25 - 434
	base (2 Chladesthyl) Ether	423 U
	P Childrephenel	41 % U
543 - 77 1	1.I-Dichiorobenzena	4 2중 년
106-46-7	1,4-Dichilorabenzeno	4.277.43
100-51-6	Denzyl Alcohol	4月間 11
95-50-1	1,2-Dichlorobenzene	425 U
95-48-7	2 Methylphenol -	4 % N (1)
108601	bis(2-Chlore)supropyl/Elber	# JW (U
106-44-5	4-Methylphenol	400 to
521-64-7	N Nitroso-Di-n-Probylamine	423
67-72-i	Hexachloroethane	423 U
98-95-3	Nitrobenzene	421 U
	Isapharone	423 U
[88-75-5	2-Nitrophenol	. 423 U
106-44-5	2,4-Dimethylphenol	423 U _
65-85- 0	Benzoic Acid	423 U R
111-91-1	bis(2-Chloroethoxy) Methane	423 U '
120-83-2	2,4-Dichlorophenol	423 U
120-83-2	1,2,4-Trichlorobenzene	423 U
	Naphthalene	493 U
106-47-8	4-Chloroaniline	423 U
	Hexachlorobutadiene	425 U
	4-Chloro-3-Methylphenol	423 U
	2-Methylnaphthalene	4%3 U
106-47-8	Hexachlorocyclopentadiene	423 U
88-06-2	2,4,6-Trichlorophenol	423 년
95-95-4	2,4,5-Trichlorophenal	2051 U
91-58-7	2-Chloronaphthalene	42조 년
	2-Nitroaniline	2051 U
	Dimethyl Phthalate	423 U
	Acenaphthylene	423 U
606-20-2	2,6-Dinitrofoluene	1 52 A
	FORM I SV-1	0000355
•		- 0000000

EPA SAMPLE NUMBER: 8R436

LAB MAME: metaTRACE

CONTRACT: 68-01-7417

LAB CODE: meta CACE NO: 7276

SAS NO:NA SDG NO: BR351

MATRIX (SUIL/WATER): SUIL LAB SAMPLE ID: AA10836

SAMPLE WI/VOL: 30 (G/ML): S: LAB FILE ID: >D2424

LEVEL:

L.OW

DATE RECEIVED:04-08-88

% MOLSTR NOT DEC: 22 % DEC: NA DATE EXTRETED:04-15-88

EXTRACIN (Gep://Cont/Sonc):SONC PATE ANALYZED:04-16-88

QCC CLNUP (Y/N): N pH: NA DILUTION FOTR:

水水厂以大用水炉食物分割的加油食物的分型的现在形式的微量的或液质或水质溶液或水质溶液或水质溶液或水管溶液或水质的含量,有效性的大用的含量,可以用水管物物,有种的用水管的可能,有用用水管的可能,可以用水管 CONCENTRATION UNITS (US/L OR US/ES): US/ES

CAS MUMBER	COMPOUND	SOIL	©.
100 10 2			
Andrea makina ma	I-Nitroaniline	2051	1.3
50-02-7 51 50 5	Acenaphthene	423	U
017 2073 100 00 7	2.4-Dinitrophenol	2051	IJ
100-02-7	4-Nitrophenoi	2051	U
10275459	Dibenzofumen	423	1_1
121-14-2	2,4-Dinitrotoluena	2051	U
34-66-2		2051	U
7005-72-3	4-Chlorophenyl-phenylether	423	Į.j
85-73-7		423	U
[00-01-6	4-Nitroaniline	423	Ü
534-52-1	4.6-Dinitro-2-Methylphenol	2051	ប
36-30-5	N-Nitrosidiphenylamine	423	U
101-55-3	4-Bromophenyl-phenylether	423	U
118-74-1	Hexachlorobenzene	423	U
. 87-86-5	Fentachlorophenol	· 2051	U
	Phenanthrene	47	J
120-12-7	Anthracene	, 423	U
84-74-2	Di-N-Butylphthalate	423372	RU
	Fluoranthene	65	
129-00-0	, —··-	96	J
85-68-7	Butylbenzylphthalate	423	U
91-94-1	ਤ,ਤ′−Dichlorobenzidine	846	IJ
56-55-3	Benzo(a) Anthracene	423	U
218-01-9	Chrysene	96	J
117-81-7	bis(2-Ethylhexyl)Fhthalate	423295	x u
117-84-0	Di-n-Octylphthalate	423	
205-99-2	Benzo(b)Fluorathene	64	J
207-08- 9	Benzo(k)Fluorathene	423	U
	Benzo(a)Pyrene	423	U
193-39-5	Indeno(1,2,3-cd)Fyrene	423	
53-70-3	Dibenzo(a,h) Anthracene	423	
191-24-2	Benzo(g,h,i)Ferylene	423	
	FORM I SV-2		_

The state of the s

EPA SAMPLE NUMBER: BR**437**

LAN MANE: WHEATRACE

CONTRACT: 68-01-7417

CAR CODE: wete CASE NO: 7276 SAS NO:NA SDG NO: PR351 PHAIRTY - SCIE/WATCEO: SOIL LAB SAMPLE ID:AA10837

SAMMUD WIVVOL: 3 (G/ML): G LAB FILE ID: >D2486

LOW DATE RECEIVED:04-08-88

CHRICTE NOT DEC: 22 % DEC: NA DATE EXTRCTED:04-13-88

Lk (Reality) - Compf/Cont./Sonc):SONC DATE AMALYZED:04-25-88

BPC CLINUP (Y/N): N PH: NA DILUTION FOTR:

CONCENTRATION UNITS (UG/L OR UG/KG):UG/KG

A. NUMBER COMPOUND	
그는 문화를 살살폈다면 그렇게 되었다.	SUIL ក
111-44-6 3-4-4	
1:1-44-4 Dis(-Z-Chloroeth, LoEther 55-57-8 2-Chloropheno:	4931 U
5141-77-1 - The Cophesion	4231 Û
541-73-7 1.3-Dichlorobenzene	4271 ()
196-444-7 1,4-Dichlorobenzene 199-51-6 Benzyl Alaska	4231 (j
100-51-6 Benzyl Alcohol	라오크는 U
95-50 t 1,2 Dichlorobenzene 75-48-7 2-Methylpheno! 108-60-1 bis/2-0-1	423 (<u>U</u>
100 / 2-Methylpheno!	4231 (J
108-60-1 bis(2-Chloro(sopronyl)Ethe	4251 (j
105-44-5 4-Methylphenol	⁰⁰ 4ድ31 (/
	4231 U
67-72-1 Hexachloroethane	4231 U
- '' 'C'	4231 U
/0~09~1 t	4231 U
907/075	4234 U
	4231 U
	407
**************************************	4231 U
120-83-2 1,4-Dichlorophenol	4231 ປີ
	4231 Ü
91-20-3 Naphthalene	4231 U
- 19974778 4-Chimea	4231 U
	4231 U
	4231 Ú
91-20-3 2-Methylnaphthalene	4231 U
	4231 U
88-06-2 2,4,6-Trichlorophenol	4231 U
75-75-4 2,4.5-Trichlorophenol	4231 U
91-58-7 2-Chloronaphthalene	20513 ப
	4231 Ü
	1 30513 U
三字字 化铁 學 一角色色色 法法国主义	4231 (1
506-20-2 2,6-Dinitrotoluene	4231 U
FORM I SV-1	4231 11
FORM I SV-1	4231. U

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ERA SAMPLE NUMBER: BR437

LAS NAME: metaTRACE - CONTRACT: 50-01-7417

LAR CODE: meta CASE MO: 9276 SAS NO:NA SDG NO: /

MATRIX (SOIL/WATER): SOIL LAB SAMPLE ID: AA10837

SAMPLE WI/VOL: 3 (G/ML): G LAB FILE ID: >02486

LEVEL: LOW DATE PECFIVED:04-08-88

% MOISTR NOT DEC: 22 % DEC: NA DATE EXTROTED:04-13-88

FXTRACTN (Sepf/Cont/Sonc):SONC DATE HMALY7ED:04-23-88

GRC CLNUP (Y/N): N PH: NA FILUTION FOTR: 10

CONCENTRATION UNITS (UGAL OF UGARG): UGARG

99_09-0	CAS NUMBER	COMPOUND	901(G
## According to Proceed ## According to Proceed ## According ## Accord	99-09-2	7 Mitemanilias	
S1-28-5	O	Arenanhthans	
132-64-9 Dibenzofuran 4231 Dibenzofuran 4231 Districted Juene 20513 U	51-28-5	2,4-Dimitrontenni	
132-64-9 121-14-2 2.4-Dinitrotoluone 84-56-2 Diethylphthalate 7005-72-3 86-73-7 Fluorene 100-01-6 4-Nitroaniline 4231 U 86-30-6 N-Nitrosidiohenylamine 4231 U 87-86-5 Pentachlorophenol 85-01-8 Phenanthrene 120-12-7 Anthracene 120-12-7 Burylphthalate 120-12-7 Burylphthalate 120-12-7 Burylphthalate 120-12-7 Burylphthalate 120-12-7 Burylphthalate 120-12-7 Burylphthalate 120-13-1 S6-55-3 Benzo(a)Anthracene 117-81-7 Dis(2-Ethylhexyl)Fhthalate 117-84-0 Di-n-Octylphthalate 120-79-2 Benzo(a)Fluorathene 120-79-3 Benzo(a)Pyrene 1193-79-5 Indeno(1,2,3-cd)Pyrene 1193-79-5 Dibenzo(a,h)Anthracene 120-12-8 Benzo(g,h,i)Ferylene 121-14-15 Benzo(g,h,i)Ferylene 1231 U 4231 U	$V(0) - (0)^{n-1}$	4-Nitrophward:	
121-J4-2	132-64-9	Dibenzofuras	-
### 1005-72-3 ### 1005-72-3 ### 1005-72-3 ### 1005-72-3 ### 100-01-6 #	121-14-2		·
## Chlorophenyl = phenyl ether #231 U 100-01-6 #4-Nitroaniline #231 U 4231	Diethylobthatata		
100-01-6	7005-72-3	4-Chlorophenyl-phonylethan	
100-01-6 4-Nitroaniline 534-52-1 4,6-Dinitro-2-Methylphenol 86-30-6 N-Nitrosidiphenylamine 101-55-3 4-Bromophenyl-phenyletner 118-74-1 Hexachlorophenol 87-86-5 Pentachlorophenol 85-01-8 Phenanthrene 120-12-7 Anthracene 84-74-2 Di-N-Butylphthalate 1206-44-0 Fluoranthene 1206-44-0 Pyrene 85-68-7 Butylbenzylphthalate 129-00-0 Pyrene 85-68-7 Benzo(a) Anthracene 117-84-1 bis(2-Ethylhexyl)Fhthalate 117-84-0 Di-n-Octylphthalate 205-99-2 Benzo(b)Fluorathene 1207-08-9 Benzo(a)Pyrene 1193-39-5 Indeno(1,2,3-cd)Fyrene 1191-24-2 Benzo(a,h)Anthracene' 1291-24-2 Benzo(a,h)Anthracene' 1291-24-2 Benzo(a,h)Ferylene 14231 U 1	86-73-7	Eldobene .	
### ### ### ### ### ### ### ### ### ##	100-01-6		
101-55-3			
118-74-1 Hexachlorobenzene 4231 U 87-86-5 Pentachlorophenol 20513 U 85-01-8 Phenanthrene 4231 U 120-12-7 Anthracene 4231 U 84-74-2 Di-N-ButyIphthalate 4231 U 129-00-0 Pyrene 4231 U 85-68-7 ButyIbenzyIphthalate 4231 U 86-55-3 Benzo(a) Anthracene 4231 U 17-81-7 bis(2-EthyIhexyI) Finthalate 4231 U 17-84-0 Di-n-OctyIphthalate 4231 U 17-84-0 Benzo(b) Fluorathene 4231 U 193-79-5 Fenzo(a,h) Anthracene 4231 U 193-79-5 U 193-79-5 Dibenzo(a,h) Anthracene 4231 U 191-24-2 Benzo(g,h,i) Perylene 4231 U	86-30-6	N-Nitrosidiobeavisais-	
## Hexachlorobenzene ## ## ## ## ## ## ## ## ## ## ## ## ##	101-55-3	4-Eromonhenyl-phonylator	
### ### ##############################	118-74-1	Hexachlorohenzene	
### ### ##############################	87-86-5	Pentachlorophecol	
120-12-7 Anthracene 84-74-2 Di-N-ButyIphthalate 206-44-0 Fluoranthene 129-00-0 Pyrene 85-68-7 ButylbenzyIphthalate 91-94-1 3,3'-Dichlorobenzidine 56-55-3 Benzo(a)Anthracene 218-01-9 Chrysene 117-81-7 bis(2-Ethylhexyl)Fhthalate 117-84-0 Di-n-OctyIphthalate 205-99-2 Benzo(b)Fluorathene 207-08-9 Benzo(b)Fluorathene 193-39-5 Indeno(1,2,3-od)Fyrene 193-39-5 Indeno(1,2,3-od)Fyrene 53-70-3 Dibenzo(a,h)Anthracene 191-24-2 Benzo(g,h,i)Ferylene 4231 U	ತ5−01-8	Phenanthrene	
84-74-2 Di-N-ButyIphthalate 4231 U 206-44-0 Fluoranthene 4231 U 129-00-0 Pyrene 4231 U 85-68-7 ButylbenzyIphthalate 4231 U 91-94-1 3,3'-Dichlorobenzidine 5462 U 56-55-3 Benzo(a)Anthracene 4231 U 218-01-9 Chrysene 4231 U 117-81-7 bis(2-Ethylhexyl)Fhthalate 4231 U 117-84-0 Di-n-Octylphthalate 4231 U 205-99-2 Benzo(b)Fluorathene 4231 U 207-08-9 Benzo(k)Fluorathene 4231 U 50-32-8 Benzo(a)Pyrene 4231 U 193-79-5 Indeno(1,2,3-cd)Pyrene 4231 U 53-70-3 Dibenzo(a,h)Anthracene 4231 U 191-24-2 Benzo(g,h,i)Perylene 4231 U	120-12-7		
129-00-0 Pyrene 4231 U 85-68-7 Butylbenzylphthalate 4231 U 56-55-3 Benzo(a) Anthracene 4231 U	84-74-2		
129-00-0 Pyrene 4231 U 85-68-7 Butylbenzylphthalate 4231 U 91-94-1 3,3'-Dichlorobenzidine 5462 U 56-55-3 Benzo(a)Anthracene 4231 U 218-01-9 Chrysene 4231 U 117-81-7 bis(2-Ethylhexyl)Phthalate 4231 U 117-84-0 Di-n-Octylphthalate 4231 U 205-99-2 Benzo(b)Fluorathene 4231 U 207-08-9 Benzo(k)Fluorathene 4231 U 50-32-8 Benzo(a)Pyrene 4231 U 193-39-5 Indeno(1,2,3-cd)Pyrene 4231 U 53-70-3 Dibenzo(a,b)Anthracene 4231 U 191-24-2 Benzo(g,h,i)Perylene 4231 U	206-44-0	Fluoranthene	4451 744 ELAK
85-68-7 Butylbenzylphthalate 4231 U 91-94-1 3,3'-Dichlorobenzidine 5462 U 56-55-3 Benzo(a)Anthracene 4231 U 218-01-9 Chrysene 4231 U 117-81-7 bis(2-Ethylhexyl)Fhthalate 4231 U 117-84-0 Di-n+Octylphthalate 4231 U 205-99-2 Benzo(b)Fluorathene 4231 U 207-08-9 Benzo(k)Fluorathene 4231 U 50-32-8 Benzo(a)Fyrene 4231 U 193-39-5 Indeno(1,2,3-cd)Fyrene 4231 U 53-70-3 Dibenzo(a,h)Anthracene 4231 U 191-24-2 Benzo(g,h,i)Ferylene 4231 U			
56-55-3 Benzo(a)Anthracene 4231 U 218-01-9 Chrysene 4231 U 117-81-7 bis(2-Ethylhexyl)Fhthalate 4231 U 117-84-0 Di-n-Octylphthalate 4231 U 205-99-2 Benzo(b)Fluorathene 4231 U 207-08-9 Benzo(k)Fluorathene 4231 U 50-32-8 Benzo(a)Fyrene 4231 U 193-39-5 Indeno(1,2,3-cd)Fyrene 4231 U 53-70-3 Dibenzo(a,b)Anthracene 4231 U 191-24-2 Benzo(g,h,i)Ferylene 4231 U	85-68-7	Butylbenzylobthalato	
56-55-3 Benzo(a)Anthracene 4231 U 218-01-9 Chrysene 4231 U 117-81-7 bis(2-Ethylhexyl)Fhthalate 4231 U 117-84-0 Di-n-Octylphthalate 4231 U 205-99-2 Benzo(b)Fluorathene 4231 U 207-08-9 Benzo(k)Fluorathene 4231 U 50-32-8 Benzo(a)Fyrene 4231 U 193-39-5 Indeno(1,2,3-cd)Fyrene 4231 U 53-70-3 Dibenzo(a,h)Anthracene 4231 U 191-24-2 Benzo(g,h,i)Ferylene 4231 U	91-94-1	3.3 =Dichlorobensiding	
218-01-9 Chrysene 4231 U 117-81-7 bis(2-Ethylhexyl)Phthalate 4231 U 117-84-0 Di-n+Octylphthalate 4231 U 205-99-2 Benzo(b)Fluorathene 4231 U 207-08-9 Benzo(k)Fluorathene 4231 U 50-32-8 Benzo(a)Pyrene 4231 U 193-39-5 Indeno(1,2,3-cd)Pyrene 4231 U 53-70-3 Dibenzo(a,b)Anthracene 4231 U 191-24-2 Benzo(g,h,i)Perylene 4231 U		Benzo (a) Anthracona	
117-81-7 bis(2-Ethylhexyl)Phthalate 4231 U 117-84-0 Di-n-Octylphthalate 4231 U 205-99-2 Benzo(b)Fluorathene 4231 U 207-08-9 Benzo(k)Fluorathene 4231 U 50-32-8 Benzo(a)Pyrene 4231 U 193-39-5 Indeno(1,2,3-cd)Pyrene 4231 U 53-70-3 Dibenzo(a,h)Anthracene 4231 U 191-24-2 Benzo(g,h,i)Perylene 4231 U	218-01-9	Chrysene	
117-84-0 Di-n-Octylphthalate 4231 U 205-99-2 Benzo(b)Fluorathene 4231 U 207-08-9 Benzo(k)Fluorathene 4231 U 50-32-8 Benzo(a)Fyrene 4231 U 193-39-5 Indeno(1,2,3-cd)Fyrene 4231 U 53-70-3 Dibenzo(a,b)Anthracene 4231 U 191-24-2 Benzo(g,h,i)Ferylene 4231 U	117-81-7		
205-99-2 Benzo(b)Fluorathene 4231 U 207-08-9 Benzo(k)Fluorathene 4231 U 50-32-8 Benzo(a)Pyrene 4231 U 193-39-5 Indeno(1,2,3-cd)Pyrene 4231 U 53-70-3 Dibenzo(a,h)Anthracene 4231 U 191-24-2 Benzo(g,h,i)Perylene 4231 U	117-84-0	Di-n-Octvlohthalate	
207-08-9 Benzo(k)Fluorathene 4231 U 50-32-8 Benzo(a)Pyrene 4231 U 193-39-5 Indeno(1,2,3-cd)Pyrene 4231 U 53-70-3 Dibenzo(a,b)Anthracene 4231 U 191-24-2 Benzo(g,h,i)Perylene 4231 U	205-99-2	Benzo(b) Fluorathena	
50-32-8 Benzo(a) Pyrene 4231 U 193-39-5 Indeno(1,2,3-cd) Pyrene 4231 U 53-70-3 Dibenzo(a,b) Anthracene 4231 U 191-24-2 Benzo(g,b,i) Perylene 4231 U	207-08-9		
193-39-5 Indeno(1,2,3-cd)Pyrene 4231 U 53-70-3 Dibenzo(a,b)Anthracene 4231 U 191-24-2 Benzo(g,b,i)Perylene 4231 U	50-32-8		
191-24-2 Benzo(g,h,i)Perylene 4231 U	193-39-5	Indeno(1.2.Zend) Pyropa	
191-24-2 Benzo(g,h,i)Perylene 4231 U		Dibenzo(a.h) Anthracens	
4 5 M 1		Benza (a.h.i) Poetel ona	
		FORM I SULT	4231 U

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SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET
                                                                     EPA SAMPLE NUMBER: BR438
 LAB NAME: metaTRACE
                                                                                CUNTRACT:
                                                                                                             68-01-7417
 LAB CODE: meta CASE NO: 9296
                                                                              SAS NO:NA SDG NO:
 MATRIX (SCIL/WATER): SCIL
                                                                                                                                        ER.751
                                                                              LAB SAMPLE ID:AA10838
 SAMPLE WT/VOL: 30 (G/ML): G LAB FILE ID: >D24G7
                                                     LOW
                                                                   DATE RECEIVED:04-08-88
% MOISTR NOT DEC:
                                               25 % DEC: NA DATE EXTRETED: 04-13-68
FXTMACIN (Sepf/Cont/Sond):SONC
                                                                             DATE AMALYZED:04-27-88
GPC CLNUP (YZN): N pH: NA DILUTION FOTR:
CONCENTRATION UNITS (UG.L OR UG/EG): UG/EG
                              CAS NUMBER COMPOUND
                               The second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second secon
                                                                                                                               SUM: a
                                  108-705-2 Phenos
                                 111-44-4 bis/-2-Chlorosthyl/Sther
                                                                                                                              4450 D
                                 95-57-8 2-Chlorophenol
                                                                                                                               4400 0
                                 541-73-1 1.3-Dichlorobenzeno
                                                                                                                              4200 0
                                 106-46-7 1,4-Dichloropenzens
                                                                                                                              4400 U
                                 100-51-6 Benzyl Alcohol
                                                                                                                              4400 0
                                95-50-1 1,2-Dichlorobenzene
                                                                                                                              4400 U
                                95-48-7 2-Methylphenol
                                                                                                                              4400 U
                                108-60-1 bis(2-ChloreisopropyI)Ether
                                                                                                                             4400 U
                                106-44-5 4-Methylphenol
                                                                                                                             4456 [
                                621-64-7 N-Nitroso-Di-n-Propylamine
                                                                                                                            4400 U
                                67-72-1 Hemachloroethane
                                                                                                                           4400 U
                                98-95-3 Nitrobenzene
                                                                                                                            4400 U
                               78-59-1 Isophorone
                                                                                                                            4400 B
                               88-75-5 2-Nitrophenol
                                                                                                                           4-400 U
                               106-44-5 2,4-Dimethylphenol
                                                                                                                           4400 U
                               65-85-0 Benzoic Acid
                                                                                                                            4400 U
                               111-91-1 bis(2-Chlorgethoxy) Methane
                                                                                                                           4400 U
                               120-83-2 2,4-Dichlorophenol
                                                                                                                          4400 U
                               120-83-2 1,2,4-Trichlorobenzene
                                                                                                                          4400 U
                               91-20-3 Naphthalene
                                                                                                                          4400 U
                               106-47-8 4-Chloroaniline
                                                                                                                           4400 U
                               87-68-3 Hexachlorobutadiene
                                                                                                                          4400 U
                              59-50-7 4-Chloro-3-Methylphenol
91-20-3 2-Methylnaphthalene
                                                                                                                          4400 U
                                                                                                                          4400 U
                              106-47-8 Hexachlorocyclopentadiene
                                                                                                                         4400 U
                              88-06-2 2,4,6-Trichlorophenol
                                                                                                                        4400 U
                              95-95-4 2,4,5-Trichlorophenol
                                                                                                                        4400 U
                             91-58-7 2-Chloronaphthalene
88-74-4 2-Nitroaniline
                                                                                                                      21333 U
                                                                                                                          4400 U
                             131-11-3 Dimethyl Phthalate
                                                                                                                        21333 U
                             208-96-8 Acenaphthylene
                                                                                                                          4400 U
                             606-20-2 2,6-Dinitrotoluene
                                                                                                                          4400 U
```

FORM I SV-12 For Many A

200

Total Secretary

0000412

A 1950

4400 U

EPA SAMPLE NUMBER: BR430

LAB NAME: metaTRACE CONTRACT: 68-01-7417 LAR CODC: weta CABE NO: 5098 - 5AG NO:NA

SDG NO: SRJ51 MATRIX (SOT /WATER): SOIL LAD SAMPLE ID:AA10838

SAMPLE WT/VOL: 50 (G/ML): 0 LAB FILE ID: >02487

LEVEL: LOW DATE RECEIVED:04-08-88

% MOISTR NOT DEC: 25 % DEC: NA DATE EXTROTED:04-13-88

EXTRACIN (Sepf/Cont/Sond):SONC DATE ANALYZED:04-23-88

SPC CLNBP (Y/N): N / PH: NA DILUTION FOTR:

CONCENTRATION UNITS (UG/L OR UG/KG): UG/KG

		5 5 1. '7=1
CAS NUMBER	R COMPANIA,	- -
	The state of the s	501L g
77-97-1	그 등이 가는 사람이 나를 보냈습니다.	
3 7-30-9	A	2)্সুসুর চ
147 AGT	moenaphthene 7.4-Dinitrophenol	_4400 U
	TOTAL TROUBERING	ੜ੍ਹੀ ਕਰਤ 👵
172-64-5	/ District	21303 H
101-14-3		4400 D
		21273 ប
7 005-70	J ATOMIONOMENUT SABABALITEL	21ತತತ ಗು
8 4-73-7	Floorene Phorene	4400 U
100-01-5	$4 - 2! \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 $	4400 U
	4.cmDinitomen was a second	4400 U
		2133R U
101-55-3	**************************************	4400 U
118-74-1	11873 8110 1 0 126 8 8 8 2 2 2 2 2	4400 U
87 -86-5	Fientachlo	4400 U
85-01-8	- MRARACTARAS	21333 ც
120-12-7	Anthracana	4400 U
34 -74-2	Di-N-Butylphthalate	4400 U
206-44-0	Fluoranthene	4400 U
129-00-0	Syrana	4400 U
8 5 -68-7	Bitylhonesteet	4400 U UJ
91-94-1		4400 Û 🕽
56~55 <u>~</u> 3	3.3'-Dichlorobenzidine Benzo(a)Anthracene	8800 U
218-01-9	Chrysene	4400 LI
117-81-7	hie/Dethers	4400 U 🗸
117-84-Q		4400 son \$UJ
205-99-2	or "-Octylonthalate	720 J
2 0 7-08-9	Benzo(b)Fluorathene	4400 U UJ
50-32-8	Benzo(k) Fluorathene	4400 U
A	Benzo(a) Pyrene	4400 U
5370-3	Indena(1,2,3-cd) Fyrene	4400 ()
191-24-2	Urughzo(a.h)Anthracene	4400 U
	Genza(g,h,i)Ferylene	4400 U 🖤
	FORM I SV-2	

EPA CAMPLE NUMBER: (BR439

LAB WAME: metaTRACE

CONTRACT: 68-01-7417

LAG CODE: meta | CASE NO: 9296 | SAS NO: WA | SDG NO: | DR351

MA) RIX (ROIL/WATER): SOIL LAB SAMPLE ID: AALOGS9

SAMPLE WITHOUT: 3 (G/ML): G LAB FILE ID: >02488

LEVEL:

and the second of the second o

LOW DATE RECEIVED:04-08-88

N HOISTR NOT DEC: 31 % DEC: NA DATE TEXTROTED: 04-13-88

TXTRACTN (Sepf/Cont/Sonc):SONC DATE ANALY7ED:Q4-23-88

GRO CLINUP CYZN): N PH: NA DILUTION FOTR:

CONCENTRATION UNITS (USA, OR UG/KG): UG/KG

CAS NUMBER COMPOUND	
the residue of the same and the	SOIL 0
108-65-2 Pheno;	
111-44-4 bis(-2-Chloroethyl)Ether	4783 ()
95-57-8 2-Chlorophenol	4763 U
54:-73-1 1,3-Dichlorobeamene	4783 []
106-46-7 1,4-Dichlarobenzene	4783 U
- ・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・	4783 U
7070(J-1 1 948; 46; 46; 46; 46; 46; 46; 46; 46; 46; 46	4783 U
75-48-7 2-Methylphenol	4783 U
108-60-1 bis(2-Chlord)sopropy()Ether	4783 U
106-44-5 4-Methylphenol	4783 U
521-64-7 N-Nitroso-Di-n-Fropylamine	4783 U
67-72-1 Hexachloroethane	4783 U
98-95-3 Nitrobenzene	4783 U
78-59-1 Isophorone	4783 U
88-75-5 2-Nitrophenol	4783 U
106-44-5 2,4-Dimethylphenol	4783 U
65-85-0 Benzoic Acid	4783 U
111-91-1 bis(2-Chloroethoxy) Methane	4783 U
*** 9974 * 47D1Chlorophena)	4783 U
120-83-2 1.2,4-Trichlorobenzene	4783 U
91-20-3 Naphthalene	4783 U
196-47-8 4-Chloroaniline	4783 U
87-68-3 Hexachlorobutadions	4783 U
59-50-7 4-Chloro-3-Methylchopa	4783 U
7.174970 Z-Methylnachthalene	4783 U
106-4/-8 Hexachlorocyclopentadions	4783 U
00 00-4 4,4,6-(richloropheno)	4783 U
73-73-4 2,4,5-Trichlorophenol	4783 U
71-38-/ 2-Chloronachthalene	23188 U
- 55-74-4 2-Nitroaniline (4783 U
- NAI-11-3 Dimethyl Phthalata	23168 U
208-76-8 Acenaphthylene	4783 U
606-20-2 2,6-Dinitrotoluene	4783 U
FORMS E SUPERIOR OF STREET OF STREET	4783 U

EPA SAMPLE NUMBER: BR479

CONTRACT: metaTRACE CONTRACT: 68-01-74(7

CAD CODE: meta CAGE Hu: 9794 GAS NO:NA SDS NO: RR75!

MATRIX (SOIL/WATER): SOIL (CO SAMPLE 10:ANIOCO)

SAMPLE WT/VOL: 3 (G/ML): G LAB FILE ID: >02468

LEVEL: LOW DATE PECETVED: 04-06-98

% MOISTR NOT DEC: 31 % DEC: NA DATE EXTROYED:04-11-88

EXTRACIN (Yepf/Cont/Sonc):80NC DATE ANALYZED:04-23-88

GEC CLINUP (YYN): N DIFFLICH ECLE: 10

CONCENTRATION UNITS (UG/L OF UD/KG): UG/KG

CAS NUMBER COMPOUND SOIL 0 51-28-5 Z.4 Dinitroppersol 27188 H 4763 11 PIION U (100-07-7 4-Nitrophenol 132-64-9 Dibenvotoran 22188 U 4793 0 121-14-2 2,4-Dimitrotoluene 23**1**88 U 84-66-2 Diethylphthalate 23188 U 7005-72-3 4-Chlorophenyl phenylethen 4797 U 83-73-7 Fluoreno 4700 U 100-01-6 4-Nitroaniline 4783 U 534-52-1 4.6-Dimitno-2-Methylphenol 23108 UUJ 86-30-6 N-Nitrosidiphenylasina 101-55-3 4-Bromophenyl-phenylether 4783 U 4783 년 118-74-1 Hexachlorobenzene 4783 U -87-86-5 Fentachlorophenol 23188 U 85-01-8 Phenanthrene 4783 U 120-12-7 Anthracene 4783 U 84-74-2 Di-N-Butylphthalate 4783 U 206-44-0 Fluoranthene 4783 U 129-00-0 Pyrene 4783 U 85-68-7 Butylbenzylphthalate 4783 U 91-94-1 3,31-Dichlorobenzidine 9565 U 56-55-3 Benzo(a)Anthracene 4783 U 218-01-9 Chrysene 4783 U 117-81-7 bis(2-Ethylhemyl)Phthalate 4783 U 117-84-0 Di-n-Octylphthalate 4783 U 205-99-2 Benzo(b)Fluorathene 4783 U 207-08-9 Benzo(k)Fluorathene 4783 U 50-32-8 Benzo(a) Fyrene 4783 U 193-39-5 Indeno(1,2,3-cd)Fyrene 4793 5ペーアロース Dibenzo(a.h)Anthrezene 4783 U 191-24-2 Benzo(g,h,i)Perylene 4783 U 🛂

FORM I SV-2

ا المارانية المارانية المارانية المارانية المارانية المارانية المارانية المارانية المارانية المارانية المارانية EFA SAMPLE NUMBER: (BR444

LAB NAME: metaTRACE

CONTRACT: 68-01-7417

LAB COPE: meta CASE NO: 9276 SAS NO:NA

SDG NO: BR351

MATRIX (SCIL/WATER): SCIL LAB SAMPLE ID: AA10840

SAMPLE WT/VOL: 30 (G/ML): G LAB FILE ID: >D2485

LEVEL:

LOW DATE RECEIVED:04-08-88

% MOISTR NOT DEC: 24 % DEC: NA DATE EXTROTED:04-13-88

FYTRACTN (Sepf/Cont/Sonc):SONC DATE ANALYZED:04-22-88

GPC CLNUP (YZN): N PH: NA DILUTION FCTR:

CONCENTRATION UNITS (UG/L OR UG/KG): UG/KG

CAS NUMBER COMPOUND	SOIL g
100.05.0.5.	
108;-95-2 Phenol	434 U
111-44-4 bis(-2-Chloroethyl)Ether	434 U
95-57-8 2-Chlorophenol	434 Û
541-70-1 1,3-Dichlorobenzene	434 Ü
106-46-7 1,4-Dichlorobenzene	434 Ü
100-51-6 Benzyl Alcohol	43 4 U
75-50-1 1,2-Dichlorobenzene	434 U
95-48-7 2-Methylphenol	434 U
108-60-1 bis(2-Chloroisopropyl)Ether 106-44-5 4-Methylphenol	434 U
621-64-7 N-Mithern P:	434 U
621-64-7 N-Nitroso-Di-n-Propylamine 67-72-1 Hexachloroethane	434 ∪
78-95-3 Nitrobenzene	434 U
78-59-1 Isophorone	434 U
88-75-5 2-Nitrophenol	434 U
106-44-5 2,4-Dimethylphenol	434 U
65-85-0 Benzoic Acid	434 U
111-91-1 bis(2-Chloroethoxy) Methane	434 U
120-83-2 2,4-Dichlorophenol	434 U
120-83-2 1,2,4-Trichlorobenzene	434 U
91-20-3 Naphthalene	434 ∪
106-47-8 4-Chloroaniline	434 U
87-68-3 Heyachtorphutadaaa	434 U
59-50-7 4-Chloro-3-Mothy)-6	434 U
91-20-3 2-Methylnaphthalene	434 U
106-47-8 Hexachlorocyclopentadiene	434 U
88-06-2 2,4,6-Trichlorophenol	434 U
95-95-4 2,4,5-Trichlorophenol	434 U
91-58-7 2-Chloronaphthalene	2105 U
SS-74-4 7-Nikepanities	434 U
131-11-3 Dimethyl Phthalate	2105 U
208-96-8 Acenaphthylene	434 U
606-20-2 2,6-Dinitrotoluene	434 U
FORM I SV-1	434 U
-	

EFA CAMPLE NUMBER: BR444

LAB CORTEGOR: metal CASC NO: 90% 945 NO:NA 505 NO: 88351

MATRIX (SOTL/WATER): SOTL LAB SAMPLE 10:AA10840

SAMPLE WITYOU: 50 (G/ML): G LAB FILE ID: > D2485

LEVEL: LOW DATE RECEIVED: 04-05-08

EXTRACTN (Sepf/Cent/Sond): SONC DATE EXTRCTED: 04-13-88

EXTRACTN (Sepf/Cent/Sond): SONC DATE AMALYZED: 04-27-08

LECTION (Y/N): N DATE CLUTION FORE: 1

CONCENTRATION UNITS (US/L OR US/US): US/KG

		·
CAS MINDER	COMPONIONS	
· · · · · · · · · · · · · · · · · · ·	Mark and the second	50 H. @
200 mg (200 mg)	T Mitroardine	
	Account to the second s	7 1 0 7 U
51 G8 5	Sud-Dinitrophenol	474 0
100-02-7	4-Nitrophenol	2105 U
132-64-9	Diberrations	7105 U
121-14-0	2,4-Dinitrotoluene	4ाऽाय ∪
8 4- 66-2	Diethylphthalate	2105 U
70 05-79-3	4-Chlorophanyl-phanylether	2105 U
86-73-7	Fluorene Fluorene	434 U
100-01-6	4 Witream: line	434 U
574-52-1	4,6-Dinitro-E-Methylphenol	434 U
85~30-5	N-Nitrosidiphenylamine	2105 U U J
101-55-3	4-Bromophen, 1-phenylether	434 4
118-74-1	Hexachlorobenzene	434 U
8 7- 86-5	Fentachlorophenol	434 U
85-01-8	Fhenanthrene	2105 U
1.20=12-7	Anthracene	454 U
	Di-N-Butylphthalate	43 4 U
206-44-0	Fluoranthene	434 U
129-00-0	Fyrene	434 년 📗
85-48-7	Butylbenzylphthalate	434 U
91-94-1	3,3'-Dichlorobenzidine	454 U
56-55-3	Benzo(a) Anthracene	868 U ∫
218-01-9	Chrysene	434 U /
	bis(2-Ethylhexyl)Phthalate	434 니
117-84-0	Di-n-Octylphthalate	43 4 U
205-99-2	Benzo(b) Fluorathene	434 U
207-08-9	Benzo(k) Fluorathene	434 U \
គឺ១១១-ខ	Benzo(a) Fyrene	434 U √
193-39-5	Indeno(1,2,3mcd)fyrene	434 U \
53-70-3	Dibenzo(a,h)Anthracene	434 U
191-24-2	Benzo(g,h,1)Perylene	434 U
-	FORM I SV-2	434 U ¥
	1 UNII 1 5V-/	•

EPA SAMPLE NUMBER: BR445

LAB NAME: metaTRACE

CONTRACT: 68-01-7417

LAO COVE: meta CASE NO: 9296 SAS NO:NA SDG NO: BR351

MATRIX (SOI) /WATER): SOIL LAB SAMPLE ID: AA10841

SAMPLE WIT/VOL: 30 (G/ML): G LAB FILE ID: >D2433

LEVEL:

LOW DATE RECEIVED: 04-08-88

% MOISTR NOT DEC: 24 % DEC: NA DATE EXTROTED:04-13-98

EXTRACTN (Sept/Cont/Sond):SONC DATE AMALYZED:04-17-88

GFC CLNUP (Y/N): N pH:

NA DILUTION FOTE:

CONCENTRATION UNITS (UGZL OR UGZKG):UGZKG

CAS NUMBER COMPOUND	201(g
108-55-2 Phenol	3.77 a 1.1
111-44-4 bis(-2-Chloroethyl/Ether	434 년 43 4 년
79m9/mb 2mUhlomophenal	434 U
#####################################	434 U
196-46-/ 1,4-Dichlorobenzene	434 U
19955156 Benzyl Alcohol	434 U
95-50-1 1,2-Dichlorobenzene	434 U
プロー48ー7 2-Methylphena!	
198-60-1 bis(2-Chloroisonconvi)Ethar	4조4 U 4조4 U
*VOT44-0 4-MethylphenoI	_
521-54-7 N-Nitroso-Di-n-Fronylamina	434 U
67-72-1 Hexachloroethane	434 U
98-95-3 Nitrobenzene	434 U
78-59-1 Isophorone	434 U
36 -75-5 2-Nitrophenn)	434 U
106-44-5 2,4-Dimethylphenol	434 U
65-65-0 Benzoic Acid	434 U
111-91-1 bis(2-Chloroethovy) Mothage	434 U
120-83-2 2,4-Dichlorophenol	434 U
120-83-2 1,2,4-Trichlorobenzene	434 U
91-20-3 Naphthalene	4호4 U
106-47-8 4-Chloroaniline	434 U
87-68-3 Hexachlorobutadions	434 U
59-50-7 4-Chloro-3-Methylabana	434 U
91-20-3 2-Methylnaphthalene	434 U
106-47-8 Hexachlorocyclopentadiene	434 U
88-06-2 2,4,6-Trichlorophenol	434 U
95-95-4 2,4,5-Trichlorophenol	434 U
91-58-7 2-Chloronaphthalene	2105 U
88-74-4 2-Nitroaniline	434 U
131-11-3 Dimethyl Phthalate	2105 U
208-96-8 Acenaphthylene	434 U
606-20-2 2,6-Dinitrotaluene	434 U
FORM I SV-1	434 U

EFA SAMPLE NUMBER: BR445

LAB NAME: metaTRACE CONTRACT: 68-01-7417

LAB CODE: meta CASE NO: 9276 SAS NO:NA SDG NO: BR351

MATRIX (SOIL/WATER): SOIL LAB SAMPLE ID: AA10841

SAMPLE WT/VOL: 30 (G/ML): G LAB FILE TD: >D2433

LEVEL: LOW DATE RECEIVED:04-08-88

M MOISTR NOT DEC: 24 % DEC: NA DATE EXTROTED:04-13-88

EXTRACTN (Sepf/Cont/Sonc):SONC DATE ANALYZED:04-17-88

GPC CLNUP (Y/N): N pH: NA DILUTION FCTR:

CONCENTRATION UNITS (US/L OR UG/KG): UG/KG

CAS NIMBER	COMPOUND	(D. T. T.)
	The state of the s	8011. 0
77-05-5	3 Nitroam:line	
G	Acemaphthene	2105 () 454 ()
51-28-5	, and the specific trot	2105 U
100-02-7	4 mNi trophenol	
132-64-9	Dibenzofuran	2105 U
121-14-8	그 그 그 그 그 그 그 그 나는 그 나는 그 나는 나는 나는 그 그 그 그	434 U
84-66-2	U10thv1n8th31st4	2105 U
7005-72-3	4-Chlorophenvl-phenvlether	2105 U
	Linduction and the contract of	4조4 년
100-01-6	4-Nitroanilina	434 U
シンチャンジー 1	4.6-Dinitro-2-Mass.	474 U
·-· ·- ·	NTN1TEOS101000001	21 <u>05</u> U
1 (71 - 32)-	4-bromophenvl-phenvlather	434 U
118-74-1	Hexachlorobenzene	434 U
6 7-86-5	Fentachlorophenol	434 U
85-01-8	- Fhenanthrana	2105 U
120-12-7	Anthracene	434 ⊔
84-74-2	Di-N-ButyIphthalate	4⋽4 U
206-44-0	Fluoranthena	الم و صبد بالا
200-44-0	Fluoranthene	
129-00-0	Fluoranthene Fyrene	الم و صبد بالا
129-00-0 85-68-7	Fluoranthene Fyrene Butylbenzylphthalate	434 Ú
129-00-0 85-68-7 9 1-94-1	Fluoranthene Fyrene Butylbenzylphthalate 3,3'-Dichlorobenzidine	434 U 434 U 434 U
129-00-0 85-68-7 9 1-94-1 5 6-55-3	Fluoranthene Fyrene Butylbenzylphthalate 3,3'-Dichlorobenzidine Benzo(a)Anthracene	434 U 434 U 434 U 434 U
129-00-0 85-68-7 91-94-1 56-55-3 218-01-9	Fluoranthene Fyrene Butylbenzylphthalate 3,3'-Dichlorobenzidine Benzo(a)Anthracene Chrysene	434 U 434 U 434 U 434 U 868 U
129-00-0 85-68-7 91-94-1 56-55-3 218-01-9 117-81-7	Fluoranthene Fyrene Butylbenzylphthalate 3,3'-Dichlorobenzidine Benzo(a)Anthracene Chrysene bis(2-Ethylbexyl)Fhthalate	434 U 434 U 434 U 434 U 868 U 434 U
129-00-0 85-68-7 91-94-1 56-55-3 218-01-9 117-81-7	Fluoranthene Fyrene Butylbenzylphthalate 3,3'-Dichlorobenzidine Benzo(a)Anthracene Chrysene bis(2-Ethylhexyl)Fhthalate Di-n-Octylphthalate	434 U 434 U 434 U 434 U 868 U 434 U 434 U
129-00-0 85-68-7 91-94-1 56-55-3 218-01-9 117-81-7 117-84-0 205-99-2	Fluoranthene Fyrene Butylbenzylphthalate 3,3'-Dichlorobenzidine Benzo(a)Anthracene Chrysene bis(2-Ethylhexyl)Fhthalate Di-n-Octylphthalate Benzo(b)Fluorathene	434 U 434 U 434 U 434 U 868 U 434 U 434 U 431 B
129-00-0 85-68-7 91-94-1 56-55-3 218-01-9 117-81-7 117-84-0 205-99-2 207-08-9	Fluoranthene Fyrene Butylbenzylphthalate 3,3'-Dichlorobenzidine Benzo(a)Anthracene Chrysene bis(2-Ethylhexyl)Fhthalate Di-n-Octylphthalate Benzo(b)Fluorathene Benzo(k)Fluorathene	434 U 434 U 434 U 868 U 434 U 434 U 434 U 431 B 434 U
129-00-0 85-68-7 91-94-1 56-55-3 218-01-9 117-81-7 117-84-0 205-99-2 207-08-9 50-32-8	Fluoranthene Fyrene Butylbenzylphthalate 3,3'-Dichlorobenzidine Benzo(a)Anthracene Chrysene bis(2-Ethylhexyl)Fhthalate Di-n-Octylphthalate Benzo(b)Fluorathene Benzo(k)Fluorathene Benzo(a)Fyrene	434 U 434 U 434 U 868 U 434 U 434 U 434 U 434 U 434 U 434 U
129-00-0 85-68-7 91-94-1 56-55-3 218-01-9 117-81-7 117-84-0 205-99-2 207-08-9 50-32-8 193-39-5	Fluoranthene Fyrene Butylbenzylphthalate 3,3'-Dichlorobenzidine Benzo(a)Anthracene Chrysene bis(2-Ethylhexyl)Fhthalate Di-n-Octylphthalate Benzo(b)Fluorathene Benzo(k)Fluorathene Benzo(a)Pyrene Indeno(1,2,3-cd)Fyrene	434 U 434 U 434 U 868 U 434 U 434 U 434 U 434 U 434 U 434 U
129-00-0 85-68-7 91-94-1 56-55-3 218-01-9 117-81-7 117-84-0 205-99-2 207-08-9 50-32-8 193-39-5 53-70-3	Fluoranthene Fyrene Butylbenzylphthalate 3,3'-Dichlorobenzidine Benzo(a)Anthracene Chrysene bis(2-Ethylhexyl)Fhthalate Di-n-Octylphthalate Benzo(b)Fluorathene Benzo(k)Fluorathene Benzo(a)Pyrene Indeno(1,2,3-cd)Fyrene Dibenzo(a,h)Anthracene	434 U 434 U 434 U 868 U 434 U 434 U 434 U 434 U 434 U 434 U 434 U
129-00-0 85-68-7 91-94-1 56-55-3 218-01-9 117-81-7 117-84-0 205-99-2 207-08-9 50-32-8 193-39-5	Fluoranthene Fyrene Butylbenzylphthalate 3,3'-Dichlorobenzidine Benzo(a)Anthracene Chrysene bis(2-Ethylhexyl)Fhthalate Di-n-Octylphthalate Benzo(b)Fluorathene Benzo(k)Fluorathene Benzo(a)Pyrene Indeno(1,2,3-cd)Fyrene	434 U 434 U 434 U 868 U 434 U 434 U 434 U 434 U 434 U 434 U 434 U 434 U

EDA SAMPLE NUMBER / BR440

FAR MAME: met aTRACE

CONTRACT:

68-01-7417

LAE CODE: webs CASE NO: 92%

SAS NO:NA SDG NO:

BR081

CARRER CARRER CAR SAMPLE [0:6410845

SAMES E WILVOL: 1000 (GZML): ML LAB FILE ID: D2414

r EVIJ:

LOW

DATE PRODIVED:04-06-88

W MOTSTE NOT DEC:NA

DEC: NA DATE EXTRETED:04-13-88

HATTORICAL SHERY (Come (Sone): SEFF DATE AMALYZED: 04-15 DE

OPE CENTE (YVN): N PH: NA DILUTION FOTE:

CONCENTRATION UNITS (UGAL OR USANG): DOAL

Hao MANJORMON BRANMUN ÇAN عوليسو بوادات والمراجع المراجع JOH HELD WHENING 1.0 $rac{1}{2} rac{1}{4} rac{1}{4} rac{1}{4} = 6 \left(- 2 - 0 h \log c \cot h \cdot L
ight)$ (Since 10 ଟରି-ଟିଡ ଓ C-Chlorophenol 1.6 Ui 54:-75-1 t,5-Dichlampbenzene 10 U. 106-48 -7 1,4 Dichlorobensene 10 0 100-5; s Denzyl Alcehel 10 0 95-00-1 1,2-Dichlorobenzene 10 U 75-48-7 Z-Methylphenol 10 0 108-60-1 bis(2 Chloreisop obyl)Ether 100 11 106-44-5 4-Methylphenol 10 0 621-64-7 N-Nitroso-Di-n-Propylamine 10 U 67-72-1 Hexachloroethane 10 11 98-95-3 Nitrobenzene 10 U 78-59-1 Isophorone 88-75-5 2-Nitrophenol 10 U 10 U 106-44-5 2,4-Dimethylphenol 10 U 65-85-0 Benzoic Acid 50 U 111-91-1 bis(2-Chloroethoxy) Methane 10 0 120-83-2 2,4-Dichlorophenol 10 U 120-83-2 1,2,4-Trichlorobenzene 10 0 91-20-3 Naphthalene 10 U 106-47-8 4-Chloroamiline 10 U 87-68-3 Hexachlorobutadiene 10 U 59-50-7 4-Chloro-3-Methylphenol 10 U 91-20-3 2-Methylnaphthalene 10 U 106-47-8 Hexachlorocyclopentadiene 10 U 88-06-2 2,4,6-Trichlorophenol 75-95-4 2,4,5-Trichlorophenol 10 U 50 U 91-58-7 2-Chloronaphthalene 10 U 33-74-4 2-Nitroaniline 50 U 131-11-3 Dimethyl Phthalate 10 U 208-96-8 Acenaphthylene 10 U 606-20-2 2,6-Dinitrotoluene 10 U FORM I SV-1 001246

EFA SAMPLE NUMBER: 88440

LAB NAME: metaTRACE

CONTRACT: (CS-01-Val7

LAU 0000: mata - 0ASE MO: 9296 - SAS MO:NA - 500 MO:

MATGIX (COIL / WATER): WATER

LAB SAMPLE ID: NAID845

SAMPLE WIZZOL: 1000 (GZML): ML LAB FILE ID: 02414

LEVELY

LOW DATE PECFIVED:04-08-88

% MOTSTR NOT DEC: NA DATE EXTRCTED:04-13-88

E(TRACIN (Sepf/Cont/Sono):SEPF

DATE ANALYZED: 04-15-25

OFF CLNUF (Y/N): N

PH: NA DILUTION FOTA:

CONCENTRATION UNITS CHG/L OR DEVEG: 105.

CAS MIMBER	COMECUMD	WATER SHUE
the consideration and the constant and the same		
49-09-2	W Mitrosniline	MG U
31-13-7	Armaphthene	
51-20-5	o tetromatiiine Arenaphthema 2,4:Groit-ophene:	10 U 50 U
1000 000 1	- ԳԻՐԾ1 էրագիցիցի	50 U
100 64-9	Ditenzofuran	10 U
1771 14-7	ე. ქინქიებოდულებალიც	\$0 U
선색시시선 건	Diethylphilalate	50 U
アルジュースコ・ス	4-Chlorophenyl-chemylather	10 8
20-70m/	Fluorene	10 ប
100016	4-Nitroanilina	50 U
53452:-1	4,6 Dinitro-2-Methylphonol	50 년
00-30-6	- NHN1 tractal atomorphisms - we will	10 U
エロオーカカース	- AriBromonterny) - nhanytakas	10 U
1.10-74-1	- Mexachlorobenzene	10 U
87-86-5	Fentachloropheno!	50 U
00-01-B	Fhenanthrene	10 U
120-12-7	Anthracene	10 U
34-74-2	Di-N-Butylphthalate	2 8
206-44-Q	Fluoranthene	10 11
129-00-0		10 U
85-68-7	Butylbenzylphthalate	10 U
91-94-1	3,3'-Dichlorobenzidine	និច ប៉
56-55-3	Benzo(a)Anthracene	10 U
218-01-9	Chrysene	10 U
117-81-7	bis(2-Ethylhexyl)Phthalate	1 B
117-84-0	Dimn-Octylphthalate	10 U
205-99-2	Benzo(b)Fluorathene	10 U
207-08-9	Benzo(k)Fluorathene	10 U
50-32-8	Benzo(a) Fyrene	10 U
193-39-5	Indena(1,2,3-od) Pyrana	10 U
ロジーノロー区	Dibenzo(a,h)Anthracene	1. €r - (.) ‡ f% - (.)
191-24-2	Benzo(g.h,i)Perylene	to u
	FORM I SV-2	

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET 1 F

EFA SAMPLE NUMBER: (DR441

MADERNAGE metaTRACE

CONTRACT: 68-01-7417

was code: meta - CACC NO: 9296

SAB NO:NA SOG NO: DROS!

HATRIY (GOIL/WATER): WATER LAD SAMPLE ID: AA10846

SAMPLE WI/VOL: 1000 (G/ML): ML LAB FILE ID: 02415

LEVEL:

LUW

DATE RECEIVED:04-08-88

MOISTR NOT DEC: NA DATE EXTROTED:04-13-88

CXTGACTN (Sepf/Cont/Sonc):SEFF DATE AMALYZED:04-15-88

GRO CLNUR (Y/N): N

PH: NA DILUTION FOTE:

	ATION UNITS (US/L OR US/FG):US/L	H20	5,6.55 MB
DAS NUMBER		11111	
100-05-2		10	U
LLLTHHEN DE SE S	bisk-2-Chlomoeth,1/Other	10	U
フロザル75 回 (SAI) ファ (2-Chlumophenol	10	Li
104.70.7	1,3-Dichlorobenzene	10	()
100-50-7	1,4-Dichlarobenzene	1.0	1.)
# # # # # # # # # # # # # # # # # # #	Benzyl Alcohol	$1 \odot$	Ü
250-00-1 95457	1,2-Dichlorobenzene	1.00	
108-40-1	2-Methylphenol	1.0	$^{\dagger J}$
100-00-1	bis(2-Chloroisopropyl)E:her 4-Methylphenol	i iji	Ų
671-64-7	M-Nitesan Discussion	1.0	
67-77-1	N-Nitroso-Di-n-Fropylamine Hexachloroethane	10	
98-95-3	Nitrobenzene	1 - 3	-
78-59-1	Isophorone	40	
88-75-5	2-Nitrophenol	10	
106-44-5	2,4-Dimethylphenol	10	_
65-85-0	Benzoic Acid	10	
111-91-1	bis(2-Chloroethoxy) Methane	50	
120-83-2	2,4-Dichlorophenol	10	
120-83-2	1,2,4-Trichlorobenzene	10	
91-20-3	Naphthalene	1.0	
106-47-8	4-Chloroaniline	10	
8768-3	Hexachlorobutadiene	10	
39-50-7	4-Chloro-3-Methylphenol	10	
91-20-3	2-Methylnaphthalene	10	
106-47-8	Hexachlorocyclopentadiene	-10 10	
88-06-2	2,4,6-Trichlorophenol	10	
95-95-4	2.4.5-Trichlorophenol	50	
91-58-7	7-Chlacas askthalau-		
88-74-4	2-Nitroaniline	10 50	
131-11-3	Dimethyl Phthalate	10 10	
208-96-8	Acenaphthylene	10	
4 04-20-2	2.6-Dimitrotoluene	10	
•	FORMET SV-1	¥.0	U 🚑 🖟

18 SEMI-VOLATILE ORGANICS AMALYSIS DATA SHEET

SEC CLAUM (YZN): N)

ERA SAMPLE NUMBER: BR441

CONTRACT: 62-01-7417

CAR CODE: metal CARE NO: 7000 SAS NO:NA SUG NO: NO: MR351

MATERIX (SOI: /WATER): WATER LAB SAMPLE ID: AA10046

CAMPLE WT/VOL: 1000 (T/ML): ML LAB FILE ID: D0415

CEVEL: LOW DATE AECEIVED: 04-08-88

% MO:STR NOT DEC:NA DEC:NA DATE EXTROTED: 04-13-88

CKTRACIN (Sepf/Coot/Sond):SEPF DATE GNALYZED: 04-15-88

SH: NA DILLTION FOTE:

	TION UNITS (US/K OR US/MG):UG/.	He 0 5-10-98
165 Muddete		7 711 ()
· · · · · · · · · · · · · · · · · · ·	Composition Total Compilion Essenaph thene T.4-Dissit commens: 4 Nitrophenol	
	To Mitage Addition	50 U
edition of the	- Premaphthene	10 U
	1.4-Denite optimiet	70 . II
1000 ON -2	4-Nitrophenol	70 ()
7 , (-)	Trailing) that the questions	10 U
1.1.1.1+.2	2.4-Dimitrotoluene	<u> 50</u> U
	Diethylphthalate	50 U
7000 - 72 - 7	4-Chlorophanyl-phenylether	t⊕ U
8년- 기지- 기		10 U
	4-Nitroaniline	50 U
	4.6-Dinitro-2-Methylphenol	50 U
	N-Nitrosidiphenylamine	10 U
	4-Bromophenyl-phenylether	10 U
	Hexachlorobenzene	10 U
	Pentachlorophenol	50 U
	Phenanthrene	10 U
	Anthracene	10 U
84-74-2	Di-N-Butylphthalate	50 U
	Flworanthene	10 U
129-00-0	Fyrene	10 U
85-63-7 -	Butylbenzylphthalate	10 U
91-941	3,3'-Dichlorobenzidine	20 U
	Benzo(a)Anthracene	10 U
213-01-7		10 U
117-81-7	bis(2-Ethylhexyl)Phthalate	26 B
117-84-0	Di-n-Octylphthalate	10 U
	Benzo(b)Fluorathene	10 U
207-08-9	Benzo(k)Fluorathene	10 U
<u> 50 - 32 - 8</u>		1.00 (.)
193-39-5	Indeno(1,2,3-cd)Fyrène	10 U
53-70-3	,	1.5 (2)
191-24-2	Benzo(g,h,i)Perylene	10 U
	FORM I SV-2	

Name: META-TRACE Contract	et: <u>(8-01-7417</u> BR-351	
b code: META case No.: 9296 SAS No		51
cix: (soil/water) WATER	Lab Sample ID: 10842	182
mple wt/vol:	Lab File ID:	
Hel: (low/med) LOU	Date Received: $4/9/88$	
pisture: not dec dec	Date Extracted: 4/13/88	
traction: (SepF/Cont/Sonc) <u>SEP</u> F	Date Analyzed: 4/16/88	
Cleanup: (Y/N) N pH:	Dilution Factor:	
	ENTRATION UNITS: L or ug/Kg) ug/L Q	
319-34-6alpha-BHC	.05	
319-65-7beta-BHC		
319-86-8delta-BHC	1	
58-89-9gamma-BHC (Lindane)	1	
1 /6-44-8Heptachlor	1 .05	
309-00-2Aldrin	111	
1024-57-3Heptachlor epoxide	105	
959-98-8Endosulfan T	.05	
■ 60-57-1Dieldrin		
72-55-94,4'-DDE	10 4	
72-20-8Endrin		
33213-65-9Endosulfan II		
72-54-84,4'-DDD	10 L	
= 1031-07-3Endosulfan sulfate		
50-29-34,4'-DDT		
72-43-5Methoxychlor_		
53494-70-5Endrin ketone	0.5	
5103-71-9alpha-Chlordane_		
5103-74-2gamma-Chlordane	<u> 0.5 u </u>	
8001-35-2Toxaphene	· 0.5	
12674-11-2Aroclor-1016		
11104-28-2Aroclor-1221	<u> 05 </u>	
11141-16-5Aroclor-1232		
53469-21-9Aroclor-1242		
12672-29-6Aroclor-1248	0,5 L	
11097-69-1Aroclor-1254	05 In	
11096-82-5Aroclor-1260	<u> </u>	
04-3Arocior-1260	10	

b Name: META-TRACE Contract:	: <u>68-01-7417</u> BR.	352
ab code: META case No.: 9296 SAS No.	: SDG No.:	BR-435351
trix: (soil/water) WATER	Lab Sample ID: //	848
ample wt/vol:		
evel: (low/med) LOU	Date Received:	
	Date Extracted:	1' /
xtraction: (SepF/Cont/Sonc) SEPF	Date Analyzed:	4/16/93
C Cleanup: (Y/N) N pH:	Dilution Factor:	
CAS NO. COMPOUND (ug/L	NTRATION UNITS: or ug/Kg) ug/L	Q
319-84-6beta-BHC 319-85-7beta-BHC 319-86-8delta-BHC 58-89-9gamma-BHC (Lindane) 76-44-8Heptachlor 309-00-2Heptachlor epoxide 959-98-8	.05	5
11141-16-5Aroclor-1232 53469-21-9Aroclor-1242 12672-29-6Aroclor-1248 11097-69-1Aroclor-1254	0.5	<u> </u>
11096-82-5Aroclor-1260		<u></u>

1D PESTICIDE ORGANICS ANALYSIS DATA SHEET

b Name: META-TRACE contrac	ct: <u>(8-01-74</u> 17 b)	253
Lab Code: META case No.: 9296 SAS No		: RR-43535
Matrix: (soil/water) WATER	Lab Sample ID:	10849 PP 1900.
Sample wt/vol:	Lab File ID:	
Level: (low/med) LOW	Date Received:	4/8/88
% Moisture: not dec dec	Date Extracted:	4/13/88
Extraction: (SepF/Cont/Sonc) SEPF	Date Analyzed:	4/16/99
GPC Cleanup: (Y/N) N pH:	Dilution Factor:	
	CENTRATION UNITS:	Q
319-34-6	.05 .05 .05 .05 .05 .05 .05 .05 .05 .05	
11097-69-1Aroclor-1254 11096-82-5Aroclor-1260	10	_ <u> </u>
ALOCIOI 1200		!

b Name: META-TRACE	Contract: (8-01-	7417 BR	354
ab Code: META Case No.: 929			
etrix: (soil/water) WATER	Lab Samp	le ID:/(5850
emple wt/vol:	1L Lab File	ID:	
evel: (low/med) LOW	Date Rec	eived:	4/8/88
Moisture: not dec dec	Date Ext	racted:	4/13/88
straction: (SepF/Cont/Sonc)	EPF Date Ana	lyzed:	4/16/98
C Cleanup: (Y/N) N pH:		Factor:	
CAS NO. COMPOUND	CONCENTRATION (ug/L or ug/Kg		Q
319-84- 6 alpha-BHC		.05	<u> </u>
319-35- 7 beta-BHC		,05	ihi
319-86- 8 -delta-BHC		,05	1 13
53-69-9gamma-BHC (L.	indane)	,05	
76-44-8Heptachlor		,05	1_4_1
309-00-2Aldrin	<u>·</u>	.05	<u> </u>
1024-57-3Heptachlor e	coxide	,05	<u></u>
959-98-8Endosulfan I			<u> </u>
60-57-1Dieldrin			<u> </u>
72-55-94,4'-DDE		.10	
33213-65-9Endosulfan II		.10	1 4
72-54-84,4'-DDD	·	.10	<u>u</u>
1031-07-8Endosulfan su	ıl fate	.10	1 <u>u</u>
50-29-34,4'-DDT		,10	- 1 - 1
72-43-5Methoxychlor	<u></u>	0.5	<u> </u>
53494-7 0-5 Endrin keton	<u> </u>	0ار	- , — — ,
5103-71-9alpha-Chlorda		0,5	<u> </u>
5103-74-2gamma-Chlorda	ine	0.5	1-2
8001-35-2Toxaphene		1.0	<u> </u>
12674-11-2Arcclor-1016		0.5	<u> </u>
11104-2 8-2 -Aroclor-1221	i	0,5	
11141-16-5Aroclor-1232		0.5	
53469-21-9Aroclor-1242		0,5	i w
12672-29-6Aroclor-1248		25	l w
11097-69-1Aroclor-1254			<u> </u>
11096-82-5Aroclor-1260		<u>/ 0</u>	1 10

1D TICIDE ORGANICS ANALYSIS DATA SHEET

META -TRACE contract: 6	8-01-7417 B	R 435 PL
code: META Case No.: 9296 SAS No.:	SDG No.	: BR-351
Matrix: (soil/water) 501L	b Sample ID:	
Sample wt/vol: 30.1 (g/mL) 6 Lai	b File ID:	V
	te Received:	4/8/88
% Moisture: not dec Dat	te Extracted:	4/13/88
	e Analyzed:	4/20/80
GPC Cleanup: (Y/N) Dil	ution Factor:	10
	TION UNITS: ug/Kg) _ kg/kg	Q
319-84- 6 alpha-BHC 319-85- 7 -beta-BHC	1	U
319-86-8delta-BHC		
58-86-6		
58-89-9gamma-BHC (Lindane)	1	<u> </u>
309-00-2Aldrin	100	
1024-57-3Heptachlor epoxide		
959-98-8Endosulfan I		
60-57-1Dieldrin	///	
72-55-94,4'-DDE		
72-20-8Endrin	230	
33213-65-9Endosulfan II	230	U
72-54-64,4'-DDD_		
1031-07-2	224	
1031-07-6Endosulfan sulfate 50-29-3	120	
72-63-5	320	<u>ا ت</u>
72-43-5Methoxychlor	1 1100	- [-]
53494-70-5Endrin ketone	226	
5103-71-9alpha-Chlordane	1100	
5103-74-2gamma-Chlordane	1100	- -
8001-35-2Toxaphene	2240	<u> </u>
12674-11-2Aroclor-1016	1100	-ii
11104-28-2Aroclor-1221	1 1100	-ii
11141-16-5Aroclor-1232	1/00	-ii
53469-21-9Aroclor-1242	1 1160	
1 120/2-29-6Aroctor-1249	1 440	
1 1109/-69-1Aroclor-1254	2300	· , :
11096-82-5Aroclor-1260	2200	

b Name: META - TRACE contract: 68	-01-7417 BR 436
Lab Code: META Case No.: 9296 SAS No.:	SDG No.: _6R-351
matrix: (soil/water) 501L Lab	Sample ID:/0836
ample wt/vol: 30.7 (g/mL) 6 Lab	File ID:
Level: (low/med) LOW Date	e Received: 4/8/88
Moisture: not dec. 22% dec. Date	Extracted: 4/13/88
extraction: (SepF/Cont/Sonc) <u>SOUC</u> Date	e Analyzed: 4/3488
PC Cleanup: (א/א) <u>N</u> pH: Dilu	ation Factor:/
	CION UNITS: 19/Kg)
319-64-6	
53469-21-9Aroclor-1242 12672-29-6Aroclor-1248 11097-69-1Aroclor-1254	100 U U U U U U U U U U U U U U U U U U
11096-82-5Aroclor-1260	200

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Name: META - TRACE contract: 68-01-	14/7 BR 437 B
Cab Code: META Case No.: 9296 SAS No.:	SDG No.: BR-351
Matrix: (soil/water) 501L Lab Sampl	
Sample wt/vol: 30. (g/mL) 6 Lab File	ID:
Level: (low/med) LOW Date Rece	ived: 4/8/88
Moisture: not dec. 22% dec. Date Extr	acted: 4/13/18
Extraction: (SepF/Cont/Sonc) SONC Date Anal	yzed: 4/20/88
PC Cleanup: (Y/N) D pH: Dilution	Factor:
CAS NO. COMPOUND CONCENTRATION US (ug/L or ug/Kg)	NITS: hg/tg Q
319-84-6alpha-BHC	100
319-66-6	100
319-86-8delta-BHC	100
58-89-9gamma-BHC (Lindane)	100
- /0-44-0	/00
309-00-2Aldrin	100
1024-57-3Heptachlor epoxide	100
1 JJJ JO DO TO TO TO TO TO TO TO TO TO TO TO TO TO	· · · · · · · · · · · · · · · · · · ·
00-5/-1	210
72-55-94,4'-DDE	 ''
1 /2-20-8Endrin	310
33213-65-9Endosulfan II	310
- 1 /2-54-8	310
1031-07-8	210
- 1 JU-29-3	
1 /2-43-5Methovychlor	210
1 33494-70-5Endrin ketone	/000
1 3103-/1-9alpha-Chlordana	210
1 Java-74-2gamma-Chlordane	1600
Touriss-2Toyanhene	/400
1 12674-11-2Arcclor-1016	O 2050 5 Park
1 11104-28-2Aroclor-1221	1600
1 1141-16-5Arocior-1232	/006
1 33469-21-9	1000
1 120/2-29-6	/800
1 1109/-69-1Aroclor-1254	1000
1 11090-82-5	197
2100	2050 Splane

A MANAGEMENT OF THE PARTY OF TH

Name: META - TRACE contra	act: 68-01-7417 BR	438 P.C.
D Code: META Case No.: 9296 SAS	No.:SDG No.:	BR-351
trix: (soil/water) 501L	Lab Sample ID:	
ple wt/vol: 30./ (g/mL) 6	Lab File ID:	
vel: (low/med) LOW	Date Received:	4/8/88
Noisture: not dec. 25% dec.	Date Extracted:	4/13/18
traction: (SepF/Cont/Sonc) <u>SOU</u> C	Date Analyzed:	4/20/08
C Cleanup: (Y/N) D pH:	Dilution Factor: _	10
CAS NO. COMPOUND (ug	CENTRATION UNITS:	Q
319-84-6alpha-BHC	1	и
319-65-7beta-BHC		ч
319-86-8delta-BHC 58-89-9garma-BHC (Lindane)	100	1 4
58-89-9gamma-BHC (Lindane)		<u> </u>
76-44-8Heptachlor 309-00-2Aldrin	1 100	1 4
1024-57-3Heptachlor epoxide		_!!
1024-57-3Heptachlor epoxide 959-98-8Endosulfan I		_ ! ч
60-57-1Dieldrin		_
. 73.65.0		_ <u> _ </u>
72-20-8Endrin	210	_
33213-65-9Endosulfan II	2(0	-
1 72-54-8 4 41-000		
1031-07-8Fndosulfan sulfato		-¦!
1 30-23-34,4'-DDT	310	-¦-
1 /2-43-5Methoxychlor	1/00	-::
53494-70-5Endrin ketone	2/0	-\- \
1 5103-/1-9alpha-Chlordane		
1 5103-74-2gamma-Chlordane		-1-2-1
1 8001-35-2Toxaphene	2100	-ii
12674-11-2Aroclor-1016		-ii
11104-28-2Aroclor-1221		-ii
11141-16-5Aroclor-1232	1(00	I V
53469-21-9Aroclor-1242 12672-29-6Aroclor-1248	1 1100	10
11097-69-1Aroclor-1248	1100	1 0 1
11096-82-5Aroclor-1260	1/64	_!1
T TOCTOL TYPE	1 2/m	1 0 1

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· Mariante de la company

b Name: META -TRACE Contract: 68	9-01-7417 BR 439 1.L
ab Code: META Case No.: 9296 SAS No.:	SDG No.: BR-351
atrix: (soil/water) 50/L Lab	Sample ID: 10839
ample wt/vol: 30. (g/mL) 6 Lab	File ID:
	e Received: 4/8/88
	Extracted: 4/13/88
	a Analyzed: 4/20/21
PC Cleanup: (Y/N) D pH: Dilu	ution Factor:
CAS NO. COMPOUND CONCENTRATE (ug/L or u	TION UNITS: 19/Kg)
319-64-6alpha-BHC 319-65-7beta-BHC	100
319-86-8delta-BHC	100 1 4
58-69-9gamma-BHC (Lindane)	_11 <u>60</u> 1
76-44-8	100
_ 1 303-00-2	100
1024-57-3	100
	100
1 00-5/-1	_ <u>100</u>
/2-55-9	3.34
1 /2-20-6	1 230
33213-65-9	7.76
72-54-64,4'-DDD	230
1031-07-6	276
50-29-3	230
72-43-5	1200
5103-71-9alpha-Chlordane	230
~~~~ / \	1200
1 0001-33-2TOVARDORA	1300
1 120/4-11-2	2700
1 11104-28-2Arocior-1991	1200
- 1	<u> </u>
1 33469-21-9	1200
1 120/2-29-6	- 1200
1 1103/-09-12700107-1264	187
11096-82-5Aroclor-1260	2300

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Name: META - TRACE contract:	68-01-7417 BR 444 1.	, ζ,
ab Code: META Case No.: 9296 SAS No.:		
•	Lab Sample ID: /68 YO	
mple wt/vol: 30./ (g/mL) 6	Lab File ID:	
	Date Received: 4/8/88	
Moisture: not dec. 24% dec.	Date Extracted: 4/13/38	7
	Date Analyzed: 4/20/0	
C Cleanup: (Y/H) N pH:	Dilution Factor:	
	TRATION UNITS: or ug/Kg) <u>la/kg</u> Q	
319-84-6alpha-BHC	100	1
319-65-7beta-BHC	100	i
319-86-8delta-BHC	100	İ
58-89-9gamma-BHC (Lindane)	1 100	İ
76-44-8Heptzchlor   309-00-2Aldrin	100	1
1024-57-3Heptachlor epoxide	[60]	1
959-98-8Endosulfan I	/80	1
60-57-1Dieldrin	100	ļ
72-55-94,4'-DDE	210	ļ
72-20-6Endrin	210	ļ
33213-65-9Endosulfan II	710	1
72-54-84,4'-DDD	310	! 1
1031-07-8Endosulfan sulfate	210	I I
50-29-34,41-DDT	310	1
72-43-5Methoxychlor	1100	
53494-70-5Endrin ketone	310	i
5103-71-9alpha-Chlordane	1 1(00	i
5103-74-2gamma-Chlordane	1. /100	ĺ
8001-35-2Toxaphene	1 2(00 1 0	
12674-11-2Aroclor-1016		l
11104-28-2Aroclor-1221	<u>                                      </u>	
11141-16-5Aroclor-1232 53469-21-9Aroclor-1242		
12672-29-6Aroclor-1248		
11097-69-1Aroclor-1254	1/50	
11096-82-5Aroclor-1260	2/00	
7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7	ا ب ا 2100	

### PESTICIDE ORGANICS ANALYSIS DATA SHEET

me: META - TRACE contract	: 68-01-7417 BR 4	45 Dd.
, code: META Case No.: 9296 SAS No.	: SDG No.:	BR-351
atrix: (soil/water) 501L	Lab Sample ID:	1480
mple wt/vol: 30.2 (g/mL) 6	Lab File ID:	
evel: (low/med) LOW	Date Received:	4/8/88
Moisture: not dec. 24% dec.	Date Extracted:	4/13/25
traction: (SepF/Cont/Sonc) <u>SON</u> C	Date Analyzed:	4/20/4
PC Cleanup: (Y/N) D pH:	Dilution Factor:	10
	NTRATION UNITS:  or ug/Kg) ug/kg	Q
319-84-6alpha-BHC	1100	   <u> </u>
319-65-7- <b>-</b> be <b>ta-</b> BHC	1100	<u> </u>
319-86-8delta-BHC	100	
58-89-9	100	
309-00-2Aldrin	/00	1
1024-57-3Heptachlor epoxide	1 (50	
959-98-8Endosulfan I	100	i u
60-57-1Dieldrin	710	L
72-55-94,4'-DDE	3 (0	1 0
72-20-8Endrin	]⊒(0	11
33213-65-9Endosulfan II	210	
72-54-84,4'-DDD	210	\ <u> </u>
1031-07-8Endosulfan sulfate	210	
50-29-34,4'-DDT	210	
72-43-5Methoxychlor   53494-70- <b>5</b> Endrin ketone	1/00	
5103-71-9alpha-Chlordane	100	
5103-74-2gamma-Chlordane	1100	
8001-35-2Toxaphene	2100	
12674-11-2Aroclor-1016	1 1/00	
11104-28-2Aroclor-1221	1 (100	<u>                                     </u>
11141-16-5Aroclor-1232	1 (100	
53469-21-9Aroclor-1242	[(80	!!
12672-29-6Aroclor-1248		.  <u>-v-</u> -
11097-69-1Aroclor-1254	1 2100	-
11096-82-5Aroclor-1260	3(00	

| 5103-74-2----gamma-Chlordane

| 8001-35-2-----Toxaphene | 12674-11-2----Aroclor-1016 | 11104-28-2-----Aroclor-1221 | 11141-16-5-----Aroclor-1232 | 53469-21-9-----Aroclor-1242 | 12672-29-6-----Aroclor-1248 | 11097-69-1-----Aroclor-1254 | 11096-82-5-----Aroclor-1260

PESTICIDE ORGANICS ANALYSIS DATA	A SHEET	
b Name: META-TRACE contract	:: (8-01-7417 B	R 441
Lab Code: META case No.: 9296 SAS No.	120 01 111	20 Decar
TIOTAL Case No.: 1796 SAS NO.	SDG No.	: DK-75-331
fatrix: (soil/water) WATER	Lab Sample ID:	10876 natholis
	Lab File ID:	
Level: (low/med) LON	Date Received:	4/9/88
Moisture: not dec dec	Date Extracted:	4/13/88
Extraction: (SepF/Cont/Sonc) <u>SEP</u> f	Date Analyzed:	4/16/98
PC Cleanup: (Y/N) N pH:	Dilution Factor:	
CONCE	NTRATION UNITS:	
CAS NO. COMPOUND (ug/L	or ug/Kg) ug- /L	Q
319-34 <b>-6-</b> alpha-BHC	.05	
319-65-7beta-BHC	.05	_ \ <u>u</u> \
319-86-8delta-BHC	1 .05	
58-89-9	05	
76-44-8Heptachlor		
309-00-2Aldrin	1 .05	
1024-57-3Heptachlor epoxide	,05	- \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
959-98-8Endosulfan I	1	
60-57-1Dieldrin	1 .10	
72-55-94,4'-DDE	1 10	_
72-20-8Endrin	<del></del>	-   - \( \frac{1}{\tau} \)
33213-65-9Endosulfan II	10	
72-54-8- <b>4</b> ,4'-DDD		_  <u> </u>
1031-07-8Endosulfan sulfate		
50-29-34.4'-DDT	10.10	
72-43-5Methoxychlor_	0.5	-   - W
53494-70-5Endrin ketone	1	<del></del> -
5103-71-9alpha-Chlordane		_   _   _
5103-74-2gamma-Chlordage	0.5	_
8001-35-2Toxaphene	. 0.5	_  <u>~</u>
12674-11-2Aroclor-1016	1.0	_
11104-28-2Aroclor-1221	0.5	_
11141-16-5Aroclor-1232	0.5	<del></del>
53469-21-9Aroclor-1242	1	_
12672-29-6Aroclor-1248	0,5	_   _ \
11097-69-1Aroclor-1254		_  <u>_                                   </u>
110010F-1254	!	_1_4_1

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SFORM I PEST.

1/87 Rev

#### CONFIDENTIAL - NOT FOR PUBLIC RELEASE

HRS	s	s²		
Groundwater Route Score (Sgw)	52.50	2756.25		
Surface Water Route Score (S _{Sw} )	4.78	22.85		
Air Route Score (Sa)	0	0		
$S_{gw}^2 + S_{sw}^2 + S_a^2$		2779. 10		
$\sqrt{s_{gw}^2 + s_{sw}^2 + s_a^2}$		52.72		
$\sqrt{s_{gw}^2 + s_{gw}^2 + s_a^2} / 1.73 = s_M =$		30.47		

### WORKSHEET FOR COMPUTING SM

PRO	s	s ²		
Groundwater Route Score (Sgw)	69.07	4770.66		
Surface Water Route Score (Ssw)	5.03	25.30		
Air Route Score (Sa)	0	0		
$s_{gw}^2 + s_{sw}^2 + s_a^2$		4795.96		
$\sqrt{s_{gw}^2 + s_{sw}^2 + s_a^2}$		69.25		
$\sqrt{s_{gw}^2 + s_{sw}^2 + s_a^2} / 1.73 = s_M =$		40.03		

### WORKSHEET FOR COMPUTING $\mathbf{S}_{\mathbf{M}}$

## CONFIDENTIAL-NOT FOR PUBLIC RELEASE

	Sürfa	se Water Route Wo	rk Sheet		<u> </u>	· · · · · · · · ·
Rating Factor		Assigned Value : (Circle One)	Müll Büq		Max. Score	
1 Observed Release	<u>(</u> 0	15:	1	C	45	0
if observed release	ols given a value	of 45; proceed to line	ne (1).	<u> </u>	<u> </u>	<u> </u>
Route Characteristi Facility Slope and Terrain	Intervening D		1	0	3	0
1-yr. 24-hr. Rainfa Distance to Nears Water	ull 0 est Surface: 0	1 2 3	1 2	<u>2</u> 4	3 8	2 4
Physical State	0	1 2 🕥	1	,3	3	3.
	Total Pou	te Characteristics S	icore	9.	15	9
3 Containment	0	1 : 2 3	1	3	3	3
Waste Characteristic Toxicity Persister Hazardous Waste Quantity		3 6 9 12 15 (18) (1) (21) 3 4 5 6	7 1 7 8 1	18	1 <b>8</b> 8	18
	Total Was	te Characteristics S	core	19	26	20
5 Targets Surface Water Use Distance to a Sens Environment:		1 2 3	3 · 2	6	9 6	6 c
Population Served to Water intake : Downstream	12:	4% 6% 8 10 1 16% 18% 20% 30% 32% 35 40	1	0	<b>40</b> .	0
	Tota	al Targets Score		6	55	6
	ultiply 1 x 4 tiply 2 x 3			3078	64,350	3240
Divide line 6 by 6	34,350 and multiple	y by 100	S _{3W} =	4.78	· ·	5.03

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## CONFIDENTIAL-NOT FOR PUBLIC RELEASE

			Ground Was	er Route Work, S	Sheet			
	Rating Factor			ed Value e One)	Muiti		'Aax. Score	PRO
	Observed Release	)	<b>③</b>	[45]	1	0	45.	45
	If observed release	e iz čivev e iz čivev	a score of 45, a score or 0, p	proceed to line (	4 2	<b>3</b>	• · · · · · · · · · · · · · · · · · · ·	
2	Route Characterist Depth to Aquifer Concern		0 1 2	3	2	4	6	4
	Net Precipitation Permeability of the Unsaturated Zon	10	0 1 2	3 <b>13</b>	1 1	2	3 3	23
	Physical State		0 1 2	<u>a</u>	1	3	3	_3
<del>-</del>			Total Route Cha	racteristics Scor	<b>'</b> •	12	15	1 2
3] c	Containment	-	0 1 2	<u> </u>	1	3	3	3
4 ∨	Vaste Characteristi Toxicity/Persistei Hazardous Waste Quantity	nce	0 3 6 0 1 2	9 12 15 16 3 4 5 8 7	f 8 1	1 8	1 <b>8</b> 8	1 8
			otal Waste Chai	racteristics Scor	•	19	28	20
	argets Ground Water Use Distance to Neare Well/Population Served		0 1 2 0 4 6 12 16 18 24 30 32	8 10.	3	9 35	g 40	9 3 <i>5</i>
		· - <del></del> '		4-7	•			
			Total Targ	ets Score		44	49	44
	line 11 is 45, mi line 11 is 0, mu	ultiply [] Itiply []	x 4 x 5 x 3 x 4	x 5		300%	57.330	9600
יים	vide line [6] by	57.330 am	multiply by 10	a.	Same	52.5	· ·	9 07

HRS O Pro II

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N 1.5 OLD OF ERVATION CLEENING