

JENNINGS LABORATORIES, INC.

ANALYTICAL AND CONSULTING CHEMISTS

1118 CYPRESS AVENUE • P. O. BOX 851 • VIRGINIA BEACH, VA. 23451 • PHONE (804) 425-1498

VA (EPA) CERTIFIED LABORATORY for
Drinking Water Analysis - Microbiological,
Inorganic and Organic

ASBESTOS ANALYSIS - NIOSH 582

Official Reference Chemists for:
AMERICAN OIL CHEMISTS SOCIETY
NATIONAL SOYBEAN
PROCESSORS ASSOCIATION

Laboratory Certified by VA. STATE WATER
CONTROL BOARD for Analysis of
Effluents for NCDES PERMITS
CERTIFIED OFFICIAL U.S.D.A. LABORATORY
FOR MEAT ANALYSIS

CERTIFICATE OF ANALYSIS

Mr. Dave Goodwin
TO: Building N-23 Atlantic Division
Naval Facilities Engineering Command
Norfolk, Virginia 23511

DATE: April 7, 1981

SAMPLE OF WATER SAMPLES from (Test Well #15, Roadside of Chemical Dump) (Test Well
MARKED #16, Creek side of Chemical Dump) (Luke, Pool of Water) (Ens. Kalisch-Radiation
Pool) taken 3/30/81 at Camp Lejeune, Marine Corps Base, North Carolina and
delivered to laboratory 4/01/81
OFFICIAL SAMPLE BY: BETZ & LUKE

	<u>PURGEABLE ORGANICS</u>	<u>DETECTION LIMITS µg/l</u>
Acrolein	None Detected	2.0
Acrylonitrile	None Detected	2.0
Benzene	None Detected	10.0
Toluene	61.75 ppb	10.0
Ethylbenzene	None Detected	10.0
Carbon Tetrachloride	2,583.0 ppb	.007
Chlorobenzene	None Detected	.03
1,2-Dichloroethane	43.77 ppb	.006
1,1,1-Trichloroethane	None Detected	.005
1,1-Dichloroethane	68.92 ppb	.004
1,1-Dichloroethylene	124.0 ppb	.006
1,1,2-Trichloroethane	None Detected	.006
1,1,2,2-Tetrachloroethane	None Detected	.006
Chloroethane	None Detected	.01
2-Chloroethyl vinyl ether	None Detected	.08

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Respectfully submitted,
JENNINGS LABORATORIES, INC.

Navy
Laboratory
Analysis No. 109


CHEMIST

Corrected Sheet

TABLE OF ANALYTES (Continued)

DETECTION LIMITS ug/l

Chloroform	11,267.0 ppb	.010
1,1-Dichloropropane	None Detected	.004
1,3-Dichloropropane	None Detected	.006
Methylene Chloride	21,859.0 ppb	.010
Methyl Chloride	None Detected	.009
Methyl Bromide	None Detected	.03
Bromoform	None Detected	.02
Dichlorobromomethane	None Detected	.006
Trichlorofluoromethane	None Detected	.03
Dichlorodifluoromethane	None Detected	.01
Chlorodibromomethane	None Detected	.01
Tetrachloroethylene	None Detected	.007
Trichloroethylene	None Detected	.005
Vinyl Chloride	None Detected	.01
1,2-Trans-Dichloroethylene	None Detected	.006
bis(chloromethyl) ether	None Detected	.003

BASE/NEUTRAL EXTRACTABLE ORGANIC COMPOUNDS

1,3-Dichlorobenzene	None Detected	.04
1,3-Dichlorobenzene	None Detected	.04
1,4-Dichlorobenzene	None Detected	.04
Hexachloroethane	None Detected	.001
Hexachlorobutadiene	None Detected	.001
Hexachlorobenzene	None Detected	.002
1,2,4-Trichlorobenzene	None Detected	.006
Bis(2-Chloroethoxy)methane	None Detected	.40
Naphthalene	None Detected	.04
2-Chloronaphthalene	None Detected	.04
Isophorene	None Detected	5.0
Nitrobenzene	None Detected	5.0
2,4-Dinitrotoluene	None Detected	.06
2,6-Dinitrotoluene	None Detected	.06

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BASE/NEUTRAL EXTRACTABLE ORGANIC COMPOUNDS

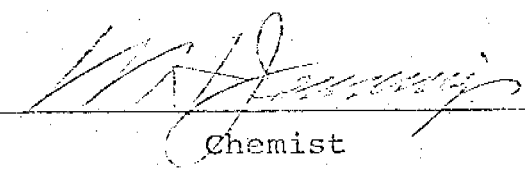
DETECTION LIMITS $\mu\text{g/l}$

4-Bromophenyl phenyl ether	None Detected	1.1
bis(2-Ethylhexyl)phthalate	None Detected	.02
Di-n-octyl phthalate	None Detected	.11
Dimethyl phthalate	None Detected	.11
Diethyl phthalate	None Detected	.13
Di-n-butyl phthalate	None Detected	.02
Fluorene	None Detected	.04
Fluoranthene	None Detected	.04
Chrysene	None Detected	.04
Pyrene	None Detected	.04
Phenanthrene	None Detected	.04
Anthracene	None Detected	.04
Benzo(a)anthracene	None Detected	.04
Benzo(b)fluoranthene	None Detected	.04
Benzo(k)fluoranthene	None Detected	.04
Benzo(a)pyrene	None Detected	.04
Ideno(1,2,3-c,d)pyrene	None Detected	.10
Dibenzo(a,h)anthracene	None Detected	.10
Benzo(g,h,i)perylene	None Detected	.10
4-Chlorophenyl phenyl ether	None Detected	2.2
3,3'Dichlorobenzidine	None Detected	.04
Benzidine	None Detected	.04
Bis(2-Chloroethyl)ether	None Detected	.04
1,2-Diphenylhydrazine	None Detected	.04
Hexachlorocyclopentadiene	None Detected	.04
N-Nitrosodiphenylamine	None Detected	1.0
Acenaphthylene	None Detected	.04
Acenaphthene	None Detected	.04
Butyl benzyl phthalate	None Detected	.04
N-Nitrosodimethylamine	None Detected	.2
N-Nitrosodi-n-propylamine	None Detected	.5
bis(2-Chloroisopropyl)ether	None Detected	.9

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ACID EXTRACTABLE ORGANIC COMPOUNDS

DETECTION LIMITS µg/l

Phenol	None Detected	1.4
2-Nitrophenol	None Detected	2.5
4-Nitrophenol	None Detected	2.5
2,4-Dinitrophenol	None Detected	7.0
4,6-Dinitro-o-cresol	None Detected	2.0
Pentachlorophenol	None Detected	10.0
p-Chloro-m-cresol	None Detected	.01
2-Chlorophenol	None Detected	2.9
2,4-Dichlorophenol	None Detected	2.1
2,4,6-Trichlorophenol	None Detected	5.0
2,4-Dimethylphenol	None Detected	1.7

PESTICIDES/PCB's

α-Endosulfan	None Detected	.005
β-Endosulfan	None Detected	.01
Endosulfan sulfate	None Detected	.03
α-BHC	None Detected	.002
β-BHC	None Detected	.004
δ-BHC	None Detected	.004
γ-BHC	None Detected	.002
Aldrin	None Detected	.003
Dieldrin	None Detected	.006
4,4'-DDE	None Detected	.006
4,4'-DDD	None Detected	.012
4,4'-DDT	None Detected	.016
Endrin	None Detected	.009
Endrin Aldehyde	None Detected	.023
Heptachlor	None Detected	.002
Heptachlor Epoxide	None Detected	.004
Chlordane	None Detected	.04
Toxaphene	None Detected	.40

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PESTICIDES/PCB's

DETECTION LIMITS ug/l

Aroclor 1014	None Detected	.04
Aroclor 1221	None Detected	.10
Aroclor 1232	None Detected	.10
Aroclor 1242	None Detected	.06
Aroclor 1248	None Detected	.08
Aroclor 1254	None Detected	.08
Aroclor 1260	None Detected	.15
2,3,7,8-Tetrachlorodibenzo-p-dioxin(TCDD)	None Detected	.003

METALS

DETECTION LIMITS mg/l

Antimony	<0.20	0.2
Arsenic	<0.002	0.002
Beryllium	<0.005	0.005
Cadmium	0.01	0.002
Chromium	0.11	0.02
Copper	<0.01	0.01
Lead	0.12	0.005
Mercury	<0.002	0.002
Nickel	0.09	0.02
Selenium	0.004	0.002
Silver	<0.01	0.01
Thallium	<0.10	0.1
Zinc	27.23	0.005
Barium	0.13	

MISCELLANEOUS

Total Cyanides	<0.01	0.01
Asbestos (fibrous)	None Detected	
Total Phenols	<0.005	0.005

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Chemist

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FOR MEAT ANALYSIS

CERTIFICATE OF ANALYSIS

TO: Mr. W. J. Sullivan
Director, West Atlantic Division
Naval Facilities Engineering Command
Norfolk, Virginia 23511

DATE: April 9, 1981

SAMPLE OF WATER SAMPLES from (Test Well #15, Roadside of Chemical Dump) Test Well
MARKED #15, Crack Side of Chemical Dump) (Lake, Pool of Water) (Ens. Kalisch-
Radiation Pool) taken 3/30/81 at Camp Lejeune, Marine Corps Base, North Carolina
and delivered to laboratory 4/01/81

OFFICIAL SAMPLE BY: BETZ & LUKE

TEST WELL #15

Carbon Tetrachloride	3,560	PPB
1,1 Dichloroethane	65	PPB
Chloroform	15,520	PPB
Methylene chloride	4,154	PPB

TEST WELL #16

1,1 Dichloroethane	122	PPB
Chloroform	13,260	PPB
Carbon Tetrachloride	2,920	PPB
Methylene Chloride	20,460	PPB
1,2 Dichloroethane	154.6	PPB
1,1 Dichloroethylene	423.5	PPB
Toluene	242.	PPB

POOL OF WATER

Carbon Tetrachloride	1,840	PPB
1,1 Dichloroethane	38	PPB
Chloroform	830	PPB
Methylene Chloride	9,640	PPB

RADIATION POOL

Carbon Tetrachloride	1,139	PPB
1,1 Dichloroethane	38	PPB
Chloroform	7,330	PPB
Methylene Chloride	7,593	PPB

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Respectfully submitted,
JENNINGS LABORATORIES, INC.

Laboratory
Analysis No. 4100

W. H. Jennings
CHEMIST