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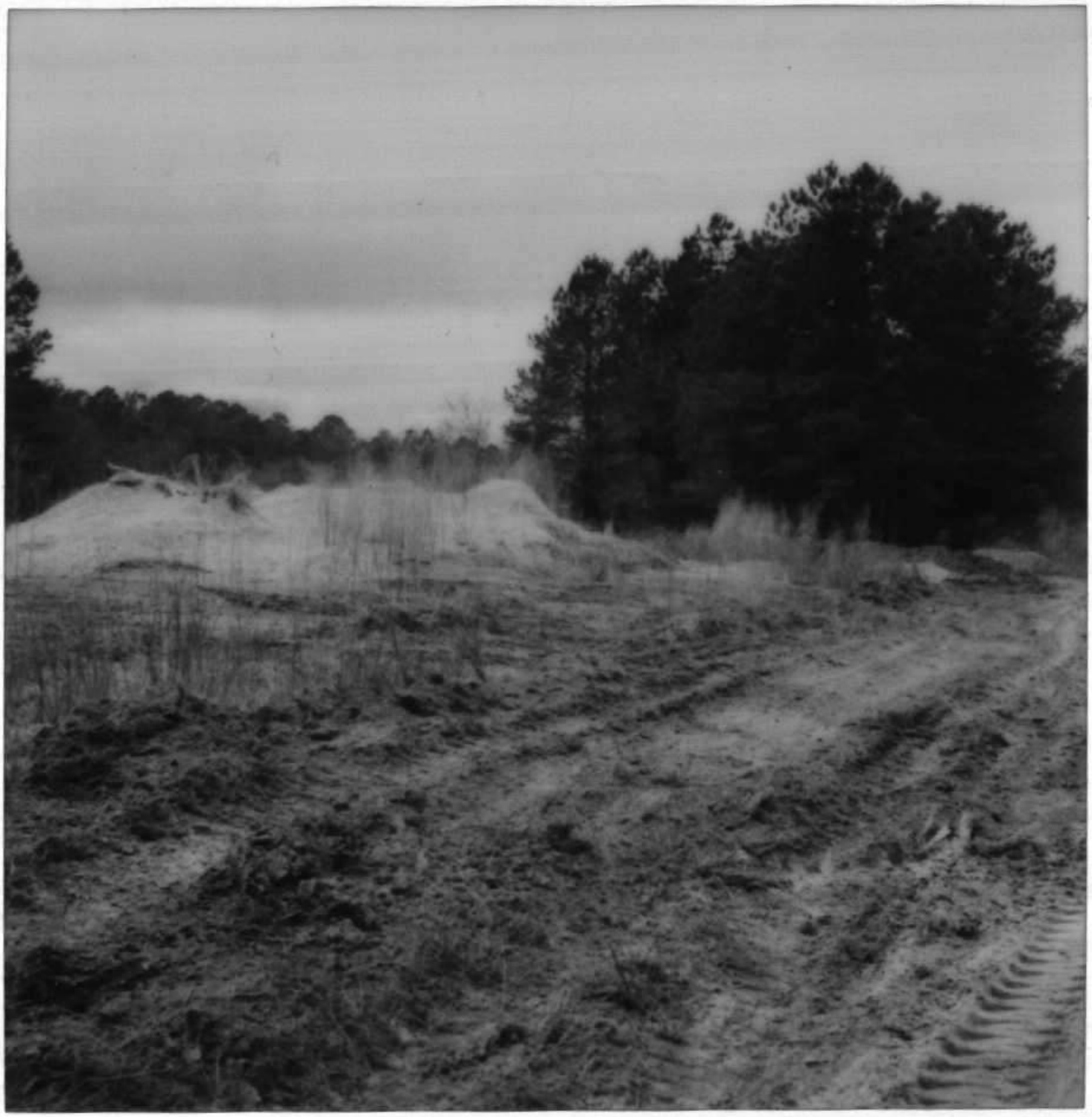

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Dan — for action

PNAV 5216/144A (Rev. 8-81)
S/N 0107-LF-052-2320

DEPARTMENT OF THE NAVY
Memorandum

6280/9
FAC

DATE: DEC 14 1987

FROM: Assistant Chief of Staff, Facilities, Marine Corps Base, Camp Lejeune, North Carolina 28542-5001

TO: Director, Natural Resources and Environmental Affairs Divsiion

SUBJ: EVALUATION OF GROUNDWATER DATA FROM MONITORING WELLS AT THE SANITARY LANDFILL

Ref: (a) Mtg btwn Mr. Shiver, NC Groundwater Section, and Mr. Alexander, MCB Fac dtd 18 Nov 87

1. As discussed during the reference, request you provide by 4 January 1988, a summary of groundwater data collected at the landfill to date. Please include a site location map showing locations of the groundwater monitoring wells in relation to the landfill operating area. ?

2. POC in this matter is Bob Alexander, extension 3034.

K. V. G. KIRIACOPOULOS
By direction

Elizabeth Betz: 16 Dec 87

Please prepare the Above requested data summary and site map. Please ensure that data and sample points are correlated and easily understood/readable. Prepare cover letter to AC/S, FAC. Assignment due NLT 24 Dec 87

(Note: Tom not available to assist) Danny Sharpe

WELL A

DATE	10/30/84 ~~11/13/84~~ ~~6/6/84~~	12/30/85	12/29/86
ARSENIC	0.0029 ppm	<10 µg/L	<10 µg/L
BARIUM	0.5 ppm	<200	<200
CADMIUM	0.039 ppm	<5	<5
CHROMIUM	0.10 ppm	<10	<10
LEAD	0.305 ppm	<5.0	<5.0
MERCURY	<0.001 ppm	<0.2	<0.2
SELENIUM	<0.001 ppm	<5.0	<5.0
SILVER	0.023 ppm	<10	<10
NITRATE NITROGEN	~~14.31~~	<0.02 mg/L	<0.02 mg/L
FLUORIDE	~~0.233~~	<0.1 mg/L	<0.19 mg/L
CHLORIDE	~~0.014~~	15 mg/L	18 mg/L
COPPER	~~14.37~~		<25 µg/L
COLOR	~~X~~		120
IRON	14.31 ppm	13.4 ppm	13.0 ppm
MANGANESE	0.233 ppm	.193 µg/L	117 µg/L
SULFATE	11.37 ppm	35 mg/L	37 mg/L
pH		5.5	5.6
TOX	<0.01 ppm	<0.01 ppm	13 µg/L
TOC	22.0 ppm		11.7 mg/L
ZINC	0.041 ppm	<20 µg/L	<20 µg/L
TDS	329.8 ppm		203 mg/L
CONDUCTIVITY	490.0 uhmo		295 µmhos ~~uhmos~~

WELL B

	9/5/84	12/30/85	12/29/86
As	<0.001 ppm	<10 ug/L	<10 ug/L
Ba	0.147	<200	<200
Cd	0.010	<5	<5
Cr	0.026	<10	<10
Pb	0.164	<5.0	<5.0
Hg	<0.001	<0.2	<0.2
Se	<0.001	<5.0	<5.0
Ag	0.022	<10	<10
NITRATE	0.54	<0.02 mg/L	<0.02 ~~ppm~~ mg/L
F	0.60	<0.1 mg/L	<0.19 ~~ppm~~ mg/L
Cl	2.2	53 mg/L	71 ~~ppm~~ mg/L
COPPER	0.027		<25 ug/L
COLOR	10.00 Pt/Co UNITS		40 UNITS
IRON	8.68 ppm	5.30 mg/L	4.25 mg/L
MN	0.104 ppm	47 ug/L	035 ug/L
SULFATE	66.6 ppm	<5 mg/L	<5 mg/L
pH	6.56	5.6	5.4
TOX	<0.01 ppm	<0.01 ppm	132 ug/L
TOC	43.5 ppm		10.5 mg/L
TDS			120 ~~ppm~~ mg/L
CONDUCTIVITY			220 umhos
ZN		<20 ug/L	30 ug/L

WELL C

DATE:	9/5/84	12/30/85	12/29/86
As	<0.001 ppm	<10 µg/L	<10 µg/L
Ba	0.147	<200	<200
Cd	0.003	<5	<5
Cr	0.020	<10	<10
Pb	0.144	<5.0	<5.0
Hg	<0.001	<0.2	<0.2
Se	<0.001	<5.0	<5.0
Ag	<0.001	<1.0	<1.0
NITRATE	0.34	<0.02 mg/L	<0.02 mg/L
F	0.11	<0.1 mg/L	<0.19 mg/L
Cl	10.4	13 mg/L	18 mg/L
CO *	<0.001		<25 µg/L
COLOR *	35 Pt/CO UNITS		15 UNITS
IRON	1.86 ppm	2.3 mg/L	2.900 mg/L
MN	0.05 ppm	<0.01 mg/L	<15 µg/L
SULFATE	4.61 ppm	<5 mg/L	<5 mg/L
pH	6.51	5.3	5.1
TOX	<0.01 ppm	<0.01 ppm	35 µg/L
TOC *	13 ppm		2.8 mg/L
TDS *			52 mg/L
CONDUCTIVITY *			38 umhos
ZN		<20 µg/L	<20 µg/L

WELL D

DATE:	9/5/84	12/30/85	12/29/86
As	<0.001 ppm	<10 µg/L	<10 µg/L
Ba	0.147	<200	<200
Cd	0.006	<5	<5
Cr	0.008	<10	<10
Pb	0.164	<5.0	<5.0
Hg	<0.001	<0.2	<0.2
Se	<0.001	<5.0	<5.0
Ag	<0.001	<10	<10
NITRATE	0.40	<0.02 mg/L	<0.02 mg/L
F	<0.10	<0.1 mg/L	<0.19 mg/L
Cl	3.8	6 mg/L	9 mg/L
Cu	0.006		< 25 µg/L
COLOR	50.00 PT/CO UNITS		12
IRON	5.78 ppm	3.6 mg/L	2.0 mg/L
MN	0.026 ppm	<15 µg/L	<15 µg/L
SULFATE	10.09 ppm	<5 mg/L	<5 mg/L
pH	7.25	5.6	5.1
TOX	<0.01 ppm	<0.01 ppm	13 µg/L
TOC	10.5 ppm		0.8 mg/L
TDS			35 mg/L
CONDUCTIVITY			38 µmhos
ZN		<20 µg/L	<20 µg/L

Elizabetz Betz: 16 Dec 87

Please prepare the Above requested data summary and site map. Please ensure that data and sample points are correlated and easily understood/readable. Prepare cover letter to AC/S, FAC. Assignment due NLT 24 Dec 87

(Note: Tom Not Available to Assist) Danny Stage

Jill Dan for action!!

OPNAV 5216/144A (Rev. 8-81)
S/N 0107-LF-052-2320

DEPARTMENT OF THE NAVY
Memorandum

6280/9
FAC

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K. J. Kiriacopoulos

K. J. KIRIACOPOULOS
By direction

Industrial & Environmental Analysts, Inc.
P.O. Box 12846 • Research Triangle Park, NC 27709 • 919-467-9919

January 19, 1988
IEA Report No. 304-17

Mr. Tom Barbee
Building No. 1103
Natural Resources & Environmental Affairs
Camp LeJuene, NC 28542

Reference: Groundwater Sampling on 12-29-87 and 12-30-87.

Dear Mr. Barbee:

This report is an addendum to the IEA analytical report. Summarized are pH, temperature and specific conductance readings taken in the field. Also enclosed are copies of the "Field Sampling Data Sheets" for groundwater sampling.

Well ID	Temperature	pH	Specific Conductance (µhos/cm)
WW-A	16.3	5.31	430
MW-B	16.6	5.37	705
MW-C	15.0	6.14	139
MW-D	14.6	4.77	67
Upstream	10.1	4.19	84
Downstream	9.4	6.35	156

If you have any questions regarding this sampling event please do not hesitate to call.

Very truly yours,

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.

Reggie Cockman

Reggie Cockman
Project Engineer

RC/erl

IEA LAB RESULTS

IEA# 304017 Samples: 8 Total Parameters: 138
Client Name Environ. Chem. & Microbiol. Section

Sa#	Sample I.D.	Parameter Studied	Results	Date Analyzed	Comments
1	MW-A	Arsenic	<0.005 mg/L	1/4/88	
2	MW-B	Arsenic	<0.005 mg/L	1/4/88	
3	MW-C	Arsenic	<0.005 mg/L	1/4/88	
4	MW-D	Arsenic	<0.005 mg/L	1/4/88	
7	Upstream	Arsenic	<0.005 mg/L	1/4/88	
8	Downstream	Arsenic	<0.005 mg/L	1/4/88	
1	MW-A	Barium	<0.2 mg/L	1/11/88	
2	MW-B	Barium	<0.2 mg/L	1/11/88	
3	MW-C	Barium	<0.2 mg/L	1/11/88	
4	MW-D	Barium	<0.2 mg/L	1/11/88	
7	Upstream	Barium	<0.2 mg/L	1/11/88	
8	Downstream	Barium	<0.2 mg/L	1/11/88	
1	MW-A	Biochemical Oxygen Demand	<2.0 mg/L	1/18/88	
2	MW-B	Biochemical Oxygen Demand	<2.0 mg/L	1/18/88	
3	MW-C	Biochemical Oxygen Demand	<2.0 mg/L	1/18/88	
4	MW-D	Biochemical Oxygen Demand	<2.0 mg/L	1/18/88	
7	Upstream	Biochemical Oxygen Demand	<2.0 mg/L	1/18/88	
8	Downstream	Biochemical Oxygen Demand	<2.0 mg/L	1/18/88	
1	MW-A	Cadmium	<0.01 mg/L	1/11/88	
2	MW-B	Cadmium	<0.01 mg/L	1/11/88	
3	MW-C	Cadmium	<0.01 mg/L	1/11/88	
4	MW-D	Cadmium	<0.01 mg/L	1/11/88	
5	Sewage DI	Cadmium	<0.01 mg/L	1/11/88	
6	Drnkng. H2O DI	Cadmium	<0.01 mg/L	1/11/88	
7	Upstream	Cadmium	<0.01 mg/L	1/11/88	
8	Downstream	Cadmium	<0.01 mg/L	1/11/88	
1	MW-A	Chemical Oxygen Demand	57 mg/L	1/5/88	
2	MW-B	Chemical Oxygen Demand	230 mg/L	1/5/88	
3	MW-C	Chemical Oxygen Demand	49 mg/L	1/5/88	
4	MW-D	Chemical Oxygen Demand	100 mg/L	1/5/88	
7	Upstream	Chemical Oxygen Demand	47 mg/L	1/5/88	
8	Downstream	Chemical Oxygen Demand	<25 mg/L	1/5/88	
1	MW-A	Chloride	26 mg/L	1/11/88	
2	MW-B	Chloride	130 mg/L	1/11/88	
3	MW-C	Chloride	8.3 mg/L	1/11/88	

IEA LAB RESULTS

IEA# 304017 Samples: 8 Total Parameters: 138

Client Name Environ. Chem. & Microbiol. Section

Se#	Sample I.D.	Parameter Studied	Results	Date Analyzed	Comments
4	MW-D	Chloride	12 mg/L	1/11/88	
7	Upstream	Chloride	14 mg/L	1/11/88	
8	Downstream	Chloride	15 mg/L	1/11/88	
1	MW-A	Chromium	<0.03 mg/L	1/7/88	
2	MW-B	Chromium	<0.03 mg/L	1/7/88	
3	MW-C	Chromium	<0.03 mg/L	1/7/88	
4	MW-D	Chromium	<0.03 mg/L	1/7/88	
5	Sewage DI	Chromium	<0.03 mg/L	1/7/88	
6	Drnkng. H2O DI	Chromium	<0.03 mg/L	1/7/88	
7	Upstream	Chromium	<0.03 mg/L	1/7/88	
8	Downstream	Chromium	<0.03 mg/L	1/7/88	
1	MW-A	Copper	<0.02 mg/L	1/5/88	
2	MW-B	Copper	<0.02 mg/L	1/5/88	
3	MW-C	Copper	<0.02 mg/L	1/5/88	
4	MW-D	Copper	<0.02 mg/L	1/5/88	
5	Sewage DI	Copper	<0.02 mg/L	1/5/88	
6	Drnkng. H2O DI	Copper	<0.02 mg/L	1/5/88	
7	Upstream	Copper	<0.02 mg/L	1/5/88	
8	Downstream	Copper	<0.02 mg/L	1/5/88	
1	MW-A	Fluoride	<0.1 mg/L	1/6/88	
2	MW-B	Fluoride	<0.1 mg/L	1/6/88	
3	MW-C	Fluoride	<0.1 mg/L	1/6/88	
4	MW-D	Fluoride	<0.1 mg/L	1/6/88	
7	Upstream	Fluoride	<0.1 mg/L	1/6/88	
8	Downstream	Fluoride	<0.1 mg/L	1/6/88	
1	MW-A	Iron	14 mg/L	1/4/88	
2	MW-B	Iron	1.6 mg/L	1/4/88	
3	MW-C	Iron	4.1 mg/L	1/4/88	
4	MW-D	Iron	5.0 mg/L	1/4/88	
7	Upstream	Iron	0.33 mg/L	1/4/88	
8	Downstream	Iron	0.31 mg/L	1/4/88	
1	MW-A	Lead	0.014 mg/L	1/6/88	
2	MW-B	Lead	0.006 mg/L	1/6/88	
3	MW-C	Lead	<0.005 mg/L	1/6/88	
4	MW-D	Lead	0.007 mg/L	1/6/88	

IEA LAB RESULTS

IEA# 304017 Samples: 8 Total Parameters: 138

Client Name Environ. Chem. & Microbiol. Section

Sa#	Sample I.D.	Parameter Studied	Results	Date Analyzed	Comments
5	Sewage DI	Lead	<0.005 mg/L	1/6/88	
6	Drnkng. H20 DI	Lead	<0.005 mg/L	1/6/88	
7	Upstream	Lead	<0.005 mg/L	1/6/88	
8	Downstream	Lead	<0.005 mg/L	1/6/88	
1	MW-A	Manganese	0.17 mg/L	1/7/88	
2	MW-B	Manganese	0.03 mg/L	1/7/88	
3	MW-C	Manganese	0.02 mg/L	1/7/88	
4	MW-D	Manganese	0.03 mg/L	1/7/88	
7	Upstream	Manganese	0.02 mg/L	1/7/88	
8	Downstream	Manganese	0.01 mg/L	1/7/88	
1	MW-A	Mercury	<0.0005 mg/L	1/15/88	
2	MW-B	Mercury	<0.0005 mg/L	1/15/88	
3	MW-C	Mercury	<0.0005 mg/L	1/15/88	
4	MW-D	Mercury	<0.0005 mg/L	1/15/88	
7	Upstream	Mercury	<0.0005 mg/L	1/15/88	
8	Downstream	Mercury	<0.0005 mg/L	1/15/88	
5	Sewage DI	Nickel	<0.03 mg/L	1/4/88	
6	Drnkng. H20 DI	Nickel	<0.03 mg/L	1/4/88	
1	MW-A	Nitrate-N	<1.0 mg/L	1/4/88	
2	MW-B	Nitrate-N	<1.0 mg/L	1/4/88	
3	MW-C	Nitrate-N	<1.0 mg/L	1/4/88	
4	MW-D	Nitrate-N	<1.0 mg/L	1/4/88	
7	Upstream	Nitrate-N	<1.0 mg/L	1/4/88	
8	Downstream	Nitrate-N	<1.0 mg/L	1/4/88	
1	MW-A	Residue-Total, filterable	240 mg/L	1/14/88	
2	MW-B	Residue-Total, filterable	640 mg/L	1/14/88	
3	MW-C	Residue-Total, filterable	200 mg/L	1/14/88	
4	MW-D	Residue-Total, filterable	110 mg/L	1/14/88	
7	Upstream	Residue-Total, filterable	98 mg/L	1/14/88	
8	Downstream	Residue-Total, filterable	130 mg/L	1/14/88	
1	MW-A	Selenium	<0.005 mg/L	1/5/88	
2	MW-B	Selenium	<0.005 mg/L	1/5/88	
3	MW-C	Selenium	<0.005 mg/L	1/5/88	
4	MW-D	Selenium	<0.005 mg/L	1/5/88	
7	Upstream	Selenium	<0.005 mg/L	1/5/88	

IEA LAB RESULTS

IEA# 304017 Samples: 8 Total Parameters: 138

Client Name Environ. Chem. & Microbiol. Section

Sa#	Sample I.D.	Parameter Studied	Results	Date Analyzed	Comments
8	Downstream	Selenium	<0.005 mg/L	1/5/88	
1	MW-A	Silver	<0.05 mg/L	1/7/88	
2	MW-B	Silver	<0.05 mg/L	1/7/88	
3	MW-C	Silver	<0.05 mg/L	1/7/88	
4	MW-D	Silver	<0.05 mg/L	1/7/88	
7	Upstream	Silver	<0.05 mg/L	1/7/88	
8	Downstream	Silver	<0.05 mg/L	1/7/88	
1	MW-A	Sulfate	41 mg/L	1/5/88	
2	MW-B	Sulfate	20 mg/L	1/5/88	
3	MW-C	Sulfate	10 mg/L	1/5/88	
4	MW-D	Sulfate	13 mg/L	1/5/88	
7	Upstream	Sulfate	4.9 mg/L	1/5/88	
8	Downstream	Sulfate	8.8 mg/L	1/5/88	
1	MW-A	Total Organic Carbon	26 mg/L	1/12/88	
2	MW-B	Total Organic Carbon	37 mg/L	1/12/88	
3	MW-C	Total Organic Carbon	8.4 mg/L	1/12/88	
4	MW-D	Total Organic Carbon	3.0 mg/L	1/12/88	
7	Upstream	Total Organic Carbon	21 mg/L	1/12/88	
8	Downstream	Total Organic Carbon	11 mg/L	1/12/88	
1	MW-A	Total Organic Halide	0.04 mg/L	1/12/88	
2	MW-B	Total Organic Halide	0.37 mg/L	1/12/88	
3	MW-C	Total Organic Halide	0.01 mg/L	1/12/88	
4	MW-D	Total Organic Halide	<0.01 mg/L	1/18/88	
7	Upstream	Total Organic Halide	0.08 mg/L	1/18/88	
8	Downstream	Total Organic Halide	0.03 mg/L	1/18/88	
1	MW-A	Zinc	0.01 mg/L	1/4/88	
2	MW-B	Zinc	0.02 mg/L	1/4/88	
3	MW-C	Zinc	0.03 mg/L	1/4/88	
4	MW-D	Zinc	0.03 mg/L	1/4/88	
5	Sewage DI	Zinc	<0.01 mg/L	1/4/88	
6	Drnkng. H20 DI	Zinc	<0.01 mg/L	1/4/88	
7	Upstream	Zinc	<0.01 mg/L	1/4/88	
8	Downstream	Zinc	<0.01 mg/L	1/4/88	

CHAIN OF CUSTODY RECORD

Date and Time Received: 12/31/87 800

IEA Sample Number: 304-17-(1)(2)(3)(4)(5)(6)

Client ID Number: (MW-A)(~~MW-B~~)(MW-C)(MW-D)

Number of Containers: 32 Plastic: 20 Glass: 12 Other:

Preservation (check): Refrigeration ✓ Nitric Acid ✓ Hydrochloric Acid ☐
Sodium Hydroxide ✓ Other(specify):

Total Volume of Sample: ~~[illegible]~~ 21,700 ml

Sample Type: Soil ☐ Water ✓ Solvent ☐

Received at Lab by: Darry Dilleland

Relinquished By:	Date	Time	Date	Time	Received By:
Reggie Lockhart	12/30/87	800	12/30/87	800	Darry Dilleland
Dispatched By:					Method of Shipment:
					IEA Truck

Industrial & Environmental Analysts, Inc. • P.O. Box 12846
Research Triangle Park, NC 27709 • 919-467-9919

GROUNDWATER FIELD SAMPLING DATA SHEET

Industrial & Environmental Analysts, Inc.
Research Triangle Park, NC 27709
919-467-9919

1. Client Name CAMP LeJUNE
2. Location JACKSONVILLE N.C.
3. Date 12/29/87
4. Well ID MW-D
5. Sequence No. D - 1
6. Sampler's Name REGGIE COCKMAN
7. Evacuation Method BAILER
8. Sampling Method BAILER

9. Field Observations & Sampling Conditions

9.1 Weather & Temperature FAIR, COLD - 20° F

9.2 Was Well Locked Upon Arrival ? ✓ Yes ____ No

9.3 Any Unusual Conditions in the Area ? ____ Yes ✓ No

Explanation _____

10. Well Evacuation Data (all measurements referenced from top of casing)

10.1 Casing Diameter 4.5 Inches

10.2 Well Diameter 2.0 Inches

10.3 Total Well Depth 33.90 Feet

10.4 Static Water Level 12.15 Feet

10.5 Height of Water Column 21.75 Feet

10.6 Water Volume in Well 13.4 Liters

10.7 Evacuate 3 Well Volumes Prior to Sampling

10.8 Evacuate 40.3 Liters Prior to Sampling or to Dryness

10.9 Actual Volume Evacuated from Well 43.3 Liters

10.10 If Well Went Dry, N/A Hours Between Purging and Sampling.

11. **Well Sampling Data**

11.1 Use BAILER For Extracting Sample

11.2

Parameter	Type of Bottle (mtl. & size)	Preservative	Sample Recipient
RCRA metals + Cu, Fe, Mn, Zn	500 ml plastic	HNO_3	IEA
Cl^-, F^-, SO_4	500 ml plastic	—	↓
NO_3, COD	500 ml plastic	H_2SO_4	↓
BOD	1 l plastic	—	↓
TDS, TOX	1 l plastic	—	↓

11.3 Sample Appearance (e.g. clear, muddy, turbid) slightly turbid

11.4 ✓ Samples Placed on Ice Immediately After Collection

11.5 Date and Time Sample Extracted 12/29/87 1440

12. **Field Analyses**

Parameter	Std. Used For Calibration	Sample Reading	Reading of Std. After Sample
Temperature		14.6	
pH	7.00	4.77	7.01
Specific Conductance	131	67	130

13. Well Secured With Lock After Sampling ? ✓ Yes ____ No

If No, Explanation ____

14. IEA Sample Number 304-17-4

15. I, The Undersigned, Hereby Certify That All Of The Above Information Is Accurate.

Signature Reggie Lockman

Date & Time 12/30/87 1600

GROUNDWATER FIELD SAMPLING DATA SHEET

Industrial & Environmental Analysts, Inc.
Research Triangle Park, NC 27709
919-467-9919

1. Client Name CAMP LeJUNE
2. Location JACKSONVILLE, N.C.
3. Date 12/30/87
4. Well ID MW-C 5. Sequence No. 4
6. Sampler's Name REGGIE COCKMAN
7. Evacuation Method BAILER 8. Sampling Method BAILER

9. Field Observations & Sampling Conditions

9.1 Weather & Temperature COLD WINDY

9.2 Was Well Locked Upon Arrival ? ✓ Yes ____ No

9.3 Any Unusual Conditions in the Area ? ____ Yes ✓ No

Explanation ____

10. Well Evacuation Data (all measurements referenced from top of casing)

10.1 Casing Diameter 4.5 Inches 10.2 Well Diameter 2.0 Inches

10.3 Total Well Depth 29.25 Feet

10.4 Static Water Level 5.45 Feet

10.5 Height of Water Column 23.80 Feet

10.6 Water Volume in Well 14.7 Liters

10.7 Evacuate 3 Well Volumes Prior to Sampling

10.8 Evacuate 44.1 Liters Prior to Sampling or to Dryness

10.9 Actual Volume Evacuated from Well 47.1 Liters

10.10 If Well Went Dry, N/A Hours Between Purging and Sampling.

11. Well Sampling Data

11.1 Use BAILER For Extracting Sample

11.2

Parameter	Type of Bottle (mtl. & size)	Preservative	Sample Recipient
RCRA metals + Cu, Fe, Mn, Zn	500 ml plastic	HNO_3	IEA
Cl^-, F^-, SO_4	500 ml plastic	–	↓
NO_3, COD	500 ml plastic	H_2SO_4	↓
BOD	1 l plastic	–	↓
TDS, TOX	1 l plastic	–	↓

11.3 Sample Appearance (e.g. clear, muddy, turbid) slightly turbid

11.4 ✓ Samples Placed on Ice Immediately After Collection

11.5 Date and Time Sample Extracted 12/30/87 1200

12. Field Analyses

Parameter	Std. Used For Calibration	Sample Reading	Reading of Std. After Sample
Temperature		15.0	
pH	7.00	6.14	7.01
Specific Conductance	131	139	130

13. Well Secured With Lock After Sampling ? ✓ Yes ____ No

If No, Explanation

14. IEA Sample Number 304-17-3

15. I, The Undersigned, Hereby Certify That All Of The Above Information Is Accurate.

Signature Reggie Lockman

Date & Time 12/30/87 1600

GROUNDWATER FIELD SAMPLING DATA SHEET

Industrial & Environmental Analysts, Inc.
Research Triangle Park, NC 27709
919-467-9919

1. Client Name CAMP LEJUNE
2. Location JACKSONVILLE, N.C.
3. Date 12/30/87
4. Well ID MW-B
5. Sequence No. 3
6. Sampler's Name REGGIE COCKMAN
7. Evacuation Method BAILER
8. Sampling Method BAILER

9. Field Observations & Sampling Conditions

9.1 Weather & Temperature COLD WINDY

9.2 Was Well Locked Upon Arrival ? ✓ Yes ____ No

9.3 Any Unusual Conditions in the Area ? ____ Yes ✓ No

Explanation ____

10. Well Evacuation Data (all measurements referenced from top of casing)

10.1 Casing Diameter 4.5 Inches

10.2 Well Diameter 2.0 Inches

10.3 Total Well Depth 24.00 Feet

10.4 Static Water Level 14.35 Feet

10.5 Height of Water Column 5.65 Feet

10.6 Water Volume in Well 3.5 Liters

10.7 Evacuate 3 Well Volumes Prior to Sampling

10.8 Evacuate 10.5 Liters Prior to Sampling or to Dryness

10.9 Actual Volume Evacuated from Well 13.5 Liters

10.10 If Well Went Dry, N/A Hours Between Purging and Sampling.

11. Well Sampling Data

11.1 Use BAILER For Extracting Sample

11.2

Parameter	Type of Bottle (mtl. & size)	Preservative	Sample Recipient
RCRA metals + Cu, Fe, Mn, Zn	500 ml plastic	HNO_3	IEA
Cl^-, Fl^-, SO_4	500 ml plastic	–	↓
NO_3, COD	500 ml plastic	H_2SO_4	↓
BOD	1 l plastic	–	↓
TDS, TOX	1 l plastic	–	↓

11.3 Sample Appearance (e.g. clear, muddy, turbid) turbid

11.4 ✓ Samples Placed on Ice Immediately After Collection

11.5 Date and Time Sample Extracted 12/30/97 1040

12. Field Analyses

Parameter	Std. Used For Calibration	Sample Reading	Reading of Std. After Sample
Temperature		16.6	
pH	7.00	5.37	7.00
Specific Conductance	131	705	131

13. Well Secured With Lock After Sampling ? ✓ Yes ____ No

If No, Explanation

14. IEA Sample Number 304-17-2

15. I, The Undersigned, Hereby Certify That All Of The Above Information Is Accurate.

Signature Reggie Lockhart

Date & Time 12/30/97 1600

GROUNDWATER FIELD SAMPLING DATA SHEET

Industrial & Environmental Analysts, Inc.
Research Triangle Park, NC 27709
919-467-9919

1. Client Name CAMP LeJune
2. Location Jacksonville, N.C.
3. Date 12/29/87
4. Well ID MW-A
5. Sequence No. 2
6. Sampler's Name Reggie Cockman
7. Evacuation Method BAILER
8. Sampling Method BAILER

9. Field Observations & Sampling Conditions

9.1 Weather & Temperature FAIR WINDY COLD

9.2 Was Well Locked Upon Arrival ? ✓ Yes ___ No

9.3 Any Unusual Conditions in the Area ? ___ Yes ✓ No

Explanation ___

10. Well Evacuation Data (all measurements referenced from top of casing)

10.1 Casing Diameter 4.5 Inches

10.2 Well Diameter 2.0 Inches

10.3 Total Well Depth 26.25 Feet

10.4 Static Water Level 10.00 Feet

10.5 Height of Water Column 16.25 Feet

10.6 Water Volume in Well 10.03 Liters

10.7 Evacuate 3 Well Volumes Prior to Sampling

10.8 Evacuate 30.1 Liters Prior to Sampling or to Dryness

10.9 Actual Volume Evacuated from Well 33.1 Liters

10.10 If Well Went Dry, N/A Hours Between Purging and Sampling.

11. **Well Sampling Data**

11.1 Use Bailer For Extracting Sample

11.2

Parameter	Type of Bottle (mL & size)	Preservative	Sample Recipient
RCRA metals + Cu, Fe, Mn, Zn	500 mL plastic	HNO_3	IEA
Cl^-, Fl^-, SO_4	500 mL plastic	—	↓
NO_3, COD	500 mL plastic	H_2SO_4	
BOD	1 L plastic	—	
TDS, TOX	1 L plastic	—	

11.3 Sample Appearance (e.g. clear, muddy, turbid) clear

11.4 ✓ Samples Placed on Ice Immediately After Collection

11.5 Date and Time Sample Extracted 12/29/87 1640

12. **Field Analyses**

Parameter	Std. Used For Calibration	Sample Reading	Reading of Std. After Sample
Temperature		16.3	
pH	7.00	5.31	6.99
Specific Conductance		430	

13. Well Secured With Lock After Sampling? ✓ Yes ___ No

If No, Explanation

14. IEA Sample Number 304-17-1

15. I, The Undersigned, Hereby Certify That All Of The Above Information Is Accurate.

Signature Reggie Lockhart

Date & Time 12/30/87 1600

Betsy: Get up with Don Gargano's and advise on status of various sludges currently stored awaiting disposal at Landfill. Give Don a copy of the procedure for testing sludges prior to landfilling.

Danny

Specifically concerned about sludges from Burn Pit

Dan → DDS Betz for Action

OPNAV 5216/144A (Rev. 8-81)
S/N 0107-LF-052-2320

DEPARTMENT OF THE NAVY

Memorandum

11345
MAIN

DATE: 25 Mar 88

FROM: Base Maintenance Officer, Marine Corps Base, Camp Lejeune

TO: Director, Natural Resources and Environmental Affairs Division

SUBJ: DISPOSAL OF SLUDGE AND CATALYST

Ref: (a) PHONCON btwn Danny Sharpe ((NREAD) and Carl Baker (MAIN) on 25 Mar 88

1. As discussed in the reference, guidance is requested on proper disposal of sludge removed from drying beds at the wastewater treatment facilities and catalyst removed from spiractors at water treatment facilities. Currently, sludge and catalyst are being taken to the Base Sanitary Landfill for stockpiling and disposal, and clarification is needed to incorporate proper procedures and locations in a service contract to accomplish the work.

C. H. Baker
C. H. BAKER
By direction

RECEIVED
28 MAR 1988

☆U.S. GOVERNMENT PRINTING OFFICE: 1985 — 505-012/18049

lw TOM ——
Betz ——

TO: Betz: I assigned this to you last Spring ? ? ? Please pull paper work and lets discuss along with Tom Burpee.

UNITED STATES MARINE CORPS
Base Maintenance Division
Marine Corps Base
Camp Lejeune, North Carolina 28542

IN REPLY REFER TO
5000
MAIN

DPS

MAR 22 1988

From: Base Maintenance Officer, Marine Corps Base, Camp Lejeune
To: Director, Natural Resources and Environmental Affairs Division
Via: Assistant Chief of Staff, Facilities: BWEbtw 3/23/88

Subj: CONTAMINATED SOIL

1. At the present time, there are several deposits of contaminated soil stored on plastic at the landfill. The soil was placed there so that samples could be taken and an analysis could be conducted by NREAD.

2. Some of these deposits have been stored here in excess of a year. It is requested that NREAD provide guidance for final disposition of these deposits.

M. G. LILLEY