State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Waste Management

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director

DEHNR

September 18, 1996

Mr. Myrl Nisely
Senior Environmental Engineer
Champion International Corporation
P.O. Box 580
Roanoke Rapids, NC 27870

Fac/Perm/Co ID #	Date	Doc ID#
4203	7/22/201	DIN 1450

RE: Closure of Champion Flyash Landfill, Roanoke Rapids:
Permit # 42-03

Dear Mr. Nisely,

After a review of the file data and our site visit, the hydrogeologic unit of the Solid Waste Section has determined that some amendments to the current monitoring system are needed before issuance of a closure letter for the above referenced facility.

Water levels in monitoring wells at the facility, along with topography, suggest that groundwater beneath the landfill flows to the southeast before discharging to the Roanoke River. An additional monitoring well needs to be installed on the southeast margin of the landfill (adjacent to the VEPCO powerline), with its location and construction specifications to be approved by the Section. The operators may drop well LG-4 from the routine detection monitoring system, though it should not be abandoned. Surface water sampling will not be required for post closure monitoring.

During our meeting at the Solid Waste Section on August 20, 1996, it was pointed out that any southeastward flow of groundwater from beneath the landfill could be not shown with certainty, using currently available water level data. Champion International does have the option of installing a number of additional piezometers at the facility in order to demonstrate that the existing water quality monitoring system is adequate for detection of possible releases from the landfill. However, the installation of one additional monitoring well would be less expensive that any investigation to make that determination. Since LG-4 could then be dropped from the system, long-term sampling costs would not be increased.

P.O. Box 27687,
Raleigh, North Carolina 27611-7687
Voice 919-733-4996

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If you have any questions about this letter, please call me at the Solid Waste Section, (919) 733-0692, ext. 342..

Sincerely,

Jim Bateson
Hydrogeologist
Solid Waste Section

cc:	Bob Midgette;	Rust Environment and Infrastructure
	Bobby Lutfy;	"
	Jim Barber;	"

CHAMPION INTERNATIONAL CORP.
ROANOKE RAPIDS, NORTH CAROLINA

Meeting Agenda - August 20, 1996

1. **Introductions**
   - Champion International
   - Solid Waste Section
   - Rust E & I

2. **History of Flyash Disposal Area**
   - Permitted May 6, 1981
   - Materials Disposed
   - 1991 Operational and Closure Plan

3. **Additional Data**
   - Topographic Map
   - Monitoring Well Installation Details
   - Analytical Database

4. **Issues for Revised Operational and Closure Plan**
   - Use of Primary Clarifier Solids in Final Cover Material
   - Vegetative Cover Specifications
   - Erosion Control Measures
   - Final Cover Thickness Documentation
   - Additional Monitoring Well

WEBB TECHNICAL GROUP, INC.
3909 Beryl Road
Raleigh, NC 27607
(919) 834-4984

CLIENT: CHAMPION INTERNATIONAL CORPORATION
SAMPLE ID: Sludge
FECAL COLIFORM
COLLECTED: See Below
WTG LOG NUMBER: See Below

WTG Laboratory Log #	Sampling Date	RESULT CFU per gram Total Solid
95-09-878	9/27/95	<485
95-10-401	10/12/95	<613
95-10-976	10/31/95	23.500
95-11-334	11/10/95	18,800
95-11-391	11/14/95	<599
95-11-513	11/16/95	<613
95-11-575	11/17/95	528

Comments:

CERTIFIED BY: [signature] REPORT DATE: December 6, 1995

A & L EASTERN AGRICULTURAL LABORATORIES, INC.
7621 Whitepine Road • Richmond, Virginia 23237 • (804) 743-9401
Fax No. (804) 271-6446

R125-211 ACCOUNT 45786 PAGE 1
REPORT NUMBER

CHAMPION INTERNATIONAL ROANOKE RAPIDS FACILITY NEAL DAVIS
~~HIGHWAY125 &SMITH CH RD~~ P.O. BOX 580
P O BOX 309 N. ROANOKE AVE.
ROANOKE RAPIDS NC 27870

SLUDGE ANALYSIS REPORT

LAB NUMBER = 42331
SAMPLE ID = ROANOKE RAPIDS

DATE SAMPLED 05/08/96
DATE RECEIVED 05/09/96
DATE REPORTED 05/15/96

PARAMETER	RESULT (%)	RESULT (MG/KG)	DETECTION LIMIT (MG/KG)	ANALYST	ANALYSIS DATE	METHOD REFERENCE
SOLIDS	40.26	402600	100	JCM	05/09/96	SM 2540G
NITROGEN (TKN)	0.24	2400	100	LDR	05/10/96	EPA 351.3
PHOSPHORUS	0.27	2700	100	JCM	05/10/96	EPA 365.4
POTASSIUM	0.20	2000	100	DCN	05/10/96	SW 846-6010
CALCIUM	2.26	22600	100	DCN	05/10/96	SW 846-6010
MAGNESIUM	0.42	4200	100	DCN	05/10/96	SW 846-6010
SODIUM	0.23	2300	100	DCN	05/10/96	SW 846-6010
IRON		6970	1	DCN	05/10/96	SW 846-6010
ALUMINUM		8470	10	DCN	05/10/96	SW 846-6010
MANGANESE		2020	1	DCN	05/10/96	SW 846-6010
COPPER		79	1	DCN	05/10/96	SW 846-6010
ZINC		307	1	DCN	05/10/96	SW 846-6010
AMMONIA NITROGEN	0.03	300	100	LDR	05/10/96	EPA 350.2
NO3-NO2 NITROGEN		20	10	KCS	05/15/96	EPA 353.1
CADMIUM		2.0	1	DCN	05/10/96	SW 846-6010
CHROMIUM		232	5	DCN	05/10/96	SW 846-6010
NICKEL		57	5	DCN	05/10/96	SW 846-6010
LEAD		9	5	DCN	05/10/96	SW 846-6010

ALL VALUES EXCEPT SOLIDS AND TSS ARE ON A DRY WEIGHT BASIS.

Paul Chu
PAUL CHU

Norman Jones
NORMAN JONES

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A & L EASTERN AGRICULTURAL LABORATORIES, INC.

7604 Hull Street Road · Richmond, Virginia 23237 · (804) 743-9401

R125-211 ACCOUNT 45786 PAGE 2
REPORT NUMBER

CHAMPION INTERNATIONAL
HIGHWAY125 &SMITH CH RD
P O BOX 309
ROANOKE RAPIDS NC 27870

ROANOKE RAPIDS FACILITY

NEAL DAVIS

SLUDGE ANALYSIS REPORT

LAB NUMBER = 42331
SAMPLE ID = ROANOKE RAPIDS

DATE SAMPLED 05/08/96
DATE RECEIVED 05/09/96
DATE REPORTED 05/15/96

PARAMETER	RESULT (%)	RESULT (MG/KG)	DETECTION LIMIT (MG/KG)	ANALYST	ANALYSIS DATE	METHOD REFERENCE
ARSENIC		12.46	0.4	DCN	05/10/96	SW 846-7061
MERCURY		0.16	0.1	DCN	05/10/96	SW 846-7471
PH (STANDARD UNITS)	7.40			KM	05/10/96	EPA 150.1
CALCIUM CARBONATE EQ	12.13	121300	100	DCH	05/10/96	ASTM C602
VOLATILE SOLIDS	64.49	644900	100	LDR	05/10/96	SM 2540G
ORGANIC NITROGEN	0.20	2000	100	KCS	05/10/96	CALCULATED
CHLORIDE		470	1	DCH	05/10/96	SM 4500-CL
SULFATE		190	10	JCM	05/10/96	SW 846-9038

ALL VALUES EXCEPT SOLIDS AND TSS ARE ON A DRY WEIGHT BASIS.

PAUL C. H. CHU

C. NORMAN JONES

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Page 1

TO:

Dunlow, David
P. O. Box 117
Gaston NC 27832

COPIES:

NORTHAMPTON CO. EXT. DIR.
Charlie Tyson
Soil Conservation Service

Sludge nutrient availability

8/09/94

REPORT NO: W00064 COUNTY: NORTHAMPTO

SAMPLE INFORMATION										
SAMPLE ID	DESCRIPTION	WASTE CODE	DM - %	N - %	P - %	K - %	Ca - %	Mg - %	S - %	Fe-PPM	Mn-PPM
Fresh 12	Indust., Other	241	42.27	0.41	0.12	0.10	2.46	0.27	0.50	2076	1204

NUTRIENTS AVAILABLE FOR FIRST CROP (lbs/Ton

APPLICATION METHOD	NITROGEN	P_2O_5	K_2O	CALCIUM	MAGNESIUM	SULFUR	Fe
BROADCAST	0.97	1.39	0.61	12.48	1.37	2.54	1.05

NUTRIENTS AVAILABLE FOR FIRST CROP (lbs/Ton

APPLICATION METHOD	NITROGEN	P_2O_5	K_2O	CALCIUM	MAGNESIUM	SULFUR	Fe
SOIL INCORP.	1.39	1.74	0.76	15.60	1.71	3.17	1.32

SAMPLE INFORMATION										
SAMPLE ID	DESCRIPTION	WASTE CODE	DM - %	N - %	P - %	K - %	Ca - %	Mg - %	S - %	Fe-PPM	Mn-PPM
~4yrs old 13	Indust., Other	241	41.21	0.61	0.07	0.10	3.81	0.30	0.53	4914	1538

NUTRIENTS AVAILABLE FOR FIRST CROP (lbs/Ton

APPLICATION METHOD	NITROGEN	P_2O_5	K_2O	CALCIUM	MAGNESIUM	SULFUR	Fe
BROADCAST	1.41	0.79	0.59	17.36	1.48	2.62	2.43

NUTRIENTS AVAILABLE FOR FIRST CROP (lbs/Ton

APPLICATION METHOD	NITROGEN	P_2O_5	K_2O	CALCIUM	MAGNESIUM	SULFUR	Fe
SOIL INCORP.	2.01	0.99	0.74	21.70	1.85	3.28	3.04

SAMPLE INFORMATION										
SAMPLE ID	DESCRIPTION	WASTE CODE	DM - %	N - %	P - %	K - %	Ca - %	Mg - %	S - %	Fe-PPM	Mn-PPM

NUTRIENTS AVAILABLE FOR FIRST CROP

APPLICATION METHOD	NITROGEN	P_2O_5	K_2O	CALCIUM	MAGNESIUM	SULFUR	Fe

NUTRIENTS AVAILABLE FOR FIRST CROP

APPLICATION METHOD	NITROGEN	P_2O_5	K_2O	CALCIUM	MAGNESIUM	SULFUR	Fe

ELEMENTAL CONCENTRATIONS
Solids - Dry Weight Basis
Liquids - Volume Basis

N-% = Nitrogen
P-% = Phosphorus
K-% = Potassium
Ca-% = Calcium
Mg-% = Magnesium
S-% = Sulfur
Cl-% = Chlorine
Na-% = Sodium
Fe-ppm = Iron
Mn-ppm = Manganese
Zn-ppm = Zinc
Cu-ppm = Copper
B-ppm = Boron
Mo-ppm = Molybdenum
Ni-ppm = Nickel
Cd-ppm = Cadmium
Pb-ppm = Lead

DM - %
Percent Dry Matter (Solids)

NUTRIENT AVAILABILITY
Nutrient availability cannot be determined with 100% accuracy. Many variables influence mineralization rate and nutrient loss. This report provides a realistic estimation of nutrient availability based on type of waste and application method.

C. Ray Campbell
AGRONOMIST

Blue Ridge Road Center
P.O. Box 27647, Raleigh, N.C. 27611 (919)

FORM AD 10 Rep. (10/92)

WASTE ANALYSIS REPORT

Page 2

PLANT WASTE SOLUTION

ADVISORY SECTION

North Carolina Department of Agriculture

Agronomic Division

LABORATORY RESULTS

Zn-PPM	Cu-PPM	B-PPM	Mo-PPM	Na - %	Cl - %	Ni-PPM	Cd-PPM	Pb-PPM
155	35.7	5.10		0.23		24.11 ±0.90	0.00	0.00

OTHER ELEMENTS

Mn	Zn	Cu	B	Mo	Na	Cl	Ni	Cd	Pb
0.61	0.08	0.02	0.00		1.17			0.00	0.00

OTHER ELEMENTS

Mn	Zn	Cu	B	Mn	Na	Cl	Ni	Cd	Pb
0.76	0.10	0.02	0.00		1.46			0.00	0.00

LABORATORY RESULTS

Zn-PPM	Cu-PPM	B-PPM	Mo-PPM	Na - %	Cl - %	Ni-PPM	Cd-PPM	Pb-PPM
300	43.9	2.15		0.22		24.91 ±0.34	1.79 ±0.08	0.00

OTHER ELEMENTS

Mn	Zn	Cu	B	Mo	Na	Cl	Ni	Cd	Pb
0.76	0.10	0.02	0.00		1.09				0.00

OTHER ELEMENTS

Mn	Zn	Cu	B	Mo	Na	Cl	Ni	Cd	Pb
0.95	0.12	0.03	0.00		1.36				0.00

LABORATORY RESULTS

Zn-PPM	Cu-PPM	B-PPM	Mo-PPM	Na - %	Cl - %	Ni-PPM	Cd-PPM	Pb-PPM

OTHER ELEMENTS

Mn	Zn	Cu	B	Mo	Na	Cl	Ni	Cd	Pb

OTHER ELEMENTS

Mn	Zn	Cu	B	Mo	Na	Cl	Ni	Cd	Pb

COMMENTS:

We did not find significant concentrations of heavy metals in the samples. Nutrient levels are also very low.

133-2655

TO:

Champion, Cory
Box 580 - M. Nisley
Roanoke Rpds NC 27870

COPIES:

HALIFAX CO. EXT. DIR.
Charlie Tyson
Soil Conservation Service

RECEIVED
NOV 18 1994
EOHS

WASTE ANALYSIS REPORT

PLANT WASTE SOLUTION

ADVISORY SECTION

North Carolina Department of Agriculture

Agronomic Division

11/08/94

REPORT NO: W00261 COUNTY: HALIFAX

SAMPLE INFORMATION			LABORATORY RESULTS																				
SAMPLE ID	DESCRIPTION	WASTE CODE	DM - %	N - %	P - %	K - %	Ca - %	Mg - %	S - %	Fe-PPM	[redacted]	B-PPM	Mo-PPM	Na - %	Cl - %	Ni-PPM	Cd-PPM	Pb-PPM	pH	$CaCO_3$	[redacted]
N94	FLY ASH Indust., Other	241	74.90	0.25	0.06	0.05	0.42	0.03	0.06	3551	[redacted]	0.00		0.02		3.52 ±0.18	0.00	0.00	3.8	7.50	[redacted] 10%

NUTRIENTS AVAILABLE FOR FIRST CROP (lbs/Ton)													OTHER ELEMENTS						
APPLICATION METHOD	NITROGEN	P_2O_5	K_2O	CALCIUM	MAGNESIUM	SULFUR	Fe	Mn	Zn	Cu	B	Mo	Na	Cl	Ni	Cd	Pb		
BROADCAST	1.05	1.23	0.54	3.78	0.27	0.54	3.19	0.09	0.01	0.01	0.00		0.18			0.00	0.00		
NUTRIENTS AVAILABLE FOR FIRST CROP (lbs/Ton)													OTHER ELEMENTS						
APPLICATION METHOD	NITROGEN	P_2O_5	K_2O	CALCIUM	MAGNESIUM	SULFUR	Fe	Mn	Zn	Cu	B	Mo	Na	Cl	Ni	Cd	Pb		
SOIL INCORP.	1.50	1.54	0.67	4.72	0.34	0.67	3.99	0.11	0.02	0.02	0.00		0.23			0.00	0.00		

SAMPLE INFORMATION			LABORATORY RESULTS																				
SAMPLE ID	DESCRIPTION	WASTE CODE	DM - %	N - %	P - %	K - %	Ca - %	Mg - %	S - %	Fe-PPM	[redacted]	B-PPM	Mo-PPM	Na - %	Cl - %	Ni-PPM	Cd-PPM	Pb-PPM	pH	$CaCO_3$	[redacted]
094	FLY ASH Indust., Other	241	56.61	0.33	0.06	0.11	0.82	0.07	0.05	3180	[redacted]	3.11		0.02		5.75 ±0.04	0.00	0.00	3.5	7.00	[redacted] 10%

NUTRIENTS AVAILABLE FOR FIRST CROP (lbs/Ton)													OTHER ELEMENTS						
APPLICATION METHOD	NITROGEN	P_2O_5	K_2O	CALCIUM	MAGNESIUM	SULFUR	Fe	Mn	Zn	Cu	B	Mo	Na	Cl	Ni	Cd	Pb		
BROADCAST	1.05	0.93	0.90	5.57	0.48	0.41	2.16	0.18	0.01	0.01	0.00		0.14			0.00	0.00		
NUTRIENTS AVAILABLE FOR FIRST CROP (lbs/Ton)													OTHER ELEMENTS						
APPLICATION METHOD	NITROGEN	P_2O_5	K_2O	CALCIUM	MAGNESIUM	SULFUR	Fe	Mn	Zn	Cu	B	Mo	Na	Cl	Ni	Cd	Pb		
SOIL INCORP.	1.50	1.17	1.12	6.96	0.59	0.51	2.70	0.23	0.02	0.02	0.00		0.17			0.00	0.00		

SAMPLE INFORMATION			LABORATORY RESULTS																				
SAMPLE ID	DESCRIPTION	WASTE CODE	DM - %	N - %	P - %	K - %	Ca - %	Mg - %	S - %	[redacted]	[redacted]	B-PPM	Mo-PPM	Na - %	Cl - %	Ni-PPM	Cd-PPM	Pb-PPM	[redacted]	[redacted]	[redacted]

NUTRIENTS AVAILABLE FOR FIRST CROP													OTHER ELEMENTS						
APPLICATION METHOD	NITROGEN	P_2O_5	K_2O	CALCIUM	MAGNESIUM	SULFUR	Fe	Mn	Zn	Cu	B	Mo	Na	Cl	Ni	Cd	Pb		
NUTRIENTS AVAILABLE FOR FIRST CROP													OTHER ELEMENTS						
APPLICATION METHOD	NITROGEN	P_2O_5	K_2O	CALCIUM	MAGNESIUM	SULFUR	Fe	Mn	Zn	Cu	B	Mo	Na	Cl	Ni	Cd	Pb		

ELEMENTAL CONCENTRATIONS
Solids - Dry Weight Basis
Liquids - Volume Basis

N-% = Nitrogen
P-% = Phosphorus
K-% = Potassium
Ca-% = Calcium
Mg-% = Magnesium
S-% = Sulfur
Cl-% = Chlorine
Na-% = Sodium
Fe-ppm = Iron
Mn-ppm = Manganese
Zn-ppm = Zinc
Cu-ppm = Copper
B-ppm = Boron
Mo-ppm = Molybdenum
Ni-ppm = Nickel
Cd-ppm = Cadmium
Pb-ppm = Lead

DM - %
Percent Dry Matter (Solids)

NUTRIENT AVAILABILITY
Nutrient availability cannot be determined with 100% accuracy. Many variables influence mineralization rate and nutrient loss. This report provides a realistic estimation of nutrient availability based on type of waste and application method.

C. Ray Campbell
AGRONOMIST

Blue Ridge Road Center
P.O. Box 27647, Raleigh, N.C. 27611 (919) 733-2655

COMMENTS:

Neutralizing value is low for both samples. Soluble salts are also low and are very similar for the two samples. Salts or neutralizing value do not explain the differences in growth that you described in the report.

Heavy metals are very low in the waste samples.

FORM AD 10 Rep (10/92)

Received: 08/02/94

WEBB TECHNICAL REPORT

11/18/94 16:28:48

Work Order # 94-08-090

REPORT TO
CHAMPION ROANOKE RAPIDS, NC
P.O. BOX 580
ROANOKE RAPIDS, NC 27870

ATTEN MRYL NISLEY

CLIENT CRR SAMPLES 2
COMPANY CHAMPION ROANOKE RAPIDS, NC
FACILITY N ROANOKE AVE
ROANOKE RAPIDS, NC 27870

WORK ID SLUDGE
TAKEN
TRANS DELIVERY, UPS
TYPE WASTEWATER
P.O. # R-70114
INV. # 47776

PREPARED BY
Webb Technical Group, Inc.
4320 Delta Lake Drive
Raleigh, NC 27612

ATTEN Client Services
PHONE (919)787-9171

CERTIFIED BY

CONTACT G FLYNT

We are pleased to provide this certified report of analysis. Samples will be retained for 30 days after report is issued. Feel free to telephone if further explanation is required. refer to the Work Order # in all correspondence.

Previously Reported on 08/30/94.
First Reported on 08/25/94.

SAMPLE IDENTIFICATION

01 NEW SLUDGE
02 OLD SLUDGE

TEST CODES and NAMES used on this workorder

AG	SILVER BY ICP
AS	ARSENIC BY ICP
BA	BARIUM BY ICP
CD	CADMIUM BY ICP
CR	TOTAL CHROMIUM BY ICP
HG_AA	MERCURY BY COLD VAPOR
PB	LEAD BY ICP
SE	SELENIUM BY ICP

NOV 18 '94 08:30PM WEBB TECHNICAL GROUP

Received: 08/02/94

WEBB TECHNICAL REPORT
Results by Sample

Work Order # 94-08-0

SAMPLE ID NEW SLUDGE — SAMPLE # 01 FRACTIONS: A,B
Date & Time Collected 07/27/94 15:00:00 Category

AG <2.5 MG/KG DRY SOLID	AS <25 MG/KG DRY SOLID	BA 220 MG/KG DRY SOLID	CD 1.58 MG/KG DRY SOLID	CR 79.5 MG/KG DRY SOLID	HG AA 0.092 MG/KG DRY SOLID
PB <12.5 MG/KG DRY SOLID	SE <25 MG/KG DRY SOLID				

SAMPLE ID OLD SLUDGE — SAMPLE # 02 FRACTIONS: A,B
Date & Time Collected 07/27/94 15:00:00 Category

AG <2.5 MG/KG DRY SOLID	AS <25 MG/KG DRY SOLID	BA 249 MG/KG DRY SOLID	CD 1.83 MG/KG DRY SOLID	CR 90.5 MG/KG DRY SOLID	HG AA 0.083 MG/KG DRY SOLID
PB 16.0 MG/KG DRY SOLID	SE <25 MG/KG DRY SOLID				

NOV 18 '94 04:39PM WEBB TECHNICAL

TCLP or LEACHATE

Received: 08/02/94

WEBB TECHNICAL REPORT

09/06/94 07:12:40

Work Order # 94-08-)

REPORT TO: CHAMPION ROANOKE RAPIDS, NC
P.O. BOX 580
ROANOKE RAPIDS, NC 27870

ATTEN: MRYL NISLEY

CLIENT: CRR
SAMPLES: 2
COMPANY: CHAMPION ROANOKE RAPIDS, NC
FACILITY: N ROANOKE AVE
ROANOKE RAPIDS, NC 27870

WORK ID: SLUDGE
TAKEN:
TRANS: DELIVERY, UPS
TYPE: WASTEWATER
P.O. #: R-70114
INVOICE: under separate cover

PREPARED BY: Webb Technical Group, Inc.
4320 Delta Lake Drive
Raleigh, NC 27612

ATTEN: Client Services
PHONE: (919)787-9171

Tammy L. Martin
CERTIFIED BY

CONTACT: G FLYNT

We are pleased to provide this certified report of analysis. Samples will be retained for 30 days after report is issued. Feel free to telephone if further explanation is required. refer to the Work Order # in all correspondence.

SAMPLE IDENTIFICATION

01 NEW SLUDGE
02 OLD SLUDGE

TEST CODES and NAMES used on this workorder

TC8150	TCLP CHLOR. HERBICIDES
TCL608	TCLP CHLORINATED PESTICIDE
TCLPBN	TCLP BASE NEUTRALS
TCLPIN	TCLP INORGANICS
TCLPVO	TCLP VOLATILE ORGANIC CPDS
TCLP_A	TCLP ACIDIC COMPOUNDS

Received: 08/02/94

WEBB TECHNICAL REPORT
Results by Sample

Work Order # 94-08-[illegible]9

SAMPLE ID NEW SLUDGE

FRACTION 01B TEST CODE TC8150 NAME TCLP CHLOR. HERBICIDES
Date & Time Collected 07/27/94 15:00:00 Category

VER DCJ

EXTRACTED
DATE RUN

PARAMETER	RESULT	EPA LIMIT	UNITS
2,4-D	<0.100	10.0	mg/L
2,4,5-TP (SILVEX)	<0.050	1.0	mg/L

Received: 08/02/94

WEBB TECHNICAL REPORT
Results by Sample

Work Order # 94-08-089

SAMPLE ID NEW SLUDGE

FRACTION 01B TEST CODE TCL608 NAME TCLP CHLORINATED PESTICIDE
Date & Time Collected 07/27/94 15:00:00 Category

VER DCJ

EXTRACTED
DATE RUN

PARAMETER	RESULT	EPA LIMIT	UNITS
CHLORDANE	<0.0025	0.030	mg/L
ENDRIN	<0.001	0.020	mg/L
HEPTACHLOR	<0.0005	0.008	mg/L
HEPTACHLOR EPOXIDE	<0.0005	0.008	mg/L
LINDANE	<0.010	0.400	mg/L
METHOXYCHLOR	<0.100	10.000	mg/L
TOXAPHENE	<0.0025	0.500	mg/L

Received: 08/02/94

WEBB TECHNICAL REPORT
Results by Sample

Work Order # 94-08-089

SAMPLE ID NEW SLUDGE

FRACTION 01B TEST CODE TCLPBN NAME TCLP BASE NEUTRALS
Date & Time Collected 07/27/94 15:00:00 Category

VER DCJ

EXTRACTED
DATE RUN

PARAMETER	RESULT	EPA LIMIT	UNITS
2,4-DINITROTOLUENE	<0.010	0.13	mg/L
HEXACHLOROBENZENE	<0.010	0.13	mg/L
HEXACHLOROBUTADIENE	<0.010	0.50	mg/L
HEXACHLOROETHANE	<0.010	3.00	mg/L
NITROBENZENE	<0.010	2.00	mg/L
PYRIDINE	<0.010	5.00	mg/L

Received: 08/02/94

WEBB TECHNICAL REPORT
Results by Sample

Work Order # 94-08-089

SAMPLE ID NEW SLUDGE

FRACTION 01C TEST CODE TCLPIN NAME TCLP INORGANICS
Date & Time Collected 07/27/94 15:00:00 Category

VER DCJ

EXTRACTED
DATE RUN

PARAMETER	RESULT	EPA LIMIT	UNITS
ARSENIC	<0.1	5.0	mg/L
BARIUM	0.485	100.0	mg/L
CADMIUM	<0.005	1.0	mg/L
CHROMIUM	0.052	5.0	mg/L
LEAD	<0.05	5.0	mg/L
MERCURY	<0.0002	0.2	mg/L
SELENIUM	<0.1	1.0	mg/L
SILVER	<0.01	5.0	mg/L

Received: 08/02/94

WEBB TECHNICAL REPORT
Results by Sample

Work Order # 94-08-089

SAMPLE ID NEW SLUDGE

FRACTION 01D TEST CODE TCLPVO NAME TCLP VOLATILE ORGANIC CPDS
Date & Time Collected 07/27/94 15:00:00 Category

VER DCJ

EXTRACTED
DATE RUN 08/17/94

PARAMETER	RESULT	EPA LIMIT	UNITS
BENZENE	<0.005	0.50	mg/L
CARBON TETRACHLORIDE	<0.005	0.50	mg/L
CHLOROBENZENE	<0.005	100.00	mg/L
CHLOROFORM	<0.005	6.00	mg/L
1,4-DICHLOROBENZENE	<0.005	7.50	mg/L
1,2-DICHLOROETHANE	<0.005	0.50	mg/L
1,1-DICHLOROETHENE	<0.005	0.70	mg/L
METHYL ETHYL KETONE	<0.500	200.00	mg/L
TETRACHLOROETHENE	<0.005	0.70	mg/L
TRICHLOROETHENE	<0.005	0.50	mg/L
VINYL CHLORIDE	<0.010	0.20	mg/L

Received: 08/02/94

WEBB TECHNICAL REPORT
Results by Sample

Work Order # 94-08-[illegible]

SAMPLE ID NEW SLUDGE

FRACTION 01B TEST CODE TCLP A NAME TCLP ACIDIC COMPOUNDS
Date & Time Collected 07/27/94 15:00:00 Category

VER DCJ

EXTRACTED
DATE RUN

PARAMETER	RESULT	LIMIT	UNITS
o-CRESOL	<0.010	200.0	Mg/L
m,p-CRESOL	<0.010	200.0	Mg/L
PENTACHLOROPHENOL	<0.050	100.0	Mg/L
2,4,5-TRICHLOROPHENOL	<0.050	400.0	Mg/L
2,4,6-TRICHLOROPHENOL	<0.010	2.0	Mg/L

Received: 08/02/94

WEBB TECHNICAL REPORT
Results by Sample

Work Order # 94-08- 9

SAMPLE ID OLD SLUDGE

FRACTION 02B TEST CODE TC8150 NAME TCLP CHLOR. HERBICIDES
Date & Time Collected 07/27/94 15:00:00 Category

VER DCJ

EXTRACTED
DATE RUN

PARAMETER	RESULT	EPA LIMIT	UNITS
2,4-D	<0.100	10.0	mg/L
2,4,5-TP (SILVEX)	<0.050	1.0	mg/L

Received: 08/02/94

WEBB TECHNICAL REPORT
Results by Sample

Work Order # 94-08-089

SAMPLE ID OLD SLUDGE

FRACTION 02B TEST CODE TCL608 NAME TCLP CHLORINATED PESTICIDE
Date & Time Collected 07/27/94 15:00:00 Category

VER DCJ

EXTRACTED
DATE RUN

PARAMETER	RESULT	EPA LIMIT	UNITS
CHLORDANE	<0.0025	0.030	mg/L
ENDRIN	<0.001	0.020	mg/L
HEPTACHLOR	<0.0005	0.008	mg/L
HEPTACHLOR EPOXIDE	<0.0005	0.008	mg/L
LINDANE	<0.010	0.400	mg/L
METHOXYCHLOR	<0.100	10.000	mg/L
TOXAPHENE	<0.0025	0.500	mg/L

Received: 08/02/94

WEBB TECHNICAL REPORT
Results by Sample

Work Order # 94-08 9

SAMPLE ID OLD SLUDGE

FRACTION 02B TEST CODE TCLPBN NAME TCLP BASE NEUTRALS
Date & Time Collected 07/27/94 15:00:00 Category

VER DCJ

EXTRACTED
DATE RUN

PARAMETER	RESULT	EPA LIMIT	UNITS
2,4-DINITROTOLUENE	<0.010	0.13	mg/L
HEXACHLOROBENZENE	<0.010	0.13	mg/L
HEXACHLOROBUTADIENE	<0.010	0.50	mg/L
HEXACHLOROETHANE	<0.010	3.00	mg/L
NITROBENZENE	<0.010	2.00	mg/L
PYRIDINE	<0.010	5.00	mg/L

Received: 08/02/94

WEBB TECHNICAL REPORT
Results by Sample

Work Order # 94-08 19

SAMPLE ID OLD SLUDGE

FRACTION 02C TEST CODE TCLPIM NAME TCLP INORGANICS
Date & Time Collected 07/27/94 15:00:00 Category

VER DCJ

EXTRACTED
DATE RUN

PARAMETER	RESULT	EPA LIMIT	UNITS
ARSENIC	<0.1	5.0	mg/L
BARIUM	1.10	100.0	mg/L
CADMIUM	<0.005	1.0	mg/L
CHROMIUM	<0.01	5.0	mg/L
LEAD	<0.05	5.0	mg/L
MERCURY	<0.0002	0.2	mg/L
SELENIUM	<0.1	1.0	mg/L
SILVER	<0.01	5.0	mg/L

Received: 08/02/94

WEBB TECHNICAL REPORT
Results by Sample

Work Order # 94-08-)

SAMPLE ID OLD SLUDGE

FRACTION Q2D TEST CODE TCLPVO NAME TCLP VOLATILE ORGANIC CPDS
Date & Time Collected 07/27/94 15:00:00 Category

VER DCJ

EXTRACTED
DATE RUN 08/17/94

PARAMETER	RESULT	EPA LIMIT	UNITS
BENZENE	<0.005	0.50	mg/L
CARBON TETRACHLORIDE	<0.005	0.50	mg/L
CHLOROBENZENE	<0.005	100.00	mg/L
CHLOROFORM	<0.005	6.00	mg/L
1,4-DICHLOROBENZENE	<0.005	7.50	mg/L
1,2-DICHLOROETHANE	<0.005	0.50	mg/L
1,1-DICHLOROETHENE	<0.005	0.70	mg/L
METHYL ETHYL KETONE	<0.500	200.00	mg/L
TETRACHLOROETHENE	<0.005	0.70	mg/L
TRICHLOROETHENE	<0.005	0.50	mg/L
VINYL CHLORIDE	<0.010	0.20	mg/L

Received: 08/02/94

WEBB TECHNICAL REPORT
Results by Sample

Work Order # 94-08 9

SAMPLE ID OLD SLUDGE

FRACTION 02B TEST CODE TCLP_A NAME TCLP ACIDIC COMPOUNDS
Date & Time Collected 07/27/94 15:00:00 Category

VER DCJ

EXTRACTED
DATE RUN

PARAMETER	RESULT	LIMIT	UNITS
o-CRESOL	<0.010	200.0	Mg/L
m,p-CRESOL	<0.010	200.0	Mg/L
PENTACHLOROPHENOL	<0.050	100.0	Mg/L
2,4,5-TRICHLOROPHENOL	<0.050	400.0	Mg/L
2,4,6-TRICHLOROPHENOL	<0.010	2.0	Mg/L

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Solid Waste Management

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director

DEHNR

MEMORANDUM

TO: Jim Barber

Date: July 16, 1996

FROM: Jim Bateson

cc: Bobby Lutfy
Mark Poindexter

RE: Closure of Champion Flyash Landfill, Roanoke Rapids:
Permit # 42-03

After a review of the file data and our site visit, the hydrogeologic unit of the Solid Waste Section has determined that some amendments to the current monitoring system are needed before issuance of a closure letter for the above referenced facility.

Water levels in monitoring wells at the facility, along with topography, suggest that groundwater beneath the landfill flows to the southeast before discharging to the Roanoke River. An additional monitoring well needs to be installed on the southeast margin of the landfill (adjacent to the VEPCO powerline), with its location and construction specifications to be approved by the Section. The operators may drop well LG-4 from the routine detection monitoring system, though it should not be abandoned. Surface water sampling will not be required for post closure monitoring.

During the post-closure monitoring period, water quality samples need to be analyzed for the constituents listed in the attached memorandum, *Sampling and Analysis Requirements for Construction and Demolition Landfills and Closed Sanitary Landfills,* using the methods and PQL's listed therein. The new constituent list includes the eight RCRA metals, plus a volatile organic scan. Sampling also needs to include field measurement of pH, temperature, and specific conductance.

Because past groundwater data for this facility indicates that Groundwater Quality Standards have been exceeded for some constituents (including lead), this needs to be noted in the closure letter, along with a statement that some additional water quality assessment might be needed in the future.

P.O. Box 27687,
Raleigh, North Carolina 27611-7687
Voice 919-733-4996

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SAMPLING AND ANALYSIS REQUIREMENTS
CONSTRUCTION AND DEMOLITION LANDFILLS
and CLOSED SANITARY LANDFILLS
N.C. SOLID WASTE SECTION

LAB CERTIFICATION REQUIREMENTS:
The Solid Waste Section now requires water quality sample analysis by a laboratory certified by the Division of Environmental Management for groundwater analysis (15A NCAC 2H .0800). The laboratories used for water quality analysis for Solid Waste Section facilities shall be certified under the Division of Environmental Management (DEM) Certification program for the approved methods and at the approved levels of certification.

SAMPLING ANALYTICAL METHODS AND REPORTING LIMITS:
Each parameter on the following constituent list shall be certified at the designated level and an appropriately certified method used for the sample analysis. The data shall be reported at the specified Practical Quantitation Limit (PQL).

Parameter	**Certification** by DEM	**PQL** in ppb
Arsenic	Metals, Group I - low level	10
Barium	Barium (20)	500
Cadmium	Metals, Group I - low level	1
Chromium	Metals, Group I - low level	10
Lead	Metals, Group I - low level	10
Mercury	Mercury (21)	1
Selenium	Metals, Group I - low level	20
Silver	Metals, Group II - low level	10

Volatile Organic Compounds
For the parameters and PQLs required for volatile organic compound analysis, refer to the next page of this attachment. For volatile organic analysis the laboratory shall be certified for an SW-846 GC/MS Method (8240 or 8260). The recommended method of analysis is EPA Method 8260.

SAMPLING AND ANALYSIS:
In addition to sampling for the constituents referenced above, all sampling should also include field testing of pH, temperature, and specific conductivity. EPA requires analysis for total metals. No filtering of samples is allowed. The 3030C preparation method for metals analysis is not allowed.

January 1995