GROUNDWATER MONITORING EVALUATION
Anson County Landfill
Permit No. 04-01
Anson County, North Carolina

March 18, 2011

Prepared for:
Mr. Sam Dawson
Anson County Utilities
907 N. Washington Street
Wadesboro, NC 28170

Prepared by:
Engineering & Environmental
Science Company
3008 Anderson Drive, Suite 102
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E²S

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APR 15 2011
SOLID WASTE SECTION

March 18, 2011

Mr. Sam Dawson
Anson County Utilities
907 N. Washington Street
Wadesboro, NC 28170

Re: Groundwater Monitoring Evaluation
Anson Co. Landfill
Permit No. 04-01
Anson Co., NC

Dear Mr. Dawson:

Engineering & Environmental Science Company (E^2S) has completed the groundwater monitoring evaluation for the closed Anson County Landfill. Following is a brief summary of the contained report.

The purpose of this evaluation is to assess the groundwater monitoring that has been conducted for about 15 years and to evaluate the need for future groundwater monitoring. Based on this evaluation, on behalf of Anson County, it is requested that future groundwater monitoring not be required.

No residential dwellings or commercial structures are located within 3000 ft. of the waste boundary except Gum Springs Baptist Church, which is located 135 ft. from the northern waste boundary of the landfill and Centenary Church, which is located 2650 ft. from the southeastern waste boundary. Public water is available and the Gum Springs Baptist Church is connected to this system.

Lakes and ponds are located within 299 ft. to 730 ft. of the waste boundary and were formed by mining activity conducted by W.R. Bousal.

The results are compared to the Class GA Groundwater Standard per 15A NCAL 2L .0202 and the Fresh Surface Water Standards per 15ANCAC 2B. The predominant contaminants detected were inorganic compounds (metals) which include cadmium, copper, cobalt, iron, manganese, and vanadium. Benzene was the predominant organic compound detected.

Based on historical contaminant levels in the groundwater and using the Solute Fate Transport Model for the predominant contaminants detected above the Groundwater Standard or Surface Water Standard it appears that it is no longer necessary to conduct groundwater sampling at the landfill. The closure and post closure activities have been completed and there is no longer a need to continue to sample groundwater at the site. We request that the site be closed and notation recorded on the subject property deed that the property was formerly a landfill.

We appreciate working with Anson County Utilities on this project. Please contact us if you have any questions.

Sincerely,

T. Patrick Shillington, P.E.
President

TABLE OF CONTENTS

	Page
1.0 Project Information	1
2.0 Potential Receptors	1
3.0 General Subsurface Conditions	2
4.0 Historical Analytical Testing	2
5.0 Future Transport of Contamination	4
6.0 Conclusion	6

LIST OF ATTACHMENTS

Attachment A: Figures & Tables
Attachment B: Solute Modeling Results

LIST OF FIGURES

Figure 1: Vicinity Map
Figure 2: Summary of Test Results – Values Above Groundwater Standard
Figure 3: Summary of Test Results – Values Above Surface Water Standard

LIST OF TABLES

Table No.1: Historical Groundwater Elevations
Table No.2: Historical Analytical Test Results

SUBMITTED SEPARATELY

Facility Layout (24" by 36")

1.0 Introduction

The Anson County Landfill (Permit No. 04-01) is located on Hailey-Ferry Rd. (SR-1801) in Anson County, NC (Figure 1). The subject landfill is located on two parcels of land totaling approximately 49.7 acres. The formally permitted landfill waste boundaries cover approximately 11.6 acres (see Facility Layout).

Landfilling was originally implemented before 1972. These areas were closed out prior to 1978 and are not a part of the permitted landfill, and are located near SR-1801 and west and north of the permitted landfill. Records indicated the exact limits of the pre-1978 dump is not available.

The landfill final cover was placed on the landfill in the fall of 1994. The landfill was officially closed on January 18, 1996 per the letter by the Solid Waste Section and addressed to Mr. Steve Carpenter, Anson County Manager.

The subject facility is presently used as a Solid Waste Transfer Facility. The Transfer Facility is located outside of the waste boundary.

In the past, methane migration off the property has occurred. However since the installation of a collection system, off-site migration has ceased.

The purpose of this evaluation is to assess the groundwater monitoring that has been conducted for about 15 years with respect to whether further sampling is necessary.

2.0 Potential Receptors

The majority of the surrounding property has been mined by W.R. Bousul. No residential dwellings or commercial structures are located within 3000 feet of the waste boundary (Figure 1), except Gum Springs Baptist Church, which is located 135 ft. from the northern waste boundary of the landfill and Centenary Church, which is located 2650 ft. from the southeastern waste boundary. The Gum Springs church is on public water, which is provided by a water line that is within SR-1801 right-of-way (see Facility Layout).

Lakes and ponds have been formed by the mining activity by W.R. Bousal, including small ponds on the subject property. The distance from these bodies of surface water are about 385 feet north of the waste boundary and 299 feet to greater than 500 feet south and southwest, and 147 feet east of the waste boundary.

With the exception of the water line running along SR-1801, no sewer or stormwater utilities are located in the vicinity of the landfill.

3.0 General Subsurface Conditions

The subject site is located in the upland terrace deposits of the Pee Dee River. Based on borings conducted by E^2S for the methane monitoring and site observations of the surrounding mine pits (E^2S has provided mine consulting services to W.R. Bousul in the past), subsurface soils typically consist of silty CLAY (CL) and clayey SAND (SC) to depths of 5 feet to 15 feet below groundsurface. Below these depths, the soils commonly consist of clayey and silty SAND (SM/SC) and silty SAND (SM).

The formation commonly has been truncated as evident by the presence of horizontal bolder layers interfilled with fine sediment. The sandy sediments commonly are more than 250 feet deep.

Groundwater direction, based on water level depths, typically is to the southeast with a horizontal gradient ranging from 0.026ft/ft to 0.032ft/ft. The Facility Layout shows a typical seasonal water table contours as measured in May, 2006 and October, 1999. Table 1 summarizes the historical water level measurements and elevations.

Near the north waste boundary at the adjacent Gum Springs Baptist Church, the groundwater direction is in a southerly direction based on the water level measurement for the methane monitory system. Water level depth can be influenced by the active mining located on all sides of the landfill. The mining activity can change the shape and surface levels of the mine empoundments.

4.0 Historical Analytical Testing

Four monitoring wells: A, B, C, and D have been sampled by E^2S between 1992 and 2006. Monitoring Well A is up-gradient of the permitted landfill. Monitoring Well B is located Cross-Gradient to down-gradient of the landfill waste boundary and Monitoring Wells C and D are down-gradient of the landfill waste boundary

Table 2, Figure 2, and Figure 3 provide historical test results for the 1992 to 2006 sampling period. Please note that the frequency of each parameter sampled varied due to the testing protocol required during the time period of each sampling event. The results are compared to the Class GA Groundwater Standard per 15A NCAL 2L .0202 and the Fresh Surface Water Standards per 15ANCAC 2B.

The predominant contaminants exceeding the above statements were inorganic compounds to include arsenic, beryllium, cadmium, copper, cobalt, chromium, iron, manganese, mercury, selenium, thallium, vanadium, and zinc. Benzene, vinyl chloride, and acrylonitrile were the only organic compounds exceeding the standards.

Cadmium, cobalt, copper, iron, manganese, lead, and vanadium were consistently detected above the Groundwater and Surface Water Standards. Cadmium was tested 27 times with an exceedance of 0.004 ppm once (1) at MW-4, four (4) times ranging from 0.002 ppm to 0.003 ppm at MW-B, nine (9) times ranging from 0.002 ppm to 0.013 ppm at MW-C, and once (1) at 0.05 ppm at MW-D.

Cobalt was tested four (4) times and exceeded the Groundwater and Surface Water Standards two (2) times at MW-D. Concentrations ranged from 0.009 ppm to 0.012 ppm.

Copper, which was tested nine (9) times, only exceeded the Surface Water Standards; the detected level did not exceed the Groundwater Standards. Copper exceeded the Surface Water Standard three (3) times at MW-C ranging from 0.01 ppm to 0.012 ppm. At MW-D, copper exceeded the Surface Water Standard five (5) times with concentrations ranging from 0.009 ppm to 0.054 ppm.

Iron was tested four (4) times and exceeded the Groundwater Standard all four (4) times in all monitoring wells with concentrations ranging from 0.839 ppm to 92.0 ppm. The iron concentrations also exceed the Surface Water Standard in all monitoring wells. However, at MW-D, the Surface Water Standard was exceeded twice. Iron is likely a naturally occurring metal and abundantly found in the soil.

Lead was tested twenty-seven (27) times with one (1) exceedance at MW-A and MW-B above the Groundwater and Surface Water Standards at 0.026 ppm to 0.066 ppm. At MW-C, the Groundwater Standard was exceeded three (3) times (0.024 ppm to 0.047 ppm) and the Surface Water Standard was exceeded two (2) times (0.024 ppm to 0.047 ppm). The Groundwater Standard was exceeded eight (8) times (0.018 ppm to 0.104 ppm) and the Surface Water Standard was exceeded four (4) times (0.018 ppm to 0.104 ppm) at MW-D.

Manganese was tested four (4) times with the Groundwater Standard exceeded all four (4) times at MW-B and MW-C. At MW-D, the groundwater standard was exceeded two (2) times. The manganese exceedance ranged from 0.055 ppm to 1.47 ppm. The manganese concentrations did not exceed the Surface Water Standard.

Vanadium was tested for (4) times with Groundwater Standards exceeded two (2) times ranging from 0.011 ppm to 0.036 ppm at MW-A, three (3) times (0.026 ppm to 0.040 ppm) at MW-C and three (3) times (0.011 ppm to 0.022 ppm) at MW-D.

Benzene, tested twenty-five (25) times, was the predominant organic compound detected that exceeded the groundwater standard. Benzene was detected one (1) time at MW-B and eight (8) times above the standard eight concentrations ranging from 0.001 ppm to 0.0027 ppm. Benzene concentrations did not exceed the surface water standard.

5.0 Future Transport of Contamination

A one-dimensional groundwater contaminant transport model (Solute Version 4.03) was used to predict contaminate levels at various distances from the landfill waste boundary. The model assumes the following:

1. Homogenous isotropic aquifer
2. Uniform flow away from the source
3. Density and viscosity of the fluid are constant
4. Column is of unit width and unit thickness with the solute well mixed over the thickness and width
5. No. mass exchange between the soil in the column and surrounding area

The model input parameters and their basis are provided below:

Groundwater Velocity:

$V=K=k_i/n$

Based on the groundwater contours, the hydraulic gradient is estimated at 0.032ft/ft near the edge of the landfill. The hydraulic conductivity (k) and porosity (n) have not been determined for the site. However, the Silty SAND (SM) soils commonly will have a "k" value of $5X10^{-4}$ cm/sec (1.417 ft/day). The "n" value is commonly near 0.25. For this evaluation the values used are k=2.835 ft/day and n=0.25. Based on these values the horizontal groundwater velocity is:

$$V= (1.417 \text{ ft/day})(0.032 \text{ ff/ft})/0.25 = 0.18 \text{ ft/day}$$

Longitudinal Dispersivity:

Longitudinal Dispersivity was determined by

$D_L = 0.1(\text{Distance of Cont. Travel})(V)$

With a total distance of 600 ft, then:

$D_L = 0.1(600 \text{ ft})(0.18 \text{ ft/day}) = 10.8 \text{ ft}$

Retardation Factor:

No retardation was assumed so it was assigned a value of 1.

For the inorganic compound the retardation factor was determined as shown below:

Compound	Kd, L/kg	[(1)]R
Copper	35	210
Cadmium	75	163
Lead	900	5401
Manganese	65	391
Vanadium	50	301
Cobalt	40	241

$^{(1)}R = 1 + \rho kd/n$ n = porosity = 0.25, ρ = soil bulk density = 1.5g/cm^3 ,
kd = sorption coefficient

Initial Aquifer Concentration:

Initial Aquifer Concentration was assumed to be 0.

Constant Source Concentration:

The average concentrations were used, with the average of the concentrations exceeding the standards. The following lists the average concentration, which is assumed constant over the evaluation time.

Compound	Average Concentration, ppm
Benzene	0.0016
Cobalt	0.011
Copper	0.023
Cadmium	0.0044
Lead	0.026
Manganese	1.06
Vanadium	0.034

Duration of Contaminant Pulse:

The Duration of Contaminant Pulse was assumed 50 years to evaluate the time and distance at which the contaminate concentration stabilized.

Time Interval:

The time intervals were set at 1 year (365 days).

Contaminant Half Life:

For Benzene, the half life can vary greatly depending on the groundwater conditions to include anaerobic or aerobic conditions. A half-life of 720 days was assumed to reflect anaerobic conditions. No half-life was assumed for the inorganic compounds.

Evaluation Results:

Attachment B contains the Solute Calculation. Based on this evaluation, the benzene concentration does not exceed the Class GA Groundwater Standard of 1ppb (0.001ppm) beyond 300 ft from the source. The benzene concentration stabilizes at 0.00109 ppm at this distance in 10 years. At 400 ft, the benzene concentration stabilizes at 0.000657 ppm in 13 years, and stabilizes at 0.000396 at 500 feet in 14 years.

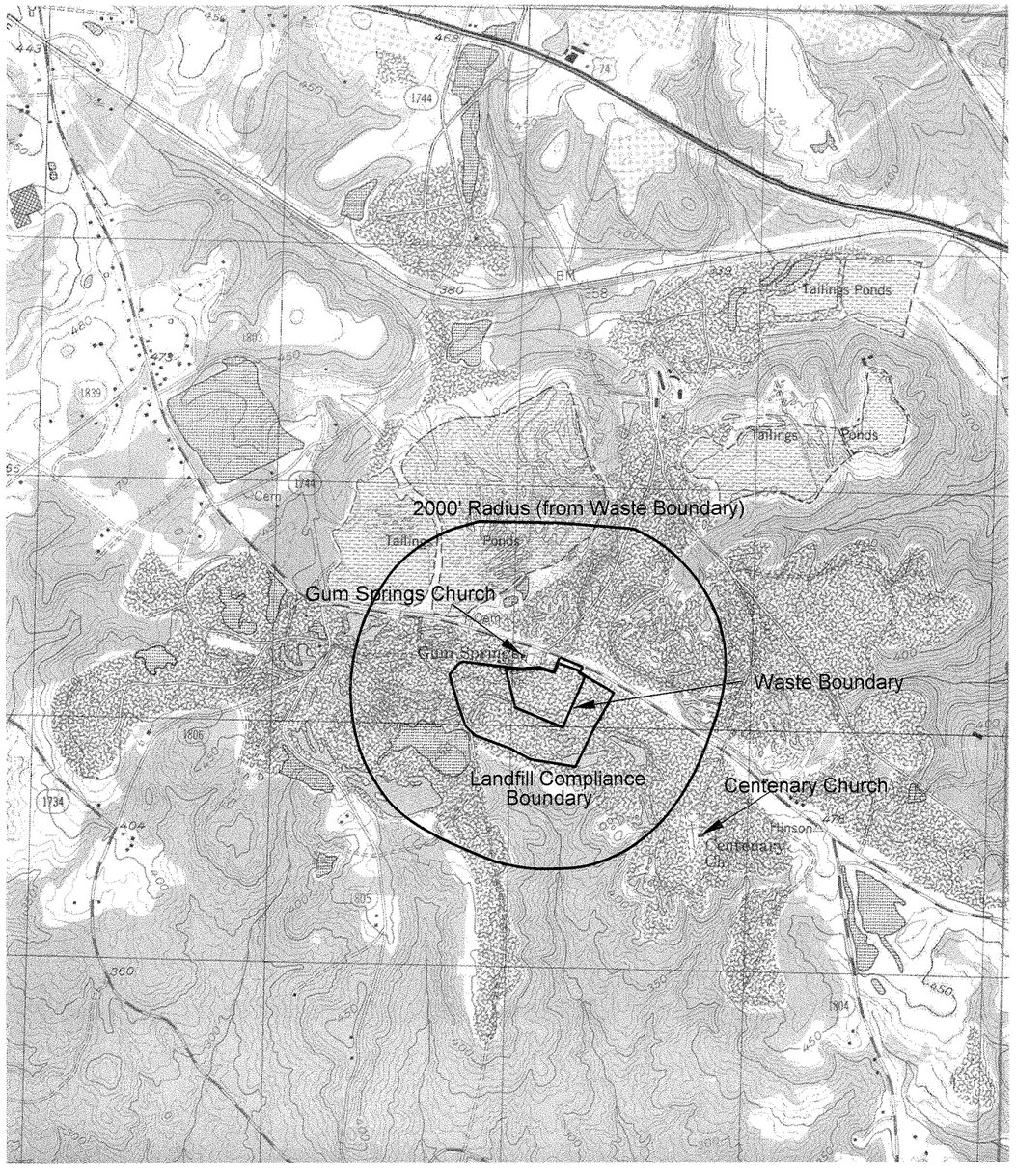
Lead concentrations were not projected after 50 years at 150 feet from the surface. Copper and manganese concentrations were projected beyond 200 ft with concentrations ranging from 1.4×10^{-45} ppm to 3.9×10^{-35} ppm. Cadmium concentrations were projected to be 300 feet from the source at 4.8×10^{-43} ppm at 50 years. For cobalt, the concentrations are projected at 1.8×10^{-29} ppm and vanadium concentrations at 2.4×10^{-36} ppm after 50 years for a distance of 200 ft.

6.0 Conclusion

Based on 15 years of analytical sampling, benzene, cobalt, cadmium, copper, lead, manganese, and vandium were identified as compounds that could potentially impact Surface Water Standards per 15A NCAC 2B or EPA National Criteria and Class GA Groundwater Standards per 15A NCAC 2L .0202 and EPA Primary Drinking Water Standards. Based on the Fate Transport Modeling, it appears that project compound concentration will not exceed the Surface Water Standards at the water bodies located within the compliance boundary. Further more, the compound concentrations will not exceed the Groundwater Standards beyond the 500 feet compliance boundary.

Based on historical contaminant levels in the groundwater and using the Solute Fate Transport Model for contaminants detected above the Groundwater or the Surface Water Standards, it appears that it is no longer necessary to conduct groundwater sampling at the landfill. We request that the site be closed and notation recorded on the subject property deed that the property was formerly a landfill.

Attachment A: Figures & Tables



Scale 1" = 2000'

ENGINEERING & ENVIRONMENTAL SCIENCE COMPANY

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(919) 781-7798

Vicinity Map
Anson County Landfill
Lilesville, NC

DATE: 9/11/09

FIGURE NO. 1

E²S

Old Landfill Area

CHURCH

Groundwater Direction Based On 2/19/99 and 4/19/99 Groundwater Vapor Monitoring Wells

Old Landfill Area

Notes:

1. Test results are show for exceedance of the Class GA Groundwater Standards or the Federal Drinking Water Standards.
2. Test results are expressed in Parts per Million (ppm).

MW-A

Arsenic
5/22/97 0.03
5/04/05 0.016

Cadmium
10/30/02 0.004

Chromium
4/27/94 0.013
5/22/97 0.023
10/16/97 0.01

Lead
5/22/97 0.026

Vanadium
5/22/97 0.036
10/16/97 0.011

Iron
10/7/92 1.8
4/7/93 4.210
4/27/94 1.273
10/27/94 1.76

Transfer Station

Groundwater Flow Direction (October 1999)

Groundwater Flow Direction (May, 2006)

MW-B

Arsenic
4/27/94 0.05
10/27/98 0.01
4/19/01 0.01
10/9/01 0.027

Cadmium
4/28/98 0.002
10/27/98 0.003
4/23/02 0.002
10/30/02 0.002

Lead
4/28/98 0.066

Manganese
10/7/92 0.128
4/7/93 0.130
4/27/94 0.109
10/27/94 0.17

Iron
10/7/92 9.39
4/7/93 11.14
4/27/94 15.02
10/27/94 18.0

Benzene
10/7/96 0.0011

MW-C

Cadmium
4/27/94 0.013
11/21/95 0.002
10/7/96 0.005
10/16/97 0.002
4/28/98 0.005
10/27/98 0.011
4/23/02 0.002
10/30/02 0.003
5/15/03 0.002

Lead
10/7/96 0.026
5/22/97 0.024
10/16/97 0.047

Mercury
10/19/01 0.0019

Chromium
4/7/96 0.013
4/27/94 0.014
11/21/95 0.011
10/7/96 0.054
5/22/97 0.01
10/16/97 0.01

Iron
10/7/92 67.7
4/7/93 24.300
4/27/94 68.777
10/27/94 92.0

Manganese
10/7/92 1.170
4/7/93 0.403
4/27/94 1.113
10/27/94 1.47

Vanadium
10/7/96 0.04
5/22/97 0.037
10/7/97 0.026

Benzene
5/22/97 0.00113
10/16/97 0.0013
10/27/98 0.0015
10/10/00 0.0021
10/9/01 0.0027
4/23/02 0.0015
10/30/02 0.0016
10/27/03 0.0013

Vinyl Chloride
10/27/98 0.00066

Permitted Landfill Waste Boundary

MW-D

Cadmium
4/27/94 0.05

Beryllium
5/22/96 0.005

Chromium
4/27/94 0.278
11/21/95 0.016
5/22/96 0.125
5/22/97 0.014
10/16/97 0.012
5/22/96 0.125
10/9/01 0.01
10/30/02 0.014

Lead
4/27/94 0.084
5/22/96 0.104
10/7/96 0.015
5/22/97 0.019
10/5/99 0.034
10/10/00 0.034
4/19/01 0.018
10/9/01 0.0240

Cobalt
5/22/96 0.012
10/7/96 0.009

Iron
10/7/92 3.790
4/7/93 0.839
4/27/94 6.348
10/27/94 0.38

Manganese
10/7/92 0.055
4/27/94 0.094

Thallium
5/22/96 0.089

Vanadium
10/7/96 0.022
5/27/97 0.011

Landfill Compliance Boundary And Property Line

Scale 1" = 200'

ENGINEERING & ENVIRONMENTAL SCIENCE COMPANY
3008 ANDERSON DR., SUITE 102
RALEIGH, NORTH CAROLINA 27609
(919) 781-7798

Summary of Test Results
Values Above Groundwater Standard
Anson County Landfill
Lilesville, NC

DATE: 9/11/09

FIGURE NO 2

Old Landfill Area

CHURCH

Groundwater Direction Based On 2/19/99 and 4/19/99 Groundwater Vapor Monitoring Wells

Old Landfill Area

Notes:

1. Test results are show for exceedance of the Fresh Water Standard or the National Criteria per EPA.
2. Test results are expressed in Parts per Million (ppm).

MW-A

Cadmium
10/30/02 0.004
Lead
5/22/97 0.026
Iron
10/7/92 1.8
4/7/93 4.210
4/27/94 1.273
10/27/94 1.76

Transfer Station

Groundwater Flow Direction (May, 2006)

Groundwater Flow Direction (October 1999)

Permitted Landfill Waste Boundary

Landfill Compliance Boundary And Property Line

MW-B

Arsenic
4/27/94 0.05
10/9/01 0.027
Cadmium
4/28/98 0.002
10/27/98 0.003
4/23/02 0.002
10/30/02 0.002
Lead
4/28/98 0.066
Mercury
10/27/94 0.0003
10/27/98 0.0002
Selenium
10/27/94 0.018
10/27/98 0.012
Manganese
10/7/92 0.128
4/7/93 0.130
4/27/94 0.109
10/27/94 0.17
Silver
10/28/98 0.003
Cooper
10/24/06 0.052
Iron
10/7/92 9.39
4/7/93 11.14
4/27/94 15.02
10/27/94 18.0

MW-C

Acrylonitrile
10/27/98 0.0149
Chloroethane
10/24/06 0.9
Cadmium
4/27/94 0.013
11/21/95 0.002
10/7/96 0.005
10/16/97 0.002
4/28/98 0.005
10/27/98 0.011
4/23/02 0.002
10/30/02 0.003
5/15/03 0.002
Chromium
10/7/96 0.054
Lead
10/7/96 0.026
10/16/97 0.047
Mercury
10/27/94 0.0002
10/27/98 0.0003
10/19/01 0.0019
Selenium
10/27/94 0.014
4/19/01 0.008
Copper
10/7/96 0.012
5/21/97 0.01
10/16/97 0.008
Iron
10/7/92 67.7
4/7/93 24.300
4/27/94 68.777
10/27/94 92.0
Zinc
11/21/95 0.076

MW-D

Cadmium
4/27/94 0.05
Chromium
4/27/94 0.278
5/22/96 0.125
Lead
4/27/94 0.084
5/22/96 0.104
10/5/99 0.034
10/10/00 0.034
Mercury
4/27/94 0.0003
4/28/98 0.0006
10/27/98 0.0004
4/13/99 0.00042
Selenium
10/27/94 0.009
4/19/01 0.006
Cobalt
5/22/96 0.012
10/7/96 0.009
Copper
10/7/92 0.033
4/27/94 0.054
10/27/94 0.008
5/22/97 0.009
10/16/97 0.011
Thallium
5/22/96 0.089
Iron
10/7/92 3.79
4/27/94 6.348
Zinc
4/27/94 0.051
5/22/96 0.07

Scale 1" = 200'

ENGINEERING & ENVIRONMENTAL SCIENCE COMPANY
3008 ANDERSON DR., SUITE 102
RALEIGH, NORTH CAROLINA 27609
(919) 781-7798

Summarry of Test Results
Values Above Surface Water Standard
Anson County Landfill
Lilesville, NC

DATE: 9/11/09

FIGURE NO. 3

Table No. 1: Water Level Elevations

Monitoring Well	A		B		C		D	
Top of Casing Elev., ft	462.63		451.20		438.19		436.16	
Date:	Depth (ft)	Elev. (ft)	Depth (ft)	Elev. (ft)	Depth (ft)	Elev. (ft)	Depth (ft)	Elev. (ft)
10/5/1999	10.31	452.32	16.00	435.2	5.97	432.22	9.65	426.51
4/27/2000	11.20	451.43	16.35	434.85	6.31	431.88	10.15	426.01
4/19/2001	11.14	451.49	16.53	434.67	6.23	431.96	10.27	425.89
10/9/2001	13.01	449.62	17.58	433.62	7.02	431.17	13.92	422.24
4/23/2002	11.89	450.74	16.72	434.48	6.59	431.60	11.92	242.24
10/30/2002	11.75	450.88	17.25	433.95	6.25	431.94	10.67	425.49
5/5/2003	9.89	452.74	17.12	434.08	5.95	432.24	10.18	425.98
10/27/2003	11.55	451.08	16.51	434.69	6.13	432.06	9.78	426.38
5/3/2004	11.98	450.65	16.53	434.67	5.89	432.30	10.01	426.15
10/11/2004	10.65	451.98	16.61	434.59	6.29	431.90	9.36	426.80
5/4/2005	12.37	450.26	17.01	434.19	6.03	432.16	9.49	426.67
11/11/2005	10.63	452.00	16.49	434.71	6.24	431.95	5.81	430.35
5/22/2006	11.59	451.04	16.75	434.45	6.59	431.60	13.81	422.35
10/24/2006	11.47	451.16	16.67	434.53	6.60	431.59	6.96	429.20

Table No.2: Historical Sample Results

MW-A

COMPOUND	Concentration, ppm																														
	10/7/1992	4/7/1993	4/27/1994	10/27/1994	11/21/1995	5/22/1996	10/7/1996	5/22/1997	10/16/1997	4/28/1998	10/27/1998	4/13/1999	10/5/1999	4/27/2000	10/10/2000	4/19/2001	10/9/2001	4/23/2002	10/30/2002	5/5/2003	10/27/2003	5/3/2004	10/11/2004	5/4/2005	11/11/2005	5/22/2006	10/24/2006	Class GA GW Standard	GWP Std.*	SWSL**	Surface (Fresh Water)
Nitrate	**0.05**	<0.05	<0.10	**0.16**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	10	[3]NE	10	10
Sulfates	**37**	<8	**1.6**	**1.95**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	250	[3]NE	250	[4]NS
TOC	<1.0	<1.0	**1.6**	**2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	[1]N/A	[3]NE	[3]NE	[4]NS
COD	**42**	<14	**27.3**	<5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	[1]N/A	[3]NE	[3]NE	[4]NS
TOX	<0.005	<0.005	**0.043**	**0.047**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	[1]N/A	[3]NE	[3]NE	[4]NS
BOD	<1.0	**3**	<2	**2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	[1]N/A	[3]NE	[3]NE	[4]NS
Carbon Disulfide	---	---	---	---	---	<0.050	<0.005	<0.005	<.0005	<.0005	<.0005	<0.002	**0.0399**	**0.0055**	<0.010	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	0.7	[3]NE	0.1	[4]NS
Arsenic	<0.003	**0.004**	<0.010	<0.001	<0.002	<0.010	<0.003	**0.03**	<0.003	<0.003	<0.003	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.008**	<0.02	**0.016**	<0.02	<0.02	<0.02	0.01	[3]NE	0.01	0.010
Barium	**0.019**	**0.021**	**0.021**	<0.1	<0.5	<0.5	**0.024**	**0.044**	**0.032**	**0.025**	**0.024**	**0.02**	<0.3	**0.021**	**0.021**	**0.023**	**0.021**	**0.023**	**0.025**	**0.019**	**0.017**	**0.023**	<0.04	**0.028**	<0.04	<0.04	<0.04	0.7	[3]NE	0.1	200
Cadmium	<0.001	<0.0005	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.0003**	<0.01	<0.01	<0.001	<0.001	**0.001**	0.004	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	0.002	[3]NE	0.001	0.002
Chromium	<0.01	**0.0064**	**0.013**	**0.003**	<0.01	<0.01	<0.01	**0.023**	**0.01**	<0.005	<0.005	<0.005	<0.01	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.02	<0.02	<0.02	<0.02	<0.02	0.01	[3]NE	0.01	0.050
Lead	**0.0046**	**0.0052**	<0.01	**0.002**	<0.01	<0.01	<0.002	0.026	**0.005**	**0.005**	<0.003	<0.003	<0.003	<0.005	<0.003	<0.003	<0.003	<0.002	<0.002	<0.002	<0.002	**0.006**	<0.015	<0.01	<0.04	<0.04	<0.04	0.015	[3]NE	0.01	0.025
Mercury	<.0002	<.0002	<.0002	<.0002	---	---	---	---	---	**0.0002**	**0.0003**	<.0002	<.0003	<0.003	<.0002	<.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.0002	0.001	[3]NE	0.0002	0.000012
Selenium	<0.005	<0.003	<0.01	**0.006**	<0.002	<0.02	<0.003	**0.004**	<0.003	**0.013**	<0.003	<0.005	<0.005	<.0002	<0.005	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	[3]NE	0.01	0.005
Chloride	**2**	**3**	**3**	**4.7**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	250	[3]NE	[3]NE	230
Copper	<0.01	<0.01	<0.005	0.001	<0.2	<0.2	<0.002	**0.015**	<0.008	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1	[3]NE	0.01	0.007
Iron	1.8	4.21	1.273	1.76	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.3	[3]NE	0.3	1.0
Manganese	**0.027**	**0.027**	**0.027**	**0.02**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.05	[3]NE	0.05	[4]NS
Vanadium	---	---	---	---	---	<0.04	<0.01	**0.036**	**0.011**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	[1]N/A	0.0003	0.025	[4]NS
Zinc	**0.014**	**0.01**	<0.025	**0.006**	<0.05	<0.05	<0.01	<0.01	**0.013**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1	[3]NE	0.01	0.05

(1) Indicates No Standard provided for Class GA Groundwater Standard per 15A NCAL 2L .0202 and EPA Primary Drinking Water Standards

(2) Value is based on EPA Primary Drinking Water Standard

(3) No Established Standard by Solid Waste Section

(4) No Surface Fresh Water Standard per 15A NCAC 2B or National Criteria per EPA

* GWP Standard indicates Groundwater Protection Standard

** SWSL Standard indicates Solid Waste Section Limits

Note: Shaded values exceed the Class GA Groundwater Standards or the EPA Primary Drinking Standards

Red values exceed the Surface Fresh Water Standard per 15A NCAC 2B or National Criteria per EPA

MW-B

COMPOUND	Concentration, ppm																														
	10/7/1992	4/7/1993	4/27/1994	10/27/1994	11/21/1995	5/22/1996	10/7/1996	5/22/1997	10/16/1997	4/28/1998	10/27/1998	4/13/1999	10/5/1999	4/27/2000	10/10/2000	4/19/2001	10/9/2001	4/23/2002	10/30/2002	5/5/2003	10/27/2003	5/3/2004	10/11/2004	5/4/2005	11/11/2006	5/22/2006	10/24/2006	Class GA GW Standard	GWP Std.*	SWSL**	Surface (Fresh Water)
Sulfates	**33**	<8	**6.7**	**5.9**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	250	(3)NE	250	(4)NS
TOC	**1.9**	**1.4**	**10**	**3.2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	(1)N/A	(3)NE	(3)NE	(4)NS
COD	<20	**65**	**32.1**	**25.6**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	(1)N/A	(3)NE	(3)NE	(4)NS
TOX	**0.013**	**0.007**	**0.071**	**0.056**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	(1)N/A	(3)NE	(3)NE	(4)NS
BOD	<1.0	**1**	**30**	**2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	(1)N/A	(3)NE	(3)NE	(4)NS
Benzene	---	---	---	---	---	<0.005	**0.0011**	<0.001	<0.001	<.0005	<.0005	<0.002	<0.001	<0.002	<0.001	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	0.001	(3)NE	0.001	0.051
Carbon Disulfide	---	---	---	---	---	<0.050	<0.005	<0.005	<0.005	<.0005	<.0005	<0.002	**0.0107**	<0.002	<0.001	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	0.7	(3)NE	0.1	(4)NS
Chlorobenzene	---	---	---	---	---	<0.005	**0.0056**	<0.001	<0.001	<.0005	<.0005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	0.05	(3)NE	0.003	0.140
Chloroethane	---	---	---	---	---	<0.005	**0.0015**	<0.001	<0.001	<.0005	<.0005	<0.002	<0.001	<0.002	<0.001	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	3.0	(3)NE	0.01	0.550
Xylenes (Total)	---	---	---	---	---	<0.005	**0.0049**	<0.001	<0.001	<.0005	<.0005	<0.002	<0.001	<0.002	<0.001	<0.002	<0.002	<0.003	<0.003	<0.001	<0.001	<0.003	<0.005	<0.005	<0.005	<0.005	<0.005	0.50	(3)NE	0.005	0.670
Arsenic	**0.0037**	**0.0053**	0.05	**0.006**	<0.002	<0.010	**0.003**	<0.003	<0.003	<0.003	**0.01**	<0.005	<0.005	<0.005	<0.005	**0.01**	0.027	<0.005	<0.005	<0.005	<0.005	**0.005**	<0.02	<0.02	<0.02	<0.02	<0.005	0.01	(3)NE	0.01	0.010
Barium	**0.035**	**0.032**	**0.033**	<0.1	<0.5	<0.5	**0.165**	**0.02**	**0.028**	**0.04**	**0.027**	**0.014**	<0.03	**0.11**	**0.15**	<0.01	**0.036**	**0.018**	**0.017**	**0.013**	**0.017**	**0.024**	**0.045**	**0.031**	<0.04	<0.04	<0.005	0.7	(3)NE	0.1	200
Cadmium	<0.001	<.0005	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	0.003	<0.001	<0.0001	<0.01	<0.01	<0.001	**0.001**	0.002	0.002	**0.001**	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	0.002	(3)NE	0.001	0.002
Chromium	**0.013**	**0.008**	**0.014**	**0.007**	<0.01	<0.01	**0.016**	**0.002**	<0.009	<0.005	<0.005	<0.005	<0.01	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.02	<0.02	<0.02	<0.02	<0.005	0.01	(3)NE	0.01	0.050
Lead	**0.0076**	**0.0075**	<0.01	**0.005**	<0.01	<0.01	**0.012**	**0.002**	**0.002**	0.066	<0.003	<0.003	<0.003	<0.005	<0.003	<0.003	**0.0005**	<0.002	<0.002	**0.003**	<0.002	**0.004**	<0.015	<0.01	<0.04	<0.04	<0.010	0.015	(3)NE	0.01	0.025
Mercury	<.0002	<.0002	<.0002	0.0003	---	---	---	---	---	<.0002	**0.0002**	<.0002	<0.0002	<0.003	<0.0002	<.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.005	0.001	(3)NE	0.0002	0.000012
Selenium	<0.005	<0.003	<0.01	**0.018**	<0.002	<0.02	<0.003	<0.003	<0.003	**0.003**	<0.003	<0.005	<0.005	<.0002	<0.005	**0.012**	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.02	<0.02	<0.02	<0.02	<0.005	0.02	(3)NE	0.01	0.005
Silver	<0.005	<0.001	<0.005	<0.01	---	<0.01	<0.001	<0.001	<0.009	**0.003**	<0.001	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.006	<0.005	<0.002	<0.005	<0.005	<0.02	<0.02	<0.02	<0.02	<0.005	0.02	(3)NE	0.01	0.0006
Chloride	**9**	**0.007**	**6**	**13.1**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	250	(3)NE	(3)NE	230
Copper	<0.01	<0.01	<0.005	**0.004**	<0.2	<0.2	**0.005**	<0.002	<0.002	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1	(3)NE	0.01	0.007
Iron	9.39	11.4	15.02	18	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.3	(3)NE	0.3	1.0
Manganese	**0.128**	**0.13**	**0.109**	**0.17**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.05	(3)NE	0.05	(4)NS

(1) Indicates No Standard provided for Class GA Groundwater Standard per 15A NCAL 2L .0202 and EPA Primary Drinking Water Standards

(2) Value is based on EPA Primary Drinking Water Standard

(3) No Established Standard by Solid Waste Section

(4) No Surface Fresh Water Standard per 15A NCAC 2B or National Criteria per EPA

* GWP Standard indicates Groundwater Protection Standard

** SWSL Standard indicates Solid Waste Section Limits

Note: Shaded values exceed the Class GA Groundwater Standards or the EPA Primary Drinking Standards

Red values exceed the Surface Fresh Water Standard per 15A NCAC 2B or National Criteria per EPA

MW-C

COMPOUND	Concentration, ppm																														
	10/7/1992	4/7/1993	4/27/1994	10/27/1994	11/21/1995	5/22/1996	10/7/1996	5/22/1997	10/16/1997	4/28/1998	10/27/1998	4/13/1999	10/5/1999	4/27/2000	10/10/2000	4/19/2001	10/9/2001	4/23/2002	10/30/2002	5/5/2003	10/27/2003	5/3/2004	10/11/2004	5/4/2005	11/11/2005	5/22/2006	10/24/2006	Class GA GW Standard	GWP Std.*	SWSL**	Surface (Fresh Water)
Nitrate	<0.05	**0.05**	<0.10	<0.10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	10	(3)NE	10	10
Sulfates	**27**	<8	**1.2**	**1.8**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	250	(3)NE	250	(4)NS
TOC	**12**	**6.1**	**1.9**	**12.5**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	(1) N/A	(3)NE	(3)NE	(4)NS
COD	**40**	**58**	**62.5**	**47.3**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	(1) N/A	(3)NE	(3)NE	(4)NS
TOX	<.005	0.018	0.016	0.124	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	(1) N/A	(3)NE	(3)NE	(4)NS
BOD	**11**	**3**	<2	23	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	(1) N/A	(3)NE	(3)NE	(4)NS
Acrylonitrile	---	---	---	---	---	<0.05	<0.025	<0.05	<0.05	<0.05	0.00149	<0.01	<0.01	<0.01	<0.01	<0.01	<0.010	<0.020	<0.050	<0.050	<0.050	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005	(2) 0.008	(3)NE	0.2	0.00025
Benzene	---	---	---	---	---	<0.005	<0.001	**0.00113**	**0.0013**	<.0005	**0.0015**	<0.002	<0.001	<0.002	**0.0021**	<0.002	**0.0027**	**0.0015**	**0.0016**	<0.001	**0.0013**	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	0.001	(3)NE	0.001	0.051
2-Butanone (MEK)	---	---	---	---	---	<0.05	<0.025	<0.025	<0.025	<0.05	<0.05	<0.001	**0.0055**	<0.002	<0.01	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005	4	(3)NE	1	160
Carbon Disulfide	---	---	---	---	---	<0.05	<0.005	<0.005	<0.005	<.0005	<.0005	<0.002	**0.0102**	**0.006**	<0.01	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	0.7	(3)NE	0.1	(4)NS
Chlorobenzene	---	---	---	---	---	**0.002**	<0.001	**0.00415**	**0.0057**	**0.00144**	**0.00664**	<0.002	**0.0091**	**0.0032**	**0.014**	**0.004**	**0.017**	**0.011**	**0.015**	**0.0022**	**0.006**	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	0.05	(3)NE	0.003	0.14
Chloroethane	---	---	---	---	---	<0.001	<0.001	**0.0024**	**0.00258**	<.0005	**0.00169**	**0.0031**	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	0.9	3.0	(3)NE	0.01	0.55
(P-Dichlorobenzene)	---	---	---	---	---	<0.005	<0.001	<0.001	<0.001	<.0005	**0.0008**	<0.002	<0.001	<0.002	<0.001	<0.002	<0.002	<0.001	**0.001**	<0.001	<.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	0.006	(3)NE	0.001	0.1
Ethylbenzene	---	---	---	---	---	<0.005	<0.001	<0.001	<0.001	<.0005	<.0005	<0.002	**0.0014**	<0.002	<0.01	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	0.6	(3)NE	0.001	0.097
Methylene Chloride	---	---	---	---	---	**0.0012**	<0.001	<0.001	<0.02	<.0005	<.0005	<0.002	<0.005	<0.005	<.0025	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010	<0.010	<0.030	<0.030	<0.010	0.005	(3)NE	(3)NE	0.096
Toluene	---	---	---	---	---	<0.005	<0.001	**0.00203**	<0.001	<.0005	<.0005	<0.002	<0.001	<0.002	<0.001	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.6	(3)NE	0.001	0.011
Vinyl Chloride	---	---	---	---	---	<0.05	<0.025	<0.025	<0.001	<.0005	0.00066	<0.002	<0.001	<0.002	<0.001	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	0.00003	(3)NE	0.0015	0.0024
Xylenes (Total)	---	---	---	---	---	<0.005	<0.001	**0.00501**	**0.0053**	<.0005	**0.00354**	<0.002	**0.0034**	<0.002	**0.0045**	<0.002	**0.0022**	<0.003	<0.003	<0.003	<0.003	<0.003	<0.005	<0.005	<0.005	<0.005	<0.005	0.5	(3)NE	0.005	0.670
Arsenic	**0.0048**	**0.0046**	<0.010	**0.009**	<0.002	<0.01	<0.003	**0.004**	**0.004**	<0.003	**0.005**	<0.005	<0.005	<0.005	**0.006**	**0.008**	<0.005	**0.008**	<0.005	<0.005	**0.007**	**0.005**	<0.02	<0.02	<0.02	<0.02	<0.02	0.01	(3)NE	0.01	0.010
Barium	**0.218**	**0.07**	**0.196**	**0.3**	<0.5	<0.5	**0.12**	**0.191**	**0.219**	**0.078**	**0.24**	**0.076**	**0.128**	**0.113**	**0.211**	**0.125**	**0.238**	**0.18**	**0.221**	**0.097**	**0.205**	**0.091**	**0.15**	**0.081**	**0.24**	**0.22**	**0.26**	0.7	(3)NE	0.1	200
Cadmium	<0.001	<.0005	0.013	<0.005	0.002	<0.001	0.003	<0.001	0.002	0.005	0.011	<0.001	<.0001	<0.01	<0.01	<0.001	<0.001	0.002	0.003	0.002	**0.001**	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	0.002	(3)NE	0.001	0.002
Chromium	<0.01	**0.013**	**0.014**	**0.009**	**0.011**	<0.01	0.054	**0.01**	**0.01**	<0.005	<0.005	<0.005	<0.01	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.02	<0.02	<0.02	<0.02	<0.02	0.01	(3)NE	0.01	0.050
Lead	**0.0065**	**0.011**	<0.01	**0.003**	<0.01	<0.01	0.026	**0.024**	0.047	**0.011**	<0.003	<0.003	**0.003**	<0.005	**0.003**	**0.005**	<0.003	**0.004**	**0.002**	**0.004**	<0.002	<0.002	<0.015	<0.01	<0.04	<0.04	<0.015	0.015	(3)NE	0.01	0.025
Mercury	<.0002	<.0002	<.0002	0.0002	---	---	---	---	---	<.0002	0.0003	<.0002	<.0002	<0.003	<.0002	<.0002	0.0019	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	0.001	(3)NE	0.0002	0.000012
Selenium	<0.005	<.003	<0.01	0.014	<0.002	<0.02	<0.003	<0.003	<0.003	**0.004**	<0.003	<0.005	<0.005	<.0002	<0.005	0.012	<0.005	<0.005	**0.002**	**0.002**	<0.002	<0.002	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	(3)NE	0.01	0.005
Chloride	**60**	**27**	**65**	**82.8**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	250	(3)NE	(3)NE	230
Copper	<0.01	<0.01	<.005	**0.004**	<0.2	<0.2	0.012	0.01	0.008	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1	(3)NE	0.01	0.007
Iron	67.7	243	68.777	92	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.3	(3)NE	0.3	1.0
Manganese	**1.17**	**0.403**	**1.113**	**1.47**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.05	(3)NE	0.05	(4)NS
Nickel	---	---	---	---	---	<0.05	**0.027**	<0.02	<0.02	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1	(3)NE	0.05	0.088
Vanadium	---	---	---	---	---	<0.04	0.04	0.037	0.026	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	(1) N/A	0.0003	0.025	(4)NS
Zinc	**0.018**	<0.01	<.025	**0.007**	0.076	<0.05	**0.039**	**0.013**	**0.02**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1	(3)NE	0.01	0.05

(1) Indicates No Standard provided for Class GA Groundwater Standard per 15A NCAL 2L .0202 and EPA Primary Drinking Water Standards

(2) Value is based on EPA Primary Drinking Water Standard

(3) No Established Standard by Solid Waste Section

(4) No Surface Fresh Water Standard per 15A NCAC 2B or National Criteria per EPA

* GWP Standard indicates Groundwater Protection Standard

** SWSL Standard indicates Solid Waste Section Limits

Note: Shaded values exceed the Class GA Groundwater Standards or the EPA Primary Drinking Standards

Red values exceed the Surface Fresh Water Standard per 15A NCAC 2B or National Criteria per EPA

COMPOUND	10/7/1992	4/7/1993	4/27/1994	10/27/1994	11/21/1995	5/22/1996	10/7/1996	2/4/2005	11/11/2005	5/22/2006	10/24/2006	Class GA GW Standard	GWP Std.*	SWSL-**	Surface (Fresh Water)
Fluoride	<0.1	**0.1**	<0.5	<0.5	---	---	---	--	---	---	---	2	(3)NE	2	1.8
Nitrate	<0.05	**0.09**	<0.1	<0.1	---	---	---	--	---	---	---	10	(3)NE	10	10
Sulfates	**30**	<8	**3.8**	**2.2**	---	---	---	--	---	---	---	250	(3)NE	250	(4)NS
TOC	**1.7**	**1.3**	<1.0	**1.2**	---	---	---	--	---	---	---	(1) N/A	(3)NE	(3)NE	(4)NS
COD	**30**	<14	**33.7**	**11.3**	---	---	---	--	---	---	---	(1) N/A	(3)NE	(3)NE	(4)NS
TOX	**0.057**	<0.002	<0.005	**0.065**	---	---	---	--	--	--	--	(1) N/A	(3)NE	(3)NE	(4)NS
BOD	**1**	**1**	<2	**4**	---	---	---	--	---	---	--	(1) N/A	(3)NE	(3)NE	(4)NS
Carbon Disulfide	---	---	---	---	---	<0.05	<0.005	.005	<0.005	<0.005	<0.005	0.7	(3)NE	0.1	(4)NS
Methylene Chloride	---	---	---	---	---	**0.0012**	<0.001	.010	<0.035	<0.035	<0.005	0.005	(3)NE	0.001	0.096
Arsenic	<0.003	<0.003	<0.01	<0.001	<0.002	<0.01	**0.009**	.02	<0.02	<0.02	<0.005	0.01	(3)NE	0.01	0.010
Barium	**0.062**	**0.079**	**0.24**	<0.1	<0.5	<0.5	**0.048**	072	**0.087**	<0.04	<0.005	0.7	(3)NE	0.1	200
Cadmium	<0.001	<0.0005	0.005	<0.005	<0.001	<0.001	<0.001	.005	<0.005	<0.005	<0.005	0.002	(3)NE	0.001	0.002
Chromium	<0.01	**0.0075**	0.278	**0.003**	**0.016**	0.125	**0.03**	.02	<0.02	<0.02	<0.005	0.01	(3)NE	0.01	0.050
Lead	**0.0091**	**0.006**	0.084	**0.005**	<0.01	0.104	**0.015**	.01	<0.04	<0.04	<0.005	0.015	(3)NE	0.01	0.025
Mercury	<0.0002	<0.0002	0.0003	<0.0002	---	---	---	0005	<0.0002	<0.0002	<0.010	0.001	(3)NE	0.0002	0.000012
Selenium	<0.005	<0.003	<0.01	0.009	<0.002	<0.02	<0.003	.02	<0.02	<0.02	<0.005	0.02	(3)NE	0.01	0.005
Beryllium	---	---	---	---	---	**0.005**	<0.002	--	---	---	---	(2) 0.004	0.004	0.001	0.0065
Chloride	**1**	**2**	**2.1**	**2.5**	---	---	---	--	---	---	---	250	(3)NE	(3)NE	230.000
Cobalt	---	---	---	---	---	0.012	0.009	--	---	---	---	(1) N/A	0.001	0.01	0.004
Copper	0.033	<0.01	0.054	0.008	<0.2	<0.2	<0.002	--	---	---	---	1	(3)NE	0.01	0.007
Iron	3.79	**0.839**	6.348	**0.38**	---	---	---	--	---	---	---	0.3	(3)NE	0.3	1.0
Manganese	**0.055**	**0.025**	**0.094**	<0.01	---	---	---	--	--	--	--	0.05	(3)NE	0.05	(4)NS
Thallium	---	---	---	---	---	0.089	<0.002	--	---	---	---	(2) 0.002	0.00028	0.0055	0.00047
Vanadium	---	---	---	---	---	<0.04	**0.022**	--	--	--	--	(1) N/A	0.0003	0.025	(4)NS
Zinc	**0.033**	**0.018**	0.051	**0.014**	<0.05	0.07	<0.01	--	---	---	---	1.0	(3)NE	0.01	0.05

(1) Indicates No Standard provided for Class GA Groundwater Standard per 15A

(2) Value is based on EPA Primary Drinking Water Standard

(3) No Established Standard by Solid Waste Section

(4) No Surface Fresh Water Standard per 15A NCAC 2B or National Criteria per

* GWP Standard indicates Groundwater Protection Standard

** SWSL Standard indicates Solid Waste Section Limits

Note: Shaded values exceed the Class GA Groundwater Standards or the EPA Primary

Red values exceed the Surface Fresh Water Standard per 15A NCAC 2B or Natio

Attachment B: Solute Modeling Results

```
*****************************************************
*                                                   *
*              S O L U T E   version 4.03           *
*                                                   *
*       ANALYTICAL MODELS FOR SOLUTE TRANSPORT      *
*                                                   *
*****************************************************

Model:  ONEd-1

Project..... = anson benzene
User name..... = tps
Date..... = 09-11-2009
Data file..... =


                  INPUT DATA:


Groundwater (seepage) velocity... =  .18 [ft/d]
Longitudinal dispersivity........ =  10.8 [ft]
Retardation factor............... =  1
Initial aquifer concentration.... =  0.00000D+00[mg/l]
Constant source concentration.... =  1.60000D-03[mg/l]
Duration of solute pulse......... =  18250 [d]
Half-life in aquifer (no decay=0) =  720 [d]
Decay coefficient for aquifer.... =  0.9627D-03 [1/d]
Length of time step.............. =  365 [d]
Number of time steps............. =  50
Number of observation points..... =  5

   1  Distance (from source)..... =  150 [ft]
   2  Distance (from source)..... =  200 [ft]
   3  Distance (from source)..... =  300 [ft]
   4  Distance (from source)..... =  400 [ft]
   5  Distance (from source)..... =  500 [ft]


                  Concentration [mg/l]

  Time        Distance      Distance      Distance      Distance      Distance
   [d]     150.00[ft]    200.00[ft]    300.00[ft]    400.00[ft]    500.00[ft]

 365.00   2.1255E-05    3.2082E-07    4.6791E-13    6.8739E-22    9.4602E-34
 730.00   4.0234E-04    1.1042E-04    9.1268E-07    2.8473E-10    2.9185E-15
1095.00   6.6792E-04    3.8943E-04    4.5117E-05    7.5868E-07    1.4472E-09
1460.00   7.3377E-04    5.3188E-04    1.7659E-04    1.9015E-05    4.6343E-07
1825.00   7.4561E-04    5.7061E-04    2.8491E-04    7.9227E-05    8.1624E-06
2190.00   7.4749E-04    5.7862E-04    3.3133E-04    1.4678E-04    3.5443E-05
2555.00   7.4777E-04    5.8006E-04    3.4525E-04    1.8716E-04    7.3507E-05
2920.00   7.4781E-04    5.8030E-04    3.4863E-04    2.0354E-04    1.0283E-04
3285.00   7.4782E-04    5.8034E-04    3.4935E-04    2.0871E-04    1.1806E-04
3650.00   7.4782E-04    5.8034E-04    3.4949E-04    2.1009E-04    1.2408E-04
4015.00   7.4782E-04    5.8035E-04    3.4951E-04    2.1041E-04    1.2604E-04
```

4380.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1048E-04	1.2659E-04
4745.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2673E-04
5110.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2677E-04
5475.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2677E-04
5840.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
6205.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
6570.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
6935.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
7300.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
7665.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
8030.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
8395.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
8760.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
9125.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
9490.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
9855.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
10220.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
10585.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
10950.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
11315.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
11680.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
12045.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
12410.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
12775.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
13140.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
13505.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
13870.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
14235.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
14600.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
14965.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
15330.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
15695.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
16060.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
16425.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
16790.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
17155.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
17520.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
17885.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04
18250.00	7.4782E-04	5.8035E-04	3.4952E-04	2.1050E-04	1.2678E-04

```
*******************************************************
*                                                     *
*              S O L U T E   version 4.03             *
*                                                     *
*       ANALYTICAL MODELS FOR SOLUTE TRANSPORT        *
*                                                     *
*******************************************************
```

Model: ONEd-1

Project..... = ansoncad
User name..... = tps
Date..... = 09-11-2009
Data file..... =

INPUT DATA:

Groundwater (seepage) velocity... = .18 [ft/d]
Longitudinal dispersivity..... = 10.9 [ft]
Retardation factor..... = 163
Initial aquifer concentration.... = 0.00000D+00[mg/l]
Constant source concentration.... = 4.40000D-03[mg/l]
Duration of solute pulse..... = 18250 [d]
Half-life in aquifer (no decay=0) = 0 [d]
Decay coefficient for aquifer.... = 0.0000D+00 [1/d]
Length of time step..... = 365 [d]
Number of time steps..... = 50
Number of observation points..... = 5

1 Distance (from source)..... = 150 [ft]
2 Distance (from source)..... = 200 [ft]
3 Distance (from source)..... = 300 [ft]
4 Distance (from source)..... = 400 [ft]
5 Distance (from source)..... = 500 [ft]

Concentration [mg/l]

Time [d]	Distance 150.00[ft]	Distance 200.00[ft]	Distance 300.00[ft]	Distance 400.00[ft]	Distance 500.00[ft]
365.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
730.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
1095.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
1460.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
1825.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
2190.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
2555.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
2920.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
3285.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
3650.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
4015.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

4380.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
4745.00	3.6434E-44	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
5110.00	4.2440E-41	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
5475.00	1.9340E-38	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
5840.00	4.1038E-36	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
6205.00	4.6400E-34	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
6570.00	3.1043E-32	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
6935.00	1.3350E-30	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
7300.00	3.9428E-29	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
7665.00	8.4379E-28	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
8030.00	1.3672E-26	2.8026E-45	0.0000E+00	0.0000E+00	0.0000E+00
8395.00	1.7391E-25	2.0319E-43	0.0000E+00	0.0000E+00	0.0000E+00
8760.00	1.7899E-24	1.2743E-41	0.0000E+00	0.0000E+00	0.0000E+00
9125.00	1.5289E-23	5.7233E-40	0.0000E+00	0.0000E+00	0.0000E+00
9490.00	1.1074E-22	1.9183E-38	0.0000E+00	0.0000E+00	0.0000E+00
9855.00	6.9274E-22	4.9571E-37	0.0000E+00	0.0000E+00	0.0000E+00
10220.00	3.8014E-21	1.0155E-35	0.0000E+00	0.0000E+00	0.0000E+00
10585.00	1.8549E-20	1.6891E-34	0.0000E+00	0.0000E+00	0.0000E+00
10950.00	8.1434E-20	2.3292E-33	0.0000E+00	0.0000E+00	0.0000E+00
11315.00	3.2495E-19	2.7117E-32	0.0000E+00	0.0000E+00	0.0000E+00
11680.00	1.1892E-18	2.7078E-31	0.0000E+00	0.0000E+00	0.0000E+00
12045.00	4.0224E-18	2.3517E-30	0.0000E+00	0.0000E+00	0.0000E+00
12410.00	1.2664E-17	1.7984E-29	0.0000E+00	0.0000E+00	0.0000E+00
12775.00	3.7337E-17	1.2243E-28	0.0000E+00	0.0000E+00	0.0000E+00
13140.00	1.0365E-16	7.4910E-28	0.0000E+00	0.0000E+00	0.0000E+00
13505.00	2.7228E-16	4.1555E-27	0.0000E+00	0.0000E+00	0.0000E+00
13870.00	6.7970E-16	2.1062E-26	0.0000E+00	0.0000E+00	0.0000E+00
14235.00	1.6188E-15	9.8213E-26	0.0000E+00	0.0000E+00	0.0000E+00
14600.00	3.6913E-15	4.2399E-25	0.0000E+00	0.0000E+00	0.0000E+00
14965.00	8.0843E-15	1.7041E-24	0.0000E+00	0.0000E+00	0.0000E+00
15330.00	1.7055E-14	6.4092E-24	0.0000E+00	0.0000E+00	0.0000E+00
15695.00	3.4746E-14	2.2662E-23	0.0000E+00	0.0000E+00	0.0000E+00
16060.00	6.8526E-14	7.5647E-23	0.0000E+00	0.0000E+00	0.0000E+00
16425.00	1.3111E-13	2.3931E-22	0.0000E+00	0.0000E+00	0.0000E+00
16790.00	2.4384E-13	7.1997E-22	0.0000E+00	0.0000E+00	0.0000E+00
17155.00	4.4163E-13	2.0666E-21	0.0000E+00	0.0000E+00	0.0000E+00
17520.00	7.8018E-13	5.6760E-21	7.0065E-45	0.0000E+00	0.0000E+00
17885.00	1.3464E-12	1.4958E-20	5.8855E-44	0.0000E+00	0.0000E+00
18250.00	2.2732E-12	3.7912E-20	4.8065E-43	0.0000E+00	0.0000E+00

```
*****************************************************
*                                                   *
*              S O L U T E   version 4.03           *
*                                                   *
*       ANALYTICAL MODELS FOR SOLUTE TRANSPORT      *
*                                                   *
*****************************************************

Model:  ONEd-1

Project..... = ansoncob
User name..... = tps
Date.......... = 09-11-2009
Data file..... = BEN.DAT


                  INPUT DATA:


Groundwater (seepage) velocity... =  .18 [ft/d]
Longitudinal dispersivity........ =  10.8 [ft]
Retardation factor............... =  241
Initial aquifer concentration.... =  0.00000D+00[mg/l]
Constant source concentration.... =  1.10000D-02[mg/l]
Duration of solute pulse......... =  18250 [d]
Half-life in aquifer (no decay=0) =  0 [d]
Decay coefficient for aquifer.... =  0.0000D+00 [1/d]
Length of time step.............. =  365 [d]
Number of time steps............. =  50
Number of observation points..... =  5

   1  Distance (from source)..... =  150 [ft]
   2  Distance (from source)..... =  200 [ft]
   3  Distance (from source)..... =  300 [ft]
   4  Distance (from source)..... =  400 [ft]
   5  Distance (from source)..... =  500 [ft]


                  Concentration [mg/l]

Time        Distance      Distance      Distance      Distance      Distance
 [d]      150.00[ft]    200.00[ft]    300.00[ft]    400.00[ft]    500.00[ft]

 365.00  0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
 730.00  0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
1095.00  0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
1460.00  0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
1825.00  0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
2190.00  0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
2555.00  0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
2920.00  0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
3285.00  0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
3650.00  0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
4015.00  0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
```

4380.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
4745.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
5110.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
5475.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
5840.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
6205.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
6570.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
6935.00	1.2612E-44	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
7300.00	1.8875E-42	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
7665.00	1.8165E-40	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
8030.00	1.1547E-38	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
8395.00	5.1182E-37	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
8760.00	1.6546E-35	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
9125.00	4.0519E-34	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
9490.00	7.7606E-33	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
9855.00	1.1947E-31	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
10220.00	1.5132E-30	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
10585.00	1.6091E-29	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
10950.00	1.4618E-28	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
11315.00	1.1519E-27	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
11680.00	7.9792E-27	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
12045.00	4.9159E-26	9.8091E-45	0.0000E+00	0.0000E+00	0.0000E+00
12410.00	2.7217E-25	2.1720E-43	0.0000E+00	0.0000E+00	0.0000E+00
12775.00	1.3665E-24	3.7891E-42	0.0000E+00	0.0000E+00	0.0000E+00
13140.00	6.2733E-24	5.6579E-41	0.0000E+00	0.0000E+00	0.0000E+00
13505.00	2.6523E-23	7.2991E-40	0.0000E+00	0.0000E+00	0.0000E+00
13870.00	1.0394E-22	8.2308E-39	0.0000E+00	0.0000E+00	0.0000E+00
14235.00	3.7980E-22	8.1971E-38	0.0000E+00	0.0000E+00	0.0000E+00
14600.00	1.3007E-21	7.2774E-37	0.0000E+00	0.0000E+00	0.0000E+00
14965.00	4.1950E-21	5.8080E-36	0.0000E+00	0.0000E+00	0.0000E+00
15330.00	1.2796E-20	4.1988E-35	0.0000E+00	0.0000E+00	0.0000E+00
15695.00	3.7057E-20	2.7686E-34	0.0000E+00	0.0000E+00	0.0000E+00
16060.00	1.0225E-19	1.6755E-33	0.0000E+00	0.0000E+00	0.0000E+00
16425.00	2.6970E-19	9.3601E-33	0.0000E+00	0.0000E+00	0.0000E+00
16790.00	6.8196E-19	4.8519E-32	0.0000E+00	0.0000E+00	0.0000E+00
17155.00	1.6576E-18	2.3449E-31	0.0000E+00	0.0000E+00	0.0000E+00
17520.00	3.8826E-18	1.0612E-30	0.0000E+00	0.0000E+00	0.0000E+00
17885.00	8.7832E-18	4.5156E-30	0.0000E+00	0.0000E+00	0.0000E+00
18250.00	1.9230E-17	1.8132E-29	0.0000E+00	0.0000E+00	0.0000E+00

```
*******************************************************
*                                                     *
*              S O L U T E   version 4.03             *
*                                                     *
*       ANALYTICAL MODELS FOR SOLUTE TRANSPORT        *
*                                                     *
*******************************************************

Model:  ONEd-1

Project..... = ansoncop
User name..... = tps
Date..... = 09-11-2009
Data file..... =


                  INPUT DATA:


Groundwater (seepage) velocity... =  .18 [ft/d]
Longitudinal dispersivity........ =  10.9 [ft]
Retardation factor............... =  210
Initial aquifer concentration.... =  0.00000D+00[mg/l]
Constant source concentration.... =  2.30000D-02[mg/l]
Duration of solute pulse......... =  18250 [d]
Half-life in aquifer (no decay=0) =  0 [d]
Decay coefficient for aquifer.... =  0.0000D+00 [1/d]
Length of time step.............. =  365 [d]
Number of time steps............. =  50
Number of observation points..... =  5

   1  Distance (from source)..... =  150 [ft]
   2  Distance (from source)..... =  200 [ft]
   3  Distance (from source)..... =  300 [ft]
   4  Distance (from source)..... =  400 [ft]
   5  Distance (from source)..... =  500 [ft]


                  Concentration [mg/l]

  Time        Distance      Distance      Distance      Distance      Distance
  [d]       150.00[ft]    200.00[ft]    300.00[ft]    400.00[ft]    500.00[ft]

 365.00   0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
 730.00   0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
1095.00   0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
1460.00   0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
1825.00   0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
2190.00   0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
2555.00   0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
2920.00   0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
3285.00   0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
3650.00   0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
4015.00   0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
4380.00   0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
```

4745.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
5110.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
5475.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
5840.00	1.4013E-45	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
6205.00	8.2116E-43	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
6570.00	1.8386E-40	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
6935.00	2.3318E-38	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
7300.00	1.8232E-36	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
7665.00	9.4164E-35	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
8030.00	3.3993E-33	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
8395.00	8.9872E-32	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
8760.00	1.8091E-30	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
9125.00	2.8650E-29	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
9490.00	3.6693E-28	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
9855.00	3.8913E-27	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
10220.00	3.4867E-26	2.8026E-45	0.0000E+00	0.0000E+00	0.0000E+00
10585.00	2.6861E-25	1.2191E-43	0.0000E+00	0.0000E+00	0.0000E+00
10950.00	1.8061E-24	3.6013E-42	0.0000E+00	0.0000E+00	0.0000E+00
11315.00	1.0740E-23	8.5083E-41	0.0000E+00	0.0000E+00	0.0000E+00
11680.00	5.7139E-23	1.6498E-39	0.0000E+00	0.0000E+00	0.0000E+00
12045.00	2.7470E-22	2.6729E-38	0.0000E+00	0.0000E+00	0.0000E+00
12410.00	1.2042E-21	3.6762E-37	0.0000E+00	0.0000E+00	0.0000E+00
12775.00	4.8512E-21	4.3529E-36	0.0000E+00	0.0000E+00	0.0000E+00
13140.00	1.8088E-20	4.4929E-35	0.0000E+00	0.0000E+00	0.0000E+00
13505.00	6.2812E-20	4.0876E-34	0.0000E+00	0.0000E+00	0.0000E+00
13870.00	2.0428E-19	3.3108E-33	0.0000E+00	0.0000E+00	0.0000E+00
14235.00	6.2538E-19	2.4088E-32	0.0000E+00	0.0000E+00	0.0000E+00
14600.00	1.8103E-18	1.5870E-31	0.0000E+00	0.0000E+00	0.0000E+00
14965.00	4.9753E-18	9.5361E-31	0.0000E+00	0.0000E+00	0.0000E+00
15330.00	1.3030E-17	5.2610E-30	0.0000E+00	0.0000E+00	0.0000E+00
15695.00	3.2631E-17	2.6807E-29	0.0000E+00	0.0000E+00	0.0000E+00
16060.00	7.8373E-17	1.2684E-28	0.0000E+00	0.0000E+00	0.0000E+00
16425.00	1.8103E-16	5.6006E-28	0.0000E+00	0.0000E+00	0.0000E+00
16790.00	4.0320E-16	2.3182E-27	0.0000E+00	0.0000E+00	0.0000E+00
17155.00	8.6788E-16	9.0320E-27	0.0000E+00	0.0000E+00	0.0000E+00
17520.00	1.8092E-15	3.3249E-26	0.0000E+00	0.0000E+00	0.0000E+00
17885.00	3.6599E-15	1.1605E-25	0.0000E+00	0.0000E+00	0.0000E+00
18250.00	7.1976E-15	3.8525E-25	0.0000E+00	0.0000E+00	0.0000E+00

```
*******************************************************
*                                                     *
*              S O L U T E   version 4.03             *
*                                                     *
*       ANALYTICAL MODELS FOR SOLUTE TRANSPORT        *
*                                                     *
*******************************************************

Model:  ONEd-1

Project..... = anson mang
User name..... = tps
Date..... = 10-27-2010
Data file..... =


                    INPUT DATA:


Groundwater (seepage) velocity... =  .18 [ft/d]
Longitudinal dispersivity........ =  10.9 [ft]
Retardation factor............... =  391
Initial aquifer concentration.... =  0.00000D+00[mg/l]
Constant source concentration.... =  1.06000D+00[mg/l]
Duration of solute pulse......... =  18250 [d]
Half-life in aquifer (no decay=0) =  0 [d]
Decay coefficient for aquifer.... =  0.0000D+00 [1/d]
Length of time step.............. =  365 [d]
Number of time steps............. =  50
Number of observation points..... =  5

   1  Distance (from source)..... =  150 [ft]
   2  Distance (from source)..... =  200 [ft]
   3  Distance (from source)..... =  300 [ft]
   4  Distance (from source)..... =  400 [ft]
   5  Distance (from source)..... =  500 [ft]


                  Concentration [mg/l]

        Time        Distance        Distance        Distance        Distance        Distance
          [d]       150.00[ft]      200.00[ft]      300.00[ft]      400.00[ft]
500.00[ft]

     365.00   0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00
     730.00   0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00
    1095.00   0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00
    1460.00   0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00
    1825.00   0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00
    2190.00   0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00
    2555.00   0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00
    2920.00   0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00
    3285.00   0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00
    3650.00   0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00
```

4015.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
4380.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
4745.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
5110.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
5475.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
5840.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
6205.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
6570.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
6935.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
7300.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
7665.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
8030.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
8395.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
8760.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
9125.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
9490.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
9855.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
10220.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
10585.00	5.6052E-45	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
10950.00	1.7656E-43	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
11315.00	4.8709E-42	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
11680.00	1.0897E-40	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
12045.00	2.0201E-39	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
12410.00	3.1544E-38	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
12775.00	4.2106E-37	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
13140.00	4.8678E-36	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
13505.00	4.9309E-35	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
13870.00	4.4225E-34	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
14235.00	3.5449E-33	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
14600.00	2.5610E-32	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
14965.00	1.6802E-31	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
15330.00	1.0080E-30	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
15695.00	5.5644E-30	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
16060.00	2.8424E-29	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
16425.00	1.3505E-28	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
16790.00	5.9969E-28	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
17155.00	2.4994E-27	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
17520.00	9.8161E-27	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
17885.00	3.6460E-26	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
18250.00	1.2851E-25	1.4013E-45	0.0000E+00	0.0000E+00	0.0000E+00

```
*******************************************************
*                                                     *
*              S O L U T E   version 4.03             *
*                                                     *
*       ANALYTICAL MODELS FOR SOLUTE TRANSPORT        *
*                                                     *
*******************************************************

Model:  ONEd-1

Project..... = ansonlead
User name..... = tps
Date..... = 10-27-2010
Data file..... =


                  INPUT DATA:


Groundwater (seepage) velocity... =  .18 [ft/d]
Longitudinal dispersivity........ =  10.9 [ft]
Retardation factor............... =  5401
Initial aquifer concentration.... =  0.00000D+00[mg/l]
Constant source concentration.... =  2.60000D-02[mg/l]
Duration of solute pulse......... =  18250 [d]
Half-life in aquifer (no decay=0) =  0 [d]
Decay coefficient for aquifer.... =  0.0000D+00 [1/d]
Length of time step.............. =  365 [d]
Number of time steps............. =  50
Number of observation points..... =  5

   1  Distance (from source)..... =  150 [ft]
   2  Distance (from source)..... =  200 [ft]
   3  Distance (from source)..... =  300 [ft]
   4  Distance (from source)..... =  400 [ft]
   5  Distance (from source)..... =  500 [ft]


                  Concentration [mg/l]


  Time        Distance        Distance        Distance        Distance        Distance
  [d]       150.00[ft]      200.00[ft]      300.00[ft]      400.00[ft]      500.00[ft]

 365.00   0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00
 730.00   0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00
1095.00   0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00
1460.00   0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00
1825.00   0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00
2190.00   0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00
2555.00   0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00
2920.00   0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00
3285.00   0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00
3650.00   0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00
4015.00   0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00      0.0000E+00
```

4380.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
4745.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
5110.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
5475.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
5840.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
6205.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
6570.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
6935.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
7300.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
7665.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
8030.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
8395.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
8760.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
9125.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
9490.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
9855.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
10220.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
10585.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
10950.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
11315.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
11680.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
12045.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
12410.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
12775.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
13140.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
13505.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
13870.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
14235.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
14600.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
14965.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
15330.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
15695.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
16060.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
16425.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
16790.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
17155.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
17520.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
17885.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
18250.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

```
*****************************************************
*                                                   *
*              S O L U T E   version 4.03           *
*                                                   *
*       ANALYTICAL MODELS FOR SOLUTE TRANSPORT      *
*                                                   *
*****************************************************

Model:  ONEd-1

Project..... = ansonvan
User name..... = tps
Date..... = 09-11-2009
Data file..... = BEN.DAT


                  INPUT DATA:


Groundwater (seepage) velocity... =  .18 [ft/d]
Longitudinal dispersivity........ =  10.8 [ft]
Retardation factor............... =  301
Initial aquifer concentration.... =  0.00000D+00[mg/l]
Constant source concentration.... =  3.40000D-02[mg/l]
Duration of solute pulse......... =  18250 [d]
Half-life in aquifer (no decay=0) =  0 [d]
Decay coefficient for aquifer.... =  0.0000D+00 [1/d]
Length of time step.............. =  365 [d]
Number of time steps............. =  50
Number of observation points..... =  5

   1  Distance (from source)..... =  150 [ft]
   2  Distance (from source)..... =  200 [ft]
   3  Distance (from source)..... =  300 [ft]
   4  Distance (from source)..... =  400 [ft]
   5  Distance (from source)..... =  500 [ft]


                  Concentration [mg/l]

  Time        Distance      Distance      Distance      Distance      Distance
   [d]      150.00[ft]    200.00[ft]    300.00[ft]    400.00[ft]    500.00[ft]

 365.00   0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
 730.00   0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
1095.00   0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
1460.00   0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
1825.00   0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
2190.00   0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
2555.00   0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
2920.00   0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
3285.00   0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
3650.00   0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
4015.00   0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00    0.0000E+00
```

4380.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
4745.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
5110.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
5475.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
5840.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
6205.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
6570.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
6935.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
7300.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
7665.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
8030.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
8395.00	1.4013E-45	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
8760.00	1.1631E-43	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
9125.00	6.3171E-42	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
9490.00	2.5184E-40	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
9855.00	7.6434E-39	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
10220.00	1.8185E-37	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
10585.00	3.4780E-36	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
10950.00	5.4652E-35	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
11315.00	7.1911E-34	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
11680.00	8.0559E-33	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
12045.00	7.7967E-32	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
12410.00	6.6037E-31	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
12775.00	4.9510E-30	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
13140.00	3.3193E-29	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
13505.00	2.0081E-28	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
13870.00	1.1051E-27	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
14235.00	5.5731E-27	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
14600.00	2.5922E-26	1.4013E-45	0.0000E+00	0.0000E+00	0.0000E+00
14965.00	1.1187E-25	1.8217E-44	0.0000E+00	0.0000E+00	0.0000E+00
15330.00	4.5033E-25	2.2141E-43	0.0000E+00	0.0000E+00	0.0000E+00
15695.00	1.6992E-24	2.3290E-42	0.0000E+00	0.0000E+00	0.0000E+00
16060.00	6.0360E-24	2.2065E-41	0.0000E+00	0.0000E+00	0.0000E+00
16425.00	2.0268E-23	1.8917E-40	0.0000E+00	0.0000E+00	0.0000E+00
16790.00	6.4566E-23	1.4771E-39	0.0000E+00	0.0000E+00	0.0000E+00
17155.00	1.9579E-22	1.0569E-38	0.0000E+00	0.0000E+00	0.0000E+00
17520.00	5.6692E-22	6.9667E-38	0.0000E+00	0.0000E+00	0.0000E+00
17885.00	1.5718E-21	4.2521E-37	0.0000E+00	0.0000E+00	0.0000E+00
18250.00	4.1838E-21	2.4141E-36	0.0000E+00	0.0000E+00	0.0000E+00

MW-D

COMPOUND	Concentration, ppm																													
	10/7/1992	4/7/1993	4/27/1994	10/27/1994	11/21/1995	5/22/1996	10/7/1996	5/22/1997	10/16/1997	4/28/1998	10/27/1998	4/13/1999	10/5/1999	4/27/2000	10/10/2000	4/19/2001	10/9/2001	4/23/2002	10/30/2002	5/5/2003	10/27/2003	5/3/2004	10/11/2004	5/4/2005	11/11/2005	5/22/2006	10/24/2006	Class GA GW Standard	GWP Std.*	SWSL**	Surface (Fresh Water)
Fluoride	<0.1	**0.1**	<0.5	<0.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2	(3)NE	2	1.8
Nitrate	<0.05	**0.09**	<0.1	<0.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	10	(3)NE	10	10
Sulfates	**30**	<8	**3.8**	**2.2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	250	(3)NE	250	(4)NS
TOC	**1.7**	**1.3**	<1.0	**1.2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	(1) N/A	(3)NE	(3)NE	(4)NS
COD	**30**	<14	**33.7**	**11.3**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	(1) N/A	(3)NE	(3)NE	(4)NS
TOX	**0.057**	<0.002	<0.005	**0.065**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--	--	--	(1) N/A	(3)NE	(3)NE	(4)NS
BOD	**1**	**1**	<2	**4**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--	(1) N/A	(3)NE	(3)NE	(4)NS
Carbon Disulfide	---	---	---	---	---	<0.05	<0.005	<0.005	<0.005	<0.0005	<0.0005	<0.002	**0.0031**	<0.002	<0.01	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	0.7	(3)NE	0.1	(4)NS
Methylene Chloride	---	---	---	---	---	**0.0012**	<0.001	<0.001	<0.020	<0.0005	<0.0005	<0.01	<0.005	<0.005	<0.0025	<0.005	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010	<0.010	<0.035	<0.035	<0.005	0.005	(3)NE	0.001	0.096
Arsenic	<0.003	<0.003	<0.01	<0.001	<0.002	<0.01	**0.009**	<0.003	<0.003	<0.003	<0.003	<0.003	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0..005	<0.005	<0.005	<0.020	<0.02	<0.02	<0.02	<0.005	0.01	(3)NE	0.01	0.010
Barium	**0.062**	**0.079**	**0.24**	<0.1	<0.5	<0.5	**0.048**	**0.099**	**0.077**	**0.077**	**0.09**	**0.066**	**0.055**	**0.054**	**0.053**	**0.065**	**0.066**	**0.052**	**0.06**	**0.036**	**0.049**	**0.051**	**0.07**	**0.072**	**0.087**	<0.04	<0.005	0.7	(3)NE	0.1	200
Cadmium	<0.001	<0.0005	0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	**0.001**	<0.001	<0.001	**0.0002**	<0.01	<0.01	<0.001	<0.001	**0.001**	<0.001	**0.001**	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	0.002	(3)NE	0.001	0.002
Chromium	<0.01	**0.0075**	0.278	**0.003**	**0.016**	0.125	**0.03**	**0.011**	**0.012**	**0.009**	<0.005	<0.005	<0.01	<0.01	<0.005	**0.007**	**0.01**	<0.005	**0.014**	<0.005	**0.006**	<0.005	<0.02	<0.02	<0.02	<0.02	<0.005	0.01	(3)NE	0.01	0.050
Lead	**0.0091**	**0.006**	0.084	**0.005**	<0.01	0.104	**0.015**	**0.019**	**0.01**	**0.011**	**0.012**	**0.008**	0.034	<0.005	0.034	**0.018**	**0.024**	**0.004**	**0.006**	**0.002**	**0.003**	<0.002	<0.015	<0.01	<0.04	<0.04	<0.005	0.015	(3)NE	0.01	0.025
Mercury	<0.0002	<0.0002	0.0003	<0.0002	---	---	---	---	---	0.0006	0.0004	0.00042	<0.0002	<0.003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.010	0.001	(3)NE	0.0002	0.000012
Selenium	<0.005	<0.003	<0.01	0.009	<0.002	<0.02	<0.003	<0.003	<0.003	**0.004**	<0.003	<0.005	<0.005	<0.0002	<0.005	0.006	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.02	<0.02	<0.02	<0.02	<0.005	0.02	(3)NE	0.01	0.005
Beryllium	---	---	---	---	---	**0.005**	<0.002	<0.002	<0.002	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	(2) 0.004	0.004	0.001	0.0065
Chloride	**1**	**2**	**2.1**	**2.5**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	250	(3)NE	(3)NE	230.000
Cobalt	---	---	---	---	---	0.012	0.009	<0.009	<0.009	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	(1) N/A	0.001	0.01	0.004
Copper	0.033	<0.01	0.054	0.008	<0.2	<0.2	<0.002	0.009	0.011	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1	(3)NE	0.01	0.007
Iron	3.79	**0.839**	6.348	**0.38**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.3	(3)NE	0.3	1.0
Manganese	**0.055**	**0.025**	**0.094**	<0.01	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--	--	--	0.05	(3)NE	0.05	(4)NS
Thallium	---	---	---	---	---	0.089	<0.002	<0.002	<0.002	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	(2) 0.002	0.00028	0.0055	0.00047
Vanadium	---	---	---	---	---	<0.04	**0.022**	**0.011**	<0.01	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--	--	--	(1) N/A	0.0003	0.025	(4)NS
Zinc	**0.033**	**0.018**	0.051	**0.014**	<0.05	0.07	<0.01	**0.022**	**0.029**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.0	(3)NE	0.01	0.05

(1) Indicates No Standard provided for Class GA Groundwater Standard per 15A NCAL 2L .0202 and EPA Primary Drinking Water Standards

(2) Value is based on EPA Primary Drinking Water Standard

(3) No Established Standard by Solid Waste Section

(4) No Surface Fresh Water Standard per 15A NCAC 2B or National Criteria per EPA

* GWP Standard indicates Groundwater Protection Standard

** SWSL Standard indicates Solid Waste Section Limits

Note: Shaded values exceed the Class GA Groundwater Standards or the EPA Primary Drinking Standards

Red values exceed the Surface Fresh Water Standard per 15A NCAC 2B or National Criteria per EPA