**Streeter, Mike**

**From:** Streeter, Mike
**Sent:** Tuesday, January 21, 2014 10:49 AM
**To:** Adams, George
**Subject:** RE: Parkway Chevrolet # 18332

George,

Petroleum hydrocarbon soil contamination was discovered around vaulted hydraulic lifts on January 8, 1998. Julie Berry with the ARO issued a Notice of Violation for the Oil Pollution and Hazardous Substances Control Act to Parkway Chevrolet on February 27, 1998. PCE had been detected at the facility previous to the last reporting period detailed in the December 6, 2013 report. However, having inherited the incident in 2009 from several previous managers, I don't know the complete history of PCE groundwater contamination, but I do know it was not detected in the initial samples collected in 1998, as indicated in a June 11, 1998 Comprehensive Site Assessment report.

Of course you are always welcome to review the incident file should you decide to take a road trip to the ARO.

Mike.Streeter@ncdenr.gov
North Carolina Dept. of Environment and Natural Resources
Asheville Regional Office
Division of Waste Management - Underground Storage Tanks
2090 U.S. 70 Highway
Swannanoa, NC 28778
Tel: 828-296-4643
Fax: 828-299-7043

Notice: E-mail correspondence to and from this address may be subject to the North Carolina Public Records Law and therefore may be disclosed to third parties.

---

**From:** Adams, George
**Sent:** Friday, January 17, 2014 5:25 PM
**To:** Streeter, Mike
**Subject:** Parkway Chevrolet # 18332

Mike,

We are having trouble trying to understand DWQ's former activities at this Site, since we have access to very little information and the IBEAM data isn't complete. The monitoring wells in the report you sent on January 2, 2014 appear to be originally installed due to a hydraulic oil UST in 1998 LUST # 18233. Do you know why this incident# 18332 was created/regulated by DWQ and if PCE had been previously detected in soil at this facility?

The December 6, 2013 report you sent to MRO states there is a community well in current use within a few hundred feet of this release. Some information I found at PWS may conflict with that, nevertheless, I would like to complete an evaluation of the priority of the Site as soon as practical. Thanks for your help--George

George Adams - george.adams@ncdenr.gov
North Carolina Department of Environment & Natural Resources
Division of Waste Management - Superfund Section - Inactive Hazardous Sites Branch
610 East Center Avenue, Suite 301
Mooresville, North Carolina 28115
Phone: (704) 663-1699 Fax: (704) 663-6040

*Email correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties unless the content is exempt by statute or other regulation.*

**All documents and communications such as work plans, reports, cover letters, and correspondence must be submitted in electronic format only. Specific requirements including acceptable file formats may be found under "Electronic Document Submittal" at the Inactive Hazardous Sites Program's website.**

Click HERE for Access to Electronic Records at the CARA$^3$ Portal

NCDENR
North Carolina Department of Environment and Natural Resources
Beverly Eaves Perdue, Governor
Division of Waste Management
UST Section
Dee Freeman, Secretary
Dexter R. Matthews, Director

December 30, 2013

Attn: Mr. Jan Chenowith
Young Realty Company, L.P.
7399 Shadeland Avenue, PMB #166
Indianapolis, IN 46250

Re: Parkway Chevrolet (former)
205 Smoky Park Highway, Asheville
Buncombe County
Incident Number: 18332

Dear Mr. Chenowith:

I have reviewed the Bi Annual Groundwater Monitoring report dated December 6, 2013. According the report, all volatile and semi-annual organic compound groundwater contaminants were below North Carolina's groundwater sampling, except for tetrachloroethene. Based on this, the UST Section has determined that no further action is required by this office and this incident is considered closed.

Please be advised that the presence of tetrachloroethene above State standards may warrant further action, but the Inactive Hazardous Sites Branch, within the Superfund Section of the Division of Waste Management, is responsible for oversight and approval of the assessment and remediation of hazardous substances and pollutants, including tetrachloroethane. A copy of the Bi Annual Groundwater Monitoring report has been forwarded to Bruce Parris, Inactive Hazardous Sites supervisor in the Mooresville Regional Office.

If you have questions, please contact me at the address or telephone number listed below.

Sincerely,

Michael Streeter, L.G.
Hydrogeologist
Asheville Regional Office

cc: Douglas Guild, Prescott Environmental, PO Box 2555, Chapel Hill, NC 27515
Bruce Parris, Inactive Hazardous Sites Branch, Mooresville Regional Office

FILE COPY

North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue, Governor

Division of Waste Management
UST Section

Dee Freeman, Secretary
Dexter R. Matthews, Director

November 30, 2011

Attn: Mr. Jan Chenowith
Young Realty Company, L.P.
7399 Shadeland Avenue, PMB #166
Indianapolis, IN 46250

Re: Parkway Chevrolet (former)
205 Smoky Park Highway, Asheville
Buncombe County
Incident Number: 18332

Dear Mr. Chenowith:

I have reviewed the Bi Annual Groundwater Monitoring report dated October 18, 2011. The next groundwater monitoring report should be submitted to this office by November 30, 2013.

If you have questions, please contact me at the address or telephone number listed below.

Sincerely,

Michael Streeter

Michael Streeter, L.G.
Hydrogeologist
Asheville Regional Office

cc: Douglas Guild, Prescott Environmental, PO Box 2555, Chapel Hill, NC 27515

S-2 - S-31 — 8260, 9071

S-1 — MADEP EPH, 8270

S-2 - S-31 — 9071, 8260

Blank — 8270, 8260, 9071

} Soil

W-1 - W-3 — MADEP EPH, 3030C, 502.2, 625

except W-3 does not have a metals analysis (3030C)

↖ sample vial broke in shipment

Field Blank — MADEP EPH 3030C, 502.2, 625

Trip Blank — 502.2, 625

FILE COPY

North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue, Governor

Division of Waste Management
UST Section

Dee Freeman, Secretary
Dexter R. Matthews, Director

December 7, 2009

Attn: Mr. Jan Chenowith
Young Realty Company, L.P.
7399 Shadeland Avenue, PMB #166
Indianapolis, IN 46250

Re: Parkway Chevrolet (former)
205 Smoky Park Highway, Asheville
Buncombe County
Incident Number: 18332

Dear Mr. Chenowith:

I have reviewed the Annual Groundwater Monitoring report dated November 5, 2009 and a December 2, 2009 letter from Prescott Environmental. This office hereby approves Prescott's request to change the frequency of groundwater monitoring and reporting from annual to bi-annual. The next groundwater monitoring report should be submitted to this office by November 30, 2011.

If you have questions, please contact me at the address or telephone number listed below.

Sincerely,

Michael Streeter

Michael Streeter, L.G.
Hydrogeologist
Asheville Regional Office

cc: Douglas Guild, Prescott Environmental, PO Box 2555, Chapel Hill, NC 27515

Q2

BEN ~~HOLL~~ HOLLY HAD SOME SPECIFIC QUESTIONS ABOUT SITE #18332 PACKMAN CHEVROLET

PLEASE GIVE HIM A CALL @ #2488881200

THANKS

-TOLD HIM YOU MAY BE ABLE TO CALL HIM ON MONDAY

Michael F. Easley, Governor

William G. Ross Jr., Secretary
North Carolina Department of Environment and Natural Resources

Coleen H. Sullins, Director
Division of Water Quality

# TRANSMITTAL

November 15, 2007

Douglas P. Guild, CEP
Prescott Environmental
P. O. Box 2555
Chapel Hill, NC 27515

RE: Contact/Address/Section Correction for NCDENR-ARO
Incident # 18332 Former Parkway Chevrolet
PEAI Project No. 98-007

Mr. Guild,

We recently received your correspondence regarding the annual groundwater monitoring report for 2007 for the above incident site. Mr. Qu Qi is no longer with NCDENR in the Asheville Regional Office.

In addition, due to a reorganization within NCDENR earlier this year, this monitoring now falls under the Division of Waste Management (DWM), UST (Underground Storage Tank) Section. The supervisor for this section here at the Asheville Regional office is Jan Andersen.

We also noticed that you have our old address. (NCDENR-ARO moved to our current location in April 2004.) Please correct your address to:

Ms. Jan Andersen
NCDENR - DWM – UST Section
Asheville Regional Office
2090 U.S. 70 Highway
Asheville, NC 28778-8211
828-296-4500; fax – 828-299-7043

Thank you in advance for your attention in correcting future correspondence,

Jan Andersen
Supervisor, UST Section, Division of Waste Management
Asheville Regional Office (ARO)

DIVISION OF WATER QUALITY
DWQ

FILE COPY

Michael F. Easley
Governor
William G. Ross, Jr., Secretary
North Carolina Department of Environment and Natural Resources
Alan W. Klimek, P.E., Director
Division of Water Quality
Asheville Regional Office

**AQUIFER PROTECTION SECTION**

December 8, 2005

Mr. Jan Chenowith
Young Realty Company, LP
7399 Shadeland Avenue, PMB#166
Indianapolis, Indiana 46250

Subject: Review of Groundwater Monitoring Report
Parkway Chevrolet
205 Smoky Park Highway, Asheville, North Carolina
Groundwater Incident Number: 18332
Incident Rank: 15B

Dear Mr. Chenowith:

The Asheville Regional Office has received a groundwater monitoring report for the subject site. According to the report the tetrachloroethene (PCE) was detected again at a level slightly above the NC groundwater standard and no other volatile and semi-volatile organics were detected in the groundwater samples. Because the contaminated soil and groundwater are still present at the site, the groundwater monitoring must be continued. The next monitoring report should be submitted to this office by November 30, 2006.

The condition of MW-1 is a concern because it cannot be sealed properly. This well has become a potential conduit for introducing more contaminants to groundwater. The well and the pavement around the well must be repaired as soon as possible. This well should be sampled after the well is repaired and the results be submitted to this office before February 28, 2006.

We appreciate your effort and cooperation on the project. If you have any questions, please call me at (828) 296-4682.

Sincerely,

Qu Qi
Asheville Regional Office

cc: Douglas Guild
ARO Files
qq\monitor\parkche13.doc

Michael F. Easley
Governor

William G. Ross, Jr., Secretary
North Carolina Department of Environment and Natural Resources

Alan W. Klimek, P.E., Director
Division of Water Quality

Asheville Regional Office

**AQUIFER PROTECTION SECTION**

December 1, 2004

Mr. Jan Chenowith
Young Realty Company, LP
7399 Shadeland Avenue, PMB#166
Indianapolis, Indiana 46250

FILE COPY

Subject: Review of Groundwater Monitoring Report
Parkway Chevrolet
205 Smoky Park Highway, Asheville, North Carolina
Groundwater Incident Number: 18332
Incident Rank: 15B

Dear Mr. Chenowith:

The Asheville Regional Office has received the groundwater monitoring report for the subject site. According to the report the tetrachloroethene (PCE) was detected again at a level slightly above the NC groundwater standard and no other volatile and semi-volatile organics were detected in the groundwater samples. Because the contaminated soil and groundwater are still present at the site, the groundwater monitoring must be continued. The concentration of the contaminant (PCE) in the groundwater appears to be stable, therefore, we recommend that the monitoring schedule be reduced to an annual base and the next monitoring report should be submitted to this office by November 30, 2005.

We appreciate your effort and cooperation on the project. If you have any questions, please call me at (828) 296-4682.

Sincerely,

Qu Qi
Asheville Regional Office

cc: Douglas Guild
ARO Files

qq\monitor\parkche12.doc

Michael F. Easley
Governor
William G. Ross, Jr., Secretary
North Carolina Department of Environment and Natural Resources
Alan W. Klimek, P.E., Director
Division of Water Quality
Asheville Regional Office

FILE COPY

**AQUIFER PROTECTION SECTION**

August 20, 2004

Mr. Jan Chenowith
Young Realty Company, LP
7399 Shadeland Avenue, PMB#166
Indianapolis, Indiana 46250

Subject: Review of Groundwater Monitoring Report
Parkway Chevrolet #3
205 Smoky Park Highway, Asheville, North Carolina
Groundwater Incident Number: 18332
Incident Rank: 15B

Dear Mr. Chenowith:

The Asheville Regional Office has received the groundwater monitoring report for the subject site. According to the report the tetrachloroethene was detected again at a level above the NC groundwater standard and no other volatile and semi-volatile organics were detected in the groundwater samples. Because the contaminated soil and groundwater are still present at the site, the groundwater monitoring must be continued and the next monitoring report should be submitted to this office by January 31, 2005.

We appreciate your effort and cooperation on the project. If you have any questions, please call me at (828) 296-4682.

Sincerely,

Qu Qi
Asheville Regional Office

cc: Douglas Guild
ARO Files

qq\monitor\parkche11.doc

Michael F. Easley
Governor

William G. Ross, Jr., Secretary
North Carolina Department of Environment and Natural Resources

Alan W. Klimek, P.E., Director
Coleen H. Sullins, Deputy Director
Division of Water Quality

Asheville Regional Office

**GROUNDWATER SECTION**

January 9, 2004

Mr. Jan Chenowith
Young Realty Company, LP
7399 Shadeland Avenue, PMB#166
Indianapolis, Indiana 46250

Subject: Review of Groundwater Monitoring Report
Parkway Chevrolet #3
205 Smoky Park Highway, Asheville, North Carolina
Groundwater Incident Number: 18332
Incident Rank: 15B

Dear Mr. Chenowith:

The Asheville Regional Office has received the groundwater monitoring report for the subject site. According to the report the tetrachloroethene was detected again at a level above the NC groundwater standard and no other volatile and semi-volatile organics were detected in the groundwater samples. Because the contaminated soil and groundwater are still present at the site, the groundwater monitoring must be continued and the next monitoring report should be submitted to this office by July 30, 2004.

We appreciate your effort and cooperation on the project. If you have any questions, please call me at (828) 251-6208 ext. 228.

Sincerely,

Qu Qi
Asheville Regional Office

cc: Eric Kulz
ARO Files

qq\monitor\parkche10.doc

Michael F. Easley
Governor
William G. Ross, Jr., Secretary
North Carolina Department of Environment and Natural Resources
Alan W. Klimek, P. E. Director
Division of Water Quality
Asheville Regional Office

FILE COPY

**GROUNDWATER SECTION**

July 17, 2003

Mr. Jan Chenowith
Young Realty Company, LP
7399 Shadeland Avenue, PMB#166
Indianapolis, Indiana 46250

Subject: Review of Groundwater Monitoring Report
Parkway Chevrolet #3
205 Smoky Park Highway, Asheville, North Carolina
Groundwater Incident Number: 18332
Incident Rank: 15B

Dear Mr. Chenowith:

The Asheville Regional Office has received the groundwater monitoring report for the subject site. According to the report the tetrachloroethene was detected again at a level above the NC groundwater standard and no other volatile and semi-volatile organics were detected in the groundwater samples. Because the contaminated soil and groundwater are still present at the site, the groundwater monitoring must be continued and the next monitoring report should be submitted to this office by December 31, 2003.

We appreciate your effort and cooperation on the project. If you have any questions, please call me at (828) 251-6208 ext. 228.

Sincerely,

Qu Qi
Asheville Regional Office

cc: Eric Kulz
ARO Files

qq\monitor\parkche9.doc

Michael F. Easley
Governor
William G. Ross, Jr., Secretary
North Carolina Department of Environment and Natural Resources
Alan W. Klimek, P. E. Director
Division of Water Quality
Asheville Regional Office

FILE COPY

**GROUNDWATER SECTION**

November 21, 2002

Mr. Jan Chenowith
Young Realty Company, LP
7399 Shadeland Avenue, PMB#166
Indianapolis, Indiana 46250

Subject: Review of Groundwater Monitoring Report
Parkway Chevrolet #3
205 Smoky Park Highway, Asheville, North Carolina
Groundwater Incident Number: 18332
Incident Rank: 15B

Dear Mr. Chenowith:

The Asheville Regional Office has received the groundwater monitoring report for the subject site. According to the report the tetrachloroethene was detected again at a level above the NC groundwater standard and no other volatile and semi-volatile organics were detected in the groundwater samples. Because the contaminated soil and groundwater are still present at the site, the groundwater monitoring must be continued and the next monitoring report should be submitted to this office by June 30, 2003. The analytical method - EPA Method 625 plus 10 peaks, may be replaced by a less expensive EPA Method 625 (base and neutrals only) or GC Method 610.

We appreciate your effort and cooperation on the project. If you have any questions, please call me at (828) 251-6208 ext. 228.

Sincerely,

Qu Qi
Asheville Regional Office

cc: Douglas Guild
ARO Files

qq\monitor\parkche8.doc

Groundwater Section, 59 Woodfin Place Asheville, NC 28801-2414 Telephone: 828/251-6208
Fax: 828/251-6452
Customer Service
1 800 623-7748

Michael F. Easley
Governor

William G. Ross, Jr., Secretary
North Carolina Department of Environment and Natural Resources

Alan W. Klimek, P. E. Director
Division of Water Quality

Asheville Regional Office

FILE COPY

**GROUNDWATER SECTION**

June 28, 2002

Mr. Jan Chenowith
Young Realty Company, LP
7399 Shadeland Avenue, PMB#166
Indianapolis, Indiana 46250

Subject: Review of Groundwater Monitoring Report
Parkway Chevrolet #3
205 Smoky Park Highway, Asheville, North Carolina
Groundwater Incident Number: 18332
Incident Rank: 15B

Dear Mr. Chenowith:

The Asheville Regional Office has received the groundwater monitoring report for the subject site. According to the report the tetrachloroethene was detected again at a level above the NC groundwater standard and no other volatile and semi-volatile organics were detected in the groundwater samples. Because the contaminated soil and groundwater are still present at the site, the groundwater monitoring must be continued and the next monitoring report should be submitted to this office by December 31, 2002.

We appreciate your effort and cooperation on the project. If you have any questions, please call me at (828) 251-6208 ext. 228.

Sincerely,

Qu Qi
Asheville Regional Office

cc: Douglas Guild
ARO Files

qq\monitor\parkche7.doc

Groundwater Section, 59 Woodfin Place Asheville, NC 28801-2414 Telephone: 828/251-6208
Fax: 828/251-6452

Customer Service
1 800 623-7748

FILE COPY

Michael F. Easley
Governor

William G. Ross, Jr., Secretary
North Carolina Department of Environment and Natural Resources

Gregory J. Thorpe, Ph.D.
Acting Director
Division of Water Quality

Asheville Regional Office

**GROUNDWATER SECTION**

November 30, 2001

Mr. Jan Chenowith
Young Realty Company, LP
7399 Shadeland Avenue, PMB#166
Indianapolis, Indiana 46250

Subject: Review of Groundwater Monitoring Report
Parkway Chevrolet #3
205 Smoky Park Highway, Asheville, North Carolina
Groundwater Incident Number: 18332
Incident Rank: 15B

Dear Mr. Chenowith:

The Asheville Regional Office has received the groundwater monitoring report for the subject site. According to the report the tetrachloroethene was detected again at a level above the NC groundwater standard and no other volatile and semi-volatile organics were detected in the groundwater samples. Because the contaminated soil and groundwater are still present at the site, the groundwater monitoring must be continued and the next monitoring report should be submitted to this office by June 30, 2002. MW-2 has been dry for almost two years and there is little chance that this well will be usable again. Therefore, MW-2 should be properly abandoned and must be replaced by a new well. The next monitoring report should include data from the new well.

We appreciate your effort and cooperation on the project. If you have any questions, please call me at (828) 251-6208 ext. 228.

Sincerely,

Qu Qi
Asheville Regional Office

cc: Douglas Guild
ARO Files
Qq\monitor\parkche6.doc

Groundwater Section, 59 Woodfin Place Asheville, NC 28801-2414 Telephone: 828/251-6208
Fax: 828/251-6452

Customer Service
1 800 623-7748

Michael F. Easley
Governor

William G. Ross, Jr., Secretary
North Carolina Department of Environment and Natural Resources

Kerr T. Stevens, Director
Division of Water Quality

Asheville Regional Office

FILE COPY

**GROUNDWATER SECTION**

June 6, 2001

Mr. Douglas Guild
Prescott Environmental Associates, Inc.
P. O. Box 2555
Chapel Hill, NC 27515-2555

Subject: Review of Groundwater Monitoring Report
Parkway Chevrolet #3
205 Smoky Park Highway, Asheville, North Carolina
Groundwater Incident Number: 18332
Incident Rank: 15B

Dear Mr. Guild:

The Asheville Regional Office has received the groundwater monitoring and soil sampling report for the subject site. The MW- 2 was dry during the April sampling event and the sampling result from MW-3 indicates that tetrachloroethene was detected at a level above the NC groundwater standard. The soil sampling results indicate that the subsurface soil contamination is still present. The groundwater monitoring must be continued, and the next monitoring report should be submitted to this office by December 31, 2001.

We appreciate your effort and cooperation on the project. If you have any questions, please call me at (828) 251-6208 ext. 228.

Sincerely,

Qu Qi
Asheville Regional Office

cc: Arthur Mouberry
ARO Files

Groundwater Section, 59 Woodfin Place Asheville, NC 28801-2414 Telephone: 828/251-6208
Fax: 828/251-6452

Customer Service
1 800 623-7748

RECEIVED
JUN 2 6 2000
Groundwater Section
Asheville Regional Office

# DIVISION OF WATER QUALITY

**Chemistry Laboratory Report / Ground Water Quality**

| | |
|---|---|
| Lab Number : | YG0749 |
| Date Received : | 6/7/2000 |
| Time Received : | 8;50 |
| Received By : | DS |
| Released By : | DS |
| Date reported : | 6/22/2000 |

COUNTY : BUNCOMBE
QUAD NO:

REPORT TO : ARO Regional Office
COLLECTOR(S) : QUQI
DATE: 6/5/2000
TIME:

PURPOSE:

SAMPLE PRIORITY
[ ] ROUTINE [X] EMERGENCY

[ ] CHAIN OF CUSTODY

[W] SAMPLE TYPE

1

Owner: PARKWAY CHEVROLET
Location or Site:
Description of sampling point
Sampling Method:
Remarks:

## LABORATORY ANALYSIS

| | | |
|---|---|---|
| | BOD 310 | mg/L |
| | COD High 340 | mg/L |
| | COD Low 335 | mg/L |
| | Coliform: MF Fecal 31616 | /100ml |
| | Coliform: MF Total 31504 | /100ml |
| | TOC | mg/l |
| | Turbitity | NTU |
| | Residue., Suspended 530 | mg/L |
| | Total Suspended solids | mg/L |
| | | |
| | pH | units |
| | Alkalinity to pH 4.5 | mg/L |
| | Alkalinity to pH 8.3 | mg/L |
| | Carbonate | mg/L |
| | Bicarbonate | mg/L |
| | Carbon dioxide | mg/L |
| | Chloride | mg/L |
| | Chromium: Hex 1032 | ug/L |
| | Color: True 80 | c.u. |
| | Cyanide 720 | mg/L |

| | | |
|---|---|---|
| | Diss. Solids 70300 | mg/L |
| | Fluoride 951 | mg/L |
| | Hardness: total 900 | mg/L |
| | Hardness: (non-carb) 902 | mg/L |
| | Phenols 32730 | ug/L |
| | Specific Cond. 95 | umhos/cm2 |
| | Sulfate | mg/L |
| | Sulfide 745 | mg/L |
| | MBAS | mg/L |
| | Oil and Grease | mg/L |
| | Silica | mg/L |
| | Boron | |
| | Formaldehyde | mg/L |
| | NH3 as N 610 | mg/L |
| | TKN as N 625 | mg/L |
| | NO2 +NO3 as n 630 | mg/L |
| | P: Total as P 665 | mg/L |
| | PO4 | mg/L |
| | | |
| | | |

| | | |
|---|---|---|
| | Ag-Silver 46566 | ug/L |
| | Al-Aluminum 46557 | ug/L |
| | As-Arsenic 46551 | ug/L |
| | Ba-Barium 46558 | ug/L |
| | Ca-Calcium 46552 | mg/L |
| | Cd-Cadium 46559 | ug/L |
| | Cr-Chromium 46560 | ug/L |
| | Cu- Copper 1042 | ug/L |
| | Fe- Iron 1045 | ug/L |
| | Hg- Mercury 71900 | ug/L |
| | K-Potassium 46555 | mg/L |
| | Mg- Magnesium 927 | mg/L |
| | Mn-Manganese 1055 | ug/L |
| | Na- Sodium 929 | mg/L |
| | Ni-Nickel | ug/L |
| | Pb-Lead 46564 | ug/L |
| | Se-Selenium | ug/L |
| | Zn_Zinc 46567 | ug/L |
| | | |
| | | |

| | |
|---|---|
| | Organochlorine Pesticides |
| | Organophosphorus Pesticides |
| | Nitrogen Pesticides |
| | |
| | Acid Herbicides |
| | |
| | Semivolatiles |
| | TPH-Diesel Range |
| | |
| X | Volatile Organics (VOA bottle) |
| | |
| | TPH-Gasoline Range |
| | TPH-BTEX Gasoline Range |
| | |
| | |
| | |
| | |
| | |
| | |

COMMENTS :

# GROUNDWATER FIELD/LAB FORM

North Carolina
Department of Environment, Health, and Natural Resources
DIVISION OF WATER QUALITY - GROUNDWATER SECTION

County: Buncombe
Quad No: _____ Serial No. _____
Lat _____ Long. _____

| SAMPLE TYPE | SAMPLE PRIORITY |
|---|---|
| ☑ Water | ☐ Routine |
| ☐ Soil | ☑ Emergency |
| ☐ Other _____ | |

☐ Chain of Custody

1

Lab Number: VG0749
Date Received: 6/7/00 Time: 8:50
Rec'd by: DS From: Bus, (Courier), Hand Del.,
Other: _____
Data Entry By: _____ Ck: _____
Date Reported: _____

Report To: (ARO) FRO, MRO, RRO, WaRO, WiRO, WSRO, Kinston FO, Fed. Trust, Central Off., Other: _____
Shipped by: Bus, (Courier), Hand Del., Other: _____
Collector(s): Qu Qi Date: 6/5/2000 Time: 10:00 AM
Purpose: Baseline, Complaint, (Compliance) (circle one) LUST, Pesticide Study, Federal Trust, Other: _____

## FIELD ANALYSES

$pH_{400}$ _____ Spec. Cond.$_{94}$ _____ at 25° C
Temp.$_{10}$ _____ °C Odor _____
Appearance _____
Field Analysis By: _____

Owner: Parkway Chevrolet
Location or site: 205 Smoky Park Highway
Description of sampling point: MW2
Sampling Method: Bailing (Pump, bailer, etc.) Sample Interval _____
Remarks: very little water (pumping time, air temp, etc.)

## LABORATORY ANALYSES

| | | |
|---|---|---|
| | BOD, 310 | mg/l |
| | COD High 340 | mg/l |
| | COD Low 335 | mg/l |
| | Coliform: MF Fecal 31616 | /100ml |
| | Coliform: MF Total 31504 | /100ml |
| | TOC 680 | mg/l |
| | Turbidity 76 | NTU |
| | Residue., Suspended 530 | mg/l |
| | | |
| | | |
| | pH 403 | units |
| | Alkalinity to pH 4.5 410 | mg/l |
| | Alkalinity to pH 8.3 415 | mg/l |
| | Carbonate 445 | mg/l |
| | Bicarbonate 440 | mg/l |
| | Carbon dioxide 405 | mg/l |
| | Chloride 940 | mg/l |
| | Chromium: Hex 1032 | ug/l |
| | Color: True 80 | CU |
| | Cyanide 720 | mg/l |

| | | |
|---|---|---|
| | Diss. Solids 70300 | mg/l |
| | Flouride 951 | mg/l |
| | Hardness: Total 900 | mg/l |
| | Hardness (non-carb) 902 | mg/l |
| | Phenols 32730 | ug/l |
| | Specific Cond. 95 | uMhos/cm² |
| | Sulfate 945 | mg/l |
| | Sulfide 745 | mg/l |
| | | |
| | Oil and Grease | mg/l |
| | | |
| | | |
| | | |
| | $NH_3$ as N 610 | mg/l |
| | TKN as N 625 | mg/l |
| | $NO_2$ + $NO_3$ as N 630 | mg/l |
| | P: Total as P 665 | mg/l |
| | | |
| | | |
| | | |

| | | |
|---|---|---|
| | Ag - Silver 46566 | ug/l |
| | Al - Aluminum 46557 | ug/l |
| | As - Arsenic 46551 | ug/l |
| | Ba - Barium 46558 | ug/l |
| | Ca - Calcium 46552 | mg/l |
| | Cd - Cadmium 46559 | ug/l |
| | Cr - Chromium 46560 | ug/l |
| | Cu - Copper 46562 | ug/l |
| | Fe - Iron 46563 | ug/l |
| | Hg - Mercury 71900 | ug/l |
| | K - Potassium 46555 | mg/l |
| | Mg - Magnesium 46554 | mg/l |
| | Mn - Manganese 46565 | ug/l |
| | Na - Sodium 46556 | mg/l |
| | Ni - Nickel | ug/l |
| | Pb - Lead 46564 | ug/l |
| | Se - Selenium | ug/l |
| | Zn - Zinc 46567 | ug/l |
| | | |
| | | |

| | |
|---|---|
| | Organochlorine Pesticides |
| | Organophosphorus Pesticides |
| | Nitrogen Pesticides |
| | Acid Herbicides |
| | PCB's |
| | |
| | |
| | |
| | Semivolatile Organics |
| | TPH - Diesel Range |
| | |
| | |
| | |
| ✓ | Volatile Organics (VOA bottle) |
| | TPH - Gasoline Range |
| | TPH - BTEX Gasoline Range |
| | |
| | ✓ |
| | |
| | |

Lab Comments: _____

GW-54 REV. 7/[illegible] For Dissolved Analysis - submit filtered sample and write "DIS" in bl[illegible]

ENR/DWQ LABORATORY
VOLATILE ANALYTICAL REPORT

LAB NO. YG0749

REPORTED BY AB/AB
CHECKED BY ASC
REVIEWED BY ASC

SUPERVISOR REK
DATE 6/20/00

SAMPLE TYPE: WATER

ENTERED BY DS
DATE 6/21/00

ANALYSIS RESULTS

| CAS# | VOA TARGET COMPOUND | TQL ug/L | DETECTED ug/L | |
|---|---|---|---|---|
| 75-35-4 | 1,1-Dichloroethene | 0.75 | U | |
| 75-09-2 | Methylene Chloride | 10 | U | |
| 156-60-5 | trans-1,2-Dichloroethene | 0.75 | U | |
| 75-34-3 | 1,1-Dichloroethane | 0.25 | U | |
| 590-20-7 | 2,2-Dichloropropane | 0.25 | U | |
| 156-59-4 | cis-1,2-Dichloroethene | 0.25 | U | |
| 67-66-3 | Chloroform | 0.25 | U | |
| 74-97-5 | Bromochloromethane | 0.75 | U | |
| 71-55-6 | 1,1,1-Trichloroethane | 0.25 | U | |
| 563-58-6 | 1,1-Dichloropropene | 0.25 | U | |
| 56-23-5 | Carbon Tetrachloride | 0.75 | U | |
| 107-06-2 | 1,2-Dichloroethane | 0.25 | U | |
| 79-01-6 | Trichloroethene | 0.25 | U | |
| 78-87-5 | 1,2-Dichloropropane | 0.25 | U | |
| 75-27-4 | Bromodichloromethane | 0.25 | U | |
| 74-95-3 | Dibromomethane | 1 | U | |
| 10061-01-5 | cis-1,3-Dichloropropene | 0.25 | U | |
| 10061-02-6 | trans-1,3-Dichloropropene | 0.25 | U | |
| 79-00-5 | 1,1,2-Trichloroethane | 0.25 | U | |
| 127-18-4 | Tetrachloroethene | 0.25 | U | |
| 142-28-9 | 1,3-Dichloropropane | 0.25 | U | |
| 124-48-1 | Dibromochloromethane | 0.75 | U | |
| 106-93-4 | 1,2-Dibromoethane | 1 | U | |
| 108-90-7 | Chlorobenzene | 0.25 | U | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 0.25 | U | |
| 75-25-2 | Bromoform | 0.5 | U | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 0.75 | U | |

| CAS# | VOA TARGET COMPOUND | TQL ug/L | DETECTED ug/L | |
|---|---|---|---|---|
| 96-18-4 | 1,2,3-Trichloropropane | 0.25 | U | |
| 108-86-1 | Bromobenzene | 1 | U | |
| 95-49-8 | 2-Chlorotoluene | 0.25 | U | |
| 106-43-4 | 4-Chlorotoluene | 0.25 | U | |
| 541-73-1 | 1,3-Dichlorobenzene | 0.25 | U | |
| 106-46-7 | 1,4-Dichlorobenzene | 0.25 | U | |
| 95-50-1 | 1,2-Dichlorobenzene | 0.25 | U | |
| 96-12-8 | 1,2-Dibromo-3-Chloropropane | 1 | U | |
| 120-82-1 | 1,2,4-Trichlorobenzene | 0.25 | U | |
| 87-68-3 | Hexachlorobutadiene | 0.25 | U | |
| 87-61-6 | 1,2,3-Trichlorobenzene | 0.75 | U | |
| 1634-04-4 | Methyl-tert-butyl ether | 5 | U | |
| 71-43-2 | Benzene | 1 | U | |
| 108-88-3 | Toluene | 1 | U | |
| 100-41-4 | Ethyl benzene | 1 | U | |
| 108-38-3 | m,p-Xylenes | 2 | U | |
| 95-47-6 | o-Xylene | 1 | U | |
| 100-42-5 | Styrene | 1 | U | |
| 98-82-8 | Isopropylbenzene | 1 | U | |
| 103-65-1 | n-Propylbenzene | 1 | U | |
| 108-67-8 | 1,3,5-Trimethylbenzene | 1 | U | |
| 98-06-6 | tert-Butylbenzene | 1 | U | |
| 95-63-6 | 1,2,4-Trimethylbenzene | 1 | U | |
| 135-98-8 | sec-Butylbenzene | 1 | U | |
| 99-87-6 | p-isopropyltoluene | 1 | U | |
| 104-51-8 | n-Butylbenzene | 1 | U | |
| 91-20-3 | Naphthalene | 1 | U | |

| | mg/L | mg/L | |
|---|---|---|---|
| Gasoline Range Estimated Total Petroleum Hydrocarbon | 0.20 | | N |

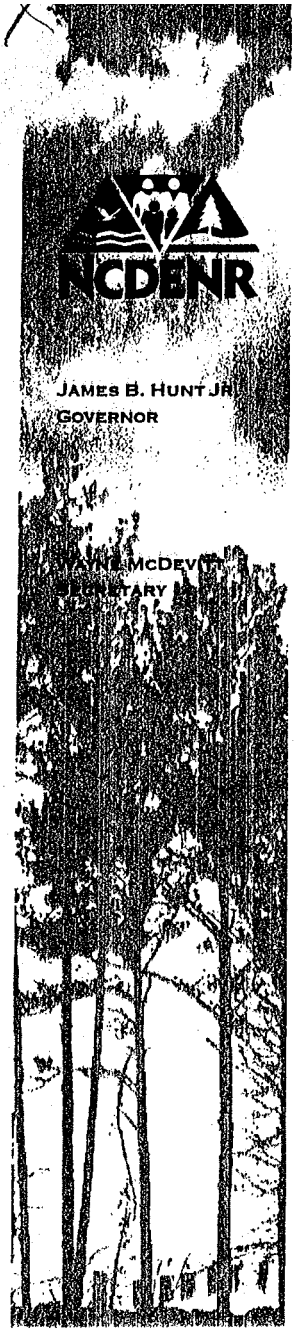
TQL- Target Quantitation Limit- Subject to change due to instrument sensitivity
T- Tentatively Identified, not confirmed
E- Estimated Value
U- Samples analyzed for this compound but not detected
N- Sample not analyzed for this compound
D- Detected below quantitation limit
M- GC/MS Analysis performed

Other purgeables detected (up to 10 highest peaks)

Detected ug/L

NO VOLATILE ORGANIC COMPOUNDS DETECTED BY GC/ELCD/PID.

COMMENTS:




NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
ASHEVILLE REGIONAL OFFICE

GROUNDWATER SECTION

December 12, 2000

Mr. Douglas Guild
Prescott Environmental Associates, Inc.
P. O. Box 2555
Chapel Hill, NC 27515-2555

Subject: Review of Groundwater Monitoring Report
Parkway Chevrolet #3
205 Smoky Park Highway, Asheville, North Carolina
Groundwater Incident Number: 18332
Incident Rank: 15B

Dear Mr. Guild:

The Asheville Regional Office has received the groundwater monitoring report for the subject site. The MW-1 and 2 were dry during the October sampling event and the sample result from MW-3 indicates that bis(2-ethylhexyl)phthalate was detected at a level above the NC groundwater standard. The groundwater monitoring must be continued, and the next monitoring report should be submitted to this office by June 30, 2001. Soil samples should be collected from the known "hot" spots to evaluate the progress of natural biodegradation processes during the next sampling event.

We appreciate your effort and cooperation on the project. If you have any questions, please call me at (828) 251-6208 ext. 228.

Sincerely,

Qu Qi
Asheville Regional Office

cc: Arthur Mouberry

INTERCHANGE BUILDING, 59 WOODFIN PLACE, ASHEVILLE, NORTH CAROLINA 28801
PHONE 828-251-6208 FAX 828-251-6452
AN EQUAL OPPORTUNITY / AFFIRMATIVE ACTION EMPLOYER - 50% RECYCLED/10% POST-CONSUMER PAPER

# Incident Management Data Entry

## Incident Information — 12/12/2000

| | | | |
|---|---|---|---|
| Incident Number | 18332 | Site Priority | 15 B |
| Incident Name | PARKWAY CHEVROLET #3 | | |
| Incident Address | 205 SMOKY PARK HWY. | | |
| Incident City/Town | ASHEVILLE | Incident Zip | 28806 |
| County | Buncombe | | |
| ROContact | QQ | | |

## Responsible Party Information

| | | | |
|---|---|---|---|
| RP Contact | RON ANDERSON | | |
| RP Company | PARKWAY CHEVROLET | | |
| RP Address | 205 SMOKY PARK HWY | | |
| RP City | ASHEVILLE | RP State | NC |
| RP Zip | 28806 | | |
| RP Phone | | | |
| OwnerShip Type | Private | | |
| Operation Type | Commercial | | |

## Contamination Information — GWContam (Y/N)

| Sources | Type | Wells | |
|---|---|---|---|
| AST System | Other Petroleum Products | Private Well | |
| | | Private NonDrinking | |
| | | Public Well | |

## Status Information

| | | | |
|---|---|---|---|
| Report/Discovery Date | 01/08/1998 | Phase | Remediation |
| Notice Date | 02/27/1998 | Next Due Date | 06/30/2001 |
| Next Action | MONITORING | | |
| CSA Received | 08/08/1998 | CAP Received | |
| CSA Approved | | CAP Approved | |
| Last Modified | 12/12/2000 | CAP Type | None |
| Date Closed | | CAP Implemented | No Data |

## Locational Information

| | | | |
|---|---|---|---|
| Latitude (DMS) | 353350 | Longitude (DMS) | 823747 |
| Latitude (Decimal Degrees) | 35.5638888888889 | Longitude (Decimal Degrees) | 82.63 |
| Lat/Long QC | EST | Quad | N87h7p |

## Comments

SEMIANNUAL GW MONITORING.

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
ASHEVILLE REGIONAL OFFICE

GROUNDWATER SECTION

November 1, 2000

Mr. Douglas Guild
Prescott Environmental Associates, Inc.
P. O. Box 2555
Chapel Hill, NC 27515-2555

Subject: Review of Groundwater Monitoring Report
Parkway Chevrolet #3
205 Smoky Park Highway, Asheville, North Carolina
Groundwater Incident Number: 18332
Incident Rank: 15B

Dear Mr. Guild:

Asheville Regional Office has received the groundwater monitoring report for the subject site. The MW-2 was dry during April sampling event and the previous sampling result indicates that PCE and dichlorobenzene were detected in this monitoring well. The contaminated soil is still present at the site. Therefore, the groundwater monitoring must be continued. The next monitoring report should be submitted to this office by December 31, 2000.

If you have any questions, please call me at (828) 251-6208 ext. 228.

Sincerely,

Qu Qi
Asheville Regional Office

cc: Arthur Mouberry

INTERCHANGE BUILDING, 59 WOODFIN PLACE, ASHEVILLE, NORTH CAROLINA 28801
PHONE 828-251-6208 FAX 828-251-6452
AN EQUAL OPPORTUNITY / AFFIRMATIVE ACTION EMPLOYER - 50% RECYCLED/10% POST-CONSUMER PAPER

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
ASHEVILLE REGIONAL OFFICE

GROUNDWATER SECTION

November 1, 2000

Mr. Douglas Guild
Prescott Environmental Associates, Inc.
P. O. Box 2555
Chapel Hill, NC 27515-2555

Subject: Review of Groundwater Monitoring Report
Parkway Chevrolet #3
205 Smoky Park Highway, Asheville, North Carolina
Groundwater Incident Number: 18332
Incident Rank: 15B

Dear Mr. Guild:

Asheville Regional Office has received the groundwater monitoring report for the subject site. The MW-2 was dry during April sampling event and the previous sampling result indicates that PCE and dichlorobenzene were detected in this monitoring well. The contaminated soil is still present at the site. Therefore, the groundwater monitoring must be continued. The next monitoring report should be submitted to this office by December 31, 2000.

If you have any questions, please call me at (828) 251-6208 ext. 228.

Sincerely,

Qu Qi
Asheville Regional Office

cc: Arthur Mouberry

INTERCHANGE BUILDING, 59 WOODFIN PLACE, ASHEVILLE, NORTH CAROLINA 28801
PHONE 828-251-6208 FAX 828-251-6452
AN EQUAL OPPORTUNITY / AFFIRMATIVE ACTION EMPLOYER - 50% RECYCLED/10% POST-CONSUMER PAPER

NCDENR

JAMES B. HUNT JR.
GOVERNOR

WAYNE MCDEVITT
SECRETARY

KERR T. STEVENS
DIRECTOR

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES

DIVISION OF WATER QUALITY
ASHEVILLE REGIONAL OFFICE

GROUNDWATER SECTION

December 7, 1999

Mr. Douglas Guild
Prescott Environmental Associates, Inc.
P. O. Box 2555
Chapel Hill, NC 27515-2555

Subject: Review of Groundwater Monitoring Report
Parkway Chevrolet #3
205 Smoky Park Highway, Asheville, North Carolina
Groundwater Incident Number: 18332
Incident Rank: 15B

Dear Mr. Guild:

Asheville Regional Office has received the groundwater monitoring report for the subject site. The sampling results indicate that PCE and dichlorobenzene were detected in the groundwater and the contaminated soil still present at the site. Therefore, the groundwater monitoring must be continued. The next monitoring report should be submitted to this office by June 15, 2000.

If you have any questions, please call me at (828) 251-6208 ext. 228.

Sincerely,

Qu Qi
Asheville Regional Office

cc: Arthur Mouberry

INTERCHANGE BUILDING, 59 WOODFIN PLACE, ASHEVILLE, NC 28801-2414
PHONE 828-251-6208 FAX 828-251-6452
AN EQUAL OPPORTUNITY / AFFIRMATIVE ACTION EMPLOYER - 50% RECYCLED/10% POST-CONSUMER PAPER

NCDENR

JAMES B. HUNT JR.
GOVERNOR

WAYNE MCDEVITT
SECRETARY

KERR T. STEVENS
DIRECTOR

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES

DIVISION OF WATER QUALITY
ASHEVILLE REGIONAL OFFICE

GROUNDWATER SECTION

June 15, 1999

Mr. Douglas Guild
Prescott Environmental Associates, Inc.
P. O. Box 2555
Chapel Hill, NC 27515-2555

Subject: Review of Groundwater Monitoring Report
Parkway Chevrolet #3
205 Smoky Park Highway, Asheville, North Carolina
Groundwater Incident Number: 18332
Incident Rank: 15B

Dear Mr. Guild:

Asheville Regional Office has received the groundwater monitoring report for the subject site. The sampling results indicate that the groundwater is not contaminated. However, because of the remaining soil contamination at the site, the groundwater monitoring must be continued. The next monitoring report should be submitted to this office by December 15, 1999.

If you have any questions, please call me at (828) 251-6208 ext. 228.

Sincerely,

Qu Qi (pronounced Chu Chi)
Asheville Regional Office

cc: Arthur Mouberry

INTERCHANGE BUILDING, 59 WOODFIN PLACE, ASHEVILLE, NC 28801-2414
PHONE 828-251-6208 FAX 828-251-6452
AN EQUAL OPPORTUNITY / AFFIRMATIVE ACTION EMPLOYER - 50% RECYCLED/10% POST-CONSUMER PAPER

Incident Name: Parkway Chevrolet #3 Region/County: ARO/Bu Co.

Groundwater Incident File #: 18332 Ranking Performed by: JAB

Date: 2/8/99

# NORTH CAROLINA
# GROUNDWATER CONTAMINATION INCIDENT MANAGEMENT
# SITE PRIORITY RANKING SYSTEM

(To be completed by Regional Office)

**IMMINENT HAZARD ASSESSMENT** — Points Awarded

A. Vapor Hazard - free product in confined areas or vapor phase contamination detected at or above 20% of the lower explosive limit or at health concern levels; award 50 points total _____

B. Fire - free product subject to ignition in exposed areas such as surface water impoundments, streams, excavations, etc.; award 50 points total _____

**EXPOSURE ASSESSMENT**

A Contaminated Drinking Water Supplies

1. Private, domestic water supply well containing substances in concentrations exceeding 15A NCAC 2L groundwater quality standards; award 10 points per well _____

2. Public or institutional water supply well containing substances in concentrations exceeding 15A NCAC 2L groundwater quality standards; award 20 points per well _____

3. Exceedances of Class WS- 1 surface water quality standards as a result of groundwater discharge; award 20 points per surface water body impacted _____

4. Any water supply well identified in Items II. A 1 and II. A 2 that cannot be replaced by connecting to an existing public water supply source: award additional 10 points per irreplaceable well _____

B. Threat to Uncontaminated Drinking Water Supplies

1. Private. domestic water supply well located within 1500 feet down gradient of the discharge, release or known extent of contaminant; award 10 points per well _____

2. Public or institutional water supply well located within 1500 feet down gradient of the discharge, release or known extent of contaminant; award 15 points per well (well is upgradient) _____

3. Raw surface water intake for public water supply located within ½ mile down gradient of the discharge, release or known extent of contaminant; award 5 points per water supply system _____

4. Any well identified In Items II. B. 1 and 11. B. 2 or an intake in Item II. B. 3. are located within 250 feet of the discharge, release or known extent of contaminant; award additional 20 points total (not per well or intake) _____

C. Vapor Phase Exposure

1. Contaminant vapors detected in inhabitable building(s) but levels are below 20% of the lower explosive limit and heath concern levels: award 30 points total _____

2. Contaminant vapors detected in other confined areas (uninhabitable buildings, sewer lines, utility vaults, etc.) but levels are below 20% of the lower explosive limit; award 10 points total _____

**II. SOURCE ASSESSMENT**

A. Uncontrolled or Unabated Contaminant Source (including dumpsites, stockpiles, lagoons, contaminant soil, land applications, septic tanks, landfills, underground and aboveground storage tanks, etc.)

1. Suspected or confirmed primary source remains in active use and continues to receive raw product, wastewater or solid waste; award 30 points per source _____

Points Awarded

2. Active use of suspected or confirmed primary source has been discontinued or source was caused by a one-time release of product or waste, however, primary or secondary source continues to release product or contaminants into the environment; award 10 points per source _____

## IV. ENVIRONMENTAL VULNERABILITY ASSESSMENT

A Vertical Contaminant Migration - Literature or well logs indicate that no confining layer is present above bedrock or within twenty feet of land surface; award 10 points total 10

B. Horizontal Contaminant Migration - Data or observations indicate that no discharge points or aquifer discontinuities exist between the discharge, release or known extent of contamination and the nearest down gradient drinking water supply; award 10 points total _____

C. Existing Groundwater Quality - The worst case monitor or supply well contains contaminant levels:

1. At less than 10 times the 2L groundwater standards; award 5 points 5
2. Between 10 and 100 times the 2L groundwater standards; award 20 points _____
3. Greater than 100 times the 2L groundwater standards; award 40 points _____

## V. REGIONAL OFFICE RESPONSE (LETTER RANK)

**(Put an X on the line next to all conditions that apply)**

**CATEGORY A** (one or more of the following conditions are present)

1. One or more water supply well(s) are contaminated and the persons using the wells are not served by an existing public water supply. _____
2. Petroleum vapors present in confined areas at levels that pose a human health concern or an explosion hazard. _____
3. A treated surface water supply is in violation of the drinking water standards set out in rules adopted by the Commission for Health Services under G.S. 130A-315.. _____

**CATEGORY B** (one or more of the following conditions are present)

1. One or more water supply wells are contaminated but the persons using the wells are served by an existing public water supply. _____
2. One or more water supply well(s) are in use within 1500 feet of discharge, release or known extent of contamination, the wells are not contaminated, and the persons using the wells are not served by an existing public water supply. ✓
3. Petroleum vapors present in confined areas but do not currently pose a threat to human health or an explosion hazard. _____

**CATEGORY C** (both of the following conditions are present)

1. One or more water supply well(s) are present at a distance greater than 1500 feet of the discharge, release or known extent of contamination, and the persons using the wells are not served by an existing public water supply. _____
2. None of the identified water supply wells are contaminated. _____

**CATEGORY D** (both of the following conditions are present)

1. One or more water supply well(s) are present within 1500 feet of the discharge, release or known extent of contamination, and the persons using the wells are served by an existing public water supply. _____
2. None of the identified water supply wells are contaminated. _____

**CATEGORY E** (both of the following conditions are present)

1. Water supply well(s) are not present within 1500 feet of the discharge, release or known extent of contamination, and no known water supply well(s) are contaminated. _____
2. All persons within 1500 feet of the discharge, release or known extent of contamination are served by an existing public water supply. _____

**TOTAL POINTS AWARDED** 15 B

#/letter

10:52AM 2/3/99
Doug Guild, Prescott Env., 919-942-8006, re: Parkway Chevrolet
The monitoring report needs to be sealed by a PE or PG because he has not just submitted data, but has also submitted data interpretation. He asked for a copy of the regs that say that. It will take me a while to find them, but I will get them and send them to him. It's not in any of our rules (ie 2N, 2L), but in the general statutes. As for future work on the site, let's go to semi-annual gw monitoring until we get risk-based rules. Next sampling event will be 2nd quarter of 1999. We won't require soil monitoring until we start looking at site closure. I don't agree with closing out the Auto Detail Bldg area because it's all part of the same incident and we will continue gw monitoring there.

GW monitoring:
625+10
502.2

Soil monitoring
9071
8260

# DIVISION OF WATER QUALITY

**Chemistry Laboratory Report / Ground Water Quality**

COUNTY : BUNCOMBE
QUAD NO:

REPORT TO : ARO Regional Office
COLLECTOR(S) : DECHANT
DATE: 12/15/98
TIME:

PURPOSE:

SAMPLE PRIORITY
[X] ROUTINE [ ] EMERGENCY

[X] CHAIN OF CUSTODY

[W] SAMPLE TYPE

Owner: PARKWAY CHEV. MW-1
Location or Site:
Description of sampling point
Sampling Method:
Remarks:

Lab Number : 8G2559
Date Received : 12/17/98
Time Received : 9;30
Received By : JG

Released By : DS
Date reported : 1/21/99

A S7

## LABORATORY ANALYSIS

| | | |
|---|---|---|
| | BOD 310 | mg/L |
| | COD High 340 | mg/L |
| | COD Low 335 | mg/L |
| | Coliform: MF Fecal 31616 | /100ml |
| | Coliform: MF Total 31504 | /100ml |
| | TOC | mg/l |
| | Turbitity | NTU |
| | Residue., Suspended 530 | mg/L |
| | Total Suspended solids | mg/L |
| | | |
| | pH | units |
| | Alkalinity to pH 4.5 | mg/L |
| | Alkalinity to pH 8.3 | mg/L |
| | Carbonate | mg/L |
| | Bicarbonate | mg/L |
| | Carbon dioxide | mg/L |
| | Chloride | mg/L |
| | Chromium: Hex 1032 | ug/L |
| | Color: True 80 | c.u. |
| | Cyanide 720 | mg/L |

| | | |
|---|---|---|
| | Diss. Solids 70300 | mg/L |
| | Fluoride 951 | mg/L |
| | Hardness: total 900 | mg/L |
| | Hardness: (non-carb) 902 | mg/L |
| | Phenols 32730 | ug/L |
| | Specific Cond. 95 | umhos/cm2 |
| | Sulfate | mg/L |
| | Sulfide 745 | mg/L |
| | MBAS | mg/L |
| | Oil and Grease | mg/L |
| | Silica | mg/L |
| | Boron | |
| | Formaldehyde | mg/L |
| | NH3 as N 610 | mg/L |
| | TKN as N 625 | mg/L |
| | NO2 +NO3 as n 630 | mg/L |
| | P: Total as P 665 | mg/L |
| | PO4 | mg/L |
| | | |
| | | |

| | | |
|---|---|---|
| | Ag-Silver 46566 | ug/L |
| | Al-Aluminum 46557 | ug/L |
| | As-Arsenic 46551 | ug/L |
| | Ba-Barium 46558 | ug/L |
| | Ca-Calcium 46552 | mg/L |
| | Cd-Cadium 46559 | ug/L |
| | Cr-Chromium 46560 | ug/L |
| | Cu- Copper 1042 | ug/L |
| | Fe- Iron 1045 | ug/L |
| | Hg- Mercury 71900 | ug/L |
| | K-Potassium 46555 | mg/L |
| | Mg- Magnesium 927 | mg/L |
| | Mn-Manganese 1055 | ug/L |
| | Na- Sodium 929 | mg/L |
| | Ni-Nickel | ug/L |
| | Pb-Lead 46564 | ug/L |
| | Se-Selenium | ug/L |
| | Zn_Zinc 46567 | ug/L |
| | | |
| | | |

| | |
|---|---|
| | Organochlorine Pesticides |
| | Organophosphorus Pesticides |
| | Nitrogen Pesticides |
| | |
| | Acid Herbicides |
| | |
| X | Semivolatiles |
| | TPH-Diesel Range |
| | |
| X | Volatile Organics (VOA bottle) |
| | |
| | TPH-Gasoline Range |
| | TPH-BTEX Gasoline Range |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

COMMENTS :

RECEIVED
JAN 22 1999
Groundwater Section
Asheville Regional Office

8G2559.DEC

# GROUNDWATER FIELD/LAB FORM

CHAIN OF CUSTODY

North Carolina
Department of Environment, Health, and Natural Resources
DIVISION OF WATER QUALITY - GROUNDWATER SECTION

County Buncombe
Quad No. _____ Serial No. _____
Lat. _____ Long. _____

| SAMPLE TYPE | SAMPLE PRIORITY |
|---|---|
| ☑ Water | ☑ Routine |
| ☐ Soil | ☐ Emergency |
| ☐ Other _____ | |
| ☑ Chain of Custody | |

MW-1

Lab Number 8G2559
Date Received 12-17-98 Time 4:36
Rec'd by: _____ From: Bus, Courier, Hand Del.,
Other: _____
Data Entry By: _____ Ck: _____
Date Reported: _____

Report To: ARO, FRO, MRO, RRO, WaRO, WiRO, WSRO, Kinston FO, Fed. Trust, Central Off., Other: _____
Shipped by: Bus, Courier, Hand Del., Other: _____
Collector(s): K. Dechant Date 12/15/98 Time 2:30

Purpose:
Baseline, Complaint, Compliance, LUST, Pesticide Study, Federal Trust, Other: Incident 18332

## FIELD ANALYSES

$pH_{400}$ _____ Spec. Cond.$_{94}$ _____ at 25° C
Temp.$_{10}$ _____ °C Odor _____
Appearance _____
Field Analysis By: _____

Owner Parkway Chevrolet (circle one)
Location or site MW-1
Description of sampling point MW-1 well head
Sampling Method bailed (Pump, bailer, etc.)
Remarks _____ Sample Interval _____ (pumping time, air temp. etc.)

## LABORATORY ANALYSES

| | | |
|---|---|---|
| | $BOD_5$ 310 | mg/l |
| | COD High 340 | mg/l |
| | COD Low 335 | mg/l |
| | Coliform: MF Fecal 31616 | /100ml |
| | Coliform: MF Total 31504 | /100ml |
| | TOC 680 | mg/l |
| | Turbidity 76 | NTU |
| | Residue., Suspended 530 | mg/l |
| | | |
| | | |
| | pH 403 | units |
| | Alkalinity to pH 4.5 410 | mg/l |
| | Alkalinity to pH 8.3 415 | mg/l |
| | Carbonate 445 | mg/l |
| | Bicarbonate 440 | mg/l |
| | Carbon dioxide 405 | mg/l |
| | Chloride 940 | mg/l |
| | Chromium: Hex 1032 | ug/l |
| | Color: True 80 | CU |
| | Cyanide 720 | mg/l |

| | | |
|---|---|---|
| | Diss. Solids 70300 | mg/l |
| | Flouride 951 | mg/l |
| | Hardness: Total 900 | mg/l |
| | Hardness (non-carb) 902 | mg/l |
| | Phenols 32730 | ug/l |
| | Specific Cond. 95 | uMhos/cm² |
| | Sulfate 945 | mg/l |
| | Sulfide 745 | mg/l |
| | | |
| | **Oil and Grease** | **mg/l** |
| | | |
| | | |
| | | |
| | $NH_3$ as N 610 | mg/l |
| | TKN as N 625 | mg/l |
| | $NO_2$ + $NO_3$ as N 630 | mg/l |
| | P: Total as P 665 | mg/l |
| | | |
| | | |
| | | |

| | | |
|---|---|---|
| | Ag - Silver 46566 | ug/l |
| | Al - Aluminum 46557 | ug/l |
| | As - Arsenic 46551 | ug/l |
| | Ba - Barium 46558 | ug/l |
| | Ca - Calcium 46552 | mg/l |
| | Cd - Cadmium 46559 | ug/l |
| | Cr - Chromium 46560 | ug/l |
| | Cu - Copper 46562 | ug/l |
| | Fe - Iron 46563 | ug/l |
| | Hg - Mercury 71900 | ug/l |
| | K - Potassium 46555 | mg/l |
| | Mg - Magnesium 46554 | mg/l |
| | Mn - Manganese 46565 | ug/l |
| | Na - Sodium 46556 | mg/l |
| | Ni - Nickel | ug/l |
| | Pb - Lead 46564 | ug/l |
| | Se - Selenium | ug/l |
| | Zn - Zinc 46567 | ug/l |
| | | |
| | | |

| | |
|---|---|
| | Organochlorine Pesticides |
| | Organophosphorus Pesticides |
| | Nitrogen Pesticides |
| | Acid Herbicides |
| | PCB's |
| | |
| | |
| | |
| ✓ | Semivolatile Organics |
| | **TPH - Diesel Range** |
| | |
| | |
| | |
| ! ✓ | Volatile Organics (VOA bottle) |
| | **TPH - Gasoline Range** |
| | **TPH - BTEX Gasoline Range** |
| | |
| | |
| | |

RECEIVED
JAN 22 1999
GROUNDWATER SECTION
ASHEVILLE REGIONAL OFFICE

Lab Comments: _____

GW-54 REV. 7/96 For Dissolved Analysis - submit filtered sample and write "DIS" in block.

REPORTED BY VA VA
CHECKED BY ARC
REVIEWED BY ARC

**ENR/DWQ LABORATORY**
**VOLATILE ANALYTICAL REPORT**

**LAB NO. 8G2559**

SUPERVISOR RCK
DATE 1/7/99

SAMPLE TYPE: WATER

ENTERED BY RS
DATE 1-8-99

**ANALYSIS RESULTS**

| CAS# | VOA TARGET COMPOUND | TQL ug/L | DETECTED ug/L | |
|---|---|---|---|---|
| 75-35-4 | 1,1-Dichloroethene | 0.75 | | U |
| 75-09-2 | Methylene Chloride | 10 | | U |
| 156-60-5 | trans-1,2-Dichloroethene | 0.75 | | U |
| 75-34-3 | 1,1-Dichloroethane | 0.25 | | U |
| 590-20-7 | 2,2-Dichloropropane | 0.25 | | U |
| 156-59-4 | cis-1,2-Dichloroethene | 0.25 | | U |
| 67-66-3 | Chloroform | 0.25 | | U |
| 74-97-5 | Bromochloromethane | 0.75 | | U |
| 71-55-6 | 1,1,1-Trichloroethane | 0.25 | | U |
| 563-58-6 | 1,1-Dichloropropene | 0.25 | | U |
| 56-23-5 | Carbon Tetrachloride | 0.75 | | U |
| 107-06-2 | 1,2-Dichloroethane | 0.25 | | U |
| 79-01-6 | Trichloroethene | 0.25 | | U |
| 78-87-5 | 1,2-Dichloropropane | 0.25 | | U |
| 75-27-4 | Bromodichloromethane | 0.25 | | U |
| 74-95-3 | Dibromomethane | 1 | | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 0.25 | | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 0.25 | | U |
| 79-00-5 | 1,1,2-Trichloroethane | 0.25 | | U |
| 127-18-4 | Tetrachloroethene | 0.25 | 0.36 T | 0.2 |
| 142-28-9 | 1,3-Dichloropropane | 0.25 | | U |
| 124-48-1 | Dibromochloromethane | 0.75 | | U |
| 106-93-4 | 1,2-Dibromoethane | 1 | | U |
| 108-90-7 | Chlorobenzene | 0.25 | | U |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 0.25 | | U |
| 75-25-2 | Bromoform | 0.5 | | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 0.75 | | U |

| CAS# | VOA TARGET COMPOUND | TQL ug/L | DETECTED ug/L | |
|---|---|---|---|---|
| 96-18-4 | 1,2,3-Trichloropropane | 0.25 | | U |
| 108-86-1 | Bromobenzene | 1 | | U |
| 95-49-8 | 2-Chlorotoluene | 0.25 | | U |
| 106-43-4 | 4-Chlorotoluene | 0.25 | | U |
| 541-73-1 | 1,3-Dichlorobenzene | 0.25 | | U |
| 106-46-7 | 1,4-Dichlorobenzene | 0.25 | | U |
| 95-50-1 | 1,2-Dichlorobenzene | 0.25 | | U |
| 96-12-8 | 1,2-Dibromo-3-Chloropropane | 1 | | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 0.25 | | U |
| 87-68-3 | Hexachlorobutadiene | 0.25 | | U |
| 87-61-6 | 1,2,3-Trichlorobenzene | 0.75 | | U |
| 1634-04-4 | Methyl-tert-butyl ether | 5 | | U |
| 71-43-2 | Benzene | 1 | | U |
| 108-88-3 | Toluene | 1 | | U |
| 100-41-4 | Ethyl benzene | 1 | | U |
| 108-38-3 | m,p-Xylenes | 2 | | U |
| 95-47-6 | o-Xylene | 1 | | U |
| 100-42-5 | Styrene | 1 | | U |
| 98-82-8 | Isopropylbenzene | 1 | | U |
| 103-65-1 | n-Propylbenzene | 1 | | U |
| 108-67-8 | 1,3,5-Trimethylbenzene | 1 | | U |
| 98-06-6 | tert-Butylbenzene | 1 | | U |
| 95-63-6 | 1,2,4-Trimethylbenzene | 1 | | U |
| 135-98-8 | sec-Butylbenzene | 1 | | U |
| 99-87-6 | p-isopropyltoluene | 1 | | U |
| 104-51-8 | n-Butylbenzene | 1 | | U |
| 91-20-3 | Naphthalene | 1 | | U |

| | mg/L | mg/L | |
|---|---|---|---|
| Gasoline Range Estimated Total Petroleum Hydrocarbon | 0.20 | | N |

Other purgeables detected
(up to 10 highest peaks)

Detected ug/L

NO VOLATILE ORGANIC COMPOUNDS DETECTED BY GC/PID.

TQL- Target Quantitation Limit- Subject to change due to instrument sensitivity
T- Tentatively Identified, not confirmed
E- Estimated Value
U- Samples analyzed for this compound but not detected
N- Sample not analyzed for this compound
D- Detected below quantitation limit
M- GC/MS Analysis performed

COMMENTS:

# DIVISION OF WATER QUALITY

**Chemistry Laboratory Report / Ground Water Quality**

AST

COUNTY : BUNCOMBE
QUAD NO:

REPORT TO : ARO Regional Office
COLLECTOR(S) : DECHANT
DATE: 12/15/98
TIME:

PURPOSE:

SAMPLE PRIORITY
[X] ROUTINE [ ] EMERGENCY

[X] CHAIN OF CUSTODY

[W] SAMPLE TYPE

Owner: PARKWAY CHEVE.
Location or Site: MW-3
Description of sampling point:
Sampling Method:
Remarks:

| | |
|---|---|
| Lab Number : | 8G2561 |
| Date Received : | 12/17/98 |
| Time Received : | 9;30 |
| Received By : | JG |
| Released By : | DS |
| Date reported : | 1/21/99 |

## LABORATORY ANALYSIS

| | | |
|---|---|---|
| | BOD 310 | mg/L |
| | COD High 340 | mg/L |
| | COD Low 335 | mg/L |
| | Coliform: MF Fecal 31616 | /100ml |
| | Coliform: MF Total 31504 | /100ml |
| | TOC | mg/l |
| | Turbitity | NTU |
| | Residue., Suspended 530 | mg/L |
| | Total Suspended solids | mg/L |
| | | |
| | pH | units |
| | Alkalinity to pH 4.5 | mg/L |
| | Alkalinity to pH 8.3 | mg/L |
| | Carbonate | mg/L |
| | Bicarbonate | mg/L |
| | Carbon dioxide | mg/L |
| | Chloride | mg/L |
| | Chromium: Hex 1032 | ug/L |
| | Color: True 80 | c.u. |
| | Cyanide 720 | mg/L |

| | | |
|---|---|---|
| | Diss. Solids 70300 | mg/L |
| | Fluoride 951 | mg/L |
| | Hardness: total 900 | mg/L |
| | Hardness: (non-carb) 902 | mg/L |
| | Phenols 32730 | ug/L |
| | Specific Cond. 95 | umhos/cm2 |
| | Sulfate | mg/L |
| | Sulfide 745 | mg/L |
| | MBAS | mg/L |
| | Oil and Grease | mg/L |
| | Silica | mg/L |
| | Boron | |
| | Formaldehyde | mg/L |
| | NH3 as N 610 | mg/L |
| | TKN as N 625 | mg/L |
| | NO2 +NO3 as n 630 | mg/L |
| | P: Total as P 665 | mg/L |
| | PO4 | mg/L |
| | | |
| | | |

| | | |
|---|---|---|
| | Ag-Silver 46566 | ug/L |
| | Al-Aluminum 46557 | ug/L |
| | As-Arsenic 46551 | ug/L |
| | Ba-Barium 46558 | ug/L |
| | Ca-Calcium 46552 | mg/L |
| | Cd-Cadium 46559 | ug/L |
| | Cr-Chromium 46560 | ug/L |
| | Cu- Copper 1042 | ug/L |
| | Fe- Iron 1045 | ug/L |
| | Hg- Mercury 71900 | ug/L |
| | K-Potassium 46555 | mg/L |
| | Mg- Magnesium 927 | mg/L |
| | Mn-Manganese 1055 | ug/L |
| | Na- Sodium 929 | mg/L |
| | Ni-Nickel | ug/L |
| | Pb-Lead 46564 | ug/L |
| | Se-Selenium | ug/L |
| | Zn_Zinc 46567 | ug/L |
| | | |
| | | |

| | |
|---|---|
| | Organochlorine Pesticides |
| | Organophosphorus Pesticides |
| | Nitrogen Pesticides |
| | |
| | Acid Herbicides |
| | |
| X | Semivolatiles |
| | TPH-Diesel Range |
| | |
| X | Volatile Organics (VOA bottle) |
| | |
| | TPH-Gasoline Range |
| | TPH-BTEX Gasoline Range |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

COMMENTS :

RECEIVED
JAN 22 1999
Groundwater Section
Asheville Regional Office

8G2561.DEC

# GROUNDWATER FIELD/LAB FORM — CHAIN OF CUSTODY

North Carolina
Department of Environment, Health, and Natural Resources
DIVISION OF WATER QUALITY - GROUNDWATER SECTION

County Buncombe
Quad No. _____ Serial No. _____
Lat. _____ Long. _____

| SAMPLE TYPE | SAMPLE PRIORITY |
|---|---|
| ☑ Water | ☑ Routine |
| ☐ Soil | ☐ Emergency |
| ☐ Other _____ | |
| ☑ Chain of Custody | |

MW-3

Lab Number 8G2561
Date Received 12-17-98 Time 9:30
Rec'd by: _____ From: Bus, Courier, Hand Del.,
Other: _____
Data Entry By: _____ Ck: _____
Date Reported: _____

Report To: ARO, FRO, MRO, RRO, WaRO, WiRO, WSRO, Kinston FO, Fed. Trust, Central Off., Other: _____
Shipped by: Bus, Courier, Hand Del., Other: _____
Collector(s): K. Dechant Date 12/15/98 Time 3:00

Purpose:
Baseline, Complaint, Compliance, LUST, Pesticide Study, Federal Trust, Other: Incident 18332
(circle one)

## FIELD ANALYSES

$pH_{400}$ _____ Spec. Cond.$_{94}$ _____ at 25° C
Temp.$_{10}$ _____ °C Odor _____
Appearance _____
Field Analysis By: _____

Owner Parkway Chevrolet
Location or site MW-3
Description of sampling point well head
Sampling Method bailed (Pump, bailer, etc.)
Remarks _____ Sample Interval _____
(pumping time, air temp. etc.)

## LABORATORY ANALYSES

| | | |
|---|---|---|
| | $BOD_5$ 310 | mg/l |
| | COD High 340 | mg/l |
| | COD Low 335 | mg/l |
| | Coliform: MF Fecal 31616 | /100ml |
| | Coliform: MF Total 31504 | /100ml |
| | TOC 680 | mg/l |
| | Turbidity 76 | NTU |
| | Residue., Suspended 530 | mg/l |
| | | |
| | | |
| | pH 403 | units |
| | Alkalinity to pH 4.5 410 | mg/l |
| | Alkalinity to pH 8.3 415 | mg/l |
| | Carbonate 445 | mg/l |
| | Bicarbonate 440 | mg/l |
| | Carbon dioxide 405 | mg/l |
| | Chloride 940 | mg/l |
| | Chromium: Hex 1032 | ug/l |
| | Color: True 80 | CU |
| | Cyanide 720 | mg/l |

| | | |
|---|---|---|
| | Diss. Solids 70300 | mg/l |
| | Flouride 951 | mg/l |
| | Hardness: Total 900 | mg/l |
| | Hardness (non-carb) 902 | mg/l |
| | Phenols 32730 | ug/l |
| | Specific Cond. 95 | uMhos/cm² |
| | Sulfate 945 | mg/l |
| | Sulfide 745 | mg/l |
| | | |
| | **Oil and Grease** | **mg/l** |
| | | |
| | | |
| | | |
| | $NH_3$ as N 610 | mg/l |
| | TKN as N 625 | mg/l |
| | $NO_2 + NO_3$ as N 630 | mg/l |
| | P: Total as P 665 | mg/l |
| | | |
| | | |
| | | |

| | | |
|---|---|---|
| | Ag - Silver 46566 | ug/l |
| | Al - Aluminum 46557 | ug/l |
| | As - Arsenic 46551 | ug/l |
| | Ba - Barium 46558 | ug/l |
| | Ca - Calcium 46552 | mg/l |
| | Cd - Cadmium 46559 | ug/l |
| | Cr - Chromium 46560 | ug/l |
| | Cu - Copper 46562 | ug/l |
| | Fe - Iron 46563 | ug/l |
| | Hg - Mercury 71900 | ug/l |
| | K - Potassium 46555 | mg/l |
| | Mg - Magnesium 46554 | mg/l |
| | Mn - Manganese 46565 | ug/l |
| | Na - Sodium 46556 | mg/l |
| | Ni - Nickel | ug/l |
| | Pb - Lead 46564 | ug/l |
| | Se - Selenium | ug/l |
| | Zn - Zinc 46567 | ug/l |
| | | |

| | |
|---|---|
| | Organochlorine Pesticides |
| | Organophosphorus Pesticides |
| | Nitrogen Pesticides |
| | Acid Herbicides |
| | PCB's |
| | |
| | |
| | |
| ✓ | Semivolatile Organics |
| | **TPH - Diesel Range** |
| | |
| | |
| | |
| ✓ | Volatile Organics (VOA bottle) |
| | **TPH - Gasoline Range** |
| | **TPH - BTEX Gasoline Range** |
| | |
| | |
| | |
| | |

Lab Comments: _____

GW-54 REV. 7/96 For Dissolved Analysis - submit filtered sample and write "DIS" in block.

REPORTED BY
CHECKED BY
REVIEWED BY

SAMPLE TYPE: WATER

# ENR/DWQ LABORATORY
# SEMI-VOLATILE ANALYTICAL REPORT

LAB NO. 8G2561

SUPERVISOR R2K
DATE 1/15/99

ENTERED BY
DATE 1/15/99

## ANALYSIS RESULTS

| CAS# | SEMIVOLATILES TARGET COMPOUND | TQL ug/L | DETECTED ug/L | | CAS# | SEMIVOLATILES TARGET COMPOUND | TQL ug/L | DETECTED ug/L | |
|---|---|---|---|---|---|---|---|---|---|
| 62-53-3 | ANILINE | 10 | U | | 606-20-2 | 2,6-DINITROTOLUENE | 10 | U | |
| 108-95-2 | PHENOL | 10 | U | | 99-09-2 | 3-NITROANILINE | 50 | U | |
| 111-44-4 | BIS(2-CHLOROETHYL) ETHER | 10 | U | | 83-32-9 | ACENAPHTHENE | 10 | U | |
| 95-57-8 | 2-CHLOROPHENOL | 10 | U | | 51-28-5 | 2,4-DINITRO PHENOL | 50 | U | |
| 541-73-1 | 1,3-DICHLOROBENZENE | 10 | U | | 100-02-7 | 4-NITRO PHENOL | 50 | U | |
| 106-46-7 | 1,4-DICHLOROBENZENE | 10 | U | | 132-64-9 | DIBENZOFURAN | 10 | U | |
| 100-51-6 | BENZYL ALCOHOL | 20 | U | | 121-14-2 | 2,4-DINITROTOLUENE | 10 | U | |
| 95-50-1 | 1,2-DICHLOROBENZENE | 10 | U | | 84-66-2 | DIETHYL PHTHALATE | 10 | U | |
| 95-48-7 | 2-METHYL PHENOL | 10 | U | | 7005-72-3 | 4-CHLOROPHENYL PHENYL ETHER | 10 | U | |
| 108-60-1 | BIS(2-CHLOROISOPROPYL) ETHER | 10 | U | | 86-73-7 | FLUORENE | 10 | U | |
| 106-44-5 | 4-METHYL PHENOL | 10 | U | | 100-01-6 | 4-NITROANILINE | 50 | U | |
| 621-64-7 | N-NITROSO-DI-N-PROPYLAMINE | 10 | U | | 534-52-1 | 4,6-DINITRO-2-METHYL PHENOL | 50 | U | |
| 67-72-1 | HEXACHLOROETHANE | 10 | U | | 86-30-6 | N-NITROSODIPHENYLAMINE | 10 | U | |
| 98-95-3 | NITROBENZENE | 10 | U | | 101-55-3 | 4-BROMOPHENYL PHENYL ETHER | 10 | U | |
| 78-59-1 | ISOPHORONE | 10 | U | | 118-74-1 | HEXACHLOROBENZENE | 10 | U | |
| 88-75-5 | 2-NITRO PHENOL | 10 | U | | 87-86-5 | PENTACHLORO PHENOL | 50 | U | |
| 105-67-9 | 2,4-DIMETHYL PHENOL | 10 | U | | 85-01-8 | PHENANTHRENE | 10 | U | |
| 65-85-0 | BENZOIC ACID | 50 | U | | 120-12-7 | ANTHRACENE | 10 | U | |
| 111-91-1 | BIS(2-CHLOROETHOXY) METHANE | 10 | U | | 84-74-2 | DI-N-BUTYL PHTHALATE | 10 | U | |
| 120-83-2 | 2,4-DICHLORO PHENOL | 10 | U | | 206-44-0 | FLUORANTHENE | 10 | U | |
| 120-82-1 | 1,2,4-TRICHLOROBENZENE | 10 | U | | 129-00-0 | PYRENE | 10 | U | |
| 91-20-3 | NAPHTHALENE | 10 | U | | 85-68-7 | BUTYLBENZYL PHTHALATE | 10 | U | |
| 106-47-8 | 4-CHLOROANILINE | 20 | U | | 91-94-1 | 3,3'-DICHLOROBENZIDINE | 20 | U | |
| 87-68-3 | HEXACHLOROBUTADIENE | 10 | U | | 56-55-3 | BENZO(A)ANTHRACENE | 10 | U | |
| 59-50-7 | 4-CHLORO-3-METHYL PHENOL | 20 | U | | 218-01-9 | CHRYSENE | 10 | U | |
| 91-57-6 | 2-METHYL NAPHTHALENE | 10 | U | | 117-81-7 | BIS(2-ETHYLHEXYL) PHTHALATE | 10 | U | |
| 77-47-4 | HEXACHLOROCYCLOPENTADIENE | 10 | U | | 117-84-0 | DI-N-OCTYL PHTHALATE | 10 | U | |
| 88-06-2 | 2,4,6-TRICHLORO PHENOL | 10 | U | | 205-99-2 | BENZO(B)FLUORANTHENE | 10 | U | |
| 95-95-4 | 2,4,5-TRICHLORO PHENOL | 10 | U | | 207-08-9 | BENZO(K)FLUORANTHENE | 10 | U | |
| 91-58-7 | 2-CHLORO NAPHTHALENE | 10 | U | | 50-32-8 | BENZO(A)PYRENE | 10 | U | |
| 88-74-4 | 2-NITROANILINE | 50 | U | | 193-39-5 | INDENO(1,2,3-CD)PYRENE | 10 | U | |
| 131-11-3 | DIMETHYL PHTHALATE | 10 | U | | 53-70-3 | DIBENZO(A,H)ANTHRACENE | 10 | U | |
| 208-96-8 | ACENAPHTHYLENE | 10 | U | | 191-24-2 | BENZO(G,H,I)PERYLENE | 10 | U | |

## SEMIVOLATILE ORGANICS REPORT - DWQ LAB PAGE 2

LAB NO. 8G2561

| Other Semi-Volatiles compounds detected (up to 20 highest peaks) | Detected ug/L |
|---|---|
| NO BASE/NEUTRAL OR ACID EXTRACTABLE ORGANICS DETECTED BY GC/MS. | |

TQL- Target Quantitation Limit- Subject to change due to instrument sensitivity
T- Tentatively Identified, estimated concentration
E- Estimated Value
U- Samples analyzed for this compound but not detected
N- Sample not analyzed for this compound
D- Detected below quantitation limit
H- Holding time exceeded

COMMENTS:

REPORTED BY VA VA
CHECKED BY
REVIEWED BY

SAMPLE TYPE: WATER

**ENR/DWQ LABORATORY**
**VOLATILE ANALYTICAL REPORT**

**LAB NO. 8G2561**

SUPERVISOR RGK
DATE 1/8/99

ENTERED BY DS
DATE 1-8-99

**ANALYSIS RESULTS**

| CAS# | VOA TARGET COMPOUND | TQL ug/L | DETECTED ug/L | |
|---|---|---|---|---|
| 75-35-4 | 1,1-Dichloroethene | 0.75 | | U |
| 75-09-2 | Methylene Chloride | 10 | | U |
| 156-60-5 | trans-1,2-Dichloroethene | 0.75 | | U |
| 75-34-3 | 1,1-Dichloroethane | 0.25 | | U |
| 590-20-7 | 2,2-Dichloropropane | 0.25 | | U |
| 156-59-4 | cis-1,2-Dichloroethene | 0.25 | | U |
| 67-66-3 | Chloroform | 0.25 | 0.32 T | |
| 74-97-5 | Bromochloromethane | 0.75 | | U |
| 71-55-6 | 1,1,1-Trichloroethane | 0.25 | 0.38 | |
| 563-58-6 | 1,1-Dichloropropene | 0.25 | | U |
| 56-23-5 | Carbon Tetrachloride | 0.75 | | U |
| 107-06-2 | 1,2-Dichloroethane | 0.25 | | U |
| 79-01-6 | Trichloroethene | 0.25 | | U |
| 78-87-5 | 1,2-Dichloropropane | 0.25 | | U |
| 75-27-4 | Bromodichloromethane | 0.25 | | U |
| 74-95-3 | Dibromomethane | 1 | | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 0.25 | | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 0.25 | | U |
| 79-00-5 | 1,1,2-Trichloroethane | 0.25 | | U |
| 127-18-4 | Tetrachloroethene | 0.25 | 0.43 | |
| 142-28-9 | 1,3-Dichloropropane | 0.25 | | U |
| 124-48-1 | Dibromochloromethane | 0.75 | | U |
| 106-93-4 | 1,2-Dibromoethane | 1 | | U |
| 108-90-7 | Chlorobenzene | 0.25 | | U |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 0.25 | | U |
| 75-25-2 | Bromoform | 0.5 | | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 0.75 | | U |

| CAS# | VOA TARGET COMPOUND | TQL ug/L | DETECTED ug/L | |
|---|---|---|---|---|
| 96-18-4 | 1,2,3-Trichloropropane | 0.25 | | U |
| 108-86-1 | Bromobenzene | 1 | | U |
| 95-49-8 | 2-Chlorotoluene | 0.25 | | U |
| 106-43-4 | 4-Chlorotoluene | 0.25 | | U |
| 541-73-1 | 1,3-Dichlorobenzene | 0.25 | | U |
| 106-46-7 | 1,4-Dichlorobenzene | 0.25 | | U |
| 95-50-1 | 1,2-Dichlorobenzene | 0.25 | 0.56 | |
| 96-12-8 | 1,2-Dibromo-3-Chloropropane | 1 | | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 0.25 | | U |
| 87-68-3 | Hexachlorobutadiene | 0.25 | | U |
| 87-61-6 | 1,2,3-Trichlorobenzene | 0.75 | | U |
| 1634-04-4 | Methyl-tert-butyl ether | 5 | | U |
| 71-43-2 | Benzene | 1 | | U |
| 108-88-3 | Toluene | 1 | | U |
| 100-41-4 | Ethyl benzene | 1 | | U |
| 108-38-3 | m,p-Xylenes | 2 | | U |
| 95-47-6 | o-Xylene | 1 | | U |
| 100-42-5 | Styrene | 1 | | U |
| 98-82-8 | Isopropylbenzene | 1 | | U |
| 103-65-1 | n-Propylbenzene | 1 | | U |
| 108-67-8 | 1,3,5-Trimethylbenzene | 1 | | U |
| 98-06-6 | tert-Butylbenzene | 1 | | U |
| 95-63-6 | 1,2,4-Trimethylbenzene | 1 | | U |
| 135-98-8 | sec-Butylbenzene | 1 | | U |
| 99-87-6 | p-isopropyltoluene | 1 | | U |
| 104-51-8 | n-Butylbenzene | 1 | | U |
| 91-20-3 | Naphthalene | 1 | | U |

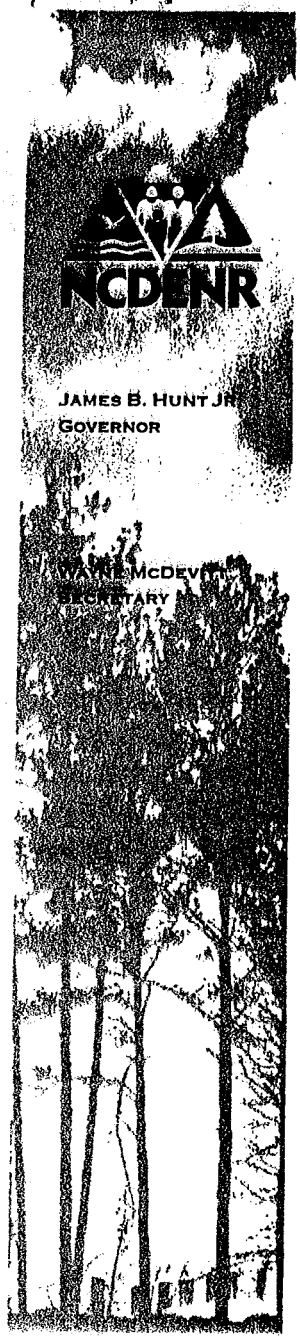
| | TQL | DETECTED | |
|---|---|---|---|
| Gasoline Range Estimated Total Petroleum Hydrocarbon | mg/L 0.20 | mg/L | N |

Other purgeables detected
(up to 10 highest peaks)

| | Detected ug/L |
|---|---|
| | |
| | |
| | |
| | |
| | |

TQL- Target Quantitation Limit- Subject to change due to instrument sensitivity
T- Tentatively Identified, not confirmed
E- Estimated Value
U- Samples analyzed for this compound but not detected
N- Sample not analyzed for this compound
D- Detected below quantitation limit
M- GC/MS Analysis performed

COMMENTS:



FILE COPY

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
ASHEVILLE REGIONAL OFFICE

DIVISION OF WATER QUALITY

October 5, 1998

CERTIFIED MAIL P 458 913 661
RETURN RECEIPT REQUESTED

Parkway Chevrolet
205 Smoky Park Highway
Asheville, North Carolina 28806
Attention: Ron Anderson

SUBJECT: Acknowledgment of Receipt
Comprehensive Site Assessment

Parkway Chevrolet #3
205 Smoky Park Highway, Asheville
Buncombe County, N.C.
GW Incident #18332

Dear Mr. Anderson:

On August 8, 1998, the Groundwater Section of the Division of Water Quality (DWQ) received the revised Comprehensive Site Assessment for the subject site. On August 27, 1998 and September 21, 1998, this office received monitor well analytical results from two groundwater sampling events. The DWQ also sampled the groundwater monitoring wells on August 3, 1998, and these analytical results are enclosed.

You requested that no further action be required at this site. Unfortunately, site closure is not possible at this time. First, the CSA and previously submitted reports show that soil contamination remains in place at levels above the state action levels. Before site closure can be granted, the remaining contaminated soil must be addressed. Second, the groundwater analytical results vary widely from sampling event to sampling event. At this point, the possibility that groundwater has been or may become impacted has not been ruled out.

You must submit a corrective action plan (CAP) to address the remaining soil contamination and you must continue to monitor the groundwater quarterly for at least one year. The first quarterly sampling report and the CAP must be received by this office by December 31, 1998.

If you have any questions don't hesitate to call me at (828) 251-6208, ext. 203.

Sincerely,

Julie Berrey
Hydrogeological Technician

cc: Ted Bush
Doug Guild - Prescott Environmental Associates, Inc.

Enclosures: DWQ Groundwater Analytical Results

JAB/parkway3.cap

**SENDER:**
- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

I understand that a fee will be charged for each service I request except for postmaster for fee.

North Carolina Department of
Environment and Natural Resources
59 Woodfin Place Asheville, NC 28801-2414

3. A
DIV OF WATER QUALITY

**TO:** RON ANDERSON
PARKWAY CHEVROLET
205 SMOKY PARK HWY
ASHEVILLE, NC 28806

4a. Article Number
P 458 913 661

RECEIVED
OCT - 8 1998
Groundwater Section
Asheville Regional Office

4b. Service Type
☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☒ Return Receipt for Merchandise ☐ COD

7. Date of Delivery
10-6-98

5. Received By: *(Print Name)*
CM

8. Addressee's Address *(Only if requested and fee is paid)*

6. Signature: *(Addressee or Agent)*
X Mary Brackelier

PS Form **3811**, December 1994 102595-97-B-0179 Domestic Return Receipt

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

P 458 913 661

US Postal Service
**Receipt for Certified Mail**
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

North Carolina Departme
Environment and Natural
59 Woodfin Place Ashev

OF WATER QUALITY

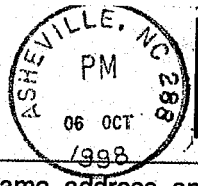
RON ANDERSON
PARKWAY CHEVROLET
205 SMOKY PARK HWY
ASHEVILLE, NC 28806

| | |
|---|---|
| TOTAL Postage & Fees | $ |

Postmark or Date
10/5/98

PS Form **3800**, April 1995

UNITED STATES POSTAL SERVICE




First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10

● Print your name, address, and ZIP Code in this box ●

NCDENR
DWQ-GROUNDWATER SECTION
59 WOODFIN PLACE
ASHEVILLE NC 28801

02

PS Form **3800**, April 1995 *(Reverse)*

**Stick postage stamps to article to cover First-Class postage, certified mail fee, and charges for any selected optional services** *(See front).*

1. If you want this receipt postmarked, stick the gummed stub to the right of the return address leaving the receipt attached, and present the article at a post office service window or hand it to your rural carrier *(no extra charge).*
2. If you do not want this receipt postmarked, stick the gummed stub to the right of the return address of the article, date, detach, and retain the receipt, and mail the article.
3. If you want a return receipt, write the certified mail number and your name and address on a return receipt card, Form 3811, and attach it to the front of the article by means of the gummed ends if space permits. Otherwise, affix to back of article. Endorse front of article **RETURN RECEIPT REQUESTED** adjacent to the number.
4. If you want delivery restricted to the addressee, or to an authorized agent of the addressee, endorse **RESTRICTED DELIVERY** on the front of the article.
5. Enter fees for the services requested in the appropriate spaces on the front of this receipt. If return receipt is requested, check the applicable blocks in item 1 of Form 3811.
6. Save this receipt and present it if you make an inquiry.

## DIVISION OF WATER QUALITY

**Chemistry Laboratory Report / Ground Water Quality**

| | |
|---|---|
| Lab Number : | 8G1860 |
| Date Received : | 8/5/98 |
| Time Received : | 8:50 AM |
| Received By : | DS |
| Released By : | DS |
| Date reported : | 9/4/98 |

AST

COUNTY : BUNCOMBE
QUAD NO:

SAMPLE PRIORITY
[X] ROUTINE [ ] EMERGENCY

REPORT TO : ARO Regional Office
COLLECTOR(S) : JAB/LKD
DATE: 8/3/98
TIME:

[X] CHAIN OF CUSTODY
[W] SAMPLE TYPE

MW-1

PURPOSE:

Owner: PARKWAY CHEV.
Location or Site:
Description of sampling point
Sampling Method:
Remarks:

## LABORATORY ANALYSIS

| | | |
|---|---|---|
| | BOD 310 | mg/L |
| | COD High 340 | mg/L |
| | COD Low 335 | mg/L |
| | Coliform: MF Fecal 31616 | /100ml |
| | Coliform: MF Total 31504 | /100ml |
| | TOC | mg/l |
| | Turbitity | NTU |
| | Residue., Suspended 530 | mg/L |
| | Total Suspended solids | mg/L |
| | | |
| | pH | units |
| | Alkalinity to pH 4.5 | mg/L |
| | Alkalinity to pH 8.3 | mg/L |
| | Carbonate | mg/L |
| | Bicarbonate | mg/L |
| | Carbon dioxide | mg/L |
| | Chloride | mg/L |
| | Chromium: Hex 1032 | ug/L |
| | Color: True 80 | c.u. |
| | Cyanide 720 | mg/L |

| | | |
|---|---|---|
| | Diss. Solids 70300 | mg/L |
| | Fluoride 951 | mg/L |
| | Hardness: total 900 | mg/L |
| | Hardness: (non-carb) 902 | mg/L |
| | Phenols 32730 | ug/L |
| | Specific Cond. 95 | umhos/cm2 |
| | Sulfate | mg/L |
| | Sulfide 745 | mg/L |
| | MBAS | mg/L |
| | Oil and Grease | mg/L |
| | Silica | mg/L |
| | Boron | |
| | Formaldehyde | mg/L |
| | NH3 as N 610 | mg/L |
| | TKN as N 625 | mg/L |
| | NO2 +NO3 as n 630 | mg/L |
| | P: Total as P 665 | mg/L |
| | PO4 | mg/L |
| | | |
| | | |

| | | |
|---|---|---|
| | Ag-Silver 46566 | ug/L |
| | Al-Aluminum 46557 | ug/L |
| | As-Arsenic 46551 | ug/L |
| | Ba-Barium 46558 | ug/L |
| | Ca-Calcium 46552 | mg/L |
| | Cd-Cadium 46559 | ug/L |
| | Cr-Chromium 46560 | ug/L |
| | Cu- Copper 1042 | ug/L |
| | Fe- Iron 1045 | ug/L |
| | Hg- Mercury 71900 | ug/L |
| | K-Potassium 46555 | mg/L |
| | Mg- Magnesium 927 | mg/L |
| | Mn-Manganese 1055 | ug/L |
| | Na- Sodium 929 | mg/L |
| | Ni-Nickel | ug/L |
| | Pb-Lead 46564 | ug/L |
| | Se-Selenium | ug/L |
| | Zn_Zinc 46567 | ug/L |
| | | |
| | | |

| | |
|---|---|
| | Organochlorine Pesticides |
| | Organophosphorus Pesticides |
| | Nitrogen Pesticides |
| | |
| | Acid Herbicides |
| | |
| X | Semivolatiles |
| | TPH-Diesel Range |
| | |
| X | Volatile Organics (VOA bottle) |
| | |
| | TPH-Gasoline Range |
| | TPH-BTEX Gasoline Range |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

COMMENTS :

RECEIVED
SEP - 8 1998
Groundwater Section Asheville Regional Office
8G1860.AUG

# GROUNDWATER FIELD/LAB FORM

North Carolina
Department of Environment, Health, and Natural Resources
DIVISION OF WATER QUALITY - GROUNDWATER SECTION

County Buncombe
Quad No. N87h Serial No.
Lat. 35° 34' 48" Long. 82° 37' 51"

| SAMPLE TYPE | SAMPLE PRIORITY |
|---|---|
| ☑ Water | ☑ Routine |
| ☐ Soil | ☐ Emergency |
| ☐ Other | |

☑ Chain of Custody

CHAIN OF CUSTODY

MW-1

Lab Number AG 1866
Date Received 8/5/98 Time 8:50
Rec'd by: DS From: Bus, Courier, Hand Del.,
Other:
Data Entry By: Ck:
Date Reported:

Report To: ARO, FRO, MRO, RRO, WaRO, WiRO, WSRO, Kinston FO, Fed. Trust, Central Off., Other:
Shipped by: Bus, Courier, Hand Del., Other:
Collector(s): JAB + LKD Date 8/3/98 Time 1:28 pm
Purpose: Baseline, Complaint, Compliance, LUST, Pesticide Study, Federal Trust, Other: AST (circle one)

## FIELD ANALYSES

$pH_{400}$ _____ Spec. Cond.$_{94}$ _____ at 25° C
Temp.$_{10}$ _____ °C Odor _____
Appearance _____
Field Analysis By: _____

Owner Parkway Chevrolet Inc. # 18332
Location or site 205 Smoky Park Highway, Asheville, NC 28806
Description of sampling point MW-1 Wellhead
Sampling Method Bailer (Pump, bailer, etc.) Sample Interval
Remarks (pumping time, air temp. etc.)

## LABORATORY ANALYSES

| | | |
|---|---|---|
| | BOD, 310 | mg/l |
| | COD High 340 | mg/l |
| | COD Low 335 | mg/l |
| | Coliform: MF Fecal 31616 | /100ml |
| | Coliform: MF Total 31504 | /100ml |
| | TOC 680 | mg/l |
| | Turbidity 76 | NTU |
| | Residue., Suspended 530 | mg/l |
| | | |
| | | |
| | pH 403 | units |
| | Alkalinity to pH 4.5 410 | mg/l |
| | Alkalinity to pH 8.3 415 | mg/l |
| | Carbonate 445 | mg/l |
| | Bicarbonate 440 | mg/l |
| | Carbon dioxide 405 | mg/l |
| | Chloride 940 | mg/l |
| | Chromium: Hex 1032 | ug/l |
| | Color: True 80 | CU |
| | Cyanide 720 | mg/l |

| | | |
|---|---|---|
| | Diss. Solids 70300 | mg/l |
| | Flouride 951 | mg/l |
| | Hardness: Total 900 | mg/l |
| | Hardness (non-carb) 902 | mg/l |
| | Phenols 32730 | ug/l |
| | Specific Cond. 95 | uMhos/cm² |
| | Sulfate 945 | mg/l |
| | Sulfide 745 | mg/l |
| | | |
| | Oil and Grease | mg/l |
| | | |
| | | |
| | | |
| | $NH_3$ as N 610 | mg/l |
| | TKN as N 625 | mg/l |
| | $NO_2 + NO_3$ as N 630 | mg/l |
| | P: Total as P 665 | mg/l |
| | | |
| | | |
| | | |

| | | |
|---|---|---|
| | Ag - Silver 46566 | ug/l |
| | Al - Aluminum 46557 | ug/l |
| | As - Arsenic 46551 | ug/l |
| | Ba - Barium 46558 | ug/l |
| | Ca - Calcium 46552 | mg/l |
| | Cd - Cadmium 46559 | ug/l |
| | Cr - Chromium 46560 | ug/l |
| | Cu - Copper 46562 | ug/l |
| | Fe - Iron 46563 | ug/l |
| | Hg - Mercury 71900 | ug/l |
| | K - Potassium 46555 | mg/l |
| | Mg - Magnesium 46554 | mg/l |
| | Mn - Manganese 46565 | ug/l |
| | Na - Sodium 46556 | mg/l |
| | Ni - Nickel | ug/l |
| | Pb - Lead 46564 | ug/l |
| | Se - Selenium | ug/l |
| | Zn - Zinc 46567 | ug/l |
| | | |

| | |
|---|---|
| | Organochlorine Pesticides |
| | Organophosphorus Pesticides |
| | Nitrogen Pesticides |
| | Acid Herbicides |
| | PCB's |
| | |
| | |
| ✓ | Semivolatile Organics |
| | **TPH - Diesel Range** |
| | |
| | |
| | |
| ✓ | Volatile Organics (VOA bottle) |
| | **TPH - Gasoline Range** |
| | **TPH - BTEX Gasoline Range** |
| | |
| | |
| | |
| | |

Lab Comments:

GW-54 REV. 7/96 For Dissolved Analysis - submit filtered sample and write "DIS" in block.

REPORTED BY
CHECKED BY
REVIEWED BY

SAMPLE TYPE: WATER

## ENR/DWQ LABORATORY
## SEMI-VOLATILE ANALYTICAL REPORT

**LAB NO.** 8G1860

SUPERVISOR R.E.K
DATE 9/2/98

ENTERED BY
DATE 9-3-98

### ANALYSIS RESULTS

| CAS# | SEMIVOLATILES TARGET COMPOUND | TQL ug/L | DETECTED ug/L | CAS# | SEMIVOLATILES TARGET COMPOUND | TQL ug/L | DETECTED ug/L |
|---|---|---|---|---|---|---|---|
| 62-53-3 | ANILINE | 10 | U | 606-20-2 | 2,6-DINITROTOLUENE | 10 | U |
| 108-95-2 | PHENOL | 10 | U | 99-09-2 | 3-NITROANILINE | 50 | U |
| 111-44-4 | BIS(2-CHLOROETHYL) ETHER | 10 | U | 83-32-9 | ACENAPHTHENE | 10 | U |
| 95-57-8 | 2-CHLOROPHENOL | 10 | U | 51-28-5 | 2,4-DINITRO PHENOL | 50 | U |
| 541-73-1 | 1,3-DICHLOROBENZENE | 10 | U | 100-02-7 | 4-NITRO PHENOL | 50 | U |
| 106-46-7 | 1,4-DICHLOROBENZENE | 10 | U | 132-64-9 | DIBENZOFURAN | 10 | U |
| 100-51-6 | BENZYL ALCOHOL | 20 | U | 121-14-2 | 2,4-DINITROTOLUENE | 10 | U |
| 95-50-1 | 1,2-DICHLOROBENZENE | 10 | U | 84-66-2 | DIETHYL PHTHALATE | 10 | U |
| 95-48-7 | 2-METHYL PHENOL | 10 | U | 7005-72-3 | 4-CHLOROPHENYL PHENYL ETHER | 10 | U |
| 108-60-1 | BIS(2-CHLOROISOPROPYL) ETHER | 10 | U | 86-73-7 | FLUORENE | 10 | U |
| 106-44-5 | 4-METHYL PHENOL | 10 | U | 100-01-6 | 4-NITROANILINE | 50 | U |
| 621-64-7 | N-NITROSO-DI-N-PROPYLAMINE | 10 | U | 534-52-1 | 4,6-DINITRO-2-METHYL PHENOL | 50 | U |
| 67-72-1 | HEXACHLOROETHANE | 10 | U | 86-30-6 | N-NITROSODIPHENYLAMINE | 10 | U |
| 98-95-3 | NITROBENZENE | 10 | U | 101-55-3 | 4-BROMOPHENYL PHENYL ETHER | 10 | U |
| 78-59-1 | ISOPHORONE | 10 | U | 118-74-1 | HEXACHLOROBENZENE | 10 | U |
| 88-75-5 | 2-NITRO PHENOL | 10 | U | 87-86-5 | PENTACHLORO PHENOL | 50 | U |
| 105-67-9 | 2,4-DIMETHYL PHENOL | 10 | U | 85-01-8 | PHENANTHRENE | 10 | U |
| 65-85-0 | BENZOIC ACID | 50 | U | 120-12-7 | ANTHRACENE | 10 | U |
| 111-91-1 | BIS(2-CHLOROETHOXY) METHANE | 10 | U | 84-74-2 | DI-N-BUTYL PHTHALATE | 10 | U |
| 120-83-2 | 2,4-DICHLORO PHENOL | 10 | U | 206-44-0 | FLUORANTHENE | 10 | U |
| 120-82-1 | 1,2,4-TRICHLOROBENZENE | 10 | U | 129-00-0 | PYRENE | 10 | U |
| 91-20-3 | NAPHTHALENE | 10 | U | 85-68-7 | BUTYLBENZYL PHTHALATE | 10 | U |
| 106-47-8 | 4-CHLOROANILINE | 20 | U | 91-94-1 | 3,3'-DICHLOROBENZIDINE | 20 | U |
| 87-68-3 | HEXACHLOROBUTADIENE | 10 | U | 56-55-3 | BENZO(A)ANTHRACENE | 10 | U |
| 59-50-7 | 4-CHLORO-3-METHYL PHENOL | 20 | U | 218-01-9 | CHRYSENE | 10 | U |
| 91-57-6 | 2-METHYL NAPHTHALENE | 10 | U | 117-81-7 | BIS(2-ETHYLHEXYL) PHTHALATE | 10 | U |
| 77-47-4 | HEXACHLOROCYCLOPENTADIENE | 10 | U | 117-84-0 | DI-N-OCTYL PHTHALATE | 10 | U |
| 88-06-2 | 2,4,6-TRICHLORO PHENOL | 10 | U | 205-99-2 | BENZO(B)FLUORANTHENE | 10 | U |
| 95-95-4 | 2,4,5-TRICHLORO PHENOL | 10 | U | 207-08-9 | BENZO(K)FLUORANTHENE | 10 | U |
| 91-58-7 | 2-CHLORO NAPHTHALENE | 10 | U | 50-32-8 | BENZO(A)PYRENE | 10 | U |
| 88-74-4 | 2-NITROANILINE | 50 | U | 193-39-5 | INDENO(1,2,3-CD)PYRENE | 10 | U |
| 131-11-3 | DIMETHYL PHTHALATE | 10 | U | 53-70-3 | DIBENZO(A,H)ANTHRACENE | 10 | U |
| 208-96-8 | ACENAPHTHYLENE | 10 | U | 191-24-2 | BENZO(G,H,I)PERYLENE | 10 | U |

## SEMIVOLATILE ORGANICS REPORT - DWQ LAB PAGE 2

LAB NO. 8G1860

| Other Semi-Volatiles compounds detected (up to 20 highest peaks) | Detected ug/L |
|---|---|
| NO BASE/NEUTRAL OR ACID EXTRACTABLE ORGANICS DETECTED BY GC/MS. | |

TQL- Target Quantitation Limit- Subject to change due to instrument sensitivity

T- Tentatively Identified, estimated concentration

E- Estimated Value

U- Samples analyzed for this compound but not detected

N- Sample not analyzed for this compound

D- Detected below quantitation limit

H- Holding time exceeded

COMMENTS:

ENR/DWQ LABORATORY
VOLATILE ANALYTICAL REPORT

LAB NO. 8G1860

REPORTED BY MS
CHECKED BY
REVIEWED BY

SUPERVISOR RSK
DATE 8/11/98

ENTERED BY
DATE 8/11/98

SAMPLE TYPE: WATER

ANALYSIS RESULTS

| CAS# | VOA TARGET COMPOUND | TQL ug/L | DETECTED ug/L | | CAS# | VOA TARGET COMPOUND | TQL ug/L | DETECTED ug/L | |
|---|---|---|---|---|---|---|---|---|---|
| 75-35-4 | 1,1-Dichloroethene | 0.75 | U | | 96-18-4 | 1,2,3-Trichloropropane | 0.25 | U | |
| 75-09-2 | Methylene Chloride | 10 | U | | 108-86-1 | Bromobenzene | 1 | U | |
| 156-60-5 | trans-1,2-Dichloroethene | 0.75 | U | | 95-49-8 | 2-Chlorotoluene | 0.25 | U | |
| 75-34-3 | 1,1-Dichloroethane | 0.25 | U | | 106-43-4 | 4-Chlorotoluene | 0.25 | U | |
| 590-20-7 | 2,2-Dichloropropane | 0.25 | U | | 541-73-1 | 1,3-Dichlorobenzene | 0.25 | U | |
| 156-59-4 | cis-1,2-Dichloroethene | 0.25 | U | | 106-46-7 | 1,4-Dichlorobenzene | 0.25 | U | |
| 67-66-3 | Chloroform | 0.25 | U | | 95-50-1 | 1,2-Dichlorobenzene | 0.25 | U | |
| 74-97-5 | Bromochloromethane | 0.75 | U | | 96-12-8 | 1,2-Dibromo-3-Chloropropane | 1 | U | |
| 71-55-6 | 1,1,1-Trichloroethane | 0.25 | U | | 120-82-1 | 1,2,4-Trichlorobenzene | 0.25 | U | |
| 563-58-6 | 1,1-Dichloropropene | 0.25 | U | | 87-68-3 | Hexachlorobutadiene | 0.25 | U | |
| 56-23-5 | Carbon Tetrachloride | 0.75 | U | | 87-61-6 | 1,2,3-Trichlorobenzene | 0.75 | U | |
| 107-06-2 | 1,2-Dichloroethane | 0.25 | U | | 1634-04-4 | Methyl-tert-butyl ether | 5 | U | |
| 79-01-6 | Trichloroethene | 0.25 | U | | 71-43-2 | Benzene | 1 | U | |
| 78-87-5 | 1,2-Dichloropropane | 0.25 | U | | 108-88-3 | Toluene | 1 | U | |
| 75-27-4 | Bromodichloromethane | 0.25 | U | | 100-41-4 | Ethyl benzene | 1 | U | |
| 74-95-3 | Dibromomethane | 1 | U | | 108-38-3 | m,p-Xylenes | 2 | U | |
| 10061-01-5 | cis-1,3-Dichloropropene | 0.25 | U | | 95-47-6 | o-Xylene | 1 | U | |
| 10061-02-6 | trans-1,3-Dichloropropene | 0.25 | U | | 100-42-5 | Styrene | 1 | U | |
| 79-00-5 | 1,1,2-Trichloroethane | 0.25 | U | | 98-82-8 | Isopropylbenzene | 1 | U | |
| 127-18-4 | Tetrachloroethene | 0.25 | U | | 103-65-1 | n-Propylbenzene | 1 | U | |
| 142-28-9 | 1,3-Dichloropropane | 0.25 | U | | 108-67-8 | 1,3,5-Trimethylbenzene | 1 | U | |
| 124-48-1 | Dibromochloromethane | 0.75 | U | | 98-06-6 | tert-Butylbenzene | 1 | U | |
| 106-93-4 | 1,2-Dibromoethane | 1 | U | | 95-63-6 | 1,2,4-Trimethylbenzene | 1 | U | |
| 108-90-7 | Chlorobenzene | 0.25 | U | | 135-98-8 | sec-Butylbenzene | 1 | U | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 0.25 | U | | 99-87-6 | p-isopropyltoluene | 1 | U | |
| 75-25-2 | Bromoform | 0.5 | U | | 104-51-8 | n-Butylbenzene | 1 | U | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 0.75 | U | | 91-20-3 | Naphthalene | 1 | U | |

| | mg/L | mg/L | |
|---|---|---|---|
| Gasoline Range Estimated Total Petroleum Hydrocarbon | 0.25 | | N |

TQL- Target Quantitation Limit- Subject to change due to instrument sensitivity
T- Tentatively Identified, not confirmed
E- Estimated Value
U- Samples analyzed for this compound but not detected
N- Sample not analyzed for this compound
D- Detected below quantitation limit
M- GC/MS Analysis performed

Other purgeables detected (up to 10 highest peaks)

Detected ug/L

NO VOLATILE ORGANIC COMPOUNDS DETECTED BY GC/ELCD/PID.

COMMENTS:

# DIVISION OF WATER QUALITY

## Chemistry Laboratory Report / Ground Water Quality

| | |
|---|---|
| Lab Number | 8G1861 |
| Date Received | 8/5/98 |
| Time Received | 8,50 |
| Received By | DS |
| Released By | DS |
| Date reported | 9/10/98 |

AST

COUNTY: BUNCOMBE
QUAD NO:

SAMPLE PRIORITY
[X] ROUTINE [ ] EMERGENCY

REPORT TO: ARO Regional Office
COLLECTOR(S): JAB/LKD
DATE: 8/3/98
TIME:

[X] CHAIN OF CUSTODY
[W] SAMPLE TYPE

MW-2

PURPOSE:

Owner: PARKWAY CHEV.
Location or Site:
Description of sampling point:
Sampling Method:
Remarks:

## LABORATORY ANALYSIS

| | | |
|---|---|---|
| | BOD 310 | mg/L |
| | COD High 340 | mg/L |
| | COD Low 335 | mg/L |
| | Coliform MF Fecal 31616 | /100ml |
| | Coliform MF Total 31504 | /100ml |
| | TOC | mg/l |
| | Turbitity | NTU |
| | Residue , Suspended 530 | mg/L |
| | Total Suspended solids | mg/L |
| | | |
| | pH | units |
| | Alkalinity to pH 4 5 | mg/L |
| | Alkalinity to pH 8 3 | mg/L |
| | Carbonate | mg/L |
| | Bicarbonate | mg/L |
| | Carbon dioxide | mg/L |
| | Chloride | mg/L |
| | Chromium Hex 1032 | ug/L |
| | Color True 80 | c u |
| | Cyanide 720 | mg/L |

| | | |
|---|---|---|
| | Diss Solids 70300 | mg/L |
| | Fluoride 951 | mg/L |
| | Hardness total 900 | mg/L |
| | Hardness (non-carb) 902 | mg/L |
| | Phenols 32730 | ug/L |
| | Specific Cond 95 | umhos/cm2 |
| | Sulfate | mg/L |
| | Sulfide 745 | mg/L |
| | MBAS | mg/L |
| | Oil and Grease | mg/L |
| | Silica | mg/L |
| | Boron | |
| | Formaldehyde | mg/L |
| | NH3 as N 610 | mg/L |
| | TKN as N 625 | mg/L |
| | NO2 +NO3 as n 630 | mg/L |
| | P Total as P 665 | mg/L |
| | PO4 | mg/L |
| | | |
| | | |

| | | |
|---|---|---|
| | Ag-Silver 46566 | ug/L |
| | Al-Aluminum 46557 | ug/L |
| | As-Arsenic 46551 | ug/L |
| | Ba-Barium 46558 | ug/L |
| | Ca-Calcium 46552 | mg/L |
| | Cd-Cadium 46559 | ug/L |
| | Cr-Chromium 46560 | ug/L |
| | Cu- Copper 1042 | ug/L |
| | Fe- Iron 1045 | ug/L |
| | Hg- Mercury 71900 | ug/L |
| | K-Potassium 46555 | mg/L |
| | Mg- Magnesium 927 | mg/L |
| | Mn-Manganese 1055 | ug/L |
| | Na- Sodium 929 | mg/L |
| | Ni-Nickel | ug/L |
| | Pb-Lead 46564 | ug/L |
| | Se-Selenium | ug/L |
| | Zn Zinc 46567 | ug/L |
| | | |
| | | |

| | |
|---|---|
| | Organochlorine Pesticides |
| | Organophosphorus Pesticides |
| | Nitrogen Pesticides |
| | |
| | Acid Herbicides |
| | |
| X | Semivolatiles |
| | TPH-Diesel Range |
| | |
| X | Volatile Organics (VOA bottle) |
| | |
| | TPH-Gasoline Range |
| | TPH-BTEX Gasoline Range |
| | |
| | |
| | |
| | |
| | |
| | |

COMMENTS:

RECEIVED
SEP 15 1998
Groundwater Section
Asheville Regional Office

8G1861.AUG

# GROUNDWATER FIELD/LAB FORM

North Carolina
Department of Environment, Health, and Natural Resources
DIVISION OF WATER QUALITY - GROUNDWATER SECTION

County: Buncombe
Quad No. N3711 Serial No.
Lat 35°31'48" Long 82°37'51"

SAMPLE TYPE: ☑ Water ☐ Soil ☐ Other ☑ Chain of Custody
SAMPLE PRIORITY: ☑ Routine ☐ Emergency

MW-2

Lab Number: AG 1861
Date Received: 8/5/98 Time: 8:50
Rec'd by: DS From: Bus, Courier, Hand Del.,
Other:
Data Entry By: Ck:
Date Reported:

Report To: ARO, FRO, MRO, RRO, WaRO, WiRO, WSRO, Kinston FO, Lust Trust, Central Off., Other:
Shipped by: Bus, Courier, Hand Del., Other:
Collector(s): WSA LKD Date 8/3/98 Time 1:52 pm
Purpose: Baseline, Complaint, Compliance, LUST, Pesticide Study, Federal Trust, Other: AST (circle one)

## FIELD ANALYSES

pH_lab Spec. Cond._at 25° C
Temp._lab °C Odor
Appearance
Field Analysis By:

Owner: Parkway Chevrolet Inc. #18332
Location or site: 205 Smoky Park Highway, Asheville, NC 28806
Description of sampling point: MW-2 Wellhead
Sampling Method: Bailer (Pump, bailer, etc.)
Remarks: (pumping time, air temp. etc.) Sample Interval

## LABORATORY ANALYSES

| | | |
|---|---|---|
| | BOD, 5-day 310 | mg/l |
| | COD High 335 | mg/l |
| | COD Low 335 | mg/l |
| | Coliform, MF, Fecal 31616 | /100ml |
| | Coliform, MF, Total 31501 | /100ml |
| | TOC 680 | mg/l |
| | Turbidity 76 | NTU |
| | Residue, Suspended 530 | mg/l |
| | pH 403 | units |
| | Alkalinity to pH 4.5 410 | mg/l |
| | Alkalinity to pH 8.3 415 | mg/l |
| | Carbonate 445 | mg/l |
| | Bicarbonate 440 | mg/l |
| | Carbon dioxide 405 | mg/l |
| | Chloride 940 | mg/l |
| | Chromium, Hex 1032 | ug/l |
| | Color, True 80 | CU |
| | Cyanide 720 | mg/l |

| | | |
|---|---|---|
| | Diss. Solids 70300 | mg/l |
| | Flouride 951 | mg/l |
| | Hardness, Total 900 | mg/l |
| | Hardness (non-carb) 902 | mg/l |
| | Phenols 32730 | ug/l |
| | Specific Cond. 95 | uMhos/cm |
| | Sulfate 945 | mg/l |
| | Sulfide 745 | mg/l |
| | Oil and Grease | mg/l |
| | $NH_3$ as N 610 | mg/l |
| | TKN as N 625 | mg/l |
| | $NO_2 + NO_3$ as N 630 | mg/l |
| | P, Total as P 665 | mg/l |

| | | |
|---|---|---|
| | Ag - Silver 46566 | ug/l |
| | Al - Aluminum 46557 | ug/l |
| | As - Arsenic 46551 | ug/l |
| | Ba - Barium 46558 | ug/l |
| | Ca - Calcium 46552 | mg/l |
| | Cd - Cadmium 46559 | ug/l |
| | Cr - Chromium 46560 | ug/l |
| | Cu - Copper 46562 | ug/l |
| | Fe - Iron 46563 | ug/l |
| | Hg - Mercury 71900 | ug/l |
| | K - Potassium 46555 | mg/l |
| | Mg - Magnesium 46554 | mg/l |
| | Mn - Manganese 46565 | ug/l |
| | Na - Sodium 46556 | mg/l |
| | Ni - Nickel | ug/l |
| | Pb - Lead 46564 | ug/l |
| | Se - Selenium | ug/l |
| | Zn - Zinc 46567 | ug/l |

| | |
|---|---|
| | Organochlorine Pesticides |
| | Organophosphorus Pesticides |
| | Nitrogen Pesticides |
| | Acid Herbicides |
| | PCB's |
| ✓ | Semivolatile Organics |
| | TPH - Diesel Range |
| ✓ | Volatile Organics (VOA bottle) |
| | TPH - Gasoline Range |
| | TPH - BTEX Gasoline Range |

Lab Comments:

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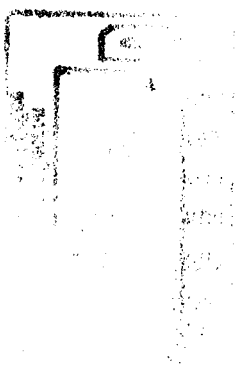
SEP 15 1998
Groundwater Section
Asheville Regional Office

GW 54 REV 7/96 For Dissolved Analysis - submit filtered sample and write "DIS" in block.



ENR/DWQ LABORATORY
VOLATILE ANALYTICAL REPORT

LAB NO. 8G1861

REPORTED BY CG
CHECKED BY
REVIEWED BY

SUPERVISOR
DATE 8/11/98

ENTERED BY
DATE 8/11/98

SAMPLE TYPE WATER

ANALYSIS RESULTS

| CAS# | VOA TARGET COMPOUND | TQL ug/L | DETECTED ug/L | | CAS# | VOA TARGET COMPOUND | TQL ug/L | DETECTED ug/L | |
|---|---|---|---|---|---|---|---|---|---|
| 75-35-4 | 1,1-Dichloroethene | 0.75 | | U | 96-18-4 | 1,2,3-Trichloropropane | 0.25 | | U |
| 75-09-2 | Methylene Chloride | 10 | | U | 108-86-1 | Bromobenzene | 1 | | U |
| 156-60-5 | trans-1,2-Dichloroethene | 0.75 | | U | 95-49-8 | 2-Chlorotoluene | 0.25 | | U |
| 75-34-3 | 1,1-Dichloroethane | 0.25 | | U | 106-43-4 | 4-Chlorotoluene | 0.25 | | U |
| 590-20-7 | 2,2-Dichloropropane | 0.25 | | U | 541-73-1 | 1,3-Dichlorobenzene | 0.25 | | U |
| 156-59-4 | cis-1,2-Dichloroethene | 0.25 | | U | 106-46-7 | 1,4-Dichlorobenzene | 0.25 | | U |
| 67-66-3 | Chloroform | 0.25 | D | | 95-50-1 | 1,2-Dichlorobenzene | 0.25 | 0.48 | |
| 74-97-5 | Bromochloromethane | 0.75 | | U | 96-12-8 | 1,2-Dibromo-3-Chloropropane | 1 | | U |
| 71-55-6 | 1,1,1-Trichloroethane | 0.25 | 0.41 | | 120-82-1 | 1,2,4-Trichlorobenzene | 0.25 | | U |
| 563-58-6 | 1,1-Dichloropropene | 0.25 | | U | 87-68-3 | Hexachlorobutadiene | 0.25 | | U |
| 56-23-5 | Carbon Tetrachloride | 0.75 | | U | 87-61-6 | 1,2,3-Trichlorobenzene | 0.75 | | U |
| 107-06-2 | 1,2-Dichloroethane | 0.25 | | U | 1634-04-4 | Methyl-tert-butyl ether | 5 | | U |
| 79-01-6 | Trichloroethene | 0.25 | | U | 71-43-2 | Benzene | 1 | | U |
| 78-87-5 | 1,2-Dichloropropane | 0.25 | | U | 108-88-3 | Toluene | 1 | | U |
| 75-27-4 | Bromodichloromethane | 0.25 | | U | 100-41-4 | Ethyl benzene | 1 | | U |
| 74-95-3 | Dibromomethane | 1 | | U | 108-38-3 | m,p-Xylenes | 2 | | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 0.25 | | U | 95-47-6 | o-Xylene | 1 | | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 0.25 | | U | 100-42-5 | Styrene | 1 | | U |
| 79-00-5 | 1,1,2-Trichloroethane | 0.25 | | U | 98-82-8 | Isopropylbenzene | 1 | | U |
| 127-18-4 | Tetrachloroethene | 0.25 | 0.40 | | 103-65-1 | n-Propylbenzene | 1 | | U |
| 142-28-9 | 1,3-Dichloropropane | 0.25 | | U | 108-67-8 | 1,3,5-Trimethylbenzene | 1 | | U |
| 124-48-1 | Dibromochloromethane | 0.75 | | U | 98-06-6 | tert-Butylbenzene | 1 | | U |
| 106-93-4 | 1,2-Dibromoethane | 1 | | U | 95-63-6 | 1,2,4-Trimethylbenzene | 1 | | U |
| 108-90-7 | Chlorobenzene | 0.25 | | U | 135-98-8 | sec-Butylbenzene | 1 | | U |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 0.25 | | U | 99-87-6 | p-isopropyltoluene | 1 | | U |
| 75-25-2 | Bromoform | 0.5 | | U | 104-51-8 | n-Butylbenzene | 1 | | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 0.75 | | U | 91-20-3 | Naphthalene | 1 | | U |

TQL- Target Quantitation Limit- Subject to change due to instrument sensitivity
T- Tentatively Identified, not confirmed
E- Estimated Value
U- Samples analyzed for this compound but not detected
N- Sample not analyzed for this compound
D- Detected below quantitation limit
M- GC/MS Analysis performed

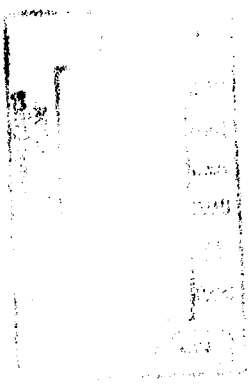
| | mg/L | mg/L | |
|---|---|---|---|
| Gasoline Range Estimated Total Petroleum Hydrocarbon | 0.25 | | N |

Other purgeables detected (up to 10 highest peaks) — Detected ug/L

NO VOLATILE ORGANIC COMPOUNDS
QUANTITATED BY GC/PID.

COMMENTS

RECEIVED
SEP 15 1998
Groundwater Section
Asheville Regional Office



RECEIVED
SEP 15 1998
Groundwater Section
Asheville Regional Office

ENR/DWQ LABORATORY
SEMIVOLATILE ANALYTICAL REPORT

LAB NO. 8G1861

REPORTED BY
CHECKED BY
REVIEWED BY

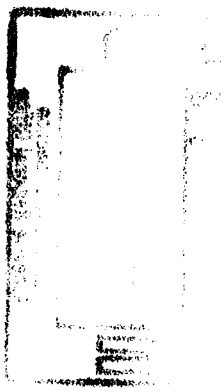
SUPERVISOR REK
DATE 9/4/98

ENTERED BY DS
DATE 9-4-98

SAMPLE TYPE: WATER

ANALYSIS RESULTS

| CAS# | SEMIVOLATILES TARGET COMPOUND | TQL ug/L | DETECTED ug/L | | CAS# | SEMIVOLATILES TARGET COMPOUND | TQL ug/L | DETECTED ug/L | |
|---|---|---|---|---|---|---|---|---|---|
| 62-53-3 | ANILINE | 10 | U | | 606-20-2 | 2,6-DINITROTOLUENE | 10 | U | |
| 108-95-2 | PHENOL | 10 | U | | 99-09-2 | 3-NITROANILINE | 50 | U | |
| 111-44-4 | BIS(2-CHLOROETHYL) ETHER | 10 | U | | 83-32-9 | ACENAPHTHENE | 10 | U | |
| 95-57-8 | 2-CHLOROPHENOL | 10 | U | | 51-28-5 | 2,4-DINITRO PHENOL | 50 | U | |
| 541-73-1 | 1,3-DICHLOROBENZENE | 10 | U | | 100-02-7 | 4-NITRO PHENOL | 50 | U | |
| 106-46-7 | 1,4-DICHLOROBENZENE | 10 | U | | 132-64-9 | DIBENZOFURAN | 10 | U | |
| 100-51-6 | BENZYL ALCOHOL | 20 | U | | 121-14-2 | 2,4-DINITROTOLUENE | 10 | U | |
| 95-50-1 | 1,2-DICHLOROBENZENE | 10 | U | | 84-66-2 | DIETHYL PHTHALATE | 10 | U | |
| 95-48-7 | 2-METHYL PHENOL | 10 | U | | 7005-72-3 | 4-CHLOROPHENYL PHENYL ETHER | 10 | U | |
| 108-60-1 | BIS(2-CHLOROISOPROPYL) ETHER | 10 | U | | 86-73-7 | FLUORENE | 10 | U | |
| 106-44-5 | 4-METHYL PHENOL | 10 | U | | 100-01-6 | 4-NITROANILINE | 50 | U | |
| 621-64-7 | N-NITROSO-DI-N-PROPYLAMINE | 10 | U | | 534-52-1 | 4,6-DINITRO-2-METHYL PHENOL | 50 | U | |
| 67-72-1 | HEXACHLOROETHANE | 10 | U | | 86-30-6 | N-NITROSODIPHENYLAMINE | 10 | U | |
| 98-95-3 | NITROBENZENE | 10 | U | | 101-55-3 | 4-BROMOPHENYL PHENYL ETHER | 10 | U | |
| 78-59-1 | ISOPHORONE | 10 | U | | 118-74-1 | HEXACHLOROBENZENE | 10 | U | |
| 88-75-5 | 2-NITRO PHENOL | 10 | U | | 87-86-5 | PENTACHLORO PHENOL | 50 | U | |
| 105-67-9 | 2,4-DIMETHYL PHENOL | 10 | U | | 85-01-8 | PHENANTHRENE | 10 | U | |
| 65-85-0 | BENZOIC ACID | 50 | U | | 120-12-7 | ANTHRACENE | 10 | U | |
| 111-91-1 | BIS(2-CHLOROETHOXY) METHANE | 10 | U | | 84-74-2 | DI-N-BUTYL PHTHALATE | 10 | U | |
| 120-83-2 | 2,4-DICHLORO PHENOL | 10 | U | | 206-44-0 | FLUORANTHENE | 10 | U | |
| 120-82-1 | 1,2,4-TRICHLOROBENZENE | 10 | U | | 129-00-0 | PYRENE | 10 | U | |
| 91-20 3 | NAPHTHALENE | 10 | U | | 85-68-7 | BUTYLBENZYL PHTHALATE | 10 | U | |
| 106-47-8 | 4-CHLOROANILINE | 20 | U | | 91-94-1 | 3,3'-DICHLOROBENZIDINE | 20 | U | |
| 87-68-3 | HEXACHLOROBUTADIENE | 10 | U | | 56-55-3 | BENZO(A)ANTHRACENE | 10 | U | |
| 59-50-7 | 4-CHLORO-3-METHYL PHENOL | 20 | U | | 218-01-9 | CHRYSENE | 10 | U | |
| 91-57-6 | 2-METHYL NAPHTHALENE | 10 | U | | 117-81-7 | BIS(2-ETHYLHEXYL) PHTHALATE | 10 | U | |
| 77-47-4 | HEXACHLOROCYCLOPENTADIENE | 10 | U | | 117-84-0 | DI-N-OCTYL PHTHALATE | 10 | U | |
| 88-06-2 | 2,4,6-TRICHLORO PHENOL | 10 | U | | 205-99-2 | BENZO(B)FLUORANTHENE | 10 | U | |
| 95-95-4 | 2,4,5-TRICHLORO PHENOL | 10 | U | | 207-08-9 | BENZO(K)FLUORANTHENE | 10 | U | |
| 91-58-7 | 2-CHLORO NAPHTHALENE | 10 | U | | 50-32-8 | BENZO(A)PYRENE | 10 | U | |
| 88-74-4 | 2-NITROANILINE | 50 | U | | 193-39-5 | INDENO(1,2,3-CD)PYRENE | 10 | U | |
| 131-11-3 | DIMETHYL PHTHALATE | 10 | U | | 53-70-3 | DIBENZO(A,H)ANTHRACENE | 10 | U | |
| 208-96-8 | ACENAPHTHYLENE | 10 | U | | 191-24-2 | BENZO(G,H,I)PERYLENE | 10 | U | |



## SEMIVOLATILE ORGANICS REPORT - DWQ LAB PAGE 2

LAB NO. 8G1861

| Other Semi-Volatiles compounds detected (up to 20 highest peaks) | Detected ug/L |
|---|---|
| NO BASE/NEUTRAL OR ACID EXTRACTABLE ORGANICS DETECTED BY GC/MS. | |

TQL- Target Quantitation Limit- Subject to change due to instrument sensitivity
T- Tentatively Identified, estimated concentration
E- Estimated Value
U- Samples analyzed for this compound but not detected
N- Sample not analyzed for this compound
D- Detected below quantitation limit
H- Holding time exceeded

COMMENTS

RECEIVED
SEP 15 1998
Groundwater Section
Asheville Regional Office

## DIVISION OF WATER QUALITY

**Chemistry Laboratory Report / Ground Water Quality**

| | |
|---|---|
| Lab Number : | 8G1862 |
| Date Received : | 8/5/98 |
| Time Received : | 8:50 AM |
| Received By : | DS |
| Released By : | DS |
| Date reported : | 9/4/98 |

COUNTY : BUNCOMBE
QUAD NO:

SAMPLE PRIORITY
[X] ROUTINE [ ] EMERGENCY

REPORT TO : ARO Regional Office
COLLECTOR(S) : JAB/LKD
DATE: 8/3/98
TIME:

[X] CHAIN OF CUSTODY
[W] SAMPLE TYPE

MW-3

PURPOSE:

Owner: PARKWAY CHEV.
Location or Site:
Description of sampling point
Sampling Method:
Remarks:

## LABORATORY ANALYSIS

| | | |
|---|---|---|
| | BOD 310 | mg/L |
| | COD High 340 | mg/L |
| | COD Low 335 | mg/L |
| | Coliform: MF Fecal 31616 | /100ml |
| | Coliform: MF Total 31504 | /100ml |
| | TOC | mg/l |
| | Turbitity | NTU |
| | Residue., Suspended 530 | mg/L |
| | Total Suspended solids | mg/L |
| | | |
| | pH | units |
| | Alkalinity to pH 4.5 | mg/L |
| | Alkalinity to pH 8.3 | mg/L |
| | Carbonate | mg/L |
| | Bicarbonate | mg/L |
| | Carbon dioxide | mg/L |
| | Chloride | mg/L |
| | Chromium: Hex 1032 | ug/L |
| | Color: True 80 | c.u. |
| | Cyanide 720 | mg/L |

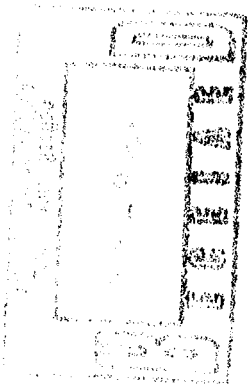
| | | |
|---|---|---|
| | Diss. Solids 70300 | mg/L |
| | Fluoride 951 | mg/L |
| | Hardness: total 900 | mg/L |
| | Hardness: (non-carb) 902 | mg/L |
| | Phenols 32730 | ug/L |
| | Specific Cond. 95 | umhos/cm2 |
| | Sulfate | mg/L |
| | Sulfide 745 | mg/L |
| | MBAS | mg/L |
| | Oil and Grease | mg/L |
| | Silica | mg/L |
| | Boron | |
| | Formaldehyde | mg/L |
| | NH3 as N 610 | mg/L |
| | TKN as N 625 | mg/L |
| | NO2 +NO3 as n 630 | mg/L |
| | P: Total as P 665 | mg/L |
| | PO4 | mg/L |
| | | |
| | | |

| | | |
|---|---|---|
| | Ag-Silver 46566 | ug/L |
| | Al-Aluminum 46557 | ug/L |
| | As-Arsenic 46551 | ug/L |
| | Ba-Barium 46558 | ug/L |
| | Ca-Calcium 46552 | mg/L |
| | Cd-Cadium 46559 | ug/L |
| | Cr-Chromium 46560 | ug/L |
| | Cu- Copper 1042 | ug/L |
| | Fe- Iron 1045 | ug/L |
| | Hg- Mercury 71900 | ug/L |
| | K-Potassium 46555 | mg/L |
| | Mg- Magnesium 927 | mg/L |
| | Mn-Manganese 1055 | ug/L |
| | Na- Sodium 929 | mg/L |
| | Ni-Nickel | ug/L |
| | Pb-Lead 46564 | ug/L |
| | Se-Selenium | ug/L |
| | Zn_Zinc 46567 | ug/L |
| | | |
| | | |

| | |
|---|---|
| | Organochlorine Pesticides |
| | Organophosphorus Pesticides |
| | Nitrogen Pesticides |
| | |
| | Acid Herbicides |
| | |
| X | Semivolatiles |
| | TPH-Diesel Range |
| | |
| X | Volatile Organics (VOA bottle) |
| | |
| | TPH-Gasoline Range |
| | TPH-BTEX Gasoline Range |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

COMMENTS :

RECEIVED
SEP - 8 1998
Groundwater Section
Asheville Regional Office
8G1862Rec



# GROUNDWATER FIELD/LAB FORM

North Carolina
Department of Environment, Health, and Natural Resources
DIVISION OF WATER QUALITY - GROUNDWATER SECTION

County Buncombe
Quad No. N87h Serial No.
Lat. 35° 31' 48" Long. 82° 37'

CHAIN OF CUSTODY

SAMPLE TYPE: [x] Water [ ] Soil [ ] Other
SAMPLE PRIORITY: [x] Routine [ ] Emergency
[x] Chain of Custody

MW-3

Lab Number 8G 1862
Date Received 8/5/98 Time 8:50
Rec'd by: DS From: Bus, Courier, Hand Del.,
Other:
Data Entry By: Ck:
Date Reported:

Report To: ARO, FRO, MRO, RRO, WaRO, WiRO, WSRO, Kinston FO, Fed. Trust, Central Off., Other:
Shipped by: Bus, Courier, Hand Del., Other:
Collector(s): JAB + LKD Date 8/3/98 Time 2:11pm
Purpose: Baseline, Complaint, Compliance, LUST, Pesticide Study, Federal Trust, Other: AST (circle one)

## FIELD ANALYSES

$pH_{400}$ _____ Spec. Cond.$_{94}$ _____ at 25° C
Temp.$_{10}$ _____ °C Odor _____
Appearance _____
Field Analysis By: _____

Owner Parkway Chevrolet Inc. # 18332
Location or site 205 Smoky Park Highway, Asheville, NC 28806
Description of sampling point MW-3 Wellhead
Sampling Method Bailer (Pump, bailer, etc.) Sample Interval _____
Remarks _____ (pumping time, air temp. etc.)

## LABORATORY ANALYSES

| | | |
|---|---|---|
| | BOD$_5$ 310 | mg/l |
| | COD High 340 | mg/l |
| | COD Low 335 | mg/l |
| | Coliform: MF Fecal 31616 | /100ml |
| | Coliform: MF Total 31504 | /100ml |
| | TOC 680 | mg/l |
| | Turbidity 76 | NTU |
| | Residue., Suspended 530 | mg/l |
| | pH 403 | units |
| | Alkalinity to pH 4.5 410 | mg/l |
| | Alkalinity to pH 8.3 415 | mg/l |
| | Carbonate 445 | mg/l |
| | Bicarbonate 440 | mg/l |
| | Carbon dioxide 405 | mg/l |
| | Chloride 940 | mg/l |
| | Chromium: Hex 1032 | ug/l |
| | Color: True 80 | CU |
| | Cyanide 720 | mg/l |

| | | |
|---|---|---|
| | Diss. Solids 70300 | mg/l |
| | Flouride 951 | mg/l |
| | Hardness: Total 900 | mg/l |
| | Hardness (non-carb) 902 | mg/l |
| | Phenols 32730 | ug/l |
| | Specific Cond. 95 | uMhos/cm² |
| | Sulfate 945 | mg/l |
| | Sulfide 745 | mg/l |
| | Oil and Grease | mg/l |
| | $NH_3$ as N 610 | mg/l |
| | TKN as N 625 | mg/l |
| | $NO_2$ + $NO_3$ as N 630 | mg/l |
| | P: Total as P 665 | mg/l |

| | | |
|---|---|---|
| | Ag - Silver 46566 | ug/l |
| | Al - Aluminum 46557 | ug/l |
| | As - Arsenic 46551 | ug/l |
| | Ba - Barium 46558 | ug/l |
| | Ca - Calcium 46552 | mg/l |
| | Cd - Cadmium 46559 | ug/l |
| | Cr - Chromium 46560 | ug/l |
| | Cu - Copper 46562 | ug/l |
| | Fe - Iron 46563 | ug/l |
| | Hg - Mercury 71900 | ug/l |
| | K - Potassium 46555 | mg/l |
| | Mg - Magnesium 46554 | mg/l |
| | Mn - Manganese 46565 | ug/l |
| | Na - Sodium 46556 | mg/l |
| | Ni - Nickel | ug/l |
| | Pb - Lead 46564 | ug/l |
| | Se - Selenium | ug/l |
| | Zn - Zinc 46567 | ug/l |

| | |
|---|---|
| | Organochlorine Pesticides |
| | Organophosphorus Pesticides |
| | Nitrogen Pesticides |
| | Acid Herbicides |
| | PCB's |
| ✓ | Semivolatile Organics |
| | TPH - Diesel Range |
| ✓ | Volatile Organics (VOA bottle) |
| | TPH - Gasoline Range |
| | TPH - BTEX Gasoline Range |

Lab Comments:

GW-54 REV. 7/96 For Dissolved Analysis - submit filtered sample and write "DIS" in block.

ENR/DWQ LABORATORY
VOLATILE ANALYTICAL REPORT

LAB NO. 8G1862

REPORTED BY CG
CHECKED BY
REVIEWED BY

SUPERVISOR RSK
DATE 8/11/98

ENTERED BY DB
DATE 8/11/98

SAMPLE TYPE: WATER

ANALYSIS RESULTS

| CAS# | VOA TARGET COMPOUND | TQL ug/L | DETECTED ug/L | | CAS# | VOA TARGET COMPOUND | TQL ug/L | DETECTED ug/L | |
|---|---|---|---|---|---|---|---|---|---|
| 75-35-4 | 1,1-Dichloroethene | 0.75 | | U | 96-18-4 | 1,2,3-Trichloropropane | 0.25 | | U |
| 75-09-2 | Methylene Chloride | 10 | | U | 108-86-1 | Bromobenzene | 1 | | U |
| 156-60-5 | trans-1,2-Dichloroethene | 0.75 | | U | 95-49-8 | 2-Chlorotoluene | 0.25 | | U |
| 75-34-3 | 1,1-Dichloroethane | 0.25 | | U | 106-43-4 | 4-Chlorotoluene | 0.25 | | U |
| 590-20-7 | 2,2-Dichloropropane | 0.25 | | U | 541-73-1 | 1,3-Dichlorobenzene | 0.25 | | U |
| 156-59-4 | cis-1,2-Dichloroethene | 0.25 | | U | 106-46-7 | 1,4-Dichlorobenzene | 0.25 | | U |
| 67-66-3 | Chloroform | 0.25 | | U | 95-50-1 | 1,2-Dichlorobenzene | 0.25 | | U |
| 74-97-5 | Bromochloromethane | 0.75 | | U | 96-12-8 | 1,2-Dibromo-3-Chloropropane | 1 | | U |
| 71-55-6 | 1,1,1-Trichloroethane | 0.25 | | U | 120-82-1 | 1,2,4-Trichlorobenzene | 0.25 | | U |
| 563-58-6 | 1,1-Dichloropropene | 0.25 | | U | 87-68-3 | Hexachlorobutadiene | 0.25 | | U |
| 56-23-5 | Carbon Tetrachloride | 0.75 | | U | 87-61-6 | 1,2,3-Trichlorobenzene | 0.75 | | U |
| 107-06-2 | 1,2-Dichloroethane | 0.25 | | U | 1634-04-4 | Methyl-tert-butyl ether | 5 | | U |
| 79-01-6 | Trichloroethene | 0.25 | | U | 71-43-2 | Benzene | 1 | | U |
| 78-87-5 | 1,2-Dichloropropane | 0.25 | | U | 108-88-3 | Toluene | 1 | | U |
| 75-27-4 | Bromodichloromethane | 0.25 | | U | 100-41-4 | Ethyl benzene | 1 | | U |
| 74-95-3 | Dibromomethane | 1 | | U | 108-38-3 | m,p-Xylenes | 2 | 2.2 | |
| 10061-01-5 | cis-1,3-Dichloropropene | 0.25 | | U | 95-47-6 | o-Xylene | 1 | | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 0.25 | | U | 100-42-5 | Styrene | 1 | | U |
| 79-00-5 | 1,1,2-Trichloroethane | 0.25 | | U | 98-82-8 | Isopropylbenzene | 1 | | U |
| 127-18-4 | Tetrachloroethene | 0.25 | | U | 103-65-1 | n-Propylbenzene | 1 | | U |
| 142-28-9 | 1,3-Dichloropropane | 0.25 | | U | 108-67-8 | 1,3,5-Trimethylbenzene | 1 | | U |
| 124-48-1 | Dibromochloromethane | 0.75 | | U | 98-06-6 | tert-Butylbenzene | 1 | | U |
| 106-93-4 | 1,2-Dibromoethane | 1 | | U | 95-63-6 | 1,2,4-Trimethylbenzene | 1 | | U |
| 108-90-7 | Chlorobenzene | 0.25 | | U | 135-98-8 | sec-Butylbenzene | 1 | | U |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 0.25 | | U | 99-87-6 | p-isopropyltoluene | 1 | | U |
| 75-25-2 | Bromoform | 0.5 | | U | 104-51-8 | n-Butylbenzene | 1 | | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 0.75 | | U | 91-20-3 | Naphthalene | 1 | | U |

| | mg/L | mg/L | |
|---|---|---|---|
| Gasoline Range Estimated Total Petroleum Hydrocarbon | 0.25 | | N |

TQL- Target Quantitation Limit- Subject to change due to instrument sensitivity
T- Tentatively Identified, not confirmed
E- Estimated Value
U- Samples analyzed for this compound but not detected
N- Sample not analyzed for this compound
D- Detected below quantitation limit
M- GC/MS Analysis performed

Other purgeables detected (up to 10 highest peaks) — Detected ug/L

NO VOLATILE ORGANIC COMPOUNDS DETECTED BY GC/ELCD.

COMMENTS:

## ENR/DWQ LABORATORY
## SEMI-VOLATILE ANALYTICAL REPORT

**LAB NO.** 8G1862

REPORTED BY
CHECKED BY
REVIEWED BY

SUPERVISOR REK
DATE 9/2/98

ENTERED BY
DATE 9-3-98

SAMPLE TYPE: WATER

**ANALYSIS RESULTS**

| CAS# | SEMIVOLATILES TARGET COMPOUND | TQL ug/L | DETECTED ug/L | CAS# | SEMIVOLATILES TARGET COMPOUND | TQL ug/L | DETECTED ug/L |
|---|---|---|---|---|---|---|---|
| 62-53-3 | ANILINE | 10 | U | 606-20-2 | 2,6-DINITROTOLUENE | 10 | U |
| 108-95-2 | PHENOL | 10 | U | 99-09-2 | 3-NITROANILINE | 50 | U |
| 111-44-4 | BIS(2-CHLOROETHYL) ETHER | 10 | U | 83-32-9 | ACENAPHTHENE | 10 | U |
| 95-57-8 | 2-CHLOROPHENOL | 10 | U | 51-28-5 | 2,4-DINITRO PHENOL | 50 | U |
| 541-73-1 | 1,3-DICHLOROBENZENE | 10 | U | 100-02-7 | 4-NITRO PHENOL | 50 | U |
| 106-46-7 | 1,4-DICHLOROBENZENE | 10 | U | 132-64-9 | DIBENZOFURAN | 10 | U |
| 100-51-6 | BENZYL ALCOHOL | 20 | U | 121-14-2 | 2,4-DINITROTOLUENE | 10 | U |
| 95-50-1 | 1,2-DICHLOROBENZENE | 10 | U | 84-66-2 | DIETHYL PHTHALATE | 10 | U |
| 95-48-7 | 2-METHYL PHENOL | 10 | U | 7005-72-3 | 4-CHLOROPHENYL PHENYL ETHER | 10 | U |
| 108-60-1 | BIS(2-CHLOROISOPROPYL) ETHER | 10 | U | 86-73-7 | FLUORENE | 10 | U |
| 106-44-5 | 4-METHYL PHENOL | 10 | U | 100-01-6 | 4-NITROANILINE | 50 | U |
| 621-64-7 | N-NITROSO-DI-N-PROPYLAMINE | 10 | U | 534-52-1 | 4,6-DINITRO-2-METHYL PHENOL | 50 | U |
| 67-72-1 | HEXACHLOROETHANE | 10 | U | 86-30-6 | N-NITROSODIPHENYLAMINE | 10 | U |
| 98-95-3 | NITROBENZENE | 10 | U | 101-55-3 | 4-BROMOPHENYL PHENYL ETHER | 10 | U |
| 78-59-1 | ISOPHORONE | 10 | U | 118-74-1 | HEXACHLOROBENZENE | 10 | U |
| 88-75-5 | 2-NITRO PHENOL | 10 | U | 87-86-5 | PENTACHLORO PHENOL | 50 | U |
| 105-67-9 | 2,4-DIMETHYL PHENOL | 10 | U | 85-01-8 | PHENANTHRENE | 10 | U |
| 65-85-0 | BENZOIC ACID | 50 | U | 120-12-7 | ANTHRACENE | 10 | U |
| 111-91-1 | BIS(2-CHLOROETHOXY) METHANE | 10 | U | 84-74-2 | DI-N-BUTYL PHTHALATE | 10 | U |
| 120-83-2 | 2,4-DICHLORO PHENOL | 10 | U | 206-44-0 | FLUORANTHENE | 10 | U |
| 120-82-1 | 1,2,4-TRICHLOROBENZENE | 10 | U | 129-00-0 | PYRENE | 10 | U |
| 91-20-3 | NAPHTHALENE | 10 | U | 85-68-7 | BUTYLBENZYL PHTHALATE | 10 | U |
| 106-47-8 | 4-CHLOROANILINE | 20 | U | 91-94-1 | 3,3'-DICHLOROBENZIDINE | 20 | U |
| 87-68-3 | HEXACHLOROBUTADIENE | 10 | U | 56-55-3 | BENZO(A)ANTHRACENE | 10 | U |
| 59-50-7 | 4-CHLORO-3-METHYL PHENOL | 20 | U | 218-01-9 | CHRYSENE | 10 | U |
| 91-57-6 | 2-METHYL NAPHTHALENE | 10 | U | 117-81-7 | BIS(2-ETHYLHEXYL) PHTHALATE | 10 | U |
| 77-47-4 | HEXACHLOROCYCLOPENTADIENE | 10 | U | 117-84-0 | DI-N-OCTYL PHTHALATE | 10 | U |
| 88-06-2 | 2,4,6-TRICHLORO PHENOL | 10 | U | 205-99-2 | BENZO(B)FLUORANTHENE | 10 | U |
| 95-95-4 | 2,4,5-TRICHLORO PHENOL | 10 | U | 207-08-9 | BENZO(K)FLUORANTHENE | 10 | U |
| 91-58-7 | 2-CHLORO NAPHTHALENE | 10 | U | 50-32-8 | BENZO(A)PYRENE | 10 | U |
| 88-74-4 | 2-NITROANILINE | 50 | U | 193-39-5 | INDENO(1,2,3-CD)PYRENE | 10 | U |
| 131-11-3 | DIMETHYL PHTHALATE | 10 | U | 53-70-3 | DIBENZO(A,H)ANTHRACENE | 10 | U |
| 208-96-8 | ACENAPHTHYLENE | 10 | U | 191-24-2 | BENZO(G,H,I)PERYLENE | 10 | U |

## SEMIVOLATILE ORGANICS REPORT - DWQ LAB PAGE 2

LAB NO. 8G1862

| Other Semi-Volatiles compounds detected (up to 20 highest peaks) | Detected ug/L |
|---|---|
| DODECANOIC ACID C12.H24.O2 | 5 T |
| BUTYLIDENE BIS DIMETHYLETHYL METHYL PHENOL C26.H38.O2 | 12 T |

TQL- Target Quantitation Limit- Subject to change due to instrument sensitivity

T- Tentatively Identified, estimated concentration

E- Estimated Value

U- Samples analyzed for this compound but not detected

N- Sample not analyzed for this compound

D- Detected below quantitation limit

H- Holding time exceeded

COMMENTS:

ARO

Division of Environmental Management
GROUNDWATER SECTION

# CHAIN OF CUSTODY RECORD

RECEIVED
AUG - 6 1998
GROUNDWATER SECTION
ASHEVILLE REGIONAL OFFICE

For Investigation of Parkway Chevrolet #3 Incident No.

Samples collected and GW-54 forms completed by: Julie Berrey & Kay Dechant

| Lab Only Lab No. | Quad No. | Location | Date | Time | No. of Containers |
|---|---|---|---|---|---|
| 8G1860 | N87h | Parkway Chevrolet MW-1 | 8/3/98 | 1:28pm | 3 |
| 8G1861 | N87h | Parkway Chevrolet MW-2 | 8/3/98 | 1:52pm | 3 |
| 8G1862 | N87h | Parkway Chevrolet MW-3 | 8/3/98 | 2:11pm | 3 |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| Relinquished by (Signature): Kay Dechant | Received by (Signature): Donna Saunders | Date/Time 8/5/98 18:05 |
|---|---|---|
| Rel. | Rec. by | / |
| Rel. | Rec. by | / |
| Rel. | Rec. by | / |

Method of Shipment: courier

Security Type and Condition: Seal by: Kay Dechant Lock by: Broken by: Donna Open by: Saunders

LAB USE ONLY

| Lab No. From | Lab No. Through | No. Containers | Analysis | Relinquished by | Received by | Date / Time |
|---|---|---|---|---|---|---|
| 8G1860 | 8G1862 | 6 | VOA | Donna Saunders | Melvin Stout | 8/5/98 19:00 |
| 8G1860 | 8G1862 | 3 | Semi VOA | Donna Saunders | David Livingston | 8-5-98 19:13 |
| | | | | | | / |
| | | | | | | / |
| | | | | | | / |
| | | | | | | / |
| | | | | | | / |
| | | | | | | / |
| | | | | | | / |

White copy - GW Headquarters, Canary copy - Lab, Pink copy - Region

GW-63 Revised 9/87

A120

Division of Environmental Management
GROUNDWATER SECTION

# CHAIN OF CUSTODY RECORD

RECEIVED
AUG - 6 1998
GROUNDWATER SECTION
ASHEVILLE REGIONAL OFFICE

For Investigation of Parkway Chevrolet #3 Incident No.

Samples collected and GW-54 forms completed by: Julie Berrey & Kay Dechant

| Lab Only Lab No. | Quad No. | Location | Date | Time | No. of Containers |
|---|---|---|---|---|---|
| 8C-1860 | N87h | Parkway Chevrolet MW-1 | 8/3/98 | 1:28pm | 3 |
| 8C1861 | N87h | Parkway Chevrolet MW-2 | 8/3/98 | 1:52pm | 3 |
| 8C-1862 | N87h | Parkway Chevrolet MW-3 | 8/3/98 | 2:11pm | 3 |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| Relinquished by(Signature): | Received by(Signature): | Date/Time |
|---|---|---|
| Kay Dechant | Donna Saunders | 8/5/98 15:00 |
| Rel. | Rec. by | / |
| Rel. | Rec. by | / |
| Rel. | Rec. by | / |

Method of Shipment: courier

Security Type and Condition: Seal by: Kay Dechant Broken by: Donna Saunders
Lock by: ✓ Open by:

LAB USE ONLY

| Lab No. From | Lab No. Through | No. Containers | Analysis | Relinquished by | Received by | Date / Time |
|---|---|---|---|---|---|---|
| 8C-1860 | 8C-1862 | 6 | VOA | Donna Saunders | Melissa Sell | 8/5/98 9:00 |
| 8C1860 | 8C-1862 | 3 | semi-VOA | Donna Saunders | [illegible] | 8/99 / 9:13 |
| | | | | | | / |
| | | | | | | / |
| | | | | | | / |
| | | | | | | / |
| | | | | | | / |
| | | | | | | / |
| | | | | | | / |

White copy - GW Headquarters, Canary copy - Lab, Pink copy - Region

GW-63 Revised 9/87

State of North Carolina
Department of Environment
and Natural Resources
Asheville Regional Office
Division of Water Quality

James B. Hunt, Jr., Governor
Wayne McDevitt, Secretary
A. Preston Howard, Jr., P.E., Director

NCDENR
NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

**DIVISION OF WATER QUALITY**

February 27, 1998

Green card attached to Parkway Chevrolet #2 NORR (INC. # 18233)

CERTIFIED MAIL P 458 913 652
RETURN RECEIPT REQUESTED

Parkway Chevrolet
205 Smoky Park Highway
Asheville, North Carolina 28806
Attention: Ron Anderson

SUBJECT: Notice of Violation
G.S. 143-215.75 - Oil Pollution
and Hazardous Substances Control Act

Parkway Chevrolet #3
205 Smoky Park Highway, Asheville
Buncombe County, N.C.
Incident #pending

Dear Mr. Anderson:

Information received by this office on January 13, 1998 confirms a release or discharge from seven hydraulic lift aboveground storage tanks at the subject site. Based upon the available information, Parkway Chevrolet is responsible for the release. This letter is a standard notice explaining the actions you must take in accordance with North Carolina laws as a result of the release. The Division of Water Quality (DWQ) administers the Oil Pollution and Hazardous Substance Control.

Listed below are general descriptions of action you must take to comply with State general statutes. If you have not already done so, please perform the following activities.

1) Immediately prevent any further release or discharge of a petroleum product into the environment; monitor and mitigate any fire, explosion, and vapor hazards which may have entered into subsurface structures such as basements and/or sewers; investigate for the presence of free product and if product is discovered, remove it.

2) Conduct an investigation of the release to determine the full extent and location of contaminated soil and groundwater. In order to comply with this requirement, the vertical as well as the horizontal extent of contamination must be determined. This includes delineation of the free product plume. Using data from available sources and/or site investigations, determine the use and approximate locations of water supply wells within 1,500 feet of the release area, subsurface soil conditions, water quality, location of subsurface sewers, and land use.

Please submit a complete initial site assessment report describing the release response actions initiated and providing the information requested above within 90 days of receipt of this notice. For a detailed description of your requirements please refer to the "Groundwater Section Guidelines for the Investigation and Remediation of Soils and Groundwater" (March 17, 1997).

3) If investigations indicate that a corrective action plan (remedial action plan) is required, the plan must be submitted and approved. If the groundwater is not contaminated, you are required to submit a remedial action plan (RAP) which is due within 60 days after the site assessment report is submitted and approved by this office addressing soil remediation. If groundwater is found to be contaminated, you are required to notify this office immediately for further instructions in order to achieve compliance with G.S. 143-215.75 *et seq.*

If requested, the Asheville Regional Office may allow an alternate compliance schedule for the release response and corrective action and may allow certain reports to be combined. In order for such an alternate compliance schedule to be considered, you must contact the Asheville Regional Office immediately and follow-up in writing with a proposed schedule.

Your prompt attention to the items described herein is required. Failure to comply with the State's general statutes may result in the assessment of civil penalties and/or the use of other enforcement mechanisms available to the State. Each day that a violation continues may be considered a separate violation.

If you believe you are not the responsible party, notify the Groundwater Section within 15 days of receipt of this letter. If you have any questions regarding the actions that must be taken or the statutes mentioned in this letter, please contact Julie Berrey of the Asheville Regional Office, at the letterhead address and/or telephone number.

Sincerely,

Roy M. Davis
Regional Supervisor

Enclosures: Approved Methods for Soil Analyses
Approved Methods for Groundwater Analyses

cc: Ted Bush - Central Office
Devin Claypool - Prescott Environmental Associates, Inc.

JAB/parkway3.oil

**PHONE LOG**

10:58AM 10/22/98

Doug Guild, Prescott Envr., re: Parkway Chevrolet

He called to ask about soil leachate computer model SESOIL to be used in soil only l-cap. Nobody knows much about the model (I called Raleigh). In this instance, since gw is so close to contaminated soil I think it would be tough for a model to show that gw could not become impacted. Also we already have gw monitoring wells in place that we'll be sampling for solvents. As I see it, we have two options. We can do a gw and soil l-cap and monitor soil and gw, and just say that at this point gw is not an issue but that it might become one and we want to do natural attenuation on it should gw contam show up. Or, we can just monitor gw for a few years and then the site will probably be closed under riskbased in the future anyway. Doug likes the second option. We discussed whether we ought to continue sampling the soil. We decided it's up to the client. From a regulatory point of view, we probably don't need to monitor the soil, just the gw. If gw becomes impacted, then we'll know that the soil leached. If gw does not become impacted, then when we got to risk-based, they can take a confirmatory soil sample. But, if they think natural attenuation is going to clean up the soil before then, they may want to monitor soil. Option 1 is less expensive, but with option 2 they may get a clean closure and increase their property value. He'll check with the client. He also asked me to look into the respirometry study to find out what field measurements he should take.

1:47PM 11/3/98

Doug Guild, Prescott Envr., 919-942-8006, re Parkway Chevrolet

For gw monitoring: 625+10 and 502.2. If they decide to continue soil monitoring, then analyze for 9071 and 8260. I realize that we're going to try to talk to the state epidemiology office to say that the solvents levels are low enough that they aren't a concern, but as long as we're monitoring the soil, I'd like to keep tabs on those constituents. Technically, there aren't supposed to be any hits on those, so until we actually get to closure, I want to continue monitoring for those. He will talk to his client to see what they want to do and then get back to me.

## DIVISION OF WATER QUALITY

**Chemistry Laboratory Report / Ground Water Quality**

| | |
|---|---|
| Lab Number : | 8G2560 |
| Date Received : | 12/17/98 |
| Time Received : | 9;30 |
| Received By : | JG |
| Released By : | DS |
| Date reported : | 1/5/99 |

COUNTY : BUNCOMBE
QUAD NO:

SAMPLE PRIORITY
[X] ROUTINE [ ] EMERGENCY

REPORT TO : ARO Regional Office
COLLECTOR(S) : DECHANT
DATE: 12/15/98
TIME:

[X] CHAIN OF CUSTODY

[W] SAMPLE TYPE

PURPOSE:

Owner: PARKWAY CHEVE. MW-2
Location or Site:
Description of sampling point
Sampling Method:
Remarks:

## LABORATORY ANALYSIS

| | | |
|---|---|---|
| | BOD 310 | mg/L |
| | COD High 340 | mg/L |
| | COD Low 335 | mg/L |
| | Coliform: MF Fecal 31616 | /100ml |
| | Coliform: MF Total 31504 | /100ml |
| | TOC | mg/l |
| | Turbitity | NTU |
| | Residue., Suspended 530 | mg/L |
| | Total Suspended solids | mg/L |
| | | |
| | pH | units |
| | Alkalinity to pH 4.5 | mg/L |
| | Alkalinity to pH 8.3 | mg/L |
| | Carbonate | mg/L |
| | Bicarbonate | mg/L |
| | Carbon dioxide | mg/L |
| | Chloride | mg/L |
| | Chromium: Hex 1032 | ug/L |
| | Color: True 80 | c.u. |
| | Cyanide 720 | mg/L |

| | | |
|---|---|---|
| | Diss. Solids 70300 | mg/L |
| | Fluoride 951 | mg/L |
| | Hardness: total 900 | mg/L |
| | Hardness: (non-carb) 902 | mg/L |
| | Phenols 32730 | ug/L |
| | Specific Cond. 95 | umhos/cm2 |
| | Sulfate | mg/L |
| | Sulfide 745 | mg/L |
| | MBAS | mg/L |
| | Oil and Grease | mg/L |
| | Silica | mg/L |
| | Boron | |
| | Formaldehyde | mg/L |
| | NH3 as N 610 | mg/L |
| | TKN as N 625 | mg/L |
| | NO2 +NO3 as n 630 | mg/L |
| | P: Total as P 665 | mg/L |
| | PO4 | mg/L |
| | | |
| | | |

| | | |
|---|---|---|
| | Ag-Silver 46566 | ug/L |
| | Al-Aluminum 46557 | ug/L |
| | As-Arsenic 46551 | ug/L |
| | Ba-Barium 46558 | ug/L |
| | Ca-Calcium 46552 | mg/L |
| | Cd-Cadium 46559 | ug/L |
| | Cr-Chromium 46560 | ug/L |
| | Cu- Copper 1042 | ug/L |
| | Fe- Iron 1045 | ug/L |
| | Hg- Mercury 71900 | ug/L |
| | K-Potassium 46555 | mg/L |
| | Mg- Magnesium 927 | mg/L |
| | Mn-Manganese 1055 | ug/L |
| | Na- Sodium 929 | mg/L |
| | Ni-Nickel | ug/L |
| | Pb-Lead 46564 | ug/L |
| | Se-Selenium | ug/L |
| | Zn_Zinc 46567 | ug/L |
| | | |
| | | |

| | |
|---|---|
| | Organochlorine Pesticides |
| | Organophosphorus Pesticides |
| | Nitrogen Pesticides |
| | |
| | Acid Herbicides |
| | |
| | Semivolatiles |
| | TPH-Diesel Range |
| | |
| X | Volatile Organics (VOA bottle) |
| | |
| | TPH-Gasoline Range |
| | TPH-BTEX Gasoline Range |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

COMMENTS :

RECEIVED
JAN 8 1999
GROUNDWATER SECTION
ASHEVILLE REGIONAL OFFICE

8G2560.DEC

# GROUNDWATER FIELD/LAB FORM CHAIN OF CUSTODY

North Carolina
Department of Environment, Health, and Natural Resources
DIVISION OF WATER QUALITY - GROUNDWATER SECTION

County Buncombe
Quad No. _____ Serial No. _____
Lat. _____ Long. _____

| SAMPLE TYPE | SAMPLE PRIORITY |
|---|---|
| ☑ Water | ☑ Routine |
| ☐ Soil | ☐ Emergency |
| ☐ Other _____ | |
| ☑ Chain of Custody | |

MW-2

Lab Number 8G2560
Date Received 12-7-98 Time 9:30
Rec'd by: _____ From: Bus, Courier, Hand Del.,
Other: _____
Data Entry By: _____ Ck: _____
Date Reported: _____

Report To: ARO, FRO, MRO, RRO, WaRO, WiRO, WSRO, Kinston FO, Fed. Trust, Central Off., Other: _____
Shipped by: Bus, Courier, Hand Del., Other: _____
Collector(s): K. Dechant Date 12/5/98 Time 2:45
Purpose: Baseline, Complaint, Compliance, LUST, Pesticide Study, Federal Trust, Other: Inc. 18332 (circle one)

## FIELD ANALYSES

$pH_{400}$ _____ Spec. Cond.$_{94}$ _____ at 25° C
Temp.$_{10}$ _____ °C Odor _____
Appearance _____
Field Analysis By: _____

Owner Parkway Chevrolet
Location or site MW-2
Description of sampling point well head
Sampling Method bailed (Pump, bailer, etc.) Sample Interval _____
Remarks _____ (pumping time, air temp. etc.)

## LABORATORY ANALYSES

| | | |
|---|---|---|
| | BOD, 310 | mg/l |
| | COD High 340 | mg/l |
| | COD Low 335 | mg/l |
| | Coliform: MF Fecal 31616 | /100ml |
| | Coliform: MF Total 31504 | /100ml |
| | TOC 680 | mg/l |
| | Turbidity 76 | NTU |
| | Residue., Suspended 530 | mg/l |
| | | |
| | | |
| | pH 403 | units |
| | Alkalinity to pH 4.5 410 | mg/l |
| | Alkalinity to pH 8.3 415 | mg/l |
| | Carbonate 445 | mg/l |
| | Bicarbonate 440 | mg/l |
| | Carbon dioxide 405 | mg/l |
| | Chloride 940 | mg/l |
| | Chromium: Hex 1032 | ug/l |
| | Color: True 80 | CU |
| | Cyanide 720 | mg/l |

| | | |
|---|---|---|
| | Diss. Solids 70300 | mg/l |
| | Flouride 951 | mg/l |
| | Hardness: Total 900 | mg/l |
| | Hardness (non-carb) 902 | mg/l |
| | Phenols 32730 | ug/l |
| | Specific Cond. 95 | uMhos/cm² |
| | Sulfate 945 | mg/l |
| | Sulfide 745 | mg/l |
| | | |
| | **Oil and Grease** | **mg/l** |
| | | |
| | | |
| | | |
| | $NH_3$ as N 610 | mg/l |
| | TKN as N 625 | mg/l |
| | $NO_2$ + $NO_3$ as N 630 | mg/l |
| | P: Total as P 665 | mg/l |
| | | |
| | | |
| | | |

| | | |
|---|---|---|
| | Ag - Silver 46566 | ug/l |
| | Al - Aluminum 46557 | ug/l |
| | As - Arsenic 46551 | ug/l |
| | Ba - Barium 46558 | ug/l |
| | Ca - Calcium 46552 | mg/l |
| | Cd - Cadmium 46559 | ug/l |
| | Cr - Chromium 46560 | ug/l |
| | Cu - Copper 46562 | ug/l |
| | Fe - Iron 46563 | ug/l |
| | Hg - Mercury 71900 | ug/l |
| | K - Potassium 46555 | mg/l |
| | Mg - Magnesium 46554 | mg/l |
| | Mn - Manganese 46565 | ug/l |
| | Na - Sodium 46556 | mg/l |
| | Ni - Nickel | ug/l |
| | Pb - Lead 46564 | ug/l |
| | Se - Selenium | ug/l |
| | Zn - Zinc 46567 | ug/l |
| | | |
| | | |

| | |
|---|---|
| | Organochlorine Pesticides |
| | Organophosphorus Pesticides |
| | Nitrogen Pesticides |
| | Acid Herbicides |
| | PCB's |
| | |
| | |
| | |
| | Semivolatile Organics |
| | **TPH - Diesel Range** |
| | |
| | |
| | |
| ✓ | Volatile Organics (VOA bottle) |
| | **TPH - Gasoline Range** |
| | **TPH - BTEX Gasoline Range** |
| | |
| | |
| | |
| | |

Lab Comments: _____

GW-54 REV. 7/96 For Dissolved Analysis - submit filtered sample and write "DIS" in block.

ENR/DWQ LABORATORY
VOLATILE ANALYTICAL REPORT

LAB NO. 8G2560

REPORTED BY MS
CHECKED BY
REVIEWED BY

SUPERVISOR R&K
DATE 12/22/98

ENTERED BY
DATE 12/22/98

SAMPLE TYPE: WATER

ANALYSIS RESULTS

| CAS# | VOA TARGET COMPOUND | TQL ug/L | DETECTED ug/L | |
|---|---|---|---|---|
| 75-35-4 | 1,1-Dichloroethene | 0.75 | U | |
| 75-09-2 | Methylene Chloride | 10 | U | |
| 156-60-5 | trans-1,2-Dichloroethene | 0.75 | U | |
| 75-34-3 | 1,1-Dichloroethane | 0.25 | U | |
| 590-20-7 | 2,2-Dichloropropane | 0.25 | U | |
| 156-59-4 | cis-1,2-Dichloroethene | 0.25 | U | |
| 67-66-3 | Chloroform | 0.25 | U | |
| 74-97-5 | Bromochloromethane | 0.75 | U | |
| 71-55-6 | 1,1,1-Trichloroethane | 0.25 | U | |
| 563-58-6 | 1,1-Dichloropropene | 0.25 | U | |
| 56-23-5 | Carbon Tetrachloride | 0.75 | U | |
| 107-06-2 | 1,2-Dichloroethane | 0.25 | U | |
| 79-01-6 | Trichloroethene | 0.25 | U | |
| 78-87-5 | 1,2-Dichloropropane | 0.25 | U | |
| 75-27-4 | Bromodichloromethane | 0.25 | U | |
| 74-95-3 | Dibromomethane | 1 | U | |
| 10061-01-5 | cis-1,3-Dichloropropene | 0.25 | U | |
| 10061-02-6 | trans-1,3-Dichloropropene | 0.25 | U | |
| 79-00-5 | 1,1,2-Trichloroethane | 0.25 | U | |
| 127-18-4 | Tetrachloroethene | 0.25 | U | |
| 142-28-9 | 1,3-Dichloropropane | 0.25 | U | |
| 124-48-1 | Dibromochloromethane | 0.75 | U | |
| 106-93-4 | 1,2-Dibromoethane | 1 | U | |
| 108-90-7 | Chlorobenzene | 0.25 | U | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 0.25 | U | |
| 75-25-2 | Bromoform | 0.5 | U | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 0.75 | U | |
| 96-18-4 | 1,2,3-Trichloropropane | 0.25 | U | |
| 108-86-1 | Bromobenzene | 1 | U | |
| 95-49-8 | 2-Chlorotoluene | 0.25 | U | |
| 106-43-4 | 4-Chlorotoluene | 0.25 | U | |
| 541-73-1 | 1,3-Dichlorobenzene | 0.25 | U | |
| 106-46-7 | 1,4-Dichlorobenzene | 0.25 | U | |
| 95-50-1 | 1,2-Dichlorobenzene | 0.25 | U | |
| 96-12-8 | 1,2-Dibromo-3-Chloropropane | 1 | U | |
| 120-82-1 | 1,2,4-Trichlorobenzene | 0.25 | U | |
| 87-68-3 | Hexachlorobutadiene | 0.25 | U | |
| 87-61-6 | 1,2,3-Trichlorobenzene | 0.75 | U | |
| 1634-04-4 | Methyl-tert-butyl ether | 5 | U | |
| 71-43-2 | Benzene | 1 | U | |
| 108-88-3 | Toluene | 1 | U | |
| 100-41-4 | Ethyl benzene | 1 | U | |
| 108-38-3 | m,p-Xylenes | 2 | U | |
| 95-47-6 | o-Xylene | 1 | U | |
| 100-42-5 | Styrene | 1 | U | |
| 98-82-8 | Isopropylbenzene | 1 | U | |
| 103-65-1 | n-Propylbenzene | 1 | U | |
| 108-67-8 | 1,3,5-Trimethylbenzene | 1 | U | |
| 98-06-6 | tert-Butylbenzene | 1 | U | |
| 95-63-6 | 1,2,4-Trimethylbenzene | 1 | U | |
| 135-98-8 | sec-Butylbenzene | 1 | U | |
| 99-87-6 | p-isopropyltoluene | 1 | U | |
| 104-51-8 | n-Butylbenzene | 1 | U | |
| 91-20-3 | Naphthalene | 1 | U | |

| | mg/L | mg/L | |
|---|---|---|---|
| Gasoline Range Estimated Total Petroleum Hydrocarbon | 0.20 | | N |

TQL- Target Quantitation Limit- Subject to change due to instrument sensitivity
T- Tentatively Identified, not confirmed
E- Estimated Value
U- Samples analyzed for this compound but not detected
N- Sample not analyzed for this compound
D- Detected below quantitation limit
M- GC/MS Analysis performed

Other purgeables detected (up to 10 highest peaks) — Detected ug/L

NO VOLATILE ORGANIC COMPOUNDS DETECTED BY GC/ELCD/PID.

COMMENTS:

ARO

Division of Environmental Management

GROUNDWATER SECTION

# CHAIN OF CUSTODY RECORD

For Investigation of Parkway Chevrolet Incident No. 18332

Samples collected and GW-54 forms completed by: Kay Dechant

| Lab Only Lab No. | Quad No. | Location | Date | Time | No. of Containers |
|---|---|---|---|---|---|
| 862559 | | MW-1 | 12/15/98 | 2:30 | 3 |
| 862560 | | MW-2 | 12/15/98 | 2:45 | 2 KD |
| 862561 | | MW-3 | 12/15/98 | 3:00 | 3 |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| Relinquished by (Signature): | Received by (Signature): | Date/Time |
|---|---|---|
| Kay Dechant | [signature] | 12/17/98 19:30 |
| Rel. | Rec. by | / |
| Rel. | Rec. by | / |
| Rel. | Rec. by | / |

Method of Shipment: COURIER

Security Type and Condition: Seal by: acr Lock by: Broken by: [signature] Open by:

LAB USE ONLY

| Lab No. From | Lab No. Through | No. Containers | Analysis | Relinquished by | Received by | Date / Time |
|---|---|---|---|---|---|---|
| 862559 | 862561 | 6 | VOA | [signature] | [signature] | 12/17/98 19:40 |
| 862559 | | 1 | Semi Vol | [signature] | [signature] | 12-17-98 940 |
| 862561 | | 1 | Semi Vol | [signature] | [signature] | 12-17-98 940 |
| | | | | | | / |
| | | | | | | / |
| | | | | | | / |
| | | | | | | / |
| | | | | | | / |
| | | | | | | / |

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White copy - GW Headquarters, Canary copy - Lab, Pink copy - Region

GW-63 Revised 9/87

ARO

Division of Environmental Management

GROUNDWATER SECTION

# CHAIN OF CUSTODY RECORD

For Investigation of Parkway Chevrolet Incident No. 18332

Samples collected and GW-54 forms completed by: Kay Dechant

| Lab Only Lab No. | Quad No. | Location | Date | Time | No. of Containers |
|---|---|---|---|---|---|
| 163559 | | MW-1 | 12/15/98 | 2:30 | 3 |
| 163560 | | MW-2 | 12/15/98 | 2:45 | 2 |
| 163561 | | MW-3 | 12/15/98 | 3:00 | 3 |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| Relinquished by(Signature) | Received by(Signature): | Date/Time |
|---|---|---|
| Kay Dechant | | |
| Rel. | Rec. by | / |
| Rel. | Rec. by | / |
| Rel. | Rec. by | / |

Method of Shipment: COURIER

Security Type and Condition: Seal by: ACR Broken by:
Lock by: Open by:

LAB USE ONLY

| Lab No, From | Through | No. Containers | Analysis | Relinquished by | Received by | Date / Time |
|---|---|---|---|---|---|---|
| 163559 | 163561 | 6 | VOA | | DSA Courier | 12/17/98 14:40 |
| 163559 | | 1 | Semi VOC | | Courier | 12-17-98 1540 |
| 163561 | | 1 | Semi VOC | | Courier | 12-17-98 1540 |
| | | | | | | / |
| | | | | | | / |
| | | | | | | / |
| | | | | | | / |
| | | | | | | / |
| | | | | | | / |

RECEIVED
DEC 22 1998
Groundwater Section
Asheville Regional Office

White copy - GW Headquarters, Canary copy - Lab, Pink copy - Region

GW-63 Revised 9/87

FILE COPY

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WATER QUALITY
ASHEVILLE REGIONAL OFFICE

Groundwater Section

July 17, 1998

JAMES B. HUNT JR.
GOVERNOR

WAYNE MCDEVITT,
SECRETARY

A. PRESTON HOWARD, JR.,
P.E., DIRECTOR

CERTIFIED MAIL P458 913 656
RETURN RECEIPT REQUESTED

Parkway Chevrolet
205 Smoky Park Highway
Asheville, North Carolina 28806
Attention: Ron Anderson

Subject: Request for Additional Information
Comprehensive Site Assessment Report
Parkway Chevrolet #3
205 Smoky Park Highway, Asheville
Buncombe County, N.C.
GW Incident #18332

Dear Mr. Anderson:

The Asheville Regional Office Groundwater Section has completed a preliminary technical review of the comprehensive site assessment (CSA) for the subject site. The report arrived on June 15, 1998. Before a review can be completed, additional information is required:

1) In order for the Division of Water Quality (DWQ) to approve a CSA, the report must be submitted in a complete form. The CSA submitted on June 15, 1998 is neither complete nor in the correct format. You must resubmit the CSA. For a detailed description of your requirements please refer to the "Groundwater Section Guidelines for the Investigation and Remediation of Soils and Groundwater Volume I" (May 1998) (the Guidelines).

2) Any investigation, assessment, interpretation, characterization or corrective action plan submitted to DWQ requires appropriate licensing as specified in 15A NCAC 2L .0103(e). Neither the June 15, 1998 CSA nor the April 2, 1998 phase III environmental site assessment and remediation action report are signed and sealed by a geologist or engineer. Neither of these reports can be accepted without the appropriate licensing. Please note that the agent signing and sealing reports is certifying that he or she has directly supervised the work being sealed. Review only of others' work does not qualify as supervision.

3) Double check Table 2, Soil Sample Laboratory Results. Although this table was resubmitted on July 13, 1998, it still contains errors.

4) Please submit well construction records and show the depth to the water table from the top of the casing. You must provide water level data and a water table contour map.

5) Page 9 of the June 15, 1998 CSA states that petroleum-contaminated soil is below the action level of 250 parts per million (ppm), yet the confirmatory sampling in the April 2, 1998 phase III report shows levels as high as 2,400 ppm. The petroleum-contaminated soil must be addressed. Has a site sensitivity evaluation (SSE) been performed? If not, explain. GW3 W/S', so no SSE per Prescott Envr. 7/27/98 JAB

6) The monitor wells at the site shall be resampled to confirm that groundwater has not been impacted. Please contact me at least one week prior to sampling to coordinate split sampling. Analyze the samples for EPA method 625 plus the ten largest non-target peaks identified, method 6230D or 6210D, and the MADEP EPH method in accordance with the Guidelines. 8260 is okay instead of 6230D or 6210D JAB 7/29/98

The required information must be received by this office within 30 days of receipt of this letter or the CSA will be denied and returned. If you have any questions, please call me at (828) 251-6208, ext. 203.

Sincerely,

Julie Berrey
Hydrogeological Technician

Enclosures: Certification form GW100 CSA
CSA Guidelines
SSE Guidelines
Analytical Guidelines

cc: Arthur Mouberry - Groundwater Section
Devin Claypool - Prescott Environmental Associates, Inc.

JAB/parkway3.add

Is your RETURN ADDRESS completed on the reverse side?

**SENDER:**
- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

onsult postmaster for fee.

NCDENR

North Carolina Department of
Environment and Natural Resources
59 Woodfin Place Asheville, NC 28801-2414

DIV OF WATER QUALITY

TO: RON ANDERSON
PARKWAY CHEVROLET
205 SMOKY PARK HIGHWAY
ASHEVILLE , NC 28806

4a. Article Number
P 458 913 656

4b. Service Type
☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☒ Return Receipt for Merchandise ☐ COD

7. Date of Delivery
7/18/98

RECEIVED
JUL 20 1998
USS
Section
Asheville Regional Office

5. Received By: *(Print Name)*

6. Signature: *(Addressee or Agent)*
X

8. Addressee's Address *(Only if requested and fee is paid)*

PS Form 3811, Dece 102595-97-B-0179 Domestic Return Receipt

PS Form 3800

Postmark or Date
7/17/98

NCDENR

North Carolina Department of
Environment and Natural Resourc
59 Woodfin Place Asheville, NC

DIV OF WATER QUALITY

TO: RON ANDERSON
PARKWAY CHEVROLET
205 SMOKY PARK HIGHWAY
ASHEVILLE , NC 28806

US Postal Service
P 458 913 656

**Stick postage stamps to article to cover First-Class postage, certified mail fee, and charges for any selected optional services** *(See front).*

1. If you want this receipt postmarked, stick the gummed stub to the right of the return address leaving the receipt attached, and present the article at a post office service window or hand it to your rural carrier *(no extra charge).*

2. If you do not want this receipt postmarked, stick the gummed stub to the right of the return address of the article, date, detach, and retain the receipt, and mail the article.

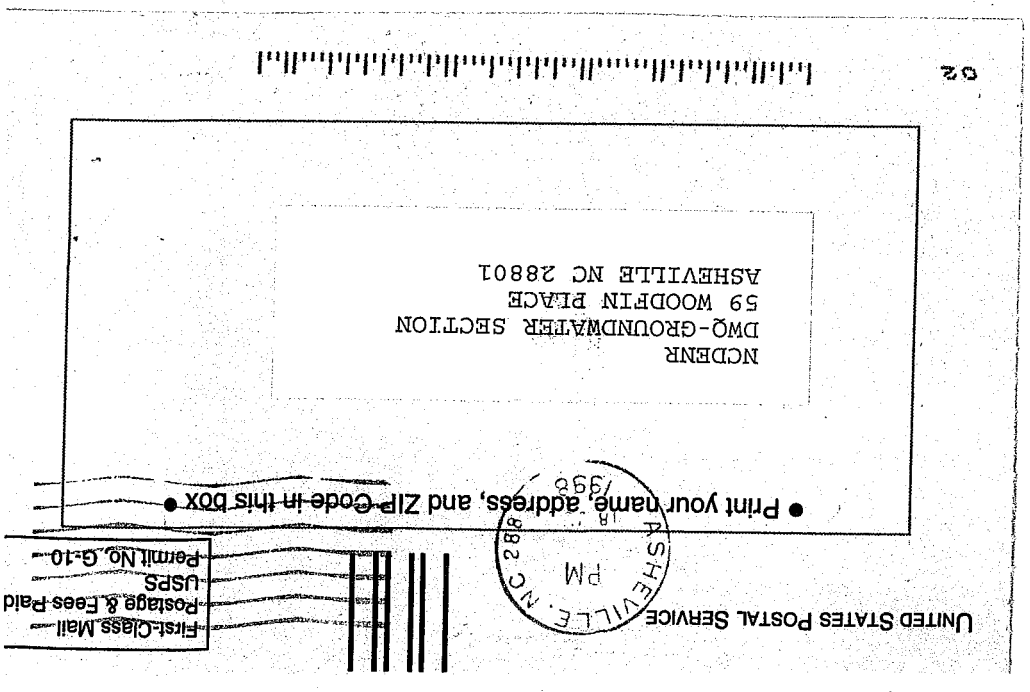
3. If you want a return receipt, write the certified mail number and your name and address on a return receipt card, Form 3811, and attach it to the front of the article by means of the gummed ends if space permits. Otherwise, affix to back of article. Endorse front of article **RETURN RECEIPT REQUESTED** adjacent to the number.

4. If you want delivery restricted to the addressee, or to an authorized agent of the addressee, endorse **RESTRICTED DELIVERY** on the front of the article.

5. Enter fees for the services requested in the appropriate spaces on the front of this receipt. If return receipt is requested, check the applicable blocks in item 1 of Form 3811.

6. Save this receipt and present it if you make an inquiry.

PS Form **3800**, April 1995 *(Reverse)*



BuCo
18332
PARKWAY CHEVROLET #3
JAB 4/1/98

# FACSIMILE

**To:** Julie Berrey
**Fax #:** 704-251-6452
**Re:** Proposed Scope of Work for Parkway Chevrolet
**Date:** April 1, 1998
**Pages:** 3, including this cover sheet.

Julie -

Attached is the proposed scope of work for Parkway Chevrolet, Asheville, NC.

Please call me once you've had a chance to the review this.

Thanks.

Devin

RECEIVED
APR 1 - 1998
GROUNDWATER SECTION
ASHEVILLE REGIONAL OFFICE

From the desk of...

**Devin S. Claypool**
Environmental Scientist
Prescott Environmental Associates, Inc.
312 W. Franklin Street, Suite 4
Chapel Hill, North Carolina 27516

(919) 942-8006
Fax: (919) 967-4953

DRAFT

March 27, 1998

Mr. Daniel P. McInerny
Bose, McKinney & Evans
135 N. Pennsylvania St., Suite 2700
Indianapolis, Indiana 26204-2426

**PROPOSAL NO. P-98-010**

Reference: Proposal - Soil Delineation and Groundwater Assessment Project (SDGAP)
Parkway Chevrolet, Asheville, Buncombe County, NC

Dear Mr. McInerny:

Prescott Environmental Associates, Inc. is pleased to submit this proposal to complete a soil delineation and groundwater assessment (SDGAP) project at the referenced site. This proposal covers additional assessment activities primarily for the Truck Shop and Auto Detail Shop areas at the subject site, as required by State regulations.

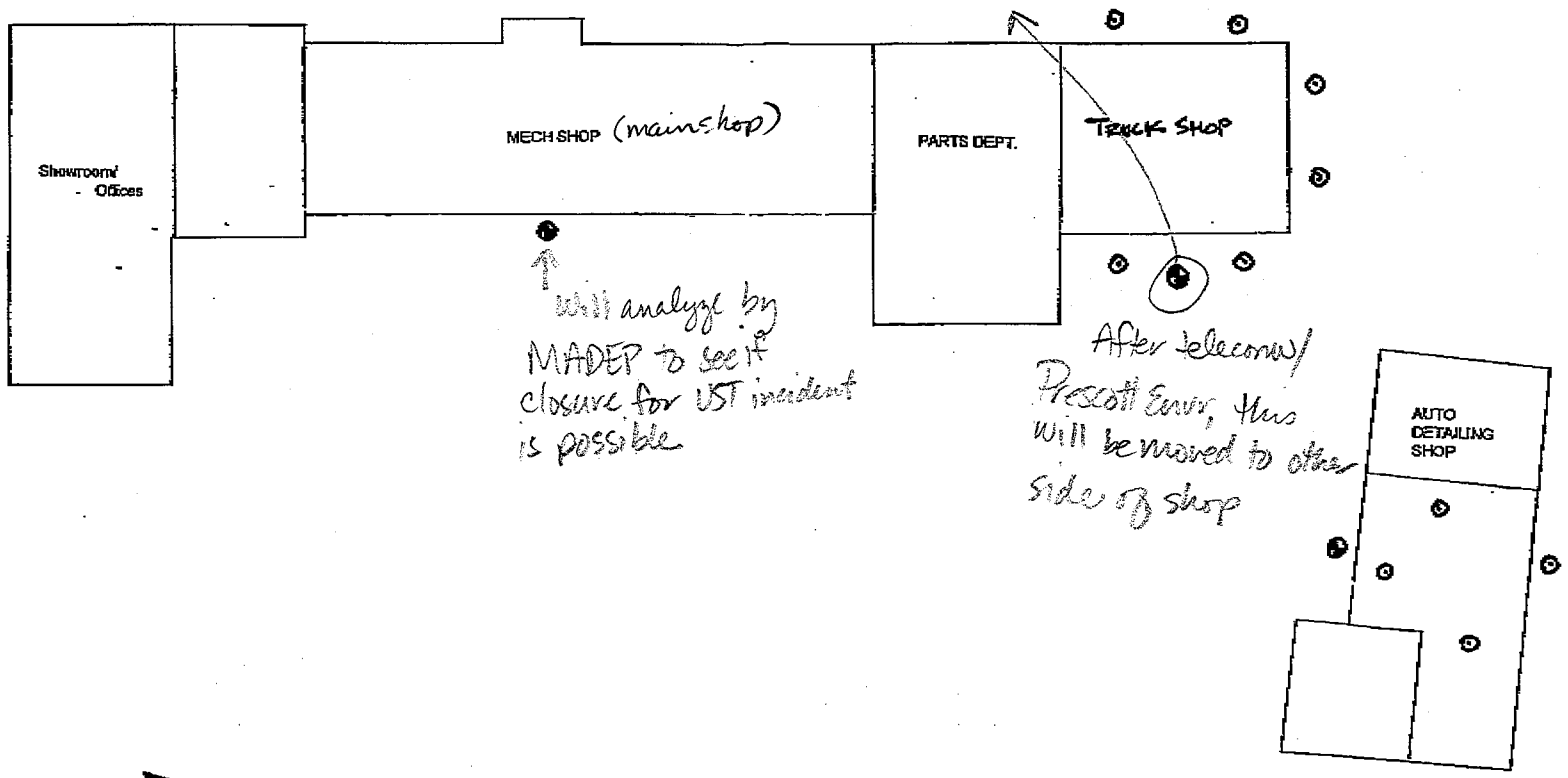
## PROPOSED SCOPE OF WORK

Our proposed scope of work includes the completion of subsurface soil borings at all three areas of concern, including one boring to determine soil characteristics at the main shop area for natural attenuation of residual contamination in excess of the new risk-based action level. The remaining borings include six (6) borings outside the Truck Shop (2 per side), and four (4) borings inside and outside of the Auto Detail Shop to determine if residual subsurface contamination has spread outside either of these two areas. The soil borings will be completed to the vadose zone, with sample collection for analysis at 15, 20 and 25 feet in depth. The analytical program for the subsurface soil samples will be by EPA Methods 9071 for oil and grease, and by 8260 for volatile organic compounds.

The other primary goal of this CSA is to determine if groundwater at the site has been impacted by the subsurface soil contamination at any of the three areas of concern. Attached please find a site map with the proposed groundwater monitoring well and soil boring locations. Groundwater samples will be analyzed by EPA Methods 625 (plus 10 peaks) for semi-volatile organic compounds, and 502.2 for volatile organic compounds.

This scope of work was developed based upon guidelines published by the State of North Carolina, DENR, conversations with the Asheville Regional Office, Groundwater Section personnel, and commonly accepted environmental engineering practices and principles.

DRAFT




⊙ PROPOSED SOIL BORING LOCATIONS

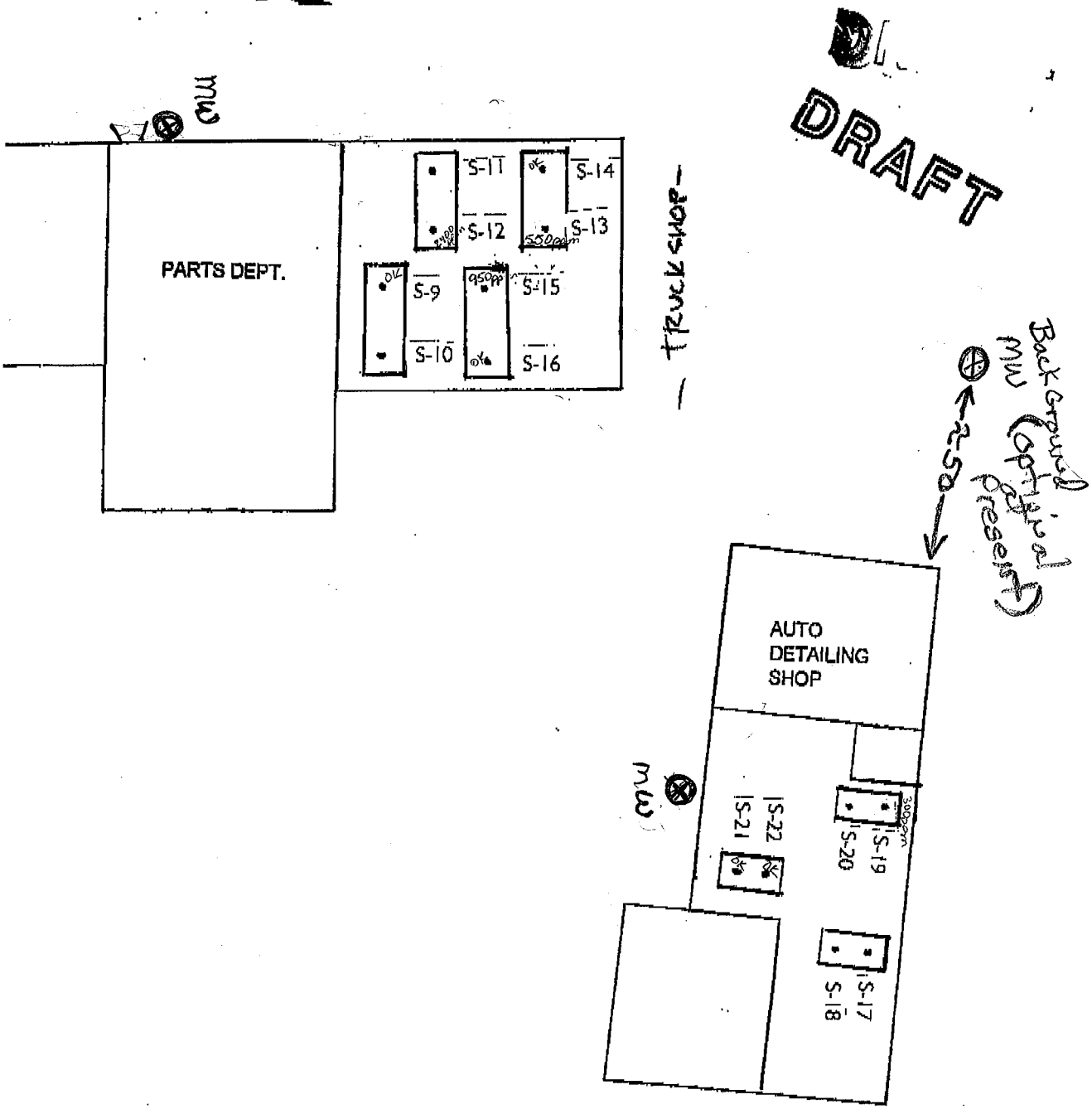
● PROPOSED MONITORING WELL LOCATIONS

PRESCOTT ENVIRONMENTAL ASSOCIATES, INC.
POST OFFICE BOX 2555
CHAPEL HILL, NORTH CAROLINA 27515-2555
(919) 942-0005 TELEPHONE (919) 967-4953 FACSIMILE

| | | |
|---|---|---|
| SCALE: N.T.S. | APPROVED BY: DPG | DRAWN BY CRG |
| DATE: 1/13/98 | | REVISED |

Parkway Chevrolet
205 Smoky Park Highway, Asheville, NC

DRAWING NUMBER 2




| | | |
|---|---|---|
| PRESCOTT ENVIRONMENTAL ASSOCIATES, INC.<br>POST OFFICE BOX 2555<br>CHAPEL HILL, NORTH CAROLINA 27515-2555<br>(919) 942-8006 TELEPHONE (919) 967-4953 FACSIMILE | | |
| SCALE: 1" = 37' | APPROVED BY: DRG | DRAWN BY: DSE |
| DATE: | | REVISED |
| Parkway Chevrolet<br>205 Smoky Park Highway, Asheville, NC | SAMPLE LOCATIONS PHASE III | |
| Phase III ESA | | DRAWING NUMBER |

# FACSIMILE

**To:** Julie Berrey
**Fax #:** 704-251-6452
**Re:** Parkway Phase III Map
**Date:** March 19, 1998
**Pages:** 2, including this cover sheet.

Julie -

Here is a draft of the excavation location map for the Parkway Phase III of the Truck Shop and Auto Detailing Building.

I'll call you later this afternoon to discuss monitoring wells. Doug Guild, the Project Manager, has some questions concerning the scope and deep wells.

Thanks for your help.

Devin

From the desk of...

**Devin S. Claypool**
**Environmental Scientist**
**Prescott Environmental Associates, Inc.**
**312 W. Franklin Street, Suite 4**
**Chapel Hill, North Carolina 27516**

**(919) 942-6006**
**Fax: (919) 967-4953**

# POLLUTION INCIDENT/U.S.T. LEAK REPORTING FORM

Department of Environment, Health, Natural Resources
Division of Environmental Management
GROUNDWATER SECTION

Confirm. GW Contamination (Y/N) ____
Major Soil Contamination (Y/N) Y
Minor Soil Contaminatin (Y/N) ____

Incident # 18332

Date Incident Occurred or Leak Detected 1/8/98 (labs)

## INCIDENT DESCRIPTION

Incident Location/Name: Parkway Chevrolet #3
Address: 205 Smoky Park Highway
City/Town: Asheville | County: Buncombe | Region: ARO
Briefly Describe Incident: Major soil contamination discovered around vaulted ASTs. Hydraulic lift ASTs. Note that this is the same site as Parkway Chevrolet #2, but a different incident

## POTENTIAL SOURCE OWNER-OPERATOR

Potential Source Owner-Operator: Ron Anderson | Telephone: (828) 665-4444
Company: Parkway Chevrolet | Street Address: 205 Smoky Park Highway
City: Asheville | County: Buncombe | State: NC | Zip Code: 28806

OWNERSHIP
0. N/A 1. Municipal 2. Military 3. Unknown (4. Private) 5. Federal 6. County 7. State

OPERATION TYPE
0. N/A 1. Public Service 2. Agricultural 3. Residential 4. Educational/Relig. 5. Industrial (6. Commercial) 7. Mining

## POLLUTANTS INVOLVED

| MATERIALS INVOLVED | AMOUNT LOST | AMOUNT RECOVERED |
|---|---|---|
| Hydraulic Oil | ? | ? |
| | | |
| | | |

## SOURCE OF POLLUTION

PRIMARY SOURCE OF POLLUTION (Select one)
1. Intentional dump
2. Pit, pond, lagoon
3. Leak-underground
4. Spray irrigation
5. Land application
6. Animal feedlot
7. Source unknown
8. Septic tank
9. Sewer line
10. Stockpile
11. Landfill
12. Spill-surface
13. Well
(14. Above-ground Storage Tank)
15. Nonpoint source

PRIMARY POLLUTANT TYPE (Select one)
1. Pesticide/herbicide
2. Radioactive waste
3. Gasoline/diesel
4. Heating oil
(5. Other petroleum prod.) hydraulic oil
6. Sewage/septage
7. Fertilizers
8. Sludge
9. Solid waste leachate
10. Metals
11. Other inorganics
12. Other organics

LOCATION
(1. Facility)
2. Railroad
3. Waterway
4. Pipeline
5. Dumpsite
6. Highway
7. Residence
8. Other

SETTING
1. Residential
2. Industrial
(3. Urban)
4. Rural

Site Priority Ranking: B

D.E.M. Regional Contact: Julie Berrey | Signature: John A Bossa | Date: 2/26/98

GW-61 Revised 2/95

## IMPACT ON DRINKING WATER SUPPLIES

WELLS AFFECTED 1. YES 2. NO

NUMBER OF WELLS AFFECTED _____

Well(s) Contaminated: (Users Name)

1.

2.

3.

4.

5.

Circle Appropriate Responses

Lab Samples Taken By: 1. DEM 2. DHS (3) Responsible Party 4. Other 5. None

Samples Taken Include:

1. Groundwater (2) Soil

## LOCATION OF INCIDENT

7 1/2 Min. Quad Name

Enka, NC

5 Min. Quad Number

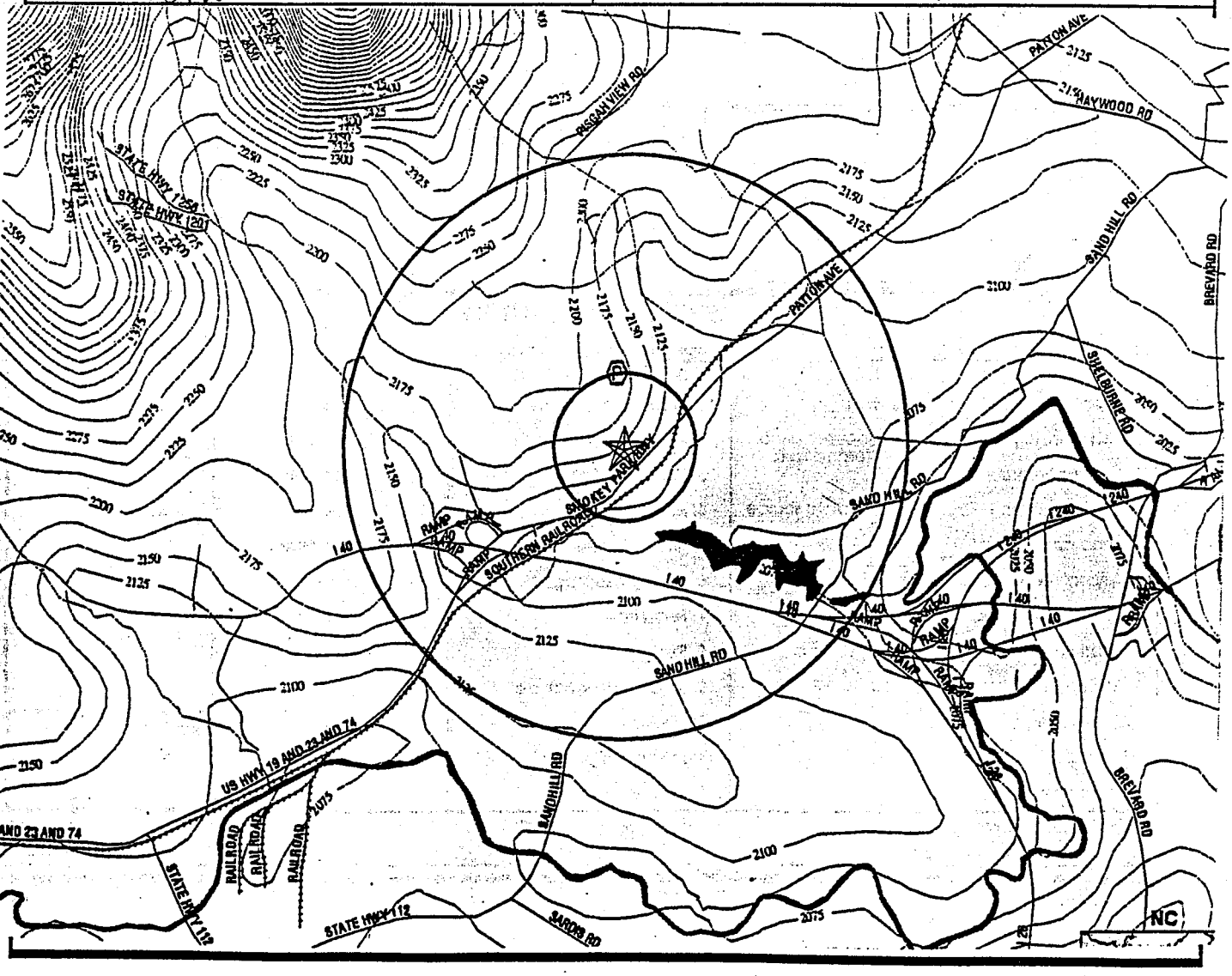
N87w

Lat. : Deg : Min : Sec :

35/33/50 35°34'48"

Long. : Deg : Min : Sec :

82/37/48 82°37'51"

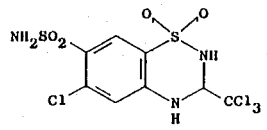


Faintly bitter crystals producing transient numbness of the tongue. mp 147-150°. Sol in 7 parts water, in alcohol; insol in ether, benzene. The aq soln is neutral to litmus. Aq solns are stable and may be sterilized by brief boiling. $LD_{50}$ i.p. in mice: 70 mg/kg, Dawes, *Brit. J. Pharmacol. Chemother.* **1**, 90 (1946).

THERAP CAT: Local anesthetic.

THERAP CAT (VET): Topical anesthetic.

**9015. Tetrachlormethiazide.** *6-Chloro-3,4-dihydro-3-trichloromethyl-2H-1,2,4-benzothiadiazine-7-sulfonamide 1,1-dioxide;* 6-chloro-3,4-dihydro-7-sulfamoyl-3-trichloromethyl-2*H*-1,2,4-benzothiadiazine 1,1-dioxide; 3-trichloromethylhydrochlorothiazide; teclothiazide; PS 207; K 33; Depleil. $C_8H_7Cl_4N_3O_4S_2$; mol wt 415.13. C 23.15%, H 1.70%, Cl 34.17%, N 10.12%, O 15.42%, S 15.45%. Prepn: Close *et al., J. Am. Chem. Soc.* **82**, 1132 (1960); Novello *et al., J. Org. Chem.* **25**, 970 (1960).



Crystals, mp 300-303° (Close); mp 287° (Novello).

THERAP CAT: Diuretic.

**9016. Tetrachloroethane.** *1,1,2,2-Tetrachloroethane; sym*-tetrachloroethane; acetylene tetrachloride; Cellon; Bonoform. $C_2H_2Cl_4$; mol wt 167.86. C 14.31%, H 1.20%, Cl 84.49%. $Cl_2CHCHCl_2$. Manuf by catalytic addition of chlorine to acetylene: Peters, Neumann, *Angew. Chem.* **45**, 261 (1932); by chlorination of ethylene: Pye, U.S. pat. **2,752,402** (1956 to Dow); by catalytic chlorination of ethane: Joseph, U.S. pat. **2,752,401** (1956 to Dow); by chlorination of 1,2-dichloroethane: Conrad, U.S. pat. **2,725,412** (1955 to Ethyl Corp.); Fox, U.S. pat. **2,846,484** (1958 to Monsanto). Toxicity: E. Browning, *Toxicity and Metabolism of Industrial Solvents* (Elsevier, New York, 1965) pp 220-229.

Nonflammable, heavy, mobile liquid. Sweetish, suffocating, chloroform-like odor. $d_4^{25}$ 1.58658. mp −44°. $bp_{760}$ 146.5°. $n_D^{20}$ 1.49419. Very sparingly sol in water. At 25° one gram dissolves in 350 ml $H_2O$. Misc with methanol, ethanol, benzene, ether, petr ether, carbon tetrachloride, chloroform, carbon disulfide, dimethylformamide, oils. Has the highest solvent power of the chlorinated hydrocarbons. $LD_{50}$ orally in rats: 0.20 ml/kg, H. F. Smyth *et al., Am. Ind. Hyg. Assoc. J.* **30**, 470 (1969).

USE: Nonflammable solvent for fats, oils, waxes, resins, cellulose acetate, rubber, copal, phosphorus, sulfur. As solvent in certain types of Friedel-Crafts reactions or phthalic anhydride condensations. In the manuf of paint, varnish, and rust removers. In soil sterilization and weed killer and insecticide formulations. In the determination of theobromine in cacao. As immersion fluid in crystallography. In the biological laboratory to produce pathological changes in gastrointestinal tract, liver, and kidneys. Intermediate in the manuf of trichloroethylene and other chlorinated hydrocarbons having two carbon atoms. *Caution:* Powerful narcotic; liver poison. For symptoms *see* Carbon Tetrachloride.

**9017. Tetrachloroethylene.** Perchloroethylene; ethylene tetrachloride; tetrachlorethylene; Nema; Tetracap; Tetropil; Perclene; Ankilostin; Didakene. $C_2Cl_4$; mol wt 165.85. C 14.48%, Cl 85.52%. $Cl_2C{=}CCl_2$. Prepd by Faraday in 1821. Manuf by catalytic oxidation of 1,1,2,2-tetrachloroethane: Ellsworth, Vancamp, U.S. pat. **2,951,103** (1960 to Columbia-Southern Chem.); Feathers, Rogerson, U.S. pat. **3,040,109** (1962 to Pittsburgh Plate Glass); by catalytic chlorination of acetylene: Thermet, Parvi, U.S. pat. **2,938,-931** (1960 to Société d'électrochimie, d'électrométallurgie et des aciéries électriques d'Ugine). Review of mfg processes: Faith, Keyes & Clark's *Industrial Chemicals,* F. A. Lowenheim, M. K. Moran, Eds. (Wiley-Interscience, New York, 4th ed., 1975) pp 604-611.

Colorless, nonflammable liq; ethereal odor; $d_4^{15}$ 1.6311; $d_4^{20}$ 1.6230. bp 121°. Solidif about −22°. $n_D^{20}$ 1.5055: Mumford, Phillips, *J. Chem. Soc.* **1950**, 75. Sol in about 10,000 vol water; misc with alcohol, ether, chloroform, benzene. $LD_{50}$ orally in mice: 8.85 g/kg, Dybing, *Acta Pharmacol. Toxicol.* **2**, 223 (1946). Lethal concn for mice in air: 5925 ppm, Lazarew, *Arch. Exp. Pathol. Pharmacol.* **141**, 19 (1929).

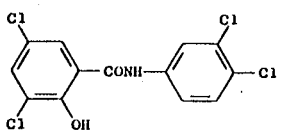
*Human Toxicity:* Narcotic in high concns. Defatting action on skin can lead to dermatitis.

USE: Dry cleaning; degreasing metals; solvent.

THERAP CAT: Anthelmintic (hookworms and some trematodes).

THERAP CAT (VET): Anthelmintic.

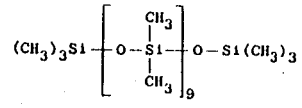
**9018. 3,3',4',5-Tetrachlorosalicylanilide.** *3,5-Dichloro-N-(3,4-dichlorophenyl)-2-hydroxybenzamide;* Irgasan BS200. $C_{13}H_7Cl_4NO_2$; mol wt 351.03. C 44.48%, H 2.01%, Cl 40.40%, N 3.99%, O 9.12%. Prepn of polyhalosalicylanilides: Bindler, Model, U.S. pat. **2,703,332** (1955 to Geigy). Bacteriostat in the manuf of thermoplastic articles: Teller, U.S. pat. **3,005,720** (1961 to Weco Products).



Crystals, mp 161°. Fluoresces under ultraviolet light. Practically insol in water. Sol in alkaline aq solns and in solns of wetting agents. Sol in many organic solvents.

USE: Bacteriostat in formulations of surgical soaps, laundry soaps, rinses, polishes, shampoos, deodorants. Also as preservative in textile finishes, certain petroleum products, cellulose esters, cutting oils, coolants. Banned by FDA from use in cosmetics.

**9019. Tetracosamethylhendecasiloxane.** *Tetracosamethylundecasiloxane.* $C_{24}H_{72}O_{10}Si_{11}$; mol wt 829.83. C 34.75%, H 8.75%, O 19.28%, Si 37.21%. Prepd by reaction of hexamethyldisiloxane with octamethylcyclotetrasiloxane and sulfuric acid: Patnode, Wilcock, *J. Am. Chem. Soc.* **68**, 362 (1946); by cohydrolysis of ethoxytrimethylsilane and diethoxydimethylsilane: Hyde, U.S. pat. **2,457,677** (1948 to Corning Glass).



Liquid; $bp_{4.7}$ 201°; $bp_{0.5}$ 152°; $d_4^{25}$ 0.9247; $n_D^{20}$ 1.3994. Flash pt 188.33°. Stable. Inert to most chemical reagents and rubber. Maintains about the same viscosity over a wide temperature range. Sol in benzene and the lighter hydrocarbons; slightly sol in alcohol and the heavy hydrocarbons.

USE: As a basis for silicone oils or fluids designed to withstand extremes of temperature; as a foam suppressant in petroleum lubricating oil.

**9020. Tetracyanoethylene.** *Ethenetetracarbonitrile;* TCNE. $C_6N_4$; mol wt 128.10. C 56.26%, N 43.74%. $(NC)_2C{=}C(CN)_2$. Prepd by debromination of dibromomalononitrile with copper powder in boiling benzene: Cairns *et al., J. Am. Chem. Soc.* **80**, 2775 (1958).

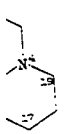
Crystals, mp 200°. Begins to sublime at 120°.

USE: In the synthesis of spiro compds, in modified Diels-Alder reactions, as aromatizing agent: Longone, Smith, *Tetrahedron Letters* **1962**, 205.

**9021. Tetracycline.** *4-(Dimethylamino)-1,4,4a,5,5a,6,-11,12a-octahydro-3,6,10,12,12a-pentahydroxy-6-methyl-1,-11-dioxo-2-naphthacenecarboxamide;* deschlorobiomycin; tsiklomitsin; Abricycline; Achromycin; Agromicina; Ambramicina; Ambramycin; Bio-Tetra; Bristaciclina; Cefracycline suspension; Criseociclina; Cyclomycin; Democracin; Hostacyclin; Omegamycin; Panmycin; Polycycline; Purocyclina; Sanclomycine; Steclin; Tetrabon; Tetracyn; Tetradecin. $C_{22}H_{24}N_2O_8$; mol wt 444.43. C 59.45%, H 5.44%, N 6.30%, O 28.80%. Prepn: Boothe *et al., J. Am. Chem. Soc.* **75**, 4621 (1953); Conover *et al., ibid.* 4622; Conover, U.S. pat. **2,699,-**

r. Sol in alcohols.
1 mice: 17 mg/kg.
*lban, Velbe.* Crys-
in methanol).
$_3N_4O_9.2H_2O$, crys-

*4-hydroxyeburnam-*
*la-ethyl-2,3,5,6,12,-*
*f-indolo[3,2,1-de]-*
*boxylic acid meth-*
*nca; Equipur; Novi-*
*incamine; Pervone;*
*for; Vincagil; Vinca-*
*saunier; Vincimax;*
*54.43.* C 71.16%, H
*aloid of Vinca minor*
*the d-form:* Schlitt-
2017 (1953); Pailer,
*Cing et al., J. Chem.*
*Czech. Chem. Com-*
*bernaemontana rigida*
*Org. Chem.* **33,** 1055
*rahedron Letters* **1961,**
*der, ibid.* 1147; Plat *et*
. Abs config: Troja-
**55,** 1261; Blaha *et al.,*
13 (1968). X-ray de-
Weber, T. J. Petcher, *J.*
1. Total synthesis: C.
**73,** 191; *eidem, Tetra-*
*Helv. Chim. Acta* **58,**
*d.* **60,** 1801 (1977); B.
**981,** 908; of *dl*-form:
6 (1964); Herrmann *et*
4); K. H. Gibson, J. E.
K. Irie, Y. Ban, *Hetero-*
tereoisomers: Warnant
to U.S. pat. **3,770,724**
F).



$H_2CH_3$

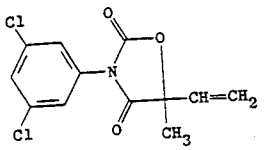
methanol, mp 232-233°.
225, 278 nm (log ϵ 4.14,
i.v.; > 1000 mg/kg, s.c.,
*ol. Pharmakol.* **236,** 296
zabo, Nagy, *Arzneimittel-*

*Cetal, Esberidin.*
the "vincamine fraction" of
*incaminine* and *vincinine:*
*rs* **1963,** 897.

in. $C_{50}H_{82}O_{20}$; mol wt
1.90%. $C_{46}H_{70}O_{16}(OCH_3)_4$.
*cinale* Moench., *Asclepiada-*
, 277 (1885); Kubler, *Arch.*
r, Zechner, *ibid.* **276,** 431
*ler.* **88,** 1527 (1955); Korte,
). Known in two forms:
le.
ght yellow, amorphous pow-
pn. $[\alpha]_D$ −50°. Sol in alco-

in amorphous powder melt-
roform, ether.

24.78%, N 4.90%, O [illegible]. Ger. pat. **2,207,576** (1973 to BASF), *C.A.* **79,** 137120q (1973). Activity: C. Hess, F. Locher, *Proc. Brit. Insectic. Fungic. Conf.* **2,** 693 (1975). Comparative mechanism of action: A. C. Pappas, D. J. Fisher, *Pestic. Sci.* **10,** 239 (1979).



Cryst solid, mp 108°. Soly in water at 20°: 1 g/l. Soly in (g/kg): acetone 435; benzene 146; chloroform 319; ethyl acetate 253. Slowly hydrolyzed in alkaline soln. $LD_{50}$ orally in rats: 10 g/kg, C. Hess, F. Locher, *loc. cit.*

USE: Fungicide.

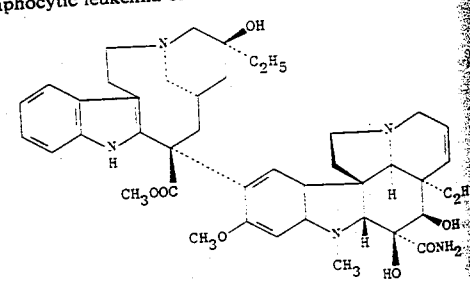
**9788. Vincristine.** *22-Oxovincaleukoblastine; leurocristine;* VCR; LCR. $C_{46}H_{56}N_4O_{10}$; mol wt 824.94. C 66.97%, H 6.84%, N 6.79%, O 19.40%. Antitumor alkaloid isolated from *Vinca rosea* Linn. (*Catharanthus roseus* G. Don), *Apocynaceae:* Svoboda, *Lloydia* **24,** 173 (1961). Structure: Neuss *et al., J. Am. Chem. Soc.* **86,** 1440 (1964); Moncrief, Lipscomb, *ibid.* **87,** 4963 (1965). Pharmacology: R. H. Adamson *et al., Arch. Int. Pharmacodyn. Ther.* **157,** 299 (1965); S. M. Sieber *et al., Cancer Treat. Rep.* **60,** 127 (1976). Prepn and pharmacology of [$^3$H]vincristine: Owellen, Donigian, *J. Med. Chem.* **15,** 894 (1972). Symposium on vincristine: *Cancer Chemother. Rep.* **52,** 453-535 (1968). Biosynthesis from catharanthine, *q.v.* and vindoline, *q.v.*: A. Rahman *et al., Tetrahedron Letters* **1976,** 2351; P. Mangeney *et al., J. Am. Chem. Soc.* **101,** 2243 (1979). Comprehensive description of the sulfate: J. H. Burns in *Analytical Profiles of Drug Substances* **vol. 1,** K. Florey, Ed. (Academic Press, New York, 1972) pp 463-480. For structure *see* Vinblastine. R = CHO.

Blades from methanol, mp 218-220°. $[\alpha]_D^{25}$ +17°; $[\alpha]_D$ +26.2° (ethylene chloride). pKa: 5.0, 7.4 in 33% DMF. uv max (ethanol): 220, 255, 296 nm (log $a_m$ 4.65, 4.21, 4.13). $LD_{50}$ i.p. in mice: 5.2 mg/kg, R. H. Adamson *et al., loc. cit.*

Sulfate, $C_{46}H_{58}N_4O_{14}S$, *Kyocristine, Oncovin.* Crystals from ethanol.

THERAP CAT: Antineoplastic.

**9789. Vindesine.** *3-(Aminocarbonyl)-O$^4$-deacetyl-3-de(methoxycarbonyl)vincaleukoblastine;* desacetylvinblastine amide; VDS; Compound 112531; NSC 245467. $C_{43}H_{55}N_5O_7$; mol wt 753.95. C 68.50%, H 7.35%, N 9.29%, O 14.86%. Synthetic deriv of the dimeric *Catharanthus* alkaloid vinblastine, *q.v.* Prepn: G. J. Cullinan, K. Gerzon, Ger. pat. **2,415,980** (1974 to Lilly), *C.A.* **82,** 72191r (1975); *see also* C. J. Burnett *et al., J. Med. Chem.* **21,** 88 (1978). $^{13}$C-NMR spectroscopy: D. E. Dorman, J. W. Paschal, *Org. Magn. Reson.* **8,** 413 (1976). Antitumor activity in rodents: M. Sweeney *et al., Cancer Res.* **38,** 2886 (1978). Pharmacokinetics: R. J. Owellen *et al., ibid.* **37,** 2603 (1977). Use in acute lymphocytic leukemia of childhood: W. Krivit *et al., Cancer*

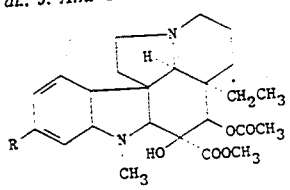


266, 288, 296 nm (ε [illegible]). (DMF 66%) 5.39, 7.36; ($H_2O$) 6.04, 7.67.

Sulfate salt, $C_{43}H_{57}N_5O_{11}S$, *LY 099094, Eldisine.* Amorphous solid from ethanol-isopropyl alcohol, mp > 250° (solvated form). $LD_{50}$ i.v. in mice, rats (mg/kg): 6.3 ± 0.6, 2.0 ± 0.2, Todd *et al., loc. cit.*; i.p. in mice: 8.8 ± 2.5, R. J. Owellen *et al., Biochem. Pharmacol.* **26,** 1213 (1977).

THERAP CAT: Antineoplastic.

**9790. Vindoline.** *4-(Acetyloxy)-6,7-didehydro-3-hydroxy-16-methoxy-1-methylaspidospermidine-3-carboxylic acid methyl ester.* $C_{25}H_{32}N_2O_6$; mol wt 456.52. C 65.77%, H 7.07%, N 6.14%, O 21.03%. Major alkaloid from the leaves of *Vinca rosea* Linn. (*Catharanthus roseus* G. Don.), *Apocynaceae:* Gorman *et al., J. Am. Pharm. Assoc.* **48,** 256 (1959); Svoboda *et al., ibid.* 659; Moza, Trojánek, *Coll. Czech. Chem. Commun.* **28,** 1419 (1963). Structure: Gorman *et al., J. Am. Chem. Soc.* **84,** 1058 (1962); Neuss, *Bull. Soc. Chim. France* **1963,** 1509. Stereochemistry: Moncrief, Lipscomb, *J. Am. Chem. Soc.* **87,** 4963 (1965). Review of chemistry: Neuss *et al., Advan. Chemother.* **1,** 133 (1964). Total synthesis of (±)-vindoline: Ando *et al., J. Am. Chem. Soc.* **97,** 6880 (1975); Y. Ban *et al., Tetrahedron Letters* **1978,** 151; J. P. Kutney *et al., J. Am. Chem. Soc.* **100,** 4220 (1978).



R = $OCH_3$. Needles from acetone + petr ether, mp 164-165°; prisms, mp 174-175°; $[\alpha]_D^{20}$ −18° (chloroform); pKa 5.5 in 66% DMF [Moza, Trojánek, *loc. cit.*]. Also reported as crystals, mp 154-155°; $[\alpha]_D^{27}$ +42° (chloroform) [Gorman *et al., loc. cit.*]. uv max (ethanol): 212, 250, 304 nm (log ϵ 4.49, 3.74, 3.57).

Hydrochloride, $C_{25}H_{32}N_2O_6.HCl$, crystals from acetone, mp 161-164°.

Demethoxyvindoline, $C_{24}H_{30}N_2O_5$, *vindorosine, vindolidine.* R = H. Isoln: Moza, Trojánek, *loc. cit.* Structure: *eidem, Coll. Czech. Chem. Commun.* **28,** 1427 (1963). Needles from benzene + petr ether, mp 167°. $[\alpha]_D^{16}$ −31° (chloroform). uv max (methanol): 250, 302 nm (log ϵ 3.98, 3.52).

*Note:* Lacks physiological activity alone but is contained as the pentacyclic moiety in the antineoplastic agents vinblastine, *q.v.*, and vincristine, *q.v.*

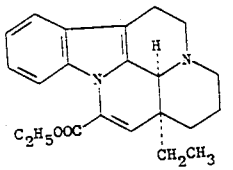
**9791. Vinethene®.** Vinesthene. About 96% pure vinyl ether together with about 4% of abs alc which renders the product less likely to cause ice formation in masks when used for anesthesia. It may contain up to 0.025% of a harmless nonvolatile preservative such as phenyl-α-naphthylamine. Preparation: Major, Ruigh, U.S. pats. **2,021,872; 2,044,800; 2,044,801** and **2,099,695** (1935, 1936, 1936 and 1937, all to Merck & Co.).

Very volatile, flammable liq. Characteristic odor. Slight purplish fluorescence due to the preservative. $d_4^{25}$ 0.767-0.771. bp 28-31°. Miscible with alcohol, ether, acetone and chloroform. For constants of pure compd *see* Vinyl Ether.

Vinyl ether for anesthesia must be preserved in tight light-resistant containers of not more than 200 ml capacity. Unopened, factory-filled bottles may be kept for as long as two years (note expiration date on label), but the product must not be used for anesthesia if the original container has been opened longer than 48 hours. The explosive and fire hazards of vinyl ether are somewhat less than those of ethyl ether. *See also* Vinyl Ether. *Keep protected from light and from acid fumes, in a cool place, and away from an open flame.* Lethal concn for mice, rats, in air: 51,233, 134,888 ppm.

THERAP CAT: Anesthetic (inhalation).

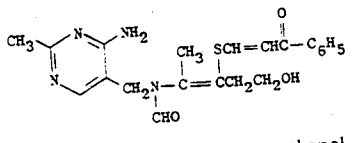
macology, biochemistry, [illegible] clinical studies, toxicity studies: *ibid.* 1908-1989. HPLC studies: G. Szepesi, M. Gazdag, *J. Chromatog.* **205,** 57, 341 (1981).



Cryst from benzene, mp 147-153° (dec). $[\alpha]_D^{20}$ +114° (c = 1 in pyridine). uv max (96% ethanol): 229, 275, 315 nm (log ϵ 4.45, 4.08, 3.85). $LD_{50}$ in mice, rats (mg/kg): 534, 503 orally; 240, 133.8 i.p.; 58.7, 42.6 i.v., E. Pálosi, L. Szporny, *Arzneimittel-Forsch.* **26,** 1926 (1976), also reported as 161.2 mg/kg i.p. in mice: E. Cholnoky, L. I. Dömök, *ibid.* 1939.

THERAP CAT: Treatment of cerebral vascular disorders.

**9793. Vintiamol.** *N-[(4-Amino-2-methyl-5-pyrimidinyl)methyl]-N-[4-hydroxy-1-methyl-2-[(3-oxo-3-phenyl-1-propenyl)thio]-1-butenyl]formamide; N-*[(4-amino-2-methyl-5-pyrimidinyl)methyl]-*N*-[2-[(2-benzoylvinyl)thio]-4-hydroxy-1-methyl-1-butenyl]formamide; *S*-(benzoylvinyl)-thiamine. $C_{21}H_{24}N_4O_3S$; mol wt 412.52. C 61.14%, H 5.86%, N 13.58%, O 11.64%, S 7.77%. Prepn and sepn of isomers: Fusco, Tenconi, *Farmaco Ed. Sci.* **20,** 866 (1965).



Higher melting isomer: crystals from ethanol, mp 202-204°, very sparingly sol in chloroform. Lower melting isomer: separated from mixture of both isomers by its greater soly in chloroform; crystals from ethanol contg 1 molecule of ethanol, mp 100-103°.

THERAP CAT: Vitamin, enzyme co-factor.

**9794. Vinyl Acetate.** *Acetic acid ethenyl ester; acetic acid vinyl ester.* $C_4H_6O_2$; mol wt 86.09. C 55.80%, H 7.03%, O 37.17%. $CH_3COOCH{=}CH_2$. Prepn: Schnizer, U.S. pat. **2,859,241** (1958 to Celanese); Sharp, Steitz, U.S. pat. **2,860,159** (1958 to Pan Am. Petroleum); Foster, Tobler, *J. Am. Chem. Soc.* **83,** 851 (1961). Study of chronic human exposure to vinyl acetate: Deese, Joyner, *Am. Ind. Hyg. Assoc. J.* **30,** 449 (1969). *Reviews:* Leonard "Vinyl Acetate" in *Vinyl and Diene Monomers* (part 1), E. C. Leonard, Ed. (Wiley-Interscience, New York, 1970) pp 263-328; Rhum, "Poly(Vinyl Acetate)" in Kirk-Othmer *Encyclopedia of Chemical Technology,* **Vol. 21** (Interscience, New York, 2nd ed., 1970) pp 317-353; Faith, Keyes & Clark's *Industrial Chemicals,* F. A. Lowenheim, M. K. Moran, Eds (Wiley-Interscience, New York, 4th ed., 1975) pp 862-867.

Liquid. Polymerizes in light to a colorless, transparent mass. bp 72-73°. Two reported melting pts: −100°; −93°, Rhum, *loc. cit.* $d_4^{20}$ 0.932. Flash pt, closed cup: 18°F (−8°C). Soly in water (20°): 1 g/50 ml. Misc with alc, ether. $LD_{50}$ orally in rats: 2.92 g/kg, Smyth, Carpenter, *J. Ind. Hyg. Toxicol.* **30,** 63 (1948).

USE: In polymerized form for plastic masses, films and lacquers.

**9795. Vinylbital.** *5-Ethenyl-5-(1-methylbutyl)-2,4,6-(1H,3H,5H)-pyrimidinetrione; 5-(1-methylbutyl)-5-vinylbar-*





*Consult the cross index before using this section.*