UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

July16, 2013

Mr. Andrew DuPont
Locks Law Firm
601 Walnut Street
Suite 720 East
Philadelphia, PA 19106

Re: Freedom of Information Act Request:
EPA-R3-2013-6194

Dear Mr. DuPont:

This is in response to your Freedom of Information Act request listed above, regarding Boeing Vertol Ridley Park Plant Site.

/X/ The Office Of Hazardous Site Clean-up Division is enclosing records in response to your request.
/ / The Resource Conservation and Recovery Program, the Toxics Programs Branch, and the Pesticides/Asbestos Programs Branch received no response regarding potential fees in regard to your request.
/ / The Water Protection Division found no records in response to your request.
/ / The Air Protection Division found no records in response to your request.

PLEASE NOTE: If any Program(s) listed above has been checked, a response from that Program(s) is enclosed along with a billing invoice for the information provided if appropriate.

You may appeal this response to the National Freedom of Information Officer, U.S. EPA Records, FOIA and Privacy Branch, 1200 Pennsylvania Avenue, NW (2822T), Washington, DC 20460, Fax: (202) 566-2147, E-mail: hq.foia@epa.gov. Only items mailed through the United States Postal Service may be delivered to 1200 Pennsylvania Avenue, NW. If you are submitting your appeal via hand delivery, courier service or overnight delivery, you must address your correspondence to 1301 Constitution Avenue, N.W., Room 6416J, Washington, DC 20004. Your appeal must be made in writing and it must be submitted no later than 30 calendar days from the date of this letter. The Agency will not consider appeals received after the 30 calendar day limit. The appeal letter should include the EPA-R3 number listed above. For quickest possible handling, the appeal letter and its envelope should be marked "Freedom of Information Act Appeal."

If you have any questions, please contact me at 215-814-5553.

Sincerely,

Richard Van Holt
Freedom of Information Officer

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Customer Service Hotline: 1-800-438-2474

PA-0585 ✓ OK

EPA Notification of Hazardous Waste Site

United States Environmental Protection Agency
Washington DC 20460

This initial notification information is required by Section 103(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and must be mailed by June 9, 1981.

Please type or print in ink. If you need additional space, use separate sheets of paper. Indicate the letter of the item which applies.

PAS 000 001 391

R

810609

A Person Required to Notify:
Enter the name and address of the person or organization required to notify.

Name: Boeing Vertol Company
Street: PO Box 16858, P33-28
City: Philadelphia State: PA Zip Code: 19142

B Site Location:
Enter the common name (if known) and actual location of the site.

Name of Site: Center 3 North
Street: Stewart Ave & Industrial Highway
City: Ridley Twp. County: Delaware State: PA Zip Code: 19033

PAD096837356

Person to Contact:
Enter the name, title (if applicable), and business telephone number of the person to contact regarding information submitted on this form.

Name (Last, First and Title): Meekins, P. K., Mgr., Facilities Planning
Phone: 215-522-7865

D Dates of Waste Handling:
Enter the years that you estimate waste treatment, storage, or disposal began and ended at the site.

From (Year): 1963 To (Year): 1976

E Waste Type: Choose the option you prefer to complete

Option 1: Select general waste types and source categories. If you do not know the general waste types or sources, you are encouraged to describe the site in Item I—Description of Site.

General Type of Waste:
Place an X in the appropriate boxes. The categories listed overlap. Check each applicable category.

1. ☐ Organics
2. ☐ Inorganics
3. ☐ Solvents
4. ☐ Pesticides
5. ☒ Heavy metals
6. ☐ Acids
7. ☐ Bases
8. ☐ PCBs
9. ☐ Mixed Municipal Waste
10. ☐ Unknown
11. ☒ Other (Specify)

Trash, Brick, etc. from Demolition Construction Activities

Source of Waste:
Place an X in the appropriate boxes.

1. ☐ Mining
2. ☐ Construction
3. ☐ Textiles
4. ☐ Fertilizer
5. ☐ Paper/Printing
6. ☐ Leather Tanning
7. ☐ Iron/Steel Foundry
8. ☐ Chemical, General
9. ☒ Plating/Polishing
10. ☐ Military/Ammunition
11. ☐ Electrical Conductors
12. ☐ Transformers
13. ☐ Utility Companies
14. ☒ Sanitary/Refuse
15. ☐ Photofinish
16. ☐ Lab/Hospital
17. ☐ Unknown
18. ☒ Other (Specify)

Option 2: This option is available to persons familiar with the Resource Conservation and Recovery Act (RCRA) Section 3001 regulations (40 CFR Part 261).

Specific Type of Waste:
EPA has assigned a four-digit number to each hazardous waste listed in the regulations under Section 3001 of RCRA. Enter the appropriate four-digit number in the boxes provided. A copy of the list of hazardous wastes and codes can be obtained by contacting the EPA Region serving the State in which the site is located.

ORIGINAL (Red)

RECEIVED RCRA/CERCLA FILE JUN 8 1981

Form Approved
OMB No. 2000-0138

Notification of Hazardous Waste Site **Side Two**

F Waste Quantity

Place an X in the appropriate boxes to indicate the facility types found at the site.

In the "total facility waste amount" space give the estimated combined quantity (volume) of hazardous wastes at the site using cubic feet or gallons.

In the "total facility area" space, give the estimated area size which the facilities occupy using square feet or acres.

Facility Type

1. ☐ Piles
2. ☐ Land Treatment
3. ☐ Landfill
4. ☐ Tanks
5. ☐ Impoundment
6. ☐ Underground Injection
7. ☐ Drums, Above Ground
8. ☐ Drums, Below Ground
9. ☐ Other (Specify)

Total Facility Waste Amount

Cubic feet Unknown

Gallons

Total Facility Area

Square feet 600, ~~ft.~~ 5

Acres

G Known, Suspected or Likely Releases to the Environment:

Place an X in the appropriate boxes to indicate any known, suspected, or likely releases of wastes to the environment. ☐ Known ☐ Suspected ☐ Likely ☒ None

Note: Items H and I are optional. Completing these items will assist EPA and State and local governments in locating and assessing hazardous waste sites. Although completing the items is not required, you are encouraged to do so.

H Sketch Map of Site Location: (Optional)

Sketch a map showing streets, highways, routes or other prominent landmarks near the site. Place an X on the map to indicate the site location. Draw an arrow showing the direction north. You may substitute a publishing map showing the site location.

See Facility Drawing, Page 5 of 5, of EPA Form 3510-3 (6-80) submitted as part of Hazardous Waste Permit Application on November 17, 1980 (a copy of page 5 is enclosed).

I Description of Site: (Optional)

Describe the history and present conditions of the site. Give directions to the site and describe any nearby wells, springs, lakes, or housing. Include such information as how waste was disposed and where the waste came from. Provide any other information or comments which may help describe the site conditions.

The majority of waste deposited consisted of concrete and construction debris and excavated materials. Prior to 1975, the site was occasionally used for disposal of solid waste, refuse and periodic disposal of sand/sludge from the company operated waste treatment plant.

J Signature and Title:

The person or authorized representative (such as plant managers, superintendents, trustees or attorneys) of persons required to notify must sign the form and provide a mailing address (if different than address in item A). For other persons providing notification, the signature is optional. Check the boxes which best describe the relationship to the site of the person required to notify. If you are not required to notify check "Other".

Name Paul O. Bromstad

Street

City State Zip Code

Signature Date 6-8-81

☒ Owner, Present
☐ Owner, Past
☐ Transporter
☐ Operator, Present
☐ Operator, Past
☐ Other

[FR Doc. 81-11500 Filed 4-14-81; 8:45 am]

BILLING CODE 6560-29-C

ORIGINAL (Red)

CFC Curtis · 5/22/97

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES

ORIGINAL (RED)

Preliminary Assessment

FOR

BOEING VERTOL
PA #585

Ridley Township
Delaware County
Pennsylvania

ORIGINAL (RED)

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Organics Analysis: VOA and Base/Neutral

ORIGINAL
(RED)

Section 1

Narrative/Overview

ORIGINAL (RED)

The Boeing Vertol Plant, currently owned by the Boeing Company, is located on the north bank of the Delaware River between Crum Creek and Darby Creek. Most of the facility is within Ridley Township with smaller sections in Eddystone Borough and Ridley Park Borough; all three of these municipalities are in Delaware County Pennsylvania. The site is approximately 403 acres and consists of two large sections purchased at different times.

The 289 acre section north of the Industrial Highway Route 291 was purchased from Baldwin-Lima-Hamilton Corporation (previously named Baldwin Locomotive Works) on August 15, 1956. Baldwin Locomotive Works purchased 184 acres of this land December 16, 1909 from George Burman; a subsequent deed for this land dated December 19, 1911 refers to transfer of "foundries, machine shops, offices, buildings, impoundments..." indicating industrial activities prior to 1911 that had potential to contaminate the groundwater. Baldwin Locomotive Works later purchased three more parcels to total the 289 acres: 3/21/19 from W. Schaeffer; 12/17/17 from A. Johnson; and 12/18/17 from C. Leiper. Baldwin Locomotive Works changed name to Baldwin-Lima-Hamilton Corporation November 30, 1950.

The 114 acre section south of Industrial Highway Route 291 was purchased by Boeing Company on September 21, 1965 from General Steel Castings Corporation (now named General Steel Industries, Inc.). General Steel Castings Corporation purchased part of this parcel from Baldwin Locomative Works May 10, 1929 and the remainder from United States of America March 30, 1956.

The Boeing Company and its divisions have undergone name changes during ownership of this facility. Piasecki Helicopter Corporation first chamed name to Vertol Aircraft Corporation, then to Boeing Airplane Company, and then to The Boeing Company.

This Boeing Vertol facility manufactures aircraft parts; processes performed include: metal machining, metal treatment, metal finishing, painting, plating, electroplating, cleaning of metal, and degreasing of metal. Waste from the plating

operations is treated on site. The sludge is dewatered utilizing on-site drying beds and the effluent is discharged to the river under a NPDES Permit. The treatment process utilized unlined drying beds for approximately 20 years; in 1983, concrete lined drying beds were put in the same location (see maps in section 5 for location of treatment plant and drying beds). Four groundwater monitoring wells were installed for RCRA closure of the unlined drying beds: 3 wells just north of the cafeteria and 1 well just north of the treatment plant. High concentrations of Trichloroethylene (TCE) were found in all four of these wells(see analysis in sections 8,9, and 10). The facility has since installed 6 additional groundwater monitoring wells; facility is currently sampling these wells. The alleged source of the TCE is the degreasing units (past and present units) in the Blade Plant. The Commonwealth of Pa. DER Bureau of Waste Management, Region One is pursuing the current groundwater study under RCRA enforcement. The locations of these 10 groundwater monitoring wells are shown on map 1 section 5; also shown on this map are the locations of an old landfill and an old quarry.

The landfill was used from 1963 to 1976. The majority of waste in the landfill is construction waste from construction of the adjacent building to the south. Prior to 1975 the landfill was used for disposal of solid waste, refuse, and periodic disposal of sand/sludge from on-site treatment plant. This landfill is now closed, covered,and vegitated.

The quarry had been backfilled with unknown material some time in the past.

ORIGINAL (RED)

ORIGINAL (RED)

Geology/Hydrology

The facility is located on the North bank of The Delaware River between Darby Creek and Crum Creek. The topography is relatively flat with a gradual grade towards the Delaware River; the primary direction of surface run-off is towards the Delaware River with some local areas draining to Darby Creek or Crum Creek.

The facility sits on unconsolidated sands and gravels characteristic of the floodplain area underlain by bedrock of the Wissahickon Schist Formation.

ORIGINAL (RED)

Section 2

ORIGINAL (RED)

EPA

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
PA	0585

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
Boeing Vertol Company	Stewart Ave, & Industrial Hwy.				
03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Ridley Township	Pa		Delaware		

09 COORDINATES LATITUDE 39 51 56.2 LONGITUDE 75 19 16.6

10 DIRECTIONS TO SITE (Starting from nearest public road)
Interstate 95, get off Stewart Ave. exit. Entranc to plant on right side of Stewart Ave.

III. RESPONSIBLE PARTIES

01 OWNER (If known)	02 STREET (Business, mailing, residential)		
The Boeing Company	PO Box 16858 Philadelphia		
03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
Philadelphia	Pa	19142	(215) 522-7758

07 OPERATOR (If known and different from owner)	08 STREET (Business, mailing, residential)		
Baldwin Locomotive - Past Owner/Operator			
09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER
			( )

13 TYPE OF OWNERSHIP (Check one)
[X] A. PRIVATE [ ] B. FEDERAL: _____ (Agency name) [ ] C. STATE [ ] D. COUNTY [ ] E. MUNICIPAL
[ ] F. OTHER: _____ (Specify) [ ] G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)
[X] A. RCRA 3001 DATE RECEIVED: / 80 (MONTH DAY YEAR) [X] B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: 6 / 8 / 81 (MONTH DAY YEAR) [ ] C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION
[X] YES DATE 10 / 28 / 86 (MONTH DAY YEAR)
[ ] NO

BY (Check all that apply)
[ ] A. EPA [ ] B. EPA CONTRACTOR [X] C. STATE [ ] D. OTHER CONTRACTOR
[ ] E. LOCAL HEALTH OFFICIAL [ ] F. OTHER: _____ (Specify)
CONTRACTOR NAME(S): _____

02 SITE STATUS (Check one)
[X] A. ACTIVE [ ] B. INACTIVE [ ] C. UNKNOWN

03 YEARS OF OPERATION
Before 1911 (BEGINNING YEAR) | Present (ENDING YEAR) See section 1 history [ ] UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED
Plating waste including Acids, Bases, Hexavalent Chromium, Dichromate Salts, Cyanide Salts, Zinc, and Cadmium. Solvents including Methylene Chloride, Trichloroethylene, Acetone, Xylene, Toluene, Methyl Ethyl Keytone, Methyl Isobutyl Keytone, & Mineral Spirits. Paint waste including heavy metal pigments.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION
Threat to groundwater from old landfill, unlined drying beds for treatment plant sludge, and spillage/leaking of solvents (i.e. Trichloroethylene).

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)
[ ] A. HIGH (Inspection required promptly) [ ] B. MEDIUM (Inspection required) [X] C. LOW (Inspect on time available basis) [ ] D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NUMBER
Thomas Sheehan, Project Officer	Div. of Emergency & Remedial Response	215) 565-1687

04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
Thomas Sheehan, Project Officer	DER	Waste Management	215) 565-1687	12 / 16 / 86 (MONTH DAY YEAR)

EPA FORM 2070-12 (7-81)

ORIGINAL (RED)

EPA

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
PA	0585

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- [X] A. SOLID
- [ ] B. POWDER, FINES
- [X] C. SLUDGE
- [ ] E. SLURRY
- [X] F. LIQUID
- [ ] G. GAS
- [X] D. OTHER Demolition Waste (Specify)

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS _____
CUBIC YARDS _____
NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

- [X] A. TOXIC
- [X] B. CORROSIVE
- [ ] C. RADIOACTIVE
- [X] D. PERSISTENT
- [X] E. SOLUBLE
- [ ] F. INFECTIOUS
- [X] G. FLAMMABLE
- [X] H. IGNITABLE
- [X] I. HIGHLY VOLATILE
- [ ] J. EXPLOSIVE
- [X] K. REACTIVE
- [ ] L. INCOMPATIBLE
- [ ] M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE	unknown		Treatment Plant Sludge
OLW	OILY WASTE	unknown		Cutting Oils
SOL	SOLVENTS			See IV-04
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			Painting Waste
IOC	INORGANIC CHEMICALS			Plating Waste
ACD	ACIDS			Pickle Liquers
BAS	BASES			Alodine, Degreaser/cleaning
MES	HEAVY METALS			Cr,Ni, Cd,Cu, Zn

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
ACD	Hydrochloric Acid	7647-01-0	On-site treatment/disp		
IOC	Potassium Cyanide	151-50-8	On-site treat/disposal		
SOL	Toluene	108-88-3	Drums		
SOL	Trichloroethylene	79-01-6	Tanks		
SOL	Xylene	1330-20-7	Drums		
SOL	Methylene Chloride	---------	Drums		
MES	Cadmium	7440-43-9	Plating Tanks		
MES	Chromium	7440-47-3	Plating Tanks		
MES	Lead Oxide	1335-25-7	Paint Pigments		
MES	Nickel	7440-02-0	Plating Tanks		
SOL	Methyl Ethyl Keytone	--------	Drums		
SOL	Methly Isobutyl Keytone	---------	Drums		
SOL	Acetone	-------	Drums		
SOL	Mineral Spirits	--------	Drums		

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

See Section 7

EPA FORM 2070-12 (7-81)

ORIGINAL (RED)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
PA	0585

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 [X] A. GROUNDWATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: _____
02 [X] OBSERVED (DATE: _____) [ ] POTENTIAL [X] ALLEGED
04 NARRATIVE DESCRIPTION

Groundwater monitoring for RCRA closure of drying beds found elevated levels of Trichloroethylene alleged to have come from facilities degreasers in the Blade Plant.

01 [X] B. SURFACE WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: _____
02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

Potential from sources for current NPDES discharge; treatment plant effluent and cooling water.

01 [X] C. CONTAMINATION OF AIR
03 POPULATION POTENTIALLY AFFECTED: _____
02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

Several paint booths with Air Permits

01 [ ] D. FIRE EXPLOSIVE CONDITIONS
03 POPULATION POTENTIALLY AFFECTED: _____
02 [ ] OBSERVED (DATE: _____) [ ] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

01 [ ] E. DIRECT CONTACT
03 POPULATION POTENTIALLY AFFECTED: _____
02 [ ] OBSERVED (DATE: _____) [ ] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

01 [X] F. CONTAMINATION OF SOIL
03 AREA POTENTIALLY AFFECTED: _____ (Acres)
02 [ ] OBSERVED (DATE: _____) [ ] POTENTIAL [X] ALLEGED
04 NARRATIVE DESCRIPTION

Old on-site landfill and past use of unlined drying beds for sludge from treatment plant.

01 [ ] G. DRINKING WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: _____
02 [ ] OBSERVED (DATE: _____) [ ] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

01 [ ] H. WORKER EXPOSURE/INJURY
03 WORKERS POTENTIALLY AFFECTED: _____
02 [ ] OBSERVED (DATE: _____) [ ] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

01 [ ] I. POPULATION EXPOSURE/INJURY
03 POPULATION POTENTIALLY AFFECTED: _____
02 [ ] OBSERVED (DATE: _____) [ ] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

ORIGINAL (RED)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
PA	0585

II. HAZARDOUS CONDITIONS AND INCIDENTS *(Continued)*

01 ☐ J. DAMAGE TO FLORA
04 NARRATIVE DESCRIPTION
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

01 ☐ K. DAMAGE TO FAUNA
04 NARRATIVE DESCRIPTION *(Include name(s) of species)*
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

01 ☐ L. CONTAMINATION OF FOOD CHAIN
04 NARRATIVE DESCRIPTION
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES *(Spills/runoff/standing liquids/leaking drums)*
03 POPULATION POTENTIALLY AFFECTED: _____
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ N. DAMAGE TO OFFSITE PROPERTY
04 NARRATIVE DESCRIPTION
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs
04 NARRATIVE DESCRIPTION
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING
04 NARRATIVE DESCRIPTION
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

Observed contamination of groundwater with Trichloroethylene. Alleged contamination of soils and groundwater from old on-site landfill and past use of unlined drying beds.

III. TOTAL POPULATION POTENTIALLY AFFECTED: _____

IV. COMMENTS

Observed and potential groundwater contamination found. Although the groundwater contamination with TCE was found, the facility was given a low assessment due to no groundwater use in the immediate area.

V. SOURCES OF INFORMATION *(Cite specific references, e. g., state files, sample analysis, reports)*

See Section 7

APPENDIX

ORIGINAL (RED)

I. FEEDSTOCKS

CAS Number	Chemical Name
1. 7664-41-7	Ammonia
2. 7440-36-0	Antimony
3. 1309-64-4	Antimony Trioxide
4. 7440-38-2	Arsenic
5. 1327-53-3	Arsenic Trioxide
6. 21109-95-5	Barium Sulfide
7. 7726-95-6	Bromine
8. 106-99-0	Butadiene
9. 7440-43-9	Cadmium
10. 7782-50-5	Chlorine
11. 12737-27-8	Chromite
12. 7440-47-3	Chromium
13. 7440-48-4	Cobalt
14. 1317-38-0	Cupric Oxide
15. 7758-98-7	Cupric Sulfate
16. 1317-39-1	Cuprous Oxide
17. 74-85-1	Ethylene
18. 7647-01-0	Hydrochloric Acid
19. 7664-39-3	Hydrogen Fluoride
20. 1335-25-7	Lead Oxide
21. 7439-97-6	Mercury
22. 74-82-8	Methane
23. 91-20-3	Napthalene
24. 7440-02-0	Nickel
25. 7697-37-2	Nitric Acid
26. 7723-14-0	Phosphorus
27. 7778-50-9	Potassium Dichromate
28. 1310-58-3	Potassium Hydroxide
29. 115-07-1	Propylene
30. 10588-01-9	Sodium Dichromate
31. 1310-73-2	Sodium Hydroxide
32. 7646-78-8	Stannic Chloride
33. 7772-99-8	Stannous Chloride
34. 7664-93-9	Sulfuric Acid
35. 108-88-3	Toluene
36. 1330-20-7	Xylene
37. 7646-85-7	Zinc Chloride
38. 7733-02-0	Zinc Sulfate

II. HAZARDOUS SUBSTANCES

CAS Number	Chemical Name
1. 75-07-0	Acetaldehyde
2. 64-19-7	Acetic Acid
3. 108-24-7	Acetic Anhydride
4. 75-86-5	Acetone Cyanohydrin
5. 506-96-7	Acetyl Bromide
6. 75-36-5	Acetyl Chloride
7. 107-02-8	Acrolein
8. 107-13-1	Acrylonitrile
9. 124-04-9	Adipic Acid
10. 309-00-2	Aldrin
11. 10043-01-3	Aluminum Sulfate
12. 107-18-6	Allyl Alcohol
13. 107-05-1	Allyl Chloride
14. 7664-41-7	Ammonia
15. 631-61-8	Ammonium Acetate
16. 1863-63-4	Ammonium Benzoate
17. 1066-33-7	Ammonium Bicarbonate
18. 7789-09-5	Ammonium Bichromate
19. 1341-49-7	Ammonium Bifluoride
20. 10192-30-0	Ammonium Bisulfite
21. 1111-78-0	Ammonium Carbamate
22. 12125-02-9	Ammonium Chloride
23. 7788-98-9	Ammonium Chromate
24. 3012-65-5	Ammonium Citrate, Dibasic
25. 13826-83-0	Ammonium Fluoborate
26. 12125-01-8	Ammonium Fluoride
27. 1336-21-6	Ammonium Hydroxide
28. 6009-70-7	Ammonium Oxalate
29. 16919-19-0	Ammonium Silicofluoride
30. 7773-06-0	Ammonium Sulfamate
31. 12135-76-1	Ammonium Sulfide
32. 10196-04-0	Ammonium Sulfite
33. 14307-43-8	Ammonium Tartrate
34. 1762-95-4	Ammonium Thiocyanate
35. 7783-18-8	Ammonium Thiosulfate
36. 628-63-7	Amyl Acetate
37. 62-53-3	Aniline
38. 7647-18-9	Antimony Pentachloride
39. 7789-61-9	Antimony Tribromide
40. 10025-91-9	Antimony Trichloride
41. 7783-56-4	Antimony Trifluoride
42. 1309-64-4	Antimony Trioxide
43. 1303-32-8	Arsenic Disulfide
44. 1303-28-2	Arsenic Pentoxide
45. 7784-34-1	Arsenic Trichloride
46. 1327-53-3	Arsenic Trioxide
47. 1303-33-9	Arsenic Trisulfide
48. 542-62-1	Barium Cyanide
49. 71-43-2	Benzene
50. 65-85-0	Benzoic Acid
51. 100-47-0	Benzonitrile
52. 98-88-4	Benzoyl Chloride
53. 100-44-7	Benzyl Chloride
54. 7440-41-7	Beryllium
55. 7787-47-5	Beryllium Chloride
56. 7787-49-7	Beryllium Fluoride
57. 13597-99-4	Beryllium Nitrate
58. 123-86-4	Butyl Acetate
59. 84-74-2	n-Butyl Phthalate
60. 109-73-9	Butylamine
61. 107-92-6	Butyric Acid
62. 543-90-8	Cadimium Acetate
63. 7789-42-6	Cadmium Bromide
64. 10108-64-2	Cadmium Chloride
65. 7778-44-1	Calcium Arsenate
66. 52740-16-6	Calcium Arsenite
67. 75-20-7	Calcium Carbide
68. 13765-19-0	Calcium Chromate
69. 592-01-8	Calcium Cyanide
70. 26264-06-2	Calcium Dodecylbenzene Sulfonate
71. 7778-54-3	Calcium Hypochlorite
72. 133-06-2	Captan
73. 63-25-2	Carbaryl
74. 1563-66-2	Carbofuran
75. 75-15-0	Carbon Disulfide
76. 56-23-5	Carbon Tetrachloride
77. 57-74-9	Chlordane
78. 7782-50-5	Chlorine
79. 108-90-7	Chlorobenzene
80. 67-66-3	Chloroform
81. 7790-94-5	Chlorosulfonic Acid
82. 2921-88-2	Chlorpyrifos
83. 1066-30-4	Chromic Acetate
84. 7738-94-5	Chromic Acid
85. 10101-53-8	Chromic Sulfate
86. 10049-05-5	Chromous Chloride
87. 544-18-3	Cobaltous Formate
88. 14017-41-5	Cobaltous Sulfamate
89. 56-72-4	Coumaphos
90. 1319-77-3	Cresol
91. 4170-30-3	Crotonaldehyde
92. 142-71-2	Cupric Acetate
93. 12002-03-8	Cupric Acetoarsenite
94. 7447-39-4	Cupric Chloride
95. 3251-23-8	Cupric Nitrate
96. 5893-66-3	Cupric Oxalate
97. 7758-98-7	Cupric Sulfate
98. 10380-29-7	Cupric Sulfate Ammoniated
99. 815-82-7	Cupric Tartrate
100. 506-77-4	Cyanogen Chloride
101. 110-82-7	Cyclohexane
102. 94-75-7	2,4-D Acid
103. 94-11-1	2,4-D Esters
104. 50-29-3	DDT
105. 333-41-5	Diazinon
106. 1918-00-9	Dicamba
107. 1194-65-6	Dichlobenil
108. 117-80-6	Dichlone
109. 25321-22-6	Dichlorobenzene (all isomers)
110. 266-38-19-7	Dichloropropane (all isomers)
111. 26952-23-8	Dichloropropene (all isomers)
112. 8003-19-8	Dichloropropene-Dichloropropane Mixture
113. 75-99-0	2-2-Dichloropropionic Acid
114. 62-73-7	Dichlorvos
115. 60-57-1	Dieldrin
116. 109-89-7	Diethylamine
117. 124-40-3	Dimethylamine
118. 25154-54-5	Dinitrobenzene (all isomers)
119. 51-28-5	Dinitrophenol
120. 25321-14-6	Dinitrotoluene (all isomers)
121. 85-00-7	Diquat
122. 298-04-4	Disulfoton
123. 330-54-1	Diuron
124. 27176-87-0	Dodecylbenzenesulfonic Acid
125. 115-29-7	Endosulfan (all isomers)
126. 72-20-8	Endrin and Metabolites
127. 106-89-8	Epichlorohydrin
128. 563-12-2	Ethion
129. 100-41-4	Ethyl Benzene
130. 107-15-3	Ethylenediamine
131. 106-93-4	Ethylene Dibromide
132. 107-06-2	Ethylene Dichloride
133. 60-00-4	EDTA
134. 1185-57-5	Ferric Ammonium Citrate
135. 2944-67-4	Ferric Ammonium Oxalate
136. 7705-08-0	Ferric Chloride

II. HAZARDOUS SUBSTANCES

ORIGINAL (RED)

CAS Number	Chemical Name
137. 7783-50-8	Ferric Fluoride
138. 10421-48-4	Ferric Nitrate
139. 10028-22-5	Ferric Sulfate
140. 10045-89-3	Ferrous Ammonium Sulfate
141. 7758-94-3	Ferrous Chloride
142. 7720-78-7	Ferrous Sulfate
143. 206-44-0	Fluoranthene
144. 50-00-0	Formaldehyde
145. 64-18-6	Formic Acid
146. 110-17-8	Fumaric Acid
147. 98-01-1	Furfural
148. 86-50-0	Guthion
149. 76-44-8	Heptachlor
150. 118-74-1	Hexachlorobenzene
151. 87-68-3	Hexachlorobutadiene
152. 67-72-1	Hexachloroethane
153. 70-30-4	Hexachlorophene
154. 77-47-4	Hexachlorocyclopentadiene
155. 7647-01-0	Hydrochloric Acid (Hydrogen Chloride)
[illegible] 7664-39-3	Hydrofluoric Acid (Hydrogen Fluoride)
157. 74-90-8	Hydrogen Cyanide
158. 7783-06-4	Hydrogen Sulfide
159. 78-79-5	Isoprene
160. 42504-46-1	Isopropanolamine Dodecylbenzenesulfonate
161. 115-32-2	Kelthane
162. 143-50-0	Kepone
163. 301-04-2	Lead Acetate
164. 3687-31-8	Lead Arsenate
165. 7758-95-4	Lead Chloride
166. 13814-96-5	Lead Fluoborate
167. 7783-46-2	Lead Fluoride
168. 10101-63-0	Lead Iodide
169. 18256-98-9	Lead Nitrate
170. 7428-48-0	Lead Stearate
171. 15739-80-7	Lead Sulfate
172. 1314-87-0	Lead Sulfide
173. 592-87-0	Lead Thiocyanate
[illegible] 8-89-9	Lindane
1[illegible]. 14307-35-8	Lithium Chromate
176. 121-75-5	Malthion
177. 110-16-7	Maleic Acid
178. 108-31-6	Maleic Anhydride
179. 2032-65-7	Mercaptodimethur
180. 592-04-1	Mercuric Cyanide
181. 10045-94-0	Mercuric Nitrate
182. 7783-35-9	Mercuric Sulfate
183. 592-85-8	Mercuric Thiocyanate
184. 10415-75-5	Mercurous Nitrate
185. 72-43-5	Methoxychlor
186. 74-93-1	Methyl Mercaptan
187. 80-62-6	Methyl Methacrylate
188. 298-00-0	Methyl Parathion
189. 7786-34-7	Mevinphos
190. 315-18-4	Mexacarbate
191. 75-04-7	Monoethylamine
192. 74-89-5	Monomethylamine
193. 300-76-5	Naled
194. 91-20-3	Naphthalene
195. 1338-24-5	Naphthenic Acid
196. 7440-02-0	Nickel
197. 15699-18-0	Nickel Ammonium Sulfate
198. 37211-05-5	Nickel Chloride
199. 12054-48-7	Nickel Hydroxide
200. 14216-75-2	Nickel Nitrate
201. 7786-81-4	Nickel Sulfate
202. 7697-37-2	Nitric Acid
203. 98-95-3	Nitrobenzene
204. 10102-44-0	Nitrogen Dioxide
205. 25154-55-6	Nitrophenol (all isomers)
206. 1321-12-6	Nitrotoluene
207. 30525-89-4	Paraformaldehyde
208. 56-38-2	Parathion
209. 608-93-5	Pentachlorobenzene
210. 87-86-5	Pentachlorophenol
211. 85-01-8	Phenanthrene
212. 108-95-2	Phenol
213. 75-44-5	Phosgene
214. 7664-38-2	Phosphoric Acid
215. 7723-14-0	Phosphorus
216. 10025-87-3	Phosphorus Oxychloride
217. 1314-80-3	Phosphorus Pentasulfide
218. 7719-12-2	Phosphorus Trichloride
219. 7784-41-0	Potassium Arsenate
220. 10124-50-2	Potassium Arsenite
221. 7778-50-9	Potassium Bichromate
222. 7789-00-6	Potassium Chromate
223. 7722-64-7	Potassium Permanganate
224. 2312-35-8	Propargite
225. 79-09-4	Propionic Acid
226. 123-62-6	Propionic Anhydride
227. 1336-36-3	Polychlorinated Biphenyls
228. 151-50-8	Potassium Cyanide
229. 1310-58-3	Potassium Hydroxide
230. 75-56-9	Propylene Oxide
231. 121-29-9	Pyrethrins
232. 91-22-5	Quinoline
233. 108-46-3	Resorcinol
234. 7446-08-4	Selenium Oxide
235. 7761-88-8	Silver Nitrate
236. 7631-89-2	Sodium Arsenate
237. 7784-46-5	Sodium Arsenite
238. 10588-01-9	Sodium Bichromate
239. 1333-83-1	Sodium Bifluoride
240. 7631-90-5	Sodium Bisulfite
241. 7775-11-3	Sodium Chromate
242. 143-33-9	Sodium Cyanide
243. 25155-30-0	Sodium Dodecylbenzene Sulfonate
244. 7681-49-4	Sodium Fluoride
245. 16721-80-5	Sodium Hydrosulfide
246. 1310-73-2	Sodium Hydroxide
247. 7681-52-9	Sodium Hypochlorite
248. 124-41-4	Sodium Methylate
249. 7632-00-0	Sodium Nitrate
250. 7558-79-4	Sodium Phosphate, Dibasic
251. 7601-54-9	Sodium Phosphate, Tribasic
252. 10102-18-8	Sodium Selenite
253. 7789-06-2	Strontium Chromate
254. 57-24-9	Strychnine and Salts
255. 100-420-5	Styrene
256. 12771-08-3	Sulfur Monochloride
257. 7664-93-9	Sulfuric Acid
258. 93-76-5	2,4,5-T Acid
259. 2008-46-0	2,4,5-T Amines
260. 93-79-8	2,4,5-T Esters
261. 13560-99-1	2,4,5-T Salts
262. 93-72-1	2,4,5-TP Acid
263. 32534-95-5	2,4,5-TP Acid Esters
264. 72-54-8	TDE
265. 95-94-3	Tetrachlorobenzene
266. 127-18-4	Tetrachloroethane
267. 78-00-2	Tetraethyl Lead
268. 107-49-3	Tetraethyl Pyrophosphate
269. 7446-18-6	Thallium (I) Sulfate
270. 108-88-3	Toluene
271. 8001-35-2	Toxaphene
272. 12002-48-1	Trichlorobenzene (all isomers)
273. 52-68-6	Trichlorfon
274. 25323-89-1	Trichloroethane (all isomers)
275. 79-01-6	Trichloroethylene
276. 25167-82-2	Trichlorophenol (all isomers)
277. 27323-41-7	Triethanolamine Dodecylbenzenesulfonate
278. 121-44-8	Triethylamine
279. 75-50-3	Trimethylamine
280. 541-09-3	Uranyl Acetate
281. 10102-06-4	Uranyl Nitrate
282. 1314-62-1	Vanadium Pentoxide
283. 27774-13-6	Vanadyl Sulfate
284. 108-05-4	Vinyl Acetate
285. 75-35-4	Vinylidene Chloride
286. 1300-71-6	Xylenol
287. 557-34-6	Zinc Acetate
288. 52628-25-8	Zinc Ammonium Chloride
289. 1332-07-6	Zinc Borate
290. 7699-45-8	Zinc Bromide
291. 3486-35-9	Zinc Carbonate
292. 7646-85-7	Zinc Chloride
293. 557-21-1	Zinc Cyanide
294. 7783-49-3	Zinc Fluoride
295. 557-41-5	Zinc Formate
296. 7779-86-4	Zinc Hydrosulfite
297. 7779-88-6	Zinc Nitrate
298. 127-82-2	Zinc Phenolsulfonate
299. 1314-84-7	Zinc Phosphide
300. 16871-71-9	Zinc Silicofluoride
301. 7733-02-0	Zinc Sulfate
302. 13746-89-9	Zirconium Nitrate
303. 16923-95-8	Zirconium Potassium Fluoride
304. 14644-61-2	Zirconium Sulfate
305. 10026-11-6	Zirconium Tetrachloride

ORIGINAL (RED)

Section 3

ORIGINAL (RED)

FIELD TRIP SUMMARY REPORT

This summary should be prepared in conjunction with the Preliminary Assessment, EPA Form 2070-12.

EPA Case Number PA - 0585 Site Name Boeing Vertol Company

Site Description
The facility is located on the north bank of the Delaware River between Darby Creek and Crum Creek. Facility consists of two large parcels; north of the Industrial Highway is a 289 acre parcel where the alleged disposal took place (Landfill, Drying Beds, & TCE Source); south of the Industrial Highway is a 114 acre parcel where manufacturing is also performed.

Area of site (acres)	Hazardous portion, if not entire site
403 Acres	Blade Plant/treatment plant approx. 10 acre

Description of processes/operations which took place at the site
Boeing is a manufacturer of aircraft. Manufacturing processes performed at this facility include metal machining, metal finishing, plating, electroplating, metal cleaning, degreasing, and assembly.

Waste handling/disposal practices
Plating waste treated on-site, dewatered on-site, effluent go to river, and sludge disposed on-site & off-site. Unlined drying beds used until 1983 when these were replaced with concrete lined drying beds. Some sludge from the drying beds disposed of on-site in landfill.

Site topography and runoff drainage pathways
Area is relatively flat with gradual grade down towards the Delaware River; some local areas drain to Stony Creek, Crum Creek, and Darby Creek.

Surface or subsurface drainage areas (leachate) noted?	Odors/stains noted?
No.	Stressed vegetation noted?

Location and description of streams or receiving waters adjacent to site. Include flow direction and observations. Note location on attached map.
Facility is bordered by Delaware River, Crum Creek, Darby Creek, and Stony Creek.

Monitoring wells on site or in vicinity. Note location on attached map.
Facility installed 4 groundwater monitoring wells for RCRA closure of the unlined drying beds and found TCE in the groundwater (see analysis sections 8,9, & 10). Seven additional groundwater monitoring wells have been installed; currently being sampled.

ORIGINAL (RED)

Population within ¼ mile of site:

- ☐ 0-10
- ☐ 10-100
- ☒ greater than 100

Population within 1 mile of site:

- ☐ 0-10
- ☐ 10-100
- ☐ 100-1000
- ☒ greater than 1000

Surrounding land use (woodlot, agricultural, recreation, industrial, etc.)

NORTH Highway/ Dense Residential	EAST Industrial / Residential
SOUTH Delaware River	WEST Industrial / Residential

Domestic wells. Approximate number within ¼ mile: None Found

List nearest wells below and show locations on attached map.

Owner/Resident	Address	Phone

Groundwater flow direction, if known

Towards the Delaware River, but has tidal influence from the river.

Description of odor/taste problems

State inspection activity (including permits held)

NPDES PA0013323 RCRA Generator PAD096837356

Air Permits: Open Surface Process Tanks 23-318-010; Steam Boiler 23-302-109; Paint Spray Booths 23-318-00008, 23-318-023, & 23-318-025.

State/Federal/Private remedial activities

Commenwealth of Pa. DER Bureau of Waste Management, Region 1 is currently involved in groundwater assessment and remediation under RCRA enforcement.

ORIGINAL (RED)

Additional comments--Further description of site

High levels of Trichloroethylene found in the groundwater. Site assessed low priority due to no local use of groundwater and ongoing enforcement under the RCRA program.

SITE CONTACTS

Name and Title	Affiliation	Phone
Marian E. Donovan	Boeing Vertol Company	(215)522-7758
See Section 7 For Other Sources	of Information	

INSPECTION INFORMATION

Name and title of inspector(s) Thomas Sheehan, Project Officer

Agency DER Div. Emergency & Remedial Response Phone number (215)565-1687

Date October 28, 1986 Time on site 4 hours

Weather conditions: Clear & windy.

ATTACHMENTS

- o Topographic map identifying site location. Include name of quadrangle map.
- o Site sketch map showing location of monitoring wells, domestic wells, municipal water supplies, and areas of concern (lagoons, leachate seeps, drums, etc.)
- o Any available sampling results or state monitoring data with map showing sample locations.

ORIGINAL
(RED)

Section 4

Lansdowne Quadrangle
ORIGINAL (RED)
RIDLEY
Folsom
PROSPECT PARK
NORWOOD
Milmont Park
RIDLEY PARK
Crum Creek
Edgewood Sch
Jr High Sch
High Sch
Town Hall
Boro Hall
Fire Sta
Playground
Inter-Boro High Sch
St Gabriels Sch
Senech Ave Park
Prospect Hill Ch
Our Lady of Peace Sch
St Madeline Sch
Cem
Library Sta
East Lake Park
LakeView Sch
Taylor Hospital
Leedom Sch
Woodlyn
Crum Lynne
Ridley Creek Site
1/4 mile radius
St Margaret Mary's Sch
Westinghouse Village
Sewage Disposal
Lenoxville
Lipperville
Baldwin
Essington
Eddystone
Darby Creek
Tidal Flat
Gov Print Park
Seaplane Base
Floodgate
Powerplant
Conveyor
Athletic Field
Light
Little Tinicum
RIVER
PENNSYLVANIA
NEW JERSEY
DELAWARE
Bridgeport Quadrangle
Crab Pt
Thompson Pt
Tidal Flat

ORIGINAL (RED)

Section 5

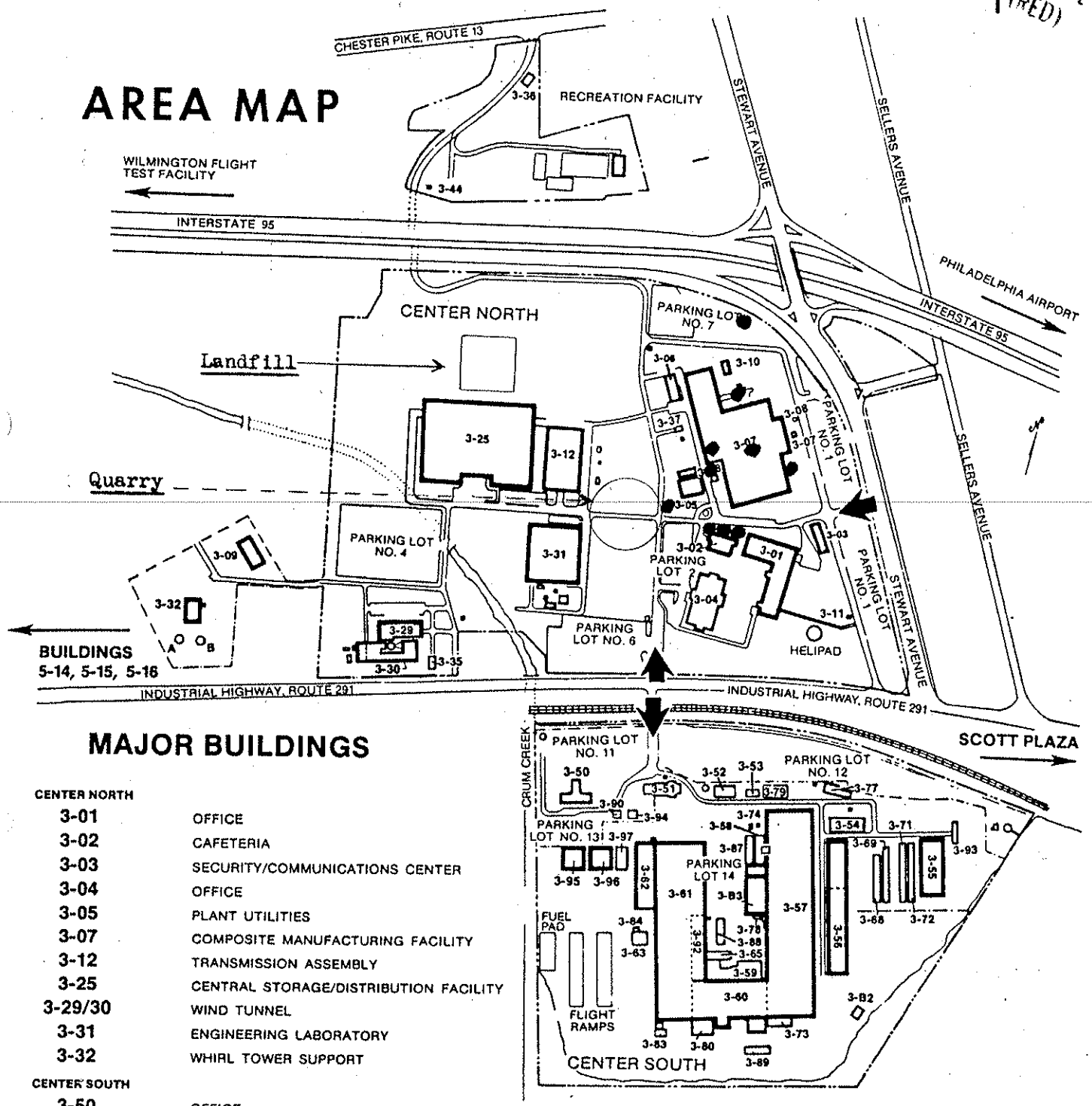
Map 1 Map of current facility indicating locations of:
10 groundwater monitoring wells
Old backfilled quarry
Old landfill

Map 2 Enlarged map of waste treatment area (taken from 1962 report)
Note that building 3-07 on Map 1 is the same building with additions as the Blade Plant on Map 2

Map 1

ORIGINAL 1 (RED)

AREA MAP



MAJOR BUILDINGS

CENTER NORTH

3-01	OFFICE
3-02	CAFETERIA
3-03	SECURITY/COMMUNICATIONS CENTER
3-04	OFFICE
3-05	PLANT UTILITIES
3-07	COMPOSITE MANUFACTURING FACILITY
3-12	TRANSMISSION ASSEMBLY
3-25	CENTRAL STORAGE/DISTRIBUTION FACILITY
3-29/30	WIND TUNNEL
3-31	ENGINEERING LABORATORY
3-32	WHIRL TOWER SUPPORT

CENTER SOUTH

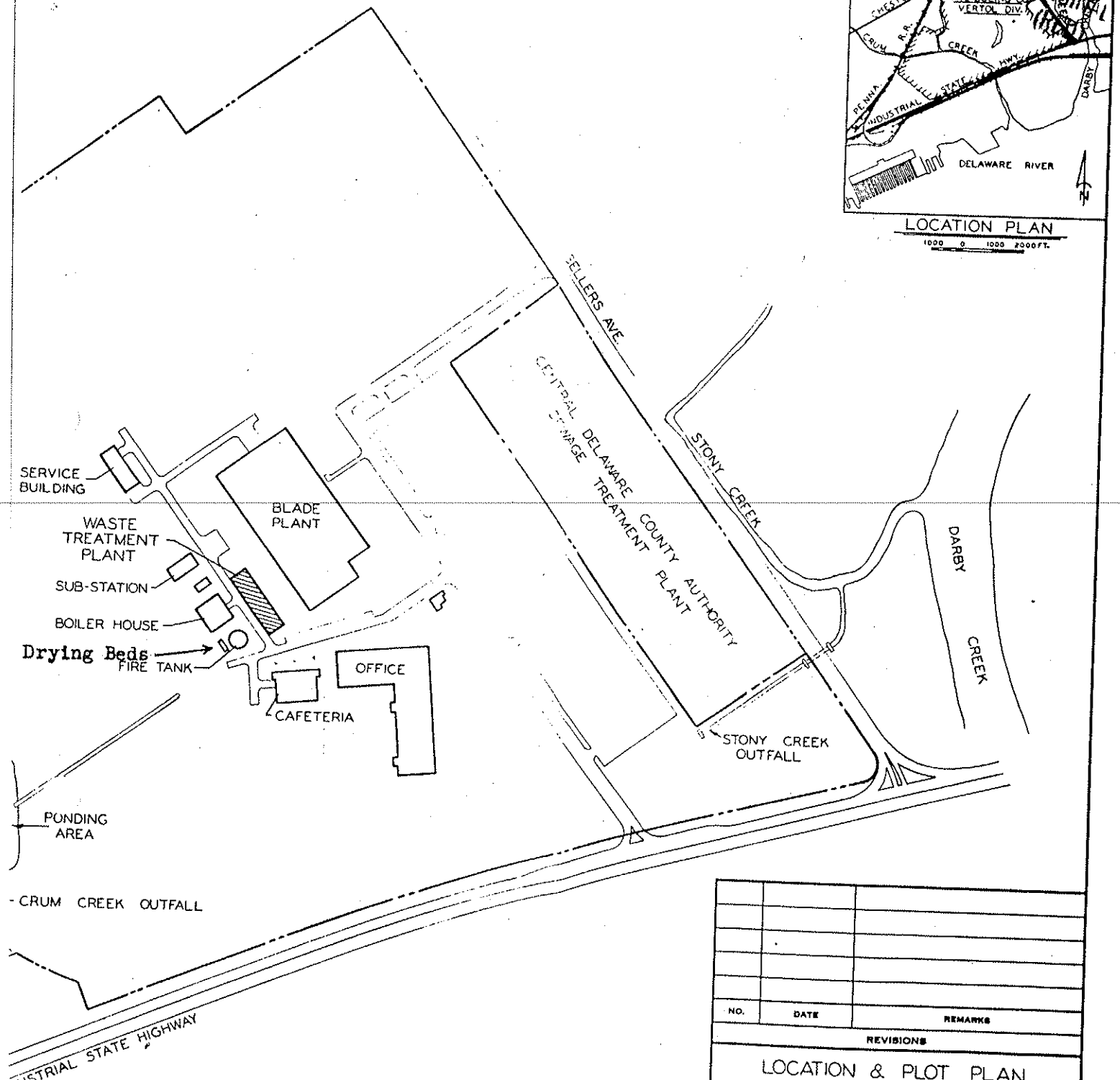
3-50	OFFICE
3-51	CAFETERIA/MEDICAL
3-52	PLANT UTILITIES
3-53	CREDIT UNION
3-55	RAW MATERIAL
3-56	FABRICATION/TOOLING
3-57	FABRICATION/ASSEMBLY
3-58	OFFICE
3-59	MOCKUP
3-60	ASSEMBLY
3-61	ASSEMBLY
3-62	OPERATIONS DEVELOPMENTAL SUPPORT
3-95/96	FLIGHT HANGARS
3-B3	DETAIL PAINT

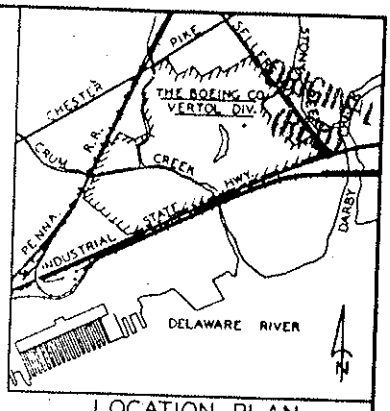
PLANT GATES

- GATE 1 — CENTER NORTH
- GATE 6 — CENTER NORTH
- GATE 1 — CENTER SOUTH

Groundwater Monitoring Wells ●

Map 2





LOCATION PLAN

1000 0 1000 2000 FT.

NO.	DATE	REMARKS

REVISIONS

LOCATION & PLOT PLAN

WASTE TREATMENT FACILITIES

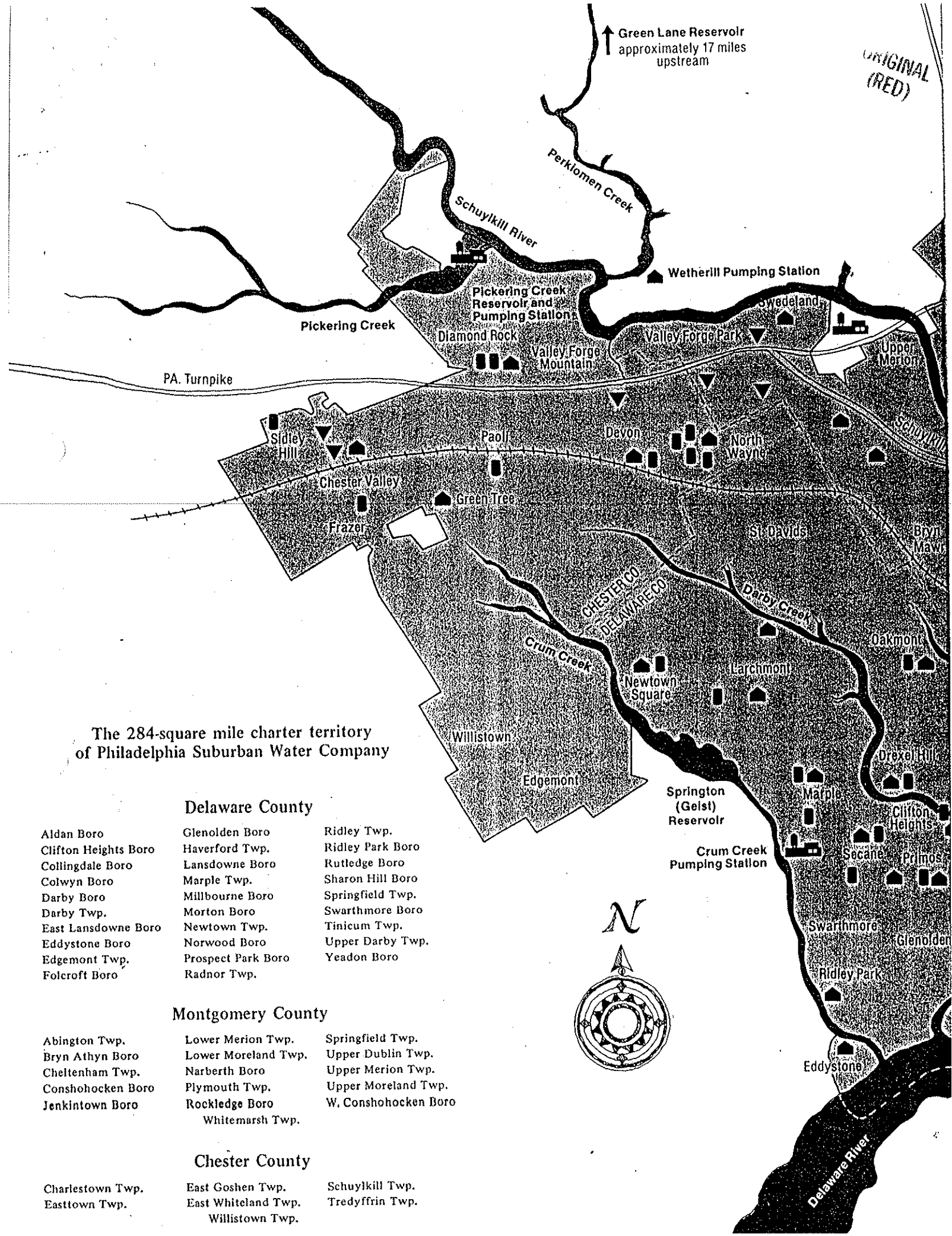
THE BOEING COMPANY
VERTOL DIVISION
RIDLEY TOWNSHIP, PA.

ROY F. WESTON, INC.
NEWTOWN SQUARE, PA.

DRAWN BY RS	SCALE: AS NOTED
CHECKED BY RJV	DATE JULY 6, 1962
APPR. BY W.E.H.	DWG. NO. 126A6-0.1
APPR. BY Roy F. Weston	

ORIGINAL
(RED)

Section 6



The 284-square mile charter territory of Philadelphia Suburban Water Company

Delaware County

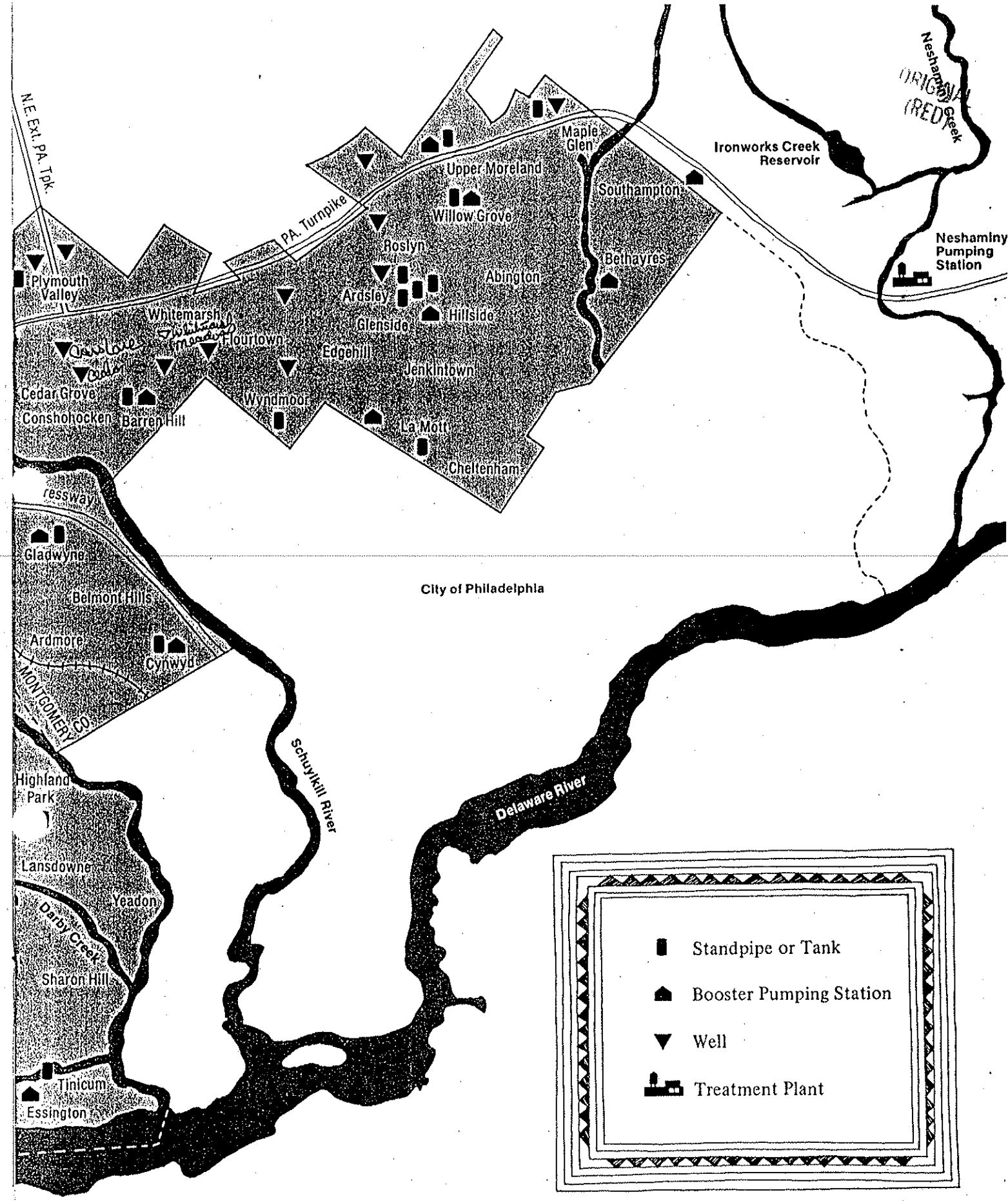
Aldan Boro
Clifton Heights Boro
Collingdale Boro
Colwyn Boro
Darby Boro
Darby Twp.
East Lansdowne Boro
Eddystone Boro
Edgemont Twp.
Folcroft Boro
Glenolden Boro
Haverford Twp.
Lansdowne Boro
Marple Twp.
Millbourne Boro
Morton Boro
Newtown Twp.
Norwood Boro
Prospect Park Boro
Radnor Twp.
Ridley Twp.
Ridley Park Boro
Rutledge Boro
Sharon Hill Boro
Springfield Twp.
Swarthmore Boro
Tinicum Twp.
Upper Darby Twp.
Yeadon Boro

Montgomery County

Abington Twp.
Bryn Athyn Boro
Cheltenham Twp.
Conshohocken Boro
Jenkintown Boro
Lower Merion Twp.
Lower Moreland Twp.
Narberth Boro
Plymouth Twp.
Rockledge Boro
Whitemarsh Twp.
Springfield Twp.
Upper Dublin Twp.
Upper Merion Twp.
Upper Moreland Twp.
W. Conshohocken Boro

Chester County

Charlestown Twp.
Easttown Twp.
East Goshen Twp.
East Whiteland Twp.
Willistown Twp.
Schuylkill Twp.
Tredyffrin Twp.


N.E. Ext. PA. Tpk.
PA. Turnpike
Maple Glen
Upper Moreland
Willow Grove
Southampton
Ironworks Creek Reservoir
Neshaminy Creek
Neshaminy Pumping Station
Roslyn
Bethayres
Plymouth Valley
Abington
Ardsley
Whitemarsh
Hillside
Glenside
Hourtown
Edgehill
Jenkintown
Cedar Grove
Wyndmoor
Conshohocken
Barren Hill
La Mott
Cheltenham
Gladwyne
Belmont Hills
City of Philadelphia
Ardmore
Cynwyd
MONTGOMERY CO.
Schuylkill River
Delaware River
Highland Park
Lansdowne
Yeadon
Darby Creek
Sharon Hill
Tinicum
Essington
Standpipe or Tank
Booster Pumping Station
Well
Treatment Plant

ORIGINAL
(RED)

Section 7

Sources of Information: People Interviewed

ORIGINAL (RED)

Marian E. Donovan
Senior Facilities Engineer
Environmental Engineering Facilities Department
Boeing Vertol Company
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Philadelphia, Pa. 19142
Mail Stop P33-29
(215)522-7758

Thomas Bunton
Hydrogeologist
Commenwealth of Pennsylvania Department of Environmental Resources
Bureau of Waste Management
1875 New Hope St.
Norristown, Pa 19401

Georgia Kagle
Waste Management Specialist
Commenwealth of Pennsylvania Department of Environmental Resources
Bureau of Waste Management
Ridley Creek State Park
Sycamore Mills Road
Media, Pa. 19063

John P. Damon, Township Engineer
Ridley Township
McDade Blvd. & Morton Ave.
Folsom, Pa.
(215)534-4800

Paul Ong, Code Enforcement Officer
Ridley Township
McDade Blvd. & Morton Ave.
Folsom, Pa.
(215)534-4800

ORIGINAL (RED)

Other Sources of Information:

Commenwealth of Pennsylvania
Department of Environmental Resources
Region 1 Files
1875 New Hope St.
Norristown, Pa. 19401

Recorder of Deeds, Delaware County
Delaware County Courthouse
Media, Pa. 19063

Site Visit October 28, 1986 by:
Thomas Sheehan, Project Officer
Commonwealth of Pennsylvania Department of Environmental Resources
Division of Emergency & Remedial Response

USGS 7.5 Minute Topographic Quadtangle Bridgeport Quadrangle

USGS 7.5 Minute Geologic Quadrangle Bridgeport Quadrangle

Ridley Township
McDade Blvd. & Morton Ave.
Folsom, Pa.
(215)534-4800

Eddystone Borough
12 th St. & Saville Ave.
Eddystone, Pa.
(215)876-3106

Ridley Park Borough
Sellers Ave
Ridley Park, Pa.
(215)532-2100

ORIGINAL
(RED)

Section 8

Regional File Boeing Vertol, Ridley Twp, Del. Co.

BOEING VERTOL COMPANY

ORIGINAL (RED)

P.O. Box 16858
Philadelphia, Pennsylvania 19142

DER-RECEIVED NORRISTOWN

FEB 5 1986

31 January 1986
8-4100-86-0127

Mr. Phil Rotstein
Commonwealth Of Pennsylvania
Department Of Environmental Resources
1875 New Hope Street
Norristown, Pennsylvania 19401

Subject: RCRA Groundwater Monitoring Program
Wastewater Treatment Plant - Sludge Drying Beds

Dear Mr. Rotstein:

On October 29, 1985, samples for the second year - first quarter monitoring were taken from the groundwater monitoring wells. Enclosed is a table summarizing the analytical data for the samples. The second quarter sampling will be conducted on February 5, 1986.

If you have any questions or comments, please call me at (215) 522-7758.

Yours truly,

BOEING VERTOL COMPANY
(A Division Of The Boeing Company)

Marian E. Donovan

Marian E. Donovan
Facilities Environmental Engineer

MED/djz

Enclosure

cc: Paul Lyman, Boeing Vertol (Enc.)
Isaac Lora-Guzman, U.S. EPA (Enc.)
Eugene Davis, U.S. EPA (Enc.)
Georgia Kagle, Pa DER (Enc.)
John Fowler, BCM (Enc.)
John Interrante, BCM (Enc.)

BOEING

BCM

ORIGINAL (RED)

BOEING VERTOL COMPANY
EDDYSTONE, DELAWARE COUNTY, PENNSYLVANIA
WASTEWATER TREATMENT PLANT
SLUDGE DRYING BEDS

GROUNDWATER MONITORING DATA
YEAR: TWO - QUARTER: ONE

Parameter	Units	Well 1	Well 2	Well 3	Well 4
Date Sampled:		10/29/85	10/29/85	10/29/85	10/29/85
BCM Sample Numbers:		519568	519569	519570	519575
Water Table Elevation*		7.60	5.33	4.92	4.47
GROUNDWATER QUALITY PARAMETERS					
Chloride	mg/l	19.2	27.2	365	70.9
Iron	mg/l	22.0	7.80	19.9	11.2
Manganese	mg/l	0.89	1.49	4.27	0.99
Phenols	mg/l	<0.002	<0.002	<0.002	<0.002
Sodium	mg/l	33.3	17.3	105	89.2
Sulfate	mg/l	10.4	25.9	39.2	165
INDICATOR PARAMETERS					
pH	Std. Units	6.92	6.51	6.31	6.77
Total Organic Carbon	mg/l	79	40	49	71
Total Organic Halogen	ug/l	3,917	236	2,833	6,691
Specific Conductance	umhos/cm	381	387	1,242	833
RADIOACTIVITY					
Unfiltered Samples:					
Radium	PCi/l	14+/-2	<1	16+/-2	<1
Gross Alpha	PCi/l	39+/-15	<2	21+/-13	<2
Gross Beta	PCi/l	37+/-12	18+/-11	15+/-10	11+/-10
Filtered Samples:					
Radium	PCi/l	<1	4+/-1	16+/-2	<1
Gross Alpha	PCi/l	<2	<2	16+/-13	<2
Gross Beta	PCi/l	14+/-10	<3	<3	<3
Additional Parameters					
Chromium	mg/l	0.005	<0.001	<0.001	0.002

* Feet above mean sea level
Source: BCM Eastern Inc.

X-RAY DIFFRACTION ANALYSIS

Laboratory no. [illegible]

ORIGINAL (RED)

Quantitative x-ray diffraction analysis showed the following materials to be present:

Very predominant (> 75%)	
Predominant (50%-75%)	
Major (20%-50%)	AMORPHOUS (*)
Minor (< 20%)	MAGNETITE (1) GOETHITE (3)

The number or symbol in parentheses ( ) refers to a formula or comment below.

1.	Fe_3O_4	13.	SiO_2	25.	$FeSO_4$	37.	$CaMg(CO_3)_2$
2.	α-Fe_2O_3	14.	$Ca(OH)_2$	26.	$Fe_2O_3 \cdot 2SO_3 \cdot nH_2O$	38.	Na_2SO_4
3.	α-$Fe_2O_3 \cdot H_2O$	15.	$Mg(OH)_2$	27.	$Mg_3(PO_4)_2 \cdot Mg(OH)_2$	39.	$NaFe(SO_4)_2$
4.	γ-$Fe_2O_3 \cdot H_2O$	16.	$CaSO_4$	28.	$CaCO_3$	40.	$Na_2Fe(SO_4)_2 \cdot 4H_2O$
5.	FeO	17.	Cu	29.	$CaSO_4 \cdot 2H_2O$	41.	$FeSO_4 \cdot H_2O$
6.	$CaCO_3$	18.	CuO	30.	ZnO	42.	$Fe_2(SO_4)_3 \cdot H_2SO_4 \cdot 2H_2O$
7.	$Ca_5(PO_4)_3OH$	19.	Cu_2O	31.	NaCl	43.	$VOSO_4$
8.	$3MgO \cdot 2SiO_2 \cdot 2H_2O$	20.	Cu_2S	32.	$3Na_2O \cdot 2SO_3 \cdot CO_2$	44.	$Na_{0.33}V_2O_5$
9.	$CaCO_3 \cdot H_2O$	21.	CuS	33.	Na_2SO_4	45.	$Na_2O \cdot V_2O_4 \cdot 5V_2O_5$
10.	$Na_2O \cdot Fe_2O_3 \cdot 4SiO_2$	22.	Na_2CO_3	34.	$6CaO \cdot 6SiO_2 \cdot H_2O$	46.	$5Na_2O \cdot V_2O_4 \cdot 11V_2O_5$
11.	$Na_2O \cdot Al_2O_3 \cdot 4SiO_2 \cdot 2H_2O$	23.	CaF_2	35.	Na_2SO_4	47.	$3Al_2O_3 \cdot 2SiO_2$
12.	SiO_2	24.	$FeCO_3$	36.	$2CaSO_4 \cdot H_2O$	48.	$Al_2O_3 \cdot SiO_2$
49.	$FeO(OH) \cdot nH_2O$	50.	Composition varies from $NaAlSi_3O_8$(albite) to $CaAl_2Si_2O_8$(anorthite)				

Amorphous (non-crystalline) materials cannot be identified by XRD techniques.

INFRARED ANALYSIS

ORIGINAL (RED)

Section 9

BOEING VERTOL COMPANY

P.O. Box 16858
Philadelphia, Pennsylvania 19142

ORIGINAL (RED)

DER RECEIVED
NORRISTOWN

JUL 23 1986

17 July 1986
8-4100-86-0765

Mr. Tom Buntin, Hydrogeologist
Commonwealth Of Pennsylvania
Department Of Environmental Resources
Bureau Of Waste Management
1875 New Hope Street
Norristown, Pennsylvania 19401

Subject: RCRA Groundwater Monitoring Program
Second Year, Second And Third Quarter Data

Dear Mr. Buntin:

During January 1986 and May 1986, BCM conducted groundwater sampling at Boeing Vertol for the Second And Third Quarter - Second Year RCRA Groundwater Monitoring Program. The results are enclosed. If you have any questions/comments, please call me at 215-522-7758.

I am looking forward to meeting you on August 5, 1986 to discuss the RCRA Groundwater Monitoring Program being conducted at Boeing Vertol.

Yours truly,

BOEING VERTOL COMPANY
(A Division Of The Boeing Company)

Marian E. Donovan

Marian E. Donovan
Facilities Environmental Engineer

Enclosure

cc: E. Davis (enc.)
J. Fowler (enc.)
J. Interrante
G. Kagle (enc.)
L. Lunsk
P. Lyman

BOEING

ER-SWM-92: Rev. 7/83

ORIGINAL (RED)

3/13/86
DATE PREPARED

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF SOLID WASTE MANAGEMENT

HAZARDOUS WASTE MONITORING QUARTERLY REPORT

(To be submitted in triplicate for all monitoring wells)

P A D 0 9 6 8 3 7 3
I. D. NUMBER

Facility Name BOEING VERTOL Facility Permit Number

Location: County DELAWARE Municipality RIDLEY TOWNSHIP

Monitoring Well Number # 1 Check one: up X down gradient

Depth to Water Level 5.99 feet. Measured from: land surface top of casing X

Sampling Depth 5.99 feet. Elevation of land surface 4.22 feet or top of casing 14.23 feet

Type of Sampling (check one) pump bailer X. Was the well purged? Yes X No

Monitoring Well Location: Latitude 39 ° 52 ' 0 "N Longitude 75 ° 19 ' 21 "W

Date Sample Collected 2/5/86 Time of Sampling 13:15

Sample Collectors Name RUSSELL MEHALICK

Quarter (1) (Jan--March) 2 (April--June) 3 (July--Aug) 4 (Sept--Dec) 19 86.
(circle one)

I. PARAMETERS USED AS INDICATORS OF GROUND WATER CONTAMINATION -- RESULTS

	Replicates (must be done for all wells)			
pH (00403)	6.6	6.6	6.6	6.6
Specific Conductance (00905) (micromhos)	317	335	327	333
Total Organic Carbon ( ) mg/l	20.4	21.3	20.3	21.0
Total Organic Halogen ( ) ug/l	3962	3800	3440	3727
Additional (if required) CHROMIUM	0.001			

Name, Address and Supervisor of Laboratory Performing Chemical Analysis:

MR. JOHN J. TOBIN, LABORATORY DIRECTOR
BCM EASTERN, INC
ONE PLYMOUTH MEETING,
PLYMOUTH MEETING, PA 19462

ORIGINAL (RED)

Monitoring Well Number # _____

II. TESTS FOR SIGNIFICANCE -- CALCULATIONS
(attach all necessary data)

A. Arithmetic results for this quarter (background values based on first year's sample results in the upgradient wells; or as otherwise approved by the Department)

	$(\bar{X}_b)$ Background Mean	(S_b^2) Background Variance	$(\bar{X}_m)$ Monitoring Mean	(S_m^2) Monitoring Variance
pH (00403)	6.349	.005	6.6	.000
Specific Conductance (00905) (micromhos)	452.25	9328.333	328.0	65.333
Total Organic Carbon ( ) mg/l	13.025	3.539	20.75	.230
Total Organic Halogen ( ) ug/l	13131.563	N/A	3732.25	47604.25
(Additional) _____				

N/A = NOT AVAILABLE

B. Student's T-Test (at the specified level of significance using Cochran's Approximation to the Behrens-Fisher single-tailed solution of the comparison of two independent samples with unequal population variances; or an equivalent approved method).

Level of Significance Used -- .01 .05 (circle one)
(see Appendix III, Chapter 75, Subchapter D)

	(t^*) weighted t-statistic	(t_c) comparison t-statistic	SIGNIFICANT CHANGE? (circle one)	
pH (00403) (use two-tailed test)	14.44	2.947	(Y)	N
Specific Conductance (00905) (micromhos)	-5.075	2.655	Y	(N)
Total Organic Carbon ( ) mg/l	14.633	3.002	(Y)	N
Total Organic Halogen ( ) ug/l	-4.459	2.607	Y	(N)
(Additional) _____			Y	N

Name, Address, and Title of Individual Performing the Tests for Significance:

MR. JOHN W. FOWLER, SENIOR HYDROGEOLOGIST

BCM EASTERN, INC.

ONE PLYMOUTH MEETING

PLYMOUTH MEETING, PA 19462

ER-SWM-92: Rev. 7/83

ORIGINAL (RED)

3/13/86
DATE PREPARED

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF SOLID WASTE MANAGEMENT

P A D 0 9 6 8 3 7 3
I. D. NUMBER

HAZARDOUS WASTE MONITORING QUARTERLY REPORT

(To be submitted in triplicate for all monitoring wells)

Facility Name BOEING VERTOL Facility Permit Number

Location: County DELAWARE Municipality RIDLEY TOWNSHIP

Monitoring Well Number # 2 Check one: up ____ down X gradient

Depth to Water Level 9.05 feet. Measured from: land surface ____ top of casing X

Sampling Depth 9.05 feet. Elevation of land surface 3.22 feet or top of casing 15.27 feet

Type of Sampling (check one) pump ____ bailer X. Was the well purged? Yes X No ____

Monitoring Well Location: Latitude 39 ° 52 ' 0 "N Longitude 75 ° 19 ' 21 "W

Date Sample Collected 2-5-86 Time of Sampling 11:15

Sample Collectors Name RUSSELL MEHALICK

Quarter (1) (Jan--March) 2 (April--June) 3 (July--Aug) 4 (Sept--Dec) 19 86.
(circle one)

I. PARAMETERS USED AS INDICATORS OF GROUND WATER CONTAMINATION -- RESULTS

	Replicates (must be done for all wells)			
pH (00403)	6.1	6.1	6.0	6.0
Specific Conductance (00905) (micromhos)	317	300	320	325
Total Organic Carbon ( ) mg/l	1.59	1.68	1.44	1.53
Total Organic Halogen ( ) ug/l	189	246	259	224
Additional (if required) CHROMIUM	0.005			

Name, Address and Supervisor of Laboratory Performing Chemical Analysis:

MR. JOHN J. TOBIN, LABORATORY DIRECTOR
BCM EASTERN, INC.
ONE PLYMOUTH MEETING
PLYMOUTH MEETING, PA 19462

ORIGINAL (RED)

Monitoring Well Number # 2

II. TESTS FOR SIGNIFICANCE -- CALCULATIONS
(attach all necessary data)

A. Arithmetic results for this quarter (background values based on first year's sample results in the upgradient wells; or as otherwise approved by the Department)

	($\bar{X}_b$) Background Mean	(S_b^2) Background Variance	($\bar{X}_m$) Monitoring Mean	(S_m^2) Monitorin Variance
pH (00403)	6.349	.005	6.05	.003
Specific Conductance (00905) (micromhos)	452.25	9328.333	315.5	117.667
Total Organic Carbon ( ) mg/l	13.025	3.539	1.560	.010
Total Organic Halogen ( ) ug/l	13131.563	N/A	229.5	937.667
(Additional)				

N/A = NOT AVAILABLE

B. Student's T-Test (at the specified level of significance using Cochran's Approximation to the Behrens-Fisher single-tailed solution of the comparison of two independent samples with unequal population variances; or an equivalent approved method).

Level of Significance Used -- .01 .05 (circle one)
(see Appendix III, Chapter 75, Subchapter D)

	(t^*) weighted t-statistic	(t_c) comparison t-statistic	SIGNIFICANT CHANGE? (circle one)	
pH (00403) (use two-tailed test)	-8.888	5.073	(Y)	N
Specific Conductance (00905) (micromhos)	-5.526	2.695	Y	(N)
Total Organic Carbon ( ) mg/l	-24.237	2.624	Y	(N)
Total Organic Halogen ( ) ug/l	-6.128	2.602	Y	(N)
(Additional)			Y	N

Name, Address, and Title of Individual Performing the Tests for Significance:

MR. JOHN W. FOWLER, SENIOR HYDROGEOLOGIST

BCM EASTERN, INC.

ONE PLYMOUTH MEETING

PLYMOUTH MEETING, PA 19462

ER-SWM-92: Rev. 7/83

ORIGINAL (RED)

3/13/86
DATE PREPARED

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF SOLID WASTE MANAGEMENT

P A D 0 9 6 8 3 7 3
I. D. NUMBER

HAZARDOUS WASTE MONITORING QUARTERLY REPORT

(To be submitted in triplicate for all monitoring wells)

Facility Name BOEING VERTOL Facility Permit Number

Location: County DELAWARE Municipality RIDLEY TOWNSHIP

Monitoring Well Number # 3 Check one: up ____ down X gradien

Depth to Water Level 8.77 feet. Measured from: land surface ____ top of casing X

Sampling Depth 8.77 feet. Elevation of land surface 4.12 feet or top of casing 14.45 feet

Type of Sampling (check one) pump ____ bailer X. Was the well purged? Yes X No ____

Monitoring Well Location: Latitude 39 ° 52 ' 0 "N Longitude 75 ° 19 ' 21 "W

Date Sample Collected 2/5/86 Time of Sampling 12:00

Sample Collectors Name RUSSELL MEHALICK

Quarter (1) (Jan--March) 2 (April--June) 3 (July--Aug) 4 (Sept--Dec), 19 86.
(circle one)

I. PARAMETERS USED AS INDICATORS OF GROUND WATER CONTAMINATION -- RESULTS

	Replicates (must be done for all wells)			
pH (00403)	6.0	6.0	6.0	6.0
Specific Conductance (00905) (micromhos)	1121	1168	1150	1144
Total Organic Carbon ( ) mg/l	5.51	5.39	5.54	5.39
Total Organic Halogen ( ) ug/l	3130	2754	2865	2757
Additional (if required) CHROMIUM	0.003			

Name, Address and Supervisor of Laboratory Performing Chemical Analysis:

MR. JOHN J. TOBIN, LABORATORY DIRECTOR
BCM EASTERN, INC.
ONE PLYMOUTH MEETING
PLYMOUTH MEETING, PA 19462

ORIGINAL (RED)

Monitoring Well Number # 3

II. TESTS FOR SIGNIFICANCE -- CALCULATIONS
(attach all necessary data)

A. Arithmetic results for this quarter (background values based on first year's sample results in the upgradient wells; or as otherwise approved by the Department)

	($\bar{X}_b$) Background Mean	(S_b^2) Background Variance	($\bar{X}_m$) Monitoring Mean	(S_m^2) Monitoring Variance
pH (00403)	6.349	.005	6.0	.000
Specific Conductance (00905) (micromhos)	452.25	9328.333	1145.75	376.25
Total Organic Carbon ( ) mg/l	13.025	3.539	5.458	.006
Total Organic Halogen ( ) ug/l	13131.563	N/A	2876.5	31227.0
(Additional)				

N/A = NOT AVAILABLE

B. Student's T-Test (at the specified level of significance using Cochran's Approximation to the Behrens-Fisher single-tailed solution of the comparison of two independent samples with unequal population variances; or an equivalent approved method).

Level of Significance Used -- .01 .05 (circle one)
(see Appendix III, Chapter 75, Subchapter D)

	(t^*) weighted t-statistic	(t_c) comparison t-statistic	SIGNIFICANT CHANGE? (circle one)	
pH (00403) (use two-tailed test)	-20.13	2.947	(Y)	N
Specific Conductance (00905) (micromhos)	26.652	2.871	(Y)	N
Total Organic Carbon ( ) mg/l	-16.034	2.616	Y	(N)
Total Organic Halogen ( ) ug/l	-4.867	2.605	Y	(N)
(Additional)			Y	N

Name, Address, and Title of Individual Performing the Tests for Significance:

MR. JOHN W. FOWLER, SENIOR HYDROGEOLOGIST

BCM EASTERN, INC.

ONE PLYMOUTH MEETING

PLYMOUTH MEETING, PA 19462

ER-SWM-92: Rev. 7/83

ORIGINAL (RED)

3/13/86
DATE PREPARED

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF SOLID WASTE MANAGEMENT

P A D 0 9 6 8 3 7 3 5
I. D. NUMBER

HAZARDOUS WASTE MONITORING QUARTERLY REPORT

(To be submitted in triplicate for all monitoring wells)

Facility Name BOEING VERTOL Facility Permit Number _____

Location: County DELAWARE Municipality RIDLEY TOWNSHIP

Monitoring Well Number #4 Check one: up _____ down X gradient

Depth to Water Level 9.62 feet. Measured from: land surface _____ top of casing X

Sampling Depth 9.62 feet. Elevation of land surface 4.15 feet or top of casing 14.42 feet

Type of Sampling (check one) pump _____ bailer X. Was the well purged? Yes X No _____

Monitoring Well Location: Latitude 39 ° 52 ' 0 "N Longitude 75 ° 19 ' 21 "W

Date Sample Collected 2/5/86 Time of Sampling 12:35

Sample Collectors Name RUSSELL MEHALICK

Quarter (1) (Jan--March) 2 (April--June) 3 (July--Aug) 4, (Sept--Dec) 19 86.
(circle one)

I. PARAMETERS USED AS INDICATORS OF GROUND WATER CONTAMINATION -- RESULTS

	Replicates (must be done for all wells)			
pH (00403)	6.3	6.4	6.4	6.4
Specific Conductance (00905) (micromhos)	771	802	780	798
Total Organic Carbon ( ) mg/l	10.2	10.2	10.6	10.4
Total Organic Halogen ( ) ug/l	14323	14730	13974	13605
Additional (if required) CHROMIUM	0.002			

Name, Address and Supervisor of Laboratory Performing Chemical Analysis:

MR. JOHN J. TOBIN, LABORATORY DIRECTOR
BCM EASTERN, INC.
ONE PLYMOUTH MEETING
PLYMOUTH MEETING, PA 19462

ORIGINAL (RED)

Monitoring Well Number # 4

II. TESTS FOR SIGNIFICANCE -- CALCULATIONS
(attach all necessary data)

A. Arithmetic results for this quarter (background values based on first year's sample results in the upgradient wells; or as otherwise approved by the Department)

	($\bar{X}_b$) Background Mean	(S_b^2) Background Variance	($\bar{X}_m$) Monitoring Mean	(S_m^2) Monitori Varianc
pH (00403)	6.349	.005	6.375	.003
Specific Conductance (00905) (micromhos)	452.25	9328.333	787.75	216.25
Total Organic Carbon ( ) mg/l	13.025	3.539	10.35	.037
Total Organic Halogen ( ) ug/l	13131.563	N/A	14158.00	231358
(Additional)				

N/A = NOT AVAILABLE

B. Student's T-Test (at the specified level of significance using Cochran's Approximation to the Behrens-Fisher single-tailed solution of the comparison of two independent samples with unequal population variances; or an equivalent approved method).

Level of Significance Used -- .01 .05 (circle one)
(see Appendix III, Chapter 75, Subchapter D)

	(t^*) weighted t-statistic	(t_c) comparison t-statistic	SIGNIFICANT CHANGE? (circle one)	
pH (00403) (use two-tailed test)	.842	4.9	Y	(N)
Specific Conductance (00905) (micromhos)	13.292	2.767	(Y)	N
Total Organic Carbon ( ) mg/l	-5.573	2.679	Y	(N)
Total Organic Halogen ( ) ug/l	.484	2.627	Y	(N)
(Additional)			Y	N

Name, Address, and Title of Individual Performing the Tests for Significance:

MR. JOHN W. FOWLER, SENIOR HYDROGEOLOGIST

BCM EASTERN, INC.

ONE PLYMOUTH MEETING

PLYMOUTH MEETING, PA 19462

HAZARDOUS WASTE MONITORING

REPORT FOR QUARTER 02/86

CLIENT: 07 BOEING VERTOL COMPANY

EDDYSTONE, DELAWARE CO., PA

WELL: 2 DOWNGRADIENT

ANALYTICAL RESULTS	DOWNGRADIENT AVERAGE	DOWNGRADIENT VARIANCE	BACKGROUND AVERAGE	BACKGROUND VARIANCE	DEGREES OF FREEDOM	T *	T-C	T TEST RESULTS
PH								
6.100								
6.100								
6.000								
6.000	6.050	.003	6.349	.005	18	-8.888	5.073	SL
SPECIFIC CONDUCTANCE UMHOS/CM								
317.000								
320.000								
300.000								
325.000	315.500	117.667	452.250	9328.333	18	-5.526	2.695	N
TOTAL ORGANIC CARBON MG/L								
1.590								
1.440								
1.680								
1.530	1.560	.010	13.025	3.539	18	-24.237	2.624	N
TOTAL ORGANIC HALOGEN UG/L								
189.000								
259.000								
246.000								
224.000	229.500	937.667	13131.563	###########	18	-6.128	2.602	N

COCHRAN'S APPROXIMATION T-TEST USING HISTORY FOR UPGRADIENT WELL - 1

0.01 LEVEL OF SIGNIFICANCE

SH SIGNIFICANTLY HIGHER
SL SIGNIFICANTLY LOWER
N NO SIGNIFICANT DIFFERENCE

ORIGINAL (RED)

HAZARDOUS WASTE MONITORING

REPORT FOR QUARTER 02/86

CLIENT: 07 BOEING VERTOL COMPANY

EDDYSTONE, DELAWARE CO., PA

WELL: 1 UPGRADIENT

ANALYTICAL RESULTS	AVERAGE	VARIANCE	BACKGROUND AVERAGE	BACKGROUND VARIANCE	DEGREES OF FREEDOM	T *	T-C	T TEST RESULTS
PH								
6.600								
6.600								
6.600								
6.600	6.600	.000	6.349	.005	18	14.440	2.947	SH
SPECIFIC CONDUCTANCE UMHOS/CM								
317.000								
327.000								
335.000								
333.000	328.000	65.333	452.250	9328.333	18	-5.075	2.655	N
TOTAL ORGANIC CARBON MG/L								
20.400								
20.300								
21.300								
21.000	20.750	.230	13.025	3.539	18	14.633	3.002	SH
TOTAL ORGANIC HALOGEN UG/L								
3962.000								
3440.000								
3800.000								
3727.000	3732.250	47604.250	13131.563	###########	18	-4.459	2.607	N

COCHRAN'S APPROXIMATION T-TEST FOR WELL - 1

0.01 LEVEL OF SIGNIFICANCE

SH SIGNIFICANTLY HIGHER
SL SIGNIFICANTLY LOWER
N NO SIGNIFICANT DIFFERENCE

ORIGINAL (RED)

HAZARDOUS WASTE MONITORING

REPORT FOR QUARTER 02/86

CLIENT: 07 BOEING VERTOL COMPANY

EDDYSTONE, DELAWARE CO., PA

WELL: 3 DOWNGRADIENT

ANALYTICAL RESULTS	AVERAGE	VARIANCE	BACKGROUND AVERAGE	BACKGROUND VARIANCE	DEGREES OF FREEDOM	T *	T-C	T TEST RESULTS
PH								
6.000								
6.000								
6.000								
6.000	6.000	.000	6.349	.005	18	-20.130	2.947	SL
SPECIFIC CONDUCTANCE UMHOS/CM								
1121.000								
1150.000								
1168.000								
1144.000	1145.750	376.250	452.250	9328.333	18	26.652	2.871	SH
TOTAL ORGANIC CARBON MG/L								
5.510								
5.540								
5.390								
5.390	5.458	.006	13.025	3.539	18	-16.034	2.616	N
TOTAL ORGANIC HALOGEN UG/L								
3130.000								
2865.000								
2754.000								
2757.000	2876.500	31227.000	13131.563	###########	18	-4.867	2.605	N

COCHRAN'S APPROXIMATION T-TEST USING HISTORY FOR UPGRADIENT WELL - 1

0.01 LEVEL OF SIGNIFICANCE

SH SIGNIFICANTLY HIGHER

ORIGINAL (RED)

HAZARDOUS WASTE MONITORING

REPORT FOR QUARTER 02/86

CLIENT: 07 BOEING VERTOL COMPANY

FOOYSTONE, DELAWARE CO., PA

WELL: 4 DOWNGRADIENT

ANALYTICAL RESULTS	AVERAGE	VARIANCE	BACKGROUND AVERAGE	BACKGROUND VARIANCE	DEGREES OF FREEDOM	T *	T-C	T TEST RESULTS
PH								
6.500								
6.400								
6.400								
6.400	6.375	.005	6.349	.005	18	.842	4.900	N
SPECIFIC CONDUCTANCE UMHOS/CM								
771.000								
780.000								
802.000								
798.000	787.750	216.250	452.250	9328.333	18	13.292	2.767	SH
TOTAL ORGANIC CARBON MG/L								
10.200								
10.600								
10.200								
10.400	10.350	.037	13.025	3.539	18	-5.573	2.679	N
TOTAL ORGANIC HALOGEN UG/L								
14323.000								
13974.000								
14730.000								
13605.000	14158.000	231358.000	13131.563	###########	18	.484	2.627	N

COCHRAN'S APPROXIMATION T-TEST USING HISTORY FOR UPGRADIENT WELL - 1

0.01 LEVEL OF SIGNIFICANCE

SH SIGNIFICANTLY HIGHER
SL SIGNIFICANTLY LOWER
N NO SIGNIFICANT DIFFERENCE

ORIGINAL (RED)

ER-SWM-92: Rev. 7/83

6/27/86
DATE PREPARED

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF SOLID WASTE MANAGEMENT

ORIGINAL (RED)

P	A	D	0	9	6	8	3	7	3

I. D. NUMBER

HAZARDOUS WASTE MONITORING QUARTERLY REPORT

(To be submitted in triplicate for all monitoring wells)

Facility Name Boeing Vertol Facility Permit Number

Location: County Delaware Municipality Ridley Township

Monitoring Well Number #1 Check one: up X down gradient

Depth to Water Level 6.82 feet. Measured from: land surface top of casing X

Sampling Depth 6.82 feet. Elevation of land surface 4.22 feet or top of casing 14.23 feet

Type of Sampling (check one) pump bailer X. Was the well purged? Yes X No

Monitoring Well Location: Latitude 39 ° 52 ' 0 "N Longitude 75 ° 19 ' 21 "W

Date Sample Collected 5/20/86 Time of Sampling 11:50

Sample Collectors Name Russell Mehalick

Quarter 1 (Jan--March) (2) (April--June) 3 (July--Aug) 4, (Sept--Dec) 19 86.
(circle one)

I. PARAMETERS USED AS INDICATORS OF GROUND WATER CONTAMINATION -- RESULTS

	Replicates (must be done for all wells)			
pH (00403)	6.6	6.6	6.6	6.6
Specific Conductance (00905) (micromhos)	451	443	450	452
Total Organic Carbon ( ) mg/l	13	14	12	12
Total Organic Halogen ( ) ug/l	11,191	11,071	11,025	11,133
Additional (if required) Chromium	0.006			

Name, Address and Supervisor of Laboratory Performing Chemical Analysis:

Mr. John J. Tobin, Laboratory Director
BCM Eastern Inc. - Laboratory Division
521 West Germantown Pike
Norristown, PA 19401

ER-SWM-92: Rev. 7/83

ORIGINAL (RED)

6/27/86
DATE PREPARED

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF SOLID WASTE MANAGEMENT

HAZARDOUS WASTE MONITORING QUARTERLY REPORT

(To be submitted in triplicate for all monitoring wells)

P	A	D	0	9	6	8	3	7	3

I. D. NUMBER

Facility Name Boeing Vertol Facility Permit Number

Location: County Delaware Municipality Ridley Township

Monitoring Well Number 2 Check one: up ____ down X gradient

Depth to Water Level 9.75 feet. Measured from: land surface ____ top of casing X

Sampling Depth 9.75 feet. Elevation of land surface 3.22 feet or top of casing 15.27 feet

Type of Sampling (check one) pump ____ bailer X. Was the well purged? Yes X No ____

Monitoring Well Location: Latitude 39 ° 52 ' 0 "N Longitude 75 ° 19 ' 21 "W

Date Sample Collected 5/20/86 Time of Sampling 10:50

Sample Collectors Name Russell Mehalick

Quarter 1 (Jan--March) 2 (April--June) 3 (July--Aug) 4 (Sept--Dec) 19 86.
(circle one)

I. PARAMETERS USED AS INDICATORS OF GROUND WATER CONTAMINATION -- RESULTS

	Replicates (must be done for all wells)			
pH (00403)	6.1	6.1	6.2	6.1
Specific Conductance (00905) (micromhos)	319.00	324.00	320.00	324.00
Total Organic Carbon ( ) mg/l	3.0	4.0	1.0	1.0
Total Organic Halogen ( ) ug/l	209.0	204.0	192.0	203.0
Additional (if required) Chromium	0.006			

Name, Address and Supervisor of Laboratory Performing Chemical Analysis:

Mr. John J. Tobin, Laboratory Director
BCM Eastern Inc. - Laboratory Division
521 W. Germantown Pike
Norristown, PA 19401

(Over)

Monitoring Well Number #1

II. TESTS FOR SIGNIFICANCE -- CALCULATIONS

(attach all necessary data)

A. Arithmetic results for this quarter (background values based on first year's sample results in the upgradient wells; or as otherwise approved by the Department)

	($\bar{X}_b$) Background Mean	(S_b^2) Background Variance	($\bar{X}_m$) Monitoring Mean	(S_m^2 Monito Varia
pH (00403)	6.349	0.005	6.6	0.000
Specific Conductance (00905) (micromhos)	452.25	9328.333	449.0	16.667
Total Organic Carbon ( ) mg/l	13.025	3.539	12.750	0.917
Total Organic Halogen ( ) ug/l	13131.563	N/A	111105.00	5245.3
(Additional)				

N/A = Not Available

B. Student's T-Test (at the specified level of significance using Cochran's Approximation to the Behrens-Fisher single-tailed solution of the comparison of two independent samples with unequal population variances; or an equivalent approved method).

Level of Significance Used -- .01 .05 (circle one)
(see Appendix III, Chapter 75, Subchapter D)

	(t^*) weighted t-statistic	(t_c) comparison t-statistic	SIGNIFICANT CHANGE? (circle one)	
pH (00403) (use two-tailed test)	14.44	2.947	(Y)	N
Specific Conductance (00905) (micromhos)	-0.134	2.616	Y	(N)
Total Organic Carbon ( ) mg/l	-0.410	3.589	Y	(N)
Total Organic Halogen ( ) ug/l	-0.962	2.603	Y	(N)
(Additional)			Y	N

Name, Address, and Title of Individual Performing the Tests for Significance:

Mr. John W. Fowler, Senior Hydrogeologist
BCM Eastern Inc.
One Plymouth Meeting
Plymouth Meeting, PA 19462

ORIGINAL (RED)

Monitoring Well Number #2

II. TESTS FOR SIGNIFICANCE -- CALCULATIONS
(attach all necessary data)

A. Arithmetic results for this quarter (background values based on first year's sample results in the upgradient wells; or as otherwise approved by the Department)

	$(\bar{X}_b)$ Background Mean	(S_b^2) Background Variance	$(\bar{X}_m)$ Monitoring Mean	(S_m^2) Monitori Varianc
pH (00403)	6.349	0.005	6.125	0.003
Specific Conductance (00905) (micromhos)	452.25	9328.33	321.75	6.917
Total Organic Carbon ( ) mg/l	13.025	3.539	2.250	2.250
Total Organic Halogen ( ) ug/l	13131.563	NA	202.00	51.333
(Additional)				

NA = Not Available

B. Student's T-Test (at the specified level of significance using Cochran's Approximation to the Behrens-Fisher single-tailed solution of the comparison of two independent samples with unequal population variances; or an equivalent approved method).

Level of Significance Used -- .01 .05 (circle one)
(see Appendix III, Chapter 75, Subchapter D)

	(t*) weighted t-statistic	(t_c) comparison t-statistic	SIGNIFICANT CHANGE? (circle one)	
pH (00403) (use two-tailed test)	-7.373	4.900	(Y)	N
Specific Conductance (00905) (micromhos)	-5.397	2.608	Y	(N)
Total Organic Carbon ( ) mg/l	-12.171	3.994	Y	(N)
Total Organic Halogen ( ) ug/l	-6.142	2.602	Y	(N)
(Additional)			Y	N

Name, Address, and Title of Individual Performing the Tests for Significance:

Mr. John Fower, Senior Hydrogeologist

BCM Eastern Inc.

One Plymouth Meeting

Plymouth Meeting, PA 19462

ER-SWM-92: Rev. 7/83

ORIGINAL (RED)

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF SOLID WASTE MANAGEMENT

6/27/86
DATE PREPARED

P A D 0 9 6 8 3 7 3
I. D. NUMBER

HAZARDOUS WASTE MONITORING QUARTERLY REPORT

(To be submitted in triplicate for all monitoring wells)

Facility Name Boeing Vertol Facility Permit Number

Location: County Delaware Municipality Ridley Township

Monitoring Well Number #3 Check one: up ____ down X gradient

Depth to Water Level 9.50 feet. Measured from: land surface ____ top of casing X

Sampling Depth 9.50 feet. Elevation of land surface 4.12 feet or top of casing 14.45 feet

Type of Sampling (check one) pump ____ bailer X. Was the well purged? Yes X No ____

Monitoring Well Location: Latitude 39 ° 52 ' 0 "N Longitude 75 ° 19 ' 21 "W

Date Sample Collected 5/20/86 Time of Sampling 11:20

Sample Collectors Name Russ Mehalick

Quarter 1 (Jan--March) 2 (April--June) 3 (July--Aug) 4, (Sept--Dec) 19 86.
(circle one)

I. PARAMETERS USED AS INDICATORS OF GROUND WATER CONTAMINATION -- RESULTS

	Replicates (must be done for all wells)			
pH (00403)	5.9	5.9	5.9	5.9
Specific Conductance (00905) (micromhos)	1150	1140	1150	1140
Total Organic Carbon ( ) mg/l	9	9	8	9
Total Organic Halogen ( ) ug/l	6355	6007	5777	6212
Additional (if required) Chromium	0.013			

Name, Address and Supervisor of Laboratory Performing Chemical Analysis:

Mr. John J. Tobin - Laboratory Director
BCM Eastern Inc. - Laboratory Division
521 W. Germantown Pike
Norristown, PA 19401

(Over)

ORIGINAL (RED)

Monitoring Well Number #3

II. TESTS FOR SIGNIFICANCE -- CALCULATIONS
(attach all necessary data)

A. Arithmetic results for this quarter (background values based on first year's sample results in the upgradient wells; or as otherwise approved by the Department)

	($\bar{X}_b$) Background Mean	(S_b^2) Background Variance	($\bar{X}_m$) Monitoring Mean	(S_m^2) Monitorir Variance
pH (00403)	6.349	0.005	5.9	0.000
Specific Conductance (00905) (micromhos)	452.25	9328.33	1145.00	33.33
Total Organic Carbon ( ) mg/l	13.025	3.539	8.750	0.250
Total Organic Halogen ( ) ug/l	13131.56	N/A	6087.75	63315.5
(Additional)				

N/A = Not Available

B. Student's T-Test (at the specified level of significance using Cochran's Approximation to the Behrens-Fisher single-tailed solution of the comparison of two independent samples with unequal population variances; or an equivalent approved method).

Level of Significance Used -- .01 .05 (circle one)
(see Appendix III, Chapter 75, Subchapter D)

	(t^*) weighted t-statistic	(t_c) comparison t-statistic	SIGNIFICANT CHANGE? (circle one)	
pH (00403) (use two-tailed test)	-25.892	2.947	(Y)	N
Specific Conductance (00905) (micromhos)	28.487	2.629	(Y)	N
Total Organic Carbon ( ) mg/l	-8.028	3.039	Y	(N)
Total Organic Halogen ( ) ug/l	-3.340	2.609	Y	(N)
(Additional)			Y	N

Name, Address, and Title of Individual Performing the Tests for Significance:

Mr. John W. Fowler, Senior Hydrogeologist

BCM Eastern Inc.

One Plymouth Meeting

Plymouth Meeting, PA 19462

ER-SWM-92: Rev. 7/83

ORIGINAL (RED)

7/26/86
DATE PREPARED

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF SOLID WASTE MANAGEMENT

HAZARDOUS WASTE MONITORING
QUARTERLY REPORT
(To be submitted in triplicate for all monitoring wells)

PAD 096837
I. D. NUMBER

Facility Name Boeing Vertol Facility Permit Number

Location: County Delaware Municipality Ridley Township

Monitoring Well Number #4 Check one: up ____ down X gradient

Depth to Water Level 9.82 feet. Measured from: land surface ____ top of casing X

Sampling Depth 9.82 feet. Elevation of land surface 4.15 feet or top of casing 14.42 feet

Type of Sampling (check one) pump ____ bailer X. Was the well purged? Yes X No ____

Monitoring Well Location: Latitude 39 ° 52 ' 0 "N Longitude 75 ° 19 ' 21 "W

Date Sample Collected 5/20/86 Time of Sampling 10:25

Sample Collectors Name Russell Mehalick

Quarter 1 (Jan--March) (2) (April--June) 3 (July--Aug) 4, (Sept--Dec) 19 86.
(circle one)

I. PARAMETERS USED AS INDICATORS OF GROUND WATER CONTAMINATION -- RESULTS

	Replicates (must be done for all wells)			
pH (00403)	6.5	6.5	6.5	6.6
Specific Conductance (00905) (micromhos)	927	908	925	911
Total Organic Carbon ( ) mg/l	8	9	9	9
Total Organic Halogen ( ) ug/l	22420	23060	22080	21740
Additional (if required) Chromium	0.003			

Name, Address and Supervisor of Laboratory Performing Chemical Analysis:

Mr. John J. Tobin - Laboratory Director
BCM Eastern, Inc. - Laboratory Division
521 W. Germantown Pike
Norristown, PA 19401

(Over)

ORIGINAL (RED)

Monitoring Well Number #4

II. TESTS FOR SIGNIFICANCE – CALCULATIONS
(attach all necessary data)

A. Arithmetic results for this quarter (background values based on first year's sample results in the upgradient wells; or as otherwise approved by the Department)

	($\bar{X}_b$) Background Mean	(S_b^2) Background Variance	($\bar{X}_m$) Monitoring Mean	(S_m^2) Monitor Varian
pH (00403)	6.349	0.005	6.525	0.003
Specific Conductance (00905) (micromhos)	452.25	9328.33	917.75	92.917
Total Organic Carbon ( ) mg/l	13.025	3.539	8.750	0.25
Total Organic Halogen ( ) ug/l	13131.563	N/A	22325.00	317166
(Additional)				

N/A = Not Available

B. Student's T-Test (at the specified level of significance using Cochran's Approximation to the Behrens-Fisher single-tailed solution of the comparison of two independent samples with unequal population variances; or an equivalent approved method).

Level of Significance Used -- .01 .05 (circle one)
(see Appendix III, Chapter 75, Subchapter D)

	(t*) weighted t-statistic	(t_c) comparison t-statistic	SIGNIFICANT CHANGE? (circle one)	
pH (00403) (use two-tailed test)	5.771	4.90	Y	N
Specific Conductance (00905) (micromhos)	18.906	2.676	Y	N
Total Organic Carbon ( ) mg/l	-8.026	3.029	Y	N
Total Organic Halogen ( ) ug/l	4.328	2.636	Y	N
(Additional)			Y	N

Name, Address, and Title of Individual Performing the Tests for Significance:

Mr. John W. Fowler, Senior Hydrogeologist

BCM Eastern Inc.

One Plymouth Meeting

Plymouth Meeting, PA 19462

ORIGINAL (RED)

HAZARDOUS WASTE MONITORING

REPORT FOR QUARTER 03/80

CLIENT: U/ BOEING VERTOL COMPANY

EDDYSTONE, DELAWARE CO., PA

WELL : 1 UPGRADIENT

ANALYTICAL RESULTS	AVERAGE	VARIANCE	BACKGROUND AVERAGE	BACKGROUND VARIANCE	DEGREES OF FREEDOM	T *	T-C	T TEST RESULTS
PH								
6.000								
6.000								
6.000								
6.000	6.000	.000	6.549	.005	18	14.440	2.947	SH
SPECIFIC CONDUCTANCE UMHOS/CM								
451.000								
450.000								
443.000								
452.000	449.000	16.667	452.250	9328.333	18	-.134	2.616	N
TOTAL ORGANIC CARBON MG/L								
13.000								
14.000								
12.000								
12.000	12.750	.917	13.025	3.569	18	-.410	3.589	N
TOTAL ORGANIC HALOGEN UG/L								
11191.000								
11071.000								
11025.000								
11133.000	11105.000	5245.333	5131.565	############	18	-.962	2.603	N

COCHRAN'S APPROXIMATION T-TEST FOR WELL - 1

0.01 LEVEL OF SIGNIFICANCE

SH SIGNIFICANTLY HIGHER
SL SIGNIFICANTLY LOWER
N NO SIGNIFICANT DIFFERENCE

ORIGINAL (RED)

HAZARDOUS WASTE MONITORING

REPORT FOR QUARTER 03/86

CLIENT: 07 BOEING VERTOL COMPANY

LOBYSTONE, DELAWARE CO., PA

WELL: 2 DOWNGRADIENT

ANALYTICAL RESULTS	AVERAGE	VARIANCE	BACKGROUND AVERAGE	BACKGROUND VARIANCE	DEGREES OF FREEDOM	T A	T-C	T TEST RESULTS
PH								
6.100								
6.100								
6.200								
6.100	6.125	.003	6.349	.005	18	-7.373	4.900	SL
SPECIFIC CONDUCTANCE UMHOS/CM								
319.000								
324.000								
320.000								
324.000	321.750	6.917	452.250	9328.333	18	-5.397	2.608	N
TOTAL ORGANIC CARBON MG/L								
3.000								
4.000								
1.000								
1.000	2.250	2.250	13.025	3.539	18	-12.171	3.994	N
TOTAL ORGANIC HALOGEN UG/L								
209.000								
204.000								
192.000								
203.000	202.000	51.33313131.563	###########		18	-6.142	2.602	N

COCHRAN'S APPROXIMATION T-TEST USING HISTORY FOR UPGRADIENT WELL - 1

0.01 LEVEL OF SIGNIFICANCE

SH SIGNIFICANTLY HIGHER
SL SIGNIFICANTLY LOWER
N NO SIGNIFICANT DIFFERENCE

ORIGINAL (RED)

HAZARDOUS WASTE MONITORING

REPORT FOR QUARTER 03/86

CLIENT: 07 BOEING VERTOL COMPANY

EDDYSTONE, DELAWARE CO., PA

WELL: 3 DOWNGRADIENT

ANALYTICAL RESULTS	AVERAGE	VARIANCE	BACKGROUND AVERAGE	BACKGROUND VARIANCE	DEGREES OF FREEDOM	T *	T-C	T TEST RESULTS
PH								
5.900								
5.900								
5.900								
5.900	5.900	.000	6.349	.005	18	-25.892	2.947	SL
SPECIFIC CONDUCTANCE UMHOS/CM								
1150.000								
1140.000								
1150.000								
1140.000	1145.000	33.333	452.250	9328.333	18	28.487	2.629	SH
TOTAL ORGANIC CARBON MG/L								
9.000								
9.000								
8.000								
9.000	8.750	.250	13.025	3.559	18	-8.026	3.029	N
TOTAL ORGANIC HALOGEN UG/L								
6355.000								
6007.000								
5777.000								
6212.000	6087.750	63315.583	131.563	###########	18	-3.340	2.609	N

COCHRAN'S APPROXIMATION T-TEST USING HISTORY FOR UPGRADIENT WELL = 1

0.01 LEVEL OF SIGNIFICANCE

SH SIGNIFICANTLY HIGHER
SL SIGNIFICANTLY LOWER
N NO SIGNIFICANT DIFFERENCE

ORIGINAL (RED)

HAZARDOUS WASTE MONITORING

REPORT FOR QUARTER 03/86

CLIENT: 07 BOEING VERTOL COMPANY

EDDYSTONE, DELAWARE CO., PA

WELL: 4 UPGRADIENT

ANALYTICAL RESULTS	AVERAGE	VARIANCE	BACKGROUND AVERAGE	BACKGROUND VARIANCE	DEGREES OF FREEDOM	T *	T-C	T TEST RESULTS
PH								
6.500								
6.500								
6.500								
6.600	6.525	.003	6.349	.005	18	5.771	4.900	SH
SPECIFIC CONDUCTANCE UMHOS/CM								
927.000								
908.000								
925.000								
911.000	917.750	92.917	452.250	9328.353	18	18.906	2.676	SH
TOTAL ORGANIC CARBON MG/L								
8.000								
9.000								
9.000								
9.000	8.750	.250	13.025	3.559	18	-8.026	3.029	N
TOTAL ORGANIC HALOGEN UG/L								
22420.000								
23060.000								
22060.000								
21740.000	22325.000	317166.667	13131.563	##########	18	4.328	2.636	SH

COCHRAN'S APPROXIMATION T-TEST USING HISTORY FOR UPGRADIENT WELL - 1

0.01 LEVEL OF SIGNIFICANCE

SH SIGNIFICANTLY HIGHER
SL SIGNIFICANTLY LOWER
N NO SIGNIFICANT DIFFERENCE

DER-RECEIVED
HARRISBURG
OCT 30 1986

R-BL-131
/83

1

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF LABORATORIES
SPECIAL ANALYSES REPORT

Lab Number 0Ble-573

Date Received 10/9/86 (RED)

ESTABLISHMENT	CASE	FACILITY	COLL NUMBER
Boeing-Vertol	RCRA	MW-3	2121

COUNTY	MUNICIPALITY	PROGRAM	COLL NAME/PHONE NUMBER	TYPE TR	STD ANALYSIS
Phila		SWM	T. Bunyin/270-1946		

CARD (3)	ID CODE (ALL CARDS) 4-16	LATITUDE 4-10	LONGITUDE 11-18	DATE 19-24	TIME 25-28	KIND 29
1 / 2	Cnty Mun T Est Case Fac.		0	M D Y: 10 09 86	Hr Min: 12 47	

USGS Q 30 34	BUREAU 35-37 AMIS	SAMPLE NUMBER 38-43	STREAM NAME 44-57	RELATIVE POINT 58
	3 0 0	2 1 2 1 1 1 2		

FULL DESCRIPTION WHERE SAMPLE TAKEN:

ADDITIONAL LAB ANALYSES: Basc/Neut

CUSTODY LOG

How Shipped: Purolator Date

Legal Seal No. 293630

Received by:

Seal Condition: Good Dilts 10/9/86

QUALITATIVE REPORT

DO NOT WRITE BELOW THIS LINE

GC/MS No Detection

Note No recovery of Fluorophenol surrogate

QUANTITATIVE RESULTS

ANALYSIS:	UNITS:	ANALYSIS CODE	RESULTS (SHOW DECIMAL POINTS ON LINES)

ANALYST SIGNATURE

DATE 10/22/86

L.L. shake out 10/15/86 WTR

RECEIVED
FR-BOYERSTOWN
7/83
OCT 30 1986

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF LABORATORIES
SPECIAL ANALYSES REPORT

Lab Number 1886-574

Date Received 10/15/86 (RED)

ESTABLISHMENT	CASE	FACILITY	COLL NUMBER
Boeing-Vertol	~~[illegible]~~ RCRA	MW-5	2121

COUNTY	MUNICIPALITY	PROGRAM	COLL NAME/PHONE NUMBER	TYPE TR	STD ANALYSIS
Phila.		SWM	T. Buntin/215-270-1946		

CARD (3)	ID CODE (ALL CARDS) 4-16	LATITUDE 4-10	LONGITUDE 11-18	DATE 19-24	TIME 25-28	KIND 29
1 / 2	Cnty Mun T Est Case Fac.		0	M D Y: 10 05 86	Hr Min: 12 51	

USGS Q 30 34	BUREAU 35-37 AMIS	SAMPLE NUMBER 38-43	STREAM NAME 44-57	RELATIVE POINT 58
	300	212118		

FULL DESCRIPTION WHERE SAMPLE TAKEN:

ADDITIONAL LAB ANALYSES: Base/Neutra

CUSTODY LOG

How Shipped: Purolator Date

Legal Seal No. 293634

Received by: [signature]

Seal Condition: Intact

QUALITATIVE REPORT

DO NOT WRITE BELOW THIS LINE

GC/MS No Detection

QUANTITATIVE RESULTS

ANALYSIS:	UNITS:	ANALYSIS CODE	RESULTS (SHOW DECIMAL POINTS ON LINES)

ANALYST [signature] SIGNATURE DATE 10/22/86

1L. intake out 10/15/86 WTR

ER-LAB-13.1
7/83

DER-RECEIVED
NORRISTOWN
OCT 22 1986

1

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF LABORATORIES
SPECIAL ANALYSES REPORT

Lab Number CBLa-5739

Date Received 10/16/86 ORIGINAL (RED)

ESTABLISHMENT	CASE	FACILITY	COLL NUMBER
Boeing-Vertol	RCRA	MW-4	2121

COUNTY	MUNICIPALITY	PROGRAM	COLL NAME/PHONE NUMBER	TYPE TR	STD ANALYSIS
Phila.		SWM	T. Buntin/270-1944		

CARD (3)	ID CODE (ALL CARDS) 4-16	LATITUDE 4-10	LONGITUDE 11-18	DATE 19-24	TIME 25-28	KIND 29
1 / 2	Cnty Mun T Est Case Fac.		0	M D Y: 10 03 86	Hr Min: 11 15	

USGS Q 30 34	BUREAU 35-37 AMIS	SAMPLE NUMBER 38-43	STREAM NAME 44-57	RELATIVE POINT 58
	306	211115		

FULL DESCRIPTION WHERE SAMPLE TAKEN:

ADDITIONAL LAB ANALYSES: Base/Neutr.

CUSTODY LOG

How Shipped Purolator Date

Legal Seal No. 293736

Received by:

Legal Seal Condition: intact

QUALITATIVE REPORT

DO NOT WRITE BELOW THIS LINE

GC/MS detected Nonyl Phenols; ~~Ex~~ 2-Ethyl hexanoic Acid;

QUANTITATIVE RESULTS

ANALYSIS:	UNITS:	ANALYSIS CODE	RESULTS (SHOW DECIMAL POINTS ON LINES)

ANALYST Dan Clare SIGNATURE DATE 10/22/86

R. CLE 10/14/86 WTR

ER-BL-13.1
7/83

1

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NORRISTOWN
OCT 30 1986

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF LABORATORIES
SPECIAL ANALYSES REPORT

Lab Number ORCh-573

Date Received 10/6/86

ORIGINAL (RED)

ESTABLISHMENT	CASE	FACILITY	COLL NUMBER
Boeing - Vertol	RCRA	MW - 2	2121

COUNTY	MUNICIPALITY	PROGRAM	COLL NAME/PHONE NUMBER	TYPE TR	STD ANALYSIS
Phila.		SWA	T. Buntin/270-1946		

CARD (3)	ID CODE (ALL CARDS) 4-16	LATITUDE 4-10	LONGITUDE 11-18	DATE 19-24	TIME 25-28	KIND 29
1 / 2	Cnty Mun T Est Case Fac.		0	M D Y: 10 03 86	Hr Min: 12 07	

USGS Q 30 34	BUREAU 35-37 AMIS	SAMPLE NUMBER 38-43	STREAM NAME 44-57	RELATIVE POINT 58
	300	212109		

FULL DESCRIPTION WHERE SAMPLE TAKEN:

ADDITIONAL LAB ANALYSES

Base/neutra

CUSTODY LOG

How Shipped Purolator Date

Legal Seal No. 293560

Received by [signature]

Legal Seal Condition: intact

QUALITATIVE REPORT

DO NOT WRITE BELOW THIS LINE

GC/MS No Detection

QUANTITATIVE RESULTS

ANALYSIS:	UNITS:	ANALYSIS CODE	RESULTS (SHOW DECIMAL POINTS ON LINES)

ANALYST [signature] SIGNATURE

DATE 10/22/86

Rl. CLE 10/14/86 WTR

ER-BL-13.1
7/83

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OCT 30 1986

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF LABORATORIES
SPECIAL ANALYSES REPORT

Lab Number ORR-573
Date Received 10/9/86
ORIGINAL (RED)

ESTABLISHMENT	CASE	FACILITY	COLL NUMBER
Boeing-Vertol	RCRA	MW-1	2121

COUNTY	MUNICIPALITY	PROGRAM	COLL NAME/PHONE NUMBER	TYPE TR	STD ANALYSIS
Phila.		SWM	Tom Buntin/270-1946		

CARD (3)	ID CODE (ALL CARDS) 4-16	LATITUDE 4-10	LONGITUDE 11-18	DATE 19-24	TIME 25-28	KIND 29
1 / 2	Cnty Mun T Est Case Fac.		0	M D Y 1 6 0 5 8 6	Hr Min 0 1 4 3	

USGS Q 30 34	BUREAU 35-37 AMIS	SAMPLE NUMBER 38-43	STREAM NAME 44-57	RELATIVE POINT 58
	3 0 0	2 1 2 1 0 6		

FULL DESCRIPTION WHERE SAMPLE TAKEN:

ADDITIONAL LAB ANALYSES: Base/neutral

CUSTODY LOG

How Shipped Purolator Date
Legal Seal No. 293555
Received by: [signature]
Legal Seal Condition: intact

QUALITATIVE REPORT

DO NOT WRITE BELOW THIS LINE

GC/MS also detected large number Methoxylated Ethers, these are higher boiling homologes to Butyl Carbitol ®.

QUANTITATIVE RESULTS

ANALYSIS:	UNITS:	ANALYSIS CODE	RESULTS (SHOW DECIMAL POINTS ON LINES)
Naphthalene			1.0
~~Do.~~ Cumene isomers			3.0
Xylene isomers			3.0

ANALYST [signature] SIGNATURE DATE 10/22/86

I.L. CLE 10/14/86 WTR

ER-BL 13.1
7/83

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OCT 21 1986

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF LABORATORIES
SPECIAL ANALYSES REPORT

Lab Number CW-573

Date Received 10/9/86

ORIGINAL (RED)

ESTABLISHMENT	CASE	FACILITY	COLL NUMBER
Boeing-Vertol	RCRA	MW-1	212

COUNTY	MUNICIPALITY	PROGRAM	COLL NAME/PHONE NUMBER	TYPE TR	STD ANALYSIS
Phila.		SWM	Tom Burtin/270-1946		

CARD (3)	ID CODE (ALL CARDS) 4-16						LATITUDE 4-10	LONGITUDE 11-18	DATE 19-24			TIME 25-28		KIND
1 / 2	Cnty	Mun	T	Esi	Case	Fac.		0	M 10	D 05	Y 86	Hr 01	Min 41	

USGS Q 30 34	BUREAU 35-37 AMIS	SAMPLE NUMBER 38-43	STREAM NAME 44-57	RELATIVE POINT
	300	211105		

FULL DESCRIPTION WHERE SAMPLE TAKEN: ~ [illegible] VOA [illegible] DMB

ADDITIONAL LAB ANALYS

VOA

CUSTODY LOG

How Shipped Purolator Date

Legal Seal No 293554

Received by:

Legal Seal Condition: good DMB 10/9/86

QUALITATIVE REPORT

DO NOT WRITE BELOW THIS LINE

GCMS detection limit ~ 500, ug/l

QUANTITATIVE RESULTS

ANALYSIS:	UNITS:	ANALYSIS CODE	RESULTS (SHOW DECIMAL POINTS ON LINE)
1,2 Dichloroethylene	ug/l		21000.
Trichloroethylene	ug/l		79000.

ANALYST Susan C Kan
SIGNATURE

DATE 10/14/86

ER-BL-13.1
7/83

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OCT 21 1986

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF LABORATORIES
SPECIAL ANALYSES REPORT

Lab Number 026-573

Date Received 10/9/86

ORIGINAL (RED)

ESTABLISHMENT	CASE	FACILITY	COLL NUMBER
Boeing - Vertol	RCRA	MW-2	2121

COUNTY	MUNICIPALITY	PROGRAM	COLL NAME/PHONE NUMBER	TYPE TR	STD ANALYSIS
Phila.		SWM	Tom Buntin/270-1946		

CARD (3)	ID CODE (ALL CARDS) 4-16	LATITUDE 4-10	LONGITUDE 11-18	DATE 19-24	TIME 25-28	KIND 29
1 / 2	Cnty Mun T Est Case Fac.		0	M D Y: 10 08 86	Hr Min: 11 59	

USGS Q 30 34	BUREAU 35-37 AMIS	SAMPLE NUMBER 38-43	STREAM NAME 44-57	RELATIVE POINT 58
	3 0 0	2 1 2 1 1 0 8		

FULL DESCRIPTION WHERE SAMPLE TAKEN:

ADDITIONAL LAB ANALYSES

VOA

CUSTODY LOG

How Shipped Purolator Date

Legal Seal No. 293559

Received by:

Legal Seal Condition: good JMB 10/9/86

QUALITATIVE REPORT

DO NOT WRITE BELOW THIS LINE

GC/MS detection limit ~ 0.5 ug/l

QUANTITATIVE RESULTS

ANALYSIS:	UNITS:	ANALYSIS CODE	RESULTS (SHOW DECIMAL POINTS ON LINES)
Vinyl chloride	ug/l		est ~ 7.0
1,1 Dichloroethylene	ug/l		1.0
1,2 Dichloroethylene	ug/l		250
Trichloroethylene	ug/l		290

ANALYST Susan C Kan
SIGNATURE

DATE 10/14/86

SR-BL-13.1
7/82

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NORRISTOWN
OCT 21 1986

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF LABORATORIES
SPECIAL ANALYSES REPORT

ORIGINAL (RED)

Lab Number 86a-5736
Date Received 10/9/86

ESTABLISHMENT	CASE	FACILITY	COLL NUMBER
Boeing-Vertol	RCRA	MW-3	2121

COUNTY	MUNICIPALITY	PROGRAM	COLL NAME/PHONE NUMBER	TYPE TR	STD ANALYSIS
Phila.		SWM	Tom Runtin/270-1946		

CARD (3)	ID CODE (ALL CARDS) 4-16	LATITUDE 4-10	LONGITUDE 11-18	DATE 19-24	TIME 25-28	KIND 29
1 / 2	Cnty Mun T Est Case Fac.		0	M D Y: 10 09 86	Hr Min: 12 45	

USGS Q 30 34	BUREAU 35-37 AMIS	SAMPLE NUMBER 38-43	STREAM NAME 44-57	RELATIVE POINT 58
	300	212111		

FULL DESCRIPTION WHERE SAMPLE TAKEN:

ADDITIONAL LAB ANALYSES: VOA's.

CUSTODY LOG

How Shipped Purolator Date

Legal Seal No. 293629

Received by:

Legal Seal Condition: Good DHS 10/9/86

QUALITATIVE REPORT

DO NOT WRITE BELOW THIS LINE

Orig. DHS detection limit ~ 12.5 ug/l.

QUANTITATIVE RESULTS

ANALYSIS:	UNITS:	ANALYSIS CODE	RESULTS (SHOW DECIMAL POINTS ON LINES)
1,2 Dichloroethylene	ug/l.		950.
Trichloroethylene	ug/l.		15000.

ANALYST Susan C Kau
SIGNATURE

DATE 10/14/86

ER-LAB-(2)
7/83

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NORRISTOWN
OCT 21 1986

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF LABORATORIES
SPECIAL ANALYSES REPORT

ORIGINAL (RED)

Lab Number 086-57
Date Received 10/9/86

ESTABLISHMENT	CASE	FACILITY	COLL NUMBER
Boeing-Vertol	RCRA	MW-4	2121

COUNTY	MUNICIPALITY	PROGRAM	COLL NAME/PHONE NUMBER	TYPE TR	STD ANALYSIS
Phila.		SWM	T Burtin/270-1946		

CARD (3)	ID CODE (ALL CARDS) 4-16	LATITUDE 4-10	LONGITUDE 11-18	DATE 19-24	TIME 25-28	KIND 29
1 / 2	Cnty Mun T Est Case Fac.		0	M D Y 10 09 86	Hr Min 11 13	

USGS Q 30-34	BUREAU 35-37 AMIS	SAMPLE NUMBER 38-43	STREAM NAME 44-57	RELATIVE POINT 58
	310	212114		

FULL DESCRIPTION WHERE SAMPLE TAKEN:

ADDITIONAL LAB ANALYSES:
VOA's.

CUSTODY LOG

How Shipped Purolator Date
Legal Seal No. 293735
Received by:
Legal Seal Condition: good DAG 10/9/86

QUALITATIVE REPORT

DO NOT WRITE BELOW THIS LINE

GC/MS detection limit ~ 500. ug/l.

QUANTITATIVE RESULTS

ANALYSIS:	UNITS:	ANALYSIS CODE	RESULTS (SHOW DECIMAL POINTS ON LINES)
1,2 Dichloroethylene	ug/l		37000.
Trichloroethylene	ug/l		86000.

ANALYST Susan C Kan
SIGNATURE

DATE 10/14/86

ER-BL 13.1
3/93

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OCT 21 1986

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF LABORATORIES
SPECIAL ANALYSES REPORT

ORIGINAL (RED)

Lab Number OBL-574
Date Received 10/9/86

ESTABLISHMENT	CASE	FACILITY	COLL NUMBER
Boeing-Vertol	RCRA	MW-5	212

COUNTY	MUNICIPALITY	PROGRAM	COLL NAME/PHONE NUMBER	TYPE TR	STD ANALYSIS
Phila.		SWM	Tom Buntin/270-1946		

CARD (3)	ID CODE (ALL CARDS) 4-16	LATITUDE 4-10	LONGITUDE 11-18	DATE 19-24	TIME 25-28	KIND 2
1 / 2	Cnty Mun T Est Case Fac.		0	M D Y 10 05 86	Hr Min 12 01	

USGS Q 30 34	BUREAU 35-37 AMIS	SAMPLE NUMBER 38-43	STREAM NAME 44-57	RELATIVE POINT 5
	300	211117		

FULL DESCRIPTION WHERE SAMPLE TAKEN:

ADDITIONAL LAB ANALYSE

VOA

CUSTODY LOG

How Shipped purolator Date

Legal Seal No. 293564

Received by:

Legal Seal Condition: good DFB 10/9/86

QUALITATIVE REPORT

DO NOT WRITE BELOW THIS LINE

GCMS VOA - No detection.

GC/MS detection limit ~ 0.5 ug/l

QUANTITATIVE RESULTS

ANALYSIS:	UNITS:	ANALYSIS CODE	RESULTS (SHOW DECIMAL POINTS ON LINES)

ANALYST Susan C Ha
SIGNATURE

DATE 10/14/86