

AR 226 - 1233

FOURTH QUARTER 2002 C-8
SURFACE WATER AND GROUNDWATER
MONITORING REPORT
FOR WASHINGTON WORKS FACILITY AND
LOCAL, LETART AND DRY RUN LANDFILLS
WASHINGTON, WV

Date: December 2002

Project No.: D6WW7423.01
18983635.40000
18983627.00001
18983630.00001
18983636.00001

2003 MAR 31 AM 10:19



CORPORATE REMEDIATION GROUP
*An Alliance between
DuPont and URS Diamond*

Barley Mill Plaza, Building 27
Wilmington, Delaware 19805

CONTAIN NO CRI

000003

WVDEP 17200

TABLE OF CONTENTS

1.0	Introduction.....	1
2.0	C-8 Analytical Reporting.....	3
3.0	Washington Works Facility	5
4.0	Local Landfill.....	7
5.0	Letart Landfill	8
6.0	Dry Run Landfill.....	10
7.0	References.....	11

TABLES

Table 1.0	Monitoring Well Construction and Groundwater Elevation Data – Washington Works Facility
Table 1.1A	C-8 in Surface Water – Washington Works Facility
Table 1.1B	C-8 in Groundwater – Washington Works Facility
Table 2.0	Monitoring Well Construction and Groundwater Elevation Data – Local Landfill
Table 2.1A	C-8 in Surface Water – Local Landfill
Table 2.1B	C-8 in Groundwater – Local Landfill
Table 3.0	Monitoring Well Construction and Groundwater Elevation Data – Letart Landfill
Table 3.1A	C-8 in Surface Water – Letart Landfill
Table 3.1B	C-8 in Groundwater – Letart Landfill
Table 4.0	Monitoring Well Construction and Groundwater Elevation Data – Dry Run Landfill
Table 4.1A	C-8 in Surface Water – Dry Run Landfill
Table 4.1B	C-8 in Groundwater – Dry Run Landfill

FIGURES

Figure 1.0	Site Location Map – Washington Works Facility
Figure 1.1	Monitoring Well and Surface Water Sample Location Map – Washington Works Facility

Figure 1.2	C-8 Concentration Map 4Q02 – Washington Works Facility Surface Water and Groundwater
Figure 2.0	Site Location Map – Local Landfill
Figure 2.1	Monitoring Well and Surface Water Sample Location Map – Local Landfill
Figure 2.2A	Groundwater Elevation Map 2Q02 – Local Landfill
Figure 2.2B	Groundwater Elevation Map 3Q02 – Local Landfill
Figure 2.2C	Groundwater Elevation Map 4Q02 – Local Landfill
Figure 2.3	C-8 Concentration Map 4Q02 – Local Landfill Outfalls and Monitoring Wells
Figure 3.0	Site Location Map – Letart Landfill
Figure 3.1A	Monitoring Well and Surface Water Sample Location Map – Letart Landfill
Figure 3.1B	Rt. 33 Stream and Brinker’s Run Surface Water Sampling Locations – Letart Landfill
Figure 3.2A	F-Zone Groundwater Elevation Map 2Q02 – Letart Landfill
Figure 3.2B	F-Zone Groundwater Elevation Map 3Q02 – Letart Landfill
Figure 3.2C	F-Zone Groundwater Elevation Map 4Q02 – Letart Landfill
Figure 3.3A	C-8 Concentration Map 4Q02 – Letart Landfill Outfalls and Monitoring Wells
Figure 3.3B	C-8 Concentration Map 4Q02 – Letart Landfill Zone F
Figure 4.0	Site Location Map – Dry Run
Figure 4.1	Monitoring Well and Surface Water Sample Location Map – Dry Run Landfill
Figure 4.2A	Groundwater Elevation Map 2Q02 – Dry Run Landfill
Figure 4.2B	Groundwater Elevation Map 3Q02 – Dry Run Landfill
Figure 4.2C	Groundwater Elevation Map 4Q02 – Dry Run Landfill
Figure 4.3	C-8 Concentration Map 4Q02 – Dry Run Surface Water
Figure 4.4	C-8 Concentration in Groundwater 4Q02 – Dry Run Bedrock Monitoring Wells

APPENDICES

Appendix A	Laboratory Analytical Data Reports – Washington Works Facility
Appendix B	Chain-of-Custody Records – Washington Works Facility
Appendix C	Laboratory Analytical Data Reports – Local Landfill
Appendix D	Chain-of-Custody Records – Local Landfill

Appendix E	Laboratory Analytical Data Reports – Letart Landfill
Appendix F	Chain-of-Custody Records – Letart Landfill
Appendix G	Laboratory Analytical Data Reports – Dry Run Landfill
Appendix H	Chain-of-Custody Records – Dry Run Landfill

1.0 INTRODUCTION

A multi-media consent order (Order No. GWR-2001-019) was entered into between the West Virginia Department of Environmental Protection (WVDEP), the West Virginia Department of Health and Human Resources – Bureau for Public Health (WVDHHR-BPH) and DuPont on November 15, 2001 (Consent Order). The Consent Order identified a series of requirements and tasks to be performed by the parties to determine whether there has been an impact on human health and the environment as a result of releases of ammonium perfluorooctanoate (C-8), CAS Number 3825-26-1, to the environment from DuPont operations at the Washington Works facility and the associated landfills (Local, Letart and Dry Run).

The Consent Order established the C-8 Groundwater Investigation Steering Team (GIST) to oversee investigations and activities that will be conducted to assess the presence and extent of C-8 in drinking water, groundwater, and surface water at and around the Washington Works facility and the Local, Letart and Dry Run Landfills.

An additional component of the Consent Order relates to the West Virginia National Pollutant Discharge Elimination System (WV NPDES) permit sampling requirements. In this portion of the Consent Order, specific outfalls and outlets (outfalls) are to be sampled monthly for C-8 by DuPont.

Pursuant to Attachment A of the Consent Order, three tasks will be performed by DuPont and evaluated by the GIST, Tasks A, B, and C. Task A: Groundwater Use and Well Survey/Groundwater Monitoring has been completed (DuPont, 2002a; 2002b). Task B: Assessment of Existing Groundwater and Surface Water Monitoring Data includes the compilation of historical C-8 data, monitoring all wells at the landfills and the development of a Groundwater Monitoring Plan (GMP) for the Washington Works facility. The first part of the task, the historical C-8 data compilation report has been submitted to the GIST for evaluation (DuPont, 2002c). The second part of this task, monitoring C-8 in groundwater at the landfills, began in December 2001 and was performed monthly for four months and quarterly thereafter. The third part of the task, the proposed GMP for the Washington Works facility, was submitted to the GIST (DuPont, 2002d) and groundwater sampling at the Washington Works facility began in January 2002. Groundwater sampling at the Washington Works facility was conducted monthly for four months and continues quarterly. Task C: Plume Identification/Groundwater Assessment is ongoing.

This report presents the results of the monthly (October 2002) C-8 surface water and the 4th Quarter 2002 (4Q02) C-8 groundwater sampling. The results for additional surface water sampling, that was performed in October 2002, are also included. This additional sampling is not required by the Consent Order or the WV NPDES permit. The 4Q02 C-8 groundwater-sampling event included sampling new wells installed as part of Task C: Plume Identification/Groundwater Assessment. Three new monitoring wells were installed at the Washington Works facility, five at the Local Landfill, five at the Letart Landfill, and seven at the Dry Run Landfill. These 20 new monitoring wells will be included in future quarterly C-8 sampling events as additional monitoring well sampling

points. Further, an additional surface water location at the Letart Landfill was sampled. This new location, called Brinker's Run, will also be included in future quarterly C-8 sampling events.

2.0 C-8 ANALYTICAL REPORTING

The analytical method, method detection limit, and laboratory utilized for C-8 analysis has changed over time. Prior to 1991, DuPont performed C-8 analysis at the DuPont Experimental Station in Wilmington, Delaware. In 1991, when the RCRA Verification Investigation was conducted, the analysis was contracted to the CH₂MHill Laboratory in Montgomery, Alabama. Both labs used a Gas Chromatography/Electron Capture Detector (GC-ECD) based analytical method with detection limits for C-8 that ranged from 0.1 to 1.0 ug/l.

CH₂MHill conducted C-8 analysis for DuPont into the fall of 1998 when the laboratory ceased operation. At that time, DuPont had completed one round of analysis for the RCRA Facility Investigation (RFI). The analytical work was transferred to Lancaster Laboratories, Lancaster, PA, for the RFI second round analysis in March 1999. Lancaster Laboratories continued to conduct C-8 analysis using GC-ECD for DuPont until October 2001, when development and testing was completed on a new analytical method developed by Exygen Research, Inc. (Exygen; located in State College, PA) that utilizes Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). DuPont adopted the regular use of LC/MS/MS for C-8 analysis in water in November 2001 and Exygen was contracted to perform the analyses for DuPont.

Exygen reports C-8 results for the laboratory replicate of each field sample. These results are evaluated for precision by comparing the field sample result to the corresponding laboratory replicate result.

- ☐ If both results are less than the practical quantitation limit (PQL), the replicate sample for that analyte is considered to have passed the precision criteria.
- ☐ If one or both results are between one and five times the PQL, the replicate is considered to have met the precision criteria if the two results differ by less than the PQL.
- ☐ If one result is less than the PQL and the other is not, and if the two results differed by a value less than the PQL, the replicate is said to have met the acceptance criteria.
- ☐ If both results are at least five times the PQL, the replicate is considered to have met the criteria if the relative percent difference (RPD) between the two results is less than or equal to 20%. The RPD is the absolute value of the difference of two measurements divided by their average.

When the precision criteria outlined above are met, Exygen reports the average of the field sample and lab replicate results reported by the laboratory. If criteria for precision are exceeded, Exygen reports the higher of the sample and lab replicate results. Finally, when one result (from the sample/lab replicate pair) is above the PQL and one below, the result that is above the PQLs is reported. C-8 results are recorded in the Corporate Environmental Database (CED) and are reported as FC-143 for consistency with historical results.

An aliquot of each field sample is also analyzed as a matrix spike (MS). Results of the MS analysis are used to assess accuracy. The MS recovery value must fall between 70 to 130%, unless the sample concentration is at least four times the amount spiked. The maximum amount used to spike field samples is 500 ug/L.

All data packages generated by Exygen are reviewed in-house for compliance with the laboratory Standard Operating Procedures (SOP) and data usability, using the checklist provided in the QAPP. Results of the in-house review indicate that data reported by Exygen have been generated in compliance with the laboratory SOP, with few exceptions as noted in the individual review summaries. All data reported by Exygen have been judged usable for the purposes of the project.

3.0 WASHINGTON WORKS FACILITY

Figure 1.0 shows the location of the Washington Works facility. On October 18, 2002, six outfalls were sampled for C-8 (001, 002, 003, 005, 007, and 105). All of these outfalls collect process water and stormwater runoff. Sampling of these outfalls is required by the Consent Order and WV NPDES permit No. WV0001279. The locations of these outfalls are shown in Figure 1.1.

Groundwater sampling was attempted at 12 monitoring wells on October 16, 2002, including the three new monitoring wells installed as part of the C-8 Plume Identification/Groundwater Assessment activities (AJ06-MW02, N04-MW03, and Y14-MW02). Monitoring well N13-MW01 was not sampled during this sampling event because the well was dry. No other changes to routine sampling protocols or other observations were recorded in the field notes during this sampling event.

In addition, groundwater from six production wells was sampled on October 22 or 25, 2002. Sampling of these wells was done according to routine sampling protocols. A combined groundwater sample representative of all the wells in the DuPont-Lubeck Well Field, labeled West Wellfield 1, was also collected, and analyzed for C-8. Sampling this well field was not identified in the Groundwater Monitoring Plan for the Washington Works facility nor was it recommended by the GIST for C-8 sampling. However, it was being sampled quarterly and analyzed for C-8 as required by the permit. Sampling of this well field on a monthly basis began in December 2001 and continued through April 2002, and is now sampled quarterly. The locations of the monitoring and production wells sampled are shown on Figure 1.1. This figure also shows the position of the DuPont-Lubeck Well Field that was sampled.

Table 1.0 summarizes the well construction data and 4Q02 groundwater elevations measured for the monitoring wells. The surface elevations were incorrectly used to calculate the groundwater elevations for 2Q02 and 3Q02. In addition, for the C-8 plume delineation work, the spreadsheet of well construction information for all Local Landfill wells was updated. In this process, it was concluded that six of the measuring point elevations used in calculating groundwater elevations were incorrect. Therefore, all the groundwater elevations presented in Table 1.0 have been recalculated using corrected measuring point elevations. A row for measuring point elevation data was added, and the row for surface elevations was deleted in Table 1.0 for completeness of data presentation.

A groundwater elevation map for 4Q02 was not generated because of the limited data set. The groundwater elevation map for February 2002, usually included in the monitoring reports, is not included in this 4Q02. This map is undergoing revision based on the corrected groundwater elevations, the geological information gained during the installation of the new wells, and on observation made during the groundwater modeling effort. The revised groundwater elevation map for February 2002 will be provided in the *C-8 Plume Identification/Groundwater Assessment Activities* report that will be submitted to the GIST in early January 2003.

Tables 1.1A and 1.1B provide the C-8 analytical results for surface water and groundwater, respectively. For each sampling point listed in these tables, historical data

are summarized with the most recent results listed first. Figure 1.2 presents the C-8 concentration map for the wells and outfalls sampled during the 4Q02 sampling event. Laboratory analytical data reports and the Chain-of-Custody records are included in Appendix A and B, respectively. (Note that C-8 results from Outfall 005 on October 16 and 17, 2002 are included on one of the laboratory analytical data reports and on one of the Chain-of-Custody records. However, these samples were collected for the Ohio River water investigation and, therefore, were documented in the *Ohio River Water Sampling Results* report (DuPont, 2002e).

4.0 LOCAL LANDFILL

Figure 2.0 shows the location of the Local Landfill. Sampling of five outfalls is required by the Consent Order and the WV NPDES permit No. WV0076538. These five outfalls collect stormwater runoff. On October 31, 2002, Outfall 101 was sampled for C-8. Outfalls 004(Old), 004(New), and 005(Old)/SS1, and 005(New) were not sampled due to no-flow conditions. The locations of these five outfalls are shown in Figure 2.1.

Between October 8 and 15, 2002, nine monitoring wells, including the five new monitoring wells installed as part of the C-8 Plume Identification/Groundwater Assessment activities, were sampled following routine sampling protocols. Figure 2.1 shows the location of the monitoring wells sampled.

Table 2.0 summarizes the well construction and groundwater elevation data for the monitoring wells. The surface elevations were incorrectly used to calculate the groundwater elevations for 2Q02 and 3Q02. Therefore, all the groundwater elevations presented in Table 2 have been recalculated using corrected measuring point elevations. A row for measuring point elevation data was added, and the row for surface elevations was deleted in Table 2.0 for completeness of data presentation. Groundwater elevation maps for 2Q02 and 3Q02 have been reconstructed using the corrected data and are presented in Figures 2.2A and 2.2B, respectively. Figure 2.2C presents the groundwater elevation map for 4Q02. The groundwater elevation data from the five new monitoring wells are not included in this figure because site conceptual model refinement based on these new wells is ongoing.

Tables 2.1A and 2.1B present the C-8 analytical results for the 4Q02 surface water and groundwater samples, respectively. These tables include the historic data available for each location sampled. The data are presented with the most recent data first. Figure 2.3 provides the C-8 concentration map for the outfalls and monitoring wells for the 4Q02 sampling event. Laboratory analytical data reports and Chain-of-Custody records are provided in Appendices C and D, respectively.

000013

5.0 LETART LANDFILL

Figure 3.0 presents the Letart Landfill location map. Sampling of Outfalls 002 and 003 (both containing stormwater runoff) is required by the Consent Order and WV NPDES permit No. WV0076066. Sampling of the Cap Runoff and Rt. 33 stream surface water locations is not required by the Consent Order nor the WV NPDES permit. On October 31, 2002, sampling was conducted at Outfall 002, Cap Runoff, and the Rt. 33 stream. Sampling was attempted at Outfall 003 but no-flow conditions were observed. An additional surface water sampling location, Brinker's Run, was also sampled on October 14, 2002 as part of the 4Q02 event. The location of Outfall 002, Outfall 003, and the Cap Runoff samples are shown in Figure 3.1A. The locations of the Rt. 33 stream sample and the Brinker's Run are near the property boundary to the west and are shown in Figure 3.1B.

Sampling was attempted at eighteen monitoring wells at Letart Landfill between October 10 and 17, 2002, including the five new monitoring wells installed for the C-8 Plume Identification/Groundwater Assessment activities. Figure 3.1A shows the locations of the monitoring wells. Changes to routine sampling protocols were recorded in the field notes and are summarized below. Monitoring well LMW-12 went dry during low-flow purging and could not be sampled. Monitoring well LMW-10 could not be sampled due to instrumentation problems. Pump problems were encountered in this monitoring well during the 3Q02 sampling event and the pump had been replaced prior to the 4Q02 sampling event. However, even with the new pump, it was not possible to collect a sample, indicating that the problem is not the pump. A thorough evaluation of the instrumentation will be conducted prior to the next sampling event to ensure that sample collection will be possible. Monitoring well LMW-3, LMW-3A, and LMW-5A went dry very rapidly and did not recharge well after a week. Due to the very limited volume of water in these wells, C-8 samples were collected immediately after starting to pump the wells. Only one round of parameters were measured before the wells went dry.

Monitoring well construction and groundwater elevation data for the 18 monitoring wells are presented in Table 3.0. The surface elevations were incorrectly used to calculate the groundwater elevations for 2Q02 and 3Q02. In addition, for the C-8 plume delineation work, the spreadsheet of well construction information for all Letart Landfill wells was updated. In this process, it was concluded that the seven of the measuring point elevations used in calculating groundwater elevations were incorrect. Therefore, all the groundwater elevations presented in Table 3.0 have been recalculated using corrected measuring point elevations. A row for measuring point elevation data was added, and the row for surface elevations was deleted in Table 3.0 for completeness of data presentation. Groundwater elevation maps of the F-zone aquifer for 2Q02 and 3Q02 have been reconstructed using the corrected data and are presented in Figures 3.2A and 3.2B, respectively. Figure 3.2C presents the 4Q02 groundwater elevation map for the F-Zone aquifer. The groundwater elevation data from the new monitoring wells are not included in this figure because site conceptual model refinement based on these new wells is ongoing.

The C-8 results for the 4Q02 surface water and groundwater samples are presented in Tables 3.1A and 3.1B, respectively. For each sampling point listed in these tables, historical data is summarized with the most recent results listed first. Figure 3.3A presents a C-8 concentration map for monitoring wells and outfalls for the 4Q02 event. Figure 3.3B provides a C-8 concentration contour map for the F-zone, the underlying significant aquifer. Appendices E and F present the laboratory analytical data reports and the Chain-of-Custody records, respectively.

6.0 DRY RUN LANDFILL

Figure 4.0 shows the location of the Dry Run Landfill. On October 30, 2002, Outfall 001 was sampled. Outfalls 003 and 004 were not sampled due to no-flow conditions. (Outfall 002 is a required outfall sampling location as stated in WV NPDES permit No. WV0076244. However, it was a temporary relocation of Outfall 001 and no longer exists). Outfall 001 collects stormwater and leachate. Outfalls 003 and 004 collect stormwater only. In addition, there are five additional locations that are sampled quarterly for C-8 that are not required to be sampled by the Consent Order. These include Stream Samples #1 and #2, DR Leachate, Pond Underdrain, and Property Boundary. These five locations were sampled on October 30, 2002. The locations of the surface water sampling points are shown in Figure 4.1. The Property Boundary sample location is on the western property boundary and is not shown in this figure.

Between October 7 and 15, 2002, 15 monitoring wells were sampled, including the seven monitoring wells newly installed for the C-8 Plume Identification/Groundwater Assessment activities. No changes from routine sampling protocols were identified in the field notes. The locations of the monitoring wells can be found in Figure 4.1.

Table 4.0 summarizes the monitoring well construction and groundwater elevation data for the monitoring wells. The surface elevations were incorrectly used to calculate the groundwater elevations for 2Q02 and 3Q02. In addition, for the C-8 plume delineation work, the spreadsheet of well construction information for all Dry Run Landfill wells was updated. In this process, it was concluded that the all of the measuring point elevations used in calculating ground water elevations were incorrect. Therefore, all the groundwater elevations presented in Table 4 have been recalculated using corrected measuring point elevations. A row for measuring point elevation data was added, and the row for surface elevations was deleted in Table 4.0 for completeness of data presentation. Groundwater elevation maps of the site aquifer for 2Q02 and 3Q02 have been reconstructed using the corrected data and are presented in Figures 4.2A and 4.2B, respectively. Figure 4.2C presents the 4Q02 groundwater elevation map for the bedrock aquifer. The groundwater elevation data from the new monitoring wells are not included in this figure because site conceptual model refinement based on these new wells is ongoing.

Tables 4.1A and 4.1B present the C-8 analytical results for the 4Q02 surface water samples and groundwater samples, respectively. The data in these tables include historical data available for each location sampled. Figure 4.3 and 4.4 presents the C-8 concentration map for surface water and groundwater for the 4Q02 event. Laboratory analytical data reports and Chain-of-Custody records are provided in Appendices G and H, respectively.

7.0 REFERENCES

- DuPont. 2002a. *One-Mile Radius Survey and C-8 Sampling Report and Ohio River Public Water Supply Sampling, DuPont Washington Works (December 2001-February 2002)* January 2002. DuPont Corporate Remediation Group and URS Diamond.
- DuPont. 2002b. *Two-Mile Radius Survey and C-8 Sampling, DuPont Washington Works Facility/Local Landfill, West Virginia (March-May 2002)* August 2002. DuPont Corporate Remediation Group and URS Diamond.
- DuPont. 2002c. *Compilation of Historical C-8 Data, DuPont Washington Works Main Plant and Landfills* January 2002. DuPont Corporate Remediation Group and URS Diamond.
- DuPont. 2002d. *Proposed Groundwater Monitoring Plan for Washington Works Facility Plant and Landfills* January 2002. DuPont Corporate Remediation Group and URS Diamond.
- DuPont. 2002e. *Ohio River Water Sampling Results, Washington Works Facility and the Letart Landfill* November 2002. DuPont Corporate Remediation Group and URS Diamond.

TABLES

Table 1.0
Monitoring Well Construction and Groundwater Elevation Data
DuPont Washington Works Facility
Washington, WV

Monitoring Wells									
New Well ID	AE11-MW01	AJ06-MW02	AM07-PW01	AO08-PW01	AX13-PW01	D08-MW01	E13-MW01	K16-PW01	L04-PW01
Old Well ID	TW-74		336	331	335	TW-M5	TW-76	L4(354)	GALLERY
Measuring Point Elevation (ft)	628.94	635.55	634.26	632.91	630.69	600.67	625.47	623.24	589.75
Total Depth (ft)	72	128	96	95	90		74		
Well Diameter (inches)	2	2	18	18	18	4	2	18	
Slot Size (inches)	10	10					10		
Screen Length (ft)	10	15	20	20	13		10		NA
Elevation of Screen Interval (ft)	567.51 - 557.51	507.55 - 522.55	555.00 - 535.00	558.70 - 538.70	556.00 - 543.00		559.50 - 549.50		
Groundwater Elevation (feet)									
January-02	567.02		*	*		562.73	561.29	*	*
February-02	566.02		*	*	*	562.69	561.12	*	*
March-02	564.77		*	*	*	562.09	560.07	*	*
April-02	565.93		*	*	*	562.51	560.59	*	*
May-02	566.54		*	*	*	562.71	560.76	*	*
August-02	567.61		*	*	*	564.55	562.23	*	*
October-02	568.52	569.55	*	*	*	564.24	561.23	*	*

*Groundwater elevations not measured.

**Well was dry.

Table 1.0
Monitoring Well Construction and Groundwater Elevation Data
DuPont Washington Works Facility
Washington, WV

Monitoring Wells									
New Well ID	N04-MW03	N13-MW01	P04-MW02	P08-MW01	Q04-MW02	R04-MW02	V05-PW01	Y14-MW01	Y14-MW02
Old Well ID		Ron's MW-5	TW-83	Ron's MW-4	Ron's MW-1	TW-85	RANNEY	TW-90	
Measuring Point Elevation (ft)	595.44	625.87	592.39	629.29	598.76	594.92	632.00	642.25	643.12
Total Depth (ft)	88.5	70	28	71	71	28	92	90	131.59
Well Diameter (inches)	2	2	2	2	2	2	NA	2	2
Slot Size (inches)	10		10			10		10	10
Screen Length (ft)	15	5	10	5	10	10	1	10	15
Elevation of Screen Interval (ft)	520.44 - 505.44	560.00 - 555.00	572.60 - 562.60	567.00 - 557.00	566.00 - 556.00	575.20 - 565.20	542.00 - 541.00	549.93 - 539.93	520.12 - 505.12
Groundwater Elevation									
January-02			572.35		560.88	576.61	*	562.78	
February-02		559.92	571.91	560.10	560.05	576.39	*	562.15	
March-02		**	571.56	*	559.45	575.64	*	559.24	
April-02		**	573.13	**	560.40	576.97	*	561.34	
May-02		**	574.32	**	559.77	577.10	*	561.67	
August-02		**	572.69	**	563.77	575.28	*	563.05	
October-02	567.82	**	572.69	562.09	563.06	574.98	*	562.89	561.75

*Groundwater elevations not measured.

**Well was dry.

Table 1.1A
Summary of Analytical Results:
C-8 in Surface Water
DuPont Washington Works Facility
Washington, WV

Sample	Date	C-8 (ug/l)
OUTLET 001	10/18/02	10.5
	9/24/02	2.15
	8/27/02	2.94
	7/23/02	8.63
	6/25/02	17.9
	5/20/02	22.4
	4/16/02	19.7
	3/19/02	21.4
	2/5/02	9.43
	1/17/02	10.9
	12/20/01	3.720
OUTFALL 002	10/18/02	3.49
	9/24/02	2.14
	8/27/02	2.56
	8/27/02 (dup)	2.51
	7/23/02	2.29
	6/25/02	3.86
	6/25/02 (dup)	3.81
	5/20/02	4.13
	4/16/02	2.45
	3/19/02	5.85
	2/5/02	4.66
	1/17/02	4.23
	12/20/01	1.980
	11/26/01*	4.84
	10/25/01	2.8
	9/19/01	0.118
	7/11/01	0.558
	6/14/01	0.594
	5/31/01	0.436
	4/11/01	1.5
OUTLET 003	3/21/01	8.54
	2/14/01	1.74
	10/18/02	0.870
	9/24/02	0.317
	8/27/02	0.268
	7/23/02	0.291
	6/25/02	0.175
	5/20/02	0.503
	4/16/02	2.76
	3/19/02	2.91
	3/19/02 (dup)	2.81
	2/5/02	1.33
	1/17/02	0.956
	1/17/02 (dup)	3.99
	12/20/01	0.713

Table 1.1A
Summary of Analytical Results:
C-8 in Surface Water
DuPont Washington Works Facility
Washington, WV

Sample	Date	C-8 (ug/l)
OUTFALL 005	10/18/02	12.1
	9/24/02	4.64
	9/24/02 (dup)	5.02
	8/27/02	12.4
	7/23/02	19.2
	6/25/02	17.9
	5/20/02	98.6
	5/17/02	65.7
	4/16/02	3.8
	3/19/02	9.26
	2/5/02	141.0
	1/17/02	137.0
	12/20/01	31.40
	12/20/01(dup)	35.20
	11/26/01	915
	10/25/01	65.7
	9/19/01	2.86
	8/30/01	2.16
	7/11/01	120
	6/14/01	7.4
	5/31/01	1.43
	4/11/01	4.31
	3/21/01	199
	2/14/01	153
OUTLET 007	10/18/02	0.251
	10/18/02 (dup)	0.209
	9/24/02	NQ (<0.05)
	8/27/02	0.207
	7/23/02	0.597
	7/23/02 (dup)	0.544
	6/25/02	0.284
	5/20/02	0.490
	4/16/02	0.567
	3/19/02	0.483
	2/5/02	0.320
	2/5/02(dup)	0.339
	1/17/02	0.871
	12/20/01	1.99
OUTLET 105	10/18/02	54.6
	9/24/02	3.69
	8/27/02	6.73
	7/23/02	34.7
	6/25/02	3.86
	5/20/02	6.27
	5/20/02 (dup)	5.16
	4/16/02	15.9
	3/19/02	13.2
	2/5/02	14.6
	1/17/02	7.53
	12/20/01	9.78

Note: Analytical method changed as of November 2001 (see Section 2.0 for details).

Table 1.1B
Summary of Analytical Results:
C-8 in Groundwater
DuPont Washington Works Facility
Washington, WV

Sample	Date	C-8 (ug/l)
AE11-MW01	10/16/02	1.74
	9/04/02	1.92
	5/23/02	1.25
	4/29/02	1.22
	3/26/02	2.82
	2/22/02	1.45
	1/28/02	1.2
	2/2/99	0.69 L
	11/10/98	0.41
AJ06-MW02	10/16/02	0.133
AM07-PW01	10/22/02	0.269
	8/26/02	0.335
	5/17/02	0.247
	4/16/02	0.159
	3/21/02	0.171
	2/14/02	0.129
	1/22/02	0.131
	11/20/00	0.24
	8/16/00	0.071 J
	5/12/99	0.578
	2/3/99	0.082 B
	11/18/98	1.9 L
	6/19/98	0.4
	6/2/97	0.79
	4/2/96	0.48
AO08-PW01	10/22/02	0.415
	8/26/02	0.420
	5/17/02	0.499
	4/16/02	0.497
	3/21/02	0.568
	2/14/02	0.439
	1/22/02	0.355
	11/20/00	0.4
	11/20/00 (dup)	0.26
	8/15/00	0.167
	5/12/99	0.307
	6/19/98	1
	6/2/97	0.55
	4/2/96	0.52
AX13-PW01	10/22/02	0.721
	8/26/02	0.834
	5/17/02	0.911
	4/16/02	1.42
	3/21/02	1.22
	2/14/02	1.03
D08-MW01	10/16/02	0.126
	9/04/02	0.117
	5/23/02	0.551
	4/29/02	0.424
	3/26/02	0.262
	2/22/02	1.27
	1/28/02	0.582

000023

Table 1.1B
Summary of Analytical Results:
C-8 in Groundwater
DuPont Washington Works Facility
Washington, WV

Sample	Date	C-8 (ug/l)
E13-MW01	10/16/02	3.43
	9/04/02	2.39
	5/23/02	2.47
	4/29/02	2.44
	3/28/02	1.62
	2/22/02	2.32
	1/28/02	2.11
	5/12/99	0.882
	2/2/99	0.59 L
	11/11/98	2
K16-PW01	10/22/02	16.2
	8/26/02	9.71
	5/17/02	12.4
	4/16/02	13.2
	3/21/02	17.2
	2/14/02	12.00
	1/22/02	10.5
	11/20/00	7.5
	2/9/99	16.2
	11/18/98	0.46 L
L04-PW01	10/25/02	14.3
	8/13/02	3.06
	5/21/02	15.1
	4/18/02	16.1
	3/21/02	40.9
	2/7/02	23.5
	1/15/02	30.9
	7/11/01	0.202
	4/11/01	3.99
	11/20/00	13.8
	2/7/99	5.89
	11/18/98	7.9 J
	11/18/98 (dup)	3.9 J
N04-MW01	1/28/02	689
N04-MW03	10/16/02	21.2
N13-MW01	10/16/02	Dry-no sample
	9/04/02	Dry-no sample
	5/23/02	Dry-no sample
	4/29/02	Dry-no sample
	3/28/02	Dry-no sample
	2/25/02	57.8
	2/2/99	29.6L
	11/11/98	<0.1
P04-MW02	10/16/02	46600
	10/16/02 (dup)	48300
	9/04/02	34400
	5/23/02	42400
	4/29/02	36500
	3/26/02	32300
	2/25/02	26800
	1/28/02	23600
	1/25/01	12600
	2/6/99	13600
	11/12/98	8300

000024

Table 1.1B
Summary of Analytical Results:
C-8 in Groundwater
DuPont Washington Works Facility
Washington, WV

Sample	Date	C-8 (ug/l)
P08-MW01	10/16/02	120
	9/04/02	Dry-no sample
	5/23/02	Dry-no sample
	4/29/02	Dry-no sample
	3/28/02	Pump problems-no sample
	2/25/02	20.7
	2/4/99	43.4
	11/13/98	36
Q04-MW02	10/16/02	7720
	9/04/02	32.2
	5/23/02	1480
	4/29/02	1210
	3/26/02	2070
	2/25/02	1590
	1/28/02	1480
	2/4/99	994
R04-MW02	11/13/98	660
	10/16/02	84100
	9/04/02	66500
	5/23/02	68100
	4/29/02	56300
	3/26/02	54400
	2/25/02	43600
	1/28/02	47500
V05-PW01	1/25/01	13800
	2/6/99	9420
	11/12/98	1300
	10/25/02	51.2
	8/13/02	34.8
	5/21/02	35.8
	4/18/02	37.6
	3/21/02	40.9
	2/7/02	25.10
	1/15/02	29.0
	7/11/01	11.4
	4/11/01	5.48
	11/20/00	13.7
Y14-MW01	2/7/99	12.4
	2/7/99 (dup)	3.95
	11/18/98	0.66 L
	10/16/02	18.2
Y14-MW02	9/04/02	18.4
	5/23/02	15.3
	4/29/02	13.9
	3/28/02	15.5
	2/22/02	10.9
	1/28/02	12.7
	2/2/99	4.95 L
	11/10/98	12
West Well Field (1)	10/16/02	NQ (< 0.05)
	10/25/02	10.3
	8/13/02	6.41
	5/21/02	7.09
	4/16/02	6.69
	3/21/02	7.72
	2/7/02	5.77
	1/15/02	6.52
	7/11/01	2.31
	4/11/01	1.58

J = estimated value (below laboratory quantification limit)

L = possible low bias result (relative to QA/QC)

B= compound detected in QC blank

Note: Analytical method changed as of November 2001 (see Section 2.0 for details).

000025

Table 2.0
Monitoring Well Construction and Groundwater Elevation Data
Local Landfill
Washington, WV

Monitoring Wells									
Parameters	LLMW-4	LLMW-6	LLMW-9	LLMW-10	LLMW-11A	LLMW-11B	LLMW-12B	LLMW-13B	LLMW-14B
Measuring Point Elevation (feet)	847.55	796.27	788.54	805.04	663.83	665.12	764.28	750.80	672.04
Total Depth (feet)	155	90	80	87	42	116	95.5	140.5	57
Well Diameter (inches)	4	4	4	4	2	2	2	2	2
Slot Size (inches)	0.02	0.020	0.020	0.020	0.01	0.01	0.01	0.01	0.010
Screen Length (feet)	20	20	20	20	20	20	20	15	15
Screen Interval (feet)	717.20 - 697.20	723.20 - 703.20	728.54 - 708.54	738.94 - 718.94	641.83 - 621.83	569.12 - 549.12	688.78 - 668.78	625.30 - 610.30	630.04 - 615.04
Groundwater Elevation (feet)									
December-01	692.55	719.69	727.78	720.67					
January-02	715.39	720.41	728.06	720.51					
February-02	715.28	719.76	728.01	720.73					
March-02	715.31	722.00	728.12	720.90					
May-02	714.93	721.52	728.48	721.84					
August-02	715.52	719.77	728.24	722.97					
October-02	715.53	719.56	728.10	723.01	640.42	563.60	681.93	648.29	627.74

Table 2.1A
Summary of Analytical Results:
C-8 in Surface Water
Local Landfill
Washington, WV

Sample	Date	C-8 (ug/l)
OUTFALL 004 (New)	10/31/02	No-flow conditions
	9/30/02	No-flow conditions
	8/26/02	No-flow conditions
	7/1/02	11.2
	6/13/02	9.29
	5/21/02	No-flow conditions
	4/29/02	14.5
	3/26/02	14.6
OUTFALL 004 (Old)	10/31/02	No-flow conditions
	9/30/02	No-flow conditions
	8/26/02	No-flow conditions
	7/1/02	11.6
	6/13/02	10.0
	5/21/02	No-flow conditions
	4/29/02	15
	3/26/02	1.54
	2/20/02	10.9
	1/24/02	11.4
	12/13/01	No-flow conditions
	9/27/2000	4.73
	12/10/1999	7.1
	6/3/1999	3.06
	6/2/1998	12
	5/29/1997	13
	4/2/1996	13
	2/16/1994	11
OUTFALL 005 (New)	10/31/02	No-flow conditions
	9/30/02	No-flow conditions
	8/26/02	No-flow conditions
	7/1/02	No-flow conditions
	6/13/02	No-flow conditions
	5/21/02	No-flow conditions
	4/29/02	34.3
	3/26/02	16.0
OUTFALL 005 (Old)/SS1	10/31/02	No-flow conditions
	9/30/02	No-flow conditions
	8/26/02	No-flow conditions
	7/1/02	32.1
	6/13/02	27.3
	5/21/02	No-flow conditions
	4/29/02	40.9
	3/26/02	39.0
	2/20/02	46.0
	1/11/02	51.4
	12/13/01	No-flow conditions
	9/27/2000	13.3
	12/10/1999	34
	6/3/1999	6.8
	6/2/1998	39
	5/29/1997	41
	4/2/1996	39
	2/16/1994	35

Table 2.1A
Summary of Analytical Results:
C-8 in Surface Water
Local Landfill
Washington, WV

Sample	Date	C-8 (ug/l)
OUTLET 101	10/31/02	78.6
	9/30/02	115.0
	8/26/02	70.3
	7/1/02	63.0
	6/13/02	38.0
	5/21/02	40.0
	4/29/02	48.2
	3/25/02	36.4
	2/20/02	63.10
	1/23/02	81.4
	12/13/01	82.40
	9/14/2000	12
	6/3/1999	15
	6/2/1998	54

Note: Analytical method changed as of November 2001 (see Section 2.0 for details).

Table 2.1B
Summary of Analytical Results:
C-8 in Groundwater
Local Landfill
Washington, WV

Sample	Date	C-8 (ug/l)
LLMW-4	10/15/02	79.6
	9/03/02	63.5
	5/20/02	55.7
	3/28/02	47.2
	2/25/02	50.2
	1/27/02	58.4
	12/13/01	54.60
	5/16/2001	1.4
	5/11/2000	10
	5/19/1999	16.2
	5/27/1998	26
	4/11/1996	39
LLMW-6	10/15/02	19.9
	10/15/02 (dup)	17.0
	9/03/02	13.7
	5/20/02	18.6
	3/28/02	11.5
	2/25/02	10.1
	1/27/02	12.2
	12/13/01	11.90
	5/16/2001	3
	5/10/2000	1.42
	5/19/1999	1.32
	5/27/1998	9
	4/11/1996	15
LLMW-9	10/15/02	0.0569
	9/03/02	NQ
	5/20/02	NQ
	3/28/02	NQ
	2/25/02	NQ
	1/27/02	NQ
	12/13/01	ND
	5/16/2001	0.039 J
	5/10/2000	<0.029
	5/20/1999	0.046 J
	5/27/1998	<0.1
	4/11/1996	0.14
LLMW-10	10/15/02	0.395
	9/03/02	0.357
	5/20/02	0.56
	3/28/02	0.698
	2/25/02	1.12
	1/27/02	0.162
	12/13/01	0.133
	5/20/1999	0.15
	5/28/1998	0.22
LLMW-11A	10/8/02	2.22
LLMW-11B	10/8/02	NQ (<0.05)
LLMW-12B	10/8/02	0.0658
LLMW-13B	10/8/02	6.61
LLMW-14B	10/9/02	0.488

J= estimated value (below laboratory quantitation limit)

ND= Not Detected at or above the limit of detection (LOD)

NQ= Not Quantifiable. Detected at a concentration above the LOD and below the limit of quantification (LOQ).

Note: Analytical method changed as of November 2001 (see Section 2.0 for details).

Table 3.0
Monitoring Well Construction and Groundwater Elevation Data
Letart Landfill
Letart, WV

Monitoring Wells									
Parameters	LMW-1	LMW-7	LMW-8	LMW-3	LMW-3A	LMW-4	LMW-5A	LMW-2A	LMW-5B
Measuring Point Elevation (feet)	768.93	770.24	777.06	676.47	674.79	651.58	647.22	780.87	646.22
Total Depth (feet)	33	35	38.5	30	60.1	28	28	180.8	72
Well Diameter (inches)	2	4	4	2	4	2	4	4	4
Slot Size (inches)					0.010		0.010	0.010	0.01
Screen Length (feet)	5	10	9	5	5	5	10	30	20
Elevation of Screen Interval (feet)	738.53 - 733.53	745.24 - 735.24	748.06 - 739.06	650.10 - 645.10	619.61 - 614.61	626.17 - 621.17	627.23 - 621.23	628.53 - 598.53	594.39 - 574.39
Groundwater Elevation (feet)									
December-01	752.62	749.73	745.04	646.82	617.4	628.08	619.22	NA	596.31
January-02	752.82	752.25	746.76	648.19	616.76	642.79	618.76	622.19	596.64
February-02	752.65	751.87	745.05	648.07	615.37	639.99	618.10	622.23	596.34
March-02	752.10	751.56	746.24	648.47	614.80	643.30	617.61	622.44	596.86
May-02	750.27	751.16	745.41	646.74	615.27	643.08	617.50	622.28	596.66
August-02	751.98	751.49	744.95	646.53	615.54	636.02	617.36	622.44	596.25
October-02	751.02	751.75	745.43	646.77	615.84	632.47	617.23	622.38	596.86

Table 3.0
Monitoring Well Construction and Groundwater Elevation Data
Letart Landfill
Letart, WV

Monitoring Wells									
Parameters	LMW-6	LMW-9	LMW-10	LMW-11	LMW-12	LMW-13A	LMW-13B	LMW-14A	LMW-14B
Measuring Point Elevation (feet)	755.99	777.85	734.37	776.21	742.62	766.25	765.86	742.62	767.10
Total Depth (feet)	183	225	189.85	161.5	105	150	190	156	200
Well Diameter (inches)	4	4	4	4	4	4	4	4	4
Slot Size (inches)	0.010	0.010	0.010	0.010	0.01	0.01	0.01	0.01	0.01
Screen Length (feet)	30	20	20	25	20	20	20	20	20
Elevation of Screen Interval (feet)	606.22 - 576.22	572.85 - 552.85	562.52 - 542.52	637.84 - 612.84	637.62 - 617.62	616.25 - 596.25	575.86 - 555.86	586.62 - 566.62	567.70 - 547.10
Groundwater Elevation (feet)									
December-01	NA	NA	NA	NA					
January-02	582.26	552.12	543.37	619.58					
February-02	581.97	551.96	543.36	620.70					
March-02	581.82	551.79	543.39	620.99					
May-02	581.97	551.24	543.39	621.28					
August-02	582.34	552.51	543.26	621.52					
October-02	582.05	551.73	543.35	621.10	635.47	621.07	582.86	602.75	569.31

Table 3.1A
Summary of Analytical Results:
C-8 in Surface Water
Letart Landfill
Letart, WV

Sample	Date	C-8 (ug/l)
002(LEACHATE BASIN)	10/31/02	645
	9/27/02	4.52
	8/30/02	2050
	7/30/02	1410
	6/28/02	Not Analyzed*
	5/30/02	1630
	4/30/02	443
	3/28/02	131
	2/19/02	355
	1/25/02	50.1
	12/14/01	36.1
	11/27/2001	53.2
	7/20/01	159
	7/25/2000	1350
	4/3/2000	1900
	1/14/2000	920
	10/21/1999	3240
003	10/31/02	No-Flow Conditions
	9/27/02	0.170
	8/30/02	No-Flow Conditions
	7/30/02	No-Flow Conditions
	6/28/02	Not Analyzed*
	5/30/02	0.282
	4/30/02	0.0653
	3/28/02	0.198
	2/19/02	No-Flow Conditions
	1/25/02	0.148
	12/14/01	0.390
STORMWATER RUNOFF	9/27/02	50.9
RT 33 STREAM	10/31/02	2.83
	9/27/02	2.24
	8/30/02	No-Flow Conditions
	5/30/02	1.570
	4/30/02	0.845
	3/28/02	1.26
	2/19/02	3.92
	1/25/02	1.9
	7/20/2001	2.01
	7/31/2000	0.573
	7/20/1999	2.23
	7/23/1997	2
	4/17/1996	1.8
BRINKER RUN	10/14/02	0.0612
CAP RUNOFF	10/31/02	102
	8/30/02	No-Flow Conditions
	6/28/02	Not Analyzed*
	5/30/02	371
	4/30/02	279
	3/28/02	Not Sampled
	2/19/02	No-Flow Conditions
	1/25/02	119

Note: Analytical method changed as of November 2001 (see Section 2.0 for details).

* Samples were taken at the respective surface water locations. However, due to an error by the courier, the samples arrived at the lab warm and were not analyzed.

Table 3.1B
Summary of Analytical Results:
C-8 in Groundwater
Letart Landfill, Letart, WV

F-Zone Wells		
Sample	Date	C-8 (ug/l)
LMW-2A	10/14/02	931
	8/27/02	676
	5/24/02	922
	3/29/02	717
	2/24/02	714
	1/26/02	740.0
	12/11/01	830
	7/19/2001	242
	1/30/2001	423
	10/5/2000	248
	7/25/2000	275
	4/3/2000	306
	1/14/2000	453
	10/21/1999	370
	7/20/1999	350
	5/28/1998	990
	7/23/1997	460
	4/17/1996	460
	9/20/1994	270
	3/15/1994	260
	11/22/1991	63
	3/22/1991	50
LMW-5B	10/11/02	2230
	10/11/02 (dup)	2280
	8/27/02	1480
	8/27/02 (dup) *	1340
	5/21/02	1720
	5/21/02 (dup) *	1630
	3/27/02	1810
	3/27/02 (dup)	1850
	2/23/02	1460
	2/23/02(dup)	1490
	1/26/02	1780
	1/26/02 (dup)	1890
	12/11/01	1880
	7/20/2001	483
	7/20/01(dup)	592
	1/31/2001	615
	10/5/2000	1190. J
	10/5/00 (dup)	780
	7/25/2000	900. J
	4/3/2000	1100
	4/3/00 (dup)	1020
	1/14/2000	1030
	10/21/1999	1750
	10/21/99 (dup)	1700
	7/20/1999	445
	7/23/1997	480
	9/20/1994	530
	3/15/1994	1200
	11/22/1991	380
	3/22/1991	340

Table 3.1B
Summary of Analytical Results:
C-8 in Groundwater
Letart Landfill, Letart, WV

F-Zone Wells		
Sample	Date	C-8 (ug/l)
LMW-6	10/14/02	15.1
	8/27/02	10.5
	5/24/02	20.7
	3/29/02	14.8
	2/24/02	14.9
	1/26/02	18.1
	12/11/01	15.8
	1/13/2000	9.4
	5/28/1998	30
	11/22/1991	24
	3/22/1991	25
LMW-9	10/17/02	0.907
	8/29/02	0.479
	5/24/02	0.715
	3/27/02	0.631
	2/23/02	0.617
	1/26/02	0.875
	12/10/01	0.845
	10/7/1992	0.2
LMW-10	10/17/02	Instrumentation problems-Not sampled
	8/29/02	Pump problems-Not sampled
	5/21/02	0.298
	3/27/02	0.136
	2/23/02	0.126
	1/26/02	0.133
	12/13/01	0.134
LMW-11	10/14/02	0.121
	8/27/02	0.058
	5/21/02	0.069
	3/29/02	0.119
	2/24/02	0.112
	1/26/02	0.159
	12/11/01	0.128
LMW-12	10/10/02	Dry-no sample
LMW-13B	10/10/02	0.0956
LMW-14B	10/10/02	105
D/E-Zone Wells		
Sample	Date	C-8 (ug/l)
LMW-3A	10/11/02	204
	8/26/02	Dry-no sample
	5/24/02	134
	3/27/02	132
	2/23/02	101
	1/26/02	98.6
	12/11/01	100
	7/19/1999	60.3
	11/22/1991	350
	3/22/1991	380

Table 3.1B
Summary of Analytical Results:
C-8 in Groundwater
Letart Landfill, Letart, WV

D/E-Zone Wells		
Sample	Date	C-8 (ug/l)
LMW-4	10/11/02	2840
	8/27/02	1410
	5/21/02	1690
	3/27/02	2620
	2/23/02	2250
	1/26/02	3060
	12/13/01	1580
	4/3/2000	272
	1/14/2000	172
	11/22/1991	830
	3/28/1991	690
LMW-5A	10/11/02	112
	8/26/02	Dry no sample
	5/21/02	87.6
	3/27/02	93.6
	2/23/02	82.2
	1/26/02	99.3
	12/11/01	94.4
	11/22/1991	0.8
	3/22/1991	1.6
LMW-13A	10/10/02	510
LMW-14A	10/10/02	974
C-Zone Wells		
Sample	Date	C-8 (ug/l)
LMW-3	10/11/02	NQ (<0.05)
	8/26/02	Dry no sample
	5/24/02	2270
	3/27/02	1760
	2/24/02	1920
	1/29/02	1700
	12/13/01	1520
	11/22/1991	1000
	3/22/1991	390
A-Zone Wells		
Sample	Date	C-8 (ug/l)
LMW-1	10/14/02	25900
	8/29/02	23000
	5/24/02	30500
	3/29/02	20600
	2/24/02	18400
	1/26/02	29400
	12/10/01	24600
	7/19/2001	6100
	1/31/2001	9190
	10/4/2000	10600
	7/24/2000	8990
	4/3/2000	13600
	1/13/2000	17400
	10/21/1999	12600
	7/20/1999	6920
	5/28/1998	24000
	7/23/1997	5100
	4/17/1996	1700
	11/22/1991	68
	3/22/1991	60

Table 3.1B
Summary of Analytical Results:
C-8 in Groundwater
Letart Landfill, Letart, WV

A-Zone Wells		
Sample	Date	C-8 (ug/l)
LMW-7	10/14/02	300
	8/27/02	197
	5/24/02	567
	3/29/02	324
	2/24/02	180
	1/26/02	496
	12/10/01	334
	7/20/2001	242
	1/31/2001	249
	10/4/2000	231
	7/25/2000	158
	4/3/2000	211
	1/13/2000	219
	10/20/1999	339
	7/20/1999	78.3
	5/28/1998	260
	7/23/1997	53
	4/17/1996	15
	11/22/1991	0.1
LMW-8	10/14/02	3480
	8/29/02	3100
	5/24/02	4020
	3/29/02	3520
	2/23/02	2230
	1/26/02	3930
	12/10/01	3240
	7/19/2001	1120
	1/30/2001	2650
	10/4/2000	2300
	7/24/2000	2160
	4/3/2000	2180
	1/13/2000	2100
	10/20/1999	3260
	7/20/1999	1790
	5/28/1998	2700
	7/23/1997	2000
	4/17/1996	2200
	11/22/1991	280

J = estimated value (below laboratory quantitation limit).

Note: Analytical method changed as of November 2001 (see Section 2.0 for details).

* Analytical duplicates' values were previously inadvertently omitted from the tables.

Table 4.0
Monitoring Well Construction and Groundwater Elevation Data
Dry Run Landfill
Lubeck, WV

Monitoring Wells								
Parameters	DRMW-6A	DRMW-12	DRMW-12A	DRMW-12B	DRMW-13	DRMW-13A	DRMW-14	DRMW-15
Measuring Point Elevation (feet)	744.46	733.1	732.41	732.85	722.68	722.57	938.08	734.28
Total Depth (feet)	12.2	35	17	15	35	11	260	45
Well Diameter (inches)	2	4	4	4	4	4	10	2
Slot Size (inches)	0.01	0.01	0.01	0.01	0.01	0.01	NA	0.01
Screen Length (feet)		15	5	10	15	5	NA	20
Screen Interval (feet)		710.50 - 695.50	718.30 - 713.30	725.50 - 715.50	700.60 - 685.60	714.30 - 709.30	NA	705.87 - 685.87
Groundwater Elevation (feet)								
December-01	737.81	724.40	727.30	728.11	711.81	714.35	754.09	716.10
January-02	738.29	725.25	728.50	729.14	712.17	716.97	757.99	716.50
February-02	738.26	725.40	727.99	728.70	711.46	714.16	754.87	716.33
March-02	738.75	725.74	728.89	729.58	712.21	716.68	755.45	717.02
May-02	738.25	725.99	728.97	729.67	712.54	716.70	755.12	716.88
August-02	735.25	723.65	725.51	726.24	710.65	713.62	755.31	715.82
October-02	736.92	723.54	725.91	726.64	711.65	713.97	755.13	716.02

Monitoring Wells							
Parameters	DRMW-16B	DRMW-17B	DRMW-18B	DRMW-19B	DRMW-20B	DRMW-21A	DRMW-21B
Measuring Point Elevation (feet)	789.97	850.27	924.15	880.27	867.07	705.55	705.60
Total Depth (feet)	63	125	198	150	134	17	175
Well Diameter (inches)	4	4	4	4	4	2	4
Slot Size (inches)	0.01	0.010	0.010	0.010	0.010	0.010	0.010
Screen Length (feet)	20	20	20	20	20	10	20
Screen Interval (feet)	750.97 - 730.97	745.27 - 725.27	746.15 - 726.15	750.27 - 730.27	753.07 - 733.07	698.55 - 688.55	550.60 - 530.60
Groundwater Elevation (feet)							
October-02	730.48	733.90	755.75	749.22	751.23	700.93	610.94

Table 4.1A
Summary of Analytical Results:
C-8 in Surface Water
Dry Run Landfill
Lubeck, WV

Sample	Date	C-8 (ug/l)
OUTLET 001	10/30/02	81.7
	9/30/02	No-flow conditions
	8/30/02	No-flow conditions
	7/31/02	No-flow conditions
	7/1/02	No-flow conditions
	6/28/02	No-flow conditions
	5/28/02	30.9
	4/24/02	41
	3/25/02	71.6
	2/25/02	43.9
	1/28/02	41.6
	12/12/01	No-flow conditions
	10/3/2000	31.5
	12/29/1999	66
	5/19/1998	17
	4/9/1996	86
OUTLET 003	10/30/02	No-flow conditions
	9/30/02	No-flow conditions
	8/30/02	No-flow conditions
	7/1/02	25.3
	6/28/02	No-flow conditions
	5/28/02	No-flow conditions
	4/29/02	20.1
	3/26/02	6.77
	2/25/02	No-flow conditions
	1/28/02	No-flow conditions
	12/12/01	No-flow conditions
OUTLET 004	10/30/02	No-flow conditions
	9/30/02	No-flow conditions
	8/30/02	No-flow conditions
	7/1/02	0.70
	6/28/02	No-flow conditions
	5/28/02	No-flow conditions
	4/27/02	No-flow conditions
	3/26/02	158
	2/25/02	No-flow conditions
	1/28/02	No-flow conditions
PROPERTY BOUNDARY	12/12/01	No-flow conditions
	10/30/02	3.80
	8/30/02	No-flow conditions
	5/28/02	9.41
	4/24/02	6.69
	3/25/02	22.8
	2/25/02	3.81
	1/28/02	11.1
	12/12/01	3.99
	10/3/2000	10.3
	12/29/1999	39
	7/14/1998	0.88
	4/9/1996	9.9

Table 4.1A
Summary of Analytical Results:
C-8 in Surface Water
Dry Run Landfill
Lubeck, WV

Sample	Date	C-8 (ug/l)
STREAM SAMPLING POINT#1	10/30/02	1.63
	8/30/02	No-flow conditions
	5/28/02	1.63
	4/24/02	0.932
	3/25/02	1.06
	2/25/02	0.850
	1/28/02	0.893
	12/12/01	1.19
	10/3/2000	0.758
	12/29/1999	0.54
	5/19/1998	1
STREAM SAMPLING POINT#2	10/30/02	29.2
	8/20/02	No-flow conditions
	5/28/02	51.0
	4/24/02	28.9
	3/25/02	66.6
	2/25/02	24.3
	1/28/02	42.4
	12/12/01	20.5
	10/3/2000	27.6
	12/29/1999	87
	5/19/1998	4.6
DRLEACHATE	10/30/02	704
	5/28/02	150
	4/24/02	237
	3/25/02	334
	2/25/02	256
	1/28/02	398
	12/12/01	109
	10/3/2000	27.4
	12/29/1999	34
	5/19/1998	56
	7/22/1997	62
POND UNDERDRAIN	10/30/02	38.8
	5/28/02	67.4
	4/24/02	33.4
	3/25/02	66.7
	2/25/02	37.1
	1/28/02	29.3
	12/12/01	35.4

Note: Analytical method changed as of November 2001 (see Section 2.0 for details).

Table 4.1B
Summary of Analytical Results:
C-8 in Groundwater
Dry Run Landfill, Lubeck, WV

Sample	Date	C-8 (ug/l)
DRMW-6A	10/9/02	1.13
	8/28/02	0.785
	5/22/02	1.24
	3/30/02	0.843
	2/20/02	0.822
	1/27/02	0.824
	12/12/01	1.04
	7/20/2000	0.212
	7/21/1999	0.096
	5/26/1998	0.27
	7/22/1997	0.36
	4/10/1996	0.19
DRMW-12	10/9/02	0.109
	8/28/02	0.0626
	5/22/02	0.0817
	3/30/02	0.0929
	2/20/02	0.11
	1/25/02	0.116
	12/12/01	0.086
	7/19/2000	0.16
	7/21/1999	0.134
	5/26/1998	<0.10
	7/22/1997	<0.1
	4/10/1996	<0.1
DRMW-12A	10/9/02	0.181
	8/28/02	0.0880
	5/22/02	0.0832
	3/30/02	0.0785
	2/20/02	0.125
	1/25/02	0.168
	12/12/01	0.158
	7/19/2000	0.128
	7/21/1999	0.081 J
	5/26/1998	<0.10
	7/22/1997	<0.1
	4/10/1996	<0.1
DRMW-12B	10/9/02	0.258
	10/9/02 (dup)	0.242
	8/28/02	NQ
	5/22/02	NQ
	3/30/02	NQ
	3/30/02 (dup)	NQ
	2/20/02	NQ
	1/25/02	0.073
	1/25/02 (dup)	0.085
	12/12/01	0.215
	7/20/2000	ND (0.029)
	7/21/1999	5.4
DRMW-13	6/16/1998	<0.1
	10/9/02	20.9
	8/28/02	13.1
	8/28/02 (dup) *	14.6
	5/22/02	16.9
	3/30/02	12.6
	2/20/02	11.5
	1/25/02	16.5
	12/12/01	9.86
	7/20/2000	9.8
	7/21/1999	3.6
	5/26/1998	9.2
	7/22/1997	7

Table 4.1B
Summary of Analytical Results:
C-8 in Groundwater
Dry Run Landfill, Lubeck, WV

Sample	Date	C-8 (ug/l)
DRMW-13A	10/9/02	6.66
	8/28/02	5.14
	5/22/02	2.31
	3/30/02	4.0
	2/20/02	3.73
	1/25/02	5.97
	12/12/01	6.4
	7/20/2000	9.9
	7/21/1999	0.070 J
	5/26/1998	8.7
	7/22/1997	15
	4/10/1996	8.2
	4/10/1996 (dup)	11
DRMW-14	10/15/02	NQ (<0.05)
	8/28/02	NQ
	5/22/02	NQ
	3/30/02	NQ
	2/20/02	NQ
	1/27/02	NQ
	12/12/01	NQ
	7/20/2000	0.115
	7/21/1999	2.5
	6/16/1998	<0.1
	7/21/1997	<0.1
	4/10/1996	<0.1
DRMW-15	10/15/02	4.92
	8/28/02	3.99
	5/22/02	5.0
	5/22/02 (dup) *	4.66
	3/30/02	4.91
	2/20/02	3.65
	1/27/02	4.35
	12/12/01	4.94
	7/20/2000	0.763
	7/21/1999	0.263
DRMW-16B	10/8/02	NQ (<0.05)
DRMW-17B	10/8/02	0.155
DRMW-18B	10/7/02	ND (<0.01)
DRMW-19B	10/7/02	NQ (<0.05)
DRMW-20B	10/8/02	NQ (<0.05)
DRMW-21A	10/9/02	0.270
DRMW-21B	10/9/02	NQ (<0.05)

ND = Not Detected at or above the limit of detection (LOD).

The listed LOD is approximate and varies by instrument and over time.

NQ = Not Quantifiable. Detected at a concentration above the LOD and below the limit of quantification (LOQ).

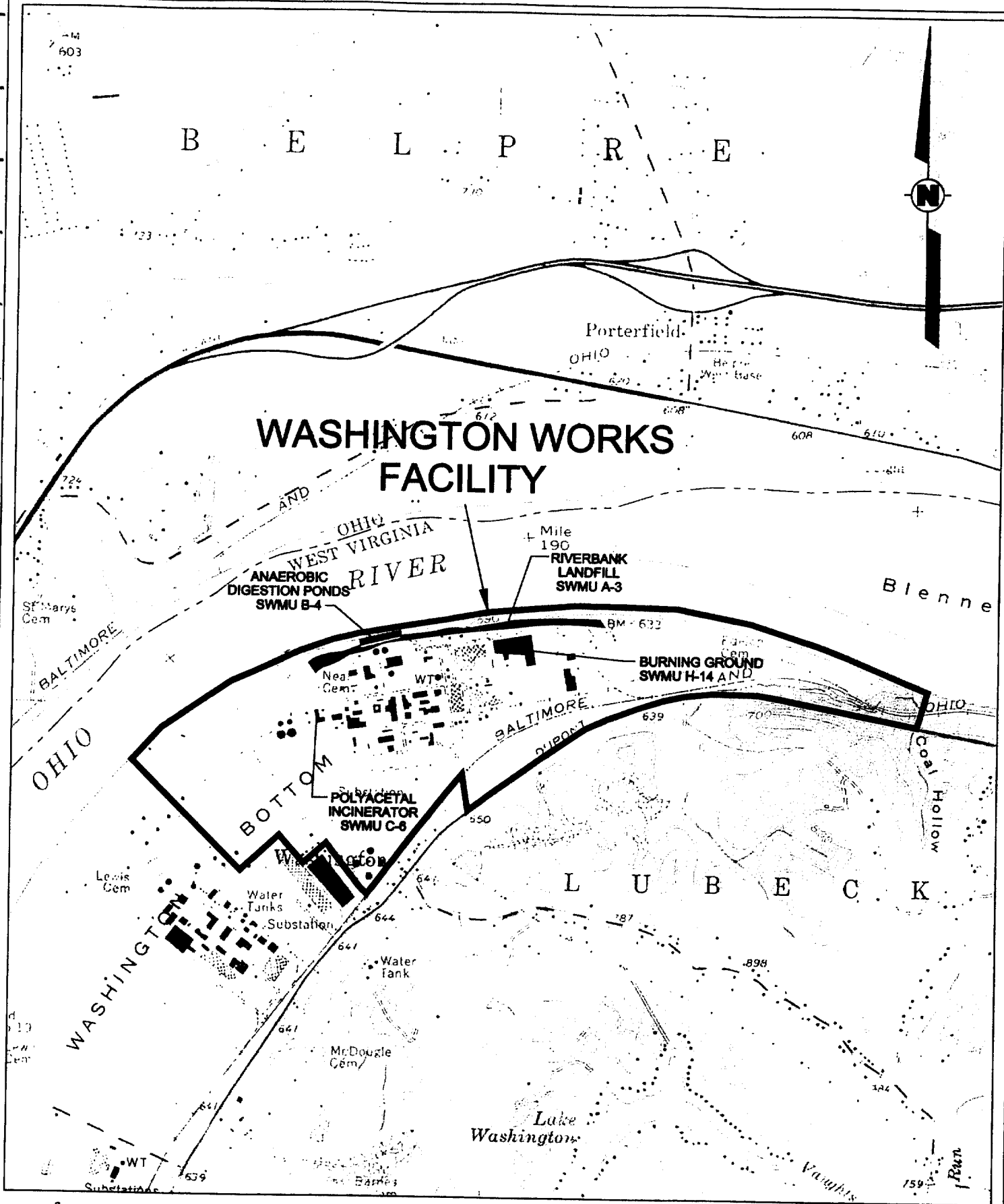
J = estimated value (below laboratory quantitation limit).

Note: Analytical method changed as of November 2001 (see Section 2.0 for details).

* Analytical duplicates' values were previously inadvertently omitted from the tables.

FIGURES

000042



000043

Source: MAP TAKEN FROM THE LUBECK, WV
USGS QUADRANGLE



Corporate Remediation Group

*An Alliance between
DuPont and URS Diamond*

Barley Mill Plaza, Building 27
Wilmington, Delaware 19805

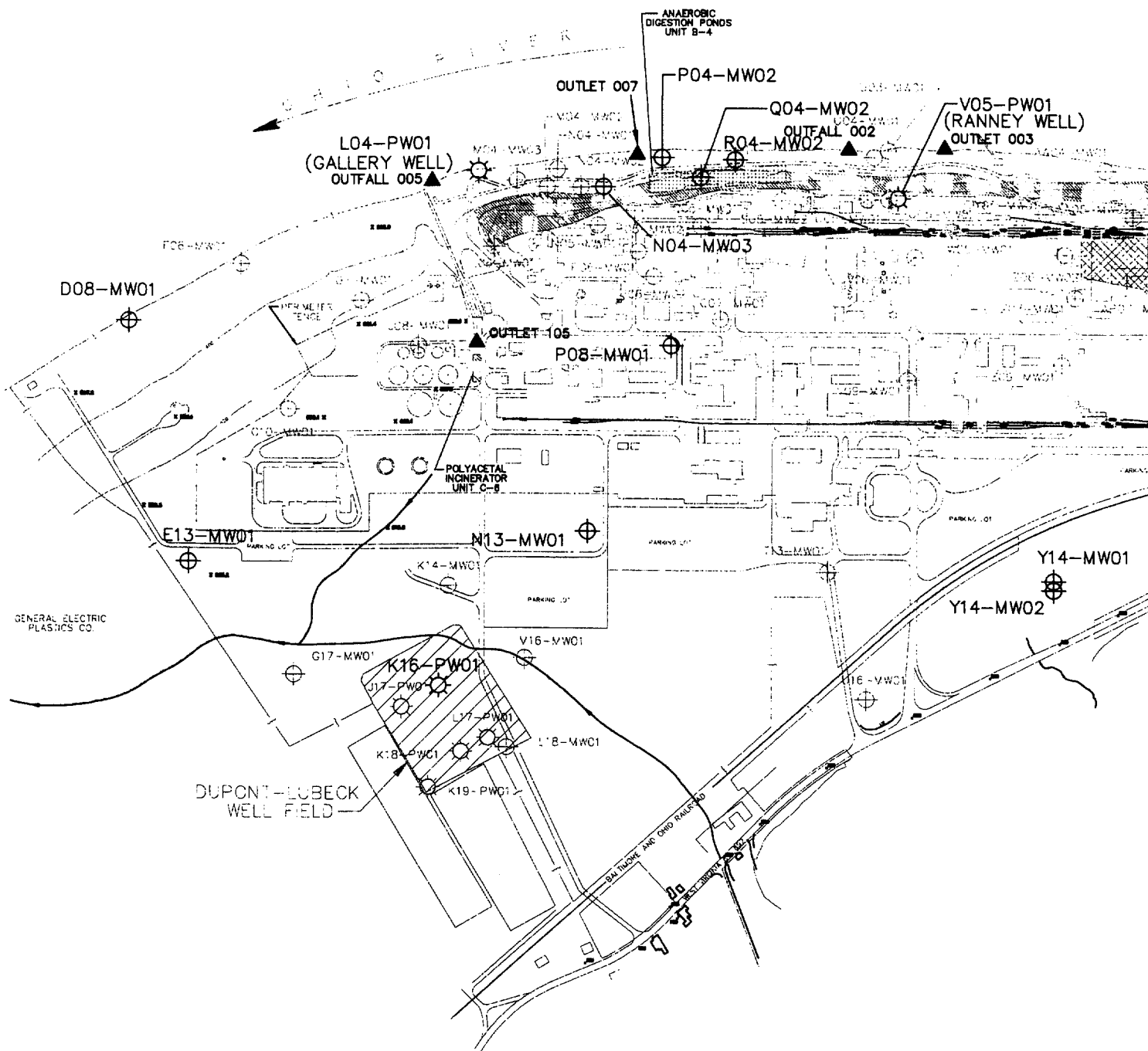


SITE LOCATION MAP

**DuPont Washington Works Facility
Washington, West Virginia**

SCALE	DESIGNED	DEL	REVIEW	DEL	DATE
Not to scale					
DATE	9/27/01	CHECKED	M. HOULDAY	APPROVED	

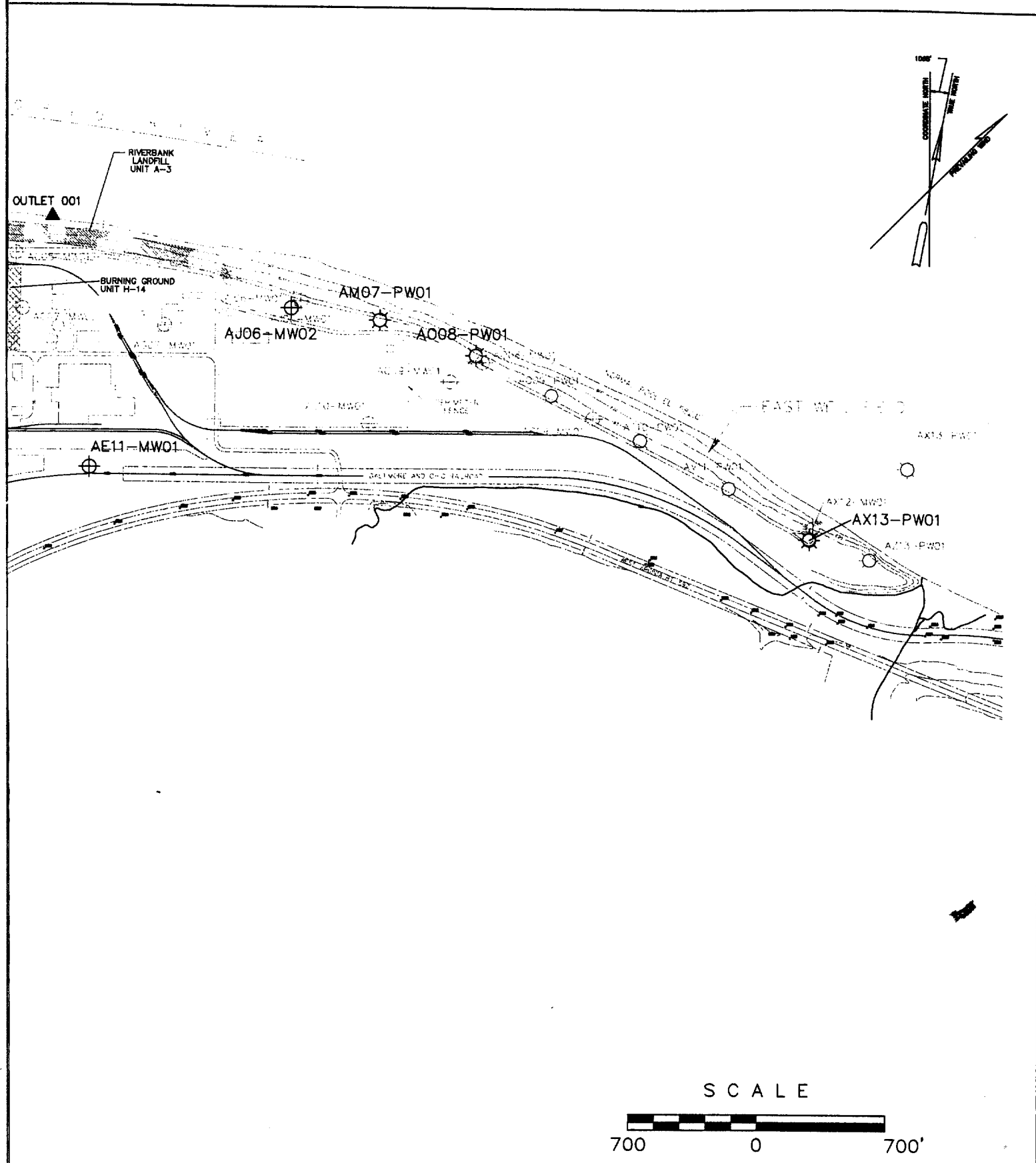
OLD FILE NO.
7423A001
FIGURE
1.0



LEGEND

- D08-MW01 = MONITORING WELL
 J17-PW01 = PRODUCTION WELL
 OUTLET 005 = OUTFALL SAMPLING POINT

000044



000444

DESIGNED	INITIALS
K. DAVIS	
DRAWN	
D.H. ENGLISH	
CHECKED	
K. DAVIS	
APPROVED(DESIGN)	
APPROVED(CONSTRUCTION)	



Corporate Remediation Group

An Alliance between
DuPont and URS Diamond

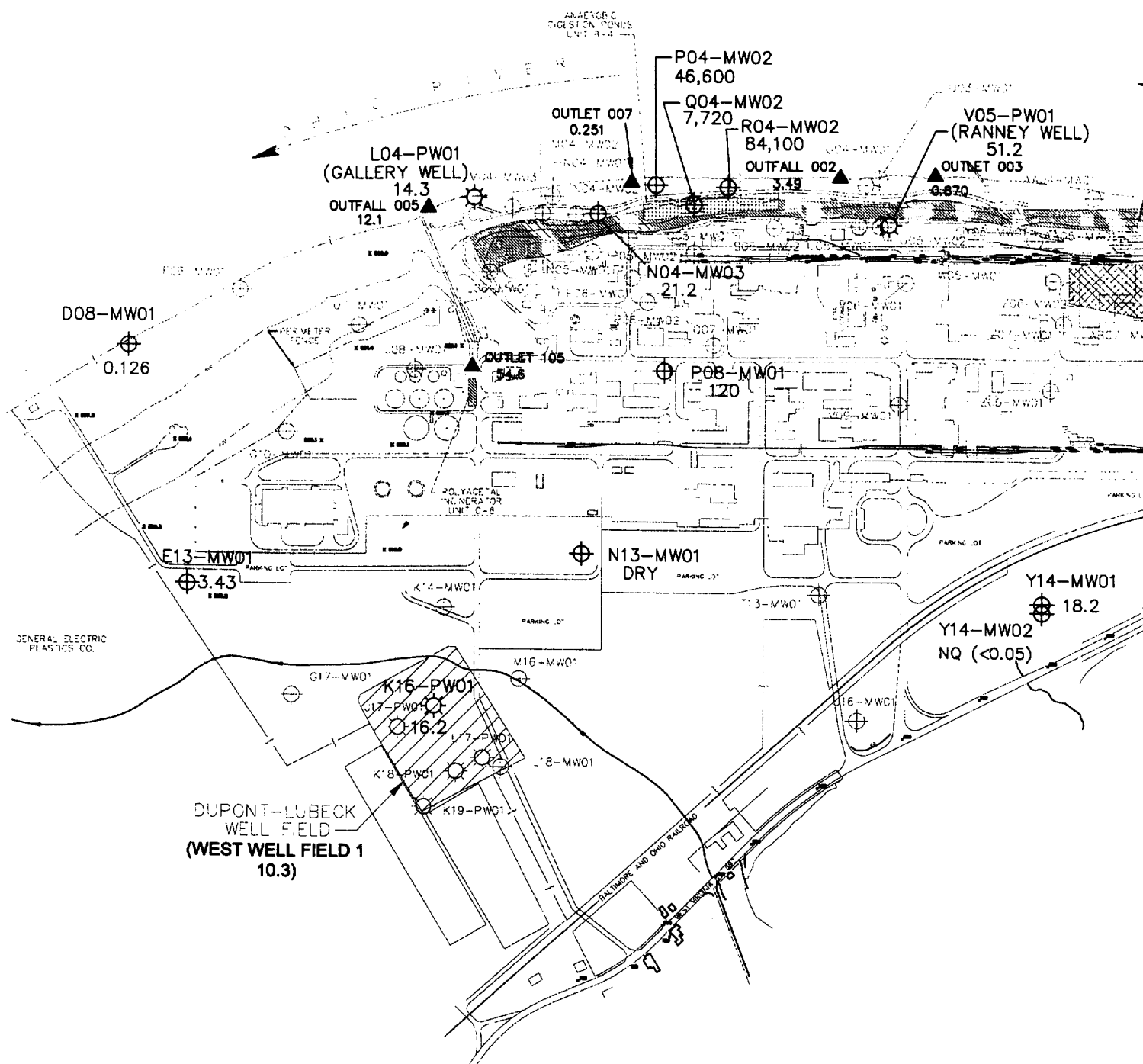
Barley Mill Plaza, Building 27
Wilmington, Delaware 19805



MONITORING WELL AND SURFACE WATER SAMPLE LOCATION MAP

DuPont Washington Works Facility
Washington, West Virginia

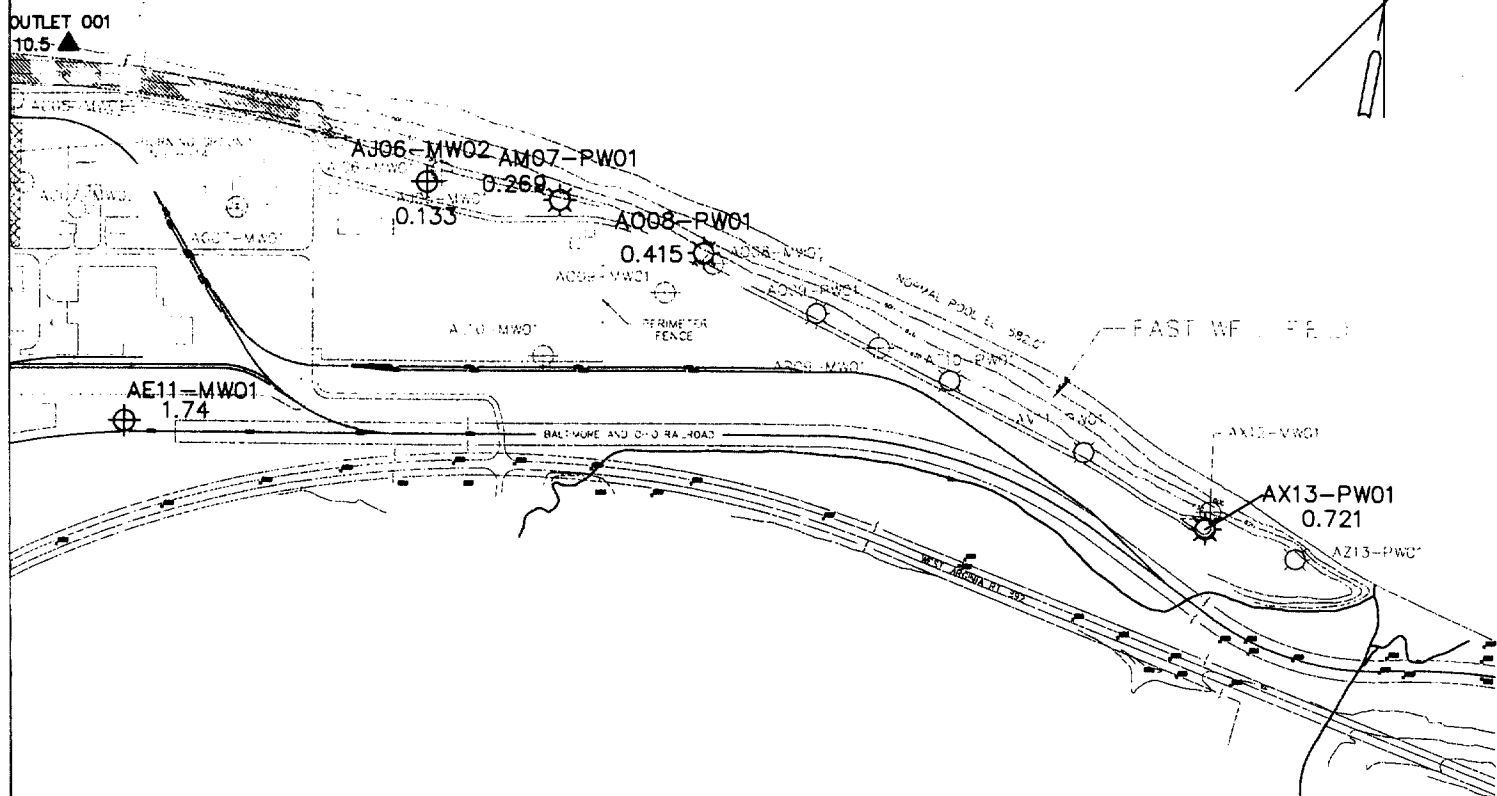
SCALE	DATE	CHG FILE NO.	FIGURE
As shown	04/11/2002	74238005	1.1



LEGEND

-  DOB-MW01 = MONITORING WELL
-  J17-PW01 = PRODUCTION WELL
-  OUTLET 005 = OUTFALL SAMPLING POINT
-  54.6 = CONCENTRATION OF C-8 (ug/L) IN SURFACE WATER
-  10.3 = CONCENTRATION OF C-8 (ug/L) IN GROUNDWATER

000045



DESIGNED	INITIALS
SJO	
DRAWN	
DEL	
CHECKED	
TDL	
APPROVED(DESIGN)	
ASH	
APPROVED(CONSTRUCTION)	



Corporate Remediation Group

An Alliance between
DuPont and URS Diamond

Barley Mill Plaza, Building 27
Wilmington, Delaware 19805

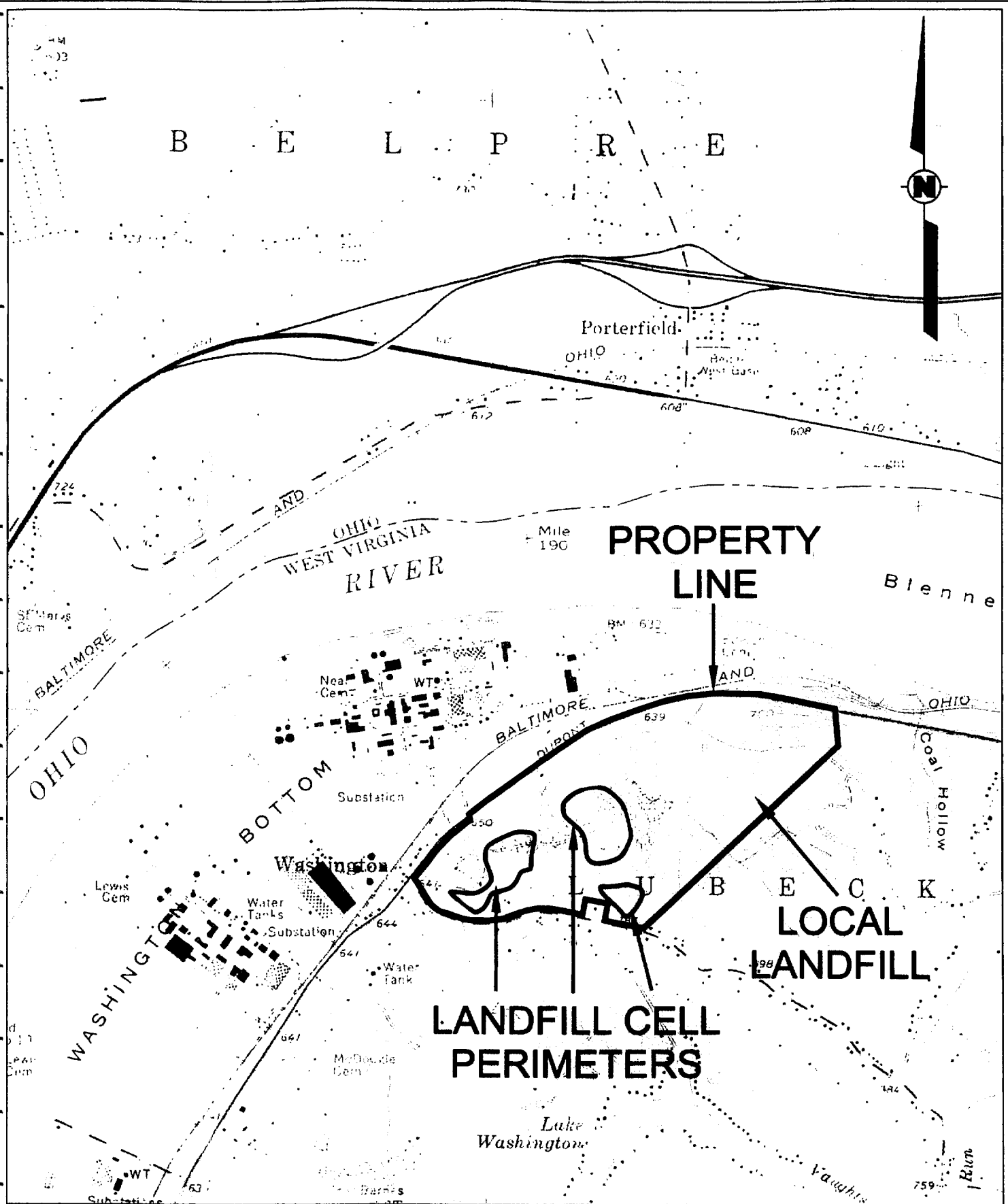


C-8 IN SURFACE WATER AND
GROUNDWATER - 4Q02

DuPont Washington Works Facility
Washington, West Virginia

SCALE	DATE	CAD FILE NO.	FIGURE
As shown	5/24/02	74238005	1.2

000045a



000046



Corporate Remediation Group

An Alliance between
DuPont and URS Diamond

Barley Mill Plaza, Building 27
Wilmington, Delaware 19805

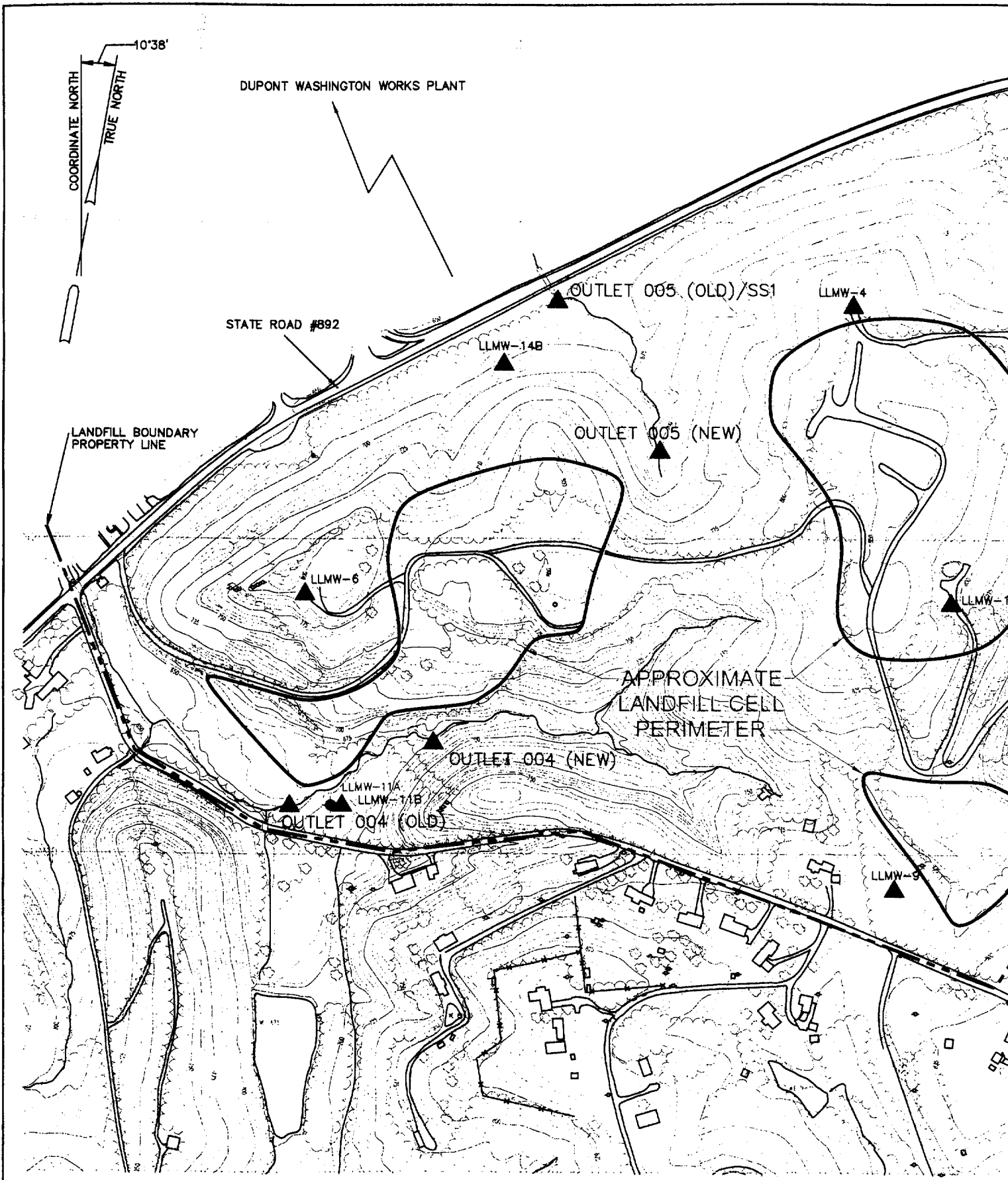


SITE LOCATION MAP

Local Landfill
Washington, West Virginia

SCALE Not to scale	DESIGNED DEL	DRAWN DEL	QID FILE NO. 7421A001
DATE 8/27/01	CHECKED M. HOULDAY	APPROVED	FIGURE 2.0

Source: USGS Little Hocking, Ohio - West Virginia
Quadrangle

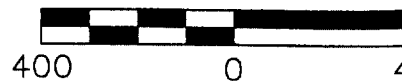


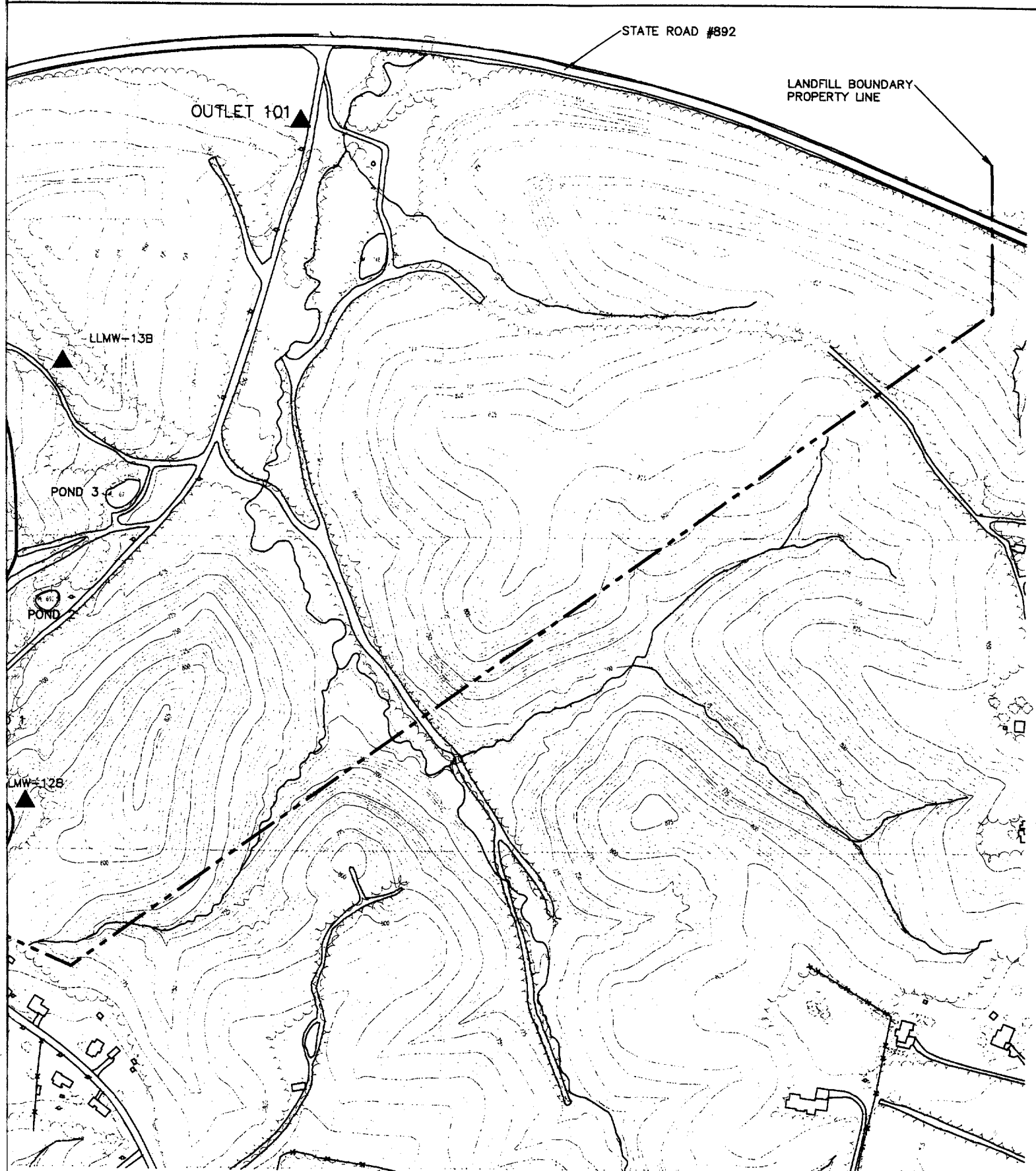
LEGEND

- LLMW-8 OVERBURDEN MONITORING WELL
- LLMW-6 BEDROCK MONITORING WELL
- OUTLET 101 SURFACE WATER SAMPLE

000047

SCALE





0000479

DESIGNED	INITIALS
DRAWN	
DEL	
CHECKED	
TDL	
APPROVED(DESIGN)	
APPROVED(CONSTRUCTION)	



Corporate Remediation Group

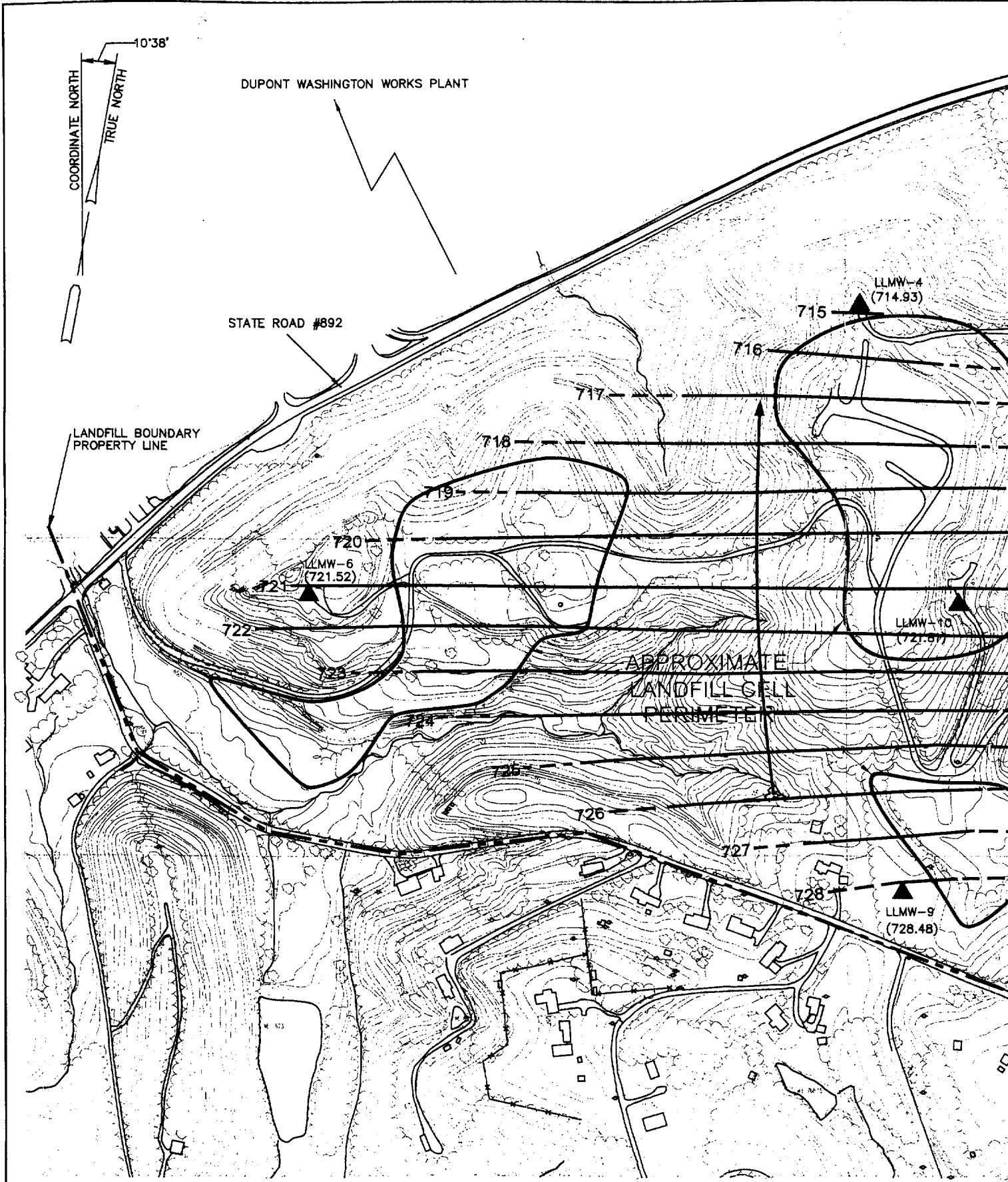
An Alliance between
DuPont and URS Diamond

Barley Mill Plaza, Building 27
Wilmington, Delaware 19805

LOCAL LANDFILL MONITORING WELL AND
SURFACE WATER SAMPLE LOCATION MAP

Local Landfill
Washington, West Virginia

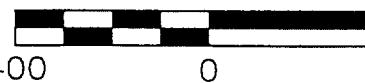
SCALE	DATE	DWG FILE NO.	FIGURE
As shown	12/18/01	7421B014	2.1



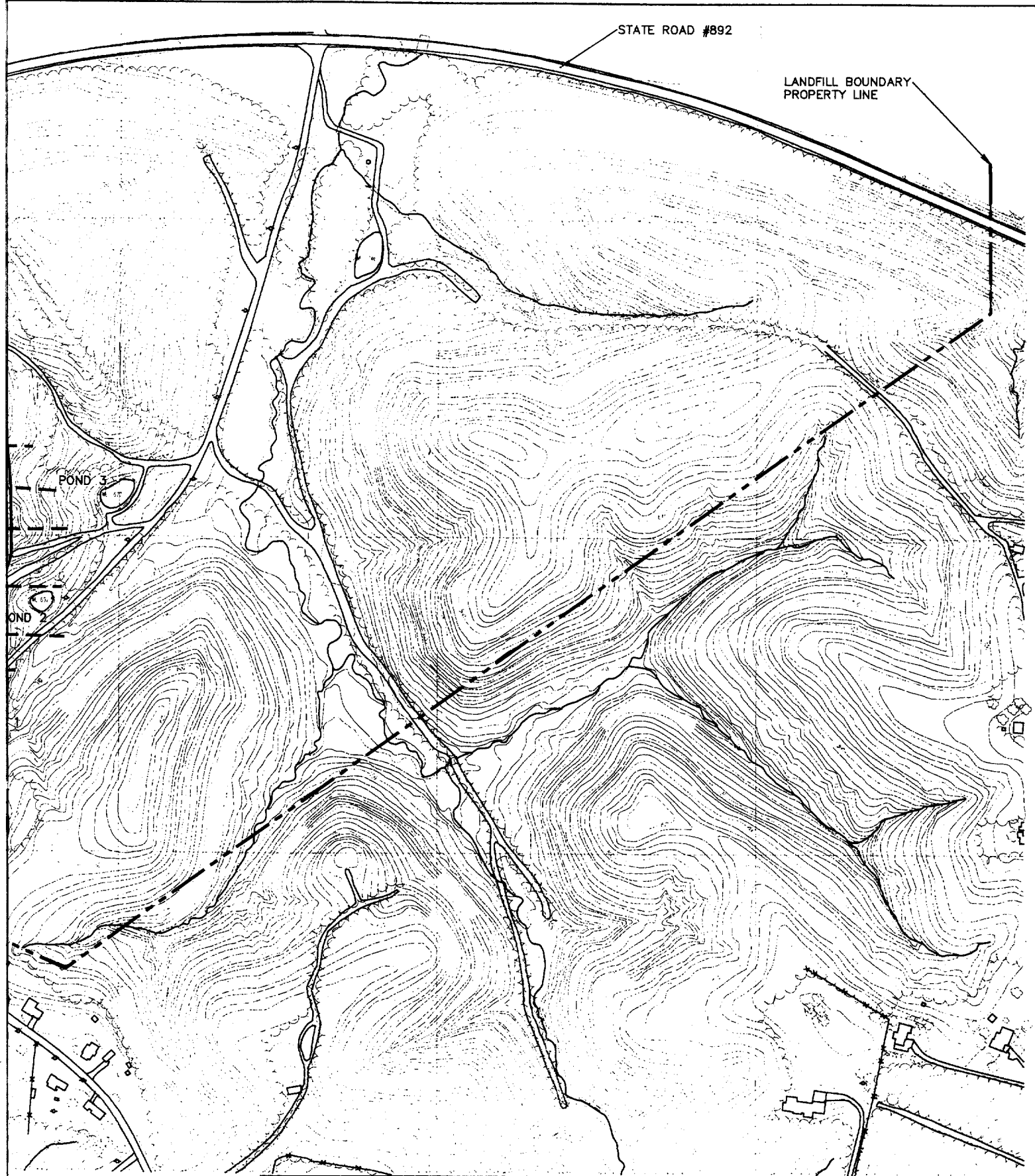
LEGEND

- ◆ --- OVERBURDEN MONITORING WELL
- ▲ --- BEDROCK MONITORING WELL
- (727.92) --- MONITOR WELL WATER LEVEL ELEVATION
- --- APPROXIMATE BEDROCK GROUND WATER FLOW DIRECTION
- 720 --- GROUND WATER CONTOUR WITH ELEVATION

S C A L E



000048



000048a

800'

DESIGNED	INITIALS
DRAWN	
DEL	
CHECKED	
TDL	
APPROVED(DESIGN)	
APPROVED(CONSTRUCTION)	



Corporate Remediation Group

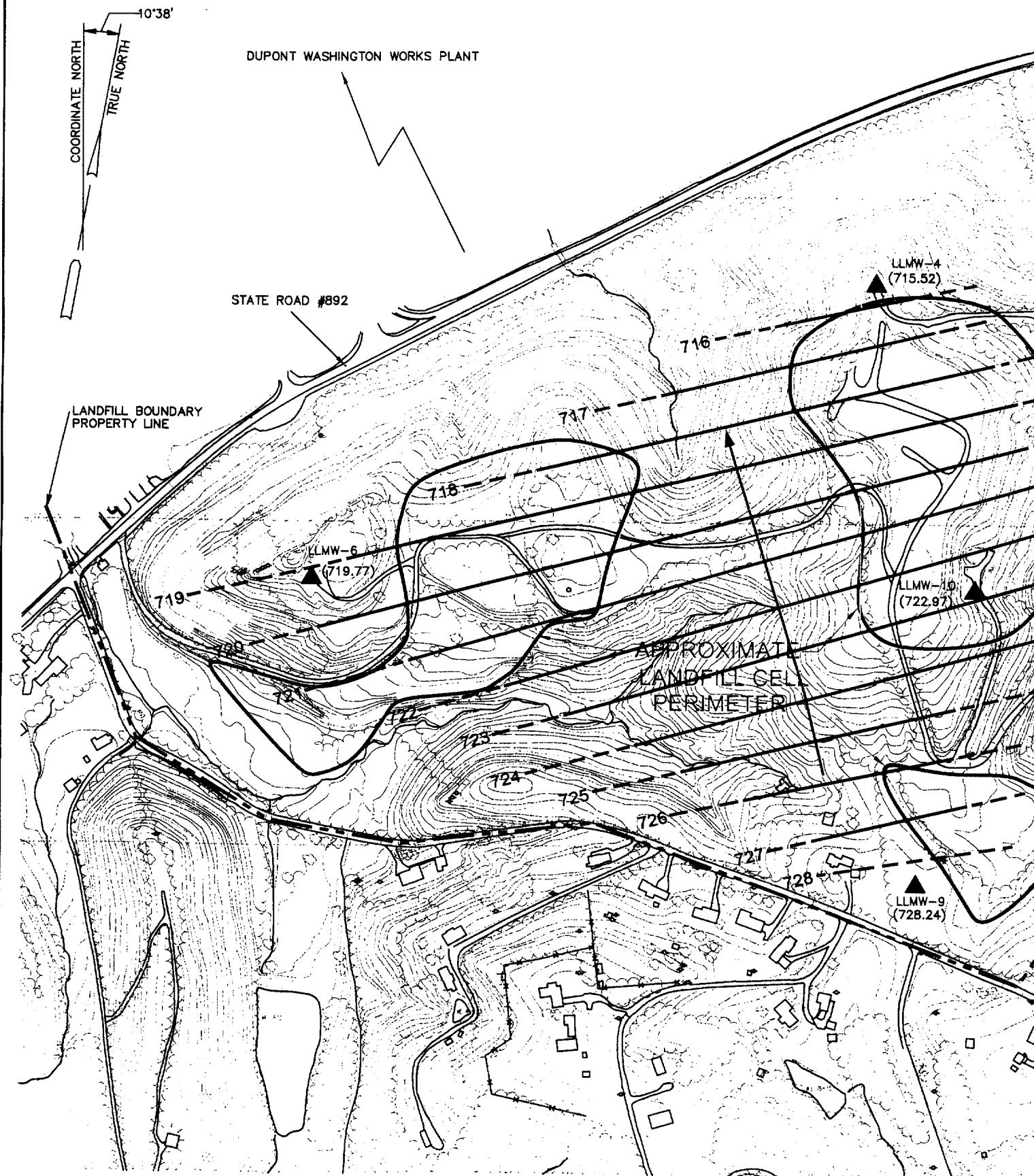
*An Alliance between
DuPont and URS Diamond*

Barley Mill Plaza, Building 27
Wilmington, Delaware 19805

**GROUNDWATER ELEVATION
CONTOUR MAP - 2Q02**

Local Landfill
Washington, West Virginia

SCALE As shown	DATE 11/27/02	CAD FILE NO. 7421B017	FIGURE 2.2A
-------------------	------------------	--------------------------	----------------

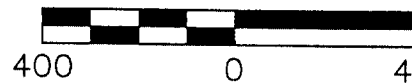


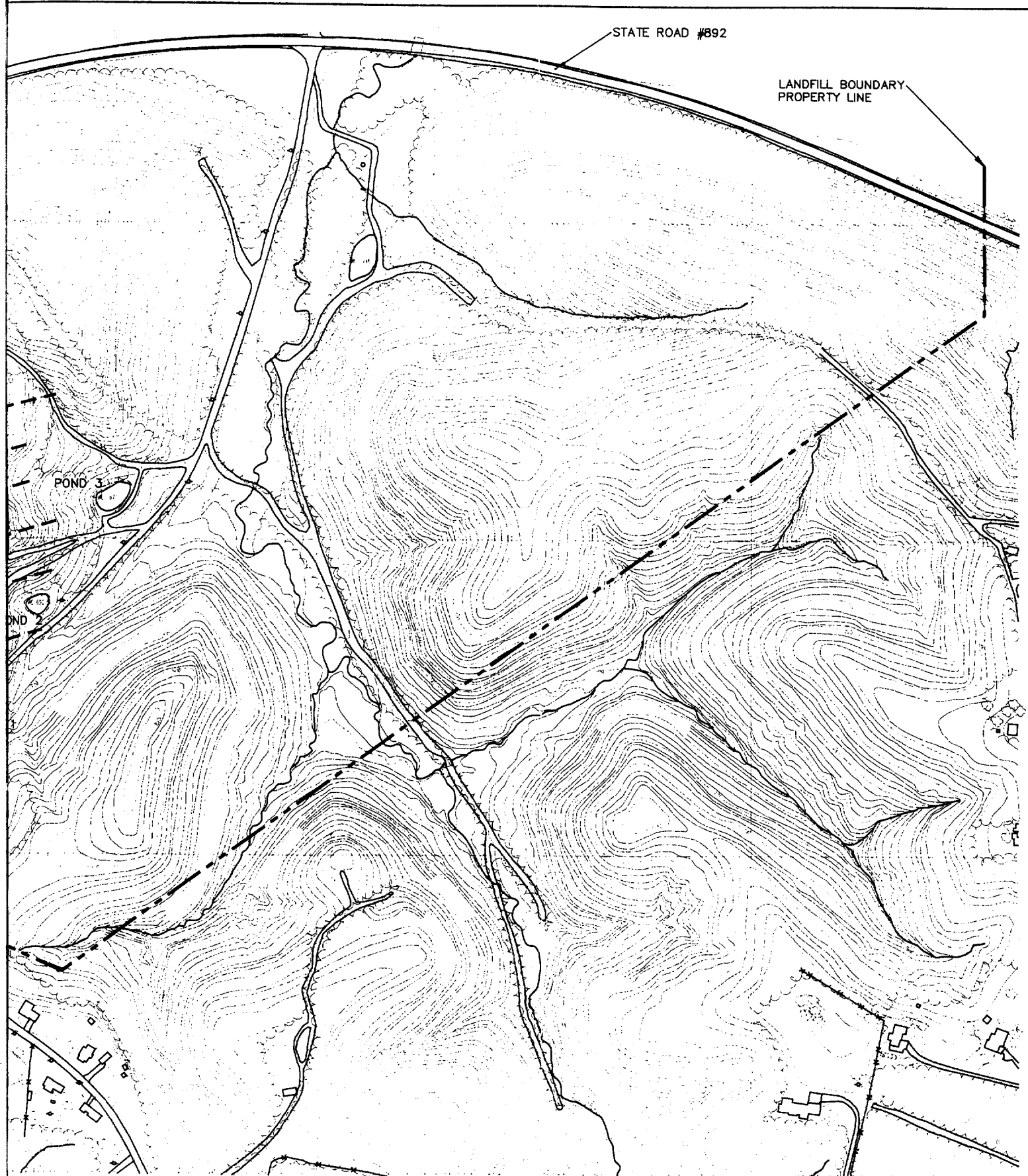
LEGEND

- ◆ --- OVERBURDEN MONITORING WELL
- ▲ --- BEDROCK MONITORING WELL
- (727.92) --- MONITOR WELL WATER LEVEL ELEVATION
- --- APPROXIMATE BEDROCK GROUND WATER FLOW DIRECTION
- 720 --- GROUND WATER CONTOUR WITH ELEVATION

000049

SCALE





0000H9a

800'

DESIGNED	INITIALS
DRAWN	
DEL	
CHECKED	
TDL	
APPROVED(DESIGN)	
APPROVED(CONSTRUCTION)	



Corporate Remediation Group

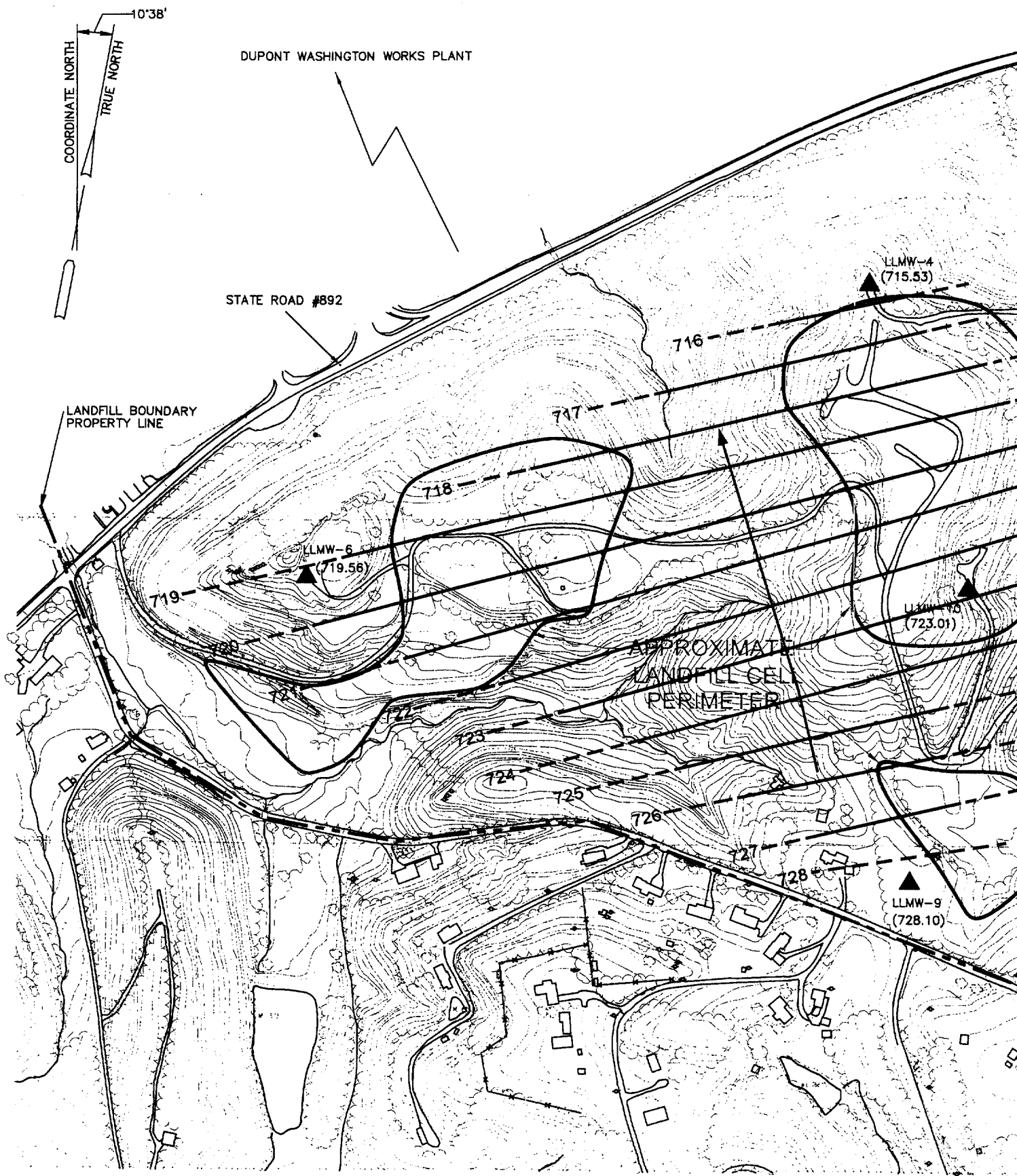
An Alliance between
DuPont and URS Diamond

Barley Mill Plaza, Building 27
Wilmington, Delaware 19805

GROUNDWATER ELEVATION CONTOUR MAP - 3Q02

Local Landfill
Washington, West Virginia

SCALE	DATE	CAD FILE NO.	FIGURE
As shown	11/27/02	7421B018	2.2B

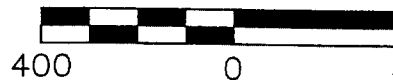


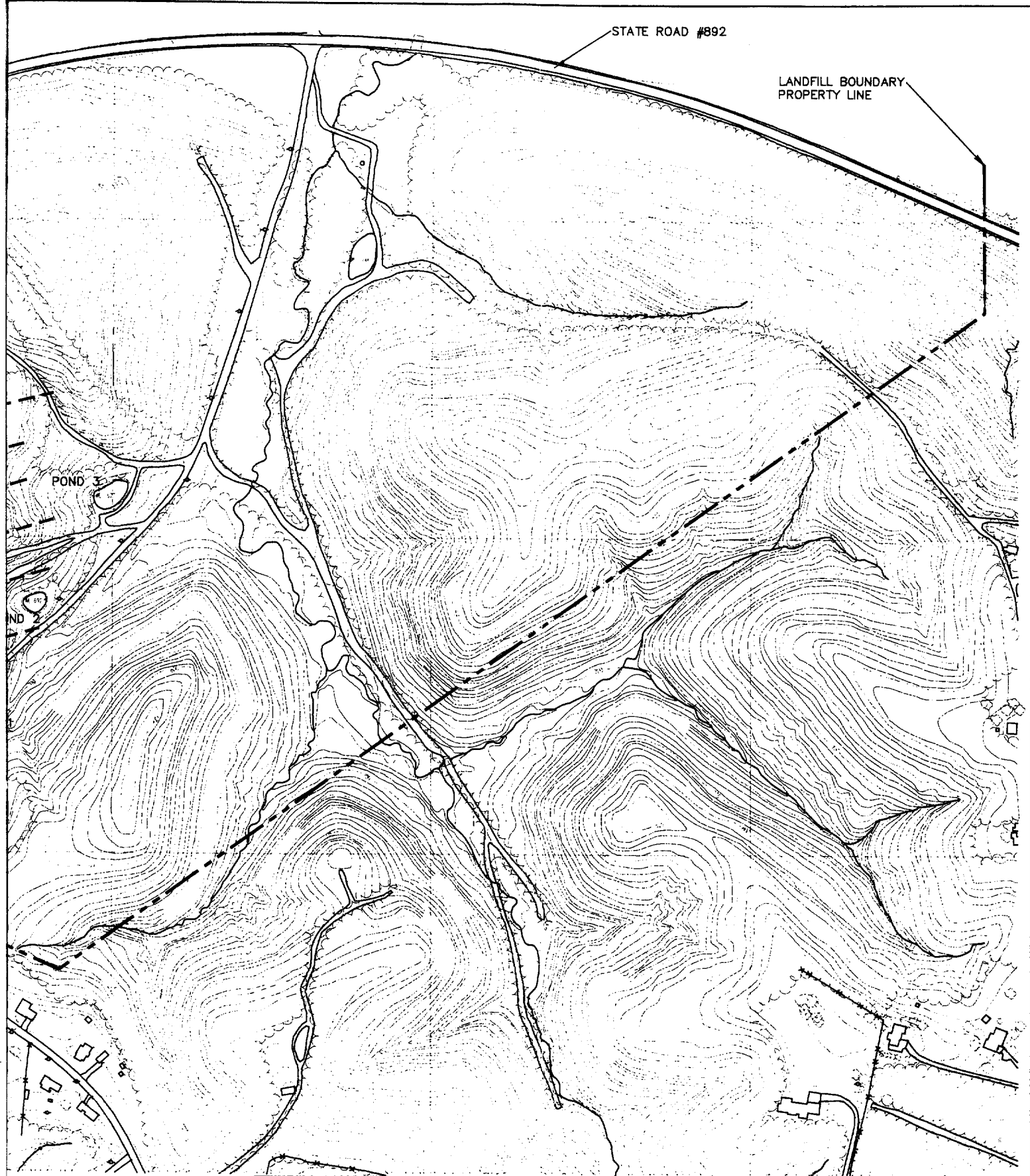
LEGEND

- ◆ --- OVERBURDEN MONITORING WELL
- ▲ --- BEDROCK MONITORING WELL
- (727.92) --- MONITOR WELL WATER LEVEL ELEVATION
- --- APPROXIMATE BEDROCK GROUND WATER FLOW DIRECTION
- 720 --- GROUND WATER CONTOUR WITH ELEVATION

000050

S C A L E





STATE ROAD #892

LANDFILL BOUNDARY
PROPERTY LINE

POND 3

000050a

DESIGNED	INITIALS
DRAWN	
DEL	
CHECKED	
TDL	
APPROVED(DESIGN)	
APPROVED(CONSTRUCTION)	



Corporate Remediation Group

*An Alliance between
DuPont and URS Diamond*

Barley Mill Plaza, Building 27
Wilmington, Delaware 19805

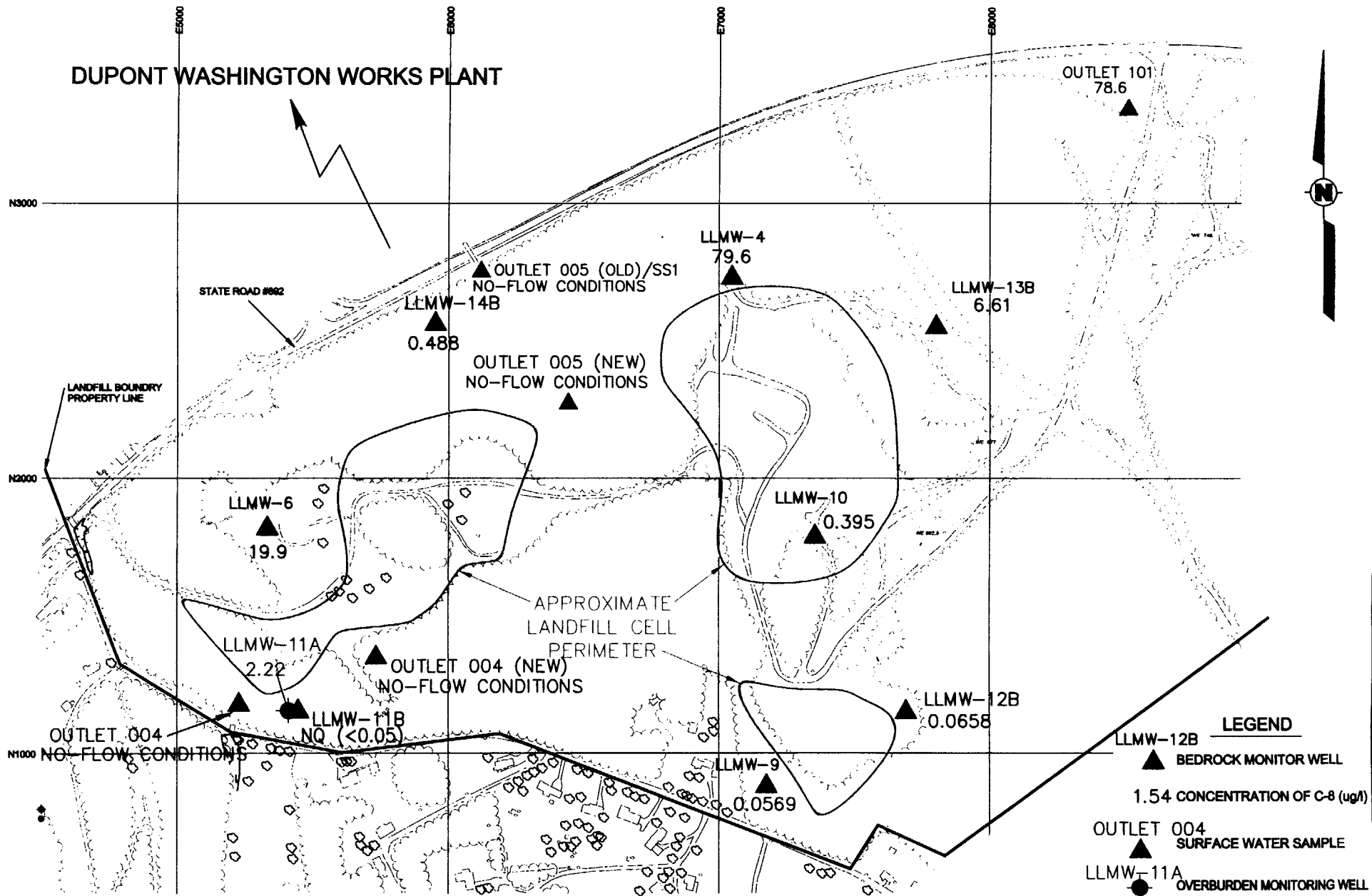
**GROUNDWATER ELEVATION
CONTOUR MAP - 4Q02**

Local Landfill
Washington, West Virginia

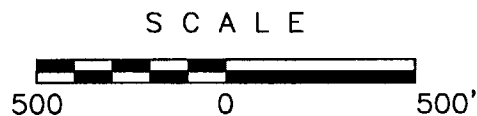
SCALE As shown	DATE 11/27/02	CAD FILE NO. 7421B019	FIGURE 2.2C
-------------------	------------------	--------------------------	----------------

800'

DUPONT WASHINGTON WORKS PLANT



000051



Corporate Remediation Group

*An Alliance between
DuPont and URS Diamond*

Barley Mill Plaza, Building 27
Wilmington, Delaware 19805



**C-8 IN GROUNDWATER AND
SURFACE WATER - 4Q02**

Local Landfill
Washington, WV

SCALE	DESIGNED	DRAWN	CAD FILE NO.
As shown	K. DAVIS	D.H. ENGLISH	7421A009
DATE	CHECKED	APPROVED	FIGURE
6/24/02	K. DAVIS		2.3

LETART LANDFILL PERIMETER

ACCESS ROAD

PROPERTY LINE

NORMAL POOL ELEV 565

Rural

Quarry

Racine Lock and Dam

Gaging Sta

582



Rural

Mud Run

Run

Letart

Evergreen Cem

Letart Falls

Cemetery 606

Letart Island

Gravel Pit

Guiding CL

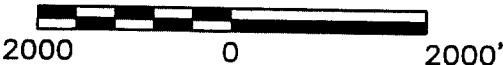
Tombleson Run

MASON CO MEIGS JAC

Light

Mile 234

SCALE



000052



Corporate Remediation Group

An Alliance between
DuPont and The W-C Diamond Group

Barley Mill Plaza, Building 27
Wilmington, Delaware 19880-0027

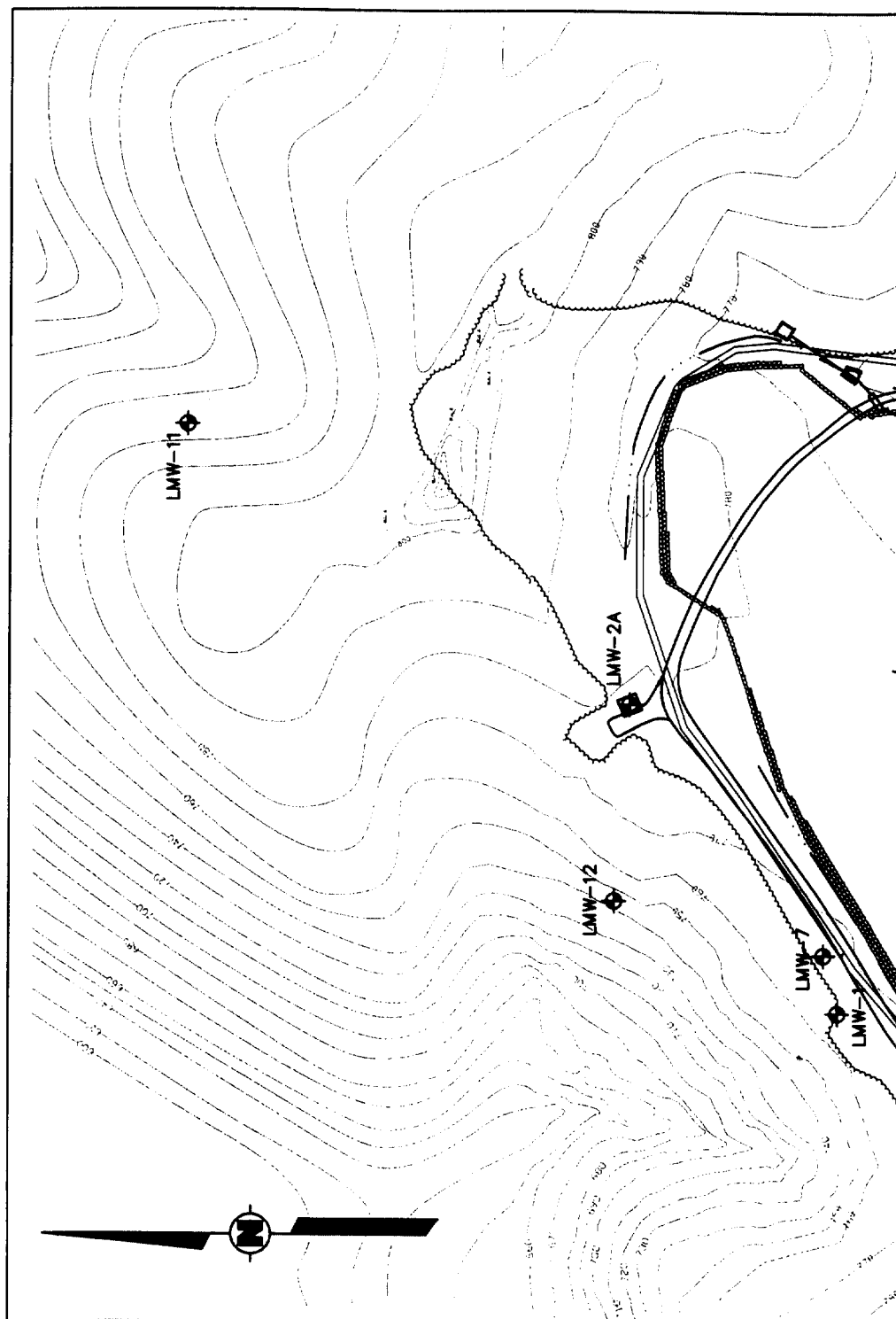
SITE LOCATION MAP

Letart Landfill Site
Letart, WV

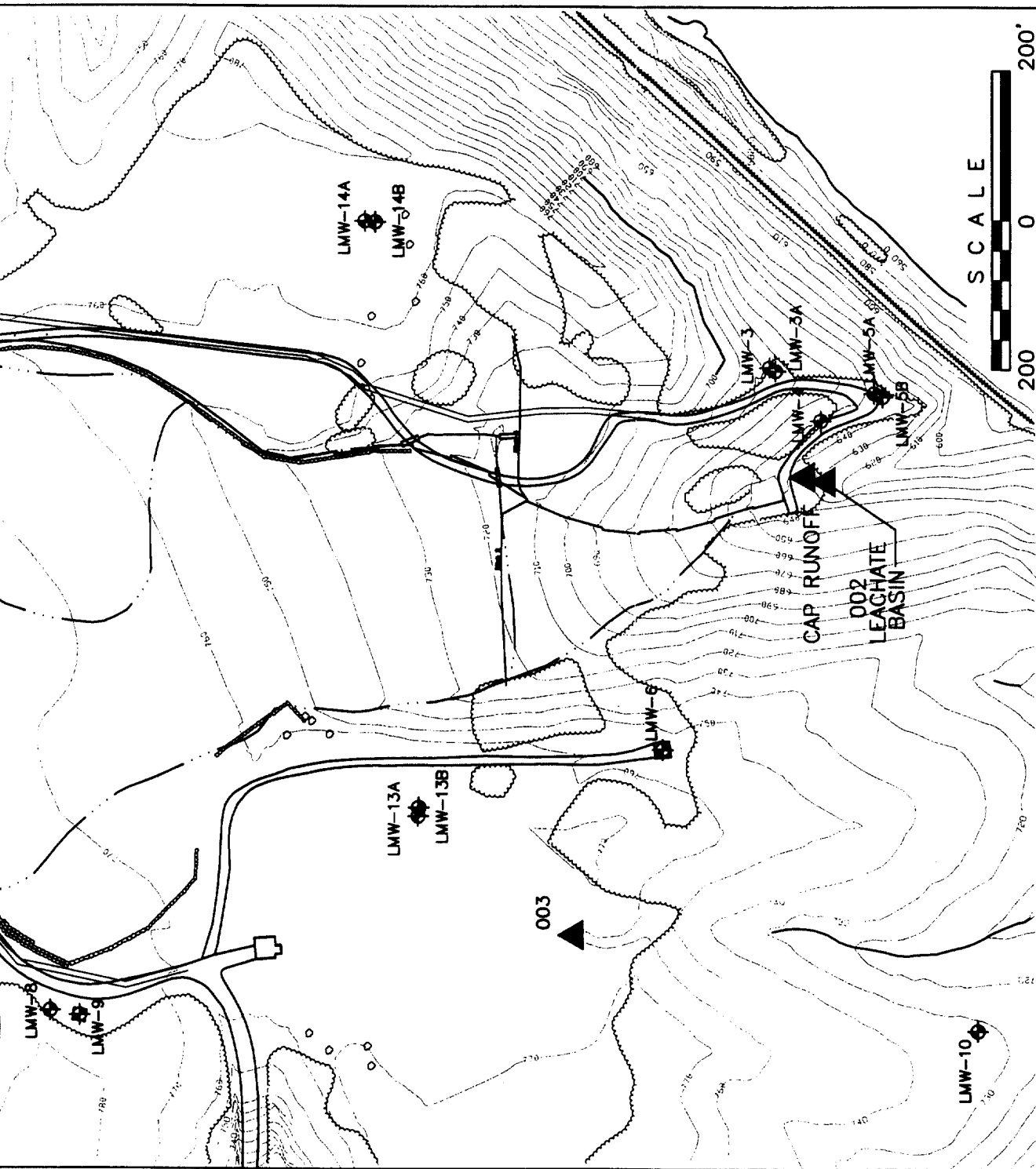
SCALE	REVISED	DATE	FILE NO.
As shown	TOL	DEL	7258-003
DATE	CHANGED	APPROVED	FIGURE
12/21/9			3.0

SOURCE: NEW HAVEN, WV-DHD QUADRANGLE 7.5' SERIES

000053



0000539



LEGEND:

- ◆ LMW-8 A ZONE MONITOR WELL
- ◆ LMW-3 C ZONE MONITOR WELL
- ◆ LMW-4 D/E ZONE MONITOR WELL
- ◆ LMW-2A F ZONE MONITOR WELL
- ▲ SURFACE WATER SAMPLE LOCATION



Corporate Remediation Group

An Alliance between
DuPont and URS Diamond

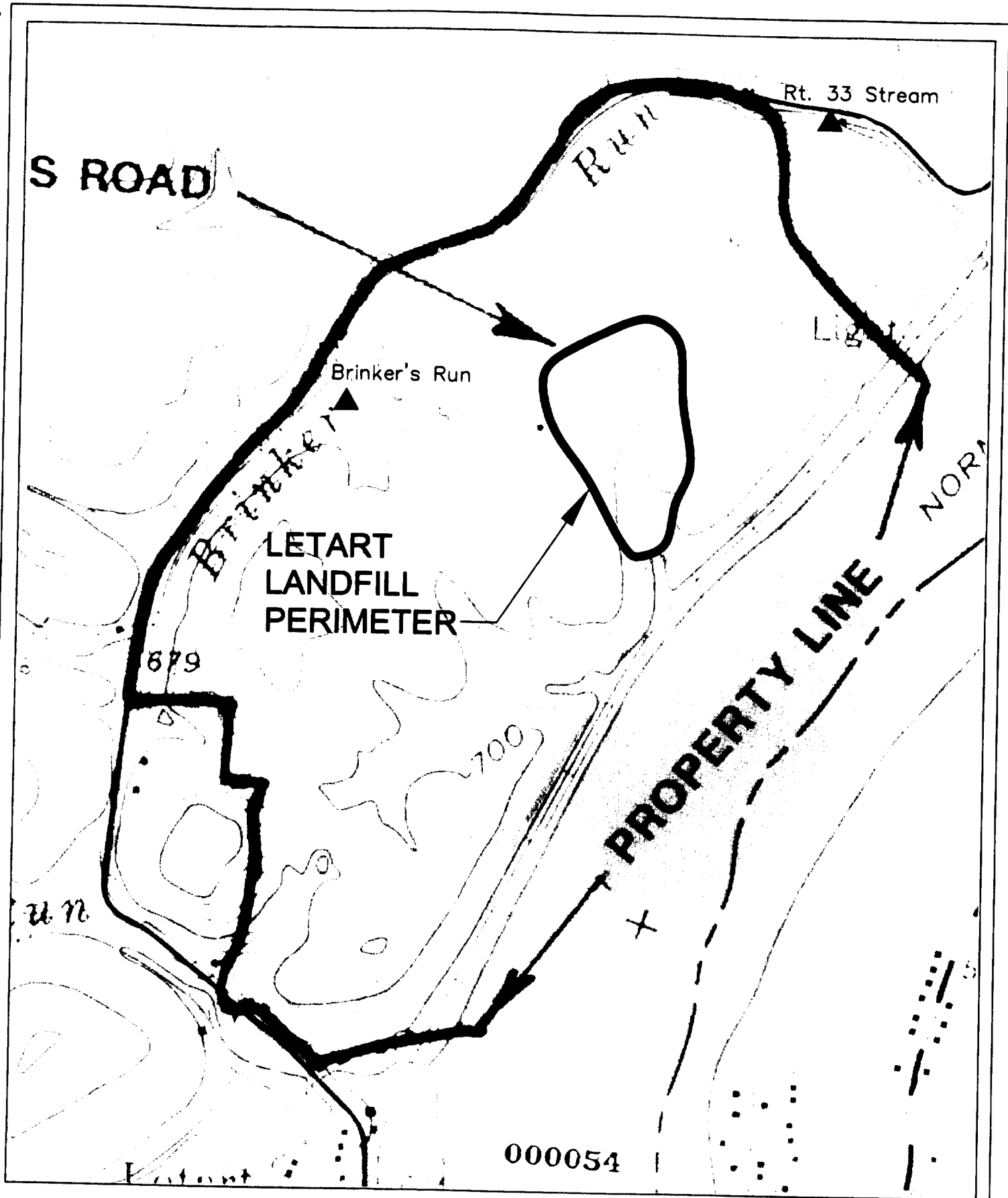
Barley Mill Plaza, Building 27
Wilmington, Delaware 19805



Letart Landfill Site
Letart, West Virginia

**MONITORING WELL AND SURFACE
WATER LOCATION SAMPLE MAP**

SCALE	As shown	DATE	12/4/91	BY	RD	APP'D	DEL	DATE	7/25/91	REV	3.1A
-------	----------	------	---------	----	----	-------	-----	------	---------	-----	------



LEGEND:

▲ SURFACE WATER SAMPLE LOCATION

SCALE

650 0 650'

SOURCE: MAP TAKEN FROM THE USGS NEW HAVEN, WV 7.5' SERIES QUADRANGLE



Corporate Remediation Group

*An Alliance between
DuPont and URS Diamond*

Barley Mill Plaza, Building 27
Wilmington, Delaware 19805

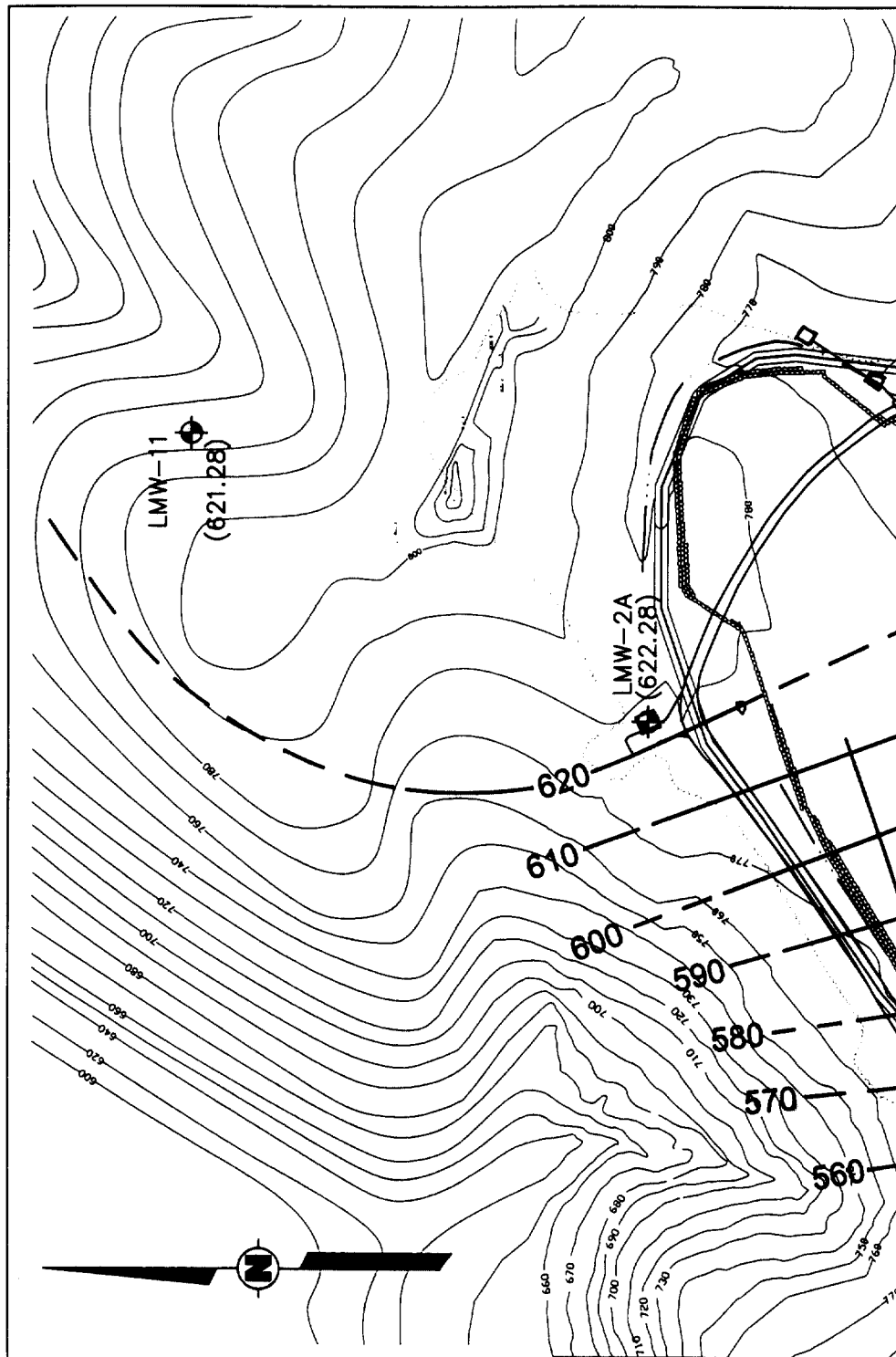


**RT. 33 STREAM AND BRINKER'S RUN
SURFACE WATER SAMPLING LOCATIONS**

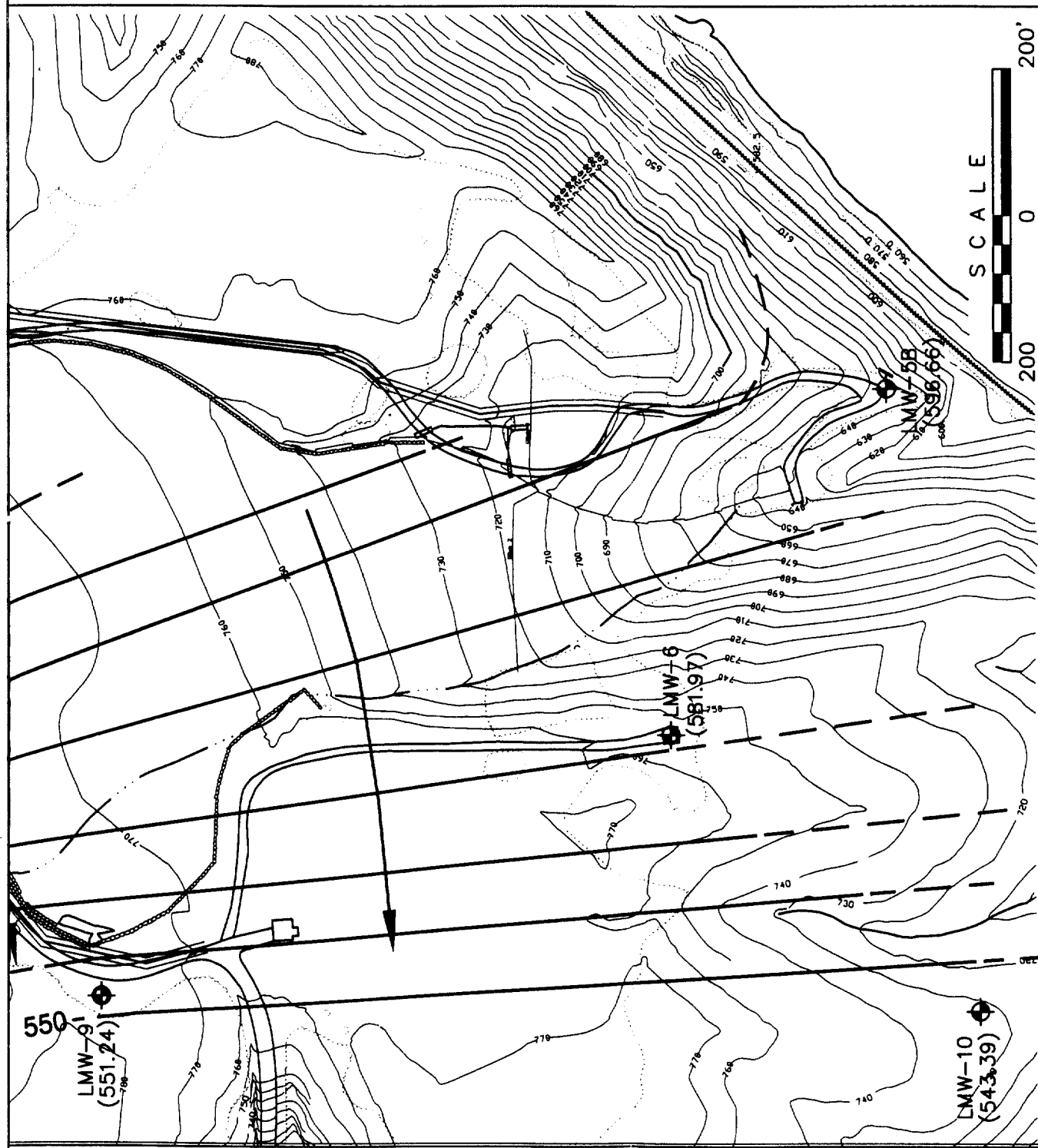
**Letart Landfill Site
Letart, West Virginia**

SCALE As shown	DESIGNED	DRAWN	DEL	CAD FILE NO. 7420A019
DATE 11/25/02	CHECKED	APPROVED	TOL	FIGURE 3.1B

000055



0000557



**F ZONE GROUNDWATER ELEVATION
CONTOUR MAP - 2Q02**

Letart Landfill Site
Letart, West Virginia



Corporate Remediation Group
An Alliance between
DuPont and URS Diamond

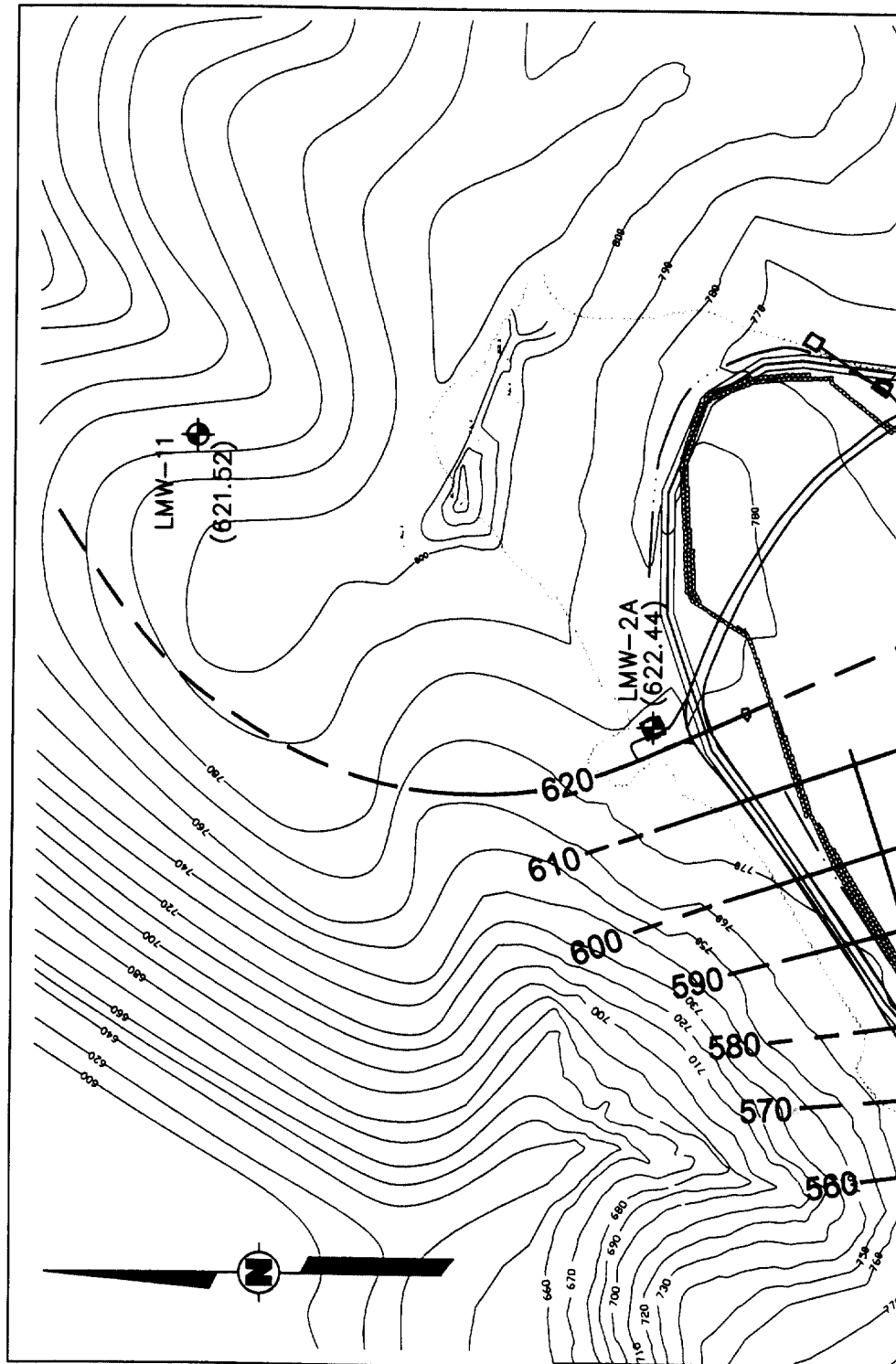
Borley Mill Plaza, Building 27
Wilmington, Delaware 19805

LEGEND:

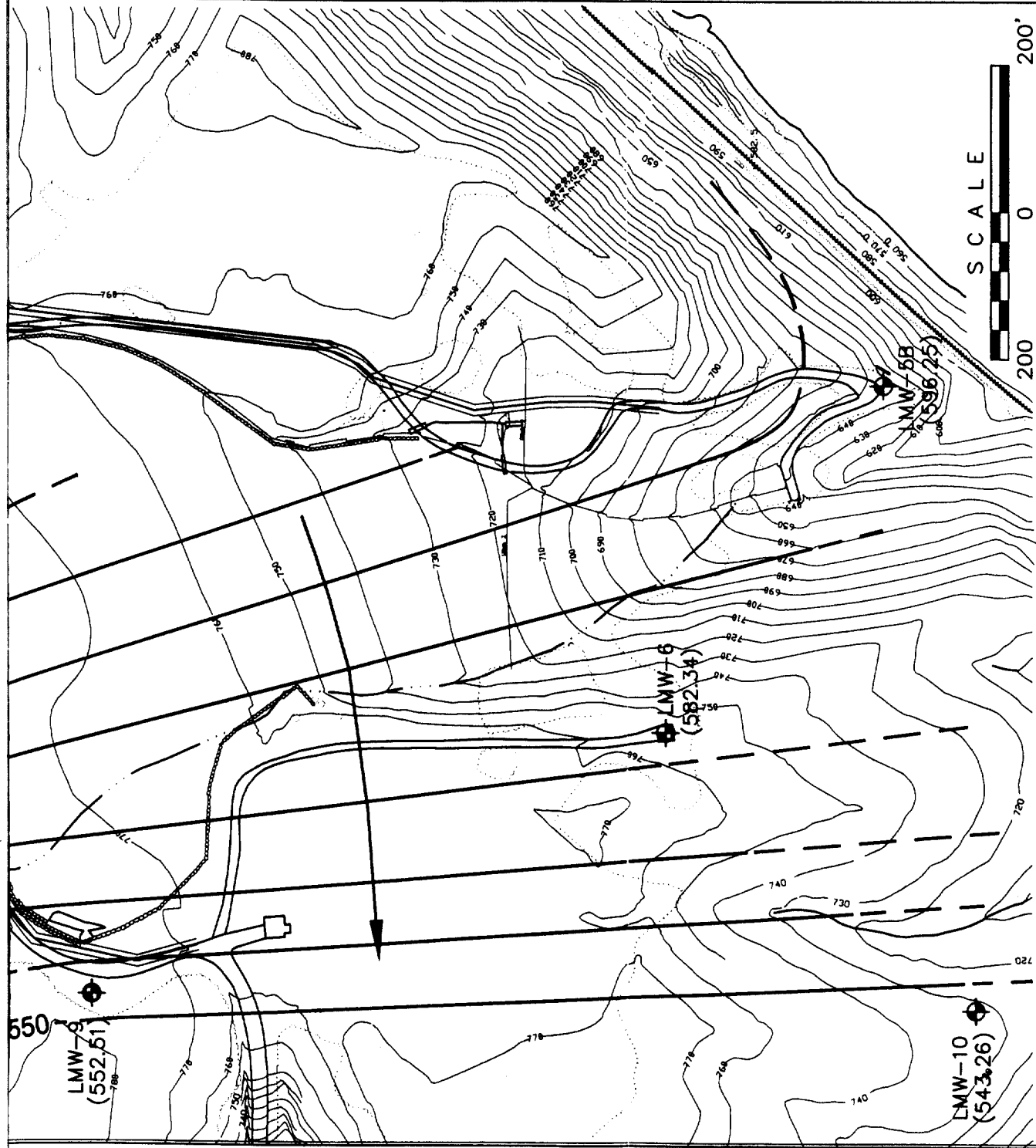
- LMW-2A F ZONE MONITOR WELL
- 541.39 GROUNDWATER ELEVATION MEASUREMENT
- 550 GROUNDWATER CONTOUR LINE
- GENERALIZED GROUNDWATER FLOW DIRECTION

SCALE	DATE	BY	CHKD	DATE	BY
11/22/02	11/22/02	K. DAVIS	11/22/02	11/22/02	3.2A

000056



0000569



F ZONE GROUNDWATER ELEVATION
CONTOUR MAP - 3Q02

Letart Landfill Site
Letart, West Virginia

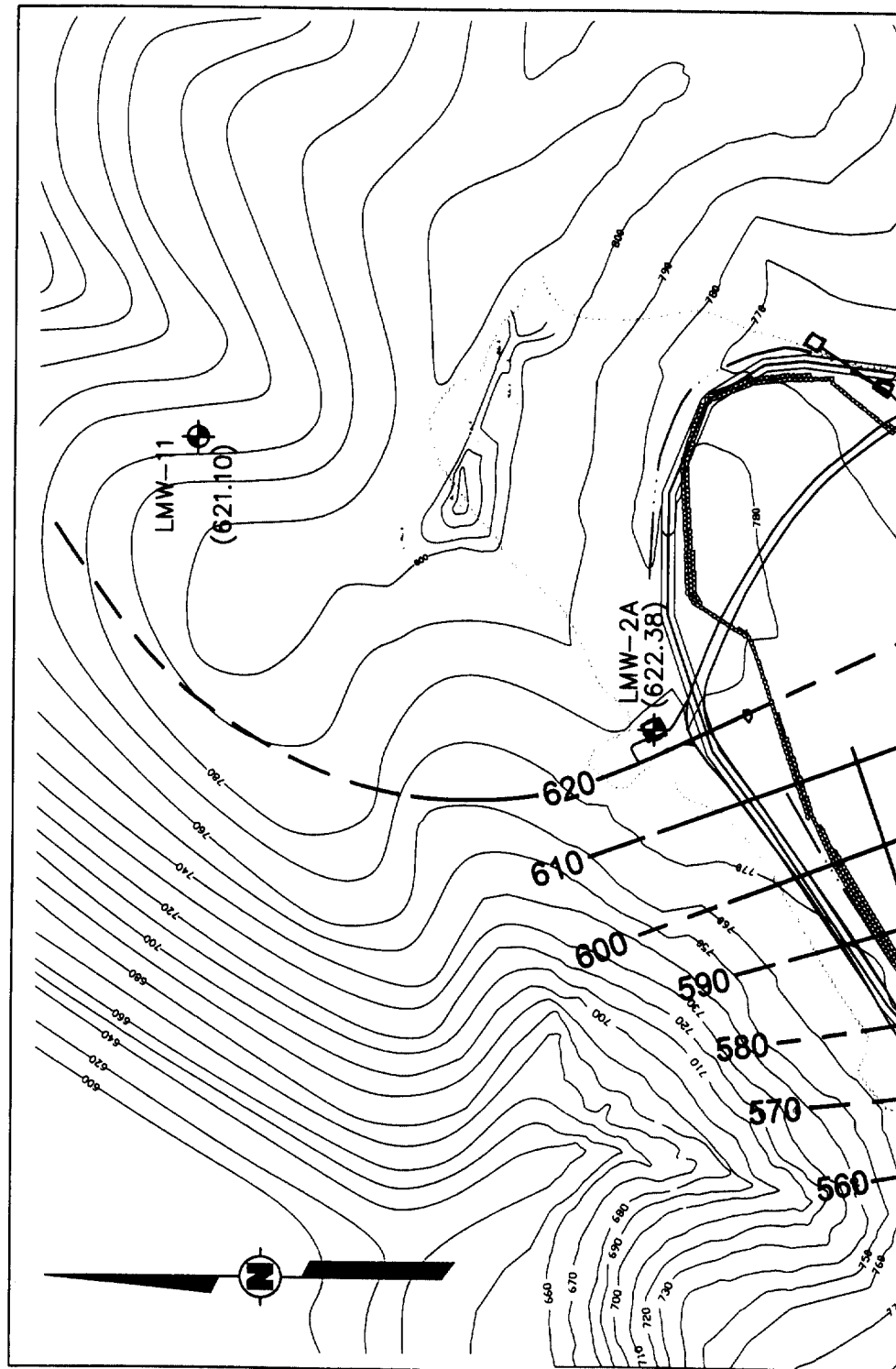
Corporate Remediation Group
An Alliance between
DuPont and URS Diamond

Barley Mill Plaza, Building 27
Wilmington, Delaware 19805

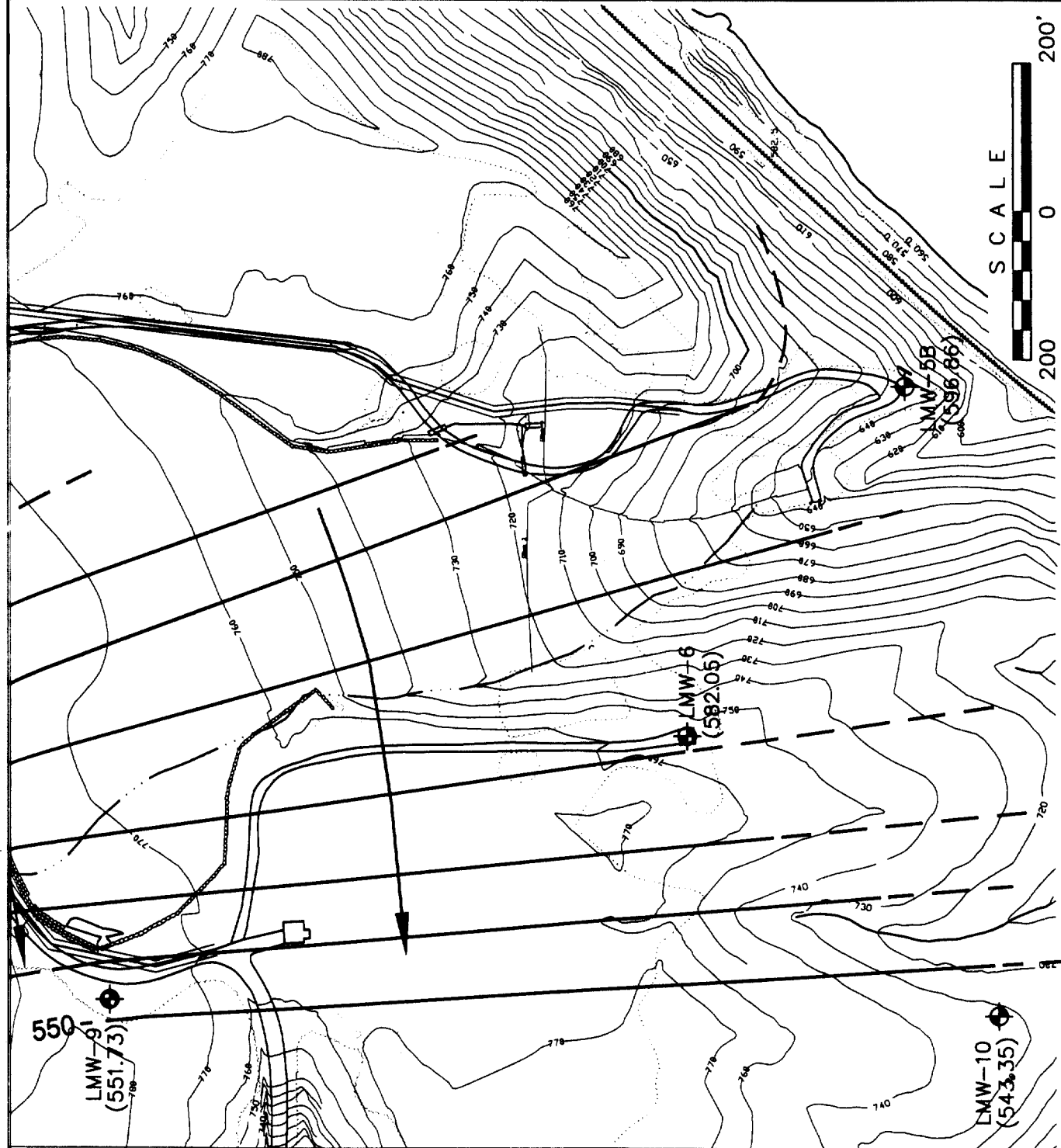
SCALE	APPROVED	DATE	CDR FILE NO.
As shown	K. DAVIS	11/27/02	74300014
	DESIGNED	APPROVED	REVISION
			3.2B

- LEGEND:**
- LMW-2A F ZONE MONITOR WELL
 - 541.39 GROUNDWATER ELEVATION MEASUREMENT
 - 550 GROUNDWATER CONTOUR LINE
 - GENERALIZED GROUNDWATER FLOW DIRECTION

000057



0000579



LEGEND:

- LMW-2A F ZONE MONITOR WELL
- 541.39 GROUNDWATER ELEVATION MEASUREMENT
- 550 GROUNDWATER CONTOUR LINE
- GENERALIZED GROUNDWATER
- FLOW DIRECTION

SCALE

200 0 200'

Corporate Remediation Group
*An Alliance between
 DuPont and URS Diamond*

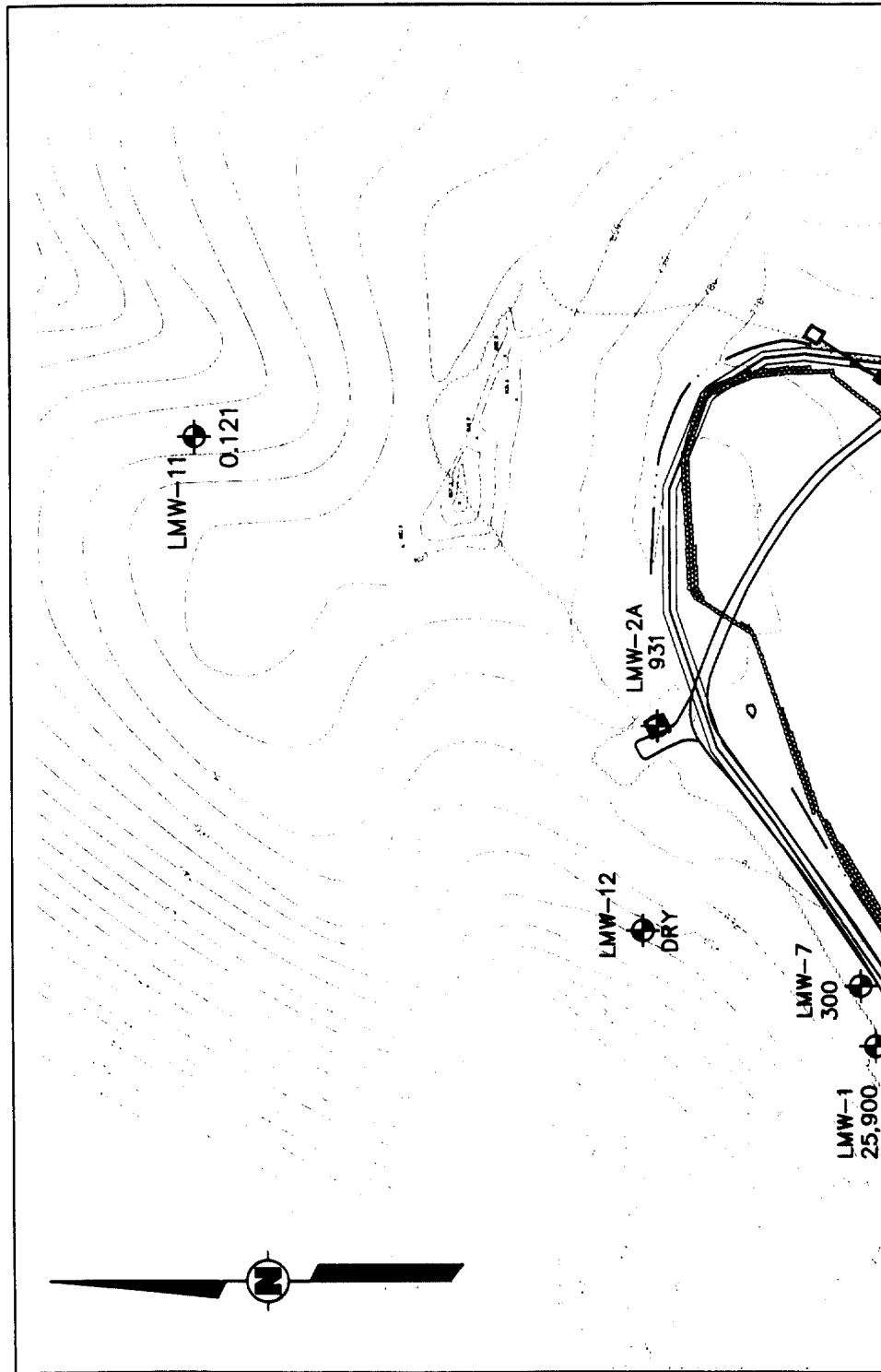
Borley Mill Plaza, Building 27
 Wilmington, Delaware 19805

**F ZONE GROUNDWATER ELEVATION
 CONTOUR MAP - 4002**

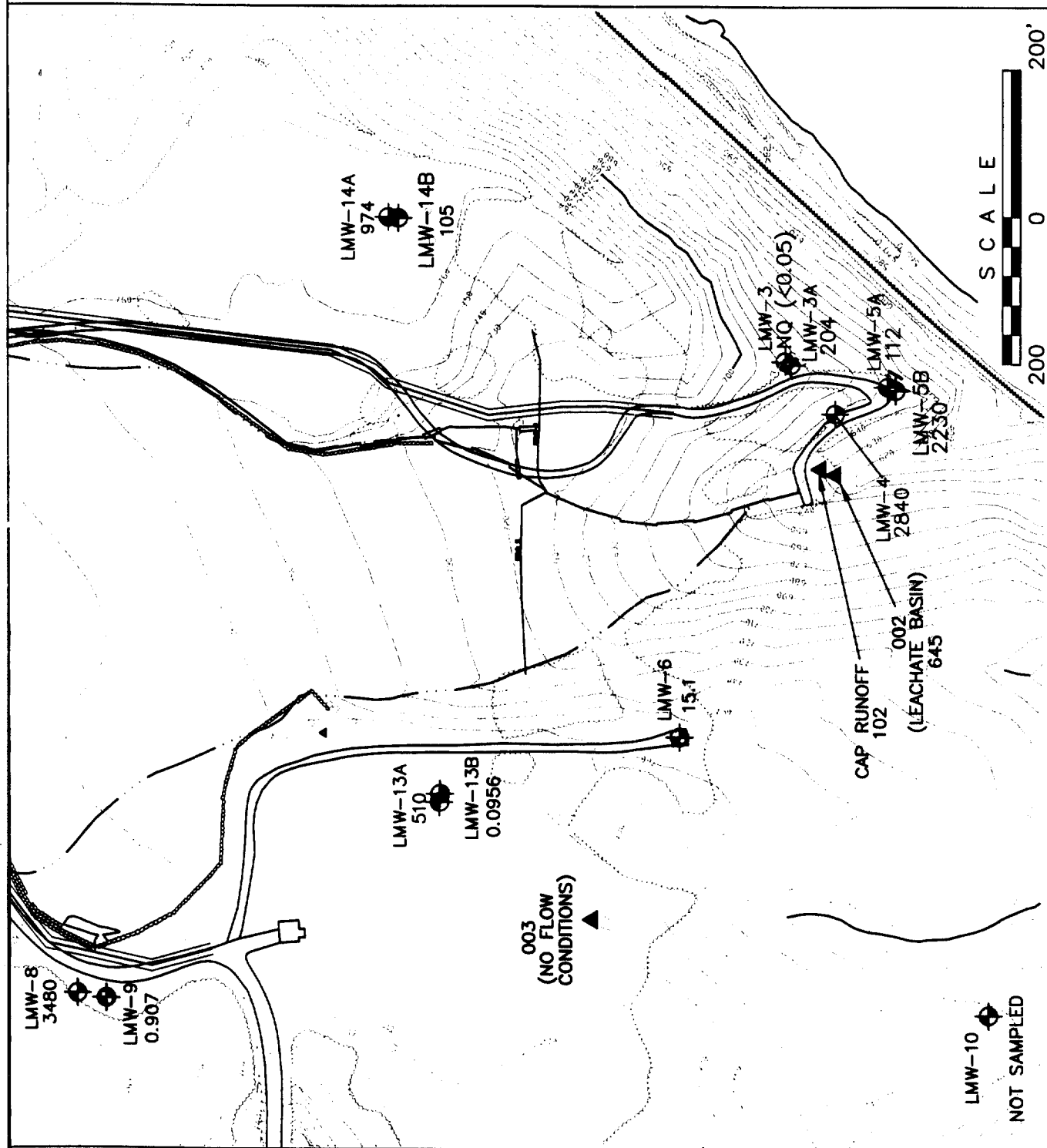
Letart Landfill Site
 Letart, West Virginia

DATE 11/27/02	BY K. DAVIS	CHECKED J. DAVIS	APPROVED J. DAVIS
JOB FILE NO. 74500015		PAGE 3.2c	

000058



000058a



LEGEND:

- LMW-8 A ZONE MONITOR WELL
- LMW-3 C ZONE MONITOR WELL
- LMW-4 D/E ZONE MONITOR WELL
- LMW-2A F ZONE MONITOR WELL
- 242 C-8 CONCENTRATION (ug/l)
- ▲ 003 SURFACE WATER SAMPLE LOCATION

Corporate Remediation Group
*An Alliance between
 DuPont and URS Diamond*

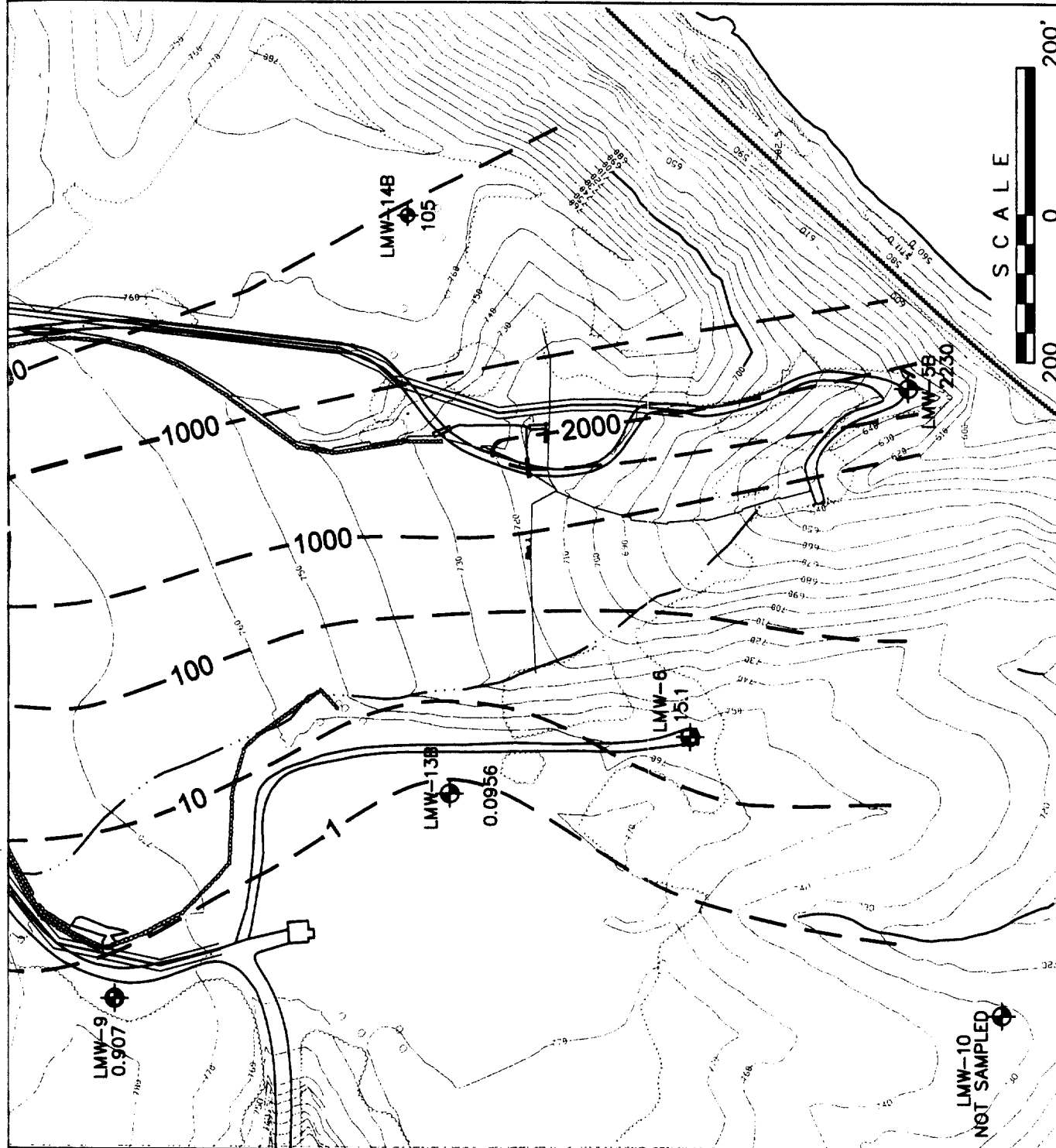
**C-8 IN GROUNDWATER AND
 SURFACE WATER - 4Q02**

Letart Landfill Site
 Letart, West Virginia

SCALE	APPROVED	DATE	FOR FILE NO.
As shown	K. DAVIS	04/11/2002	74308011
DESIGNED	K. DAVIS	APPROVED	REVISION
			3.3A

Topographic map showing contour lines and a dashed line. A north arrow is in the bottom left. Labels include LMW-11, Q.121, LMW-12, DRY, LMW-2A, 931, and 10. A scale bar is in the bottom right.

060059a



LEGEND:

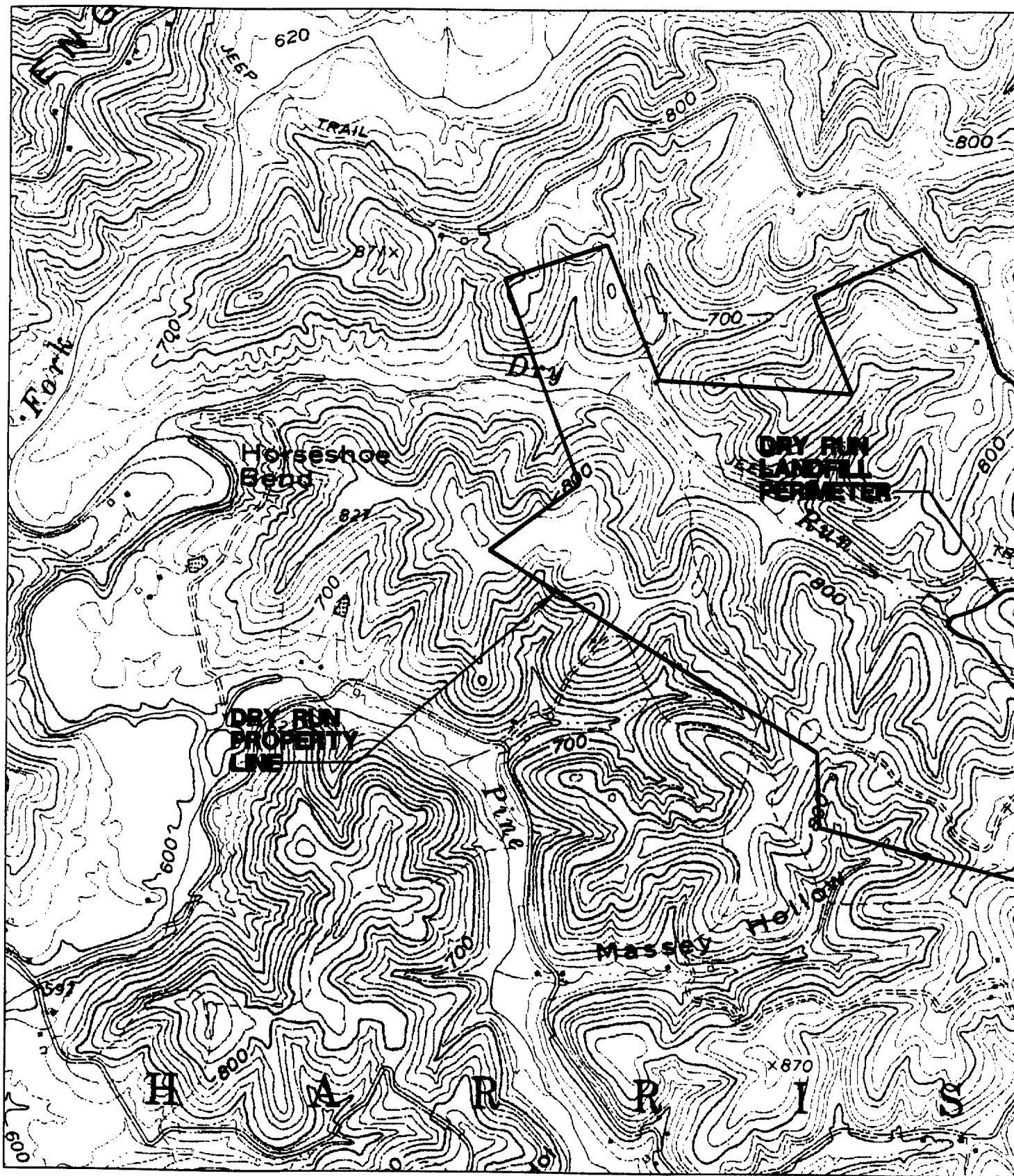
- LMW-2A 717 F ZONE MONITOR WELL
- 100 C-8 CONCENTRATION (ug/L)
- 100 ESTIMATED LINE OF ISOCONCENTRATION (C-8)

C-8 IN GROUNDWATER, ZONE F 4Q02

Corporate Remediation Group
An Alliance between
 DuPont and URS Diamond

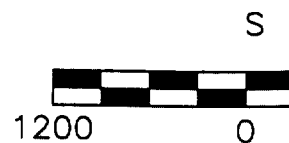
Letart Landfill Site
 Letart, West Virginia

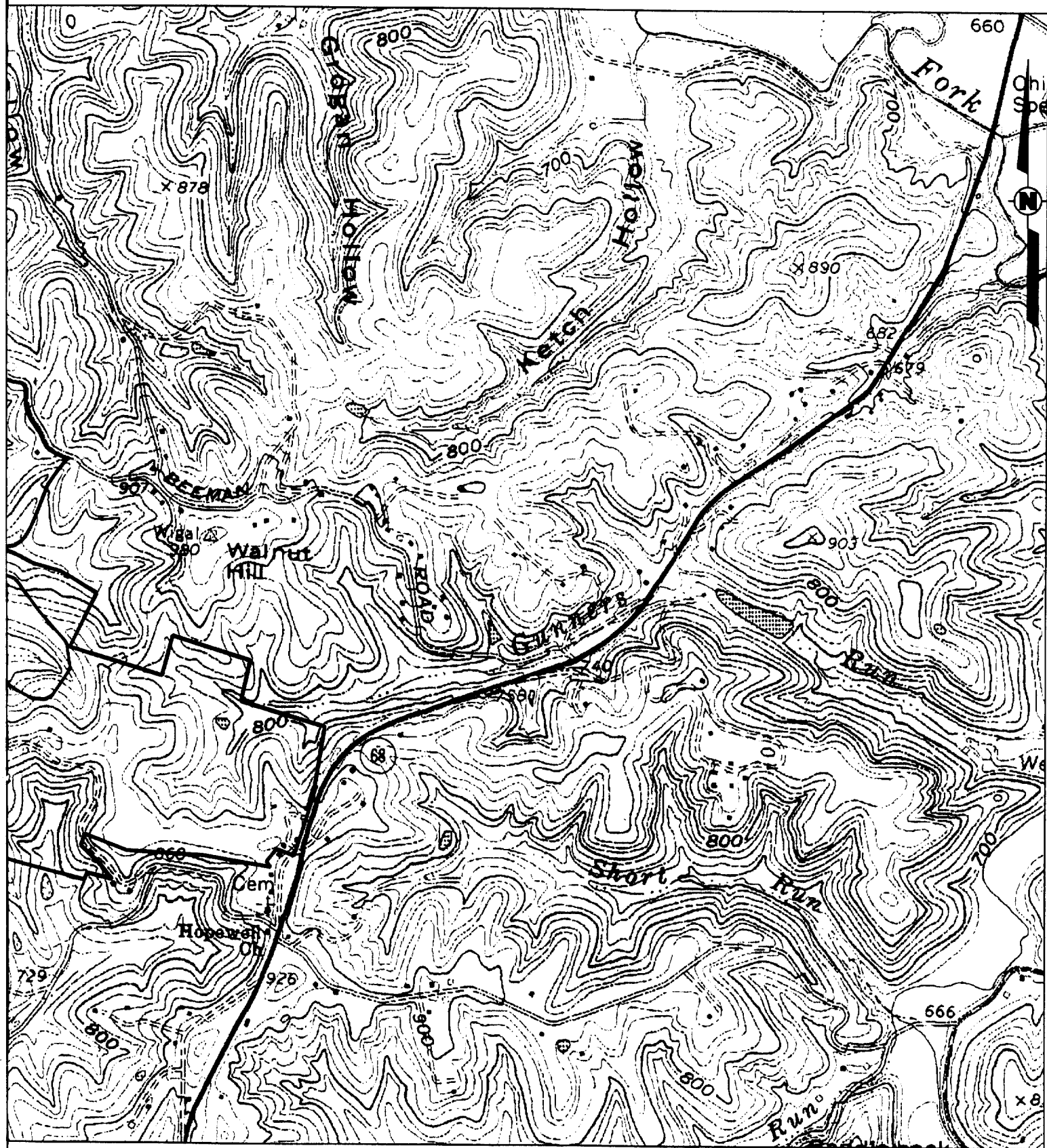
DATE	APPROVED	DATE	APPROVED
8/24/02	K. DAVIS	8/24/02	7-4200012
3.38			



000060

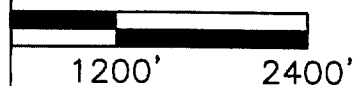
Source: MAP TAKEN FROM THE LUBECK, WV
USGS QUADRANGLE





000060a

A L E



DESIGNED	INITIALS
K. DAVIS	
DRAWN	
DEL	
CHECKED	
APPROVED (DESIGN)	
APPROVED (CONSTRUCTION)	



Corporate Remediation Group

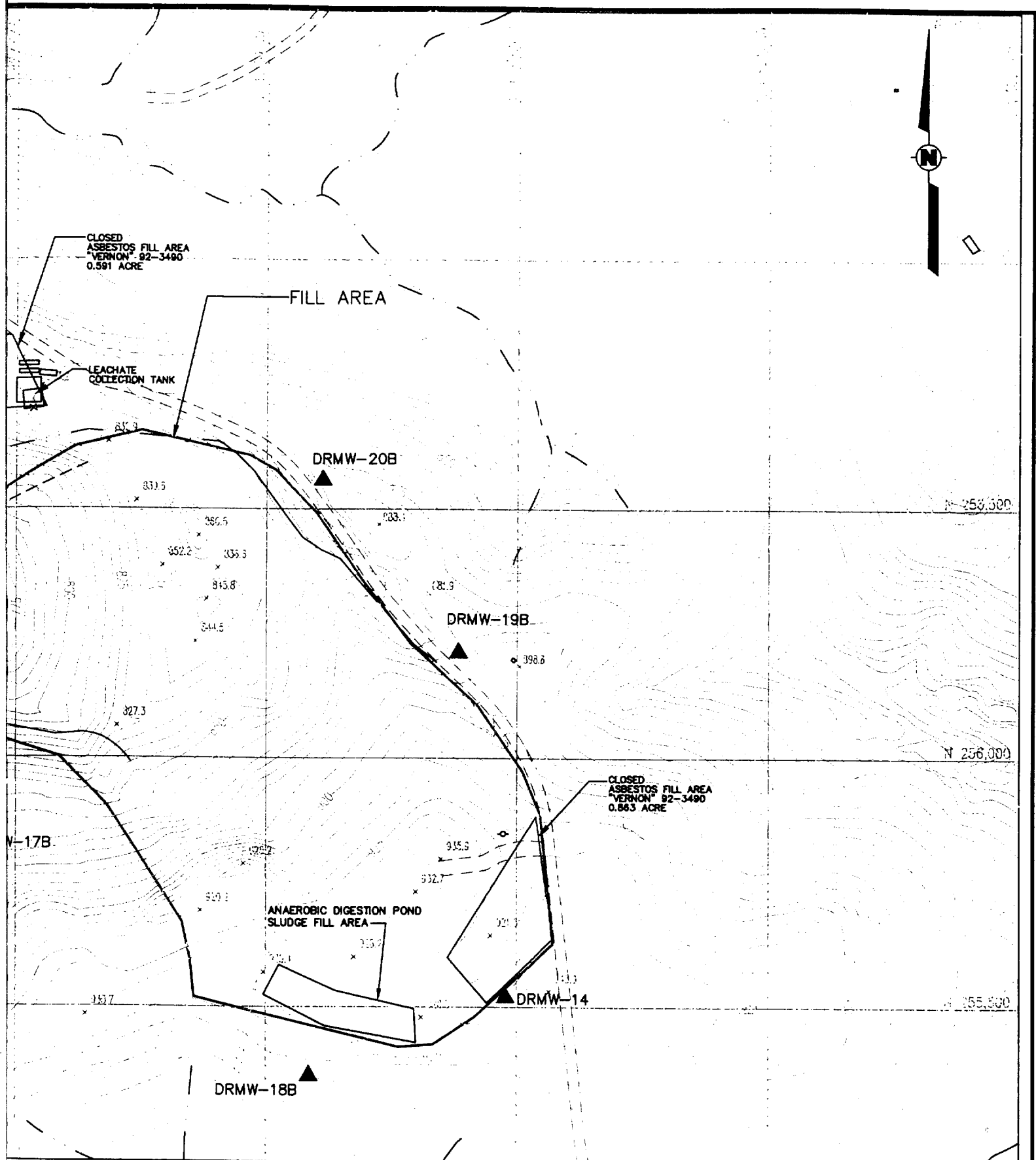
An Alliance between
DuPont and URS Diamond

Barley Mill Plaza, Building 27
Wilmington, Delaware 19805

SITE LOCATION MAP

Dry Run Landfill
Lubeck, West Virginia

SCALE	DATE	GSD FILE NO.	FIGURE
As shown	11/8/01	7422B005	4.0



DESIGNED
T.D. LOUNSBURY
DRAWN
D.E. LITTEL
CHECKED
K. DAVIS
APPROVED(DESIGN)
APPROVED(CONSTRUCTION)

INITIALS



Corporate Remediation Group

*An Alliance between
DuPont and URS Diamond*

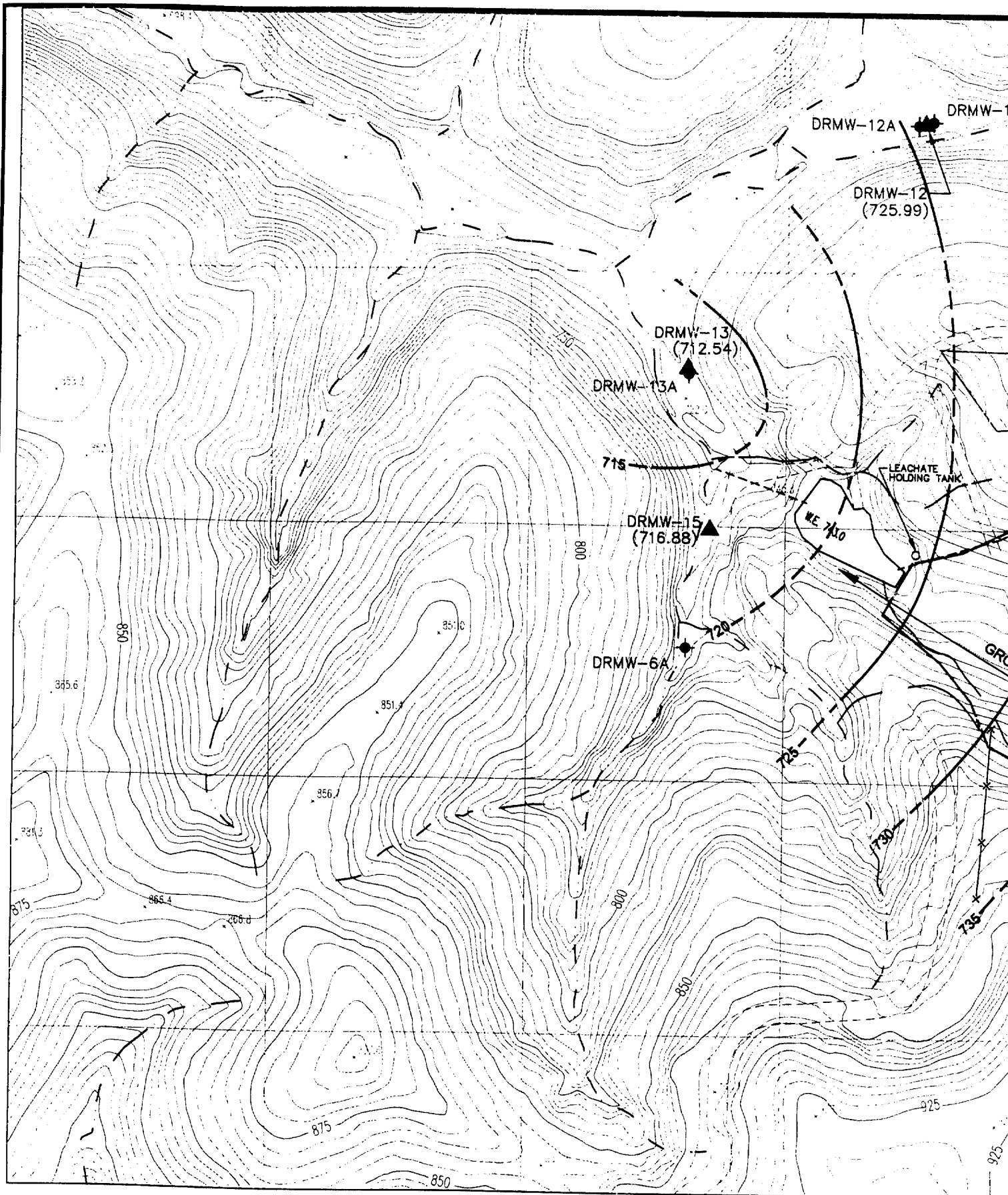
Barley Mill Plaza, Building 27
Wilmington, Delaware 19805



**MONITORING WELL AND SURFACE
WATER SAMPLE LOCATION MAP**

**Dry Run Landfill
Wood County, West Virginia**

SCALE 1" = 250'	DATE 11/08/2001	CAD FILE NO. 74220005	PAGE 4.1
--------------------	--------------------	--------------------------	-------------



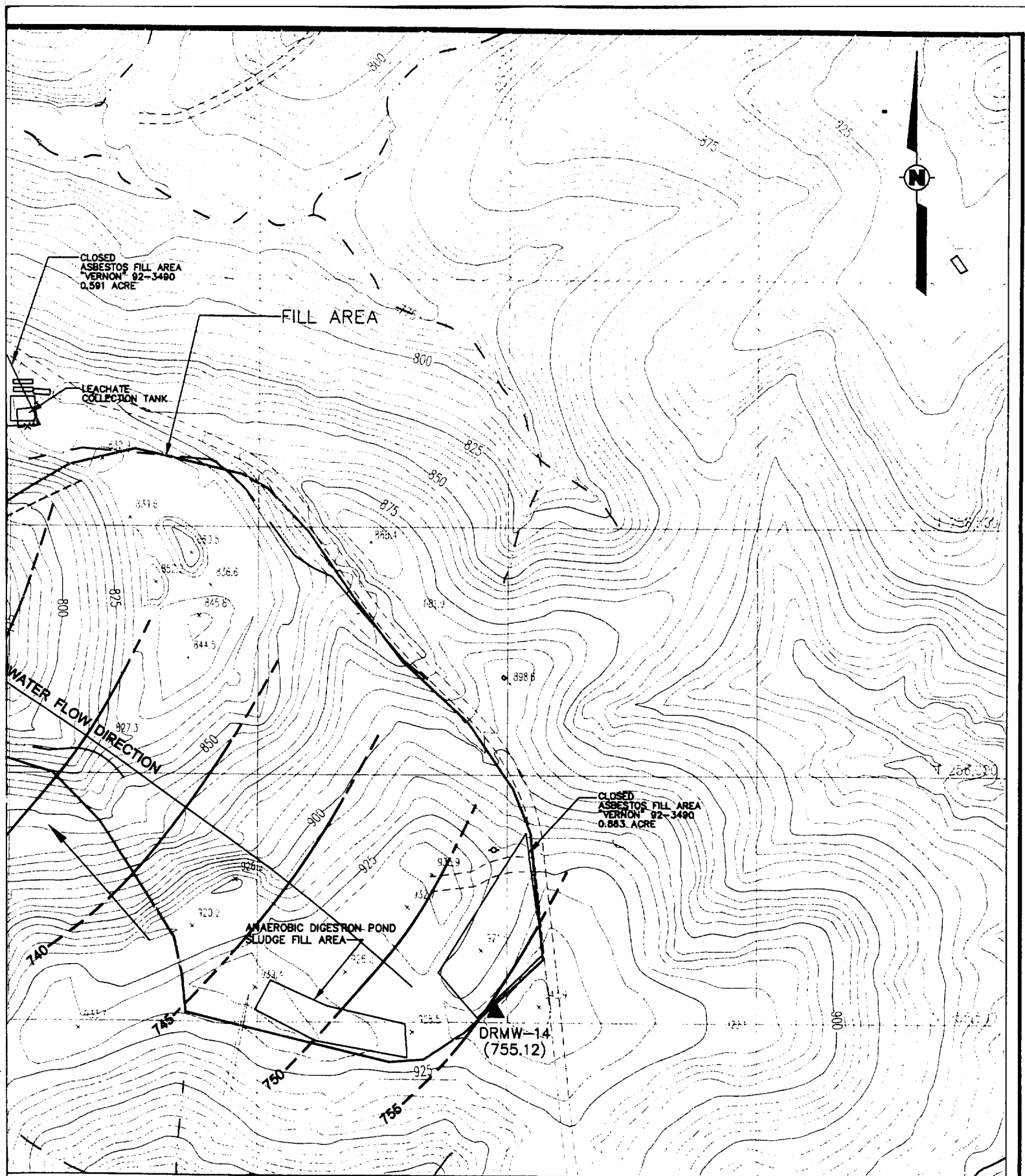
LEGEND:

- ◆ OVER BURDEN MONITOR WELL
- ▲ BEDROCK MONITOR WELL
- (738.30) MONITOR WELL WATER LEVEL ELEVATION
- 750- - - GROUNDWATER CONTOUR WITH ELEVATION
- ← APPROXIMATE DIRECTION OF GROUNDWATER FLOW

000062

SCALE





000062 9

250'

DESIGNED
TDL
DRAWN
DEL
CHECKED
K. DAVIS
APPROVED(DESIGN)
APPROVED(CONSTRUCTION)

INITIALS



Corporate Remediation Group

*An Alliance between
DuPont and URS Diamond*

Barley Mill Plaza, Building 27
Wilmington, Delaware 19805



**GROUNDWATER ELEVATION
CONTOUR MAP - 2002**

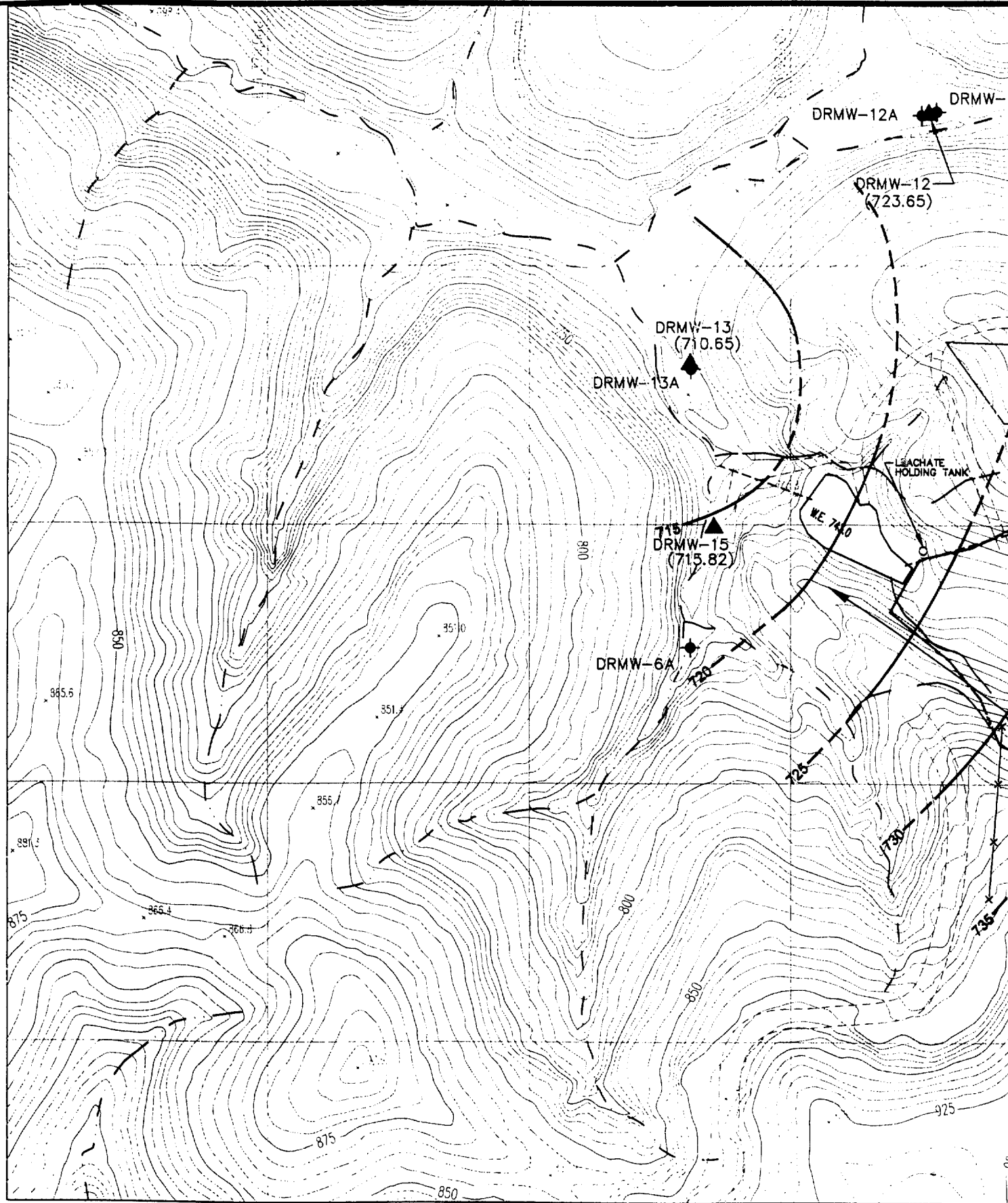
**Dry Run Landfill
Wood County, West Virginia**

SCALE
1" = 250'

DATE
8/24/02

DWG FILE NO.
74228035

FIGURE
4.2A



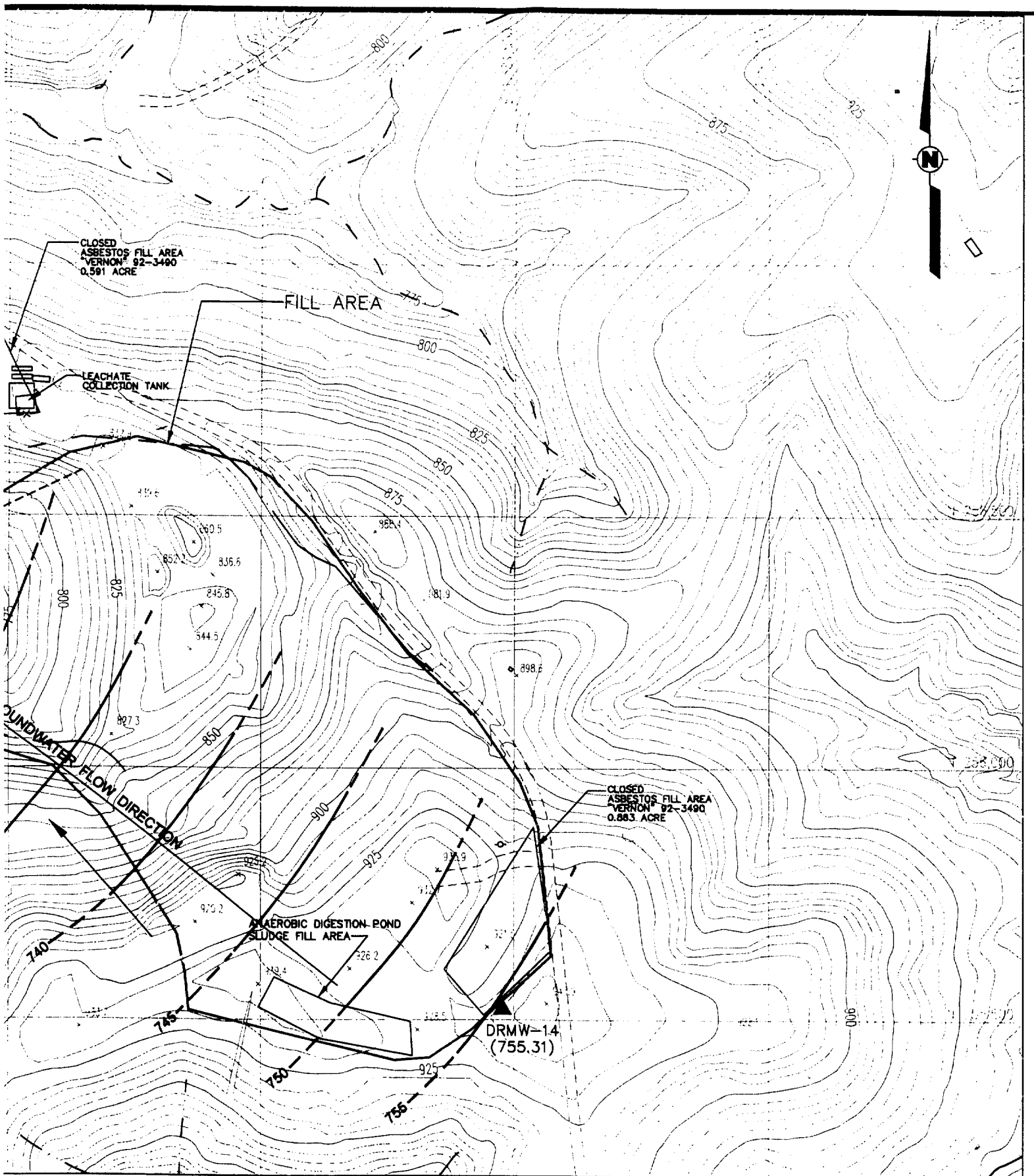
LEGEND:

- ◆ OVER BURDEN MONITOR WELL
- ▲ BEDROCK MONITOR WELL
- (738.30) MONITOR WELL WATER LEVEL ELEVATION
- 750 - - - GROUNDWATER CONTOUR WITH ELEVATION
- ← APPROXIMATE DIRECTION OF GROUNDWATER FLOW

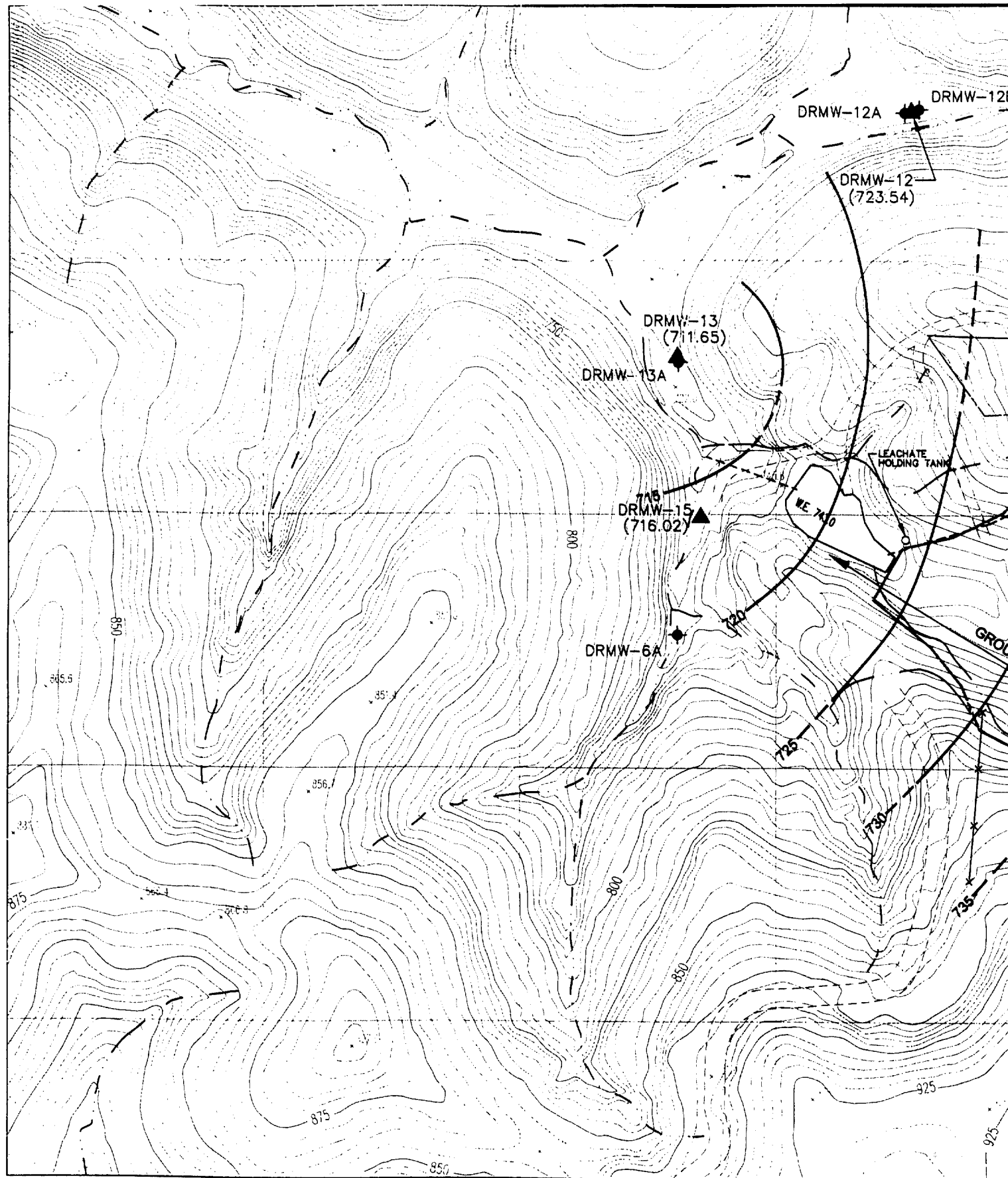
000063

S C A L E





0000639 250'	DESIGNED TDL DRAWN CHECKED K. DAVIS APPROVED (DESIGN) APPROVED (CONSTRUCTION)	INITIALS	DUPONT Corporate Remediation Group <i>An Alliance between DuPont and URS Diamond</i> Barley Mill Plaza, Building 27 Wilmington, Delaware 19805	GROUNDWATER ELEVATION CONTOUR MAP - 3Q02 Dry Run Landfill Wood County, West Virginia <table border="1"> <tr> <td>SCALE</td> <td>DATE</td> <td>QAD FILE NO.</td> <td>FIGURE</td> </tr> <tr> <td>1" = 250'</td> <td>12/2/02</td> <td>74228036</td> <td>4.28</td> </tr> </table>	SCALE	DATE	QAD FILE NO.	FIGURE	1" = 250'	12/2/02	74228036	4.28
SCALE	DATE	QAD FILE NO.	FIGURE									
1" = 250'	12/2/02	74228036	4.28									



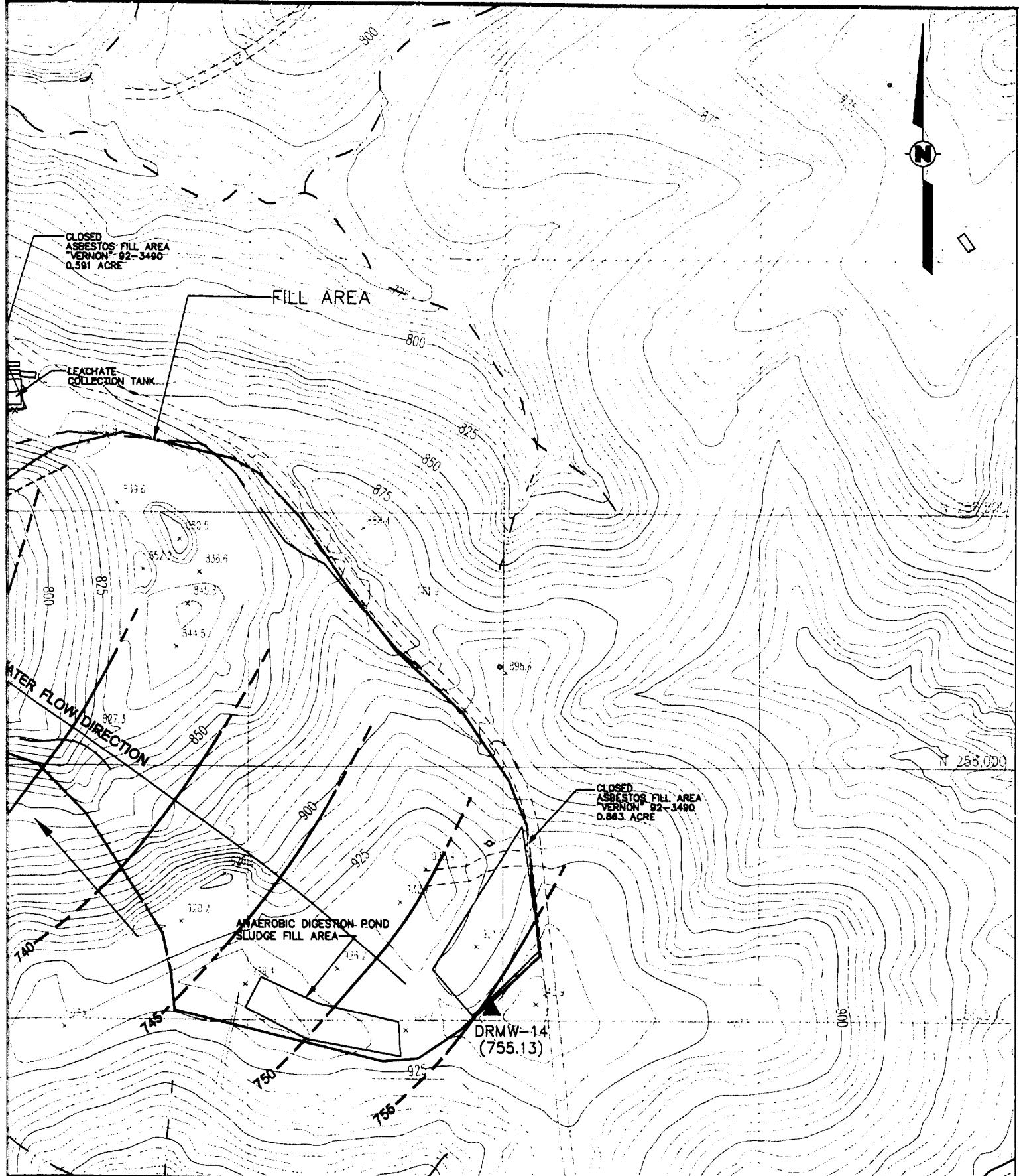
LEGEND:

- ◆ OVER BURDEN MONITOR WELL
- ▲ BEDROCK MONITOR WELL
- (738.30) MONITOR WELL WATER LEVEL ELEVATION
- 750- - - GROUNDWATER CONTOUR WITH ELEVATION
- ← APPROXIMATE DIRECTION OF GROUNDWATER FLOW

000064

SCALE





0000649

250'

DESIGNED
TDL
DRAWN
DEL
CHECKED
K. DAVIS
APPROVED(DESIGN)
APPROVED(CONSTRUCTION)

INITIALS



Corporate Remediation Group

*An Alliance between
DuPont and URS Diamond*

Barley Mill Plaza, Building 27
Wilmington, Delaware 19805



**GROUNDWATER ELEVATION
CONTOUR MAP - 4Q02**

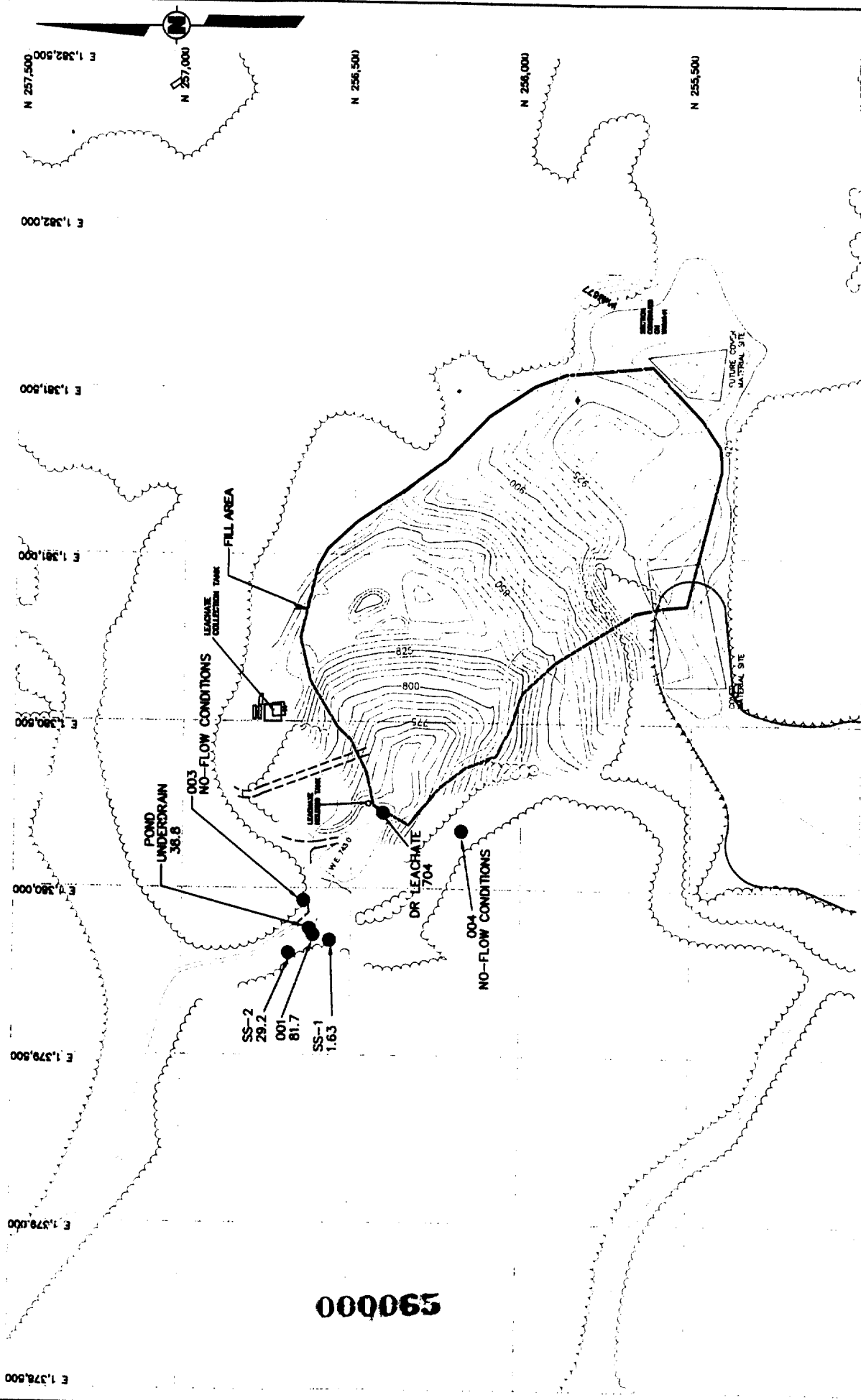
**Dry Run Landfill
Wood County, West Virginia**

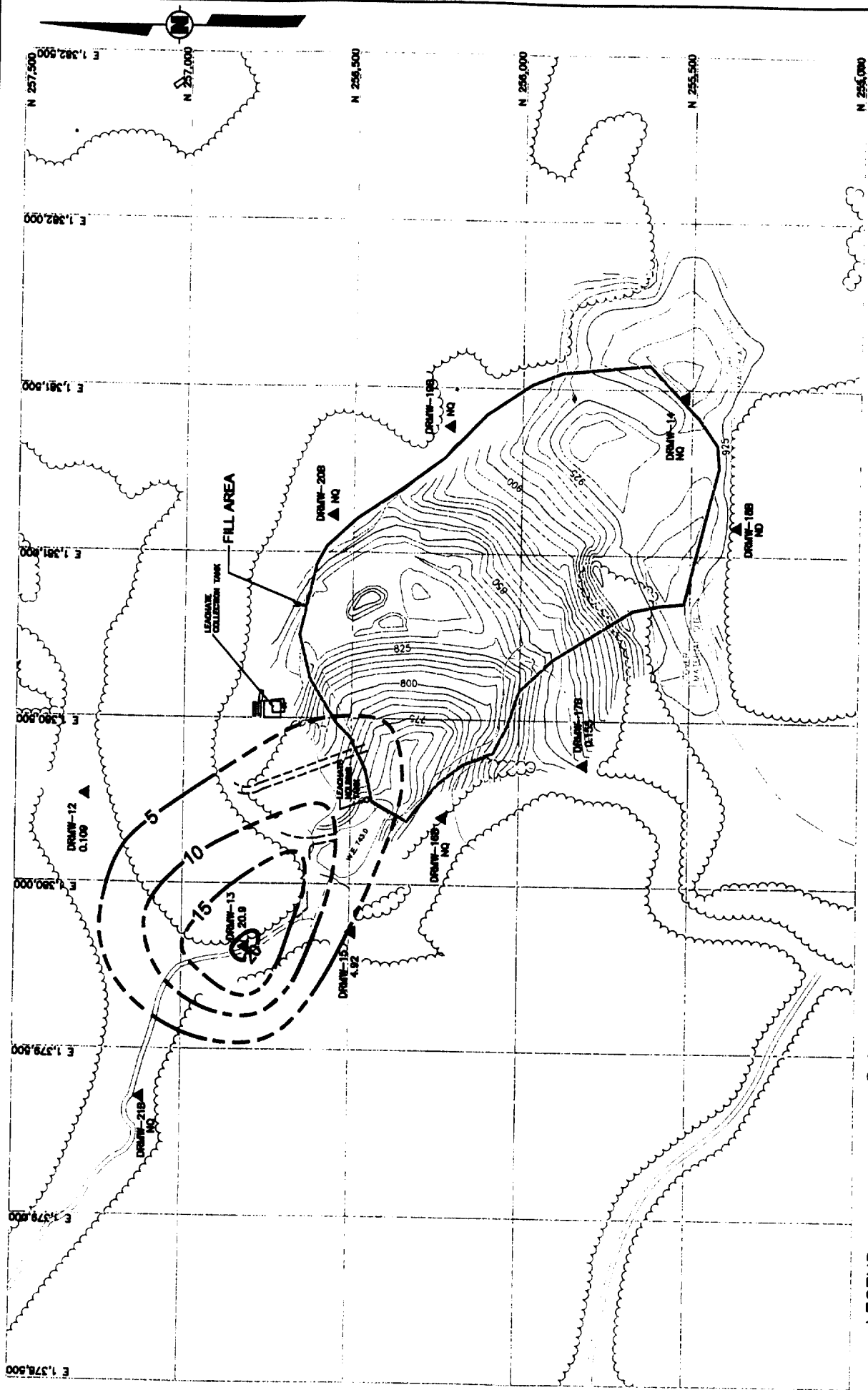
SCALE
1" = 250'

DATE
12/2/02

QAS FILE NO.
7422B037

FIGURE
4.2C





LEGEND 000066

- DRAIN-13
 16.9
 BEDROCK MONITOR WELL
 CONCENTRATION C-8 (ug/l)
- 5
 ESTIMATED LINE OF
 ISOCONCENTRATION (C-8)



Corporate Remediation Group
 An Alliance between
 DuPont and URS Diamond

Borley Mill Plaza, Building 27
 Wilmington, Delaware 19805

**C-8 IN GROUNDWATER
 BEDROCK WELLS 4Q02**

Dry Run Landfill
 DuPont Washington Works
 Lubeck, West Virginia

DATE	APPROVED	CHECKED	DESIGNED	DRAWN	SCALE	SHEET NO.	TOTAL SHEETS
8/24/02						4.4	

APPENDICES

000067

APPENDIX A

LABORATORY ANALYTICAL DATA REPORTS

WASHINGTON WORKS FACILITY

000068

Analytical Results Washington Works C8 Sampling 10/02

DuPont Sample Identification	APFO (ng/L)
WWK-Z-Outfall-001	10500
WWK-Z-Outfall-002	3490
WWK-Z-Outfall-003	870
WWK-Z-Outfall-005 (10/18/02)	12100
WWK-Z-Outfall-007	251
WWK-Z-Outfall-105	54600
WWK-Z-Outfall-007-2	209
WWK-K-EQBLK-1	ND
WWK-Z-Outfall-005 (10/16/02)	141000
WWK-Z-Outfall-005 (10/17/02)	18000

Limit of Detection (LOD) for the procedure is approximately 10 ng/L

Limit of Quantitation (LOQ) for the procedure is 50 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 250 ng/L, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less than 250 ng/L, and the absolute difference is less than 50, the average value is reported. If the absolute difference is greater than 50, the higher value is reported.

000069

0007

Analytical Results Washington Works C8 Sampling 10/02

DuPont Sample Identification

APFO (ng/L)

WWK-G-QO4-MW02	7720000
WWK-G-RO4-MW02	84100000
WWK-G-PO4-MW02	46600000
WWK-G-PO4-MW02-2	48300000
WWK-G-PO8-MW01	120000
WWK-G-DO8-MW01	126
WWK-G-E13-MW01	3430
WWK-G-Y14-MW01	18200
WWK-G-AE11-MW01	1740
WWK-K-EQBLK-2	ND

Limit of Detection (LOD) for the procedure is approximately 10 ng/L

Limit of Quantitation (LOQ) for the procedure is 50 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 250 ng/L, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less than 250 ng/L, and the absolute difference is less than 50, the average value is reported. If the absolute difference is greater than 50, the higher value is reported.

000070

0007

Analytical Results Washington Works C8 Sampling 10/02

DuPont Sample Identification

APFO (ng/L)

WWK-G-AJO6-MW02	133
WWK-G-NO4-MW03	21200
WWK-G-Y14-MW02	NQ
WWK-K-EQBLK-3	ND

Limit of Detection (LOD) for the procedure is approximately 10 ng/L

Limit of Quantitation (LOQ) for the procedure is 50 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 250 ng/L, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less than 250 ng/L, and the absolute difference is less than 50, the average value is reported. If the absolute difference is greater than 50, the higher value is reported.

000071

0009

Analytical Results Washington Works C8 Sampling 10/02

DuPont Sample Identification

APFO (ng/L)

WWK-G-Well 331	415
WWK-G-Well 336	269
WWK-G-West Wellfield 4	16200
WWK-G-AX13-PW01	721
WWK-K-FBLK-2	ND

Limit of Detection (LOD) for the procedure is approximately 10 ng/L

Limit of Quantitation (LOQ) for the procedure is 50 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 250 ng/L, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less than 250 ng/L, and the absolute difference is less than 50, the average value is reported. If the absolute difference is greater than 50, the higher value is reported.

000072

0007

Analytical Results Washington Works C8 Sampling 10/02

DuPont Sample Identification

APFO (ng/L)

WWK-G-Gallery	14300
WWK-G-Ranney	51200
WWK-G-West Wellfield 1	10300
WWK-K-FBLK1	ND

Limit of Detection (LOD) for the procedure is approximately 10 ng/L

Limit of Quantitation (LOQ) for the procedure is 50 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 250 ng/L, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less than 250 ng/L, and the absolute difference is less than 50, the average value is reported. If the absolute difference is greater than 50, the higher value is reported.

000073

0007

APPENDIX B
CHAIN-OF-CUSTODY RECORDS
WASHINGTON WORKS FACILITY

000074

- ~~000075~~

10

- 7107

- ☐ Sample results only
☐ Add case narrative
☐ Add quality control summary
☐ Add calibration summary
☐ Add raw data
☐ Other

0
1
2
3



Page 7 of 10

ANALYSES REQUESTED

☐ Other

0000

20

☐ Sample results only
☐ Add case narrative
☐ Add quality control summary
☐ Add calibration summary
☐ Add raw data
☐ Other

- ☐ Sample results only
- ☐ Add case narrative
- ☐ Add quality control summary
- ☐ Add calibration summary
- ☐ Add raw data
- ☐ Other

0000

☐ Sample results only
☐ Add case narrative
☐ Add quality control summary
☐ Add calibration summary
☐ Add raw data
☐ Other

☐ Sample results only
☐ Add case narrative
☐ Add quality control summary
☐ Add calibration summary
☐ Add raw data
☐ Other

☐ Sample results only
☐ Add case narrative
☐ Add quality control summary
☐ Add calibration summary
☐ Add raw data
☐ Other

- ☐ Sample results only
☐ Add case narrative
☐ Add quality control summary
☐ Add calibration summary
☐ Add raw data
☐ Other

APPENDIX C
LABORATORY ANALYTICAL DATA REPORTS
LOCAL LANDFILL

000093

Analytical Results Local Landfill C8 Sampling 10/02

DuPont Sample Identification

APFO (ng/L)

LCL-Z-Outlet 101

78600

Limit of Detection (LOD) for the procedure is approximately 10 ng/L

Limit of Quantitation (LOQ) for the procedure is 50 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 250 ng/L, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less than 250 ng/L, and the absolute difference is less than 50, the average value is reported. If the absolute difference is greater than 50, the higher value is reported.

000094

0007

Analytical Results Local Landfill C8 Sampling 10/02

DuPont Sample Identification

APFO (ng/L)

LCL-G-MW-4	79600
LCL-G-MW-6	19900
LCL-G-MW-9	56.9
LCL-G-MW-10	395
LCL-G-MW-6-2	17000
LCL-K-EQBLK-2	NQ

Limit of Detection (LOD) for the procedure is approximately 10 ng/L

Limit of Quantitation (LOQ) for the procedure is 50 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 250 ng/L, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less than 250 ng/L, and the absolute difference is less than 50, the average value is reported. If the absolute difference is greater than 50, the higher value is reported.

000095

0007

Analytical Results Local Landfill C8 Sampling 10/02

DuPont Sample Identification

APFO (ng/L)

LCL-G-MW-14B

LCL-K-EQBLK-3

488

ND

Limit of Detection (LOD) for the procedure is approximately 10 ng/L

Limit of Quantitation (LOQ) for the procedure is 50 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 250 ng/L, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less than 250 ng/L, and the absolute difference is less than 50, the average value is reported. If the absolute difference is greater than 50, the higher value is reported.

000097

0009

APPENDIX D
CHAIN-OF-CUSTODY RECORDS
LOCAL LANDFILL

000098



Exygen Research Sample Receiving • 3117 Research Drive • State College, PA 16801, USA
T: 814.231.8032 • F: 814.231.1580 • exygenresearch.com

Page of

PROJECT INFORMATION

Client (name & address):

ADAM AP Services - Depont
BMC Bldg 27 Lane. PR RT 141
Wilmington, DE 19805

Phone: 302-872-1673

Fax: 508-817-1613

Sampler: Barbara J. Noon

Project Manager (Name & E-mail Address):

Project Name: Michael D. Ancun DASA dupont.com

Project Name: Project 1: Disinfection byproduct dependent co

PO #: CS sampling 10/02

P.O. #: 6870-64506 Release No. EX-80
Quotation #:

ANALYSES REQUESTED[illegible]

0009

SAMPLE ANALYSIS

SAMPLE ANALYSIS													
ExyLIMS#	Client Sample Identification	Collection Date	Collection Time	Grab	Composite	Number of Containers	Specify Matrix	Comments	Fc-10	Lot			pH
L 33866-1	LCL-2-outlet 1st	10-31-02	1415	X		2	water	641673 / 641674	x	x			5.18

LAB USE ONLY

CHAIN OF CUSTODY

LAB USE ONLY

CHAIN OF CUSTODY

Relinquished by	Date	Time
Balraj G. Sharma	10-31-02	1435

Cooler ID # 160021 Cooler Temp. (°C) 0.7

Received by	Date	Time
B. J. [Signature]	10-30-02	1430
[Signature] S. Roll	11/8/2002	1100
LAB USE ONLY		

LAB USE ONLY

OTHER INFORMATION

PROJECT REQUIREMENTS

Results Deadline:

Laboratory Report Options:

- ☐ Sample results only
☐ Add case narrative
☐ Add quality control summary
☐ Add calibration summary
☐ Add raw data
☐ Other

~~000099~~



Page ____ of ____

ANALYSES REQUESTED

Quotation #:

[illegible]

LAB USE ONLY

Relinquished by	Date	Time
<i>Kucukdemir, T. O. B.</i>	<i>10/08/2024</i>	<i>10:30</i>

Cooler Temp. (°C) 6.1

Time

LAB USE ONLY

OTHER INFORMATION

~~000101~~

PROJECT REQUIREMENTS

Results Deadline:

Laboratory Report Options:

- ☐ Sample results only
☐ Add case narrative
☐ Add quality control summary
☐ Add calibration summary
☐ Add raw data
☐ Other

☐ Sample results only
☐ Add case narrative
☐ Add quality control summary
☐ Add calibration summary
☐ Add raw data
☐ Other



Page ____ of ____

ANALYSES REQUESTED

Quotation #:

4100

000103

☐ Sample results only
☐ Add case narrative
☐ Add quality control summary
☐ Add calibration summary
☐ Add raw data
☐ Other

Page of

Please fill out this form *completely* to ensure correct analysis and proper handling of your samples.

SAMPLE ANALYSIS

[illegible]

LAB USE ONLY

CHAIN OF CUSTODY

Relinquished by	Date	Time
Lucinda M. 7.0 hr	10/08/02	11:30

Cooler ID # C-2000 96 Cooler Temp. (°C) 12

Received by	Date	Time
<i>[Signature]</i>	10/2/2001	1030

LAB USE ONLY

OTHER INFORMATION

000104

PROJECT REQUIREMENTS

Results Deadline:

Laboratory Report Options:

- ☐ Sample results only
- ☐ Add case narrative
- ☐ Add quality control summary
- ☐ Add calibration summary
- ☐ Add raw data
- ☐ Other

Page of

Please fill out this form *completely* to ensure correct analysis and proper handling of your samples.

[illegible]

Relinquished by	Date	Time
Juanita M. T. L. L.	10/11/02	1730

Received by	Date	Time
<i>[Signature]</i>	10/14/02	1015

LAB USE ONLY

- ☐ Sample results only
- ☐ Add case narrative
- ☐ Add quality control summary
- ☐ Add calibration summary
- ☐ Add raw data
- ☐ Other



Oxygen Research Sample Receiving • 3117 Research Drive • State College, PA 16801, USA
T: 814.231.8032 • F: 814.231.1580 • oxygenresearch.com

Page ____ of ____

Client (name & address):

Address: PO Box 10000 - Detroit
Box 111, 57 Lane. NW Rt 141
Washington, DC 20005
 Phone: 301.893.1648
 Fax: _____
 Sampler: L. Titton, S. Opp

Project Manager (Name & E-mail Address):

Project Name: Michael S. Rosen, President - CCA

P.O. #:

Quotation #: _____

Please fill out this form *completely* to ensure correct analysis and proper handling of your samples.

ANALYSES REQUESTED

[illegible][illegible]

LAB USE ONLY

Relinquished by	Date	Time
Jucinda M. 24th	10/11/02	1730

Cooler ID # Meado 40Cooler Temp. ($^{\circ}\text{C}$) 0.8

Received by <i>[Signature]</i>	Date <i>10/14/62</i>	Time <i>1015</i>

LAB USE ONLY

LAB USE ONLY

OTHER INFORMATION

Electronic Deliverable 000106

PROJECT REQUIREMENTS

Results Deadline:

Method Standard

Laboratory Report Options:

- ☐ Sample results only
☐ Add case narrative
☐ Add quality control summary
☐ Add calibration summary
☐ Add raw data
☐ Other

APPENDIX E
LABORATORY ANALYTICAL DATA REPORTS
LETART LANDFILL

000107

Analytical Results LeTart Landfill C8 Testing 10/02

DuPont Sample Identification

APFO (ng/L)

LTL-Z-Outlet 002	645000
LTL-W-Rt33 Stream Sample	2830
LTL-Z-Cap Runoff	102000
LTL-K-EQBLK-1	ND

Limit of Detection (LOD) for the procedure is approximately 10 ng/L

Limit of Quantitation (LOQ) for the procedure is 50 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 250 ng/L, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less than 250 ng/L, and the absolute difference is less than 50, the average value is reported. If the absolute difference is greater than 50, the higher value is reported.

0007

Analytical Results LeTart Landfill C8 Sampling 10/02

DuPont Sample Identification

APFO (ng/L)

LTL-G-LMW-9

LTL-K-EQBLK-5

907

ND

Limit of Detection (LOD) for the procedure is approximately 10 ng/L

Limit of Quantitation (LOQ) for the procedure is 50 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 250 ng/L, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less than 250 ng/L, and the absolute difference is less than 50, the average value is reported. If the absolute difference is greater than 50, the higher value is reported.

000109

0007

Analytical Results Letart Landfill C8 Sampling 10/02

DuPont Sample Identification

APFO (ng/L)

LTL-G-LMW-13A	510000
LTL-G-LMW-13B	95.6
LTL-G-LMW-14A	974000
LTL-G-LMW-14B	105000
LTL-G-LMW-3	NQ
LTL-G-LMW-3A	204000
LTL-G-LMW-4	2840000
LTL-G-LMW-5A	112000
LTL-G-LMW-5B	2230000
LTL-G-LMW-5B-2	2280000
LTL-K-EQBLK-2	ND

Limit of Detection (LOD) for the procedure is approximately 10 ng/L

Limit of Quantitation (LOQ) for the procedure is 50 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 250 ng/L, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less than 250 ng/L, and the absolute difference is less than 50, the average value is reported. If the absolute difference is greater than 50, the higher value is reported.

000110

0007

Analytical Results Letart Landfill C8 Sampling 10/02

DuPont Sample Identification

APFO (ng/L)

LTL-G-LMW-1	25900000
LTL-G-LMW-2A	931000
LTL-K-EQBLK-3	ND
LTL-S-Brinker Run	61.2
LTL-G-LMW-6	15100
LTL-G-LMW-7	300000
LTL-G-LMW-8	3480000
LTL-G-LMW-11	121

Limit of Detection (LOD) for the procedure is approximately 10 ng/L

Limit of Quantitation (LOQ) for the procedure is 50 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 250 ng/L, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less than 250 ng/L, and the absolute difference is less than 50, the average value is reported. If the absolute difference is greater than 50, the higher value is reported.

000111

0007

3058 Research Drive
State College, PA 16801, USA

T: 814.272.1039
F: 814.231.1580
oxygen.com

APPENDIX F
CHAIN-OF-CUSTODY RECORDS
LETART LANDFILL

000112



Page ____ of ____

ANALYSES REQUESTED

Please fill out this form *completely* to ensure correct analysis and proper handling of your samples.

SAMPLE ANALYSIS

[illegible]

CHAIN OF CUSTODY

Relinquished by	Date	Time
95. J. N. W. M.	10-31-02	1435

Cooler ID # 1000021 Cooler Temp. (°C) 0.7

Received by	Date	Time
<i>Paulina J. Allen</i>	10-30-12	1500

LAB USE ONLY

OTHER INFORMATION

000113

PROJECT REQUIREMENTS

Results. Deadline:

Laboratory Report Options:

- ☐ Sample results only
☐ Add case narrative
☐ Add quality control summary
☐ Add calibration summary
☐ Add raw data
☐ Other



Page ____ of ____

Client (name & address):

Fax: 202-338-7698

Sampler: L. T. H. M., B. Colchuck

Project Manager (Name & E-mail Address):

Project Name: Michael D. Harris DSSA, Department of

Project Name: C8 Sampling 1st lot
P.O. #: LBIO-64506 R.L. No. EX081
Quotation #:

Please fill out this form *completely* to ensure correct analysis and proper handling of your samples.

ANALYSES REQUESTED

[illegible]

SAMPLE ANALYSIS

SAMPLE ANALYSIS								Fc	L	lo		Pt	PC
ExyLIMS#	Client Sample Identification	Collection Date	Collection Time	Grab	Composite	Number of Containers	Specify Matrix	Comments					
L 33810-1	LTL-CG-L142-9	10/17/02	1105	X		1	water	645510/645509 Only one bottle taken because will next day (unit)	+	x		-	81
L 33810-2	LTL-K-EQBK-5	10/17/02	1230	X		2	Water	825039, 825044	x	x		89	89

LAB USE ONLY

CHAIN OF CUSTODY

Cooler ID # AK000187

Cooler Temp. (°C) 0.7

Received by	Date	Time
	12/01/02	1070

PROJECT REQUIREMENTS

Results Deadline:

Method Standard

Laboratory Report Options:

- ☐ Sample results only
☐ Add case narrative
☐ Add quality control summary
☐ Add calibration summary
☐ Add raw data
☐ Other

OTHER INFORMATION

~~000114~~

Electronic Deliverable



Page ____ of ____

- ☐ Sample results only
☐ Add case narrative
☐ Add quality control summary
☐ Add calibration summary
☐ Add raw data
☐ Other

U
V
C
C



Page ____ of ____

ANALYSES REQUESTED

Quotation #:

[illegible][illegible]

LAB USE ONLY

Relinquished by	Date	Time
Lucinda M. Wilson	10/11/02	1730

Cooler ID # A00040 Cooler Temp. (°C) 0.8

Received by	Date	Time
<i>[Signature]</i>	10/14/12	1015

LAB USE ONLY

PROJECT REQUIREMENTS

Results Deadline: Method Standard

Laboratory Report Options:

- ☐ Sample results only
☐ Add case narrative
☐ Add quality control summary
☐ Add calibration summary
☐ Add raw data
☐ Other

OTHER INFORMATION

000117

Electronic Deliverable

10



Oxygen Research Sample Receiving • 3117 Research Drive • State College, PA 16801, USA
T: 814.231.8032 • F: 814.231.1580 • oxygenresearch.com

Page ____ of ____

PROJECT INFORMATION

Client (name & address):

ANQm AP 5000000 - Deposit

BMP RID 21 Lane PA RT 141

Wilmington, DE 19805

Phone: 302-393-1638

Fax: 102-393-1834

Sampler: L.T. Titon S. Dopp

Project Manager (Name & E-mail Address):

Mike Arceri

M. Charles D. Pearson B.S.A. Department of

Project Name:

CE Sampling 10/02

P.O. #: LETO-64506 Rel. to: W. EX-051

Quotation #:

Please fill out this form *completely* to ensure correct analysis and proper handling of your samples.

ANALYSES REQUESTED

[illegible]

SAMPLE ANALYSIS

[illegible]

LAB USE ONLY

CHAIN OF CUSTODY

Relinquished by	Date	Time
Shirley M. 2010-10/11/02	10/11/02	1730

Cooler ID # 1100040Cooler Temp. ($^{\circ}\text{C}$) 0.8

Received by	Date	Time
<i>[Signature]</i>	12/14/12	1015

LAB USE ONLY

LAB USE ONLY

PROJECT REQUIREMENTS

Results Deadline:

method Standard

Laboratory Report Options:

- ☐ Sample results only
☐ Add case narrative
☐ Add quality control summary
☐ Add calibration summary
☐ Add raw data
☐ Other

OTHER INFORMATION

000118

Electronic Deliverable

7017

Page of

Please fill out this form *completely* to ensure correct analysis and proper handling of your samples.

- ☐ Sample results only
- ☐ Add case narrative
- ☐ Add quality control summary
- ☐ Add calibration summary
- ☐ Add raw data
- ☐ Other



Oxygen Research Sample Receiving • 3117 Research Drive • State College, PA 16801, USA
T: 814.231.8032 • F: 814.231.1580 • oxygenresearch.com

Page ____ of ____

Client (name & address):

ADDRESS: ADDN AP Services - Department
RMP Bldg 27 Lane PK Rt 141
Washington DE 19805
Phone: 302-891-1648
Fax: _____

Phone: 304-843-1111

Fax: _____

Sampler: L. Tilton B. Caldwell

Project Manager (Name & E-mail Address):

Project Name: Michael D. Pearson, Assoc. Support. com

Project Name: Red Hat Linux 5.0.4 - Support

BO # C8 Sample 10/02

P.O. #: LAFO-64506-Release W/ 12X081

Quotation #:

Please fill out this form *completely* to ensure correct analysis and proper handling of your samples.

ANALYSES REQUESTED

[illegible][illegible]

LAB USE ONLY

CHAIN OF CUSTODY

Relinquished by	Date	Time
<i>Quanda M. Wilson</i>	10/11/02	1730

Cooler ID # CR0065 Cooler Temp. (°C) 1.1

Received by	Date	Time
<i>[Signature]</i>	10/14/02	1015

LAB USE ONLY

LAB USE ONLY

PROJECT REQUIREMENTS

Results Deadline:

Method Standard

Laboratory Report Options:

- ☐ Sample results only
☐ Add case narrative
☐ Add quality control summary
☐ Add calibration summary
☐ Add raw data
☐ Other

OTHER INFORMATION

000120

* well wendy - only able to get one bottle.
Electronic Deliverable

☐ Sample results only
☐ Add case narrative
☐ Add quality control summary
☐ Add calibration summary
☐ Add raw data
☐ Other

Page of

ANALYSES REQUESTED

Quotation #:

SAMPLE ANALYSIS

[illegible]

LAB USE ONLY

CHAIN OF CUSTODY

Relinquished by	Date	Time
Lucinda M. Wilson	12/11/02	1730

Received <i>[Signature]</i>	Date	Time
	10/14/62	1015

LAB USE ONLY

LAB USE ONLY

PROJECT REQUIREMENTS

Results Deadline:

Method Standard

Laboratory Report Options:

- ☐ Sample results only
☐ Add case narrative
☐ Add quality control summary
☐ Add calibration summary
☐ Add raw data
☐ Other

OTHER INFORMATION

~~000123~~

* Well went dry - Only able to get 1/2 of one bottle.
Electronic Deliverable

3

- 25

☐ Sample results only
☐ Add case narrative
☐ Add quality control summary
☐ Add calibration summary
☐ Add raw data
☐ Other

☐ Sample results only
☐ Add case narrative
☐ Add quality control summary
☐ Add calibration summary
☐ Add raw data
☐ Other

☐ Sample results only
☐ Add case narrative
☐ Add quality control summary
☐ Add calibration summary
☐ Add raw data
☐ Other

Results Deadline: Method Standard

Laboratory Report Options:

- ☐ Sample results only
- ☐ Add case narrative
- ☐ Add quality control summary
- ☐ Add calibration summary
- ☐ Add raw data
- ☐ Other _____



Page ____ of ____

Please fill out this form *completely* to ensure correct analysis and proper handling of your samples.

- ☐ Sample results only
☐ Add case narrative
☐ Add quality control summary
☐ Add calibration summary
☐ Add raw data
☐ Other

Page ____ of ____

Quotation #:

0015

LAB USE ONLY

Relinquished by	Date	Time
Suzanne M. Wilson	10/14/02	11:30

Received by	Date	Time
<i>[Signature]</i>	10/15/12	1020

LAB USE ONLY

LAB USE ONLY

Electronic Deliverable

☐ Sample results only
☐ Add case narrative
☐ Add quality control summary
☐ Add calibration summary
☐ Add raw data
☐ Other

☐ Sample results only
☐ Add case narrative
☐ Add quality control summary
☐ Add calibration summary
☐ Add raw data
☐ Other

APPENDIX G

LABORATORY ANALYTICAL DATA REPORTS

DRY RUN LANDFILL

000135

Analytical Results Dry Run Landfill C8 Sampling 10/02

DuPont Sample Identification

APFO (ng/L)

DRL-W-Stream Sampling Point #2	29200
DRL-W-Stream Sampling Point #1	1630
DRL-Z-Property Boundary	3800
DRL-Z-DRLeachate Upper Pond Inlet	704000
DRL-Z-Pond Underdrain	38800
DRL-K-EQBLK-2	NQ
DRL-W-Outlet 001	81700

Limit of Detection (LOD) for the procedure is approximately 10 ng/L

Limit of Quantitation (LOQ) for the procedure is 50 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 250 ng/L, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less than 250 ng/L, and the absolute difference is less than 50, the average value is reported. If the absolute difference is greater than 50, the higher value is reported.

000136

0007

Analytical Results Dry Run Landfill C8 Sampling 10/02

DuPont Sample Identification

APFO (ng/L)

DRL-G-DRMW21B	NQ
DRL-G-DRMW21A	270
DRL-G-DRMW6A	1130
DRL-G-DRMW12	109
DRL-G-DRMW12A	181
DRL-G-DRMW12B	258
DRL-G-DRMW13	20900
DRL-G-DRMW13A	6660
DRL-G-DRMW12B-2	242
DRL-K-EQBLK-3	ND

Limit of Detection (LOD) for the procedure is approximately 10 ng/L

Limit of Quantitation (LOQ) for the procedure is 50 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 250 ng/L, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less than 250 ng/L, and the absolute difference is less than 50, the average value is reported. If the absolute difference is greater than 50, the higher value is reported.

000137

0007

Analytical Results Dry Run Landfill C8 Sampling 10/02

DuPont Sample Identification

APFO (ng/L)

DRL-G-DRMW14

NQ

DRL-G-DRMW15

4920

Limit of Detection (LOD) for the procedure is approximately 10 ng/L

Limit of Quantitation (LOQ) for the procedure is 50 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 250 ng/L, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less than 250 ng/L, and the absolute difference is less than 50, the average value is reported. If the absolute difference is greater than 50, the higher value is reported.

000138

0009

Analytical Results Dry Run Landfill C8 Sampling 10/02

DuPont Sample Identification

APFO (ng/L)

DRL-G-DRMW16B	NQ
DRL-G-DRMW17B	155
DRL-G-DRMW18B	ND
DRL-G-DRMW19B	NQ
DRL-G-DRMW20B	NQ
DRL-K-EQBLK-4	NQ
DRL-K-EQBLK-5	NQ

Limit of Detection (LOD) for the procedure is approximately 10 ng/L

Limit of Quantitation (LOQ) for the procedure is 50 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 250 ng/L, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less than 250 ng/L, and the absolute difference is less than 50, the average value is reported. If the absolute difference is greater than 50, the higher value is reported.

000139

0007

APPENDIX H
CHAIN-OF-CUSTODY RECORDS
DRY RUN LANDFILL

000140

000141



Oxygen Research Sample Receiving • 3117 Research Drive • State College, PA 16801, USA
T: 814.231.8032 • F: 814.231.1580 • oxygenresearch.com

Page ____ of ____

Client (name & address):

Phone: 304-892-1615
Fax: _____

Fax: _____

Sampler: L. Tilton, B. Caldwell

Project Manager (Name & E-mail Address):

Project Name: M. K. Azeem
M. Saeed D. Azeem, P.O. S.A. Department, ...

Project Name: 1st SA. Department. C.

P.O. #: C8 Sampling 10/00

Quotation #:

Please fill out this form *completely* to ensure correct analysis and proper handling of your samples.

ANALYSES REQUESTED

[illegible]

SAMPLE ANALYSIS

SAMPLE ANALYSIS							
ExyLIMS#	Client Sample Identification	Collection Date	Collection Time	Grab	Composite	Number of Containers	
133768-1	NRL-G DRINKWATER	10/09/02	1003	X		2	
		10/09/02	(mp)				

LAB USE ONLY

150 USE ONLY

CHAIN OF CUSTODY

Relinquished by	Date	Time
Lucinda M. Tilton	10/09/03	1800

Cooler ID # C2000113

Cooler Temp. (°C) 0.1

Received by	Date	Time
<i>[Signature]</i>	10/10/2019	10:29

LAB USE ONLY

PROJECT REQUIREMENTS

Results Deadline:

Method Standard

Laboratory Report Options:

- ☐ Sample results only
☐ Add case narrative
☐ Add quality control summary
☐ Add calibration summary
☐ Add raw data
☐ Other

OTHER INFORMATION

Electronic Deliverable

000142

100

Page of

Project Manager (Name & E-mail Address):

Project Name:

P.O. #: LBID-64526 R/pen #1 64526

Quotation #:

Sampler: L. Tilton, B. Caldwell

Please fill out this form *completely* to ensure correct analysis and proper handling of your samples.

ANALYSES REQUESTED

[illegible]

SAMPLE ANALYSIS

[illegible]

LAB USE ONLY

CHAIN OF CUSTODY

Relinquished by	Date	Time
Jurisdiction 7.10	10/09/0	1800

Cooler ID # CR000113 Cooler Temp. (°C) 0.2

Received by	Date	Time
<i>[Signature]</i>	10/10/02	1029

LAB USE ONLY

LAB USE ONLY

PROJECT REQUIREMENTS

Results Deadline:

Method Standards

Laboratory Report Options:

- ☐ Sample results only
- ☐ Add case narrative
- ☐ Add quality control summary
- ☐ Add calibration summary
- ☐ Add raw data
- ☐ Other

OTHER INFORMATION

Electronic Deliverable

000143

2012

000144

☐ Sample results only
☐ Add case narrative
☐ Add quality control summary
☐ Add calibration summary
☐ Add raw data
☐ Other

- ☐ Sample results only
- ☐ Add case narrative
- ☐ Add quality control summary
- ☐ Add calibration summary
- ☐ Add raw data
- ☐ Other

Oxygen Research Sample Receiving • 3117 Research Drive • State College, PA 16801, USA
T: 814.231.8032 • F: 814.231.1580 • oxygenresearch.com

Page ____ of ____

PROJECT INFORMATION

Client (name & address):

ADWY AP Services - Deposit
Bump Bldg 27 Line PL RT 141
Wilmington, DE 19805

Phone: 303-892-1218

Fax: _____

Sampler: L. Tilton, B. Caldwell

Project Manager (Name & E-mail Address):

Project Name: Michael D. Bercini Postgraduate Comm

Project Name:

P.O. #: CR Sampling 10/02
LRIC-04506 Ref. No. RX079

Quotation #:

Please fill out this form *completely* to ensure correct analysis and proper handling of your samples.

ANALYSES REQUESTED

[illegible]

SAMPLE ANALYSIS

[illegible]

LAB USE ONLY

CHAIN OF CUSTODY

Relinquished by	Date	Time
Juan Carlos M. T. Wilson	10/08/02	11:30

Cooler ID # C1000110

Cooler Temp. (°C) 0.4

Received by	Date	Time
	10/9/2003	1030

LAB USE ONLY

PROJECT REQUIREMENTS

Results Deadline:

Method Standard

Laboratory Report Options:

- ☐ Sample results only
- ☐ Add case narrative
- ☐ Add quality control summary
- ☐ Add calibration summary
- ☐ Add raw data
- ☐ Other

OTHER INFORMATION

Electronic Deliverable

000147



Page ____ of ____

Please fill out this form *completely* to ensure correct analysis and proper handling of your samples.

- ☐ Sample results only
☐ Add case narrative
☐ Add quality control summary
☐ Add calibration summary
☐ Add raw data
☐ Other

☐ Sample results only
☐ Add case narrative
☐ Add quality control summary
☐ Add calibration summary
☐ Add raw data
☐ Other

- ☐ Sample results only
- ☐ Add case narrative
- ☐ Add quality control summary
- ☐ Add calibration summary
- ☐ Add raw data
- ☐ Other

Telephone/ Communications Log

Company Name and Address:

Adem AP Services - Dyeant
BMP Bldg 27 Lane, PK Rt 141
Wilmette, DE 19805
302-892-1098

Protocol Number:

Exygen Study Number:

L33777

Name of Person:

Mike Accor

Date:

10/15/06

Originator:

☒ Exygen ☐ Sponsor

Time:

1015

Sample LCL-K-EADK-3 was not received with the other samples.
Sample LCL-K-EADK-4 was received but was not on the chain of
custody. As per Mike Accor, he said to use the identidenta
from the chain not the bottle.

Signature:

[Signature]

Date:

10/15/06

Client (name & address):

Phone: 302-811-1698
Fax:

Fax: 202-372-7648

Sampler: L. Tilton, B. Caldwell

Please fill out this form *completely* to ensure correct analysis and proper handling of your samples.

Project Manager (Name & E-mail Address):

Project Name: Michael D. Ancein OUSA-Support.com

P.O. #: LA 500 10/02

Quotation #:

SAMPLE ANALYSIS

[illegible]

LAB USE ONLY

CHAIN OF CUSTODY

Relinquished by	Date	Time
Brian M. Tilton	10/18/02	1430

Cooler ID # CRA-110 Cooler Temp. (°C) 0.6

Received by	Date	Time
<i>[Signature]</i>	10/9/2002	1030

LAB USE ONLY

LAB USE ONLY

OTHER INFORMATION

Electronic Deliverable

000153

PROJECT REQUIREMENTS

Results Deadline:

Method Standard

Laboratory Report Options:

- ☐ Sample results only
☐ Add case narrative
☐ Add quality control summary
☐ Add calibration summary
☐ Add raw data
☐ Other

- ☐ Sample results only
- ☐ Add case narrative
- ☐ Add quality control summary
- ☐ Add calibration summary
- ☐ Add raw data
- ☐ Other