DuPont Engineering
4200 Camp Ground Road
Louisville, KY 40216

DuPont Engineering

August 27, 2002

Mr. Christopher A. Saari
Hydrogeologist
Northern Region Remediation and Redevelopment
State of Wisconsin Department of Natural Resources
Ashland Service Center
2501 Golf Course Road
Ashland, Wisconsin 54806

AQUIFER AND DRINKING WATER SOURCE EVALUATION WORK PLAN
Former DuPont Barksdale Works
Barksdale, Wisconsin

Dear Mr. Saari:

This letter transmits the Aquifer and Drinking Water Source Evaluation Work Plan for the former E. I. du Pont de Nemours and Company, Inc. (DuPont) Barksdale Works. DuPont has submitted the applicable fees for your review of this work plan to the Wisconsin Department of Natural Resource's Rhinelander, Wisconsin office (see attached letter and copy of payment).

As we have discussed previously, DuPont desires to implement the initial phase of work described in the work plan on September 3, 2002, pending your review.

If you have any questions or comments regarding work plan, please contact me at (502) 569-2148.

Sincerely,

Bradley S. Nave
DuPont Corporate Remediation Group
Project Director

cc: Mr. Cary E. Pooler, P.G., URS Corporation
Mr. Paul Bretting, Bretting Manufacturing, Inc.
Mrs. Amelia Lindsey, RN, Bayfield County Health Department
Mr. Henry Nehls-Lowe, MPH, State of Wisconsin Department of Health and Family Services
Mr. Doug Shultz, Wisconsin Department of Natural Resources, Ashland Service Center

WISCONSIN
DEPT. OF NATURAL RESOURCES

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Scott McCallum, Governor
Darrell Bazzell, Secretary
William H. Smith, Regional Director

Northern Region Headquarters
107 Sutliff Ave.
Rhinelander, Wisconsin 54501-0818
Telephone 715-365-8900
FAX 715-365-8932
TDD 715-365-8957

August 27, 2002

Ms. Peggy Moss
DuPont
Barley Mill Plaza, 27/2278
4417 Lancaster Pike
Wilmington, DE 19805

Subject: DuPont Barksdale site, BRRTS # 02-04-000156

Dear Ms. Moss:

Enclosed please find a copy of DuPont check # 355, which you recently sent us in payment of the review fee of a workplan. The copy includes a receipt for the payment.

Please call me if you have any questions at 715-365-8990.

Sincerely,
NORTHERN REGION

Janet Kazda

Janet Kazda
Remediation and Redevelopment Program

c: File
Chris Saari, Ashland

DuPont Engineering
Barley Mill Plaza - Bldg. 27
Lancaster Pike & Rte. 141
Wilmington, DE 19805

DuPont Engineering

July 29, 2002

Ms. Janet Kazda
WDNR
107 Sutliff Avenue
Rhinelander, WI 54501

Enclosed is check in the amount of $500 to cover review of a groundwater investigation work plan for the Former DuPont Barksdale site.

I'll need a receipt marked paid for my records. Please mail to my attention at —

DuPont
Barley Mill Plaza, 27/2278
4417 Lancaster Pike
Wilmington, DE 19805

Thank you

Sincerely,

Peggy Moss

Peggy Moss
Administrative Secretary

PROJECT MANAGER: Chris Saari

PROJECT NAME: DuPont Barksdale

ID #: 02-04-000156

TYPE OF REVIEW: SI Workplan

DATE SUBMITTED/CHECK REC'D: 8/27/02 $ 500.00

YOUR NAME/REGION: Janet Kazda, NoR

AQUIFER AND DRINKING WATER SOURCE EVALUATION WORKPLAN FORMER DUPONT BARKSDALE WORKS BARKSDALE, WISCONSIN

Date: August 22, 2002

Project No.: 40-D4BA7433.02

CORPORATE REMEDIATION GROUP
An Alliance between
DuPont and URS Diamond

Barley Mill Plaza, Building 27
Wilmington, Delaware 19805

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1.0 INTRODUCTION

E. I. DuPont de Nemours and Company (DuPont) operated an explosives manufacturing facility for approximately 70 years in Barksdale, Wisconsin known as the former DuPont Barksdale Works (see Figure 1). In the mid 1980s, DuPont sold the site to Bretting Development, which maintains the site for private game hunting and other recreational pursuits.

In 1997, nitroamine and nitroaromatic organic compounds were identified in residential drinking water wells adjacent to the former Barksdale Works. As a result of the detections, DuPont has installed and maintained point-of-use carbon filters in affected homes and has voluntarily conducted environmental site investigation activities to determine the nature of site-related compounds that are present in groundwater due to previous manufacturing operations.

The results of the most recent investigation (DuPont 2002) indicate that groundwater flow beneath the site occurs in three zones (shallow, intermediate, and deep) and that detected site-related compounds (nitroamine and nitroaromatic organic constituents) in groundwater were limited to wells drawing water from the shallow and intermediate zones. Furthermore, borehole geophysical and general chemical data (cation/anion analyses) collected during 2001 indicated the deep flow zone appears to be hydraulically isolated from other known flow zones. Thus, it was concluded that the deep flow zone may be a potential alternative potable water supply for surrounding residences.

The 2001 site investigation report recommended further evaluation of selected portions of the site's aquifer (DuPont, 2002) to determine whether the deep zone may be a potential alternative potable water supply source. The first step in this evaluation was to collect and analyze additional groundwater samples from deep zone wells, which was completed in May 2002. The preliminary analytical results of this sampling reaffirmed that site-related compounds are not present in the deeper portion of the aquifer and support the conclusion that the deep zone is hydraulically isolated from the shallow and intermediate zones.

This work plan details the proposed next steps to more completely evaluate whether the deep flow zone will continue to be a viable alternative for potable needs surrounding the former DuPont site.

1.1 Goal and Objectives

The overall goal of this work scope is to gain a further understanding of the potential for the deeper portion of the aquifer in the vicinity of the former Barksdale Works to supply unaffected potable water to surrounding residents. Thus, the following objectives are proposed:

- Determine which zone is supplying the potable water in selected residential wells located down gradient and northeast of the site.
- Evaluate the supply capacity of the deep aquifer zone.

To accomplish these objectives, DuPont proposes to conduct the following activities:

- ❑ Geophysically log four residential wells. The logging will be completed to determine whether several historically unaffected residential wells are installed within the deep zone and ascertain construction details for several other homes within and outside the presumed impacted area.
- ❑ Install three potable water supply wells (pending favorable geophysical logging results) in the deep flow zone (one on-site and two off site) and two monitoring wells (one on-site and one off site) within the deep aquifer zone. The potable wells will be used to evaluate the supply capacity of the deep aquifer zone. The monitoring wells will be used to obtain other hydrogeologic data (draw down during potable well operation, etc.).
- ❑ Conduct "residential demand" capacity testing of the three newly installed potable water supply wells.

Based upon the geophysical logging results, the proposed potable and monitoring wells may not be installed or their installation location may be moved. The proposed scope is based on the following assumptions:

- Affected residential wells are not screened within the deep aquifer zone,
- Water within the deep aquifer zone has been unaffected by site-related compounds and is a potential alternative drinking water source for the residents.

Should the geophysical logging data suggest that the currently affected residential wells are screened within the deep aquifer zone or that the deep aquifer zone may not be a viable alternative drinking water source, the other activities, i.e. well installation, proposed in this work plan will be reevaluated prior to implementation.

2.0 SITE DESCRIPTION

The site consists of approximately 1,800 acres and is located in Bayfield County, south of Washburn, Wisconsin, on Chequamegon Bay, Lake Superior . The town of Washburn (Bayfield County Seat) is located approximately three miles north of site. The town of Ashland (Ashland County Seat) is located approximately four miles to the southeast. State Highway 13 runs northeast across the eastern portion of the former site at about 1,000 feet from the Lake Superior shoreline (see Figure 2). The property is bordered by Nolander Road along its north side and Ondassagon Road along the west. The security fence surrounding the former site marks the southern boundary (see Figure 2).

3.0 FIELD ACTIVITIES

The following field activities are proposed to accomplish the objectives:

- Geophysical logging of up to four offsite residential potable supply wells.
- Installation of three new potable water supply wells.
- Installation of two monitoring wells next to two of the new potable water supply wells.
- Sampling of all newly installed wells (a total of five). Sampling will also be conducted at an existing monitoring well adjacent to the proposed on-site potable well.
- Aquifer capacity testing at the three newly installed potable water supply wells.
- Surveying newly installed wells.

3.1 Geophysical Logging

Geophysical logging is planned for five residential wells, pending permission from the individual residents. The purpose of this activity is to determine well construction and lithological information to evaluate the actual water source of each well. The proposed locations and reasons for their selection are outlined below. The range of historic nitroamine concentrations at each of the work areas are listed in Table 1.

- 30900 Nolander Road: Historically, nitroamine concentrations have been detected.
- 72700 Highway 13 –This well has typically been free from nitroamine compounds yet it is adjacent to residential well 72520 Highway 13 where nitroamine concentrations have regularly been detected.
- 72920 Highway 13 – This is a well in which nitroamine compounds have not been detected. Logging of the well will provide lithologic information in an unaffected portion of the local aquifer located between two areas, Birch Grove and Barksdale Village, both of which have previously had detections of site - related compounds.
- 73080 Birch Grove Road: Historically, nitroamine concentrations have not been detected. This well is near 73100 and 73115 Birch Grove Road that have had detections.

Figure 3 shows the locations.

The following steps will occur at each location.

- Down-hole tools and cables will be sanitized
- Video the borehole
- If video is not usable (water is too turbid), then run an acoustic log.

- If the water is still too turbid, run a caliper log;
- If conditions warrant (caliper used or major voids identified), run a heat-pulse log.

❑ If scale or bacterial floc build up within a well is severe, rehabilitation of the borehole (wire brushing and air-lifting followed by pumping) may be needed prior to logging.

All generated waste materials will be containerized and labeled for subsequent disposal as per appropriate regulations. Purge water from unaffected wells will be discharged to the ground surface.

3.1.1 Existing Residential Well Maintenance

To ensure residences have water during the geophysical logging activities, licensed potable well drilling and maintenance contractor(s) will handle the supply systems during the logging activities.

Prior to logging activities, the maintenance contractor will conduct the following activities.

❑ Visually inspect the system and photo-document pre-work conditions of the casing, well cap, electrical conduit terminations, pressure tank, sample tap, and pitless adapter.

❑ Conduct prework system testing (check electrical equipment, run multistage pump rate test).

❑ Clear the work area of movable objects.

❑ Lay down necessary materials to protect lawns and landscaping.

❑ Clear and sanitize the area to be used for pump and riser laydown.

❑ Verify power is off (lockout tag-out).

❑ Disconnect and secure electrical leads.

❑ Connect alternate water supply to residence.

❑ Disconnect and secure pump discharge piping.

❑ Extract well fixtures (photo document fixture condition as pulled – drop pipes, wire, pump and motor).

❑ Cover and secure well fixtures for temporary storage (rack and wrap for weather and sanitary protection).

After logging activities are completed, the maintenance contractor will conduct the following activities.

❑ Reinsert well fixtures.

❑ Reconnect pump wiring

❑ Reactivate pump power.

- Test the system, chlorinate the well, and flush the system (water to be contained then discharged after filtering).
- Collect post-activity bacteria samples.

If the chlorination test fails, chlorinating will occur again with subsequent testing.

After acceptable bacterial results are received the maintenance contractor will reactivate the water lines and disconnect temporary water supplies.

Every attempt will be made to restore each area to pre-work conditions. The ground disturbed around each logging/drilling location will be regraded and seeded at the end of all fieldwork. Seeded areas will be mulched and watered as needed for a period of one month or until stable growth of grass has been achieved.

3.2 Potable Well Installation

Providing that the deep aquifer is still considered a viable drinking water source following the inspections noted in Section 3.1, three offsite potable water wells will be installed at the following residences (see Figure 3).

- 30900 Nolander Road
- 29600 Nolander Road
- 72315 Highway 13 (near PZ-16)

The potable wells will be six-inch diameter steel potable wells with open borehole production zones compliant with WAC Ch. NR 812. Each will be double cased with 10-inch diameter steel through unconsolidated formations into the local sandstone bedrock. The open borehole portion of each potable well will extend approximately 20-ft beyond the six-inch well casing and terminate at approximately 280-ft BGS. If significant water is not recovered during drilling of the open section, the production zone of a well may be extended beyond 280-ft. Once an appropriate return of water is generated, the well will be developed and groundwater will be sampled as stated in section 3.4.

Each well will be completed with pitless adapters and vermin-proof weather-tight caps. After groundwater sampling, each well will be fitted with pumps and supply piping sufficient to serve the adjacent dwellings. Prior to being brought on-line, the wells, pumps and piping will be disinfected, flushed and sampled for bacteria. The new supply wells will not be brought on line until WDNR has had an opportunity to review the analytical data collected from the new wells.

3.3 Monitoring Well Installation

Two monitoring wells will be installed (see Figure 3) to evaluate the radius of influence of pumping conducted at the newly installed potable wells. Each of these wells will be installed in two drilling events. During the first event the borehole will be drilled to a depth of approximately 180-ft BGS. The walls of this upper borehole will be video taped and a six-inch steel casing will then be grouted into the borehole. The second drilling will occur once the casing grout has set. The second drilling will proceed through the grouted casing and into the clean lower aquifer to 280-ft BGS after which the borehole

walls will again be videotaped. After video taping is complete, two-inch diameter PVC monitoring wells will be installed as per WAC Ch. NR 141 . The slotted portion of each monitoring well screen will be 20-ft long and the well will terminate at approximately 280-ft below ground surface (bgs) or to the same depth as the new adjacent potable wells. Each monitoring well will be completed with a protective cover and locking cap. After installation, each monitoring well will be developed and sampled. Section 3.4 provides information regarding sampling. All waste material generated will be containerized and labeled for subsequent disposal.

3.3.1 Well Installation Locations

Historical results are listed in Table 1 for the areas that the proposed wells will be placed. Listed below are the geologic conditions that are expected at each location:

- 30900 Nolander Rd:

silty sand	0-15-ft,
fractured sandstone	15-50-ft,
competent sandstone	50-280-ft

- 29600 Nolander Rd:

clay	0-5-ft,
sandy clay	5-50-ft,
silty sand	50-150-ft,
dense glacial till	150-210-ft,
silty sand and gravel	210-225-ft,
fractured sandstone	225-250-ft,
competent sandstone	250-280-ft

- 72315 Hwy 13 @ PZ16:

silty clay	0-10-ft,
silty sand	10-15-ft,
fractured sandstone	15-40-ft,
competent sandstone	40-280-ft

3.4 Sampling

Following well installation, the three new potable water wells and two monitoring wells will be sampled for parameters analyzed during the 2001 investigation. The following parameters will be analyzed by Severn Trent Laboratories (STL).

- Volatile organic compounds (VOCs) (see Table 2)
- Nitroaromatic constituents (see Table 3)
- Naturally Occurring Anions and Cations (see Table 4)
- Metals (*dissolved and total*) (see Table 5)

The following parameters will be measured in the field.

- pH

- Conductivity
- Temperature
- Dissolved Oxygen

The field procedures used during the 2001 investigation will be used during this sampling event. The results of this sampling will be used to identify the aquifer zone supplying water to the well and to confirm whether the water obtained is suitable for potable consumption.

3.4.1 Additional Bacteriological Analysis

In addition to the above stated analysis, all new portable will be sampled for bacterial contamination prior to being reconnected for potable use. These water samples will be analyzed by a Drinking Water (SDWA) Lab certified by the State of Wisconsin for coliform bacteria testing using the Enzyme Substrate Method. Test kits and detailed instructions for the sampling will be provided by the laboratory.

3.5 Water Level Monitoring

In each newly installed well plus three existing wells (PZ-16-o, PZ-16-d and the existing potable well at 30900 Nolander Road), water levels will be monitored using data logging devices to record the effect of pumping at several times the customary residential water consumption rate in the area. Water levels in the pumping wells and adjacent monitoring wells will be logged and analyzed for several months to evaluate the aquifer supply capacity based on the draw down produced in each well. Water level data will be logged at the following frequencies:

- Every minute for 24 hours after well installation
- Every 15 minutes for one week after well installation
- Every half-hour for three months after well installation
- Every hour through six months after well installation

Water levels will be checked to verify logged data at each download. The data loggers will be removed from the wells after six months. The data obtained will be evaluated to determine the aquifer supply capacity.

3.6 Survey

All newly installed well locations will by surveyed by a State of Wisconsin licensed surveyor and placed on the site map. Northing and easting coordinates plus surface elevations will be recorded for all sampling points. All site coordinates will be tied to the State Plane Coordinate System – Northern Grid. All elevation information will be tied to the National Geodetic Vertical Datum (NGVD-29) elevation above mean sea level

4.0 SITE MANAGEMENT

4.1 House Keeping

Equipment staging and decontamination will be conducted at a secured location on the grounds of the former Barksdale Works.

All work areas including the decontamination pad and staging areas will be cleaned up at the end of each shift. All wastes generated will be transported to storage tanks or covered dumpsters within the secured area at the end of each workday.

Equipment will be left in place at the end of a work shift only if work at that location has not been completed and will be continued the following day. Otherwise, all equipment will be stored in the vicinity of the decontamination pad when not in use. Barricades will be left in place for overnight storage of equipment at a work location and gates will be closed and secured.

4.1.1 Investigation Derived Waste Management

The following types of non-hazardous wastes are expected to be produced by the proposed activities: drill cuttings, formation water, drilling fluids, development water, sample purge water, personal protective equipment (PPE), and decontamination water.

These media will be collected at the generation-sites and transported to a central storage area on the grounds of the former Barksdale Works.

The project specific waste management plan (Appendix B) details the actual procedures that will be followed to handle the wastes in the field. The waste management procedures are summarized as follows.

Water generated by the work will be filtered to remove suspended solids and organic chemicals. The filtered water will then be transferred to storage tanks where it will be held pending characterization. If the characterization results show that the water does not contain regulated concentrations of waste materials it will be discharged to an on-site infiltration basin. If the results show residual organic constituents, the batch will be reprocessed through the filtration system and retested. If inorganic compounds are detected in the treated water above permitted system discharge limits, the batch will be transported off-site for appropriate disposal.

Drill cuttings will be stored in plastic-lined 20-cubic yard dumpsters covered with tarps. The materials in the dumpsters will be allowed to settle for at least 24 hours, after which the free liquids will be decanted off into the filtration system. The dumpsters containing the settled soil will be transferred to an off-site landfill.

4.1.2 Contamination Control

All down-hole equipment, supporting vehicles, and auxiliary equipment will be thoroughly cleaned prior to use at each site and between installations of casing at each location. The procedures required for equipment and personnel decontamination during the course of the project are detailed in the project specific HASP (Attachment A).

Double casing will be used to prevent cross-contamination between aquifers during drilling. New potable wells will be constructed with two permanent steel casings through the upper and intermediate groundwater aquifer zones. The annular spaces between these casings will be filled with cement grout to meet the requirements of WAC Ch. NR 812.21.

4.1.3 Site Restoration

The ground disturbed around each logging and drilling location will be regraded and seeded at the end of all field work. Seeded areas will be mulched and watered as needed for a period of one month or until stable growth of grass has been achieved.

5.0 PROJECT CONTACTS

For more information please contact the project personnel listed below:

Bradley S. Nave, Project Director
DuPont Corporate Remediation Group
4200 Camp Ground Road
Louisville, KY 40216
(502) 569 2148

Carroll E. Pooler, Project Manager
URS Corporation
4200 Camp Ground Road
Louisville, KY 40216
(502) 569 2444

Jon R. Hammerberg, Field Engineer
URS Corporation
5250 East Terrace Drive
Madison, WI 53718
(608) 245 7191

6.0 REPORT

Following field activities, a summary report will be prepared providing the following information.

- Description of all field activities.
- Analytical and field data.
- Maps and tables showing data.
- Results and conclusions.

DuPont plans to begin this work by the end of August, 2002. Logging is expected to take two to three weeks. Drilling, which will begin soon after logging is expected to take about four to five weeks. It is anticipated that the final report will be submitted approximately 90 days following the completion of field activities. The actual delivery date may be extended due to the actual delivery dates of various items, i.e. analytical data, survey data, etc. taking longer than anticipated.

7.0 REFERENCES

DuPont, 2002. *2001 Site Investigation Report for the Former DuPont Barksdale Works.2001.* Barksdale , Wisconsin, June 20, 2002

DuPont, 2001. *Quality Assurance Project Plan , Former Barksdale Facility.* Barksdale, Wisconsin, September 6, 2001.

Wisconsin Administrative Code, Chapter NR-114 – Monitoring Well Construction

Wisconsin Administrative Code, Chapter NR-140 – Groundwater Quality

Wisconsin Administrative Code, Chapter NR-812 Potable Well Construction

TABLES

Table 1
Range of Historic Groundwater Nitroaromatic and Nitramine Organic Concentrations at Proposed Work Locations

Former DuPont Barksdale Site
Barksdale, Wisconsin

Nitroaromatic/Niramine Organic Compounds	units	30900 Nolander		72480 Highway 13		72700 Highway 13		72790 Highway 13		73080 Birch Grove Road		73110 Birch Grove Road	
		Lowest Detection	Highest Detection	Lowest Detection	Highest Detection	Lowest Detection	Highest Detection	Lowest Detection	Highest Detection	Lowest Detection	Highest Detection	Lowest Detection	Highest Detection
2-Nitrotoluene	ug/l	0.021 J	0.035 J	0.058 J	0.095 J	Not Detected		Not Detectected		Not Detectected		Not Detected	
4-Nitrotoluene	ug/l	Not Detected		0.031 J	0.031 J	Not Detected		Not Detectected		Not Detectected		Not Detected	
2,4,6-Trinitrotoluene	ug/l	Not Detected		0.087 J	0.087 J	Not Detected		Not Detectected		Not Detectected		Not Detected	
2,4-Dinitrotoluene	ug/l	0.045 J	0.11 J	0.090 J	0.31	0.13 J	0.13 J	Not Detectected		Not Detectected		0.044 J	0.14
2,6-Dinitrotoluene	ug/l	0.67	1	0.051 J	0.26	Not Detected		Not Detectected		Not Detectected		0.54	0.74
2-Amino-4,6-Dinitrotoluene	ug/l	Not Detected		0.11 J	0.53	Not Detected		Not Detectected		Not Detectected		Not Detected	
4-Amino-2,6-Dinitrotoluene	ug/l	0.023 J	0.060 J	0.17 J	0.93	Not Detected		Not Detectected		Not Detectected		Not Detected	
Nitroglycerin	ug/l	Not Detected		0.050 J	0.050 J	Not Detected		Not Detectected		Not Detectected		Not Detected	

ug/l = micrograms per liter or parts per billion.

J = estimated concentration. Result is less than laboratory reporting limit or qualified for QC exceedance.

Table 2
Wisconsin Regulated Volatile Organics by SW-846 8260B
Analytes and Reporting Limits

Former DuPont Barksdale Site

Barksdale, Wisconsin

Compound	Water (ug/l)	
	Reporting Limit	MDL
1, 1, 1,2-Tetrachloroethane	1.0	0.22
1,1,1-Trichloroethane	1.0	0.26
1,1,2,2-Tetrachloroethane	1.0	0.31
1,1,2-Trichloroethane	1.0	0.39
1,1-Dichloroethane	1.0	0.17
1,1-Dichloroethene	1.0	0.20
1,2,3-Trichloropropane	1.0	0.29
1,2,4-Trichlorobenzene	1.0	0.20
1,2,4-Trimethylbenzene	1.0	0.22
1,2-Dibromo-3-chloropropane (DBCP)	2.0	0.25
1,2-Dibromoethane (EDB)	1.0	0.36
1,2-Dichlorobenzene	1.0	0.24
1,2-Dichloroethane	1.0	0.28
1,2-Dichloroethene (total)	1.0	0.53
1,2-Dichloropropane	1.0	0.21
1,3,5-Trimethylbenzene	1.0	0.29
1,3-Dichlorobenzene	1.0	0.26
1,3-Dichloropropane	1.0	0.26
1,4-Dichlorobenzene	1.0	0.24
2-Butanone (MEK)	5.0	0.93
4-Methyl-2-pentanone	5.0	0.79
Acetone	10.0	1.90
Benzene	1.0	0.21
Bromodichloromethane	1.0	0.22
Bromoform	1.0	0.32
Bromomethane	2.0	0.30
Carbon disulfide	1.0	0.19
Carbon tetrachloride	1.0	0.19
Chlorobenzene	1.0	0.30
Chloroethane	2.0	0.25
Chloroform	1.0	0.23
Chloromethane	2.0	0.30
Dibromochloromethane	1.0	0.38
Dichlorodifluoromethane	2.0	0.23
Ethylbenzene	1.0	0.28
Hexane	1.0	0.25
Methyl tert-butyl ether	5.0	0.21
Methylene chloride	1.0	0.89
Naphthalene	1.0	0.15
Styrene	1.0	0.27
Tetrachloroethene	1.0	0.36
Toluene	1.0	0.29
Trichloroethene	1.0	0.22
Trichlorofluoromethane	2.0	0.28
Vinyl chloride	1.0	0.21
Xylenes	2.0	0.95

MDL (Method detection limit) is the minimum concentration of the analyte that can be measured with a 99% probability that it is different from the "blank". MDL values are measured in the laboratory with a series of replicate analyses in a standard matrix, and are updated annually.

Reporting Limit refers to the laboratory's limit of quantitation, or the lowest concentration that can be reliably achieved for a particular analyte within routine operating conditions. Values lower than the Reporting Limit, but above the MDL, are considered estimated concentrations.

ug/l = micrograms per liter or parts per billion.

Table 3
Nitroaromatic and Nitramine Organics by SW-846 8321A
Analytes and Reporting Limits
Former DuPont Barksdale Site
Barksdale, Wisconsin

Compound	Water (ug/l)	
	Reporting Limit	MDL
HMX (1)	0.12	0.022
RDX (2)	0.12	0.028
1,3,5-Trinitrobenzene	0.12	0.017
1,3-Dinitrobenzene	0.12	0.020
Tetryl (3)	0.12	0.019
2,4,6-Trinitrotoluene	0.12	0.049
Nitrobenzene	0.12	0.025
Nitroglycerin	0.12	0.049
2,4-Dinitrotoluene	0.12	0.016
2-Amino-4,6-dinitrotoluene	0.12	0.013
2,6-Dinitrotoluene	0.12	0.012
4-Amino-2,6-dinitrotoluene	0.12	0.017
2-Nitrotoluene	0.12	0.038
4-Nitrotoluene	0.12	0.038
3-Nitrotoluene	0.12	0.019
PETN (4)	0.12	0.020

(1) HMX = Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine.
(2) RDX = Hexahydro-1,3,5-trinitro-1,3,5-triazine.
(3) Tetryl = Methyl-2,4,6-trinitrophenylnitramine.
(4) PETN = Pentaerythritol tetranitrate.

MDL (Method detection limit) is the minimum concentration of the analyte that can be measured with a 99% probability that it is different from the "blank". MDL values are measured in the laboratory with a series of replicate analyses in a standard matrix, and are updated annually.

Reporting Limit refers to the laboratory's limit of quantitation, or the lowest concentration that can be reliably achieved for a particular analyte within routine operating conditions. Values lower than the Reporting Limit, but above the MDL, are considered estimated concentrations.

ug/l = micrograms per liter or parts per billion.

Table 4
Naturally Occuring Anion and Cation
Analytes and Reporting Limits

Former DuPont Barksdale Site

Barksdale, Wisconsin

Anion
Analytes and Reporting Limits

Compound	Water (ug/l)	
	Reporting Limit	MDL
Carbonate	5000	1500
Bicarbonate	5000	1500
Chloride, EPA 300.0	3.0	0.02
Sulfate, EPA 300.0	5.0	0.10

Cation
Analytes and Reporting Limits

Compound	Water (mg/l)	
	Reporting Limit	MDL
Calcium, SW-846 6010B	5000	29
Magnesium, SW-846 6010B	5000	21
Sodium, SW-846 6010B	5000	2000
Potassium, SW-846 6010B	5000	500

MDL (Method detection limit) is the minimum concentration of the analyte that can be measured with a 99% probability that it is different from the "blank". MDL values are measured in the laboratory with a series of replicate analyses in a standard matrix, and are updated annually.

Reporting Limit refers to the laboratory's limit of quantitation, or the lowest concentration that can be reliably achieved for a particular analyte within routine operating conditions. Values lower than the Reporting Limit, but above the MDL, are considered estimated concentrations.

ug/l = micrograms per liter or parts per billion.

mg/l = milligrams per liter or parts per million.

Table 5
Appendix IX Metals
Analytes and Reporting Limits

Former DuPont Barksdale Site

Barksdale, Wisconsin

Compound	Water (ug/l)	
	Reporting Limit	MDL
Beryllium, SW-846 6010B	5.0	0.22
Copper, SW-846 6010B	25	0.83
Nickel, SW-846 6010B	40	0.96
Vanadium, SW-846 6010B	10	0.67
Zinc, SW-846 6010B	20	6.6
Antimony, SW-846 6010B	10	3.1
Cadmium, SW-846 6010B	5	0.29
Cobalt, SW-846 6010B	10	0.34
Silver, SW-846 6010B	10	0.62
Tin, SW-846 6010B	100	3.3
Barium, SW-846 6010B	10	0.64
Chromium, SW-846 6010B	10	0.56
Arsenic, SW-846 6020	5.0	0.19
Lead, SW-846 6020	1.0	0.20
Selenium, SW-846 6020	5.0	0.15
Thallium, SW-846 6020	1.0	0.020
Mercury, SW-846 7470/71B	0.2	0.030

Note: Monitor wells were analyzed for all inorganics parameters; residential wells were analyzed for Nitrate-Nitrite and Sulfate. Alternate procedures for metals analysis may be utilized for samples containing high sulfide or other interferences.

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Reporting Limit refers to the laboratory's limit of quantitation, or the lowest concentration that can be reliably achieved for a particular analyte within routine operating conditions. Values lower than the Reporting Limit, but above the MDL, are considered estimated concentrations.

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FIGURES

Figure 1 - Site Location

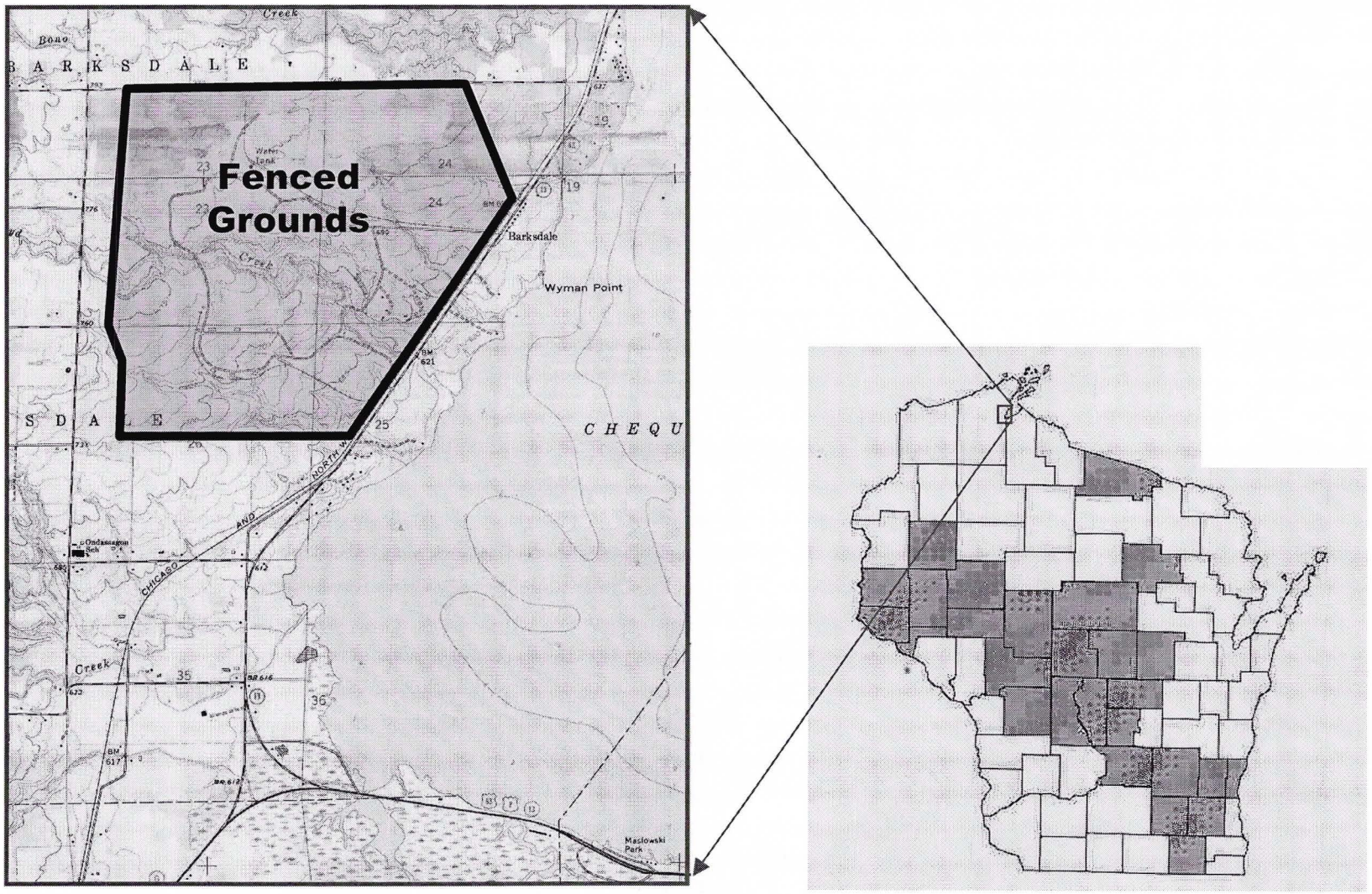

Figure 2 - Logging Work Area Locations

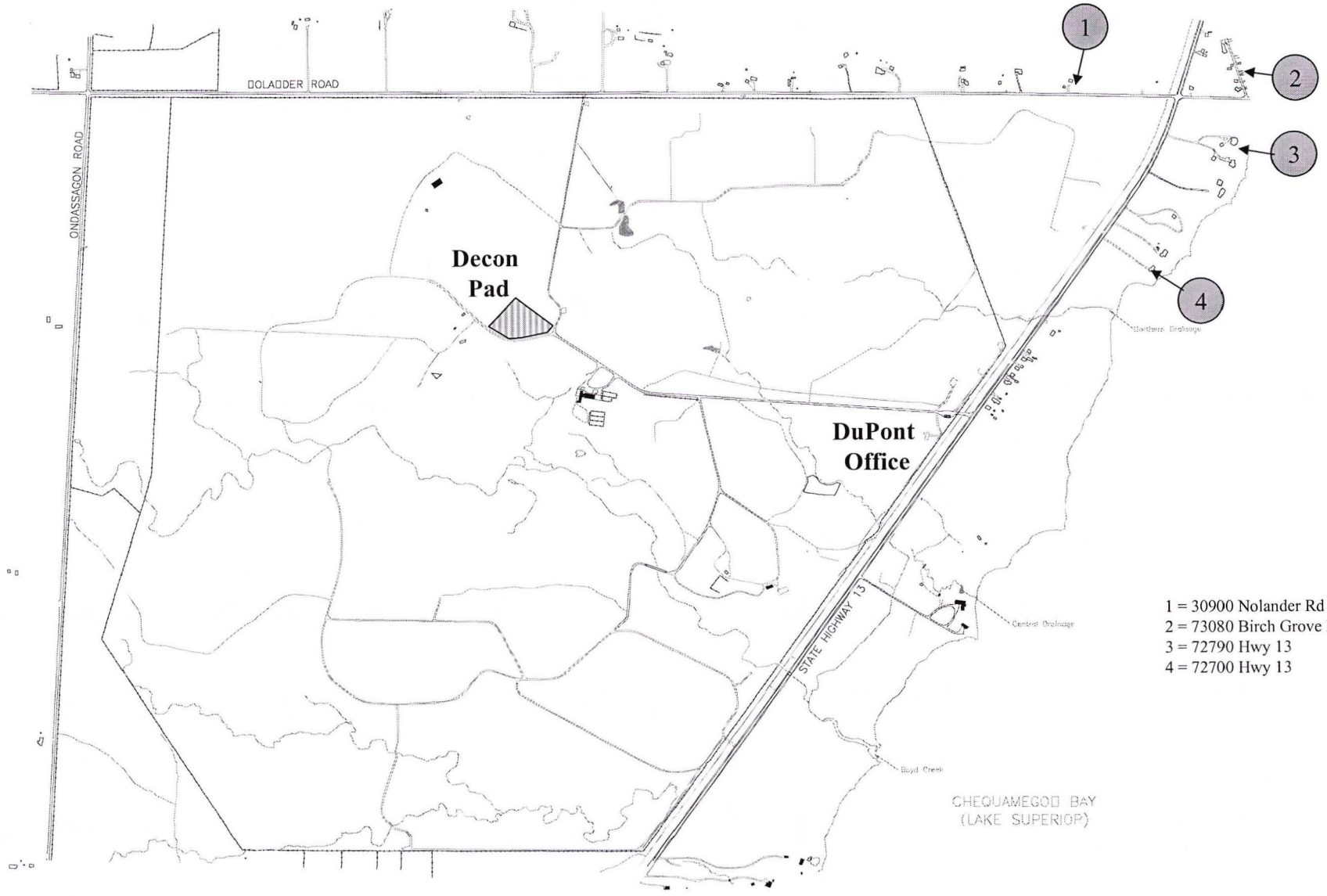

Figure 3 - Drilling Work Area Locations

PROJECT-SPECIFIC WASTE MANAGEMENT INSTRUCTIONS FOR RESIDENTIAL WELL GEOPHYSICAL LOGGING AND DEEP AQUIFER TEST WELL INSTALLATION AT THE DUPONT BARKSDALE SITE

Date: 7/23/02

Project No.:44-D4BA7433.02

CORPORATE REMEDIATION GROUP
An Alliance between
DuPont and URS Diamond

Barley Mill Plaza, Building 27
Wilmington, Delaware 19805

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1.0 DESCRIPTION OF ACTIVITIES

This waste management plan addendum covers the activities outlined in the following 2 scopes of work provided:

- Residential Well Logging Project: Geophysical Logging Activities (URSD 7/2002)
- Bid Specifications for Deep Aquifer Test Well Installation (URSD 7/2002).

DuPont Corporate Remediation Group (CRG) anticipates the following scope of activities to be conducted by URS Diamond (URSD) or its designated subcontractor(s):

- Purge of the chlorinated water at selected residential wells
- Geophysical logging of selected residential water supply wells
- Installation of water supply test wells into the deep bedrock aquifer zone using rotary drilling techniques
- Construction of a RCRA exempt wastewater pretreatment system
- Pretreat ~ 2500 gallons of wastewater and groundwater using the pretreatment system
- Storage of the treated wastewater for discharge on-site under a pending WDNR permit.

A summary of project team roles and responsibilities is provided in Table 1.

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TABLES

EXHIBITS

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A summary of project team roles and responsibilities is provided in Table 1.

2.0 WASTE CHARACTERIZATION AND HANDLING

2.1 Applicability of Listed Codes

Soil, sediments, and groundwater derived from investigations or other field activities are covered by the Environmental Protection Agency's (EPA's) contained-in policy. This policy requires that management of contaminated media be classified as hazardous waste if they contain a listed waste. Management of the waste media as hazardous continues until the media no longer contain the listed waste or the waste is delisted.

A listing code determination for the site was performed in 1998. Based on this review, there are RCRA listed waste codes applicable to wastes generated by the proposed scope activities. The site did not perform a RCRA listed process and there have been no documented releases of listed chemicals.

2.2 Determination of RCRA Characteristic Codes

Investigation derived media [soil, protective personal equipment (PPE), or water] that does not contain Resource Conservation Recovery Act (RCRA) listed waste(s) may be classified as hazardous if it exhibits a hazardous characteristic(s). The four hazardous characteristics defined by RCRA are:

- Ignitable (D001)
- Corrosive (D002)
- Reactive (D003)
- Toxic (D004-043)

The determination of whether generated wastes exhibit RCRA characteristics will be based upon:

- past analytical data collected in existing monitoring wells,
- water quality data for the residential wells being logged
- generator process knowledge of the wastewater pretreatment plant
- Low porosity of the bedrock material
- Waste characterization sampling of the solid waste collected for disposal.

Past data collected from the residential wells indicates that groundwater removed from residential systems prior to geophysical logging will not be RCRA regulated. Additionally, URSD anticipates that all decontamination and groundwater collected will also be RCRA non-regulated, prior to treatment, based on past monitoring well results. There is currently only 1 location on-site where groundwater exhibits a characteristic. All drilling fluid, groundwater and equipment decontamination water

will be collected in a wastewater pretreatment unit and treated to remove any potential RCRA characteristics.

Drilling spoils and solids collected by the wastewater pretreatment unit will be containerized in 20 yd3 roll-off boxes. URSD anticipates that this material will be classified as solid waste based on the low porosity of the bedrock and the method(s) used to recover the solids. However, a representative sample of the solids for disposal will be analyzed to confirm this expected characterization and facilitate disposal vendor approval.

PPE, excess casing, trash and disposable equipment will be placed in plastic bags without decontamination first. The plastic bags will be combined with recovered solids from both the drilling and wastewater pretreatment system. This material will be classified the same as the solids for disposal under the RCRA "contained in" policy.

2.3 Waste Management and Characterization

A summary of the waste management instructions for each anticipated waste stream is provided in Table 2. Some of these waste streams may require sampling and laboratory analysis strictly for the purpose of characterizing the waste stream for disposal. If so, proposed sampling to determine waste characterization for disposal is contained in Table 3.

3.0 SPILL RESPONSE AND REPORTING REQUIREMENTS

The requirements of this section must be carried out immediately whenever there is a fire, an explosion, or a hazardous substance spill that could threaten human health or the environment.

3.1 Internal DuPont Contacts

Should a release occur of any hazardous substance onto the ground, surface water, or air, it should be appropriately reported to the Project Manager, and internal DuPont contacts. Agency reporting may be required based on the compound released, quantity, and media affected.

In the event that any spill occurs, the following internal contacts will be made.

Name	Location	Telephone
Cary Pooler* (URSD Project Manager)	DuPont Louisville Works	**(502) 569-2444**
Brad Nave (DuPont CRG Project Director)	DuPont Louisville Works	**(502) 569-2148**
Mike Lukas (DuPont CRG Business Team Leader)	Barley Mill Plaza 27 Wilmington, DE	**(302) 992-6892**

***Cary Pooler** will make the appropriate reporting within the CRG organization.

3.2 Reporting Requirements

Specific chemicals and their quantities that require agency reporting have been established for each identified hazardous substance that will be used during the site activities or is known to be present in the waste. These quantities are shown in the table on the following page.

Reportable Quantities (RQ) for Anticipated Constituents

Constituent	RQ (pounds)*	Regulation	Comments
Di-nitrotoluene	10	40 CFR 302 CERCLA	The reportable quantity could not be exceeded if the entire 2500 gallons of untreated wastewater were released, based upon past groundwater concentrations observed
Petroleum products (fuels, hydraulic fluids)	❑ Cannot cause a sheen on the surface of the water ❑ Cannot violate applicable water quality standards ❑ Cannot cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shoreline	40 CFR 110 CWA	Petroleum product spills to the ground must be reported to Wisconsin Department of Natural Resources (WDNR)

3.3 Requirements and Contacts

If a release exceeds the quantity cited in Section 3.2, the release must be reported to the appropriate federal and/or state agency. Agency reporting will be handled by the designated Site Emergency Coordinator (the site's environmental manager or the CRG project director for inactive sites).

Federal reporting requirements for releases of hazardous substances to the environment are stipulated by the following regulations:

- ❑ Clean Air Act (CAA)/National Emissions Standards for Hazardous Air Pollutants (NESHAPS)
- ❑ Clean Water Act (CWA)
- ❑ RCRA
- ❑ Comprehensive Environmental Release Compensation and Liability Act (CERCLA)
- ❑ Emergency Planning and Community Right-to-Know Act (EPCRA).

In addition to federal reporting requirements, state spill and/or release reporting requirements may stipulate more stringent reporting thresholds than federal requirements. The WDNR rules pertaining to spill and/or release reporting require reporting of any releases that exceed the reportable quantities cited in table below or any releases that

contact surface water bodies of the state. This reporting shall be performed as soon as practical. The CRG Project Director shall notify the following agencies as necessary.

Emergency Response and Agency Contacts for Spill Reporting

Name	Telephone
USEPA- National Response Center	(800) 424-8802
Local Emergency Planning Commission (LEPC)—	911
WDNR non emergency contact – Northeast Regional Spill Coordinator (business hours only)	(920) 492-5592
WDNR 24-hour Release Reporting number	(800) 943-0003

4.0 WASTE STORAGE AND INSPECTION REQUIREMENTS

RCRA and the Department of Transportation (DOT) have developed specific requirements for the following:

- Waste containers provided for shipment
- Waste container labeling
- Waste container inventory
- Waste container accumulation area
- Inspection of RCRA hazardous and "ON-HOLD" wastes

The following procedure addresses these regulatory requirements.

4.1 Container Requirements and Labeling Instructions

All wastes destined for off-site disposal will be placed in containers that meet DOT specifications or stockpiled according to the storm water protection plan for the facility. Containerized waste will be labeled as described in Section 2 and Table 2 and will describe the following:

- Content
- Date the material was placed in the container
- State of the material (e.g., liquid, solid, and slurry)
- Unique sequential identification number of that container (as detailed in Section 4.2)
- CRG project number, contact, and telephone number.

Example labels for the waste streams are included as exhibits to this addendum. Label information will be completed in a permanent marker.

4.2 Waste Container Inventory Procedures

All waste containers generated will be given a unique container identification number. This unique container identification number will be written in paint pen on the top 1/3 of the drum and on the drum lid. Adding the unique container identification number on the lid will allow inventory of large bodies of drums without rotating the containers to find the identification number. Each container will be marked with a unique sequential identification number (e.g., BA-IW-"A"-"BCDE"-"F"), where:

- BA represents an abbreviation for the site.
- IW represents the Investigation Waste, TW represents treatability waste, and RW represents Remediation Waste.

- "A" represents the container type (i.e., D = drum, E= end-dump trailer, T = tank truck, R = roll off, X = tote bin, and S = special container, as indicated on the container generation and tracking forms).
- "BCDE" represents a four-digit sequential number beginning with 0001. Containers will be numbered so that each number will be unique to a container, regardless of the container type. (Each four-digit sequential number will be used only once for investigation and/or remediation wastes in a year. The sequential number sequence will be reset to 1001 at the beginning of each year.)
- "F" represents the last digit of the year (for the year 2002 "F" will be the number two in all of the remediation container codes for this project).

As waste containers are generated, the field personnel will log them into a working copy of the Field Documentation Form. A hard copy of this form is included in Exhibit 1.

4.3 Waste Container Inventory Documentation

At the conclusion of the field event, the field team leader will complete the Field Documentation Form for their project in the Waste Management Database and submit for approval. Your Waste Management Network will follow up with waste disposal and record keeping responsibilities.

A blank Field Documentation Form is provided in Exhibit 1of this addendum.

4.4 Container Storage Time Limits and Inspection Requirements

Waste containers may be stored in the designated waste accumulation area until characterization is completed and may remain in this area until shipment. Storage areas for "ON-HOLD" or RCRA hazardous wastes will be inspected on a weekly basis by the designated waste coordinator. An Accumulation Area Inspection Log is included in Exhibit 1.

Wastes that are characterized as RCRA hazardous wastes cannot be stored on site for greater than 365 days from the date of waste generation for Conditionally Exempt Small Quantity generators (CESQG). The date of waste generation is considered to be the date waste was first placed in the storage container (e.g., drum roll-off box or tank).

Table 1

Barksdale Residential Well Logging, Deep Aquifer Testing
Project Team Responsibilities

Task	Organization	Individual
Conduct waste coordinator duties (responsible for on-site project waste management).	URSD	J. Hammerberg
Coordinate sampling activities.	URSD	J. Hammerberg
Oversee waste management activities. (Responsible for overall project waste management.)	URSD	J. Hammerberg
Label containers.	URSD	J. Hammerberg
Move waste into the waste accumulation area.	URSD	Drilling and Logging subcontractors
Complete Waste Management Field Documentation Form and submit it (electronically) to the Waste Management Network.	URSD	J. Hammerberg
Determine applicability of listing codes to each investigation area.	DuPont	completed
Determine waste characterization testing analyses.	DuPont or URSD as requested by DuPont	B. Bishop
Provide characterization testing bottles and final analyses reports.	URSD	S. Nordstrom
Review analytical data to determine RCRA classification.	DuPont or URSD as requested by DuPont	B. Bishop
Approve waste characterization for each waste stream.	DuPont	B. Nave
Inspect RCRA Hazardous and ON-HOLD wastes weekly.	DuPont/URSD	J. Hammerberg
Select waste transportation and disposal contractors from DuPont-approved vendor list.	DuPont Waste Services Group	B. Bishop/J. Ciroalo
Label waste containers for shipment.	DuPont or URSD as requested by DuPont	J. Hammerberg
Prepare shipping papers (i.e., manifests and LDR forms).	DuPont or URSD as requested by DuPont	B. Bishop
Prepare/submit related reporting and maintain all required documents.	DuPont	DuPont Facility Services

Table 2
Barksdale Residential Well Logging, Deep Aquifer Testing
Anticipated Waste Steams

Waste Stream	Proposed RCRA Classification	Anticipated Waste Characterization Testing	Container Requirements and Estimated Volume	Labeling Requirements	Anticipated Disposal Method	Anticipated Disposal Cost (minus transportation)
Residential Well Geophysical Logging						
Residential well system purge water	Non-Hazardous based on drinking water quality criteria	None	~1200 gallons of treated water to be temporarily contained in a portable tank. The tank contents will be discharged to the on-site wastewater treatment system	Temporary tank will be labeled as non-potable water. Labeling requirements for the On-site Wastewater treatment system tanks is given below	To on-site treatment system. Treated water will be discharged on-site under a WDNR permit	$0
Logging Tool decontamination water	Non-Hazardous based on water quality criteria	None	~25 gallons to be combined with well system purge water	Same as above	Same as above	$0
PPE and disposable equipment	Non-Hazardous based on water quality criteria	None	Place in opaque trash bags. Place trash bags in the roll-off boxes provided for collection of drilling solids and other solid wastes	Each roll-off box will be labeled as "on-Hold Pending Analysis"	Landfilling at a DuPont approved facility	$400 per roll-off box plus transportation and weekly box rental charges
Deep Aquifer Test Well Installation						
Excess rock and soil drilling spoils	Anticipated to be RCRA non-hazardous will be confirmed by waste characterizatio	TCLP for toxicity characteristic list metals, VOCs and SVOCs, paint filter test for free liquids	Will be pumped out of mud pan by vacuum truck. Contents of vacuum truck will be discharged to a	No placards for the vacuum truck are proposed. Separated solids will be	Landfilling at a DuPont approved facility	$400 per roll-off box plus transportation and weekly box rental charges

Waste Stream	Proposed RCRA Classification	Anticipated Waste Characterization Testing	Container Requirements and Estimated Volume	Labeling Requirements	Anticipated Disposal Method	Anticipated Disposal Cost (minus transportation)
	n testing.		roll-off box provided for gross solids separation at the head of the on-site wastewater treatment system	stored in roll-off boxes. Each box will be labeled as "on-Hold Pending Analysis."		
Drilling mud	Will be separated by the treatment system into mud solids and treated wastewater. .	None	~1000 gallons Will be pumped out of mud pan by vacuum truck. Contents of vacuum truck will be discharged to a roll-off box provided for gross solids separation at the head of the on-site wastewater treatment system. Gross solids will be removed in the roll-off box. Fines will be clarified from the mixture in a baffled tank and finally removed from the liquid decant by in line filtration	No placards for the vacuum truck are proposed. Separated solids will be stored in roll-off boxes. Each box will be labeled as "on-Hold Pending Analysis."	Landfilling at a DuPont approved facility. Treated water fraction will be discharged on site under a pending permit from WDNR	$400 per roll-off box plus transportation and weekly box rental charges. $0- for treated water
Well Development Water	Non-Hazardous. Will be treated on-site to below characteristic levels	None	~300 gallons Will be transported by vacuum truck to on-site treatment system for fines removal and filtration.	No placards for the truck are proposed	Treated water will be discharged on site under a pending permit from WDNR	$0
Equipment Decontamination water	Non-Hazardous. Will be treated on-site to	None	Will be transported by vacuum truck to on-site treatment system for fines	No placards for the truck are proposed	Treated water will be discharged on site under a pending permit from WDNR	$0

Waste Stream	Proposed RCRA Classification	Anticipated Waste Characterization Testing	Container Requirements and Estimated Volume	Labeling Requirements	Anticipated Disposal Method	Anticipated Disposal Cost (minus transportation)
	below characteristic levels		removal and filtration.			
PPE, trash and disposable Equipment	Will be classified the same as drilling spoils for landfilling	None	Place in opaque trash bags. Place trash bags in the roll-off boxes provided for collection of drilling solids and other solid wastes	Each roll-off box will be labeled as "on-Hold Pending Analysis"	Landfilling at a DuPont approved facility	$400 per roll-off box plus transportation and weekly box rental charges
Exempted Wastewater Pretreatment System						
Recovered Solids	Anticipated to be RCRA non-hazardous will be confirmed by waste characterizatio n testing.	TCLP for toxicity characteristic list metals, VOCs and SVOCs, paint filter test for free liquids	~(3) 20yd3 roll-off boxes	Each box will be labeled as "on-Hold Pending Analysis."	Landfilling at a DuPont approved facility	$400 per roll-off box plus transportation and weekly box rental charges
Treated water	Non-Hazardous. Will be treated on-site to below characteristic levels	None. Water quality criteria & testing for the WDNR discharge permit will be used to confirm successful treatment	~2500 gallons from the geophysical logging and deep aquifer test wells installations	The final holding tanks prior to discharge will be labeled as "non-potable water"	Discharge on-site under a WDNR permit	$0
In-line carbon filters	Will be classified the same as drilling spoils for landfilling	None	Place in opaque trash bags. Place trash bags in the roll-off boxes provided for collection of drilling solids and other solid wastes	Each roll-off box will be labeled as "on-Hold Pending Analysis"	Landfilling at a DuPont approved facility	$400 per roll-off box plus transportation and weekly box rental charges

Table 3
Barksdale Residential Well Logging, Deep Aquifer Testing
Waste Characterization Samples

Waste Stream Tested	Sample Name	Sample Matrix	Analysis Requested	Date Bottles Needed
Treated Wastewater in tank 1	Wastewater Effluent 1	water	Full priority pollutant list	TBD
Treated Wastewater in tank 2	Wastewater Effluent 2	water	Full priority pollutant list	TBD
Treated Wastewater in tank 3	Wastewater Effluent 3	water	Full priority pollutant list	TBD
Treated Wastewater in tank 4	Wastewater Effluent 4	water	Full priority pollutant list	TBD
Drilling/ Wastewater Pretreatment system solids collected in roll-off boxes	Spoils composite	Soil/sludge	TCLP testing for: Toxicity Characteristic (TC) list metals, SVOCs and VOCs	TBD

Waste Management Field Documentation Form

INSTRUCTIONS: Every project's Field Team Leader is to submit this form using the Lotus Notes Technology Networks Database, for automatic forwarding to the Waste Management Consultant. This form is located on the Technology Networks Database, Waste Management Network. Completion of this documentation form replaces the former "Waste Container Generation Form" and "Inventory Sheet". A hardcopy of this form will not be accepted.

The Waste Management Field Documentation form consists of two main Sections and is organized as follows:

Section A: This Section contains general information about the project and serves as documentation that a Waste Management Plan Addendum was prepared, received and reviewed by the field team. Completion of this page will be used to document compliance with 6 Sigma improvements and the CRG waste management plan metric.

Section B is to be completed for all wastes handled by the field team.

SECTION A

GENERAL INFORMATION:

Field Event Date(s): _____

CRG Project No. _____ _____ Project Manager:_____

Site Name:_____ Project Name:_____

Site Address:_____

Site EPA ID No.:_____

Task Name:_____

Field Team Leader:_____Phone:_____

URSD Waste Consultant:_____

*Site Environmental coordinator or contact _____Phone:_____

(*orphan sites will not have an on-site contact)

WASTE MANAGEMENT PLAN DOCUMENTATION:

Was a Waste Management Plan Addendum prepared for the specific task(s) performed during this field event? ____ YES _____NO

Date the Addendum was prepared? _____ (Month/date/year)

Was the Addendum received and reviewed by the Field Team before fieldwork began?

_____YES _____NO

SECTION B

INSTRUCTIONS: Please complete the appropriate blanks for all waste streams, as applicable.

B1. Wastes disposed of at the time of generation. Please complete all that apply.

_____ gallons (total) of purgewater to on-site resource (i.e. POTW outfall, WWTP or other approved outfall, on-site groundwater treatment system)

_____ gallons (total) of purgewater to ground

_____(# of)bags of PPE to on-site or off-site DuPont controlled solid waste dumpster

_____(# of)5, 35 or 55-gallon (circle one) containers of soil or solids to on-site

_____ cubic yards of soil or solids to on-site landfill landfill.

Other (complete the blanks as described in the parentheses):

_____ (Quantity) of _____ (volume) containers of _____ (material) managed at/by _____ (location/site authority)

B2. Wastes left for management and disposal by site personnel

_____ (# of gallons) of _____* waste left for management by on-site personnel

_____cubic yards of stockpiled _____* waste left for management by on-site personnel

Other (complete the blanks as described in the parentheses):

_____ (Quantity) of _____ (volume) containers of _____ (material)

* insert appropriate waste stream here (i.e. soil, debris, purgewater, PPE etc..)

Other wastes (Please describes material, number of containers, container type, volume, waste matrix, etc.):

_____

_____

On-site Personnel responsible for Waste Disposal referred to in Section B2:

Name: _____ Phone: _____

ALL WASTES WERE MANAGED AT THE TIME OF GENERATION OR WILL BE FULLY MANAGED BY DuPont FACILITY RESOURCES: _____YES _____NO

INSTRUCTIONS: If the answer to the above question is yes, STOP HERE. You do not need to complete Section B3.

If the answer is No, please complete the following for wastes not included above.

B3. Wastes Requiring Characterization and/or Disposal Assistance by URSD Waste Consultant

INSTRUCTIONS: This page must be completed to notify the URSD Waste Consultant of wastes needing disposal. Complete the attached inventory sheet to include all wastes not covered under Section B1 or B2. You must complete a separate line entry for each container generated, providing the container ID number (i.e. IW-site initials-D001-1) for each container. This is required to distinguish one container from another for labeling and disposal requirements. Also include the source area (i.e. SWMU or AOC number, well number, boring ID) and matrix (Plastic, PPE, groundwater, decon water, soil).

_____ (Project Name)

Waste Inventory Sheet

Container Number (ie IW-XX-X1001-1)	**Work Area** (SWMU or boring ID)	**Matrix** (soil, GW, decon water, PPE, plastic)	**Container Type** (roll-off, 55-gal drum, 35-gal, drum, tanker)	**% full** (25%, 50%, 75%, 100%)	**Label** (On-hold, Hazardous, Non-Haz)	**Accum. Start Date**	**Waste characterization Sample name,** If applicable

Accumulation Area Inspection Log

Date: _____ Time: _____

Inspector Name and Title: _____

Equipment	Checklist	OK (√)	Comments
Containers	Corrosion, leakage, structural damage		
Container Sealing	Open lid, rings, bung caps		
Container Labels	Improper identification, date missing		
Segregation of Incompatibles	Storage of incompatibles		
Container Stacking	Aisle space, Height		
Pallets	Damaged, drums not on pallet		
Base or Foundation	Cracks, spelling, erosion, wet spots		
Warning Signs	Damaged, missing		

Problem—Corrective Action Taken

BA-IW-R00x-2

ON-HOLD

LOCATION: Barksdale solids

ACCUM. DATE: Date box first used

SAMPLE DATE:

MU-62395