Boulter Farm
Cumberland, RI

Moretti Perlow & Bonin Law Offices

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SEMS DocID 589395

September 22, 2008

Attn: Stephen L. Johnson
Administrator
USEPA Headquarters
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Mail Code: 1101A
Washington, DC 20460

Dear Mr. Johnson:

Please find enclosed correspondence and appropriate Service of Notice pursuant to §135.2 of Title 40 under the Clean Water Act.

Pursuant to Part 135, Subpart A, of Title 40, Prior Notice of Citizen Suits must be given. Please let this letter constitute such service of notice pursuant to said §135.2.

I thank you for your attention to this correspondence and your acknowledgment of appropriate notice having been received.

Very truly yours,

MORETTI PERLOW & BONIN LAW OFFICES

Jeffry S. Perlow, Esquire

JSP/djp
Enclosure

Also admitted in

† Massachusetts
° Pennsylvania
^ Florida
+ California
△ New York
⊙ New Jersey

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September 22, 2008

Mr. Joseph Ferreira
11 Gladding Drive
Cumberland, Rhode Island

Re: Louis Paolino
19 Heritage Drive
Lincoln, RI 02865

Dear Mr. Ferreira:

This office has been retained by the above-referenced party to ask your office to conduct an investigation regarding property located at 290 Curran Road, Cumberland, Rhode Island. The recent chain of title with respect to this property is as follows:

1. Executor's Deed from Robert J. Connelly, Jr., Executor under the Will of Samuel P. Boulter to Joseph Ferreira dated 10/10/1983 and recorded 10/25/1983 in book 288 at page 884.

2. Quit-Claim deed from Joseph I. Ferreira a/k/a Joseph I. Ferreira to Joseph I Ferreira Trustee of the Joseph I. Ferreira Trust dated March 11, 1997 dated 3/11/1997 and recorded 3/25/1997 in book 697 at page 252.

3. Warranty Deed from Joseph I. Ferreira, Trustee of the Joseph I. Ferreira Trust Under Trust Agreement dated March 11, 1997 to JF Realty, LLC, dated 11/1/2005 and recorded 1/12/2005 in book 1300 at page 685.

Mr. Paolino is the owner of the adjoining property at 286 Curran Road, Cumberland, Rhode Island. This request is made pursuant to your authority under the Refuse Act of 1899, §13, currently Title 33, Chapter 9, Subsection I, §207 of the U. S. Code. The relevant portion of said Section is as follow:

> "It shall not be lawful to throw, discharge or deposit, or cause, suffer, or procure to be thrown, discharged, or deposited either

Also admitted in

† Massachusetts
° Pennsylvania
^ Florida
+ California
△ New York
⊙ New Jersey

> from or out of any ship, barge, or other floating craft of any kind, or from the shore, wharf, manufacturing establishment, or mill of any kind, any refuse matter of any kind or description whatever other than that flowing from streets and sewers and passing therefrom in a liquid state, into any navigable water of the United States, or into any tributary of any navigable water from which the same shall float or be washed into such navigable water."

By way of history, the subject property, known as the "Boulter Farm Area" at 290 Curran Road, Cumberland, Rhode Island, is legally referred to as Lots 162, 363 and 366 on Map 19 of the Cumberland Tax Assessor's office. Said property was owned by one Joseph Ferreira since the 10th day of October, 1983, and subsequently transferred into the J. Ferreira Trust on the 11th day of March, 1998. The property was then transferred to JF Realty LLC on 11/1/05. Mr. Ferreira operated an auto recycling business at said site and said property is still being operated as such at the present time by a successor in interest, LKQ Corporation. The property is mainly located in Cumberland, Rhode Island with a portion of the property also located in the Town of North Attleboro, Massachusetts on Plat 29, Lots 15 and 16.

The entire Boulter Farm is located within the Blackstone River drainage basin. The subject property located at 290 Curran Road has topography that includes a small ridge to the north, with the property gently sloping towards the southwest and Curran Road. The low-lying areas on the western side of the property are occupied by a series of interconnected ponds. Presently, water from these ponds drains into an intermittent brook along the western border of the salvage yard. From the brook, the water flows .25 miles south to Miller's River; the river then flows 0.25 miles south into Abbott Run. Abbott Run flows 200′ south to Robin Hollow Pond. From the entrance to Robin Hollow Pond, the water flows 1 mile south to Happy Hollow Pond. From the entrance to Happy Hollow Pond the water flows 0.50 miles south to the Blackstone River. The Blackstone River flows 2.0 miles south to the Seekonk River, which then flows 4.0 miles to the Providence River where 15 miles downstream the pathway ends. A diagram of said waterways is attached hereto and marked as Exhibit "1".

Mr. Paolino has asked this office to present information to the United States Attorney specifically regarding the discharge of refuse matter into the intermittent stream that eventually deposits into drinking water. In fact, Happy Hollow Pond, which is located 1.5 stream miles south of the Boulter Farm property, supplies drinking water to over 100,000 local residents. The watershed of Robin Hollow Pond is administered by the Pawtucket Water Supply Board. The stream in question did not exist prior to being redirected by said Joseph Ferreira. A former stream existed to the east of the present one, running more centrally through the auto recycling business. (See Exhibit "2".) In addition, the above-referenced ponds, also on the property, have been filled during the course of Mr. Ferreira's ownership. There has been no documentation that the fill that was deposited

into the stream that was redirected or the fill that was placed in the ponds over a period of twenty (20) years was clean fill.

After receiving an anonymous complaint in 1983, the Rhode Island Department of Environmental Management commenced an investigation regarding 290 Curran Road, Cumberland, Rhode Island on the basis of a complaint that someone was diverting a stream on said property. In a report filed on November 29, 1983, the investigator for the Rhode Island Department of Environmental Management noted that there was a problem on the property with oil and/or gas leaking into a pond. (See Exhibit "3".) This individual stated in the same report that he had seen oil slicks "almost one-half mile downstream." The investigator noted that "this entire area is part of the Pawtucket Watershed." It was stated that "someone is filling in a pond on Curran Road in Cumberland." The investigator stated that the new channel had been dredged deeper than the original channel, thus lowering the pond level. (See Exhibit "4".) It was suggested at that time in said report that hay bails actually be placed downstream and that the dredged material be returned to the channel. In fact, the representatives of the Pawtucket Water Supply Board became so concerned with the situation that it was stated in correspondence dated January 18, 1984 "it well may be that the use of that facility may be in violation of the 50′ setback and the wetland back." (See Exhibit "5".) In fact, in that same correspondence, concern was expressed over improper salvage being conducted on the premises. In separate correspondence of the same date, Pawtucket Water Supply representatives contacted the salvage yard stating its concern "that any improper drainage of gasoline and crank case oil could lead to serious consequences to our water supply." The salvage yard was advised at that time to "protect the water system and to comply with all appropriate laws and regulations." (See Exhibit "6".) Less than one month later the Department of Environmental Management filed a report that "a heavy sediment load is being carried by the rapid removing stream – channel west of the property." This is a reference to the new stream that had been redirected by the salvage yard. The report also stated that "all roadwork by Ferreira has left unstable soil which is also being picked up by runoff from the road." (See Exhibit "7".) The same documentation referenced the stream finding its way across fields and "eventually into one of the main streams which feed the S. Attleboro Reservoir."

As this investigation proceeded, the Division of Water Supply initiated an investigation with the subject entitled, ***"Chemical Contamination on Drainage Area of Pawtucket Water Supply."*** (See Exhibit "8".) In its memorandum dated August 26, 1985 a sample of liquid matter was taken from the property. This liquid matter had been pulled from a drainage ditch which was described as "left of Joe's Auto Recycling" and stated that this drainage ditch "drains to Robin Hollow Pond via Miller's River." The memorandum goes on to state that Robin Hollow Pond is utilized by the City of Pawtucket as a source of drinking water. It was noted in that Memorandum that there was not only a violation of Rhode Island state statute, but also a potential violation of federal regulations as well.

As part and parcel of his investigation, Mr. Paolino retained the services of New England Environmental, Inc. The findings of New England Environmental, Inc. are contained in Exhibit "9". That report confirms several of the earlier findings from the 1983 Rhode Island Department of Environmental Management investigation and that investigation conducted by the Division of Water Supply. This report once again confirms that the stream on the western side of the auto recycling plant enters a stone culvert under a covered road, and eventually flows one-half mile to Miller's River and eventually enters the reservoir and the drinking supply.

As a result of the investigation conducted by the Department of Environmental Management, Mr. Ferreira was issued a Notice of Violation on January 4, 1984 for conducting inappropriate activities on the site located at 290 Curran Road, Cumberland, Rhode Island. (See Exhibit "10".) In that Notice of Violation Mr. Ferreira was advised that he did accomplish or permit "fill and grading in and within 50′ of a fresh water pond; fill into an area subject to flooding; and redirecting an area subject to storm flowage." He was ordered at that time to place the freshwater wetlands into its state as of July 16, 1971. Mr. Ferreira subsequently filed an application for permission to alter freshwater wetlands by filling and relocating the area in question and reconstructing a drainage ditch 640′ for the purpose of site development. It is important to note that it does not appear that he received any type of authority or permission to do so from the Army Corp of Engineers. There were four standard conditions and six special conditions set forth by the Rhode Island Department of Environmental Management. A copy of the correspondence from the Department of Environmental Management to Mr. Joseph Ferreira dated January 10, 1986 is attached hereto and marked as Exhibit "11".

After several delays Mr. Ferreira eventually submitted revised plans to allegedly correct the problem, which were accepted by the Department of Environmental Management. Finally on May 10, 1989, the Department of Environmental Management filed a notice releasing the violation for Complaint No. C1372, stating, "DEM is satisfied that all regulatory and statutory violations set forth within said notice of violation have been abated." It does not appear that an on-site investigation was conducted by DEM prior to this release of violation. There is no indication that the terms and conditions of the permit were complied with by Mr. Ferreira, nor is there any indication in the DEM file that all of the terms and conditions were adhered to. In fact, two essential conditions of the permit were that a 20′ wide buffer zone along the drainage channel to Curran Road on the westerly side of the property was to be maintained, as was a 50′ buffer around wetlands associated with a large pond on the property. The reason for the buffers was so that no debris from the property or from the business being conducted by Mr. Ferreira was to find its way into the pond or into the stream which subsequently flowed into the reservoir and the drinking water supply.

Approximately two years after the release of the violation and the supposed compliance by Mr. Ferreira, he filed an application for a building permit with the Town of Cumberland on March 11, 1991 requesting that a building be placed on the property

located at 290 Curran Road, Cumberland, Rhode Island. The setback on the western side of the property was listed in the building permit as being 10′. (See Exhibit "12".) This western boundary of Mr. Ferreira's property is the location where the previously referenced stream had been redirected. The 10′ setback of the building placed the building squarely within the 20′ buffer zone, established in the special conditions by the Department of Environmental Management in its correspondence and specified requirements dated January 10, 1986. It should be noted that the area between the stream and the new building was a vegetated corridor and what could be considered a riparian zone, which requires specific buffer requirements pursuant to DEM regulation. If this stream were less than 10′, DEM regulations would call for a 100′ buffer from the stream to any developments. In spite of the 20′ buffer zone as earlier required and this vegetated corridor, a building permit was subsequently approved and a building erected within the buffer zone. It is noteworthy that this building is meant to house auto recycling parts and other potentially invasive material to the environment. With respect to the supposed 50′ buffer requirement, aerial photographs obtained and included in the report of New England Environmental Inc. have determined that this 50′ buffer was not maintained. These photographs, included in Exhibit "9" attached hereto, show that the junkyard storage was very close to the drainage channel, and the cars were closer than the 50′ buffer requirement. Interestingly, the aerial photographs from 1987 are after the Notice of Violation was sent to Mr. Ferreira, but before the State of Rhode Island was satisfied that all regulatory and statutory violations had been abated. If an on-site investigation had been conducted before the release of the violation, the Department of Environmental Management undoubtedly would have found that the buffer requirements were not established initially. The same New England Environmental Management conducted an on-site investigation and determined that a chain link fence was a short distance from the drainage channel. The chain link fence varied from between 0′ and 10′ from the border of the property. The buildings and pavement as well as auto parts were found immediately behind the fence. It does not appear that the Army Corp of Engineers or any other federal agency was contacted with respect to this formal building permit application, nor were other necessary documents submitted to this Agency.

It is essential to understand that the reason for the buffer zone dated back to the initial findings of the investigators from the local state agencies. These investigators, as noted herein, found oil and gas leaking into ponds and an oil slick approximately one-half mile downstream leading to the drinking water supply. The purpose of the buffer areas was to prevent pollutants from running off from the auto recycling plant into the ponds or the stream so as not to affect the drinking supply of local residents. With the buffer zones appropriately in place, petroleum products would be filtered from runoff before they reached the wetland, and moved into a drainage channel. When Mr. Ferreira had initially obtained the permit from the State of Rhode Island in 1986, he was specifically advised that "this approval does not remove your obligation to obtain any necessary permits from other state, local or federal agencies." According to an investigation conducted by New England Environmental, it does not appear that the current records show any permits issued by the United States Army Corp of Engineers for §404 Wetland Alterations. The

permit issued to Mr. Ferreira in 1986 also provided that only clean material was to be used to fill the wetland in adjacent areas. Aerial photographs provided with the New England Environmental report demonstrate that several areas within the ponds had been filled during the time period Mr. Ferreira owned the property. There is no indication or documentation that clean material was used in filling the wetlands in these adjacent areas, especially the stream that was filled in and redirected to the western border of the Ferreira property. The earlier photographs provided by New England Environmental clearly show that this stream was running more towards the center of the Advanced Auto Recycling property, but was filled and redirected to the western boundary.

Following a release of the violation issued by the Department of Environmental Management on May 10, 1989 and the subsequent building of the property within the buffer zone, Mr. Ferreira continued to operate the property as an auto-recycling yard. Unfortunately, difficulties with pollution continued. In a memo dated March 22, 2005 from the Pawtucket Water Supply Board it was noted that analytical results from samples taken at Advanced Auto Recycling on Curran Road in Cumberland had been taken from the runoff coming from the yard just as it entered the stream. It was noted that samples had a very distinct solvent odor, even after being refrigerated for several days. (See Exhibit "13" attached hereto.) In another inter-office memorandum issued by the State of Rhode Island, Department of Environmental Management, it was noted that samples had been taken from areas where significant contamination could be expected (Exhibit "14"). It was noted that several contaminations were found including lead and arsenic.

In a detailed and comprehensive final expanded site inspection report for Boulter Farm Area, Cumberland, Rhode Island, which was prepared for the United States Environmental Protection Agency, Region I, dated April 19, 2004, (Exhibit "15"), it is noted that an estimated 109,820 people, approximately 1,438 areas of wetlands, and two state endangered and 10 state threatened species habitats are located within 4 radial miles of the Boulter Farm property. It is also noted in that report that storm water runoff flows overland into the unnamed stream to the western side of the property. This is the same stream that was noted in 1983 to have an oil slick one-half mile downstream as well as the same stream that is adjacent to the building that is located within 10′ of the stream, despite the requested and necessary 20′ buffer as established in 1986. Analytical results of soil samples taken indicated, according to this report, 16 VOCs, 16 semi-volatile organic compounds (SVOCs), numerous pesticides, extractable petroleums as well as volatile petroleums and numerous organics detected also in the soil source samples collected. These pollutants, in entering the tributary on the western side of the property, would eventually flow into the navigable waters of the United States. In the Army Corps Rules and Regulations (33CFR Part 329.4 (RHA)), the term "navigable waters of the US" is defined to include "all those waters that are subject to the ebb and flow of the tide..." These pollutants, left unabated, not only enter the stream directly but the large pond on the property that feeds the stream which acts as a tributary for the navigable waters as referenced herein. The comprehensive "final expanded site inspection report" documents significant pollutants on the property feeding the pond and the stream.

The response by the J. Ferreira Trust to this extensive and comprehensive study was apparently to provide a storm water pollution prevention plan in 2006. This plan was prepared in response to a "Letter of Responsibility" issued to the J. Ferreira Trust on October 5, 2005 by the Department of Environmental Management. (See Exhibit "16".) In that Letter of Responsibility, J. Ferreira Trust was again advised that "a file exists at the Department that describes the environmental conditions concerning the site." Numerous contaminants were listed in that correspondence, specifically, No. 4 as follows:

- JBenzo(a)pyrene, Benzo(a)anthracene, Dibenzo(a,h) anthracene, Arsenic, and lead in soil samples exceed the Rhode Island Residential Direct Exposure Criteria

- Methyl tert-Butyl Ether and Lead in groundwater exceed the Rhode Island GA Groundwater Objectives

- Benzo(a)anthracene, Phenanthrene and 4,4'-DDD in sediment samples collected from the downstream surface water pathway for the Site exceed the National Oceanic and Atmospheric Administration Probable Effect Levels. (See Exhibit "8".)

These contaminants were considered by the Department of Environmental Management as having the potential of a "significant adverse impact on human health and/or the environment." The J. Ferreira Trust was ordered to determine contamination at the site and the potential impact to nearby surface water pathways and offsite properties. The response by the J. Ferreira Trust to this extensive and comprehensive study and to the Letter of Responsibility was to provide a storm water pollution prevention plan. Unfortunately, by the very terms and conditions of the plan, access roads are as close as 24' from the edge of the pond where the mandated buffer was to be at 50'. This supposed "prevention plan" has only had a more detrimental impact on the afore-referenced stream on the western border of the Ferreira property. Recently taken photographs (Exhibit 17) show turbid water flowing from two open-end pipes. These pipes are built into a stone wall on the Ferreira property and the turbid water flows directly into the tributary and eventually finds its way into the water supply.

This office has presented the aforestated information on the basis that the history of use of this property by Mr. Ferreira and his failure to comply with state and local permits, as well as his failure to obtain necessary permits from the United States Army Corp of Engineers, demonstrate a clear violation of the terms and conditions of the Refuse Act. The Act specifically prohibits the discharge from "the shore or any refuse material 'of any kind or description' to any navigable water of the United States, or 'into any tributary'." There is little doubt that numerous inspections have revealed that pollutants have been entering the ponds and the stream on the western portion of the property located at 290 Curran Road, Cumberland, Rhode Island. This is clearly documented by the enclosed

material. The Storm Prevention Plan filed by the representatives of the J. Ferreira Trust does not address the issues of pollution into the pond and the stream, but only storm runoff. Buffer zones that were required earlier have not been appropriately complied with since established in 1986. The very plan proposed by the representatives of the Trust does not adhere to the terms and conditions of the buffer zones. Over 20 years has elapsed since the buffer zones were to be established within 50′ of the pond and 20′ of the stream. Since that time the business has been operating as an auto recycling plant, and pollutants have had an opportunity to enter the stream and potentially the water supply as a result of the failure of Mr. Ferreira to comply with the special conditions established in the permit.

The sworn deposition testimony of Mr. Joseph Ferreira was taken on May 5, 2008, a copy of which is attached hereto and marked as Exhibit "18". Mr. Ferreira was asked during the taking of his deposition if he contacted the Department of Environmental Management before constructing the building within the 20′ buffer zone. He was also asked if he contacted the Army Corp of Engineers before constructing the building. He stated on numerous occasions that he did not have any contact with either department before constructing said building (see Pages 8, Lines 14 through 21 and Page 52, Lines 5 through 10). In fact, Mr. Ferreira was asked if he requested DEM Wetlands approval and if the Army Corp of Engineers was involved with the approval of the warehouse. He stated that he did not know of any such involvement (Page 52, Lines 5 through 10 and Page 55, Lines 8 through 11). When Mr. Ferreira obtained a local permit to construct the building on the westernmost portion of his property within the 20′ buffer zone and approximately 7′ from the stream, he was advised during the approval process that "this approval does not remove your obligation to obtain any necessary permits from other state, local or federal agency (Page 88, Lines 18 through 22). His response as to whether he obtained any such permits was "I don't recall, I don't know." (Page 89, Line 2.) When asked how the building could have been constructed inside of the 20′ buffer zone, he answered, "How did that happen? I don't know." (Page 100, Lines 8 and 9.

With respect to the redirected stream that had previously been in the middle of his property, Mr. Ferreira took the position that there was "never a stream, the water would just run off the pond and it would find its way." (Page 19, Lines 18 and 19.) Mr. Ferreira stated that he "had to file a permit to build a stream from the pond out to the catch basin (Page 19, Lines 24 through 25). However, Mr. Ferreira only sought to obtain a permit after he received a cease and desist order from filling in an existing stream on the property. This was the same stream that he testified was "never a stream." Essentially, what Mr. Ferreira did with the original stream was just fill it in without obtaining any DEM approval or obtaining any type of wetlands permit to do so. When asked if he filed a permit to redirect the stream, his response was "no I didn't." (Page 20, Line 10.) Mr. Ferreira was aware that the redirected stream along the westernmost portion of his property feeds the Pawtucket Water Supply and the Robin Hollow Reservoir (Page 42, Lines 11 through 18). In addition, he did not file a request with the Army Corp of Engineers to obtain a permit to redirect this freshwater stream or to fill in what he considered a manmade pond on his property. (Page 46, Lines 7 through 13.) Although pictures of the property clearly

demonstrate a stream through its middle, Mr. Ferreira stated that the stream was "just above the land" and that it would just "run off." (Page 68, Lines 3 through 9.) Mr. Ferreira's description of what he did to this area of his property was "just moved it around and straightened it out." (Page 68, Lines 18 and 19.) Yet, when Mr. Ferreira was cited in the violation for redirecting a stream, he filed an application to divert a brook to the property line. When asked what brook he was diverting his response was "I don't know" (Page 80, Line 3). When asked if it was the water that was ambling through the property that previously he did not characterize as a stream, Mr. Ferreira's response was "I am not sure, I don't know, I don't really know, I don't know." (Page 80, Lines 14 through 15.) When asked if he was diverting something to the property line, his response was "I don't know." (Page 81, Line 5.)

Mr. Ferreira readily admitted that the storm runoff from his property finds its way into a catch basin, which eventually finds its way into the Robin Hollow Reservoir. (Page 58, Lines 10 through 13.) As earlier referenced herein, his property has been found to have numerous contaminants as per the final expanded site inspection report for Boulter Farm. As also stated herein, the response by the J. Ferreira Trust was to provide a storm water pollution plan in 2006. Mr. Ferreira maintains that he was never informed that there was contamination on the property. (Page 73, Lines 4 through 6.) At the time of his deposition, Mr. Ferreira identified the stream that feeds the Pawtucket Water Supply and two pipes running into that stream from his property. (Page 116, Lines 2 through 11.) Mr. Ferreira took the position that he thought the water was filtered; that he was told the water was filtered; but he could not identify any type of permit that was taken out to establish if the water runoff going into a stream that eventually feeds the water supply did, in fact, have a filter. Mr. Ferreira also did not know if any type of permit was obtained from any other governmental agency, other than DEM, to perform this work. (Page 119, Lines 15 through 21.

Throughout his deposition, Mr. Ferreira maintained he did not see any contamination on his property, despite the fact that numerous investigations had been performed, including the final site inspection that showed considerable contamination. He admitted he did not obtain permits from the Army Corp of Engineers at any point to modify or alter the freshwater wetlands. He filed a permit to redirect a stream only after he received a violation and only after he had filled in the original stream by just "leveling it off." Although he filed a permit asking to redirect the stream, he considered the area that he filled in not to be a stream. Essentially the storm water runoff from Mr. Ferreira's property now is being filtered through two pipes that are running unchecked into a catch basin which feeds a stream, which feeds the drinking supply of a large portion of the local population. The runoff from Mr. Ferreira's property has now been finding its way into this stream for approximately twenty-four (24) years.

The individual who inspected Mr. Ferreira's property on numerous occasions, Harold Ellis, a DEM employee, was deposed on July 8, 2008 and July 9, 2008. A copy of his deposition is attached hereto and marked as Exhibit "19", Volume I and Volume II. In

his deposition testimony, Mr. Ellis referred to the stream that was being redirected on the Ferreira property as being 560′ in length (Page 14, Lines 23 through 24, Volume I.) Mr. Ellis was the individual who was involved in the inspection and issued the cease and desist order to Mr. Ferreira for redirecting the stream in question. At the same time Mr. Ferreira was issued a cease and desist order for working within freshwater wetlands, (Page 16, Line 20, Volume I), Mr. Ellis was asked if a permit would be necessary to dredge a new channel as Mr. Ferreira had been doing on his property. Mr. Ellis' response was that since the property is part of a defined wetland area subject to storm flowage or flowing or a pond or an area within 50′ of a pond, a permit would be necessary. (Page 20, Line 16 through 22, Volume I.) When asked about the original stream on the property and whether it was considered a wetland, Mr. Ellis' response was "that was an area subject to storm flowage, yes, and that was considered a wetland." (Page 22, Lines 8 through 9, Volume I.) This area that Mr. Ellis considered a wetland was that same area that had been leveled over by Mr. Ferreira (according to his own testimony).

Mr. Ellis also noted that he personally observed a heavy sediment load being carried by the stream on the westernmost portion of the Ferreira property. (Page 34, Lines 7 through 9, Volume I.) When asked what a heavy sediment load was, Mr. Ellis stated that it's "silt that's coming off the land and getting into the stream course." (Page 34, Lines 12 and 13, Volume I.) Mr. Ellis also confirmed that this stream at some point would feed itself into the South Attleboro Reservoir (Page 38, Line 6 through 8, Volume I). As part of his investigation Mr. Ellis noted and testified as to the dirty brown color of the stream 1,500 to 2,000 feet south of the junkyard. (Page 39, Line 6 through 9, Volume I.)

After Mr. Ferreira was cited for the violation, a consent agreement was entered into on April 11, 1984. As part and parcel of that consent agreement, Mr. Ferreira was to comply with certain conditions. Mr. Ellis, during the taking of his deposition, could not see in his file whether necessary corrections had been taken or precautions made by Mr. Ferreira. When asked if temporary erosion controls were installed after the 4/11/84 consent agreement, Mr. Ellis responded, "unless I missed it, I don't see anything." (Page 45, Line 19, Volume I.) Mr. Ellis stated that if the erosion controls had been put in place it would have been reflected in his file. These erosion controls were necessary based upon information that Mr. Ellis himself had gathered wherein he noted that there was a runoff of oil and gas when it rained. (Page 30, Lines 13 through 16, Volume I.) In fact, in an inspection report of October 9, 1985, there was still no reference to the temporary controls that were supposed to be put in place in April 1984. (Page 57, Lines 10 through 13, Volume I.) It is important to note that the property continued to operate as a junkyard during this time period. Silt had been seen in this rapidly moving stream that fed the local water supply. Yet necessary controls that were part and parcel of the corrective procedure that was suppose to be undertaken by Mr. Ferreira, as ordered by DEM, were not undertaken. Mr. Ellis had also earlier expressed concern that Mr. Ferreira's proposal "will eliminate a productive pond/shallow marsh and a smaller, deeper pond. Many other species of wildlife observed and those anticipated to utilize the site will be effectively eliminated." (Page 61, Lines 14 through 18, Volume I.) Nevertheless, this work that was

to be done by Mr. Ferreira as monitored by DEM, had no federal government involvement before the consent agreement was signed or after the supposed alterations and corrections were made.

When Mr. Ellis was asked if the recommendations he had made in terms of correcting the problems were a necessity he replied "I believe so." (Page 3, Lines 14 through 17, Volume II.) Mr. Ellis confirmed that he had traced small oil slicks almost one-half mile downstream. (Page 3, Lines 18 through 21, Volume II.) He also recommended as a necessity that an oil trap should be placed on the property. (Page 5, Lines 3 through 5, Volume II.) Unfortunately, not all of Mr. Ellis' recommendations were incorporated into the consent agreement. In 1985 Mr. Ellis, having been very familiar with the situation as the investigator for DEM, considered the plan submitted by Mr. Ferreira to be "entirely inadequate." (Page 7, Lines 22 through 25, Volume II.) Additional recommendations by Mr. Ellis were not incorporated into the consent agreement as well. He had recommended a culvert "of adequate size be installed to prevent sedimentation of the pond. (Page 8, Lines 5 through 8, Volume II.) He also stated that "all debris (tires, boards, metal, etc.) within the remaining wetland area must be removed prior to July 1, 1986." (Page 10, Lines 6 through 8, Volume II.) Mr. Ellis made these recommendations as he was concerned about pollution finding its way into the watershed. (Page 12, Lines 13 through 15, Volume II.) He said he made these recommendations based upon the fact that he saw problems at least one-half (1/2) mile downstream. When asked "were you concerned about pollution finding its way into the water supply, Mr. Ellis' response was "sure, yes." (Page 12, Line 22, Volume II.)

Upon completion of the work, Mr. Ellis' office was to be notified. Mr. Ellis did not see any record in his file of inspections that took place after October 9, 1985. The application of Mr. Ferreira was dated January 10, 1986, three months after Mr. Ellis' last report was filed. Mr. Ferreira was given a notice of permit at that time. Necessary recommendations including the culvert and the oil trap were not included in the final approval. This is despite the fact that Mr. Ellis considered all of his recommendations necessary to protect the water supply.

No one from Mr. Ellis's office, according to the records he presented at the taking of his deposition, went to the site to determine if the deficiencies were corrected prior to the application being approved. The deficiencies he mentioned in the form of berms, basins and oil separators were never corrected according to Mr. Ellis' testimony. (Page 21, Line 21, Volume II.)

Mr. Ferreira was issued a release of violation on May 10, 1989, three years after the application was approved. Mr. Ellis did not know personally if the standard permit conditions were complied with, nor did he know if the special conditions were followed. He did not conduct a personal inspection of the property, nor was he aware as to whether an inspection had been conducted by anyone. When asked why a release of violation

would be given if no inspection was done on this piece of property, his response was "it wouldn't, it doesn't make sense." (Page 27, Line 23, Volume II.)

Mr. Ellis testified that there were important conditions which in his opinion, as an employee of DEM, had to be complied with in order to protect the stream which fed the drinking supply. Several of his requests were not incorporated into the final consent agreement. Those requests that were incorporated into the final consent agreement were not verified before the release of violation according to the file that Mr. Ellis presented at the taking of his deposition. Following the release of violation, there continued to be pollutants on the property as referenced in the expanded site inspection report. Without proper precautions in place and with pollutants in a tributary to the water supply being personally seen by Mr. Ellis over 20 years prior, the condition could do nothing but worsen over the subsequent 20 years. The business continues to be operated as a junkyard, and a building was placed inside of a mandated 20′ buffer zone further imperiling the cleanliness of the stream and increasing the risk of pollutants entering the stream and finding their way into the reservoir. When asked if a building could be legitimately placed within the 20′ buffer zone beside the stream, Mr. Ellis said, "not according to this, no." (Page 31, Line 7, Volume II.) Mr. Ellis stated that his office would go back out and "probably issue another notice of violation" if it recognized that a building had been placed within the buffer zone. (Page 31, Lines 16 through 18, Volume II.)

It is respectfully suggested that if action isn't taken, the property will continually be operated in a manner so as to pose a hazard to the drinking water supply of local residents. The comprehensive site inspection report notes extensive and multiple pesticides and pollutants located on the property. Various auto parts, as well as the pollutants and pesticides, have actually found their way into ponds and the stream. This office has accumulated voluminous material, including the enclosed documentation, that points to serious pollutant issues that pose a dangerous threat to local inhabitants.

If any additional information is needed to assist in this investigation, please advise.

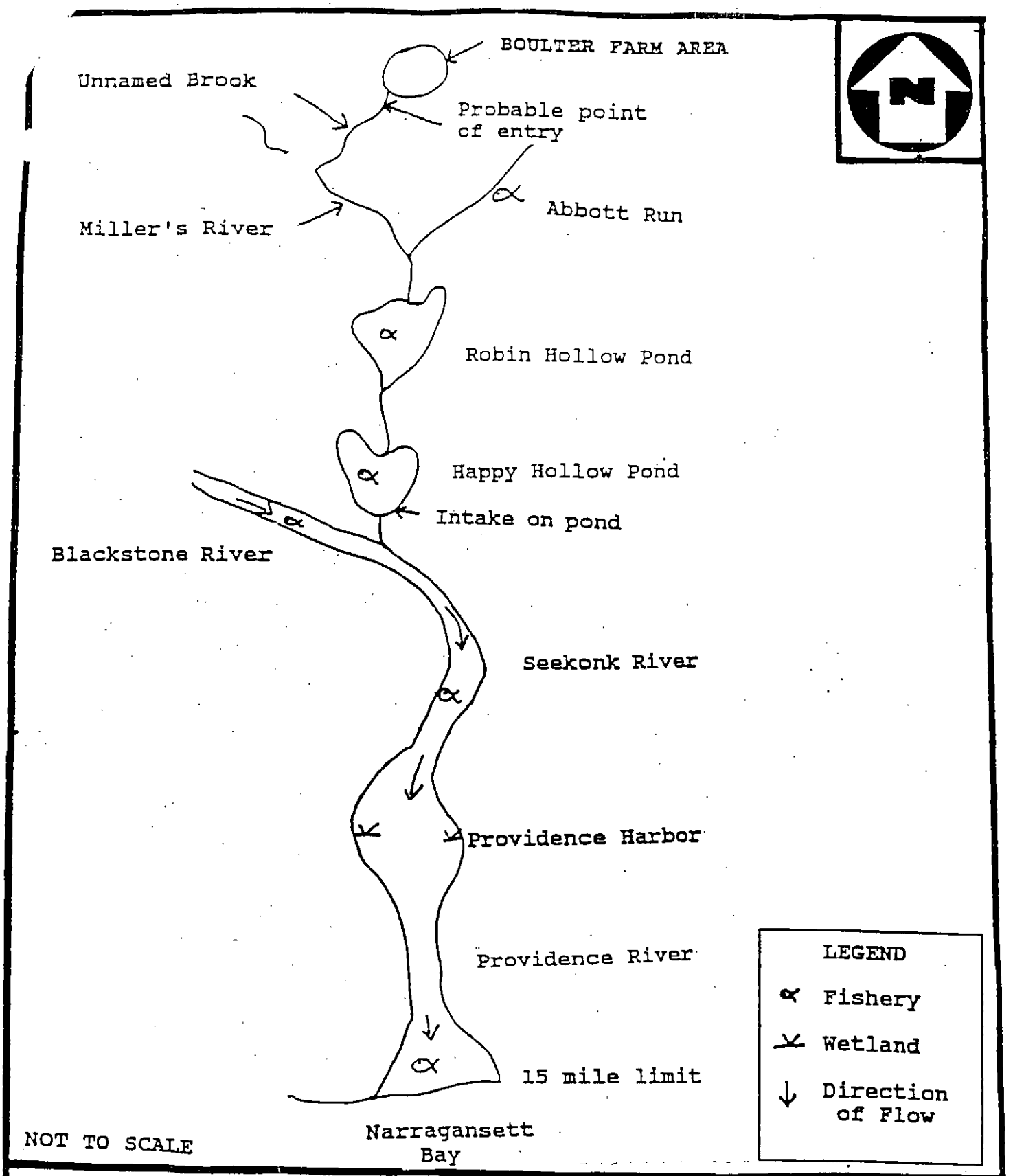
Very truly yours,

MORETTI PERLOW & BONIN LAW OFFICES

Jeffry S. Perlow, Esq.

JSP:mmb
Attachments

Exhibit 1



SURFACE WATER MIGRATION PATHWAY

BOULTER FARM AREA
CUMBERLAND, RHODE ISLAND

NUS CORPORATION

FIGURE 3

Exhibit 2

Exhibit 3

169

ETLANDS INSPECTION REPORT

DATE: 11-29-83

TIME: 12:45

PPLICATION

FILE #

COMPLAINT rcvd. 11 - 22 - 83 by BW from anon

Proposal/Details of Complaint: someone is filling in a pond on Curran Rd in Cumberland. (over for directions to site).
(514 Curran Rd)

Applicant/Owner Name: Joseph Ferreira

Address: 1 laurel lane
Cumberland 02864

AP 19
lot 10

1970 Aerial Photo # 22 - 1131/30 Wetland delineated: [illegible]

Location: ~ 200' from Mass. line on Curran Rd.
Cumberland. (514 Curran Rd).

Observations: fill and grading in and w/ 50' of FW Pond
fill into an ASF and redirecting or creating a new ASSF from the pond so off the property.
Issued a C+D to contractor for work in above areas. (Roger Gariepy)
(little wetland vege. affected by grading and fill)

Recommendations:
N.O.V. — (to land owner)

by Frank Ellis

Notes:

J. Anticipated Impacts or Proposal:

The proposal will eliminate a productive pond/shallow marsh and a smaller deeper pond. Many of the species of wildlife observed and those anticipated to utilize the site will be effectively eliminated. The remaining piece of pond is deep and small. The score does not reflect the entire value of the wetland. (scarcity, wildlife utilizing the area, etc)

K. Recommendations:

There are numerous problems with the plan submitted to this office and the project as proposed. These problems should be addressed in light of the proposed recommendation.

1. I strongly recommend that the large shallow pond remain unaltered. [I mentioned this to Mr. Ferreira on site and he agreed this would be OK provided he can fill in the eastern side of the pond]. In addition, the debris (i.e., tires, boards, metal) throughout the pond should be removed.

2. The deeper section of pond, which has fill, sediment, auto parts, and other debris in it, appears OK to fill. Filling limits might occur to a point due south of the western end of the stockard fence. (Additional plans will be necessary for the finalized fill).

3. The plans thus submitted are entirely inadequate. If the 1985 photos had been here prior to this application going to public notice we never should have sent it out.

4. The site has had a problem with oil and/or gas leaking into the pond/ASSF. I suggest that all autos stay a minimum of 50 feet away from the edge of the pond (after approved filling has occurred). Also, a small berm should be established to prevent runoff from picking up the oil and gas and carrying it into the pond or ASSF. In the past, I have traced small

Recommendations: con't

oil slicks almost ½ mile downstream. This entire area is part of the Pawtucket water shed. In addition, I suggest some type of oil trap be employed on the property to intercept runoff prior to discharge into the pond or ASSF

5. All disturbed buffer areas (50' from the new pond edge) should be seeded and left undisturbed.

6. Presently, the ASSF entering the pond from the north crosses a dirt road. Occasional traffic appears to run through the area. This roadway is another violation of several yet unrated. I recommend that a culvert of adequate size be installed to prevent further sedimentation of the pond. A plan showing the roadway and culvert along w/ engineering data should be submitted.

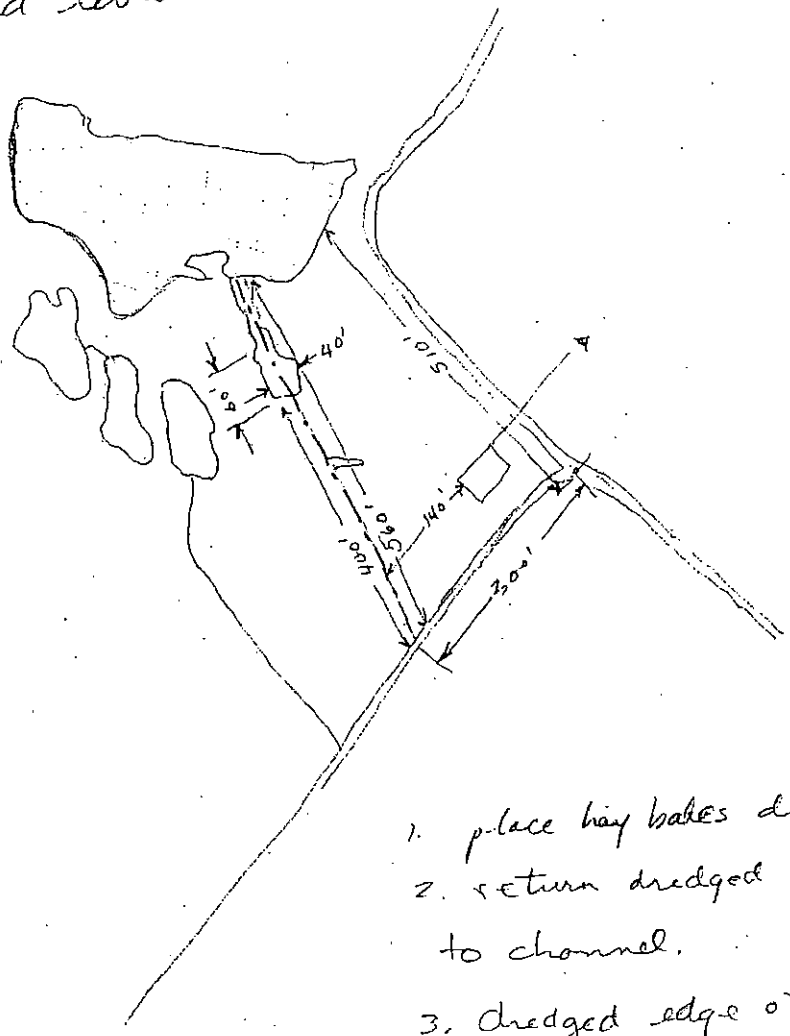
To summarize: I recommend approval with some major modifications.

1. Submit an <u>ACCURATE</u> plan (#3) showing the fill as described in #1 and #2 above.
2. The plan should also show culvert #6; undisturbed buffer areas (#5) and precautions to prevent oil/gas pollution (#4).

Exhibit 4

1972 photos

Channel has been dredged deeper than the original channel thus lowering the pond level.



1. place hay bales downstream
2. return dredged material to channel.
3. dredged edge of pond to 1972 conditions.
4. bring stakes / hammer

DATE: __

TIME: __

FILE # __

on

ling in a
in cumber
s to site).

AP 19
lot 10

ed: ... / ASF

rran Rd.
Rd).

u Pond
reating a ...
perty.
work in ah
ding and fil

(to land owner)

by Hank Ellis

Notes:

Exhibit 5

RAHILL & RAHILL
ATTORNEYS AND COUNSELLORS AT LAW
100 ARMISTICE BOULEVARD
PAWTUCKET, RHODE ISLAND 02860

ROBERT J. RAHILL
RESIDENCE: 723-3438
ROBERT J. RAHILL, JR.
RESIDENCE: 722-8933

OFFICE:
723-9303

RECEIVED
JAN 19 1984
OFFICE OF
LEGAL SERVICES

January 18, 1984

Rhode Island Department of
Environmental Management
83 Park Street
Providence, RI 02901

Re: Simon Supply Auto Salvage

JOE'S RECYCLING SHOP

Dear Sir:

Enclosed please find a copy of a letter sent to the above outlining the concerns of the Pawtucket Water Supply Board.

It well may be that the use of that facility may be in violation of the 50' set back in the Wet Lands Act. Further, our concerns as to improper salvage as detailed to you by our letter of January 11, 1984, are of such a nature that your involvement is needed.

Please advise this office as to what steps will be taken by your department to assist us in this matter.

Very truly yours,
RAHILL & RAHILL

Robert J. Rahill
RJR/kf
enc.
cc: R. Blauvelt

Exhibit 6

RAHILL & RAHILL
ATTORNEYS AND COUNSELLORS AT LAW
100 ARMISTICE BOULEVARD
PAWTUCKET, RHODE ISLAND 02860

ROBERT J. RAHILL
RESIDENCE: 723-3438
ROBERT J. RAHILL, JR.
RESIDENCE: 722-8933

OFFICE:
723-9303

January 18, 1984

Simon's Supply Auto Salvage Yard
Curran Road
Cumberland, RI

Dear Sir:

This office represents the Pawtucket Water Supply Board which board is responsible for the supply of potable water to Pawtucket, Central Falls, Cumberland and parts of other communities.

It has come to our attention that your firm has plans to salvage large numbers of used and wrecked automobiles at your site.

The facility which you intend to use is located adjacent to the Robin Hollow Reservoir, which is part of Abbott Runn Stream, the sole source of water supply for 100,000 people who use Pawtucket Water Supply Board water.

Our concern is that any improper draining of gasoline and crank case oil could lead to serious consequences to our water supply.

Please ensure that the necessary steps are taken to protect the water system and to comply with all appropriate laws and regulations including, but not limited to, State Wet Lands including penalty provisions (2-1-20 et.seq.)as well as applicable Federal Statutes.

Additionally, would you be so kind as to advise us as to the exact location of the so-called Miller River vis a vis your property.

The Board requests that you advise them as to the precise

measures you intend to take to ensure the safety of the water supply.

Very truly yours,
RAHILL & RAHILL

Robert J. Rahill
RJR/kf
cc: R. Blauvelt

Exhibit 7

2-16-84 9:45. C-1372

J. Ferreira

site meeting scheduled 10:00 on heavy rains —

a heavy sediment load is being carried by the rapidly moving stream-channel west of the property.

All roadside work by Ferreira has left unstable soil which is also being picked up by runoff from the road.

The drainage water and stream run under Carson road south (the drainage system of the subdivision to the south) The stream finds its way across open fields and eventually into one of the main streams which feed the S. Hillsboro reservoir.

There is evidence of general pollution into the fields. Further south I did

Exhibit 8

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

INTER-OFFICE MEMO

TO: Thomas Wright, Asst. Director for Regulation DATE: 26 August 1985

DEPT: Environmental Management

FROM: John V. Hagopian, Chief JVH
Division of Water Supply

DEPT: Health/Community Health Services

SUBJECT: Chemical Contamination on Drainage Area of Pawtucket Water Supply

In response to certain information furnished this office by John Quinn, a sample of liquid matter which was pooled in a drainage ditch on Curran Road, Cumberland was collected by a representative of this office on 27 June 1985. Attached is a copy of the analysis indicating the presence of acetone (3 ug/l), tetrahydrofuran (36 ug/l), and methyl isobutyl ketone (39 ug/l). The ditch referenced above which is ~~west of Joe's~~ Auto Recycling (part of or adjacent to Boulter's farm) drains to Robin Hollow Pond via Miller's River.

As you probably know, Robin Hollow Pond is utilized by the City of Pawtucket as a source of drinking water. The discharge of pollutants onto the drainage area of a public water supply constitutes a violation of Chapter 46-14 of the Rhode Island General Laws of 1956, as amended, which is enforcable by the DOH. There may also be a violation of a DEM administered law in this case. It would be appreciated if you would arrange a meeting with your staff and this office so that the course of action to be followed in this case can be determined. This should be done without delay because the threat involves a source of public drinking water.

XC: Fred Siino
Bruce Catterall
John Quinn
James Carney

RECEIVED
R.I. DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT
AUG 26 1985

Exhibit 9

NEW ENGLAND ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTING SERVICES

December 21, 2007

Mr. Lou Paolino
19 Heritage Drive
Lincoln, RI 02865

RE: Review of wetlands permitting and wetland resource areas
Curran Road, Cumberland, RI
NEE File 07-3090

Dear Mr. Paolino:

New England Environmental, Inc. (NEE) has completed a review of documents, maps, photographs, and site conditions pertaining to your property on Curran Road in Cumberland, Rhode Island, and the adjacent property to the east, which is the site of Advanced Auto Recycling, Inc. We visited the site with you on October 19, 2007. We also consulted the following:

- A bound collection of documents from the Rhode Island Department of Environmental Management (DEM), concerning a Notice of Violation dated January 4, 1984 (Complaint #1372) and an Application for Permission to Alter Freshwater Wetlands (#6517) filed by Joseph Ferreira on August 17, 1984.
- A series of plans prepared for Mr. Ferreira by Raymond Azar P.E., with revisions, the last plan dated December, 1985 and stamped "approved with conditions" by DEM on January 15, 1986.
- A bound set of plans entitled "Storm Water Pollution Prevention Plan" prepared for Advanced Auto Recycling, Inc. by Commonwealth Engineers & Consultants, Inc., with a revision date of April 21, 2006.
- The USDA Soil Conservation Service Soil Survey of Rhode Island, issued July, 1981, and the current Soil Survey information available from the Natural Resources Conservation Service on the Web Soil Survey.
- A series of four stereo-pairs of aerial photographs of the site, dated December 1, 1965; March 25, 1987; April 11, 1995; and March 27, 2003.
- Additional unpaired aerial photographs provided by you, from 1981 and 1988
- The USGS topographical maps for the area, from 1944 to the present time, as well as mapping available from MassGIS and GoogleEarth.

Permitting Review and Site Assessment

It would appear that there was a history of wetland alteration and disturbance on the land northwest of Curran Road, prior to the activity which triggered the 1984 Notice of Violation. The 1944 and 1949 USGS maps show a single large pond between the overhead power lines which extend northwest from Curran Road, and the Massachusetts

9 RESEARCH DRIVE • AMHERST, MA 01002 • PHONE: (413) 256-0202 • FAX: (413) 256-1092

state line. The 1969 aerial photographs show extensive gravel mining operations in the vicinity, and at least three areas of ponding, two of which are connected by a long ditch. The 1981 Soil Survey map shows one large and three small areas of open water, and classifies the soils over the entire area as Udorthents-Urban land complex, which means the land was cut down, filled, and/or regraded.

The properties on Curran Road are within the watershed of Robin Hollow Pond, which is a public water supply reservoir administered by the Pawtucket Water Supply Board. In 1981, an intermittent stream running off the south side of Bear Hill flowed into ponded areas which were disturbed or created by gravel mining, then meandered across the automobile recycling property to a stone culvert under Curran Road. This stream then flows approximately ½ mile to Millers River, entering that perennial stream just before it reaches the reservoir. The stream was filled and flow redirected to a ditch adjacent to your property line in 1983. A biologist with the Rhode Island Department of Environmental Management (DEM) noted in a wetland evaluation report, based on inspections in November 1983, February 1984, and October 1985, that he had seen oil slicks almost ½ mile downstream from the site, which means pollution was observed close to the reservoir. Note Grida. marked off.

See Reports 83, 84, 85.

The chain of permitting for Advanced Auto Recycling (AAR, previously known as Simon's Supply Auto Salvage, and then Joe's Recycling Shop at the time of permit applications) began with an anonymous complaint in 1983. In response to the complaint, a DEM site inspection was performed on November 29, 1983. The inspector noted fill in a freshwater pond, fill in an area subject to flooding (ASF), and redirection of flow off the property by a new ditch. He issued a cease and desist order to the contractor on site and recommended that a Notice of Violation be issued to the land owner. The Notice of Violation was issued on January 4, 1984. Notes from a site meeting on February 16 mention heavy sediment loads and petroleum pollutants being carried offsite to the south. At a pre-hearing conference on April 11, 1984, it was agreed that the land owner would submit an Application for Permission to Alter, and would install erosion controls on site. Following multiple extensions granted to the applicant, the Application was submitted on August 17, 1984. For more than a year, DEM issued a series of insufficiency notices to the applicant's engineer, citing inaccuracies in the plans and inadequacies in the procedures, until the final plan was submitted in December of 1985. This plan was stamped "approved with conditions" on January 15, 1986. A letter from DEM dated January 10, 1986 issues a permit with four standard and six special conditions.

11/29/8 Insped.

The plan and permit conditions specify the procedures the applicant was required to follow in filling the wetlands on the AAR property, and in creating the drainage ditch along the boundary with property now owned by you. The permit was set to expire one year from the effective date, or on January 10, 1987. Most of the work was required to be completed by July 1, 1986. There is no record of inspections or reports in the DEM document package you provided to us, nor is there any reference to an extension. There

is no written notice to DEM from the applicant that he is starting work, or that the work has been completed, as was required by Standard Condition No. 3. However, DEM issued a Release of Violation notice for Complaint No. C-1372 on May 10, 1989, which states that DEM is "satisfied that all regulatory and statutory violations set forth within said 'Notice of Violation' have been abated."

At this time, it is impossible to determine if any of the specific requirements of the permit were fulfilled between 1986 and 1989. However, one of the main provisions of the permit, as clearly marked on the plan, is creation of a 20' wide buffer zone along the drainage channel to Curran Road and a 50' buffer zone around the wetlands associated with the pond. The aerial photographs from 1987 show junkyard storage very close to the drainage channel, and cars stored closer than 50 feet from the edge of the pond. By 1995, the aerial photographs show a large new building close to the ditch. During our site inspection, we noted a chain link fence a short distance from the drainage channel. We estimated the distance between the top of slope next to the channel (which is given as the beginning of the buffer zone on the plan) and the chain link fence as varying between 0 and 10 feet. The buildings, pavement, and automobile parts are found immediately behind this fence. It is our assessment that the 20 foot buffer zone next to the channel is almost entirely lacking now, and appears never to have been established.

The 50 foot buffer around the pond also seems to be lacking. The Storm Water Pollution Prevention Plan (SWPPP) of 2006 shows access roads as close as 24 feet from the edge of the pond, and a discontinuous fence approaching within 20 feet of the pond in four places. The aerial photographs from 1987, before the Release of Violation was issued, clearly show junked cars stored between the access roads and the pond. Aerial photographs from 1995 through 2005 also show vehicles in the same locations.

One intended function of the buffers, as mentioned in DEM notes from the time, is to filter petroleum products from runoff before they reach the wetlands and the drainage channel. That function does not appear to have been achieved. The SWPPP seems to acknowledge that deficiency by proposing an earthen berm between vehicle storage areas and the channel and pond. During our site visit we observed runoff from a paved area southeast of the large building (labeled "paved storage area" on the SWPPP) running directly into the ditch.

Although the planting plan for the buffers is not specified on the approved alteration plan, we noted during our site visit that large portions of the areas east of the pond and drainage ditch are dominated by invasive exotic plant species such as: Multiflora Rose (*Rosa multiflora*); Russian and/or Autumn Olive (*Eleagnus spp.*); Oriental Bittersweet (*Celastrus orbiculata*); and Japanese Knotweed (*Polygonum cuspidatum*). At the same time, we noticed tires, auto parts, and other debris in the channel, in the pond, and in the areas proposed to be the protected buffer zones. Special Condition 3 of the 1986 permit mandated removal of such debris from wetlands. If the material was removed in 1986, similar material has been discarded into these areas since then.

The 1986 Permit states "This approval does not remove your obligation to obtain any necessary permits from other state, local, or federal agencies." It does not appear from the current record in our files that permits were obtained from the U.S. Army Corps of Engineers for Section 404 wetland alterations. It is our recommendation that you forward a copy of this report to both the U. S. Army Corps of Engineers and to the USEPA for their review of potential enforcement under the Clean Water Act.

In addition to the filling of wetlands permitted by the DEM, there was apparently fill of the southernmost of the three small ponds on your property prior to the process described above. This is depicted on the December 1985 plan as a hatch-marked area labeled "areas previously filled". The area is shown as open water on the 1981 Soil Survey, and does not exist on the 1987, 1995, and 2003 aerial photos. It was re-excavated prior to 2005, and was holding water at the time of our site visit. You mentioned that the fill which was removed contained contaminants from the auto salvage yard. We do not have any other information about this isolated pond, but it was clearly filled some time between 1981 and late1983, apparently without a permit.

Another requirement of the 1986 permit was that clean material be used in filling all wetlands and adjacent areas. The fill which was excavated from the small pond on your property was an indication that contaminated material was used for this purpose in that particular location. Again, because we did not have access to the AAR property, we cannot know if clean fill was used. However, we do know that there is a residue of debris on the surface as visible from your property.

Photo-interpretation

Stereo pairs of aerial photographs were examined under a stereoscope to view wetland conditions on several dates. Photographs which were reviewed included: December 1, 1965; March 25, 1987; April 11, 1995; and March 27, 2003. Additionally, images were examined from MassGIS (1996 and 2005); 1944 USGS map; 1949 USGS map; 1981 Soil Survey map; and non-stereo photographs from 1981 and 1988.

In 1981 (see figure 2A), prior to the use of this area as a car junk yard, there are several ponds on the property which appear to be part of a sand and gravel operation.

By 1988 (figure 2B) the car junk yard is fully established, and some of the ponds and adjacent wetlands have been filled. The pond drainage has also been diverted to the western boundary of the junk yard by creating a dug channel which drains towards Curran Road. There are also drainage ditches which have been dug to connect and drain the various ponds.

By 1996 (figure 2C) several drainage ditches adjacent to the large pond on the car lot property have been filled, and the car lot has been expanded to this area adjacent to the pond.

By 2005 (figure 2D) a small pond has been excavated on the west side of the drainage ditch. This is in the vicinity of the pond visible on your property in 1981, but considerably smaller.

Figure 2E shows an overview of the past and present wetlands on these properties. There are fewer wetlands on this site today, than in 1981, 1988, and 1996. We estimate the total reduction in wetland area between 1981 and 2005 to be approximately 56,700 square feet.

Conclusions

Although the process was slow and difficult, the owner of the AAR site did get a Permit to Alter from DEM and subsequently received a Release of Violation. The documents we were given do not explain how (or if) the conditions of the Permit were met, and therefore how the Release was obtained. From the photographs and site evidence, it appears that the most important parts of the Permit Plan, establishment of a 20 foot buffer next to the drainage channel and a 50 foot buffer next to the pond, were never completed. Furthermore, one of the critical objectives of the plan, prevention of pollution by petroleum products entering wetlands, and ultimately the downstream resources of the Pawtucket Water Supply Board, is still in question. As far as we can tell, neither the buffer zones prescribed by the 1986 permit nor the earthen berms proposed in the 2006 SWPPP are in place.

Attached to this letter are several figures showing the present and historic wetlands on these properties. We hope that these will be useful to you.

Sincerely,
New England Environmental, Inc.

Michael J. Marcus
Professional Wetland Scientist
Principal

Bruce Griffin
Professional Wetland Scientist
Certified Soil Scientist

MJM/sl

Enc.

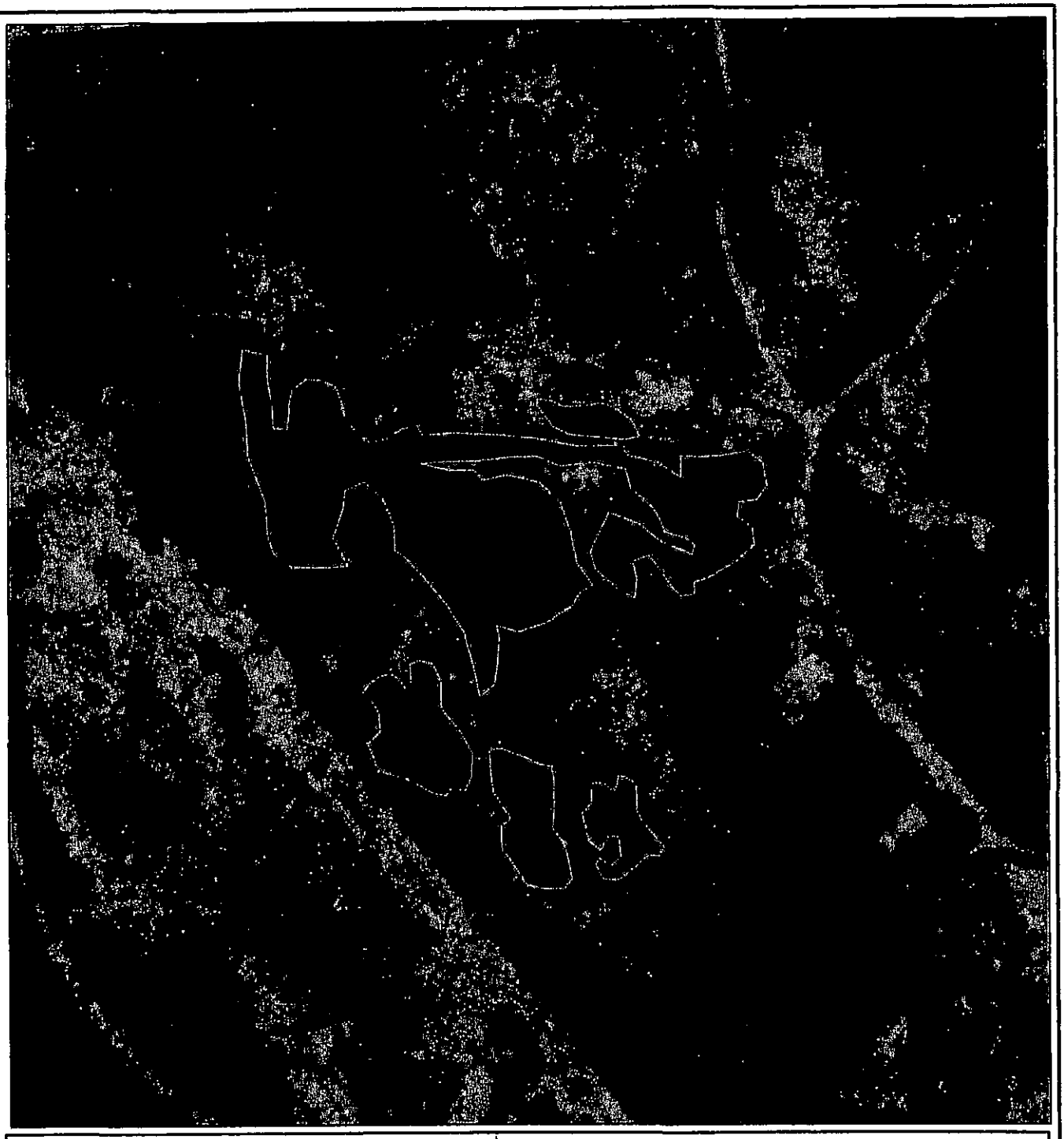


Figure 2A: Orthophotograph 1981
Curran Road
Cumberland, RI

NEW ENGLAND ENVIRONMENTAL, INC. NEE
ENVIRONMENTAL CONSULTING SERVICES
9 Research Drive • Amherst, MA 01002
(413) 256-0202 • Fax: (413) 256-1092

Data Source: MassGIS
Date of Orthophotograph: 1981
NEE Job # 07-3090

Latitude 41° 23'1"N
Longitude 71° 55'51"W

Feet
180

N

December 7, 2007

Figure 2B: Orthophotograph 1988
Curran Road
Cumberland, RI

NEW ENGLAND ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTING SERVICES
9 Research Drive • Amherst, MA 01002
(413) 256-0202 • Fax: (413) 256-1092

Data Source: MassGIS
Date of Orthophotograph: 1988
NEE Job # 07-3090

Latitude 41° 23'1"N
Longitude 71° 55'51"W

Feet
180

N

December 7, 2007

Figure 2C: Orthophotograph 1996
Curran Road
Cumberland, RI

NEW ENGLAND ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTING SERVICES
9 Research Drive • Amherst, MA 01002
(413) 256-0202 • Fax: (413) 256-1092

Data Source: MassGIS
Date of Orthophotograph 1996
NEE Job # 07-3090

Latitude 41° 23'1"N
Longitude 71° 55'51"W

Feet
180

N

December 7, 2007

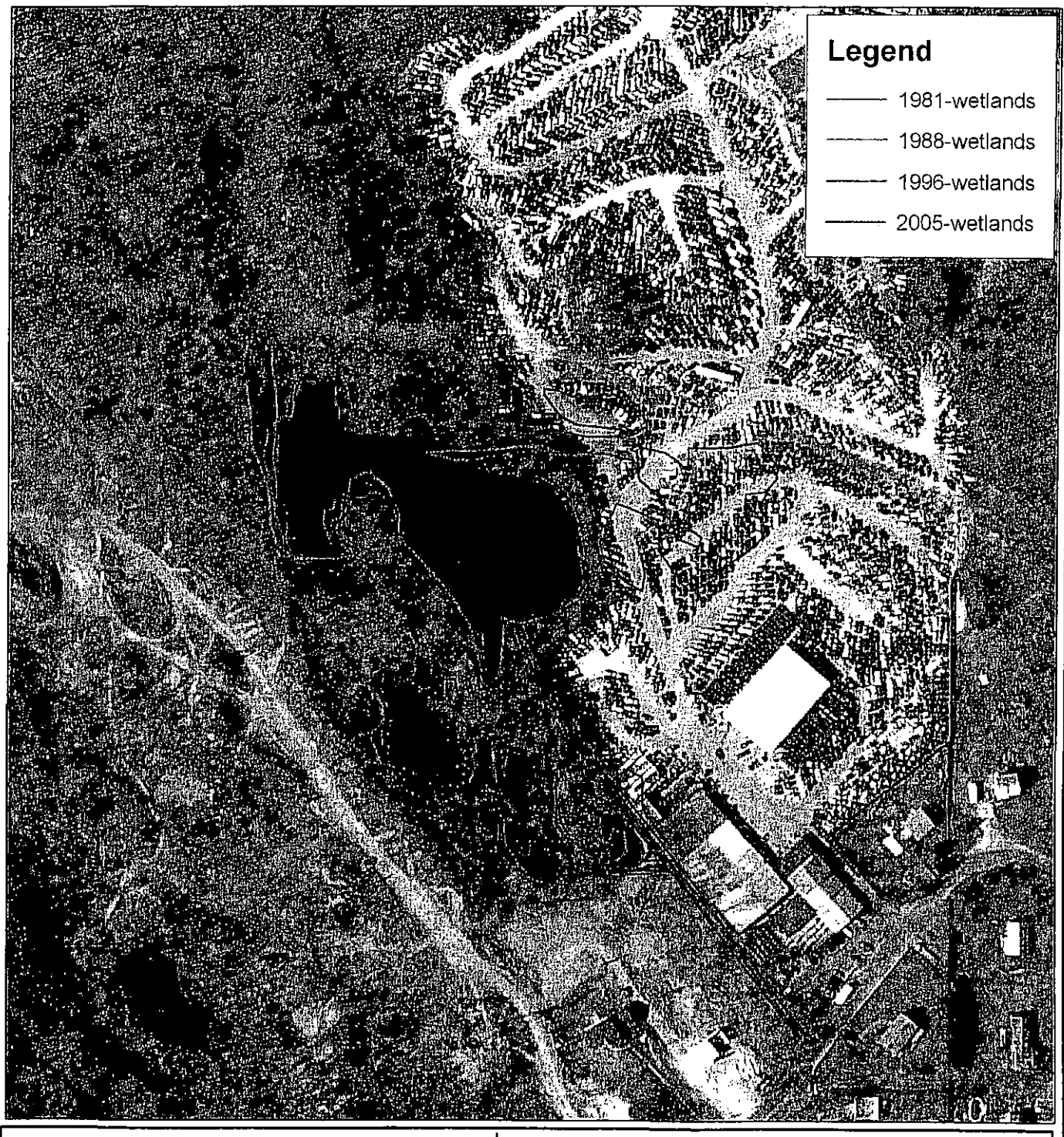


Figure 2E: Orthophotograph 2005
Curran Road
Cumberland, RI

NEW ENGLAND ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTING SERVICES
9 Research Drive • Amherst, MA 01002
(413) 256-0202 • Fax: (413) 256-1092

Data Source: MassGIS
Date of Orthophotograph: 2005
NEE Job # 07-3090

Latitude 41° 23'1"N
Longitude 71° 55'51"W

Feet
180

N

December 7, 2007

Exhibit 10

STATE OF RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
DIVISION OF LAND RESOURCES
FRESH WATER WETLANDS SECTION

In Re: Alleged Violation of R.I.G.L. 2-1-21 by:

File No. COMPLAINT NO. 1372

Joseph Ferreira
1 Laurel Lane
Cumberland, RI 02864

RECEIVED
MAR 8 1984
ENVIRONMENTAL MANAGEMENT
WETLANDS SECTION

NOTICE OF VIOLATION

Notice is hereby given that you are and have been in violation of Section 2-1-21 of the General Laws of Rhode Island, 1956, as amended (hereafter "RIGL"), in that you have proceeded to alter a fresh water wetland without having first obtained the approval of the Director of the Department of Environmental Management.

Specifically an inspection of property owned by you and located north of Curran Road, approximately 200 feet west of the Massachusetts state line, Plat 19, Lot 10, in the City/~~Town~~ of Cumberland, Rhode Island, on November 29, 1983 at 12:45 P.M. revealed that you did accomplish or permit fill and grading in and within 50 feet of a fresh water pond; fill into and area subject to flooding; and redirecting an area subject to storm flowage.

In accordance with the provisions of RIGL, Section 2-1-23 and 2-1-24 (a), you are therefore, hereby ORDERED to:

1) Cease and desist immediately from any further alteration of the above described fresh water wetland(s), and

2) Restore said fresh water wetland(s) to its (their) state as of July 16, 1971 insofar as possible on or before February 4, 1984.

Pursuant to RIGL Section 42-17.1-2 and the regulations adopted pursuant to RIGL Sections 2-1-18 et sequal, you may request, in writing, within ten (10) days, a hearing to show cause why the aforementioned order should not remain in effect.

If you fail to request a hearing within the aforesaid period of time or if you fail to appear at the scheduled hearing, you are hereby notified that this notice will automatically become a compliance order in accordance with the provisions of the RIGL Section 42-17.1-2(U).

In addition to the order specified above, if you fail to comply with any of the provisions of said order within the time periods specified, it is hereby further ORDERED:

a) That you shall pay to the Director a fine of ONE THOUSAND DOLLARS ($1000.00), as authorized by RIGL Section 2-1-23, upon failure to: immediately cease the alteration of the wetland as specified in item 1 above or restore said wetland in accordance with the provisions of item 2 above, and

b) If the restoration required by item 2 above is not accomplished within the reasonable time therein specified, pursuant to RIGL, Sections 2-1-23 and 2-1-24(a), the Director may, in his discretion and without further notice, order the restoration work done by an agent of his choosing, and you will be held liable for the cost of the restoration.

2) Failure or inability to comply with any provisions of this notice or order may result in civil or criminal actions being brought against you by the Attorney General on behalf of the Director and the State of Rhode Island in the Superior or District Court.

The original of this "Notice of Violation" is being forwarded to the city/town clerk of the appropriate city or town to be recorded in the land evidence records of that city/town under the provisions of Section 2-1-24 of the General Laws of 1956, as amended.

For the Director: Peter M. Jarcusa, P.E.

DATED: January 4, 1984

*Note: Address all correspondence to:

Department of Environmental Management
Division of Land Resources
Fresh Water Wetlands Section
38 State Street
Providence, RI 02908

HKE/PMJ/db

cc: Violator/certified mail
City/Town Council
Division of Enforcement
Carolyn Weymouth
Franklin Pond

Recorded: January 5th A. D. 1984 @ 10:46 A. M.

Exhibit 11

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
75 Davis Street
Providence, R. I. 02908

10 January 1986 CERTIFIED MAIL

Mr. Joseph Ferreira
1 Laurel Lane
Cumberland, RI 02864

APPLICATION NO. 6517

Dear Mr. Ferreira:

RE: Formal Application 6517, north of Curran Road, Cumberland, RI

The Department of Environmental Management has reviewed your application for permission to alter fresh water wetlands in the Town of Cumberland, RI locally known as an unnamed area subject to storm flowage and an unnamed pond by grading, filling and relocating the said area subject to storm flowage and reconstructing a drainage ditch 640 feet for the purpose of site development.

The location of the proposed work is north of Curran Road approximately 200 feet west of the Massachusetts State line, Assessor's Plat 19, Lot 10, Cumberland, Rhode Island.

We understand your proposal to be as described the revised site plans submitted with your application entitled: "Proposed Alterations to Freshwater Wetlands" prepared by Raymond J. Azar, P.E., 1 sheet, revised date December, 1985 and received by this office on December 6, 1985.

The Department has received one letter of objection concerning potential drainage problems. After a careful review by our staff, and in view of revised site plans dated December, 1985, this objection was not found to be substantive. Our evaluation of this proposal reveals that with special permit conditions, it does not represent an abridgement of the Fresh Water Wetlands Act. Therefore, your application is hereby APPROVED and the permit issued, provided that you comply with the following standard and special conditions:

A). Standard Permit Conditions:

1. Prior to commencing any work on this project you must record a copy of this permit letter in the land evidence records of the Town of Cumberland (See attached copy of 2-1-22 of the Fresh Water Wetlands Act. For the purpose of paragraph "8", this letter serves as the Notice of Permit);

2. All material for fill is clean and free of any matter which could pollute adjacent wetlands and water courses;

3. The applicant is required to notify the Fresh Water Wetlands Section in writing prior to commencement of construction and upon completion of the project;

4. A copy of the approved site plans and permit letter must be kept at the site at all times during construction.

SPECIAL CONDITIONS:

1. Erosion and sedimentation controls must be installed at the site prior to the start of construction, and shall be maintained for the duration of the project, including but not limited to:

   a) The placement of staked hay bales or a silt fence in all locations shown on the approved site plan and where otherwise necessary to prevent sediments from entering associated wetlands.

   b) The drainage ditch must be graded to the cross-section design as shown on the original site plans and the adjacent buffer area loamed and reseeded on or before July 1, 1986. No changes must be made to the invert elevation or the pond.

   c) A hay bale check dam must be installed in the ditch just north of Curran Road prior to any grading, and must be maintained until the area is stabilized.

   d) All restored buffer zones such as the 50 foot zone along the wetlands areas, and the 20 foot zone along the drainage ditch should be established on or before July 1, 1986;

   e) All approved filling should occur in a southeast to northwest direction. The silt fence should be placed shortly after the onset of filling in order to allow passage of any fish our of the area to be filled;

   f) No alterations (disturbance of any kind) should occur in the 50 foot buffer adjacent to the remaining wetland areas with the exception of loaming/seeding and replanting previously disturbed or unvegetated areas;

   h) All disturbed areas are to be permanently stabilized with vegetation prior to the completion of the project areas exposed for extended periods are to be completely covered with spread hay mulch.

i) The placement of additional erosion-sedimentation controls as required by the Wetlands Section staff during construction.

2. The limits of all clearing, grading and disturbance shall be kept to a minimum within the approved area of construction. All areas outside of the limits of approved alterations shall remain totally undisturbed.

3. All debris such as tires, boards, metal, etc. within the remaining wetland areas must be removed prior to July 1, 1986. No vehicles should enter the wetland areas to accomplish this task;

4. The boulders to be placed across the dirt roadway must be adequate to eliminate all vehicular traffic through the stream course;

5. Erosion and sedimentation controls must be inspected and verified by the Wetlands Section staff prior to the commencement of construction; you must notify the wetlands section when such erosion/sediment controls are in place;

6. You must notify this office in writing of completion of all work.

Enclosed please find the Notice of Permit card. This card must be displayed in a conspicous place on the premises during the period of alterations. Also enclosed is one copy of the approved site plans stamped APPROVED by the Fresh Water Wetlands Section.

The effective date of the permit is the date of issue, the permit expires one (1) year from the effective date, but when deemed necessary may be extended by the Department according to the provisions of Section 2-1-22 of the Fresh Water Wwtlands Act.

In approving your application, this Department assumes no responsibility for damages resulting from faulty design or construction. This approval does not remove your obligation to obtain any necessary permits from other state, local or federal agencies.

If you are aggrieved by this decision, you may within ten days of the receipt of this letter, request in writing, a public hearing before a designee of the Director of Environmental Management to show cause why this decision should not remain in effect.

Such a public hearing must comply with the procedures delineated in the Rhode Island Fresh Water Wetlands Act, specifically R.I.G.L. Section 2-1-22 (copy enclosed).

Very truly yours,

JAN 14 1986

James W. Fester, Chief
Division of Water Resources
Department of Environmental Management

JWF:LMM:dmb

cc: Robert D. Goldbert
Cumberland Town Council

Enclosures:

Exhibit 12

PLEASE PRINT OR TYPE

BUILDING PERMIT APPLICATION

ORIGINAL FILE (LOCATION)

MUNICIPALITY Cumberland NUMERICAL CODE 8 PERMIT NO. 9103-11

APPLICATION DATE 3/4/91 CENSUS TRACT 113.02 FEE RECEIVED: $ 215.00 BY (illegible)

I. IMPORTANT: PLEASE PRINT — APPLICANT TO COMPLETE ALL ITEMS

1. STREET LOCATION 750 Curran Rd ZONING DISTRICT [redacted]
3. PLAT/MAP [redacted]19 4. LOT/BLOCK 363 5. FILE/PARCEL _____ 6. AREA _____ FIRE DISTRICT NO. (0 or 1) _____
8. USE OF STRUCTURE: PREVIOUS _____ PROPOSED _____
9. OWNER Joseph Ferreira ADDRESS 11 Gladding Dr TEL. NO. _____
10. CONTRACTOR (0 or 1*) 370 Construction Inc ADDRESS P.O. Box 67 - Cheatley Ma 02712
11. TEL. NO. _____ 12. RI BUILDERS REGISTRATION NO. _____
13. ARCH. OR ENG. _____ ADDRESS _____ TEL. NO. _____
14. RHODE ISLAND REG. NO. _____ 15. Stamped Prints (Circle one) Yes No 16. Certificate of Occupancy Required Yes No
17. DESCRIPTION OF WORK TO BE PERFORMED.

New storage Bld
25x50 ft. Metal Bld
Storage Only - Skylights
no Electricity
To replace 4 - storage trailers (existing)

18. USE OF EACH FLOOR

BSMT.	
1st	
2nd	
3rd	
Other	

II. TYPE AND COST OF BUILDING — PLEASE CHECK APPROPRIATE ITEMS AND ENTER REQUESTED DATA

A. TYPE OF IMPROVEMENT

1. ✓ NEW STRUCTURE
2. ____ ADDITION TO STRUCTURE
3. ____ INSTALLATION
4. ____ RECONSTRUCTION
5. ____ REPLACEMENT
6. ____ FOUNDATION ONLY

B. OWNERSHIP

PUBLIC
1. ____ STATE
2. ____ CITY OR TOWN
3. ____ OTHER, SPECIFY _____

PRIVATE
4. ✓ TAXABLE
5. ____ TAX EXEMPT

C. ESTIMATED COST MATERIAL AND LABOR

1. STRUCTURAL $ 32,000 .00
TO BE INSTALLED BUT NOT INCLUDED IN THE ABOVE COST
2. ELECTRICAL $ _____ .00
3. PLUMBING OR PIPING $ _____ .00
4. HEATING, AIR COND. $ _____ .00
5. OTHER, ELEVATOR, ETC. $ _____ .00
TOTAL COST $ _____ .00

D. PROPOSED USE RESIDENTIAL

1. ____ R-1 MOTEL, HOTEL
2. ____ R-2 MULTI-FAMILY
3. ____ R-3 One and Two Family Attached
4. ____ R-4 One and Two Family Detached
5. ____ GARAGE
6. ____ CARPORT
7. ____ MOBILE HOME
8. ____ SWIMMING POOL
9. ____ FENCES
10. ____ SIGNS
11. ____ FIREPLACE
12. ____ OTHER, SPECIFY

E. PROPOSED USE NON-RESIDENTIAL

1. ____ A-1-A THEATRES W/STAGE
2. ____ A-1-B THEATRES W/O STAGE
3. ____ A-2 NIGHT CLUBS
4. ____ A-3 RESTAURANTS
5. ____ A-4 CHURCHES
6. ____ A-5 STADIUMS
7. ____ B BUSINESS
8. ____ E EDUCATIONAL
9. ____ F-1 FACTORY (MOD. HAZ.)
10. ____ F-2 FACTORY (LOW HAZ.)
11. ____ H HIGH HAZARD
12. ____ I-1 INSTITUTIONAL GROUP HOME
13. ____ I-2 INSTITUTIONAL INCAPACITATED
14. ____ I-3 INSTITUTIONAL RESTRAINED
15. ____ M MERCANTILE
16. ____ S-1 STORAGE MODERATE
17. ____ S-2 STORAGE LOW
18. ____ SWIMMING POOL
19. ____ FENCES
20. ____ SIGNS
21. ____ OTHER

SPECIFY _____

F. RESIDENTIAL
(COMPLETE FOR NEW BUILDINGS, AND RECONSTRUCTION)

SINGLE FAMILY
1. ____ TOTAL SINGLE FAMILY UNITS
2. ____ TOTAL NO. OF BEDROOMS
TOTAL NO. OF BATHROOMS 3. ____ Full 4. ____ Half

MULTI-FAMILY
5. ____ TOTAL NO. OF KITCHENS
TOTAL NO. OF BATHROOMS 6. ____ Full 7. ____ Half

TOTAL NO. OF APARTMENTS BY NO. OF BEDROOMS
8. Effic. ____ 9. 1 ____ 10. 2 ____
11. 3 ____ 12. 4 ____ 13. 5 ____
14. ____ MORE, Please Specify _____
15. ____ TOTAL NUMBER OF BUILDINGS IN PROJECT.

G. FOUNDATION SETS BACK FROM PROPERTY LINES

1. FRONT 500 ft. ____ in.
2. REAR 1000 ++ ft. ____ in.
3. LEFT SIDE 10 ft. ____ in.
4. RIGHT SIDE 500 + ft. ____ in.

H. DIMENSIONS

1. No. of Stories _____ 2. Basement: Yes ____ No ____
3. Height of Construction Ft. [redacted] MAX. WIDTH 50 MAX. DEPTH 75
4. Total Floor Area Sq. Ft. w/o Basement 3750 sq ft

I. PRINCIPAL TYPE OF CONSTRUCTION
(CONSTRUCTION CLASS (Check one))

1. 1A ____ 5. 2C ✓ 9. 5A ____
2. 1B ____ 6. 3A ____ 10. 5B ____
3. 2A ____ 7. 3B ____
4. 2B ____ 8. 4 ____

J. FLOOD HAZARD AREA - 1. YES 2. NO

1. Elev. (MSL) of lowest floor incl. basement _____
2. Elev. (MSL) of 100 year flood _____

K. TYPES OF SEWAGE DISPOSAL

1. ____ PUBLIC 2. ____ PRIVATE SYSTEM*
3. ISDS NO. _____ DATE _____

L. PRINCIPAL TYPE OF HEATING FUEL

1. ____ GAS 2. ____ ELECTRICITY
3. ____ OIL 4. ____ COAL
5. ____ SOLAR 6. ____ OTHER _____

M. NUMBER OF OFF-STREET PARKING SPACES

1. EN[illegible] _____
U[illegible] _____

N. TYPE OF WATER SUPPLY

1. ____ PUBLIC
2. ____ PRIVATE SYSTEM
3. ____ INDIVIDUAL, WELL

O. EQUIPMENT*

1. INCINERATOR ____
2. ELEVATOR (Enter Number) ____

P. TYPE OF MECHANICAL AND AIR CONDITIONING

1. ____ Central-Electric 5. ____ Heat Pump
2. ____ Central-Gas 6. ____ Solar Hot Water
3. ____ Individual RM. A/C 7. ____ Solar Heat
4. ____ Oil 8. ____ Other

PLAINTIFF'S EXHIBIT 10/18/91

I here[illegible] ority to make the foregoing application, that the application is correct, and that the owner of this building and the unde[illegible] all applicable codes and ordinances of this jurisdiction.

TEL. NO. _____ APPLICANT'S SIGNATURE _____

FOR _____

* IN-STATE CONTRACTOR = 0
OUT-OF-STATE CONTRACTOR = 1

* STATE APPROVAL REQUIRED. SEE BACK OF FORM FOR INFORMATION.

17E01

Exhibit 13

Pawtucket Water
PWSB
Supply Board

85 Branch Street
Pawtucket, RI 02860
Phone (401) 729-5000
Fax (401) 726-6493

Memo

Date: 3/22/2005

To: John P. Manning, P.E., Principal Sanitary Engineer, RIDEM Office of Water Resources

Cc: Pamela Marchand, PWSB Chief Engineer, James DeCelles, PWSB Assistant Chief Engineer

From: Allen Champagne, PWSB Source Water Manager

RE: Advanced Auto, Curran RD., Cumberlsnd

Mr. Manning: I receiver the analytical results from samples taken at Advanced Auto, Pole # 87, on Curran Road in Cumberland. This sample was not taken from the stream; it was taken from the runoff coming from their yard just as it entered the stream. The sample had a very distinct solvent odor even after being refrigerated for five days.

I "E" Mailed Mr. Meunier with our lab results and thought I would share it with you. I would certainly appreciate your assistance in this matter.

Thanks

ATC

Enc. 6

Exhibit 14

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
INTER-OFFICE MEMORANDUM

TO: Cynthia Gianfrancesco, Principal Scientist
Office of Waste Management
DEPT: Environmental Management

FROM: Louis R. Maccarone II, Engineer
Office of Waste Management
Environmental Management

LRM II

RE: Boulter Farm Area, Cumberland, RI.

DATE: August 20, 2004

Pursuant to your request, I have reviewed the ESI report and most recent data for the Boulter Farm Area in Cumberland. START has taken samples from all areas where significant contamination would be expected, from analysis of historical data and past/current uses.

The area of most the most significant contamination is also an area of concern regarding solid waste. The Former Solid Waste Disposal Area no. 1 (waste disposal area) straddles the geographic boundary between Rhode Island and Massachusetts, with exceedances of the respective standards in both states. On the Rhode Island side, the exceedances are in three separate sample locations: SS/SO-02, SS/SO-11, and SS-18. The analytes that exceed RIDEC values are Benzo(a)pyrene, Benzo(a)anthracene, Dibenzo(a,h)anthracene, Lead and Arsenic. The values at each location can be found in Table 1.

Other areas where exceedances of RI standards were found are in groundwater at GW-06 (MBTE) and GW-08 (MTBE and Lead). There was also one sampling point (SD-01) where sediment concentrations exceeded the NOAA PEL standards for Benzo(a)anthracene, Phenathrene, and the pesticide 4-4'-DDD. The values of these exceedances can also be found in Table 1.

As a result of this review, I would like to schedule a meeting with you at your convenience to discuss remedial alternatives at the site.

cc: M. DeStefano, OWM

Table 1 - Boulter Farm Area Exceedances

		Sample Concentration	Applicable Standard*
SS-02	Benzo(a)pyrene	5000 ppb	800 ppb
	Lead	4390 ppm	500 ppm
SS-03	Benzo(a)pyrene	1400 ppb	800 ppb
	Lead	588 ppm	500 ppm
SS-11	Benzo(a)pyrene	8500 ppb	800 ppb
	Benzo(a)anthracene	8900 ppb	7800 ppb
	Arsenic	14.5 ppm	7 ppm
	Lead	15200 ppm	500 ppm
SS-18	Benzo(a)pyrene	3600 ppb	800 ppb
	Arsenic	14.2 ppm	7 ppm
	Lead	4780 ppm	500 ppm
SO-02	Benzo(a)pyrene	1900 ppb	800 ppb
	Lead	1840 ppm	500 ppm
SO-11	Benzo(a)pyrene	7700 ppb	800 ppb
	Dibenzo(a,h)anthracene	2300 ppb	800 ppb
	Lead	4290 ppm	500 ppm
GW-06	Methyl tert-Butyl Ether	100 ppb	40 ppb
GW-08	Methyl tert-Butyl Ether	130 ppb	40 ppb
	Lead	26.7 ppb	15 ppb
SD-01	Benzo(a)anthracene	420 ppb	385 ppb
	Phenanthrene	550 ppb	515 ppb
	4,4'-DDD	11 ppb	8.51 ppb

*The applicable standards for the referenced samples are as follows:

SS/SO - RI Residential Direct Exposure Criteria

GW - RI GA Groundwater Objectives

SD - NOAA PEL Standards

Exhibit 15

FINAL EXPANDED SITE INSPECTION REPORT
FOR
BOULTER FARM AREA
CUMBERLAND, RHODE ISLAND

RECEIVED
D.E.M./O.W.M.
2004 APR 23 A 11:56

Prepared For:
U.S. Environmental Protection Agency
Region I
Office of Site Remediation and Restoration
1 Congress Street, Suite 1100
Boston, MA 02114-2023

CONTRACT NO. 68-W-00-097

CERCLIS NO. RID980672620
RI State ID NO. Not Applicable
MA State ID NO. Not Assigned
TDD NO. 03-05-0148
TASK NO. 6153
DC NO. A-4513

Submitted By:
Weston Solutions, Inc.
Region I
Superfund Technical Assessment and Response Team 2000 (START)
37 Upton Drive
Wilmington, MA 01887

19 April 2004

Region I START 2000
Reviewed and Approved:

Ryan Manderbach Site Leader	4/19/04 Date
Paul H. Schrot Work Group Leader	4-19-04 Date
QA Review	4/19/04 Date

Work Order No. 20110-001-001-6153-70

Weston Solutions, Inc.
Federal Programs Division
37 Upton Drive
Wilmington, Massachusetts 01887
978-657-5400 - Fax 978-658-0700

Restoring Resource Efficiency

SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM
EPA CONTRACT 68-W-00-097

RECEIVED
D.E.M./O.W.M.
2004 APR 23 A 11:56

19 April 2004
20110-001-001-6153-70
DC No. A-4513

Ms. Cynthia Gianfrancesco
Office of Waste Management
Department of Environmental Management
235 Promenade Street
Providence, RI 02908

Subject: Final Expanded Site Inspection Report
Boulter Farm Area
Cumberland, Rhode Island
CERCLIS No. RID980672620
RI State ID No. Not Applicable
MA State ID No. Not Assigned
TDD No. 03-05-0148

Dear Ms. Gianfrancesco:

Enclosed is one copy of the Final Expanded Site Inspection (ESI) Report for the Boulter Farm Area property in Cumberland, Rhode Island. The U.S. Environmental Protection Agency Region I (EPA Region I), Office of Site Remediation and Restoration and the Rhode Island Department of Environmental Management (RI DEM) comments regarding the contents of the Draft ESI Report have been incorporated.

Please contact the undersigned at (978) 657-5400 if you have any questions regarding this report.

Very truly yours,

WESTON SOLUTIONS, INC.
Region I START 2000

Ryan Manderbach
Site Leader

Paul H. Schrot
Work Group Leader

RAM:ram
Enclosures
cc: N. Smith (EPA Site Assessment Manager) w/o enclosure
D. Keefe (MA DEP - Boston) w/o enclosure
S. Sundermeyer (MA DEP - SERO) w/o enclosure

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RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
235 Promenade Street, Providence, RI 02908-5767 TDD 401-222-4462

15 June 2004

Edward C. Donnelly
Planning Director
Dept. of Planning & Community Development
Cumberland Town Hall
45 Broad Street
Cumberland, RI 02864-8303

Dear Mr. Donnelly:

Enclosed is a copy of the **Final Expanded Site Inspection Report** for the **Boulter Farms Area (CERCLIS #RID980672620)** site, located in the Town of Cumberland.

This report was completed pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) commonly known as the Superfund Site Assessment Program which investigates potential hazardous waste sites. The purpose of this program is to identify site contamination (if any) and the associated risks (if any) to human health and the environment. Please note that much of the format and wording of these reports is dictated by the administrative requirements of the Federal CERCLA program.

Be advised that inclusion of a site in the Superfund Site Assessment Program is not intended to be certification that a hazardous materials release to the environment has occurred. Nor should forwarding this document be interpreted to be a lien or condemnation on the property but rather a sharing of the information presently available to the Department. This document should be placed in the location (depository) where all other such documents are available for public review.

If you have any questions regarding this report or the Superfund Site Assessment Program, please feel free to contact me at 222-4700 (Ext. 7126).

Sincerely,

Cynthia M. Gianfrancesco

Cynthia M. Gianfrancesco
Principal Environmental Scientist
Office of Waste Management

cc: N. Smith, EPA
M. DeStefano, DEM
L. Maccarone, DEM

Weston Solutions, Inc.
Federal Programs Division
37 Upton Drive
Wilmington, Massachusetts 01887
978-657-5400 - Fax 978-658-0700

Restoring Resource Efficiency

SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM
EPA CONTRACT 68-W-00-097

19 April 2004
20110-001-001-6153-70
DC No. A-4513

Mr. Daniel Keefe
Bureau of Waste Site Cleanup
Massachusetts Department of Environmental Protection
One Winter Street
Boston, MA 02108

Subject: Final Expanded Site Inspection Report
Boulter Farm Area
Cumberland, Rhode Island
CERCLIS No. RID980672620
RI State ID No. Not Applicable
MA State ID No. Not Assigned
TDD No. 03-05-0148

Dear Mr. Keefe:

Enclosed is one copy of the Final Expanded Site Inspection (ESI) Report for the Boulter Farm Area property in Cumberland, Rhode Island. U.S. Environmental Protection Agency Region I (EPA Region I), Office of Site Remediation and Restoration and Massachusetts Department of Environmental Protection comments regarding the contents of the Draft ESI Report have been incorporated.

Please contact the undersigned at (978) 657-5400 if you have any questions regarding this report.

Very truly yours,

WESTON SOLUTIONS, INC.
Region I START 2000

Ryan Manderbach
Site Leader

Paul H. Schrot
Work Group Leader

RAM:ram
Enclosures
cc: N. Smith (EPA Site Assessment Manager) w/o enclosure
S. Sundermeyer (MA DEP - SERO) w/o enclosure
C. Gianfrancesco (RI DEM) w/o enclosure

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Weston Solutions, Inc.
Federal Programs Division
37 Upton Drive
Wilmington, Massachusetts 01887
978-657-5400 - Fax 978-658-0700

Restoring Resource Efficiency

SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM
EPA CONTRACT 68-W-00-097

19 April 2004
20110-001-001-6153-70
DC No. A-4513

Ms. Susan Sundermeyer
Southeast Regional Office (SERO)
Massachusetts Department of Environmental Protection
20 Riverside Drive
Lakeville, MA 02347

Subject: Final Expanded Site Inspection Report
Boulter Farm Area
Cumberland, Rhode Island
CERCLIS No. RID980672620
RI State ID No. Not Applicable
MA State ID No. Not Assigned
TDD No. 03-05-0148

Dear Ms. Sundermeyer:

Enclosed is one copy of the Final Expanded Site Inspection (ESI) Report for the Boulter Farm Area property in Cumberland, Rhode Island. U.S. Environmental Protection Agency Region I (EPA Region I), Office of Site Remediation and Restoration and Massachusetts Department of Environmental Protection comments regarding the contents of the Draft ESI Report have been incorporated.

Please contact the undersigned at (978) 657-5400 if you have any questions regarding this report.

Very truly yours,

WESTON SOLUTIONS, INC.
Region I START 2000

Ryan Manderbach
Site Leader

Paul H. Schrot
Work Group Leader

RAM:ram
Enclosures
cc: N. Smith (EPA Site Assessment Manager) w/o enclosure
D. Keefe (MA DEP - Boston) w/o enclosure
C. Gianfrancesco (RI DEM) w/o enclosure

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
1 CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023

RECEIVED
D.E.M. / O.W.M.

2004 APR 28 P 12: 27

April 26, 2004

Mr. Robert S. Yarbroudy
Treasurer, Joseph I. Ferriera Trust
290 Curran Road
Cumberland, RI 02864

Dear Mr. Yarbroudy:

Enclosed is one copy of the Final Expanded Site Inspection Report for the Boulter Farm Area property located in Cumberland, Rhode Island (RID980672620). If you have any questions about this report, or about the site, I may be reached at (617) 918-1436.

Sincerely,

Nancy Smith

Nancy Smith
EPA Site Assessment Manager
Office of Site Remediation and Restoration

cc: Ms. Cynthia Gianfrancesco, RI DEM
Mr. Ryan Manderbach, Weston Solutions, Inc.

DISCLAIMER

This report was prepared solely for the use and benefit of the U.S. Environmental Protection Agency Region I (EPA Region I), Office of Site Remediation and Restoration for the specific purposes set forth in the contract between the EPA Region I and the Weston Solutions, Inc., Superfund Technical Assessment and Response Team 2000 (START). Professional services performed and reports generated by START have been prepared for EPA Region I purposes as described in the START contract. The information, statements, and conclusions contained in the report were prepared in accordance with the statement of work, and contract terms and conditions. The report may be subject to differing interpretations or misinterpretation by third parties who did not participate in the planning, research or consultation processes. Any use of this document or the information contained herein by persons or entities other than the EPA Region I shall be at the sole risk and liability of said person or entity. START, therefore, expressly disclaims any liability to persons other than the EPA Region I who may use or rely upon this report in any way or for any purpose.

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Samples collected 17 through 20 June 2002

ATTACHMENT B - BOULTER FARM AREA SOIL BORING/WELL CONSTRUCTION LOGS START

ATTACHMENT C - BOULTER FARM AREA GROUNDWATER SAMPLE ANALYTICAL RESULTS START
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Final Expanded Site Inspection Report
Boulter Farm Area
Cumberland, Rhode Island

CERCLIS No. RID980672620
RI State ID NO. Not Applicable
MA State ID NO. Not Assigned
TDD No. 03-05-0148
Work Order No. 20110-001-001-6153-70

INTRODUCTION

The Weston Solutions, Inc. (formerly known as Roy F. Weston, Inc.) Superfund Technical Assessment and Response Team 2000 (START) was requested by the U.S. Environmental Protection Agency (EPA) Region I, Office of Site Remediation and Restoration to perform an Expanded Site Inspection (ESI) of the Boulter Farm Area (BFA) property located in the vicinity of Curran Road and Depot Street in Cumberland, Rhode Island (RI). Currently, the site is referred to as "Boulter Farm Area (Lots 363 and 366)" in the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database. However, based on a review of available file information, field observations, and analytical data collected as part of the ESI, on-site source areas have been identified in an additional Lot located in North Attleborough, Massachusetts (MA). As a result, for the purposes of this ESI, the site boundaries have been expanded to include the additional Lot located in MA. The site boundaries are discussed in greater detail below in the Site Description section of this report.

Tasks were conducted in accordance with the ESI scope of work and technical specifications provided by EPA Region I. Historically, portions of the BFA property were used for the disposal of miscellaneous solid waste. A Final Site Inspection Prioritization (SIP) Report for the BFA property was prepared by START on 29 September 1998. No samples were collected as part of the SIP. On the basis of the information provided in the SIP report, the BFA ESI was initiated.

Background information used in the generation of this report was obtained through file searches conducted at the EPA Region I, Rhode Island Department of Environmental Management (RIDEM), telephone interviews with town officials, conversations with persons knowledgeable of the BFA property and conversations with other Federal, State, and local agencies.

This package follows the guidelines developed under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, commonly referred to as Superfund. However, these documents do not necessarily fulfill the requirements of other EPA Region I regulations such as those under the Resource Conservation and Recovery Act (RCRA) or other Federal, State, or local regulations. ESIs are intended to provide a preliminary screening of sites to facilitate EPA Region I's assignment of site priorities. They are limited efforts and are not intended to supersede more detailed investigations.

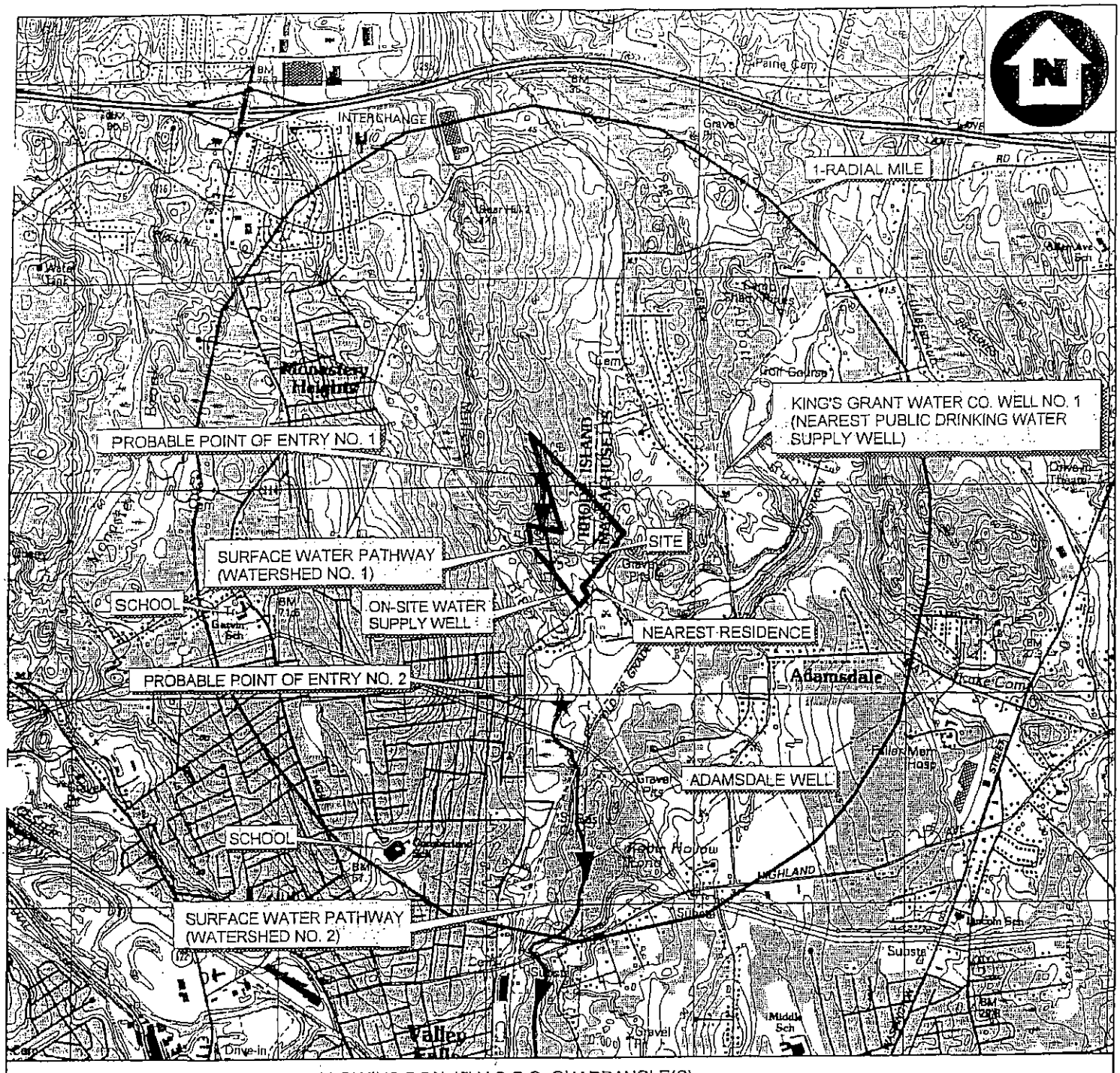
SITE DESCRIPTION

The BFA property is located along the RI/MA State line in the vicinity of Curran Road in Cumberland, Providence County, RI, and in the vicinity of Depot Street and Mendon Road in North Attleborough, Bristol County, MA [2, p. 4; 3; 4, p. 11; 7; 152]. The geographic coordinates for the BFA property, as measured from the approximate center of the property, are 41° 55′ 54.9″ north latitude and 71° 22′ 57.8″ west longitude (Figure 1) [9; 20]. The 39.4-acre property consists of three contiguous parcels of land identified by Cumberland Tax Assessor's Plat No. 19 as Lot Nos. 363 (8 acres) and 366 (21 acres), and by North Attleborough Tax Assessor's Map No. 29 as Lot No. 15 (10.4 acres) (Figure 2) [1; 7; 151-152].

The portion of the BFA property located in RI (Lot Nos. 363 and 366) is currently owned by the Joseph I. Ferreira Trust and occupied by an automobile salvage yard operated by Advanced Auto Recycling, Inc. (Advanced), street address 290 Curran Road. Property representatives include Mr. Robert Yarbroudy, Treasurer, and Mr. Joseph I. Ferreira, Trustee [4, p. 11]. The portion of the BFA property located in MA (Lot No. 15) is residentially zoned, undeveloped woodland currently owned by the Town of North Attleborough, MA [153; 159]. Advanced is currently served by an on-site bedrock water supply well, which is used for sanitary purposes only; drinking water is obtained from a municipal connection. Sanitary wastes are discharged to an on-site septic system [4, p. 21]. The locations of the septic tank and leachfield are unknown to START.

Historically, the BFA property also included Lot Nos. 362, 364, and 365, which are undeveloped lots that are located southwest of Lot Nos. 363 and 366. However, in 1990, based on the results of a 1989 Screening Site Inspection (SSI) conducted by RI DEM, EPA Region I determined that Lot Nos. 362, 364, and 365 should not be included in any CERCLA investigations [21-23; 42]. Subsequently, START personnel did not focus on these lots during the ESI.

The BFA property is located in a predominantly residential area, and is bordered to the north by undeveloped woodland (Lot No. 162) and a portion of an inactive sand and gravel pit formerly owned and operated by the Courtois Sand and Gravel Co. (historically referred to as the "Courtois Borrow Pits") (identified by the Town of North Attleborough Tax Assessor's Office as Lot No. 16 on Map No. 29); to the south by Curran Road and residential properties; to the east by Mendon Road and residential properties; and to the west by Town of Cumberland Conservation Land (Lot No. 9) and an electric transmission line right-of-way operated by the Blackstone Valley Gas & Electric Company. Several trails and dirt roads which are used for biking and off-road recreational vehicles are located in the vicinity of the electric transmission line right-of-way and on Lot Nos. 9, 15, 16, and 162. Lot No. 363 is also bordered to the west-southwest by two unnamed ponds (historically referred to as Pond Nos. 5 and 6) and undeveloped meadows (Lot Nos. 362, 364, and 365), and to the east-southeast by a residence (the nearest residence) (Lot No. 10). Lot No. 366 is additionally bordered to the west by an unnamed pond (historically referred to as Pond No. 1) which is fed by and discharges to an unnamed stream via a 12-inch-diameter pipe. From Pond No. 1, the unnamed stream flows south onto Lot No. 366 and discharges into another unnamed pond (historically referred to as Pond No. 3). From Pond No. 3, the unnamed stream continues to flow south onto Lot No. 363 and discharges into another unnamed pond (historically referred to as Pond No. 4). Pond No. 4 is the terminal pond of these interconnected surface water bodies [2, Figure 2; 4, pp. 4-5; 7; 9; 27, Figure 5; 80; 87; 152].



BASE MAP IS A PORTION OF THE FOLLOWING 7.5 X 15' U.S.G.S. QUADRANGLE(S):

ATTLEBORO, MASSACHUSETTS - RHODE ISLAND. 1987.

0.5 0 0.5 1 1.5 Miles

1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 Feet

0.5 0 0.5 1 1.5 2 2.5 Kilometers

QUADRANGLE LOCATION

SITE LOCATION MAP

BOULTER FARM AREA
CURRAN ROAD AND DEPOT STREET
CUMBERLAND, RHODE ISLAND

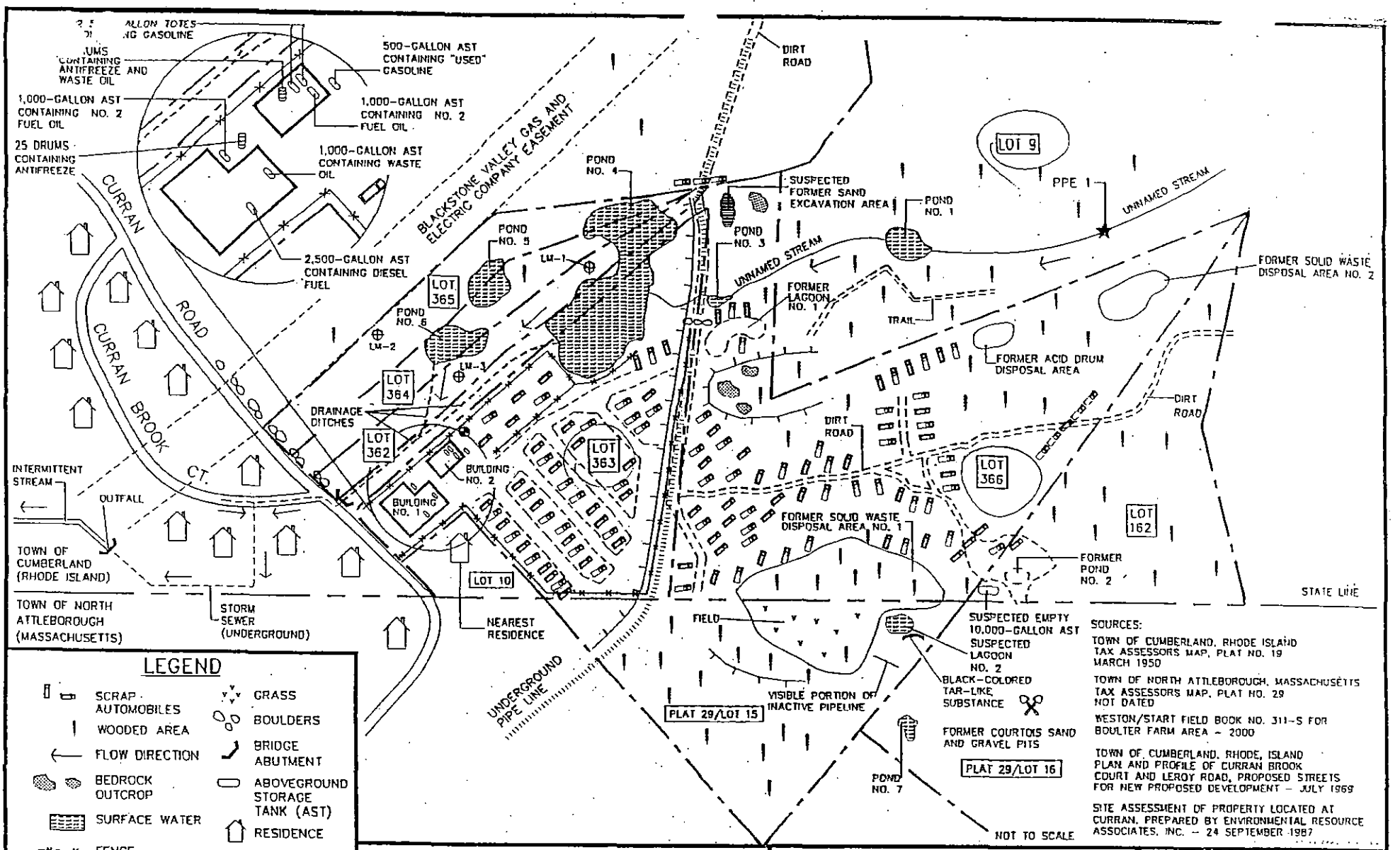
WESTON SOLUTIONS
Restoring Resource Efficiency

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD #	DRAWN BY:	DATE:
03-05-0148	PAUL H. SCHROT	04/30/2003

FILE NAME: E:\ARC_APRS\START2\BOULTER FARM AREA\BOULTERFARM.APR (LAYOUT: FIG1-DRAFT REPORT)

FIGURE 1



SITE SKETCH

BOULTER FARM AREA
CURRAN ROAD AND DEPOT STREET
CUMBERLAND, RHODE ISLAND

WESTON SOLUTIONS

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD NO.:	DRAWN BY:	DATE:
03-05-0148	W. SHAW	04/15/03

FILE NAME: S:\02050121\Figures\Figure_2.dwg

FIGURE 2

The southern portion of Lot No. 363 contains two single-story buildings (referred to by START as Building Nos. 1 and 2), miscellaneous automobile parts storage areas, and a parking area, located south-southeast of Building No. 1. Building No. 1 consists of office space, a customer service area, and approximately four garage bays. Building No. 2 consists of five garage bays and an area used for storage of automobile parts (mostly engines). The central and northern portions of Lot No. 363 are used to store several rows of salvaged automobiles. A portion of Pond No. 4 is located in the northwestern corner of Lot No. 363. Pond No. 4 periodically discharges (dependent upon water level) to a non-perennially flowing drainage ditch located parallel to the southwest property boundary of Lot No. 363. In addition, Pond No. 6 periodically discharges (dependent upon water level) to the drainage ditch; Pond No. 5 appears to be an isolated water body. The drainage ditch conveys the occasional pond discharge southeasterly into a 24-inch-diameter underground culvert at its junction with Curran Road [8]. During an on-site reconnaissance conducted on 2 August 2000, START personnel observed no flow in the drainage ditch [4, p. 4]. During a follow-up reconnaissance conducted on 8 May 2001, START personnel observed flowing water in the drainage ditch [4, p. 13].

A ridge (traversing east-west) is located along the approximate northern portion of Lot No. 363, which is topographically lower than Lot No. 366 and has a gentle grade towards the south-southwest. As a result, some stormwater runoff from the southern portion of Lot No. 363 likely flows overland directly into the drainage ditch. Lot No. 363 is surrounded by a chain-link fence except in the northwestern corner [2, p. 1; 4, p. 8].

In general, Lot No. 366 includes unpaved roads, salvaged automobile storage areas, miscellaneous automobile parts piles, tire piles, Pond No. 3, former sand and gravel extraction areas, and densely wooded undeveloped areas with several bedrock outcrops [2, p. 1; 4, p. 8]. In addition, the approximate southern portion of Lot No. 366 and/or the northern portion of Lot No. 363 is underlain by a 6-inch-diameter underground pipeline operated by the Mobil Pipe Line Company [9; 40-41]. A partially overgrown unpaved road (suspected by START to be the easement for the pipeline) traverses east-west along the approximate southern portion of Lot No. 366. The western portion of the road is blocked with scrap automobiles, and the eastern portion of the road (north of Pond No. 4) is blocked with several large boulders to prevent vehicular access to the BFA property. Two additional dirt roads extend northward from Lot No. 366 into Lot No. 162. These roads are also blocked with salvaged automobiles to prevent vehicular access to the site. There is no fence along the boundaries of Lot No. 366 [2, p. 4; 4, pp. 8, 11].

On 2 August 2000, as part of the ESI, START personnel conducted an on-site reconnaissance of the BFA property. START personnel observed several aboveground storage tanks (ASTs), used by Advanced, located in the vicinity of the on-site buildings. Refer to Figure 2 for the location of these ASTs. One 2,500-gallon AST containing diesel fuel is located in a garage bay in the central portion of Building No. 1. This AST has an associated dispensing pump located along the exterior eastern wall of Building No. 1. One 1,000-gallon AST containing No. 2 fuel oil (used for heating) is located outside along the northwest wall of Building No. 1. A garage bay located in the northern portion of Building No. 1 contains a 1,000-gallon waste oil AST. According to Mr. Yarbroudy, the waste oil is shipped off site by Western Oil Co. to a recycling facility [4, pp. 1-11].

One approximately 500-gallon AST (with a dispensing pump) containing "used" gasoline (generated from salvaged automobiles) is located outside at the northern corner of Building No. 2. The gasoline is used to fuel vehicles involved in on-site operations. One approximately 1,000-gallon AST

containing No. 2 fuel oil (used for heating) is located inside at the northern corner of Building No. 2. Two 500-gallon plastic totes (a type of mobile AST) containing gasoline are located at the rear (west-southwest) of the northernmost garage bay in Building No. 2. These two totes are situated on wooden pallets. Two 500-gallon plastic totes containing gasoline, situated on a metal pallet, are located north of Building No. 2. None of the ASTs or tote tanks on the property have secondary containment. No floor drains were observed in the buildings. According to Mr. Yarbroudy, no underground storage tanks (USTs) exist on the property [4, pp. 1-11].

Approximately 25 metal and plastic 55-gallon drums containing antifreeze are located outside along the south-southwestern wall of Building No. 1. The 55-gallon drums appeared intact, and were stored on industrial shelving. There were no containment berms associated with the area used to store the 55-gallon drums. Six metal 55-gallon drums containing antifreeze were observed by START at the rear (west-southwest) of the northernmost garage bay in Building No. 2. These six drums were situated on wooden pallets [4, p. 3].

During the reconnaissance, START personnel observed an unpaved area located in the south-southwestern portion of Lot No. 366 and north of Pond No. 4. The unpaved area appeared to contain regraded fill and is currently being used as a storage area for salvaged automobiles, automobile parts (including gas tanks and scrap metal), a trash receptacle containing various automobile parts, and approximately five empty, metal 500-gallon ASTs. The ASTs appeared to be those typically used for storing fuel oil or waste oil. START suspects that this area is what previous investigations and inspections have referred to as "Lagoon No. 1" [4, p. 4]. This source area is discussed in further detail in the Operational and Regulatory History and Waste Characteristics section of this report.

START personnel observed that the ground in the northern portion of Lot No. 366 was littered with scattered miscellaneous refuse and solid waste, including (but not limited to) what appeared to be rusted metal paint and/or thinner cans, metal oil cans, large appliances, tires, empty glass bottles, and pieces of broken glass. In addition, several empty rusted 30-gallon metal drums and 55-gallon metal drums were noted. All the solid waste appeared to be severely degraded and in the latter stages of decomposition. It is unknown exactly what the containers formerly held, as labels and/or markings were rusted over. START suspects that this area of the property was a portion of an on-site solid waste disposal area operated in the 1960s and 1970s (henceforth referred to as former solid waste disposal area No. 2). START personnel were unable to determine if the solid waste was only surficial or also at depth and intermixed with the soil. In addition, the aerial extent of the solid waste was difficult to determine, as was its location relative to the property boundaries, as property boundary markers (*e.g.*, stakes, flagging, etc.) were not observed. START noted that this portion of the property may be a gathering place for local youths as evidence of recent campfires and empty bottles were observed. Further evidence that this portion of the property may be used by trespassers as a recreational area included the presence of foot paths, and trails typically used by off-road recreational vehicles. In addition, a tree stand, typical of those used for hunting, was observed north of this area on what was presumed to be Lot No. 162 [4, pp. 4-5].

START personnel observed what appeared to be an empty, steel 10,000-gallon UST or AST lying on its side, a salvaged school bus, and several salvaged trucks in what was presumed to be the northeastern corner of Lot No. 366 (later determined to be located on Lot No. 162). START suspects that this area of the property formerly contained what previous inspections and investigations referred to as Pond No. 2. START personnel did not observe surface water in this portion of the

property; however, a circular depression [approximately 20 feet (ft) in diameter] that may contain water at various times throughout the year, which may be confused as a pond, was observed [4, p. 5]. Since the time of the 2 August 2000 reconnaissance, START has learned that this area of the property includes portions of both Massachusetts and Rhode Island (*i.e.*, Lots 16, 162, and 366) [151].

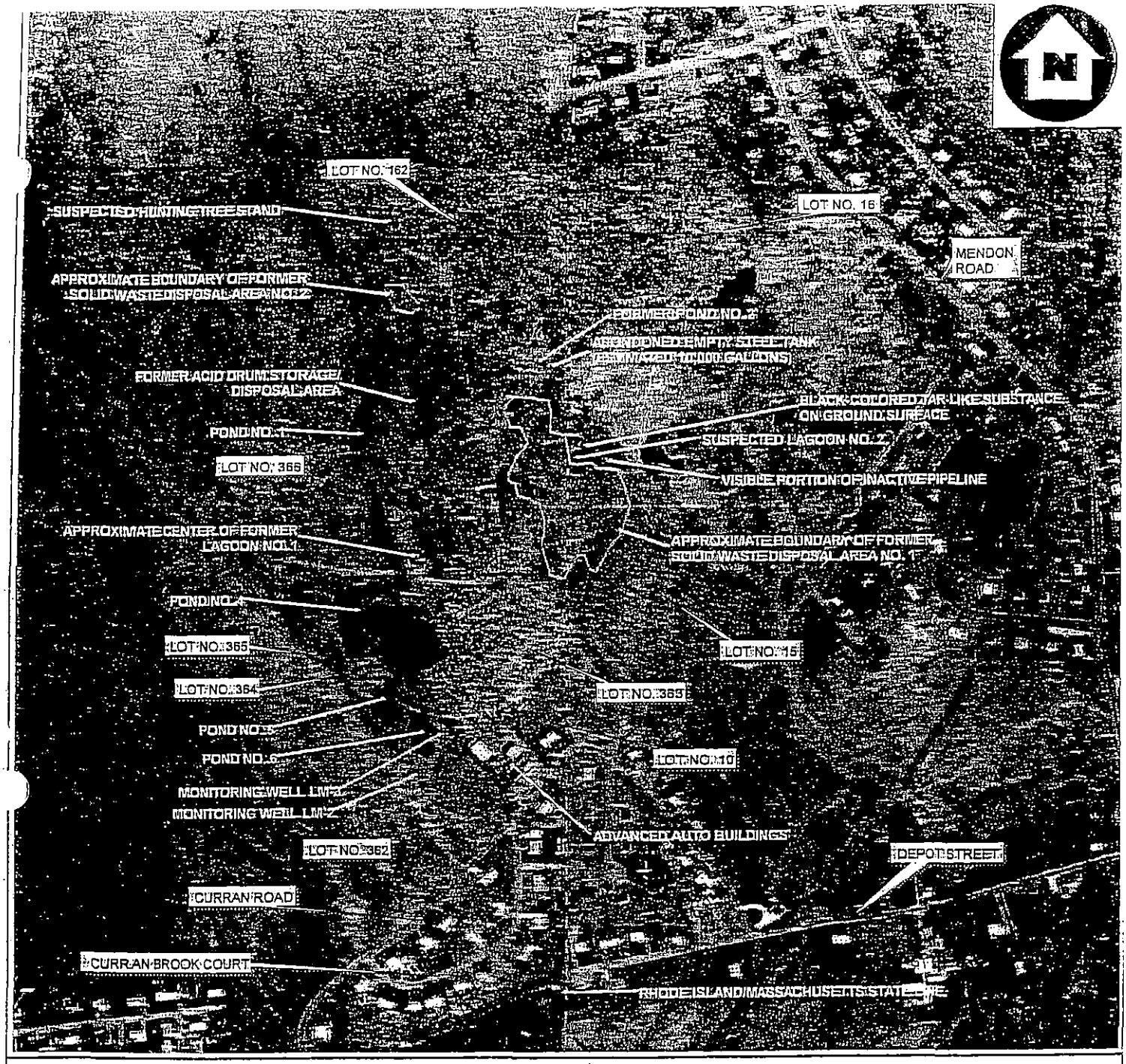
START personnel observed an area located approximately east-northeast of Pond No. 1 and north of former Lagoon No. 1. START suspects that this area of the property is the former location of what previous investigations have referred to as the "former acid drum storage area". A large portion of the former acid drum storage area is now being used for salvaged automobile storage. Glass shards were noted to be scattered over various portions of the ground. START personnel did not observe any drums in this portion of the property. It appears that the drums which were previously reported to be located here either have been removed or have decomposed [4, p. 5]. This source area is discussed in further detail in the Operational and Regulatory History and Waste Characteristics section of this report.

START personnel observed that the ground in what was presumed to be the approximate eastern portion of Lot No. 366 was littered with miscellaneous refuse and solid waste, including (but not limited to) white-colored, insulation-like fabric (possibly fiberglass); glass balls (approximately 1-inch in diameter); black-colored, rubber-like material; coal slag; and various pieces of metal. START suspects that this area of the property is a portion of the on-site solid waste disposal area operated in the 1960s and 1970s (henceforth referred to as former solid waste disposal area No. 1). START personnel were unable to determine if the solid waste was only surficial or also continued at depth and intermixed with the soil [4, p. 6]. This source is discussed in further detail in the Operational and Regulatory History and Waste Characteristics section of this report.

START noted what appeared to be a small pond located slightly east of what was presumed to be the northeastern corner of Lot No. 366 (determined to be actually on Lot No. 15 in MA). START suspects that this pond is what previous investigations and inspections have referred to as "Lagoon No. 2". In addition, START suspects that this pond may be the area of the property that was reported by the Rhode Island Department of Health (RI DOH) to be used for septage dumping in 1976 [4, p. 6]. This source is discussed in further detail in the Operational and Regulatory History and Waste Characteristics section of this report.

No monitoring wells were observed by START on Lot Nos. 363 and 366 of the BFA property; however, START personnel observed two monitoring wells, suspected to be LM-2 and LM-3, on Lot Nos. 362 and 365 [4, p. 13]. These monitoring wells were installed in 1987 as part of an environmental site assessment of Lot Nos. 362, 364, and 365 [39, p. 4]. These monitoring wells are discussed in further detail in the Operational and Regulatory History and Waste Characteristics and Groundwater Pathway sections of this report.

On 8 May 2001, as part of the ESI, START personnel conducted an additional on-site reconnaissance of the BFA property. START personnel were joined by Mr. Matthew Audet of EPA Region I and Ms. Cynthia Gianfrancesco and Mr. Lou Macarone of RI DEM. START personnel utilized a global positioning system (GPS) unit to record the location of several site features and potential source areas (Figure 3) [4, p. 13].



BASE AERIAL PHOTO IS PART OF THE FOLLOWING 1 METER RESOLUTION 1:5,000 SCALE BLACK AND WHITE DIGITAL ORTHOGRAPHIC QUARTER QUADRANGLES: MASSACHUSETTS 1_213850 AND 1_213854

NOTE: EXCEPT FOR THOSE ALONG STATE LINE, PROPERTY LOT LINES ARE APPROXIMATE.

0.1 0 0.1 0.2 0.3 0.4 0.5 Miles

500 0 500 1000 1500 2000 2500 Feet

0.1 0 0.1 0.2 0.3 0.4 0.5 Kilometers

DIGITAL ORTHOGRAPHIC QUARTER QUADRANGLES

BOULTER FARM AREA
CURRAN ROAD AND DEPOT STREET
CUMBERLAND, RHODE ISLAND

WESTON SOLUTIONS
Restoring Resource Efficiency

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD #	DRAWN BY:	DATE:
02-05-0121	S.W./P.H.S./R.M.	03/25/2003

FILE NAME:
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BOULTERFARM_GPS.APR (LAYOUT: FIG1-DRAFT REPORT)

FIGURE 3

START personnel observed an area of what appeared to be oil-saturated soil located directly adjacent to (west-southwest of) suspected Lagoon No. 2. The soil was noted by START personnel to exhibit a strong odor typical of fuel oil. Screening of the ambient air immediately above the soil with a flame ionization detector (FID) and photoionization detector (PID) reveled no readings above background levels. A black-colored tar-like substance, which had an oily odor, was observed on the ground surface east and extending northwest of suspected Lagoon No. 2 [4, p. 16].

START personnel observed the remnants of what appeared to be an aboveground pipeline, located east of suspected Lagoon No. 2. The approximate 250-foot section of pipeline was located atop a berm traversing southwest-to-northeast towards the former Courtois sand and gravel pits. Several piles of miscellaneous solid waste, including metal 55-gallon drums and metal tanks, were also observed in the vicinity of the pipeline [4, p. 16].

START personnel observed miscellaneous refuse and solid waste, including (but not limited to) white-colored insulation-like fabric (possibly fiberglass) and approximately 1-inch-diameter glass balls, in what was presumed to be the eastern portion of Lot No. 366. According the Ms. Gianfrancesco (RI DEM), the glass balls may be a by-product of an Owens Corning manufacturing process, and are commonly found throughout New England where Owens Corning has disposed of solid waste. START suspects that this area of the property was a portion of the on-site solid waste disposal area operated in the 1960s and 1970s. START members observed signs indicating the location of the Mobil underground pipeline which underlies the berm located along the boundary between Lot Nos. 363 and 366 [4, pp. 15-16].

On 3 April 2002, as part of the ESI, START personnel conducted an additional on-site reconnaissance of the BFA property. START personnel were accompanied by Mr. Audet of EPA Region I, Ms. Susan Sundermeyer of the Massachusetts Department of Environmental Protection (MA DEP), Ms. Gianfrancesco and Ms. Shelley Ducharme of RI DEM, Mr. Dave Palochko of Owens Corning, and Mr. Richard Eby of Owens Corning's environmental consultant, Arcadis G&M, Inc. (Arcadis). The additional reconnaissance was conducted in order to show the Owens Corning representative the waste present at the BFA property. START personnel utilized a GPS unit to record the location of several site features and potential source areas [4, pp. 22-28].

START personnel observed the 1-inch-diameter glass balls and the white-colored fiberglass located in former solid waste disposal area No. 1 in the eastern portion of Lot No. 366. Mr. Palochko verbally confirmed that the glass balls are melted down and used by Owens Corning to make other products. In addition, Mr. Palochko stated that the white-colored fiberglass material is used by Owens Corning to reinforce textile products [4, p. 23].

START personnel observed piles of crushed asphalt located near the salvaged school bus in the southeastern corner of Lot No. 162 [4, p. 26].

OPERATIONAL AND REGULATORY HISTORY AND WASTE CHARACTERISTICS

An 1894 U.S. Geological Survey (USGS) topographic map depicts no structures on the property at that time; however, a road is depicted. A 1944 USGS topographic map (based on surveys conducted in 1937 and 1938) depicts two buildings. In addition, the road earlier depicted is now (1944) indicated as "unpaved or private" [106]. The earliest known owner of the property is Mr. Samuel

Boulter, who resided and opened various businesses on the property between 1946 and 1983. The residence's street address was 514 Curran Road, Cumberland, Rhode Island. According to Mr. Yarbroudy, the residence located on Lot No. 10 (northeast of Building No. 1) is the former Boulter residence [4, p. 21]. Sometime in the 1940s, Mr. Boulter operated a pig farm on site. In 1949, Mr. Boulter sold Lot No. 15 to the Courtois Sand and Gravel Co. (Courtois), and portions of the property were excavated for sand and gravel. Based on historical aerial photographs and USGS topographic maps of the site, the nearby ponds appear to have been created and/or altered in size and shape as a result of these historical sand and gravel operations. Courtois maintained ownership of Lot No. 15 until October 2000, when the property was acquired by the Town of North Attleborough, MA [9; 32, p. 31; 87-91; 106; 153]. In the 1960s, Mr. Boulter began storing "junk" cars on portions of the property. From the late 1960s until 1976, Mr. Boulter operated a non-licensed solid waste disposal area on the property, primarily on portions of what is currently Lot Nos. 15 and 366 [92-93]. Operation of the "dump" ceased sometime in 1976. In 1983, Lot Nos. 362 through 366 were sold to Leo R. and Michele L. Fontaine, who subsequently sold Lot No. 363 to Mr. Ferreira the same year. In approximately 1984, Mr. Ferreira began operating Joe's Recycling, Inc., an automobile salvage business. In 1985, the Fontaines sold Lot Nos. 362, 364, and 365 to LM Nursing Services, Inc. (LM Nursing). Also in 1985, JIF Property, Inc. purchased Lot No. 366 from the Fontaines [2, p. 5; 27, p. 2].

On 2 April 1968, representatives from RI DOH; the Chief of the Valley Falls, RI, Fire Department; and the Chief of the North Attleborough, MA, Fire Department inspected the "dump" on the BFA property. RI DOH reported the presence of "...large piles of demolition mixed in with regular dumping materials." Reportedly, the Chief of the North Attleborough, MA, Fire Department indicated that "...[the] dumpsite was in North Attleboro [Attleborough] and was his territory" [92].

On 17 February 1970, RI DOH received a complaint that open burning of demolition waste was occurring on the BFA property. A subsequent RI DOH inspection revealed that the burning was occurring on the portion of the "dump site" which was located in North Attleborough, MA [93].

On 15 April 1970, fire departments from North Attleborough, MA and Cumberland, RI responded to a fire (burning tires) at "Boulter's Dump" [94].

On 28 January 1972, RI DOH conducted an inspection of the BFA property. RI DOH reported that there was "...substantial amounts of refuse being dumped there" [95].

On 10 July 1972, the Massachusetts Department of Public Health (MA DPH) submitted a communication to Mr. Boulter regarding an inspection of the BFA property on 27 June 1972. The communication stated that MA DPH personnel "...observed open storage of demolition debris on your property in North Attleborough, Massachusetts." In addition, the communication stated that this debris was apparently being reduced by burning. MA DPH informed Mr. Boulter that this practice must cease [27, p. 3; 96].

In 1974 and 1975, "Landfill Disposal Site Inspection Reports" completed by officials from RI DOH indicated that solid waste disposed on the BFA property consisted of "general refuse", wood, 55-gallon drums, metal, pallets, trees and brush, "construction waste", and cardboard. These reports also indicated that insufficient cover was being applied to the waste [97].

On 15 June 1976, RI DOH performed an inspection of the BFA property and reported that "...a natural gully area" on the property (near the RI/MA State line) was being used for the dumping of septage. Subsequently, on 22 June 1976, RI DOH ordered Mr. Boulter to prevent further disposal of septage on the property [2, p. 5; 98-99].

On 19 July 1976, because Mr. Boulter intended to cease landfilling operations, RI DOH submitted a communication to Mr. Boulter regarding the closure of his "solid waste management facility." The communication indicated that in order for operations to be considered terminated, "...a certificate of closure must be issued [by RI DOH] to all sanitary landfills." RI DOH required that "...a total of two feet of cover material be applied to the entire site" [101]. START was unable to determine if this was completed.

An RI DOH inspection of the property on 22 September 1976 reported that "...the site is inactive with no sign of fresh dumping." RI DOH also reported that several areas of waste, including wooden pallets, fiberglass, and "asphalt shingles", required cover [100].

On 24 April 1980, the Massachusetts Department of Environmental Quality Engineering [MA DEQE (now known as MA DEP)] collected a groundwater sample from the Adamsdale Well, a public drinking water supply well (screened in overburden) being constructed by the Town of North Attleborough, MA. The Adamsdale Well (initially referred to as test well T-8) is located in North Attleborough, MA, approximately 3,000 ft south-southeast of the BFA property. See Figure 1 for the location of the Adamsdale Well in relation to the BFA property. Analysis of the Adamsdale Well groundwater sample revealed it to be contaminated with three volatile organic compounds (VOCs), consisting of 1,1,1-trichloroethane (TCA); trichloroethene (TCE); and tetrachloroethene [also referred to as perchloroethylene (PCE)]. In addition, gross beta radiation was detected. The presence of radionuclides was not confirmed in later samples [28; 32, pp. 1, 47, 52, Appendix D]. Analytical results of this groundwater sample are discussed in greater detail in the Groundwater Pathway section of this report.

On 14 May 1980, MA DEQE again collected groundwater samples from the Adamsdale Well. Analysis again revealed the presence of VOCs, including TCA [6.0 parts per billion (ppb)], TCE (2.1 ppb), and trans-1,2-dichloroethene (trans-1,2-DCE) (4.9 ppb) [24, p. 8; 27, Table 1; 32, pp. 52-53, Appendix D].

Between approximately June and October 1980, in an effort to try to identify the extent of the groundwater contamination, MA DEQE collected groundwater samples from several wells located in MA, in the vicinity of the BFA property. Groundwater samples were collected from two public drinking water supply wells, including the Adamsdale Well and the King's Grant Water Company (KGWC) Well No. 1 (located in North Attleborough, approximately 0.4 miles east-northeast of the BFA property); from a private water supply well located on the Courtois Sand and Gravel Co. property; and from a test well (T-80) located southeast of the BFA property. See Figure 1 for the location of KGWC Well No. 1 in relation to the BFA property. No VOCs were detected in the groundwater samples collected from the "Courtois Well"; however, one or more of the following six VOCs were detected in three groundwater samples collected from the Adamsdale Well, KGWC Well No. 1 and T-80: TCA; TCE; PCE; carbon tetrachloride; 1,1-dichloroethane (1,1-DCA); and trans-1,2-DCE [9; 24, p. 8; 27, Table 1; 32, Plan 1, Appendix D]. These groundwater sampling events,

including analytical results, are discussed in greater detail in the Groundwater Pathway section of this report.

On 19 June 1980, officials from RI DEM, RI DOH, the Town of North Attleborough, and the "State of Massachusetts" (presumably MA DEQE), conducted an inspection of the BFA property in order to determine if the property was a potential source of the contamination detected in the Adamsdale Well. The inspection revealed that "The site was inactive and was approximately a ten acre area which contained spots of partially covered refuse." In addition, the inspection revealed the presence of approximately 20 empty and corroded 55-gallon drums [109].

During summer 1980, the Town of Cumberland received an anonymous letter alleging that in approximately 1970, the Sayles Finishing Company (a furniture refinisher) had buried an unknown number of drums and/or dumped wastes, including lacquer, acetone, acetate, and urethane, in a sand and gravel pit located on Curran Road; however, the exact location was not specified [2, p. 6; 24, p. 5; 27, p. 3]. START personnel were unable to locate any additional information in available files pertaining to this allegation.

On 8 September 1980, RI DEM personnel performed an inspection of the BFA property and reported that two areas on the property revealed visual evidence of oil disposal [24, Appendix I]. START personnel were unable to locate additional information in the available files regarding this inspection.

On 24 February 1981, MA DEQE collected a groundwater sample from test well T-80. The sample was analyzed for VOCs (method unknown) at Lawrence Experiment Station (LES); however, no VOCs were detected in the sample [27, Table 1; 32, Appendix D].

On 1 February 1981, the BFA property was added to the CERCLIS database [2, p. 5; 3].

On 3 March 1981, EPA received a letter from the Town of North Attleborough, Board of Public Works. The letter indicated that contaminants had been detected in one of their public drinking water supply wells (*i.e.*, the Adamsdale Well); however, steps had not been taken in determining if sources of contamination existed on the BFA property. As a result, the town requested EPA involvement [28].

On 12 April 1981, the Valley Falls and Ashton Fire Departments in Cumberland responded to a fire involving underbrush and approximately 30 "steel and fiberboard barrels" (presumably drums) "containing paint-like substances" on the BFA property. Reportedly, the fire occurred in a field located north of the intersection of Curran Road and Curran Brook Court (assumed by START to be Lot Nos. 362, 364, or 365) [27, p. 3; 102].

On 13 April 1981, RI DEM personnel performed an inspection of the fire scene and reported that the drums, some of which contained material similar to "a water base paint", were so burned that they were unable to ascertain where the drums came from or what material they contained. Subsequently, RI DEM personnel collected two sludge samples from the drums. Extraction Procedure (EP) Toxicity analysis revealed the presence of arsenic, barium, chromium, lead , mercury, and silver [27, p. 3; 29; 31]. Analytical results of these samples are discussed in greater detail in the Waste/Source Sampling section of this report.

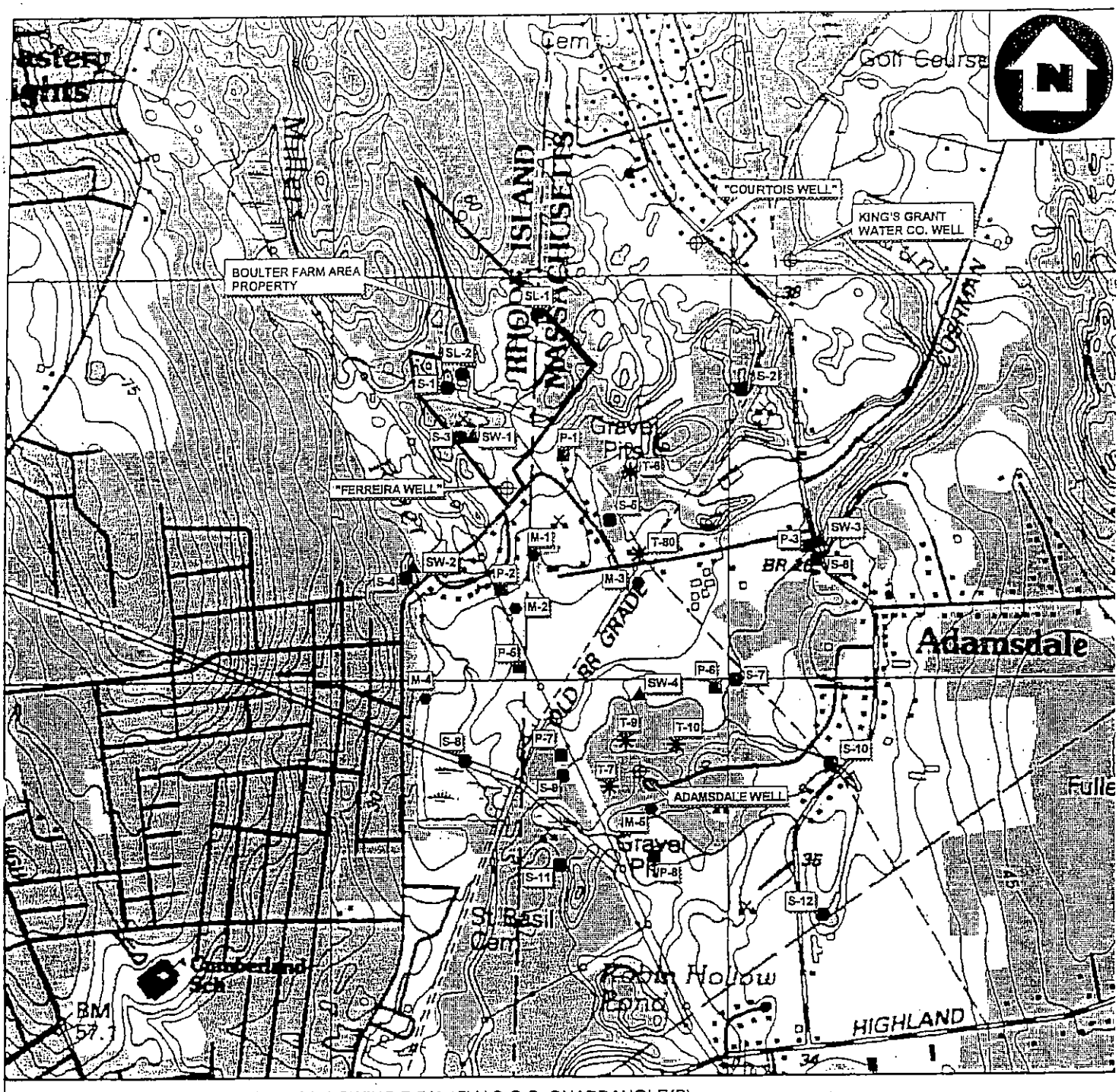
On 16 April 1981, RI DEM personnel and representatives of the Pawtucket Water Supply Board (PWSB) performed an inspection of the BFA property in order to determine its' "...potential impacts on groundwater." RI DEM reported that there was "...evidence throughout of barrels having been dumped but they are very old and deteriorated." In addition, there was "...evidence of old oil tanks (with surrounding fire damage), fiberglass dumping and rusted gasoline tanks." RI DEM concluded that any drums that had been previously buried and/or discarded on the property, specifically, those drums referred to in the anonymous letter received by the Town of Cumberland in 1980, had likely deteriorated [30].

On 10 June 1981, in support of a Preliminary Assessment (PA) and a Site Inspection (SI) being conducted by EPA, both EPA and RI DEM personnel performed an inspection of the BFA property [25, p. 1; 26, p. 1]. EPA reported that the site was "inactive" and use of the property at the time was limited to off-road motorcycle riding and a gathering place for local youths. The only building reported to be on site at that time was the "Sam Boulter Family" residence, which was apparently served by an on-site 50-ft-deep overburden water supply well [24, p. 5; 25, p. 1; 58, p. 13]. START was unable to determine the date at which this well was installed; however, available information indicates the well's earliest reported existence is August 1946, and its use was reported as "domestic" [58, pp. 11, 13]. START was unable to determine whether or not this well still exists and if it continues to serve the former Boulter residence as a potable water supply. As a result, this well does not appear on any figures in this evaluation. EPA reported that any drums/waste associated with the April 1981 fire had been removed by either the property owner or the town. In addition, large boulders had been placed along Curran Road (along Lot Nos. 362, 363, and 365) to prevent vehicular access. No visible evidence of any other potential sources of contamination, except for scattered trash, including glass, tires, and shingles, were reported by EPA [24, p. 12; 25, p. 3; 26, p. 7].

During summer 1981, EPA prepared a "Final Site Assessment Report" for the BFA property which summarized the results of the PA and the SI. No environmental samples were collected as part of the PA and the SI [24, p. 12].

On 4 January 1984, MA DEQE collected groundwater samples from the Adamsdale Well and the KGWC's Well No. 1. TCA was detected in the sample collected from the KGWC's Well No. 1, and total-1,2-dichloroethene (total-1,2-DCE); TCA; and TCE were detected in the groundwater sample collected from the Adamsdale Well [32, pp. 47-48, 53, Appendix D]. Analytical results of these groundwater samples are discussed in greater detail in the Groundwater Pathway section of this report.

In 1984, on behalf of MA DEQE and the Town of North Attleborough, Whitman & Howard, Inc. (W&H) of Wellesley, MA initiated a hydrogeological investigation regarding the source of the contamination detected in the aquifer from which the Adamsdale Well draws water. W&H's study area comprised approximately 1.2 square miles (mi^2) in the vicinity of the Adamsdale Well, with the investigation consisting of installing piezometers, monitoring wells, and surface water depth gauges (staffs); conducting seismic, land use, waste disposal area, and water quality hazard surveys; and collecting groundwater and surface water samples (Figure 4). Since the BFA property is located within the drainage basin of the aquifer that serves the Adamsdale Well, W&H identified the BFA property, in addition to several other properties, as a potential (and possibly primary) source of the VOC contamination in the Adamsdale Well [32, pp. 1-2, 20].



BASE MAP IS A PORTION OF THE FOLLOWING 7.5 X 15' U.S.G.S. QUADRANGLE(S):

ATTLEBORO, MASSACHUSETTS - RHODE ISLAND. 1987.

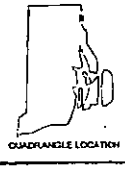
SOURCE OF SAMPLE LOCATIONS: WHITMAN & HOWARD, INC. FINAL REPORT ON CONTAMINATION CORRECTION STUDY - SEPTEMBER 1986.

NOTE: SAMPLE LOCATIONS ARE APPROXIMATE

0.1 0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 Miles

500 0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 Feet

0.2 0 0.2 0.4 0.6 0.8 1 Kilometers



WHITMAN & HOWARD SAMPLE LOCATION MAP

DATE COLLECTION POINTS, 1984 - 1985
CONTAMINATION CORRECTION STUDY
ADAMSDALE WELL
NORTH ATTLEBOROUGH, MASSACHUSETTS

WESTON SOLUTIONS
Restoring Resource Efficiency

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD #	DRAWN BY:	DATE:
03-05-0148	PAUL H. SCHROT	04/03/2003

FILE NAME: E:\ARC_APRS\START2\BOULTER FARM AREA BOULTERFARM_W&HSAMPLES.APR (LAYOUT: FIG1-Draft Report)

FIGURE 4

Between 18 and 21 December 1984, Clarence Welti Associates, Inc., under the supervision of W&H personnel, installed nine piezometers [P-1 through P-6, P-7 (P-7S and P-7D), and P-8] at eight locations in the study area (Figure 4). W&H reported that one of the objectives of the piezometers was to understand groundwater flow direction prior to the installation of a permanent monitoring well system. None of the piezometers were installed on the BFA property; the nearest piezometers (P-1 and P-2) were installed approximately 600 ft east and south, respectively [32, pp. 15-16].

On 28 December 1984, W&H personnel conducted an inspection of the BFA property (occupied at that time by an "automobile junk yard" named "Joe's Auto Recycling"). W&H reported the presence of two "sludge lagoons" (later referred to by RI DEM as Lagoon Nos. 1 and 2) and an unspecified number of "landfill areas" on the BFA property. Lagoon No. 1, reported to be located "...at the base of a hill where home appliances and other refuse have been landfilled", was described as containing waste consisting of "...leaves and soil saturated with an odorless tarry substance about 1" [inch] thick." Lagoon No. 1 was further described as having an inlet and an outlet, and containing a "...few feet of water." Lagoon No. 2, reported to be located east of the BFA property (*i.e.*, in MA), was described as being "...a small depression filled with water with no inlet or outlet." The bed of Lagoon No. 2 was reported to be covered "with about 4 inches of leaves and soil saturated with tarry substances having oily odors." Moreover, W&H personnel reported the presence of a "buried dump", containing "...partly exposed rusted-out drums, auto parts, and refuse of wood, glass, rubber, plastic, metal and fiberglass", located "adjacent" to Lagoon No. 2 [32, p. 43].

W&H personnel collected one "soil" sample (SL-2) from Lagoon No. 1 and one "soil" sample (SL-1) from Lagoon No. 2 (Figure 4). In addition, one surface water sample (SW-1) was collected from the drainage ditch located along the southwestern property boundary, and groundwater samples were collected from the "Courtois Well" and from the Adamsdale Well (Figure 4) [32, pp. 18-19, 42-43]. All the samples were submitted to Resource Analysts, Inc. (RAI) of Hampton Falls, New Hampshire, and analyzed for VOCs by EPA Method 624. In addition, samples SL-1 and SL-2 were analyzed for "base/neutral and acid extractable" compounds [semivolatile organic compounds (SVOCs)] by EPA Method 625 [32, pp. 42-43, Appendix D].

No VOCs were detected in the groundwater sample collected from the "Courtois Well" or in samples SL-1 and SL-2. One VOC (TCA) was detected in the groundwater sample collected from the Adamsdale Well. Six VOCs were detected in SW-1 above instrument detection limits and included the following: acetone ("> 650 ppb"); 1,1-dichloroethene (1,1-DCE) (5 ppb); methyl isobutyl ketone [MIBK (also known as 4-methyl-2-pentanone)] (480 ppb); 1,1,2,2-tetrachloroethane (1,1,2,2-PCA) (6 ppb); tetrahydrofuran (THF) (45 ppb); and toluene (21 ppb). Three SVOCs were detected in sample SL-1 [27, Table 3; 32, pp. 42-43, 54, Appendix D; 33]. Analytical results of samples SL-1 and SL-2 are discussed in greater detail in the Waste/Source Sampling section of this report.

On 2 January 1985, W&H personnel installed 12 surface water depth staffs (S-1 through S-12) in the study area (Figure 4). W&H reported that the data collected from the depth staffs would be integrated with data collected from the piezometers. Two depth staffs (S-1 and S-2) were installed on the BFA property [32, p. 19, Plan 1].

On 20 February 1985, W&H personnel collected groundwater samples from the Adamsdale Well. Analysis of the samples revealed the presence of the following substances: methylene chloride, TCA, acetone, and zinc. In addition, a "trace" concentration of trans-1,2-DCE was detected [32, p. 54, Appendix D]. Analytical results of these groundwater samples are discussed in greater detail in the Groundwater Pathway section of this report.

On 2 May 1985, in addition to collecting groundwater samples from several piezometers and test wells that W&H had installed in the study area, W&H personnel collected a groundwater sample from the private water supply well (screened in bedrock) located in the southern portion of the BFA property. The well was referred to as the "Ferreira Well", likely because at that time, the BFA property was owned by Mr. Ferreira who operated Joe's Auto Recycling. The sample was submitted to RAI and analyzed for VOCs by EPA Method 624; however, no VOCs were detected [32, Appendix D]. Available file information does not indicate when this well was installed or if it was used as a source of drinking water at that time. However, if this is the on-site bedrock water supply well (located on Lot No. 363) as assumed by START, the well is currently used only for sanitary purposes [4, p. 21].

On an undocumented date during the summer of 1985, RI DOH collected a surface water sample from a "culvert" on the BFA property. START was unable to determine the sample number/identifier or the exact location or date at which this surface water sample was collected. As a result, this sample is not depicted on figures in this report. However, START assumes that "culvert" refers to the drainage ditch located along the southwestern property boundary. Analysis of the sample revealed the presence of three VOCs, including acetone (3 ppb), MIBK (39 ppb), and THF (36 ppb) [27, p. 4, Table 5].

During July 1985, Clarence Welti Associates, Inc., under the supervision of W&H personnel, installed 11 overburden monitoring wells [M-1, M-2 (M-2S and M-2D), M-3 (M-3S, M-3I, and M-3D), M-4 (M-4S, M-4I, and M-4D), and M-5 (M-5S and M-5D)] at five locations in the study area (Figure 4). W&H reported that the monitoring wells were "concentrated northwest of the Adamsdale Well [*i.e.*, southeast of the BFA property] because we [W&H] suspected the former Boulter Farm to be the prime contamination source" [32, p. 20]. However, none of the monitoring wells were installed on the BFA property; the nearest monitoring well (M-1) was installed approximately 600 ft south [32, Plan 1].

On 22 August 1985, W&H collected groundwater samples from the Adamsdale Well, from the recently installed 11 monitoring wells, and from four piezometers in the study area. No VOCs were detected in groundwater samples collected from monitoring wells located directly downgradient of the BFA property. Three VOCs (TCA, carbon disulfide, and TCE) were detected in the sample collected from the Adamsdale Well. One VOC (carbon disulfide) was detected in a sample collected from a piezometer [32, pp. 25, 54, Plan 1, Appendix D]. Analytical results of these groundwater samples are discussed in greater detail in the Groundwater Pathway section of this report.

On 9 October 1985, RI DEM conducted a hazardous waste generator inspection at the BFA property, operated at that time as "Joe's Recycling." RI DEM reported that wastes generated on site included lacquer thinner, motor oil, antifreeze, and gasoline [34].

On 11 October 1985, RI DEM and RI DOH conducted an inspection of the BFA property. RI DEM personnel reported observing "...an area of the old landfill where a variety of rusted, corroded drums were located." Based on a majority of these drums (approximately 15) being poly-lined and the presence of rust-stained soil throughout the general area, RI DEM concluded that the drums, which were empty, may have previously contained acid. This portion of the property located on Lot No. 366, has since been referred to as the "acid drum storage area" or the "acid barrel disposal area." RI DEM also reported the presence of an on-site "chemical lagoon" (*i.e.,* Lagoon No. 1) [27, p. 3; 35]. This chemical lagoon was reported to be approximately 20,000 square feet (ft^2) and 2 ft deep, and was described "...as a land depression that has been used for what appears to be chemical dumping" [27, p. 3; 35]. Material in the area was "...an oily sludge-like matter with an oil/solvent odor." RI DEM reported that PID readings from 40 to 60 parts per million (ppm) were recorded. Based on the documentation, it is unclear if this reading is from the ambient air or a head space reading. Subsequently, RI DEM personnel collected one sludge sample (001-JPH-BF) and one water sample (003-JPH-BF) from Lagoon No. 1 [35; 103]. The exact locations from which samples 001-JPH-BF and 003-JPH-BF were collected are not provided in file information. As a result, these samples are not illustrated on any figures in this report.

No VOCs were detected in sample 001-JPH-BF; however, two VOCs (trans-1,2-DCE and methylene chloride) were detected in sample 003-JPH-BF. Total metals results for sample 003-JPH-BF indicated detectable levels of arsenic, barium, cadmium, chromium, lead, mercury, and selenium. In addition, "PCB [polychlorinated biphenyls]/pesticides" were detected in sample 003-JPH-BF. The available references do not contain the specific PCB and/or pesticide compounds detected. Metals detected (by EP Toxicity) in sample 001-JPH-BF included arsenic, barium, lead, and selenium [27, Table 5; 103]. Analytical results of these samples are discussed in greater detail in the Waste/Source Sampling section of this report.

In July 1986, after learning that hazardous substances may be present on the property, a developer reportedly rescinded their request to the Cumberland Town Council to re-zone a portion of the BFA property (specifically Lot Nos. 362, 364, and 365) for residential units [43].

In September 1986, W&H completed its investigation for MA DEQE and the Town of North Attleborough. W&H concluded in their September 1986 report, entitled *Final Report on Contamination Correction Study Adamsdale Well*, that an approximately 500-to-1,000-ft-wide low-level (less than 25 ppb) VOC-contaminated plume was flowing south in the center and deepest part of the aquifer toward the Adamsdale Well. The plume reportedly extended from somewhere north of KGWC's Well No. 1 south to Pawtucket Well No. 9, another VOC-contaminated public drinking water supply well located in Cumberland, RI, and approximately 0.6 miles south of the BFA property. W&H reported that the concentrations of VOCs detected in groundwater samples collected from the Adamsdale Well and from other groundwater samples collected from the plume were below the (then current) EPA proposed Recommended Maximum Contaminant Levels (RMCLs) and Maximum Contaminant Levels (MCLs). With regard to the BFA property, W&H's report stated that "...the former Boulter farm, which was initially considered a probable source, does not appear to be related to the current plume. This does not necessarily preclude the farm from past releases" [32, p. 62]. In addition, W&H reported that although operations by Joe's Auto Recycling on the BFA property were apparently releasing VOCs, as evidenced by the analysis of sample SW-1 collected (on 28 December 1984) from the drainage ditch, the VOCs did not chemically match the contaminants found in the Adamsdale Well [32, p. 43]. Moreover, none of the VOCs detected in

the Adamsdale Well were detected in monitoring wells located directly downgradient of the BFA property [32, p. 44].

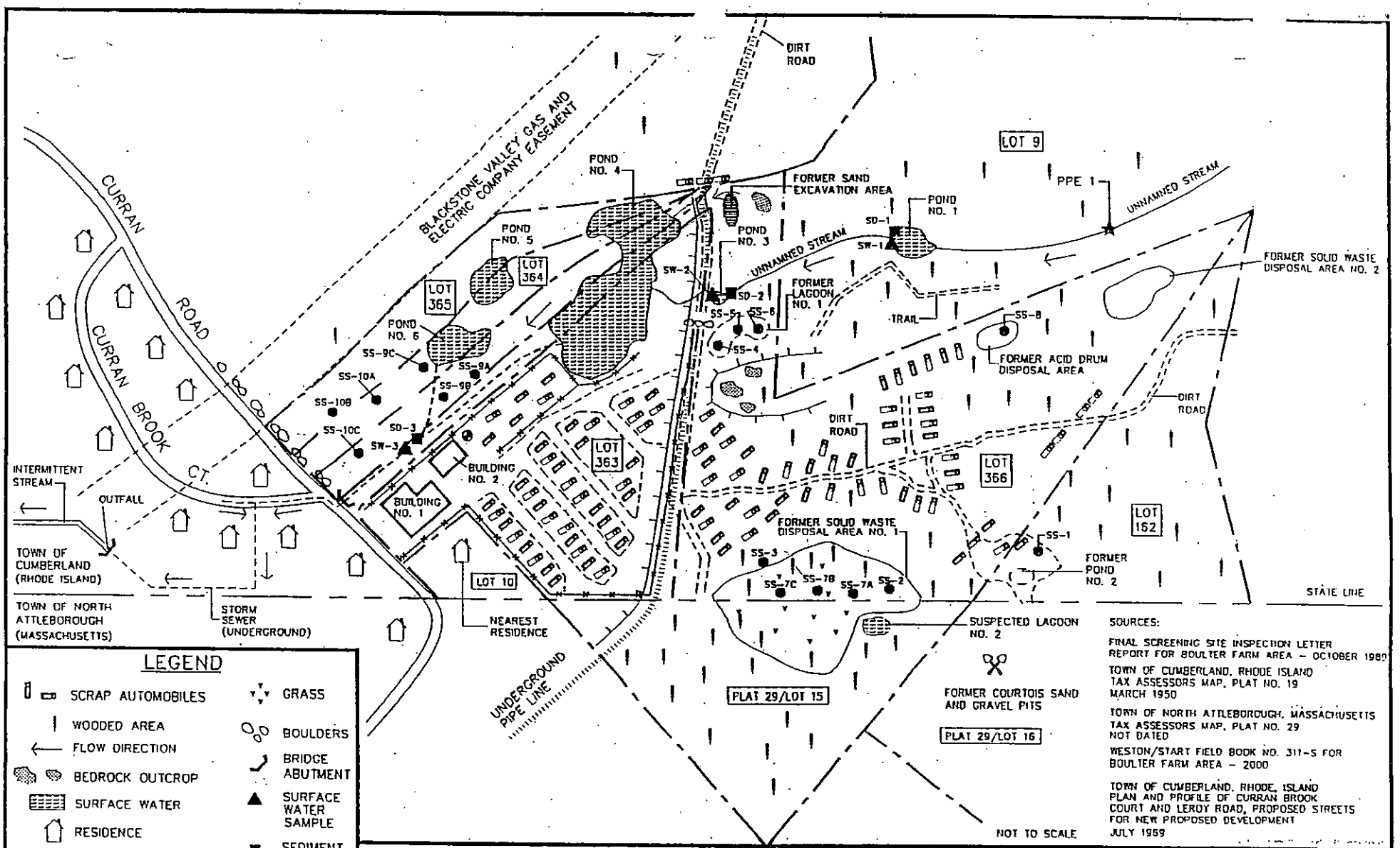
On 23 and 27 April 1987, in support of the SSI, personnel from RI DEM and Environmental Science Services (ESS) of Providence, RI, collected three sediment samples (SD-1 through SD-3), three surface water samples (SW-1 through SW-3), and 16 soil samples (SS-1 through SS-6, SS-7A, SS-7B, SS-7C, SS-8, SS-9A, SS-9B, SS-9C, SS-10A, SS-10B, and SS-10C) from the BFA property (occupied at that time by "Joes Auto Salvage") (Figure 5) [27, pp. 4-5, Tables 6-8; 36-37].

No metals were detected at elevated levels in any of the surface water samples. One VOC (methylene chloride) was detected in a duplicate sample of SW-3. No PCBs or pesticides were detected in the sediment samples. One metal (mercury) was detected in sediment sample SD-1. Oil and grease were also detected in the sediment samples [27, Tables 6-7].

Laboratory analysis of soil samples SS-1 and SS-4 revealed the presence of two PCBs (Aroclor-1242 and Aroclor-1260) above instrument detection limits. VOCs were only detected in sample SS-4 and included trans-1,2-DCE; TCA; TCE; PCE; toluene; and xylenes. Only one pesticide (lindane) was detected (by EP Toxicity) in the soil samples. The following metals were detected (by EP Toxicity) in the soil samples above instrument detection limits: barium, cadmium, and lead. Concentrations of oil and grease were detected in samples SS-1, SS-4, and SS-8 [27, p. 5, Table 8; 38; 39, Appendix]. Analytical results of the samples collected as part of the SSI are discussed in greater detail in the Waste/Source Sampling, Surface Water Pathway, and Soil Exposure Pathway sections of this report.

In 1987, Environmental Resource Associates, Inc. (ERA) of Warwick, RI, was retained by LM Nursing to conduct an environmental site assessment of their portion of the BFA property (Lot Nos. 362, 364, and 365). On 12 June 1987, GZA Drilling Company, under ERA supervision, installed three overburden groundwater monitoring wells (LM-1 through LM-3) on LM Nursing's portion of the BFA property. Refer to Figure 2 for the locations of these monitoring wells. Soil samples were collected from the borings during the monitoring well installations. The soil samples were later screened for VOCs with a PID at ERA. ERA reported that no PID readings above background levels were recorded for the samples. Based on groundwater table elevations in the monitoring wells, ERA reported that direction of groundwater flow was southeasterly [39, p. 4].

On 2 July 1987, ERA collected groundwater samples from monitoring wells LM-1 through LM-3. In addition, since a monitoring well was not installed north of the ponds (Pond Nos. 4, 5, and 6), because of drilling rig access restrictions, and because direction of groundwater flow was presumed to be southeasterly, ERA collected one surface water sample and one sediment sample from the "northernmost pond" on LM Nursing's portion of the BFA property (assumed by START to be Pond No. 4). The surface water and sediment samples were collected to determine groundwater quality upgradient of Lot Nos. 362, 364, and 365. All the samples were submitted to Rhode Island Analytical Laboratories (RIAL), of Warwick, RI. The groundwater samples and the surface water sample were analyzed for VOCs (method unknown), and the sediment sample was analyzed for metals (method unknown). Methylene chloride was detected in four of the aqueous samples; concentrations included 1 ppb in LM-1, 6 ppb in LM-2, 2 ppb in LM-3, and 4 ppb in the surface water sample. Toluene was also detected in LM-2 at 1 ppb. No metals were detected in the sediment sample [39, p. 5, Appendix].


DIRT ROAD
BLACKSTONE VALLEY GAS AND ELECTRIC COMPANY EASEMENT
CURRAN ROAD
CURRAN BROOK CT.
POND NO. 4
POND NO. 5
POND NO. 6
POND NO. 3
POND NO. 1
POND NO. 2
FORMER SAND EXCAVATION AREA
UNNAMED STREAM
FORMER LAGOON NO. 1
TRAIL
FORMER ACID DRUM DISPOSAL AREA
FORMER SOLID WASTE DISPOSAL AREA NO. 2
FORMER SOLID WASTE DISPOSAL AREA NO. 1
LOT 9
LOT 364
LOT 365
LOT 363
LOT 366
LOT 152
LOT 10
PPE 1
SD-1
SW-1
SW-2
SD-2
SD-3
SW-3
SS-1
SS-2
SS-3
SS-4
SS-5
SS-6
SS-7A
SS-7B
SS-7C
SS-8
SS-9A
SS-9B
SS-9C
SS-10A
SS-10B
SS-10C
BUILDING NO. 1
BUILDING NO. 2
INTERMITTENT STREAM
OUTFALL
TOWN OF CUMBERLAND (RHODE ISLAND)
TOWN OF NORTH ATTLEBOROUGH (MASSACHUSETTS)
STORM SEWER (UNDERGROUND)
NEAREST RESIDENCE
UNDERGROUND PIPE LINE
PLAT 29/LOT 15
PLAT 29/LOT 16
SUSPECTED LAGOON NO. 2
FORMER COURTOIS SAND AND GRAVEL PITS
STATE LINE
NOT TO SCALE
LEGEND
SCRAP AUTOMOBILES
WOODED AREA
FLOW DIRECTION
BEDROCK OUTCROP
SURFACE WATER
RESIDENCE
FENCE
WATER SUPPLY WELL (SCREENED IN BEDROCK)
PROBABLE POINT OF ENTRY TO SURFACE WATER PATHWAY
PROPERTY LINE
SLOPE (TICK MARKS DOWNHILL)
GRASS
BOULDERS
BRIDGE ABUTMENT
SURFACE WATER SAMPLE
SEDIMENT SAMPLE
SOIL SAMPLE
SOURCES:
FINAL SCREENING SITE INSPECTION LETTER REPORT FOR BOULTER FARM AREA – OCTOBER 1980
TOWN OF CUMBERLAND, RHODE ISLAND TAX ASSESSORS MAP, PLAT NO. 19 MARCH 1950
TOWN OF NORTH ATTLEBOROUGH, MASSACHUSETTS TAX ASSESSORS MAP, PLAT NO. 29 NOT DATED
WESTON/START FIELD BOOK NO. 311-S FOR BOULTER FARM AREA – 2000
TOWN OF CUMBERLAND, RHODE ISLAND PLAN AND PROFILE OF CURRAN BROOK COURT AND LEROY ROAD, PROPOSED STREETS FOR NEW PROPOSED DEVELOPMENT JULY 1959
SCREENING SITE INSPECTION
SAMPLE LOCATION SKETCH
BOULTER FARM AREA
CURRAN ROAD AND DEPOT STREET
CUMBERLAND, RHODE ISLAND
WESTON SOLUTIONS
REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM
TDD NO.: 03-05-0148
DRAWN BY: W. SHAW
DATE: 4/3/03
FILE NAME: S:\02050121\01050140\00050079\ACAD\SSI.DWG
FIGURE 5
N

In August 1987, based on the presence of methylene chloride in the July 1987 groundwater samples, ERA again collected groundwater samples from each of the monitoring wells and one surface water sample (presumably) from Pond No. 4. The samples were submitted to RIAL and analyzed for methylene chloride; however, it was not detected [39, pp. 6-7].

In October 1989, RI DEM completed the SSI of the BFA property. RI DEM concluded that a Listing Site Inspection (LSI) should be completed for the property. Specifically, RI DEM recommended that the "LSI should focus on the portions of the site for which contaminants have been detected, specifically Plat No. 19, Lot Nos. 366 and 363" [27, p. 9].

In August 1990, based on the results of the 1989 SSI, EPA Region I determined that Lot Nos. 362, 364, and 365 should not be included in any further CERCLA investigations [21-23; 42].

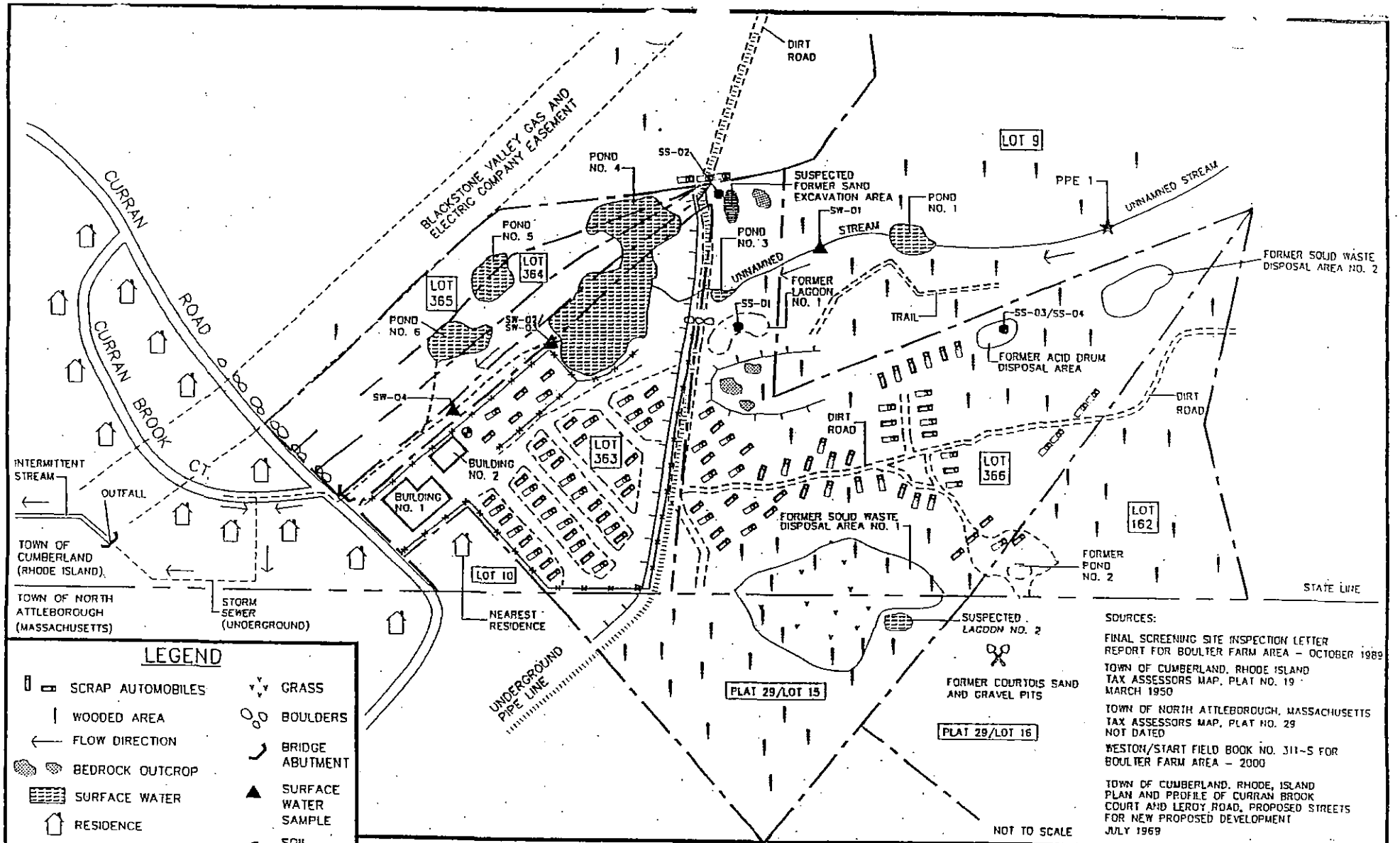
On 11 December 1990, RI DEM collected one surface water sample (LBW-SW-1) from the drainage ditch on the BFA property. The sample was submitted to RIAL and analyzed for VOCs by EPA Methods 601/602. In addition, the sample was analyzed for acetone, MIBK, and THF (methods unknown). No analytes were detected in the sample [44-46].

In August 1991, the NUS Corporation/Field Investigation Team (NUS/FIT) completed a Site Inspection Follow-Up Phase I (SIF I) for the BFA property. The SIF I included the completion of a PA Method Hazard Ranking System (HRS) Documentation Record and a Target Memorandum. No samples were collected as part of the SIF I. NUS/FIT concluded that the groundwater pathway was the pathway of primary concern, and recommended that a Site Inspection Follow-Up Phase II (SIF II) be completed [47-48].

In June 1995, RI DEM submitted a Site Monitoring Report to EPA regarding the BFA property. The report indicated that on 8 May 1995, RI DEM collected four soil samples (SS-01 through SS-04), and four surface water samples (SW-01 through SW-04), from the BFA property (occupied at that time by "Joe's Recycling") (Figure 6) [49, p. 1, Figure; 85-86].

One VOC (methylene chloride) was detected in samples SS-01 and SS-02. No SVOCs or pesticides were detected in any of the soil samples. Laboratory analysis revealed the presence of the two PCBs (Aroclor-1248 and Aroclor-1260) in sample SS-01. No PCBs were detected in the other three soil samples. Laboratory analysis indicated that nine metals were present in soil samples collected on the property; however, only three metals (copper, lead, and nickel) were detected at concentrations significantly above "background" concentrations. No VOCs, SVOCs, pesticides, or PCBs were detected in the surface water samples. Three metals (cadmium, lead, and mercury) were detected in sample SW-04, and two metals (cadmium and lead) were detected in sample SW-01 [49, Appendix A]. Analytical results of the soil and surface water samples collected as part of the Site Monitoring Report are discussed in greater detail in the Waste/Source Sampling and Surface Water Pathway sections of this report.

On 15 December 1997 and 13 January 1998, START personnel conducted on-site reconnaissances of the BFA property as part of an SIP. On 29 September 1998, START personnel completed the Final SIP. No samples were collected as part of the SIP [2].



RI DEM SITE MONITORING REPORT
SAMPLE LOCATION SKETCH

BOULTER FARM AREA
CURRAN ROAD AND DEPOT STREET
CUMBERLAND, RHODE ISLAND

WESTON SOLUTIONS
REGION 1 SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD NO.:	DRAWN BY:	DATE:
03-05-0148	W. SHAW	4/3/03

FILE NAME: S:\02050121\01050140\00050079\ACAD\SMR.DWG

FIGURE 6

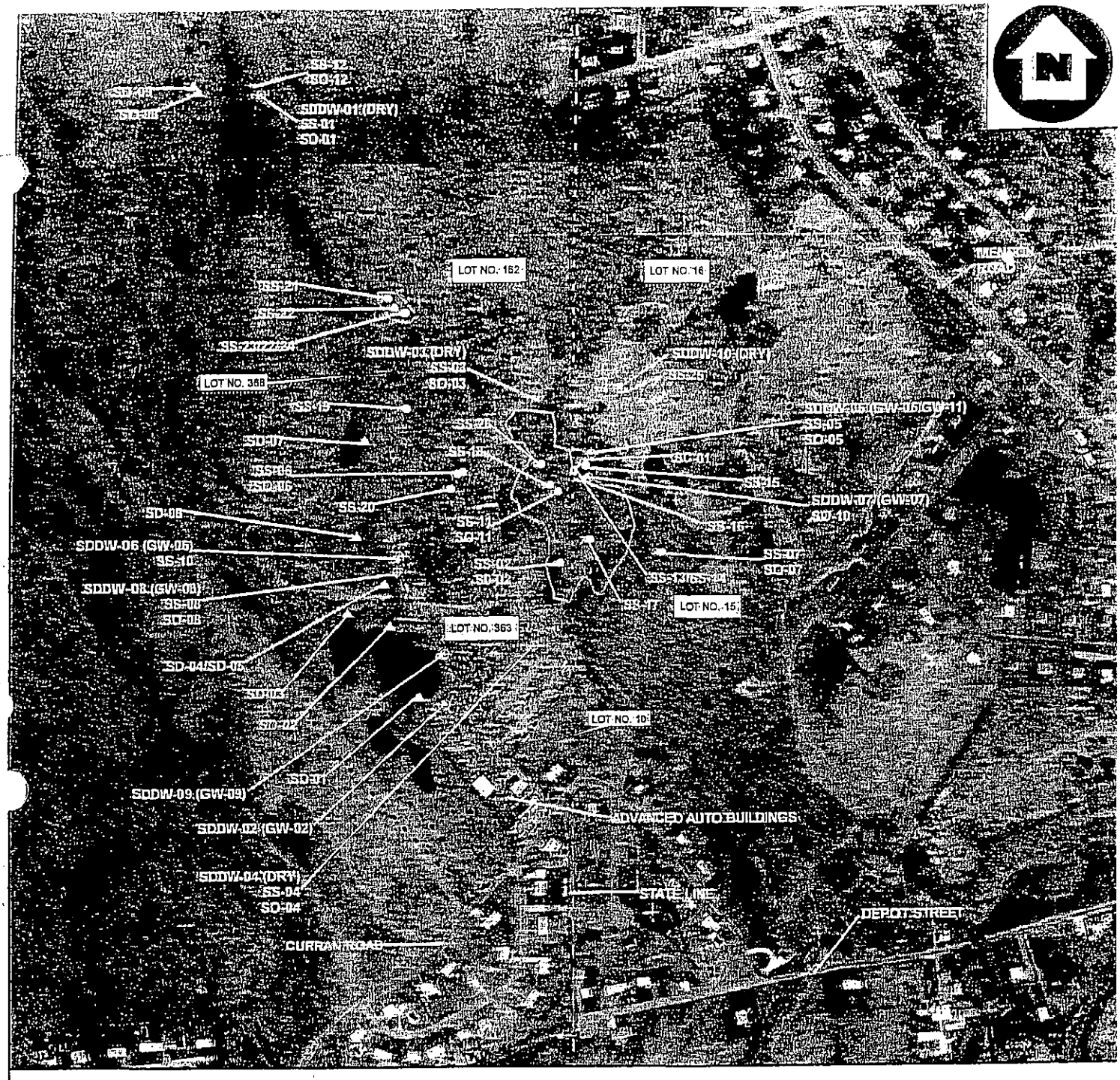
On 17 through 20 June 2002, as part of this ESI, START personnel collected 39 soil/source samples [26 surface soil samples (SS-01 through SS-26), 12 subsurface soil samples (SO-01 through SO-12), and one source sample (SC-01)] from potential source areas on the BFA property; collected nine sediment samples (SD-01 through SD-09) from the unnamed stream and Pond Nos. 1, 3, and 4, to determine if there has been a release of hazardous substances, associated with sources on the BFA property, to surface water; and installed 10 small-diameter driven wells (SDDWs) (SDDW-01 through SDDW-10) on the BFA and adjacent properties [4, pp. 33-48; 127, pp. 2-7]. On 15 and 16 July 2002, as part of the ESI, START personnel collected nine groundwater samples (GW-02, GW-05 through GW-09, GW-11 through GW-13) from six SDDWs (SDDW-02 and SDDW-05 through SDDW-09) and one on-site bedrock water supply well located on the property, to determine if there has been a release of hazardous substances, associated with sources on the BFA property, to groundwater [127, pp. 8-18]. Four groundwater samples [GW-01 (background sample), GW-03, GW-04, and GW-10] could not be collected because an insufficient amount of water was present in the SDDWs (Figures 7 and 8) [127, pp. 10-12]. Samples were analyzed for VOCs, SVOCs volatile petroleum hydrocarbons (VPHs), extractable petroleum hydrocarbons (EPHs), total petroleum hydrocarbons (TPHs), pesticides, PCBs, inorganic substances, and cyanide [128-142].

For each START sample location, a compound or element is defined as being above reference criteria if it is detected at three times or greater than its respective matrix reference sample (SS-01 and SS-12 for surface soil and source samples; SO-01 and SO-12 for subsurface soil samples; SD-08 and SD-09 for sediment samples; and GW-02 and GW-13 for groundwater samples) concentration. However, if the compound or element is not detected in the reference samples, the reference sample's sample quantitation limit (SQL) (for organic analysis) or sample detection limit (SDL) (for inorganic analysis) is used as the reference value. These compounds or elements have exceeded reference criteria if they occurred at a value equal to or greater than the reference sample's SQL or SDL and are designated by their approximate relative values above these values.

Twenty-six VOCs, 23 SVOCs, 17 pesticides, four PCBs, and 20 inorganic substances (metals and cyanide) along with EPHs and VPHs were detected in soil/source samples; one VOC and nine SVOCs were detected in sediment samples; and 12 VOCs, seven SVOCs, and nine inorganic substances along with EPHs and VPHs were detected in groundwater samples above reference criteria [138-143]. Refer to the Waste/Source Sampling, Groundwater Pathway, and Surface Water Pathway sections for a detailed discussion of sampling activities and analytical results of samples collected by START.

In February 2004, START contacted Mr. Yarbroudy and Town of North Attleborough Treasurer Mr. William Moffitt to inquire about the current conditions at the property. According to both Mr. Yarbroudy and Mr. Moffitt, conditions of the RI and MA portions of the property have remained the same since START field activities were conducted in June 2002 [156-157].

Table 1 presents identified structures or areas on the BFA property that are documented or potential sources of contamination, the containment factors associated with each source, and the relative location of each source.



BASE AERIAL PHOTO IS PART OF THE FOLLOWING 1 METER RESOLUTION 1:5,000 SCALE BLACK AND WHITE DIGITAL ORTHOGRAPHIC QUARTER QUADRANGLES: MASSACHUSETTS 1_213850 AND 1_213854

NOTE: EXCEPT FOR THOSE ALONG STATE LINE, PROPERTY LOT LINES ARE APPROXIMATE.

0.1 0 0.1 0.2 0.3 0.4 0.5 Miles

500 0 500 1000 1500 2000 2500 Feet

0.1 0 0.1 0.2 0.3 0.4 0.5 Kilometers

QUADRANGLE LOCATION

START SAMPLE

LOCATION MAP

BOULTER FARM AREA
CURRAN ROAD AND DEPOT STREET
CUMBERLAND, RHODE ISLAND

WESTON SOLUTIONS
Restoring Resource Efficiency

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD #	DRAWN BY:	DATE:
03-05-0148	S.W./P.H.S./R.M.	03/25/2003

FILE NAME: F:\ARC_APPS\START2\BOULTER FARM AREA\

FIGURE 7

SOURCES:

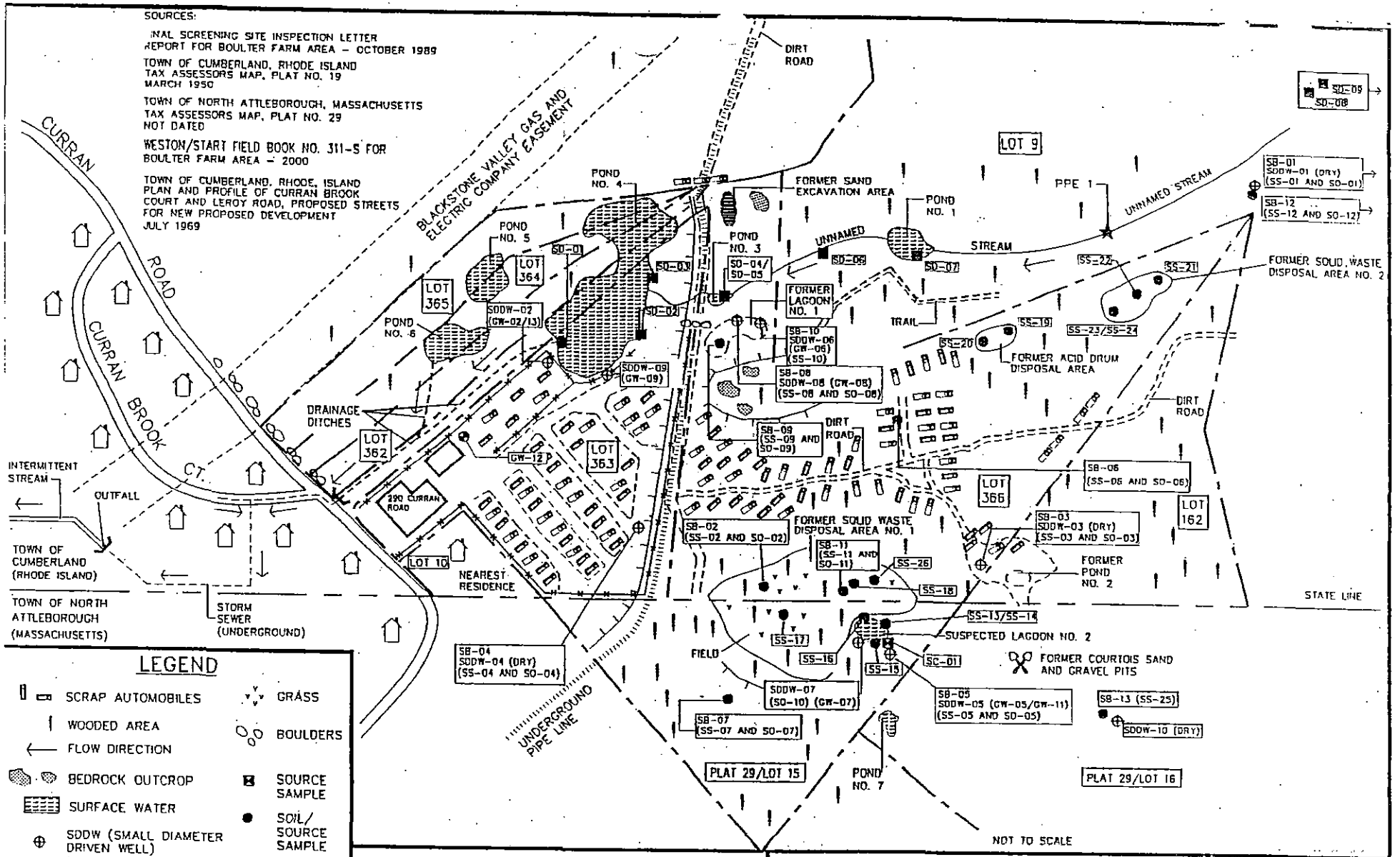
INAL SCREENING SITE INSPECTION LETTER REPORT FOR BOULTER FARM AREA – OCTOBER 1989

TOWN OF CUMBERLAND, RHODE ISLAND TAX ASSESSORS MAP, PLAT NO. 19 MARCH 1950

TOWN OF NORTH ATTLEBOROUGH, MASSACHUSETTS TAX ASSESSORS MAP, PLAT NO. 29 NOT DATED

WESTON/START FIELD BOOK NO. 311-S FOR BOULTER FARM AREA – 2000

TOWN OF CUMBERLAND, RHODE, ISLAND PLAN AND PROFILE OF CURRAN BROOK COURT AND LEROY ROAD, PROPOSED STREETS FOR NEW PROPOSED DEVELOPMENT JULY 1969



START SAMPLE LOCATION SKETCH

BOULTER FARM AREA
CURRAN ROAD AND DEPOT STREET
CUMBERLAND, RHODE ISLAND

WESTON SOLUTIONS

REGION 1 SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD NO.:	DRAWN BY:	DATE:
03-05-0148	W. SHAW	4/3/03

FILE NAME: S:\02050121\DCM_Fig2.dwg

FIGURE 8

Table 1

Source Evaluation for Boulter Farm Area

Source Area	Containment Factors	Spatial Location
Former Solid Waste Disposal Area No. 1	None.	Eastern portion of Lot No. 366 and western portion of Lot No. 15. Source area straddles the RI/MA state line.
Former Solid Waste Disposal Area No. 2	None.	Northwestern portion of Lot No. 366.
Former Lagoon No. 1	None.	Western portion of Lot No. 366, north of Pond No. 4.
Suspected Lagoon No. 2	None.	Northwestern corner of Lot No. 15.
Former Acid Drum Storage Area	None.	Northwestern portion of Lot No. 366, north of former Lagoon No. 1.
Former Metal and Fiberboard Drums	Unknown (removed).	Lot Nos. 362, 364, or 365.
Diesel Fuel and No. 2 Fuel Oil ASTs	None.	Vicinity of on-site buildings.
Waste Oil and Salvaged Gasoline ASTs	None.	Vicinity of on-site buildings.
Waste Oil and Antifreeze Drums	None.	Vicinity of on-site buildings.
Suspected 10,000-gallon tank	None (empty).	Southeastern corner of Lot No. 162.
Salvage Yard	None	Lot Nos. 363 and 366

AST = Aboveground storage tank.
MA = Massachusetts
RI = Rhode Island

[2; 4; 27; 32; 49]

Table 2 summarizes the types of potentially hazardous substances which have been disposed, used, or stored on the BFA property.

Table 2

Hazardous Waste Quantity for Boulter Farm Area

Substance	Quantity or Volume/Area	Years of Use/Storage	Years of Disposal	Source Area
Miscellaneous solid waste and soil contaminated with VOCs, SVOCs, EPHs, oil, grease, pesticides, PCBs, and inorganic substances.	172,000 ft^{2a}	Unknown	NA	Former Solid Waste Disposal Area No. 1
Miscellaneous solid waste and soil contaminated with pesticides, PCBs, and inorganic substances.	97,000 ft^2	Unknown	NA	Former Solid Waste Disposal Area No. 2
Soil contaminated with VOCs, oil, grease, pesticides, PCBs, and inorganic substances.	40,000 ft^3	Unknown	NA	Former Lagoon No. 1
Soil contaminated with VOCs, SVOCs, EPHs, VPHs, pesticides, PCBs, and inorganic substances.	400 ft^2	Unknown	NA	Suspected Lagoon No. 2
Soil contaminated with VOCs, SVOCs, oil, grease, pesticides, PCBs, and inorganic substances.	7,000 ft^2	Unknown	NA	Former Acid Drum Storage Area
Paint-like substance containing arsenic, barium, chromium, lead, mercury, and silver.	30 55-gallon drums	Unknown until 1981	NA	Former Metal and Fiberboard Drums
Diesel fuel, No. 2 fuel oil, and gasoline.	One 2,500-gallon AST (diesel fuel), two 1,000-gallon ASTs (No. 2 fuel oil), and four 500-gallon ASTs (gasoline).	Unknown until present	NA	Diesel Fuel and No. 2 Fuel Oil ASTs
Waste oil and waste gasoline.	One 1,000-gallon AST (waste oil), and one 500-gallon AST (waste gasoline)	Unknown until present	NA	Waste Oil and Salvaged Gasoline ASTs
Waste oil and antifreeze.	30 55-gallon drums	Unknown until present	NA	Waste Oil and Antifreeze Drums
Unknown substances.	10,000-gallon	Unknown	NA	Suspected 10,000-gallon Tank

Table 2

Hazardous Waste Quantity for Boulter Farm Area (Concluded)

Substance	Quantity or Volume/Area	Years of Use/Storage	Years of Disposal	Source Area
Soil Contaminated with VOCs, SVOCs, and inorganic substances	20 acres	1985 to present	NA	Salvage Yard

Note: Specific substances are discussed in greater detail in the Waste/Source Sampling and pathway sections of this report.
START estimated the area of this source area using historical aerial photographs, global positioning units and digital orthophotography, and U.S. Geological Survey topographical maps.

VOCs = Volatile organic compounds.
SVOCs = Semivolatile organic compounds.
EPHs = Extractable petroleum hydrocarbons.
VPHs = Volatile petroleum hydrocarbons.
PCBs = Polychlorinated biphenyls.
ft^2 = Square feet.
ft^3 = Cubic feet.
NA = Not applicable.
ASTs = Aboveground storage tanks.

[2; 4; 9; 27; 32; 49; 88-91; 104-105; 128-143]

Including the BFA property, there are seven CERCLIS sites located in the Town of Cumberland, RI and two CERCLIS sites in the Town of North Attleborough, MA [147-148]. The number of Resource Conservation and Recovery Information System (RCRIS) sites located within 1 radial mile of the BFA property is unknown; however, there are 152 RCRIS sites located in the Town of Cumberland, and 96 RCRIS sites in the Town of North Attleborough [149-150]. In addition, there are 120 MA DEP Reportable Release/Sites in North Attleborough; however, the MA portion of the BFA property is not currently listed in the MA DEP Reportable Release/Sites database [155].

WASTE/SOURCE SAMPLING

On 12 April 1981, the Valley Falls and Ashton Fire Departments in Cumberland responded to a fire involving underbrush and approximately 30 "steel and fiberboard barrels" (presumably drums) "containing paint-like substances" on the BFA property. Reportedly, the fire occurred in a field located north of the intersection of Curran Road and Curran Brook Court (assumed by START to be Lot Nos. 362, 364, or 365) [27, p. 3; 102].

On 13 April 1981, RI DEM personnel performed an inspection of the fire scene and reported that the drums, some of which contained material similar to "a water base paint", were so burned that they were unable to ascertain where the drums came from or what they contained. Subsequently, RI DEM personnel collected two sludge samples from the drums. The samples were submitted to RIAL, and analyzed for select metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) by EP Toxicity. Laboratory analysis revealed the presence of arsenic (0.26

ppm), barium (0.8 ppm), chromium (0.29 ppm), lead (1.5 ppm), mercury (0.0003 ppm), and silver (0.02 ppm) [27, p. 3; 29; 31].

On 28 December 1984, as part of a hydrogeological investigation regarding the contamination in the Adamsdale Well, W&H personnel conducted an inspection of the BFA property. W&H personnel collected one "soil" sample (SL-2) from Lagoon No. 1 and one "soil" sample (SL-1) from Lagoon No. 2. The samples were submitted to RAI of Hampton Falls, New Hampshire, and analyzed for VOCs by EPA Method 624 and for SVOCs by EPA Method 625 [32, pp. 42-43, Appendix D]. Locations of samples SL-1 and SL-2 are illustrated on Figure 4.

No VOCs were detected in samples SL-1 and SL-2. No SVOCs were detected in sample SL-2; however, three SVOCs were detected in sample SL-1, consisting of naphthalene (64 ppb) and "trace" concentrations (<20 ppb) of phenanthrene and anthracene [27, Table 3; 32, pp. 42-43, 54, Appendix D; 33].

On 11 October 1985, RI DEM personnel collected one sludge sample (001-JPH-BF) and one water sample (003-JPH-BF) from Lagoon No. 1 [35; 103]. The exact locations from which samples 001-JPH-BF and 003-JPH-BF were collected was not provided in the available file information. Both samples were submitted to New England Testing Laboratories of North Providence, RI and analyzed for VOCs, SVOCs, pesticides, PCBs, and the "eight heavy metals" (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver). Analytical methods used by the laboratory are not included in available file information. The sludge sample was analyzed for metals via EP Toxicity, and the water sample was analyzed for total metals [35; 103].

No VOCs were detected in sample 001-JPH-BF; however, two VOCs [trans-1,2-DCE (1,750 ppb) and methylene chloride (3,000 ppb)] were detected in sample 003-JPH-BF. Total metals detected in sample 003-JPH-BF included arsenic (0.212 ppm), barium (13 ppm), cadmium (0.13 ppm), chromium (0.78 ppm), lead (210 ppm), mercury (0.002 ppm), and selenium (0.09 ppm). In addition, 252 ppb of "PCB/pesticides" were detected in sample 003-JPH-BF. The available references did not delineate the specific PCB and/or pesticide compounds. Metals detected (by EP Toxicity) in sample 001-JPH-BF included arsenic (0.005 ppm), barium (0.32 ppm), lead (0.62 ppm), and selenium (0.001 ppm) [27, Table 5; 103].

On 23 and 27 April 1987, as part of the SSI, personnel from RI DEM and ESS collected 16 soil samples (SS-1 through SS-6, SS-7A, SS-7B, SS-7C, SS-8, SS-9A, SS-9B, SS-9C, SS-10A, SS-10B, and SS-10C) from the BFA property (reported to be occupied at that time by "Joes Auto Salvage"). Sample SS-1 [6 inches below ground surface (bgs)] was collected from an area of oil-stained soil located in the vicinity of a "...former dump area [consisting of fiberglass, cardboard, and wood]", an unnamed pond (referred to as Pond No. 2), and an empty "oil tank", located in the northern portion of the property. Samples SS-2 (1 ft bgs) and SS-3 (1.5 ft bgs) were also collected from a "former dump area" in an open field located along the eastern property boundary (possibly in MA). Samples SS-4 (3 ft bgs) (described to be a "tar-like material"), SS-5 (5 ft bgs), and SS-6 (depth unknown) were collected from Lagoon No. 1, which was reported to have been backfilled with sand and gravel at that time. Samples SS-7A (2 ft bgs), SS-7B (2 ft bgs), and SS-7C (2.5 ft bgs), which were later composited into sample SS-7, were collected from an area of stressed vegetation located within the open field along the eastern property boundary (possibly in MA). Sample SS-8 (8 inches bgs) was collected from the acid drum storage area. Samples SS-9A (1 ft bgs), SS-9B (1 ft bgs), and

SS-9C (2.5 ft bgs), which were later composited into sample SS-9, were collected southeast of Pond No. 6. Samples SS-10A (1 ft bgs), SS-10B (8 inches bgs), and SS-10C (1 ft bgs), which were later composited into sample SS-10, were collected from the southern portion of Lot Nos. 362, 364, and 365. No known reference samples were collected [27, pp. 4-5, Tables 6-8; 36-37]. The locations of samples collected as part of the SSI are illustrated on Figure 5.

All 1987 SSI samples were submitted to RIAL. Soil samples SS-1, SS-4, and SS-7 through SS-10 were analyzed for PCBs, pesticides by EP Toxicity, and select metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) by EP Toxicity. In addition, soil samples SS-4 and SS-7 through SS-10 were analyzed for VOCs, and samples SS-1, SS-4, and SS-8 were analyzed for oil and grease. Soil samples SS-2, SS-3, SS-5, and SS-6 were not analyzed [27, Tables 6-8; 36-37]. Available file information does not provide the methods used by the laboratory to analyze the samples.

Laboratory analysis of SSI soil samples SS-1 and SS-4 revealed the presence of two PCBs (Aroclor-1242 and Aroclor-1260) above instrument detection limits. Maximum concentrations were detected in sample SS-1 and included 24,000 ppb of Aroclor-1242 and 28,000 ppb of Aroclor-1260. VOCs were only detected in sample SS-4 and included trans-1,2-DCE (6,000 ppb); TCA (5,000 ppb); TCE (7,000 ppb); PCE (2,000 ppb); toluene (2,000 ppb); and xylenes (9,000 ppb). Only one pesticide (lindane at 3 ppb in SS-4) was detected (by EP Toxicity) in the soil samples. The following metals were detected (by EP Toxicity) in the soil samples above instrument detection limits: barium (1.31 ppm in SS-7), cadmium (0.01 ppm in SS-8), and lead (0.17 ppm in SS-1 and 0.73 ppm in SS-4). Concentrations of oil and grease were detected in samples SS-1, SS-4, and SS-8, with the maximum concentration detected in SS-1 (26.7 percent) [27, p. 5, Table 8; 38; 39, Appendix].

In June 1995, RI DEM submitted a Site Monitoring Report to EPA regarding the BFA property. The report indicated that on 8 May 1995, RI DEM collected four soil samples (SS-01 through SS-04), including a duplicate, from the BFA property (occupied at that time as Joe's Recycling) [49, p. 1]. Sample SS-01 was collected from former Lagoon No. 1; sample SS-02 (the "background" soil sample) was collected west of Pond No. 3; and samples SS-03 and SS-04 were collected from the former acid drum storage area. Samples SS-02, SS-03, and SS-04 were collected from less than 2 ft below grade. Conflicting file information exists regarding the depth at which sample SS-01 was collected [85-86]. For the purposes of this ESI, START assumes that sample SS-01 was collected from a depth of less than 2 ft below grade (consistent with other samples). The samples were submitted to ESS Laboratory (ESSL) and analyzed for VOCs by EPA Method 8260, SVOCs by EPA Method 8270, pesticides and PCBs by EPA Method 8080, and 13 priority pollutant total metals (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc) by EPA Method 6010/7421/7470 [49, p. 1, Appendix A].

One VOC (methylene chloride) was detected in samples SS-01 and SS-02 at 7 ppb and 8 ppb, respectively. No VOCs were detected in the other soil samples. No SVOCs or pesticides were detected in any of the soil samples. Laboratory analysis revealed the presence of the two PCBs [Aroclor-1248 (93 ppb) and Aroclor-1260 (93 ppb)] in sample SS-01. No PCBs were detected in the other soil samples. Laboratory analysis indicated that nine metals were present in soil on the property; however, only three metals (copper, lead, and nickel) were detected at concentrations significantly above "background" concentrations. These concentrations included copper at 51 ppm (SS-01); lead at 218 ppm (SS-01), 16 ppm (SS-03), and 11 ppm (SS-04); and nickel at 19 ppm (SS-01) [49, Appendix A].

On 17 through 20 June 2002, as part of this ESI, START personnel collected 39 soil/source samples [26 surface soil samples (SS-01 through SS-26), 12 subsurface soil samples (SO-01 through SO-12), and one source sample (SC-01)] from potential source areas on the BFA property. Soil/source samples depicted with an SS were collected at a depth of 0 to 2 ft bgs and are referred to as surface samples. Soil/source samples depicted with an SO were collected at a depth of greater than 2 ft bgs and are referred to as subsurface samples. Soil/source samples SS-01 through SS-12, SS-25, SO-01 through SO-09, and SO-11 and SO-12 were collected from soil borings SB-01 through SB-13. Soil borings SB-01, SB-03 through SB-05, SB-08, SB-10 were completed as SDDWs. Three soil borings (SB-02, SB-06, and SB-07) were not completed as SDDWs due to the inability of the hydraulically driven direct-push device unit to advance a boring to sufficient depth to encounter groundwater before encountering refusal. Multiple soil borings were advanced at each location attempted. Soil boring refusal may have been the result of geologic conditions or buried solid waste. Bedrock outcrops were observed in several areas of the property and indicate potentially shallow depths to bedrock [4, pp. 33-48; 127, pp. 2-7].

Soil/source samples SS-01, SS-12, SO-01, and SO-12 were collected from the northern portion of Lot. No. 9, upgradient of potential source areas, in order to establish reference concentrations for soil/source sample comparisons. To document potential source areas on the BFA property, soil/source samples SS-02, SS-03, SS-07, SS-11, SS-17, SS-18, SS-26, SO-02, SO-03, SO-07, and SO-11 were collected from the vicinity of former solid waste disposal area No. 1; soil/source samples SS-21 through SS-24 were collected from the vicinity of former solid waste disposal area No. 2; soil/source samples SS-08 through SS-10, SO-08, and SO-09 were collected from the vicinity of former Lagoon No. 1; soil/source samples SC-01, SS-05, SS-13 through SS-16, SO-05, and SO-10 were collected from the vicinity of suspected Lagoon No. 2; soil/source samples SS-19 and SS-20 were collected from the vicinity of the former acid drum disposal area; soil/source samples SS-06 and SO-06 were collected from the central portion of Lot No. 366; soil/source samples SS-04 and SO-04 were collected from the northeast portion of Lot No. 363; and soil/source sample SS-25 was collected from the central portion of Lot No. 16 [4, pp. 33-48; 127, pp. 2-7]. Refer to Figures 7 and 8 for locations of soil/source samples collected by START.

Soil/source samples SS-01 through SS-07, SS-11, SS-17 through SS-26, SO-01 through SO-04, SO-06, SO-07, and SO-11 were analyzed through an EPA Contract Laboratory Program (CLP) laboratory for SVOCs, pesticides, PCBs, total metals, and cyanide. In addition, soil/source samples SS-01 through SS-07, SS-11, SS-17 through SS-26, SO-01 through SO-04, SO-06, SO-07 and SO-11 were analyzed through a Delivery of Analytical Services (DAS) laboratory for VOCs. Soil/source sample SS-12 and SO-12 were analyzed through an EPA CLP laboratory for metals only [128-131; 133-135; 142-143].

Because of potential high concentrations of contaminants, soil/source samples SS-08 through SS-10, SS-13 through SS-16, SO-05, SO-08 through SO-10, and SC-01 were analyzed through a DAS laboratory for VOCs, SVOCs, pesticides, PCBs, total metals, and cyanide. Samples collected from areas suspected to be within MA (soil/source samples SS-05, SS-07, SS-11, SS-13 through SS-18, SS-25, SS-26, SO-05, SO-07, SO-11, and SC-01) were also analyzed through a DAS laboratory for VPHs and EPHs. In addition, VPH and EPH fractions for soil/source samples SS-01 and SO-01 (the reference sample location) were analyzed through a DAS laboratory [128-129;132; 134; 142-143]. Table 3 summarizes the soil/source samples collected by START on 17 through 20 June 2002.

Table 3

Soil/Source Sample Summary: Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002

Sample Location No.	Traffic Report No.	Date/ Time (hrs)	Remarks	Sample Depth (feet)	Sample Description/Rationale
MATRIX: Soil/Source					
SS-01	D06351 D06402 A0JC1 MA0KB1	6/19/02 1040	Grab Boring completed as SDDW-01.	0 to 2	Sample collected from soil boring SB-01, advanced in the northern portion of Lot No. 9 (Cumberland Conservation Land) (presumably outside potential source areas), in order to establish reference concentrations for soil/source sample comparisons. Material was dark brown to brown, SILT and clay, fine SAND, little fine-to-medium gravel, trace rock fragments. PID = 0 units above background. 41° 56' 13.3" North Latitude 71° 23' 8.9" West Longitude
SS-02	D06352 A0JC2 MA0KB2	6/18/02 1530	Grab No SDDW installed due to refusal.	0 to 2	Sample collected from soil boring SB-02, advanced in potentially contaminated soil in the vicinity of former solid waste disposal area No. 1, located along the eastern portion of Lot No. 366, in order to determine the presence of any hazardous substances that may be associated with the former solid waste disposal area. Material was dark brown to black, SILT and fine sand, some crushed brick and organic matter. FID and PID = 0 units above background. 41° 55' 55.8" North Latitude 71° 22' 53.5" West Longitude
SS-03	D06353 A0JC3 MA0KB3	6/18/02 0845	Grab Boring completed as SDDW-03.	0 to 2	Sample collected from soil boring SB-03, advanced in potentially contaminated soil in the vicinity of former solid waste disposal area No. 1, located along the eastern portion of Lot No. 366, in order to determine the presence of any hazardous substances that may have been disposed of in this area. Material was yellow/brown to brown/black, SILT, little fine sand, trace gravel. Glass ball and fibrous material were observed in the sample. FID and PID = 0 units above background. 41° 56' 2.0" North Latitude 71° 22' 54.7" West Longitude
SS-04	D06354 A0JC4 MA0KB4	6/18/02 1620	Grab Boring completed as SDDW-04.	0 to 2	Sample collected from soil boring SB-04, advanced in potentially contaminated soil in the northeastern portion of Lot No. 363, in order to determine the presence of any hazardous substances that may have been disposed of in this area. Material was reddish-brown to brown, SILT and fine SAND, trace gravel and medium-to-coarse sand. A possible oil/tar-like material was observed in the sample. FID and PID = 0 units above background. 41° 55' 52.8" North Latitude 71° 22' 54.9" West Longitude

Table 3

Soil/Source Sample Summary: Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

Sample Location No.	Traffic Report No.	Date/ Time (hrs)	Remarks	Sample Depth (feet)	Sample Description/Rationale
MATRIX: Soil/Source (Continued)					
SS-05	D06356 D06403 A0JC5 MA0KB5	6/17/02 1605	Grab Boring completed as SDDW-05.	0 to 4	Sample collected from soil boring SB-05, advanced in potentially contaminated soil in the northern portion of Lot No. 15, northeast of suspected Lagoon No. 2, in order to determine the presence of any hazardous substances that may be associated with suspected Lagoon No. 2. Material was brown to tan, SILT and clay, some sand and organic matter. FID and PID = 0 units above background. 41° 55' 59.9" North Latitude 71° 22' 51.9" West Longitude
SS-06	D06356 A0JC6 MA0KB6	6/17/02 1410	Grab No SDDW installed due to refusal.	0 to 2	Sample collected from soil boring SB-06, advanced in potentially contaminated soil in the central portion of Lot No. 366, in order to determine the presence of any hazardous substances that may have been disposed of in this area. Material was light to medium brown, fine to medium SAND, some gravel, trace silt and organic matter. FID and PID = 0 units above background. 41° 55' 56.02" North Latitude 71° 22' 59.6" West Longitude
SS-07	D06357 D06404 A0JC7 MA0KB7	6/20/02 0835	Grab No SDDW installed due to refusal.	0 to 2	Sample collected from soil boring SB-07, advanced in potentially contaminated soil in the central portion of Lot No. 15, in order to determine the presence of any hazardous substances that may have been released/migrated from former solid waste disposal area No.1. Material was brown to tan, SILT and clay, some organic matter. PID = 0 units above background. 41° 55' 56.2" North Latitude 71° 22' 48.2" West Longitude
SS-08	D06358	6/19/02 0930	Grab Boring completed as SDDW-08.	0 to 2	Sample collected from soil boring SB-08, advanced in potentially contaminated soil in the western portion of Lot No. 366, located in the vicinity of former Lagoon No. 1 and east of Pond No. 3, in order to determine the presence of any hazardous substances that may have been released from former Lagoon No. 1. Material was light brown to brown, SILT and fine sand, some medium-to-coarse sand, trace organic material. FID = 6.2 and PID = 12.6 units above background. 41° 55' 55.5" North Latitude 71° 23' 1.8" West Longitude

Table 3

Soil/Source Sample Summary: Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

Sample Location No.	Traffic Report No.	Date/ Time (hrs)	Remarks	Sample Depth (feet)	Sample Description/Rationale
MATRIX: Soil/Source (Continued)					
SS-09	D06359	6/20/02 1135	Grab No SDDW installed due to refusal.	0 to 2	Sample collected from soil boring SB-09, advanced in potentially contaminated soil in the western portion of Lot No. 366 and southeast of boring SB-08, located in the vicinity of former Lagoon No. 1 and east of Pond No. 3, in order to determine the presence of any hazardous substances that may have been released from former Lagoon No. 1. Material was yellow/brown to brown, SILT and fine sand, some medium-to-coarse gravel. FID and PID = 0 units above background. 41° 55' 52.1" North Latitude 71° 22' 59.4" West Longitude
SS-10	D06360	6/19/02 1135	Grab Boring completed as SDDW-06	0 to 2	Sample collected from soil boring SB-10, advanced in potentially contaminated soils in the western portion of Lot No. 366 and north of boring SB-08, located in the vicinity of former Lagoon No. 1 and east of Pond No. 3, in order to determine the presence of any hazardous substances that may have been released from former Lagoon No. 1. Material was dark brown to black, fine to medium SAND, trace coarse gravel. PID = 0 units above background. FID inoperable. 41° 55' 56.1" North Latitude 71° 23' 1.7" West Longitude
SS-11	D06361 D06405 A0CJ8 MA0KB8	6/18/02 1410	Grab	0 to 2	Sample collected from soil boring SB-11, advanced in potentially contaminated soil in the vicinity of former solid waste disposal area No. 1, located in the western portion of Lot No. 15, in order to determine the presence of any hazardous substances that may be associated with the former solid waste disposal area. Material was dark brown, SILT and clay, some fine sand, little organic matter. Miscellaneous debris was observed in the sample. FID and PID = 0 units above background. 41° 55' 58.5" North Latitude 71° 22' 53.7" West Longitude
SS-12	MA0KB9	6/19/02 1440	Grab	0 to 2	Sample collected from soil boring SB-12, advanced in the northern portion of Lot No. 9 (presumably outside potential source areas), in order to establish reference concentrations for soil/source sample comparisons (metals analyses only). Material was light brown to brown, SILT and clay, some medium gravel. PID = 0 units above background. 41° 56' 13.3" North Latitude 71° 23' 8.9" West Longitude

Table 3

Soil/Source Sample Summary: Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

Sample Location No.	Traffic Report No.	Date/ Time (hrs)	Remarks	Sample Depth (feet)	Sample Description/Rationale
MATRIX: Soil/Source (Continued)					
SS-13	D06363 D06406	6/17/02 1720	Grab	0 to 2	Sample collected from potentially contaminated soil in the northwestern portion of Lot No. 15, along the perimeter of suspected Lagoon No. 2, in order to determine the presence of any hazardous substances that may be associated with suspected Lagoon No. 2. Material was black, fine SAND and silt. PID = 80.6 units above background. 41° 55' 59.2" North Latitude 71° 22' 52.8" West Longitude
SS-14	D06364 D06407	6/17/02 1720	Grab	0 to 2	Field duplicate sample of SS-13, collected for quality control.
SS-15	D06365 D06408	6/17/02 1650	Grab	0 to 2	Sample collected from potentially contaminated soil in the northwestern portion of Lot No. 15, along the perimeter of suspected Lagoon No. 2, in order to determine the presence of any hazardous substances that may be associated with suspected Lagoon No. 2. Material was dark brown, fine SAND, some silt. No PID or FID readings were recorded. 41° 55' 59.5" North Latitude 71° 22' 52.2" West Longitude
SS-16	D06366 D06409	6/17/02 1655	Grab	0 to 2	Sample collected from potentially contaminated soil in the northwestern portion of Lot No. 15/eastern portion of Lot No. 366, in the vicinity of former solid waste disposal area No. 1, located in the western portion of Lot No. 15, in order to determine the presence of any hazardous substances that may be associated with the former solid waste disposal area. Material was dark brown, fine SAND, little silt. No PID or FID readings were recorded. 41° 55' 58.9" North Latitude 71° 22' 52.2" West Longitude
SS-17 (MS/DUP and MS/MSD)	D06367 D06410 A0CJ9 MA0KC1	6/18/02 1025	Grab	0 to 0.5	Sample collected from potentially contaminated soil in the western portion of Lot No. 15/eastern portion of Lot No. 366, in the vicinity of former solid waste disposal area No. 1, located in the western portion of Lot No. 15, in order to determine the presence of any hazardous substances that may be associated with the former solid waste disposal area. Material was dark brown, medium SAND, little fine gravel. PID = 0 units above background. 41° 55' 56.7" North Latitude 71° 22' 52.0" West Longitude

Table 3

Soil/Source Sample Summary: Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

Sample Location No.	Traffic Report No.	Date/ Time (hrs)	Remarks	Sample Depth (feet)	Sample Description/Rationale
MATRIX: Soil/Source (Continued)					
SS-18	D06368 D06411 A0JD0 MA0KC2	6/18/02 0930	Grab	0 to 1	Sample collected from potentially contaminated soil in the western portion of Lot No. 15/eastern portion of Lot No. 366, in the vicinity of former solid waste disposal area No. 1, located in the western portion of Lot No. 15, in order to determine the presence of any hazardous substances that may be associated with the former solid waste disposal area. Material was dark brown, medium SAND, some coarse sand. PID = 0 units above background. 41° 55' 58.7" North Latitude 71° 22' 54.1" West Longitude
SS-19	D06369 A0JD1 MA0KC3	6/18/02 1420	Grab	0 to 1	Sample collected from potentially contaminated soil in the northwestern portion of Lot No. 366, in the vicinity of the former acid drum storage area, in order to determine the presence of any hazardous substances that may be associated with the former acid drum storage area. Material was orange/brown, medium SAND, little fine sand. PID = 0 units above background. 41° 56' 1.6" North Latitude 71° 23' 1.4" West Longitude
SS-20	D06370 A0JD2 MA0KC4	6/18/02 1415	Grab	0 to 1	Sample collected from potentially contaminated soil in the northwestern portion of Lot No. 366, in the vicinity of the former acid drum storage area, in order to determine the presence of any hazardous substances that may be associated with the former acid drum storage area. Material was light brown, medium SAND, little fine sand. PID = 0 units above background. 41° 55' 58.6" North Latitude 71° 22' 59.1" West Longitude
SS-21	D06371 A0JD3 MA0KC5	6/18/02 1330	Grab	0 to 1	Sample collected from potentially contaminated soil in the northern portion of Lot No. 366, in the vicinity of former solid waste disposal area No. 2, in order to determine the presence of any hazardous substances that may be associated with the former solid waste disposal area. Material was light brown, medium SAND, some fine sand. PID = 0 units above background. 41° 56' 5.6" North Latitude 71° 23' 2.3" West Longitude

Table 3

Soil/Source Sample Summary: Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

Sample Location No.	Traffic Report No.	Date/ Time (hrs)	Remarks	Sample Depth (feet)	Sample Description/Rationale
MATRIX: Soil/Source (Continued)					
SS-22 (MS/MSD)	D06372 A0JD4 MA0KC6	6/18/02 1340	Grab	0 to 1	Sample collected from potentially contaminated soil in the northern portion of Lot No. 366, in the vicinity of former solid waste disposal area No. 2, in order to determine the presence of any hazardous substances that may be associated with the former solid waste disposal area. Material was light brown, medium SAND, some fine sand. PID = 0 units above background. 41° 56' 5.6" North Latitude 71° 23' 2.3" West Longitude
SS-23	D06373 A0JD5 MA0KC7	6/18/02 1350	Grab	0 to 1	Sample collected from potentially contaminated soil in the northern portion of Lot No. 366, in the vicinity of former solid waste disposal area No. 2, in order to determine the presence of any hazardous substances that may be associated with the former solid waste disposal area. Material was orange/brown, medium SAND, little fine sand. PID = 0 units above background. 41° 56' 5.1" North Latitude 71° 23' 1.4" West Longitude
SS-24	D06374 A0JD6 MA0KC8	6/18/02 1350	Grab	0 to 1	Field duplicate sample of SS-23, collected for quality control.
SS-25	D06375 D06412 A0JD7 MA0KC9	6/17/02 1300	Grab	0 to 2	Sample collected from soil boring SB-13, advanced on Lot No. 16, north of Lot No. 15, in order to determine the presence of any hazardous substances that may have been disposed of in this area. Material was reddish-brown, SILT, some gravel, little fine sand. FID and PID = 0 units above background. 41° 56' 2.2" North Latitude 71° 22' 50.4" West Longitude
SS-26	D06392 D06417 A0JE6 MA0KE0	6/18/02 0910	Grab	0 to 1	Sample collected from potentially contaminated soil in the western portion of Lot No. 15/eastern portion of Lot No. 366, in the vicinity of former solid waste disposal area No. 1, located in the western portion of Lot No. 15, in order to determine the presence of any hazardous substances that may be associated with the former solid waste disposal area. Material was brown, medium SAND, little coarse sand. FID = 0 units above background. 41° 55' 59.5" North Latitude 71° 22' 54.6" West Longitude

Table 3

Soil/Source Sample Summary: Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (*Continued*)

Sample Location No.	Traffic Report No.	Date/ Time (hrs)	Remarks	Sample Depth (feet)	Sample Description/Rationale
MATRIX: Soil/Source (Continued)					
SO-01	D06381 D06413 A0JD8 MA0KD1	6/19/02 1105	Grab Boring completed as SDDW-01.	4 to 8	Sample collected from soil boring SB-01, advanced in the northern portion of Lot No. 9 (Cumberland Conservation Land) (presumably outside potential source areas), in order to establish reference concentrations for soil/source sample comparisons. Material was brown, SILT and clay, trace rock fragments. PID = 0 units above background. 41° 56' 13.3" North Latitude 71° 23' 8.9" West Longitude
SO-02	D06382 A0JD9 MA0KD2	6/18/02 1600	Grab No SDDW installed due to refusal.	4 to 6	Sample collected from soil boring SB-02, advanced in potentially contaminated soil in the vicinity of former solid waste disposal area No. 1, located along the eastern portion of Lot No. 366, in order to determine the presence of any hazardous substances that may be associated with the former solid waste disposal area. Material was brown to tan SILT and clay, little fine sand. FID and PID = 0 units above background. 41° 55' 55.8" North Latitude 71° 22' 53.5" West Longitude
SO-03	D06383 A0JE0 MA0KD3	6/18/02 0950	Grab Boring completed as SDDW-03.	2 to 5	Sample collected from soil boring SB-03, advanced in potentially contaminated soil in the vicinity of former solid waste disposal area No. 1, located along the eastern portion of Lot No. 366, in order to determine the presence of any hazardous substances that may have been disposed of in this area. Material was dark brown to black, SILT, trace glass, brick, rock, and rubber fragments. FID and PID = 0 units above background. 41° 56' 2.0" North Latitude 71° 22' 54.7" West Longitude
SO-04	D06384 A0JE1 MA0KD4	6/18/02 1710	Grab Boring completed as SDDW-04.	4 to 6	Sample collected from soil boring SB-04, advanced in potentially contaminated soil in the northeastern portion of Lot No. 363, in order to determine the presence of any hazardous substances that may have been disposed of in this area. Material was dark red SILT and fine SAND, some medium-to-coarse sand, trace rock fragments. FID and PID = 0 units above background. 41° 55' 52.8" North Latitude 71° 22' 54.9" West Longitude

Table 3

Soil/Source Sample Summary: Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

Sample Location No.	Traffic Report No.	Date/ Time (hrs)	Remarks	Sample Depth (feet)	Sample Description/Rationale
MATRIX: Soil/Source (Continued)					
SO-05	D06385 D06414	6/17/02 1645	Grab Boring completed as SDDW-05.	8 to 16	Sample collected from soil boring SB-05, advanced in potentially contaminated soil in the northern portion of Lot No. 15, northeast of suspected Lagoon No. 2, in order to determine the presence of any hazardous substances that may be associated with suspected Lagoon No. 2. Material was gray to black, coarse SAND and fine gravel, some medium sand. FID = 39.9 and PID = 92.1 units above background. 41° 55' 59.9" North Latitude 71° 22' 51.9" West Longitude
SO-06	D06386 A0JE3 MA0KD6	6/18/02 1450	Grab No SDDW installed due to refusal.	4 to 5	Sample collected from soil boring SB-06, advanced in potentially contaminated soil in the central portion of Lot No. 366, in order to determine the presence of any hazardous substances that may have been disposed of in this area. Material was light to medium brown, fine-to-coarse SAND, some gravel, trace silt. FID = 0 and PID = 15.7 units above background. 41° 56' 0.2" North Latitude 71° 22' 59.5" West Longitude
SO-07	D06387 D06415 A0JE4 MA0KD7	6/20/02 0910	Grab No SDDW installed due to refusal.	4 to 6	Sample collected from soil boring SB-07, advanced in potentially contaminated soil in the central portion of Lot No. 15, in order to determine the presence of any hazardous substances that may have been released/migrated from former solid waste disposal area No. 1. Material was light brown to tan, SILT and fine sand, little fine-to-medium gravel. PID = 0 units above background. 41° 55' 56.2" North latitude 71° 22' 48.2" West Longitude
SO-08	D06388	6/19/02 1010	Grab Boring completed as SDDW-08.	8 to 10	Sample collected from soil boring SB-08, advanced in potentially contaminated soil in the western portion of Lot No. 366, located in the vicinity of former Lagoon No. 1 and east of Pond No. 3, in order to determine the presence of any hazardous substances that may have been released from former Lagoon No. 1. Material was light brown to brown, fine-to-medium SAND, some medium-to-coarse sand, trace gravel. FID and PID = 0 units above background. 41° 55' 55.5" North Latitude 71° 23' 1.8" West Longitude

Table 3

Soil/Source Sample Summary: Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

Sample Location No.	Traffic Report No.	Date/ Time (hrs)	Remarks	Sample Depth (feet)	Sample Description/Rationale
MATRIX: Soil/Source (Continued)					
SO-09	D06389	6/20/02 1155	Grab No SDDW installed due to refusal.	4 to 6	Sample collected from soil boring SB-09, advanced in potentially contaminated soil in the western portion of Lot No. 366 and southeast of boring SB-08, located in the vicinity of former Lagoon No. 1 and east of Pond No. 3, in order to determine the presence of any hazardous substances that may have been released from former Lagoon No. 1. Material was light brown to brown, fine-to-coarse SAND, some silt, trace gravel. FID and PID = 0 units above background. 41° 55' 52.1" North Latitude 71° 22' 59.4" West Longitude
SO-10	D06390	6/20/02 1440	Grab Boring completed as SDDW-07	8 to 10	Sample collected from a soil boring advanced in potentially contaminated soil in the northern portion of Lot No. 15, east of suspected Lagoon No. 2, in order to determine the presence of any hazardous substances that may be associated with suspected Lagoon No. 2. Material was black, coarse SAND and medium GRAVEL, some rock fragments. PID = 111 units above background. 41° 55' 59.0" North Latitude 71° 22' 52.0" West Longitude
SO-11	D06391 D06416 A0JE5 MA0KD8	6/18/02 1530	Grab	2 to 4	Sample collected from soil boring SB-11, advanced in potentially contaminated soil in the vicinity of former solid waste disposal area No. 1, located in the western portion of Lot No. 15, in order to determine the presence of any hazardous substances that may be associated with the former solid waste disposal area. Material was dark brown, SILT and clay, some fine sand, little organic matter. Miscellaneous debris was observed in the sample. FID and PID = 0 units above background. 41° 55' 58.5" North Latitude 71° 22' 53.7" West Longitude
SO-12	MA0KD9	6/19/02 1455	Grab	4 to 8	Sample collected from soil boring SB-12, advanced in the northern portion of Lot No. 9 (Cumberland Conservation Land) (presumably outside potential source areas), in order to establish reference concentrations for soil/source sample comparisons (metals analyses only). Material was brown, fine-to-coarse SAND, some medium gravel. PID = 0 units above background. 41° 56' 13.3" North Latitude 71° 23' 8.9" West Longitude

Table 3

Soil/Source Sample Summary: Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Concluded)

Sample Location No.	Traffic Report No.	Date/ Time (hrs)	Remarks	Sample Depth (feet)	Sample Description/Rationale
MATRIX: Soil/Source (Concluded)					
SC-01	D06350 D06418	6/17/02 1705	Grab	0 to 0.5	Sample collected from tar-like material located in the northern portion of Lot No. 15, along the east-northeast perimeter of suspected Lagoon No. 2, in order to identify the chemical composition of the tar-like material. Material was black, semi-solid, tar-like, trace organic matter. No PID and FID readings were recorded. 41° 55' 59.5" North Latitude 71° 22' 52.2" West Longitude

MS/MSD = Matrix Spike/Matrix Spike Duplicate.
PID = Photoionization Detector.
FID = Flame Ionization Detector.
SDDW = Small Diameter Driven Well.
MS/DUP = Matrix Spike/Duplicate.
No. = Number.
hrs = Hours.
° = Degrees.
' = Minutes.
" = Seconds.

[4; 105]

Complete analytical results of START soil/source samples including quantitation and detection limits are presented in Attachment A. Sample results qualified with a "J" on analytical tables are considered approximate because of limitations identified during data validation of the CLP and DAS sample results. In addition, organic sample results reported at concentrations below quantitation limits and confirmed by mass spectrometry are also qualified by a "J" and considered approximate.

Table 4 is a summary of organic compounds and inorganic elements detected through CLP and DAS analyses of START soil/source samples. For each sample location, a compound or element is listed if it is detected at three times or greater than the higher of the reference sample's concentration. However, if the compound or element is not detected in the reference sample, the reference sample's SQL (for organic analyses) or SDL (for inorganic analyses) is used as the reference value. These compounds or elements are listed if they occurred at a value equal to or greater than the reference sample's SQL or SDL and are designated by their approximate relative concentration above the reference criteria values. Soil/source samples SS-01 and SS-12 were collected to document reference concentrations for surface soil/source samples; and soil/source samples SO-01 and SO-12 were collected to document reference concentrations for subsurface soil/source samples.

Analytical results of soil/source samples collected from the RI portion of the property (surface soil/source samples SS-02 through SS-04, SS-06, SS-08 through SS-11, SS-18 through SS-24, and SS-26; and subsurface soil/source samples SO-02 through SO-04, SO-06, SO-08, SO-09, and SO-11) are compared to the RI DEM Remediation Regulations Residential Direct Exposure Criteria for soil. According to RI DEM, there is no environmental land use restriction (ELUR) on the RI portion of the BFA property. Consequently, soil/source sample analytical results are compared to Residential standards, instead of Industrial/Commercial standards [146, p. 30; 158]. In addition, the VOC, SVOC, PCB, and pesticide analytical results of soil/source samples collected from the RI portion of the property are compared to RI DEM Remediation Regulations Class GA groundwater Leachability Criteria for soil [146].

Analytical results of soil/source samples collected from the MA portion of the property (surface soil/source samples SS-05, SS-07, SS-13 through SS-17, SS-25, and SC-01; and subsurface soil/source samples SO-05, SO-07, and SO-10) are compared to the Massachusetts Oil and Hazardous Material List (MOHML) Reporting Category RCS-1 soil standards. Under the Massachusetts Contingency Plan (MCP), reporting category RCS-1 soil standards are applied to soil samples that are collected from an area located at or within 500 ft of a residential dwelling, a residentially zoned property, school, playground, recreational area, or park [145]. START soil/source samples collected from the MA portion of the BFA property were collected from a residentially zoned property (i.e., Lot No. 15) [159].

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002

Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
VOCs						
Benzene	130 J ppb	10 U ppb	13.0 × SQL	2,500 ppb	200 ppb	NA
Bromodichloromethane	25 J ppb	10 U ppb	2.5 × SQL	10,000 ppb	NL	NA
Chloroform	34 J ppb	10 U ppb	3.4 × SQL	1,200 ppb	NL	NA
Methylcyclohexane	63 J ppb	10 U ppb	6.3 × SQL	NL	NL	NA
Tetrachloroethene	42 J ppb	10 U ppb	4.2 × SQL	12,000 ppb	100 ppb	NA
Toluene	140 J ppb	10 U ppb	14.0 × SQL	190,000 ppb	32,000 ppb	NA
Xylene (total)	71 J ppb	10 U ppb	7.1 × SQL	110,000 ppb	540,000 ppb	NA
SVOCs						
Benzo(a)anthracene	**5,500 J ppb**	400 U ppb	13.8 × SQL	900 ppb	NL	NA
Benzo(a)pyrene	5,000 J ppb	400 U ppb	12.5 × SQL	400 ppb	240,000 ppb	NA
Benzo(b)fluoranthene	**3,900 J ppb**	400 U ppb	9.8 × SQL	900 ppb	NL	NA
Benzo(g,h,i)perylene	3,400 J ppb	400 U ppb	8.5 × SQL	800 ppb	NL	NA
Benzo(k)fluoranthene	**5,100 J ppb**	400 U ppb	12.8 × SQL	900 ppb	NL	NA
Chrysene	5,300 J ppb	400 U ppb	13.3 × SQL	400 ppb	NL	NA
Fluoranthene	9,800 J ppb	400 U ppb	24.5 × SQL	20,000 ppb	NL	NA
Indeno(1,2,3-cd)pyrene	3,300 J ppb	400 U ppb	8.3 × SQL	900 ppb	NL	NA
Phenanthrene	4,800 J ppb	400 U ppb	12.0 × SQL	40,000 ppb	NL	NA
Pyrene	8,400 J ppb	400 U ppb	21.0 × SQL	13,000 ppb	NL	NA

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
PESTICIDES						
Endrin	5.0 ppb	4.0 U ppb	1.3 × SQL	NL	NL	NA
Endrin ketone	17 ppb	4.0 U ppb	4.3 × SQL	NL	NL	NA
INORGANICS						
Antimony	4.8 J ppm	0.93 UJ ppm	5.2 × SDL	10 ppm	NA	NA
Barium	2,330 ppm	45.0 ppm	51.8 × Ref	5,500 ppm	NA	NA
Cadmium	2.5 ppm	0.13 UJ ppm	19.2 × SDL	39 ppm	NA	NA
Calcium	47,300 ppm	340 ppm	139.1 × Ref	NL	NA	NA
Copper	370 ppm	6.1 J ppm	60.7 × Ref	3,100 ppm	NA	NA
Lead	4,340 ppm	12.1 ppm	358.7 × Ref	150 ppm	NA	NA
Magnesium	5,370 ppm	1,330 ppm	4.0 × Ref	NL	NA	NA
Silver	0.92 J ppm	0.27 U ppm	3.4 × SDL	200 ppm	NA	NA
Sodium	2,920 ppm	400 U ppm	7.3 × SDL	NL	NA	NA
Zinc	1,850 ppm	26.2 ppm	70.6 × Ref	6,000 ppm	NA	NA
VOCs						
Tetrachloroethene	12 J ppb	10 U ppb	1.2 × SQL	12,000 ppb	100 ppb	NA
SVOCs						
Anthracene	470 J ppb	400 U ppb	1.2 × SQL	35,000 ppb	NL	NA
Benzo(a)anthracene	1,700 J ppb	400 U ppb	4.3 × SQL	900 ppb	NL	NA

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 0493F SDG: D06367
LABORATORY: SOUTHWEST LABORATORY OF OKLAHOMA, INC.

TABLE 1
VOLATILE SOIL ANALYSES - LOW LEVEL
µg/kg

SAMPLE NUMBER:		D06367	D06368	D06369	D06370	D06371
SAMPLE LOCATION:		SS-17	SS-18	SS-19	SS-20	SS-21
LABORATORY NUMBER:		50065.01	50065.04	50065.05	50065.06	50065.07
COMPOUND	CRQL					
Dichlorodifluoromethane	10	11 UJ	12 U	10 UJ	10 UJ	10 UJ
Chloromethane	10	11 UJ	12 U	10 UJ	10 UJ	10 UJ
Vinyl Chloride	10	11 UJ	12 U	10 U	10 U	10 U
Bromomethane	10	11 UJ	12 U	1 J	2 J	2 J
Chloroethane	10	11 UJ	12 U	10 U	10 U	10 U
Trichlorofluoromethane	10	11 UJ	12 U	10 UJ	10 UJ	10 U
1,1-Dichloroethene	10	11 UJ	12 U	10 U	10 U	10 U
1,1,2-Trichloro-1,2,2-trifluoroethane	10	11 UJ	12 U	10 U	10 U	10 U
Acetone	10	11 UJ	12 UJ	67 U	*1300 UJ	*1300 UJ
Carbon Disulfide	10	11 UJ	12 U	10 U	10 U	10 U
Methyl Acetate	10	11 UJ	12 U	10 U	10 U	10 U
Methylene Chloride	10	11 UJ	12 U	10 U	10 U	10 U
trans-1,2-Dichloroethene	10	11 UJ	12 U	10 U	10 U	10 U
Methyl tert-Butyl Ether	10	11 UJ	12 U	10 U	10 U	10 U
1,1-Dichloroethane	10	11 UJ	12 U	10 U	10 U	10 U
cis-1,2-Dichloroethene	10	11 UJ	12 U	10 U	10 U	10 U
2-Butanone	10	11 UJ	12 UJ	15	24	36
Chloroform	10	11 UJ	12 U	10 U	10 U	10 U
1,1,1-Trichloroethane	10	11 UJ	12 U	10 U	10 U	10 U
Cyclohexane	10	11 UJ	12 U	10 U	10 U	10 U
Carbon Tetrachloride	10	11 UJ	12 U	10 U	10 U	10 U
Benzene	10	11 UJ	12 U	10 U	5 J	1 J
1,2-Dichloroethane	10	11 UJ	12 U	10 U	10 U	10 U
Trichloroethene	10	11 UJ	12 U	10 U	10 U	10 U
Methylcyclohexane	10	11 UJ	12 U	10 U	10 U	10 U
1,2-Dichloropropane	10	11 UJ	12 U	10 U	10 U	10 U
Bromodichloromethane	10	11 UJ	12 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	11 UJ	12 UJ	10 U	10 U	10 U
4-Methyl-2-Pentanone	10	11 UJ	12 U	10 U	10 U	10 UJ
Toluene	10	11 UJ	12 U	7 J	16	1 J
trans-1,3-Dichloropropene	10	11 UJ	12 UJ	10 U	10 U	10 UJ
1,1,2-Trichloroethane	10	11 UJ	12 U	10 U	10 U	10 U
Tetrachloroethene	10	11 UJ	91	10 U	10 U	10 U
2-Hexanone	10	11 UJ	12 UJ	10 U	10 U	10 U
Dibromochloromethane	10	11 UJ	12 U	10 U	10 U	10 U
1,2-Dibromoethane	10	11 UJ	12 U	10 U	10 U	10 U
Chlorobenzene	10	11 UJ	12 U	10 U	10 U	10 U
Ethylbenzene	10	11 UJ	12 U	10 U	10 U	10 U
Xylene (Total)	10	11 UJ	12 U	10 U	6 J	10 U
Styrene	10	11 UJ	12 U	10 U	10 U	10 U
Bromoform	10	11 UJ	12 U	10 U	10 U	10 U
Isopropylbenzene	10	11 UJ	12 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10	11 UJ	12 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10	11 UJ	12 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10	11 UJ	12 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10	11 UJ	12 U	10 U	10 U	10 U
1,2-Dibromo-3-chloropropane	10	11 UJ	12 UJ	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10	11 UJ	12 U	10 U	10 U	10 U
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0
DATE SAMPLED:		06/18/02	06/18/02	06/18/02	06/18/02	06/18/0
DATE ANALYZED:		06/26/02	06/25/02	06/26/02	06/26/02	06/27/
% MOISTURE:		17	23	12	12	

* - Result reported from medium level analysis.

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

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Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
SVOCs (Conc.)						
Benzo(a)pyrene	**1,400 J ppb**	400 U ppb	3.5 × SQL	400 ppb	240,000 ppb	NA
Benzo(b)fluoranthene	1,300 J ppb	400 U ppb	3.3 × SQL	900 ppb	NL	NA
Benzo(g,h,i)perylene	790 J ppb	400 U ppb	2.0 × SQL	800 ppb	NL	NA
Benzo(k)fluoranthene	1,200 J ppb	400 U ppb	3.0 × SQL	900 ppb	NL	NA
Chrysene	**1,800 J ppb**	400 U ppb	4.5 × SQL	400 ppb	NL	NA
Fluoranthene	4,100 J ppb	400 U ppb	10.3 × SQL	20,000 ppb	NL	NA
Hexachlorobenzene	**500 J ppb**	400 U ppb	1.3 × SQL	400 ppb	NL	NA
Indeno(1,2,3-cd)pyrene	810 J ppb	400 U ppb	2.0 × SQL	900 ppb	NL	NA
Phenanthrene	2,900 J ppb	400 U ppb	7.3 × SQL	40,000 ppb	NL	NA
Pyrene	3,000 J ppb	400 U ppb	7.5 × SQL	13,000 ppb	NL	NA
PESTICIDES						
DDT, 4,4-	12 J ppb	4.0 U ppb	3.0 × SQL	NL	NL	NA
Endrin ketone	6.7 J ppb	4.0 UJ ppb	1.7 × SQL	NL	NL	NA
INORGANICS						
Antimony	4.7 J ppm	0.93 UJ ppm	5.1 × SDL	10 ppm	NA	NA
Cadmium	0.29 J ppm	0.13 UJ ppm	2.2 × SDL	39 ppm	NA	NA
Calcium	1,650 ppm	340 ppm	4.9 × Ref	NL	NA	NA
Copper	43.8 J ppm	6.1 J ppm	7.2 × Ref	3,100 ppm	NA	NA

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

le	Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
u	**INORGANICS (Conc.)**						
)	Lead	**588 ppm**	12.1 ppm	48.6 × Ref	150 ppm	NA	NA
	Zinc	138 ppm	26.2 ppm	5.3 × Ref	6,000 ppm	NA	NA
u	**INORGANICS**						
	Calcium	1,980 ppm	340 ppm	5.8 × Ref	NL	NA	NA
	Manganese	770 ppm	101 ppm	7.6 × Ref	390 ppm	NA	NA
	Potassium	1,630 ppm	374 J ppm	4.4 × Ref	NL	NA	NA
MA	**SVOCs**						
	Bis(2-Ethylhexyl)phthalate	5,000 J ppb	400 U ppb	12.5 × SQL	NA	NA	100,000 ppb
	EPHs						
	C11-C22 Aro. Hyds. (Un.)	**1,020,000 ppb**	14,300 J ppb	71.3 × Ref	NA	NA	200,000 ppb
	C9-C18 Aliph. Hyds.	814,000 ppb	7,020 J ppb	116.0 × Ref	NA	NA	1,000,000 ppb
	C19-C36 Aliph. Hyds.	**9,050,000 ppb**	24,100 ppb	375.5 × Ref	NA	NA	2,500,000 ppb
	C11-C22 Aro. Hyds.	**1,020,000 ppb**	14,300 J ppb	71.3 × Ref	NA	NA	200,000 ppb
	PCBs						
	Aroclor-1254	1,000 J ppb	40 U ppb	25.0 × SQL	NA	NA	2,000 ppb
	Aroclor-1260	270 J ppb	40 U ppb	6.8 × SQL	NA	NA	2,000 ppb
	PESTICIDES						
	DDT, 4,4-	24 J ppb	4.0 U ppb	6.0 × SQL	NA	NA	2,000 ppb

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
INORGANICS						
Lead	261 ppm	12.1 ppm	21.6 × Ref	NA	NA	300 ppm
VOCs						
Methylcyclohexane	12 ppb	10 U ppb	1.2 × SQL	NL	NL	NA
Methyl tert-Butyl Ether	30 ppb	10 U ppb	3.0 × SQL	390,000 ppb	900 ppb	NA
Xylene (total)	22 ppb	10 U ppb	2.2 × SQL	110,000 ppb	540,000 ppb	NA
PESTICIDES						
Chlordane, alpha-	4.3 ppb	2.1 U ppb	2.0 × SQL	500 ppb	1,400 ppb	NA
Chlordane, gamma-	3.8 J ppb	2.1 U ppb	1.6 × SQL	500 ppb	1,400 ppb	NA
INORGANICS						
Cadmium	0.21 J ppm	0.13 UJ ppm	1.6 × SDL	39 ppm	NA	NA
Copper	86.2 ppm	6.1 J ppm	14.1 × Ref	3,100 ppm	NA	NA
Lead	41.3 ppm	12.1 ppm	3.4 × Ref	150 ppm	NA	NA
Nickel	20.5 J ppm	6.7 ppm	3.1 × Ref	1,000 ppm	NA	NA
Silver	0.27 J ppm	0.27 U ppm	1.0 × SDL	200 ppm	NA	NA
Zinc	138 ppm	26.2 ppm	5.3 × Ref	6,000 ppm	NA	NA
INORGANICS						
Barium	202 ppm	45.0 ppm	4.5 × Ref	NA	NA	1,000 ppm
Copper	21.2 J ppm	6.1 J ppm	3.5 × Ref	NA	NA	1,000 ppm

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
INORGANICS (Conc.)						
Manganese	4,010 ppm	101 ppm	39.7 × Ref	NA	NA	NL
Silver	0.70 ppm	0.27 U ppm	2.6 × SDL	NA	NA	100 ppm
VOCs						
Methyl tert-Butyl Ether	10 ppb	10 U ppb	1.0 × SQL	390,000 ppb	900 ppb	NA
INORGANICS						
Cadmium	0.31 J ppm	0.13 UJ ppm	2.4 × SDL	39 ppm	NA	NA
Lead	313 J ppm	12.1 ppm	25.9 × Ref	150 ppm	NA	NA
INORGANICS						
Cadmium	0.40 J ppm	0.13 UJ ppm	3.1 × SDL	39 ppm	NA	NA
Thallium	1.0 J ppm	0.86 U ppm	1.2 × SDL	5.5 ppm	NA	NA
INORGANICS						
Cadmium	0.33 J ppm	0.13 UJ ppm	2.5 × SDL	39 ppm	NA	NA
Calcium	1,420 ppm	340 ppm	4.2 × Ref	NL	NA	NA
VOCs						
Benzene	54 J ppb	10 U ppb	5.4 × SQL	2,500 ppb	200 ppb	NA
Chloromethane	21 J ppb	10 U ppb	2.1 × SQL	NL	NL	NA
Dibromochloromethane	60 J ppb	10 U ppb	6.0 × SQL	7,600 ppb	NL	NA
Tetrachloroethene	220 J ppb	10 U ppb	22.0 × SQL	12,000 ppb	100 ppb	NA

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
VOCs (Conc.)						
Toluene	30 J ppb	10 U ppb	3.0 × SQL	190,000 ppb	32,000 ppb	NA
Trichlorofluoromethane	10 J ppb	10 U ppb	1.0 × SQL	NL	NL	NA
SVOCs						
Anthracene	2,200 J ppb	400 U ppb	5.5 × SQL	35,000 ppb	NL	NA
Benzo(a)anthracene	**8,900** ppb	400 U ppb	22.3 × SQL	900 ppb	NL	NA
Benzo(a)pyrene	**8,500** ppb	400 U ppb	21.3 × SQL	400 ppb	240,000 ppb	NA
Benzo(b)fluoranthene	**7,200** ppb	400 U ppb	18.0 × SQL	900 ppb	NL	NA
Benzo(g,h,i)perylene	**5,600** ppb	400 U ppb	14.0 × SQL	800 ppb	NL	NA
Benzo(k)fluoranthene	**7,800** ppb	400 U ppb	19.5 × SQL	900 ppb	NL	NA
Carbazole	840 J ppb	400 U ppb	2.1 × SQL	NL	NL	NA
Chrysene	**8,600** ppb	400 U ppb	21.5 × SQL	400 ppb	NL	NA
Dibenzo(a,h)anthracene	**2,400 J ppb**	400 U ppb	6.0 × SQL	400 ppb	NL	NA
Fluoranthene	15,000 ppb	400 U ppb	37.5 × SQL	20,000 ppb	NL	NA
Fluorene	460 J ppb	400 U ppb	1.2 × SQL	28,000 ppb	NL	NA
Indeno(1,2,3-cd)pyrene	**5,500** ppb	400 U ppb	13.8 × SQL	900 ppb	NL	NA
Phenanthrene	8,800 ppb	400 U ppb	22.0 × SQL	40,000 ppb	NL	NA
Pyrene	12,000 ppb	400 U ppb	30.0 × SQL	13,000 ppb	NL	NA

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
EPHs						
C11-C22 Aro. Hyds. (Un.)	210,000 ppb	14,300 J ppb	14.7 × Ref	NL	NL	NA
C9-C18 Aliph. Hyds.	24,900 ppb	7,020 J ppb	3.5 × Ref	NL	NL	NA
C19-C36 Aliph. Hyds.	264,000 ppb	24,100 ppb	11.0 × Ref	NL	NL	NA
C11-C22 Aro. Hyds.	140,000 ppb	14,300 J ppb	9.8 × Ref	NL	NL	NA
PCBs						
Aroclor-1248	140 J ppb	40 U ppb	3.5 × SQL	10,000 ppb	10,000 ppb	NA
PESTICIDES						
Chlordane, alpha	3.9 J ppb	2.1 U ppb	1.9 × SQL	500 ppb	1,400 ppb	NA
DDE, 4,4'-	21 ppb	4.0 UJ ppb	5.3 × SQL	NL	NL	NA
DDT, 4,4'-	45 J ppb	4.0 U ppb	11.3 × SQL	NL	NL	NA
Endrin ketone	23 J ppb	4.0 U ppb	5.8 × SQL	NL	NL	NA
INORGANICS						
Antimony	7.1 J ppm	0.93 UJ ppm	7.6 × SDL	10 ppm	NA	NA
Arsenic	14.5 J ppm	2.9 ppm	5.0 × Ref	17 ppm	NA	NA
Barium	1,760 ppm	45.0 ppm	39.1 × Ref	5,500 ppm	NA	NA
Cadmium	7.3 ppm	0.13 UJ ppm	56.2 × SDL	39 ppm	NA	NA
Calcium	32,900 ppm	340 ppm	96.8 × Ref	NL	NA	NA
Chromium	41.1 ppm	10.3 ppm	4.0 × Ref	1,390 ppm	NA	NA

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
INORGANICS (Conc.)						
Copper	336 ppm	6.1 J ppm	55.1 × Ref	3,100 ppm	NA	NA
Lead	15,200 ppm	12.1 ppm	1,256 × Ref	150 ppm	NA	NA
Magnesium	4,360 ppm	1,330 ppm	3.3 × Ref	NL	NA	NA
Manganese	409 ppm	101 ppm	4.0 × Ref	390 ppm	NA	NA
Mercury	0.30 J ppm	0.08 J ppm	3.8 × Ref	23 ppm	NA	NA
Nickel	51.8 J ppm	6.7 ppm	7.7 × Ref	1,000 ppm	NA	NA
Silver	3.1 J ppm	0.27 U ppm	11.5 × SDL	200 ppm	NA	NA
Sodium	4,300 J ppm	400 U ppm	10.8 × SDL	NL	NA	NA
Vanadium	120 ppm	23.6 ppm	5.1 × Ref	550 ppm	NA	NA
Zinc	2,570 ppm	26.2 ppm	98.1 × Ref	6,000 ppm	NA	NA
VOCs						
Ethylbenzene	240 J ppb	10 U ppb	24.0 × SQL	NA	NA	80,000 ppb
Isopropylbenzene	75 J ppb	10 U ppb	7.5 × SQL	NA	NA	1,000,000 ppb
Methylcyclohexane	140 J ppb	10 U ppb	14.0 × SQL	NA	NA	100,000 ppb
Tetrachloroethane, 1,1,2,2-	87 JTB ppb	10 U ppb	8.7 × SQL	NA	NA	20 ppb
Toluene	370 J ppb	10 U ppb	37.0 × SQL	NA	NA	90,000 ppb
Xylene (total)	1,300 J ppb	10 U ppb	130 × SQL	NA	NA	500,000 ppb

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

ple	Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
MA	**SVOCs**						
)	Benzo(a)anthracene	490 J ppb	400 U ppb	1.2 × SQL	NA	NA	700 ppb
	Benzo(g,h,i)perylene	840 J ppb	400 U ppb	2.1 × SQL	NA	NA	1,000,000 ppb
	Biphenyl, 1,1-	**3,100 J ppb**	400 U ppb	7.8 × SQL	NA	NA	1,000 ppb
	Chrysene	860 J ppb	400 U ppb	2.2 × SQL	NA	NA	7,000 ppb
	Fluoranthene	740 J ppb	400 U ppb	1.9 × SQL	NA	NA	1,000,000 ppb
	Fluorene	2,000 J ppb	400 U ppb	5.0 × SQL	NA	NA	400,000 ppb
	Methylnaphthalene, 2-	**13,000 ppb**	400 U ppb	32.5 × SQL	NA	NA	4,000 ppb
	Naphthalene	9,900 J ppb	400 U ppb	24.8 × SQL	NA	NA	4,000 ppb
	Phenanthrene	3,700 J ppb	400 U ppb	9.3 × SQL	NA	NA	100,000 ppb
	Pyrene	2,200 J ppb	400 U ppb	5.5 × SQL	NA	NA	700,000 ppb
	EPHs						
	C11-C22 Aro. Hyds. (Un.)	**3,510,000 ppb**	14,300 J ppb	245.5 × Ref	NA	NA	200,000 ppb
	C9-C18 Aliph. Hyds.	**5,280,000 ppb**	7,020 J ppb	752.1 × Ref	NA	NA	1,000,000 ppb
	C19-C36 Aliph. Hyds.	**25,400,000 ppb**	24,100 ppb	1,054 × Ref	NA	NA	2,500,000 ppb
	C11-C22 Aro. Hyds.	**3,470,000 ppb**	14,300 J ppb	242.7 × Ref	NA	NA	200,000 ppb
	VPHs						
	C5-C8 Aliph. Hyds. (Un.)	41,700 ppb	11,000 U ppb	3.8 × SQL	NA	NA	100,000 ppb
	C9-C12 Aliph. Hyds. (Un.)	272,000 ppb	11,000 U ppb	24.7 × SQL	NA	NA	1,000,000 ppb
	C9-C10 Aro. Hyds. (Un.)	**136,000 ppb**	11,000 U ppb	12.4 × SQL	NA	NA	100,000 ppb

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
VPHs (Conc.)						
C5-C8 Aliph. Hyds.	40,500 ppb	11,000 U ppb	3.7 × SQL	NA	NA	100,000 ppb
C9-C12 Aliph. Hyds.	133,000 ppb	11,000 U ppb	12.1 × SQL	NA	NA	1,000,000 ppb
PCBs						
Aroclor-1248	1,800 J ppb	40 U ppb	45.0 × SQL	NA	NA	2,000 ppb
Aroclor-1254	1,000 J ppb	40 UJ ppb	25.0 × SQL	NA	NA	2,000 ppb
Aroclor-1260	350 J ppb	40 U ppb	8.8 × SQL	NA	NA	2,000 ppb
PESTICIDES						
DDT, 4,4'-	41 J ppb	4.0 U ppb	10.3 × SQL	NA	NA	2,000 ppb
INORGANICS						
Barium	450 J ppm	45.0 ppm	10 × Ref	NA	NA	1,000 ppm
Cadmium	2.2 J ppm	0.13 UJ ppm	16.9 × SDL	NA	NA	30 ppm
Calcium	1,860 ppm	340 ppm	5.5 × Ref	NA	NA	NL
Chromium	61.0 J ppm	10.3 ppm	5.9 × Ref	NA	NA	1,000 ppm
Copper	174 ppm	6.1 J ppm	28.5 × Ref	NA	NA	1,000 ppm
Cyanide	6.9 J ppm	0.05 UJ ppm	138 × SDL	NA	NA	100 ppm
Lead	**6,820 ppm**	12.1 ppm	563.6 × Ref	NA	NA	300 ppm
Nickel	281 J ppm	6.7 J ppm	41.9 × Ref	NA	NA	300 ppm
Silver	2.8 ppm	0.27 U ppm	10.4 × SDL	NA	NA	100 ppm
Zinc	454 J ppm	26.2 J ppm	17.3 × Ref	NA	NA	2,500 ppm

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

le	Compound/ Element	Sample Concentration			Reference Concentration			Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1	
1A	**VOCs**											
	Dichlorobenzene, 1,2-	610	J	ppb	10	U	ppb	61.0 × SQL	NA	NA	100,000	ppb
	Dichlorobenzene, 1,4-	170	J	ppb	10	U	ppb	17.0 × SQL	NA	NA	2,000	ppb
	Ethylbenzene	600	J	ppb	10	U	ppb	60.0 × SQL	NA	NA	80,000	ppb
	Methylcyclohexane	920	J	ppb	10	U	ppb	92.0 × SQL	NA	NA	100,000	ppb
	Toluene	620	J	ppb	10	U	ppb	62.0 × SQL	NA	NA	90,000	ppb
	Xylene (total)	2,800	J	ppb	10	U	ppb	280 × SQL	NA	NA	500,000	ppb
	SVOCs											
	Benzo(a)anthracene	**710**	**J**	**ppb**	400	U	ppb	1.8 × SQL	NA	NA	700	ppb
	Biphenyl, 1,1'-	**4,200**	**J**	**ppb**	400	U	ppb	10.5 × SQL	NA	NA	1,000	ppb
	Bis(2-Ethylhexyl)phthalate	5,900	J	ppb	400	U	ppb	14.8 × SQL	NA	NA	100,000	ppb
	Chrysene	1,000	J	ppb	400	U	ppb	2.5 × SQL	NA	NA	7,000	ppb
	Fluoranthene	970	J	ppb	400	U	ppb	2.4 × SQL	NA	NA	1,000,000	ppb
	Fluorene	2,400	J	ppb	400	U	ppb	6.0 × SQL	NA	NA	400,000	ppb
	Methylnaphthalene, 2-	**16,000**		**ppb**	400	U	ppb	40.0 × SQL	NA	NA	4,000	ppb
	Naphthalene	**12,000**		**ppb**	400	U	ppb	30.0 × SQL	NA	NA	4,000	ppb
	Phenanthrene	5,600	J	ppb	400	U	ppb	14.0 × SQL	NA	NA	100,000	ppb
	Pyrene	3,000	J	ppb	400	U	ppb	7.5 × SQL	NA	NA	700,000	ppb

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

ple	Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
MA	**EPHs**						
	C11-C22 Aro. Hyds. (Un.)	**2,970,000 ppb**	14,300 J ppb	207.7 × Ref	NA	NA	200,000 ppb
	C9-C18 Aliph. Hyds.	**4,620,000 ppb**	7,020 J ppb	658.1 × Ref	NA	NA	1,000,000 ppb
	C19-C36 Aliph. Hyds.	**22,200,000 ppb**	24,100 ppb	921.2 × Ref	NA	NA	2,500,000 ppb
	C11-C22 Aro. Hyds.	**2,930,000 ppb**	14,300 J ppb	204.9 × Ref	NA	NA	200,000 ppb
	VPHs						
	C5-C8 Aliph. Hyds. (Un.)	19,600 ppb	11,000 U ppb	1.8 × SQL	NA	NA	100,000 ppb
	C9-C12 Aliph. Hyds. (Un.)	153,000 ppb	11,000 U ppb	13.9 × SQL	NA	NA	1,000,000 ppb
	C9-C10 Aro. Hyds. (Un.)	80,100 ppb	11,000 U ppb	7.3 × SQL	NA	NA	100,000 ppb
	C5-C8 Aliph. Hyds.	19,100 ppb	11,000 U ppb	1.7 × SQL	NA	NA	100,000 ppb
	C9-C12 Aliph. Hyds.	72,300 ppb	11,000 U ppb	6.6 × SQL	NA	NA	1,000,000 ppb
	PCBs						
	Aroclor-1248	1,100 J ppb	40 U ppb	27.5 × SQL	NA	NA	2,000 ppb
	Aroclor-1254	750 J ppb	40 U ppb	18.8 × SQL	NA	NA	2,000 ppb
	Aroclor-1260	420 J ppb	40 U ppb	10.5 × SQL	NA	NA	2,000 ppb
	PESTICIDES						
	DDT, 4,4'-	30 J ppb	4.0 U ppb	7.5 × SQL	NA	NA	2,000 ppb
	Endrin aldehyde	8.0 J ppb	4.0 U ppb	2.0 × SQL	NA	NA	10,000 ppb

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

ole	Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
MA .)	**INORGANICS**						
	Barium	425 J ppm	45.0 ppm	9.4 × Ref	NA	NA	1,000 ppm
	Cadmium	2.5 ppm	0.13 UJ ppm	17.7 × SDL	NA	NA	30 ppm
	Calcium	1,450 ppm	340 ppm	4.3 × Ref	NA	NA	NL
	Copper	128 ppm	6.1 J ppm	210 × Ref	NA	NA	1,000 ppm
	Cyanide	1.5 J ppm	0.05 UJ ppm	30.0 × SDL	NA	NA	100 ppm
	Lead	7,190 ppm	12.1 ppm	594.2 × Ref	NA	NA	300 ppm
	Nickel	224 ppm	6.7 ppm	33.4 × Ref	NA	NA	300 ppm
	Silver	1.1 ppm	0.27 U ppm	4.1 × SDL	NA	NA	100 ppm
	Zinc	496 J ppm	26.2 ppm	18.9 × Ref	NA	NA	2,500 ppm
MA	**VOCs**						
	Benzene	370 J ppb	10 U ppb	37.0 × SQL	NA	NA	10,000 ppb
	Cyclohexane	1,400 J ppb	10 U ppb	140 × SQL	NA	NA	500,000 ppb
	Dichlorobenzene, 1,2-	2,700 J ppb	10 U ppb	270 × SQL	NA	NA	100,000 ppb
	Dichlorobenzene, 1,3-	610 J ppb	10 U ppb	61.0 × SQL	NA	NA	100,000 ppb
	Dichlorobenzene, 1,4-	1,300 J ppb	10 U ppb	130 × SQL	NA	NA	2,000 ppb
	Dichloroethene, cis-1,2-	2,600 J ppb	10 U ppb	260 × SQL	NA	NA	2,000 ppb
	Ethylbenzene	3,600 J ppb	10 U ppb	360 × SQL	NA	NA	80,000 ppb
	Isopropylbenzene	930 J ppb	10 U ppb	93.0 × SQL	NA	NA	1,000,000 ppb

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

ple c.	Compound/ Element	Sample Concentration			Reference Concentration			Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1	
MA .)	**VOCs (Conc.)**											
	Styrene	290	J	ppb	10	U	ppb	29.0 × SQL	NA	NA	2,000	ppb
	Tetrachloroethene	**510**	**J**	**ppb**	10	U	ppb	51.0 × SQL	NA	NA	500	ppb
	Toluene	19,000	J	ppb	10	U	ppb	1,900 × SQL	NA	NA	90,000	ppb
	Trichloroethene	200	J	ppb	10	U	ppb	20 × SQL	NA	NA	400	ppb
	Vinyl Chloride	**400**	**J**	**ppb**	10	U	ppb	40.0 × SQL	NA	NA	300	ppb
	Xylene (total)	22,000	J	ppb	10	U	ppb	2,200 × SQL	NA	NA	500,000	ppb
	SVOCs											
	Benzo(a)anthracene	610	J	ppb	400	U	ppb	1.5 × SQL	NA	NA	700	ppb
	Biphenyl, 1,1'	**2,700**	**J**	**ppb**	400	U	ppb	6.8 × SQL	NA	NA	1,000	ppb
	Bis(2-Ethylhexyl)phthalate	**140,000**	**J**	**ppb**	400	U	ppb	350 × SQL	NA	NA	100,000	ppb
	Butylbenzylphthalate	37,000	J	ppb	400	U	ppb	92.5 × SQL	NA	NA	100,000	ppb
	Chrysene	1,400	J	ppb	400	U	ppb	3.5 × SQL	NA	NA	7,000	ppb
	Fluoranthene	1,200	J	ppb	400	U	ppb	3.0 × SQL	NA	NA	1,000,000	ppb
	Fluorene	2,500	J	ppb	400	U	ppb	6.3 × SQL	NA	NA	400,000	ppb
	Methylnaphthalene, 2-	**9,300**	**J**	**ppb**	400	U	ppb	23.3 × SQL	NA	NA	4,000	ppb
	Naphthalene	**7,200**	**J**	**ppb**	400	U	ppb	18.0 × SQL	NA	NA	4,000	ppb
	Phenanthrene	4,800	J	ppb	400	U	ppb	12.0 × SQL	NA	NA	100,000	ppb
	Pyrene	3,300	J	ppb	400	U	ppb	8.3 × SQL	NA	NA	700,000	ppb

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

ple c.	Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
MA .)	**EPHs**						
	C11-C22 Aro. Hyds. (Un.)	**7,640,000 ppb**	14,300 J ppb	534.3 × Ref	NA	NA	200,000 ppb
	C9-C18 Aliph. Hyds.	**18,100,000 ppb**	7,020 J ppb	2,578 × Ref	NA	NA	1,000,000 ppb
	C19-C36 Aliph. Hyds.	**42,400,000 ppb**	24,100 ppb	1,759 × Ref	NA	NA	2,500,000 ppb
	C11-C22 Aro. Hyds.	**7,590,000 ppb**	14,300 J ppb	530.8 × Ref	NA	NA	200,000 ppb
	VPHs						
	C5-C8 Aliph. Hyds. (Un.)	97,900 ppb	11,000 U ppb	8.9 × SQL	NA	NA	100,000 ppb
	C9-C12 Aliph. Hyds. (Un.)	**1,170,000 ppb**	11,000 U ppb	106 × SQL	NA	NA	1,000,000 ppb
	C9-C10 Aro. Hyds. (Un.)	**579,000 ppb**	11,000 U ppb	52.6 × SQL	NA	NA	100,000 ppb
	C5-C8 Aliph. Hyds.	**86,800 ppb**	11,000 U ppb	7.9 × SQL	NA	NA	100,000 ppb
	C9-C12 Aliph. Hyds.	577,000 ppb	11,000 U ppb	52.5 × SQL	NA	NA	1,000,000 ppb
	PCBs						
	Aroclor-1248	**3,100 J ppb**	40 U ppb	77.5 × SQL	NA	NA	2,000 ppb
	Aroclor-1254	**2,100 J ppb**	40 U ppb	52.5 × SQL	NA	NA	2,000 ppb
	Aroclor-1260	1,100 J ppb	40 U ppb	27.5 × SQL	NA	NA	2,000 ppb
	PESTICIDES						
	Chlordane, alpha-	110 ppb	2.1 U ppb	52.4 × SQL	NA	NA	1,000 ppb
	DDE, 4,4'	**140 J ppb**	4.0 U ppb	35.0 × SQL	NA	NA	2,000 ppb
	Endosulfan II	**60 J ppb**	4.0 U ppb	15.0 × SQL	NA	NA	50 ppb
	Heptachlor epoxide	**140 J ppb**	2.1 U ppb	66.7 × SQL	NA	NA	60 ppb

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

le	Compound/ Element	Sample Concentration			Reference Concentration			Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1	
IA	**INORGANICS**											
)	Barium	586	J	ppm	45.0		ppm	13.0 × Ref	NA	NA	1,000	ppm
	Cadmium	5.3		ppm	0.13	UJ	ppm	10.8 × SDL	NA	NA	30	ppm
	Calcium	3,000		ppm	340		ppm	8.8 × Ref	NA	NA	NL	
	Chromium	82.8	J	ppm	10.3		ppm	8.0 × Ref	NA	NA	1,000	ppm
	Copper	243		ppm	6.1	J	ppm	39.8 × Ref	NA	NA	1,000	ppm
	Cyanide	3.1	J	ppm	0.05	UJ	ppm	62.0 × SDL	NA	NA	100	ppm
	Lead	**10,700**		**ppm**	12.1		ppm	884.3 × Ref	NA	NA	300	ppm
	Nickel	72.0		ppm	6.7		ppm	10.7 × Ref	NA	NA	300	ppm
	Silver	1.3		ppm	0.27	U	ppm	4.8 × SDL	NA	NA	100	ppm
	Zinc	771	J	ppm	26.2		ppm	29.4 × Ref	NA	NA	2,500	ppm
IA	**VOCs**											
	Dichloroethene, cis-1,2-	21		ppb	10	U	ppb	2.1 × SQL	NA	NA	2,000	ppb
	Methylcyclohexane	22		ppb	10	U	ppb	2.2 × SQL	NA	NA	100,000	ppb
	Tetrachloroethene	13		ppb	10	U	ppb	1.3 × SQL	NA	NA	500	ppb
	Toluene	140		ppb	10	U	ppb	14.0 × SQL	NA	NA	50,000	ppb
	SVOCs											
	Benzo(a)anthracene	500	J	ppb	400	U	ppb	1.3 × SQL	NA	NA	700	ppb
	Benzo(g,h,i)perylene	1,000	J	ppb	400	U	ppb	2.5 × SQL	NA	NA	1,000,000	ppb
	Biphenyl, 1,1'-	**2,100**	**J**	**ppb**	400	U	ppb	5.3 × SQL	NA	NA	1,000	ppb

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

ple	Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
MA	**SVOCs (Conc.)**						
	Bis(2-Ethylhexyl)phthalate	17,000 ppb	400 U ppb	42.5 × SQL	NA	NA	100,000 ppb
	Fluorene	970 J ppb	400 U ppb	2.4 × SQL	NA	NA	400,000 ppb
	Methylnaphthalene, 2-	**12,000 ppb**	400 U ppb	30.0 × SQL	NA	NA	4,000 ppb
	Naphthalene	**5,500 ppb**	400 U ppb	13.8 × SQL	NA	NA	4,000 ppb
	Phenanthrene	2,700 J ppb	400 U ppb	6.8 × SQL	NA	NA	100,000 ppb
	Pyrene	2,400 J ppb	400 U ppb	6.0 × SQL	NA	NA	700,000 ppb
	EPHs						
	C11-C22 Aro. Hyds. (Un.)	**12,300,000 ppb**	14,300 J ppb	860.1 × Ref	NA	NA	200,000 ppb
	C9-C18 Aliph. Hyds.	**5,020,000 ppb**	7,020 J ppb	715.1 × Ref	NA	NA	1,000,000 ppb
	C19-C36 Aliph. Hyds.	**72,800,000 ppb**	24,100 ppb	3,021 × Ref	NA	NA	2,500,000 ppb
	C11-C22 Aro. Hyds.	**12,300,000 ppb**	14,300 J ppb	860.1 × Ref	NA	NA	200,000 ppb
	VPHs						
	C9-C12 Aliph. Hyds. (Un.)	80,300 ppb	11,000 U ppb	7.3 × SQL	NA	NA	1,000,000 ppb
	C9-C10 Aro. Hyds. (Un.)	48,500 ppb	11,000 U ppb	4.4 × SQL	NA	NA	100,000 ppb
	C9-C12 Aliph. Hyds.	31,400 ppb	11,000 U ppb	2.9 × SQL	NA	NA	1,000,000 ppb
	PCBs						
	Aroclor-1248	**7,800 J ppb**	40 U ppb	195 × SQL	NA	NA	2,000 ppb
	Aroclor-1254	6,000 J ppb	40 U ppb	150 × SQL	NA	NA	2,000 ppb

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

ple c.	Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
5MA c.)	**PESTICIDES**						
	Aldrin	**280 J ppb**	2.1 U ppb	133 × SQL	NA	NA	30 ppb
	DDE, 4,4	290 J ppb	4.0 U ppb	72.5 × SQL	NA	NA	2,000 ppb
	Endosulfan II	**110 J ppb**	4.0 U ppb	27.5 × SQL	NA	NA	50 ppb
	Endrin aldehyde	80 J ppb	4.0 U ppb	20.0 × SQL	NA	NA	10,000 ppb
	INORGANICS						
	Antimony	3.2 J ppm	0.93 UJ ppm	3.4 × SDL	NA	NA	10 ppm
	Arsenic	9.9 J ppm	2.9 ppm	3.4 × Ref	NA	NA	30 ppm
	Barium	**1,040 J ppm**	45.0 ppm	23.1 × Ref	NA	NA	1,000 ppm
	Cadmium	6.8 ppm	0.13 UJ ppm	52.3 × SDL	NA	NA	30 ppm
	Calcium	1,900 ppm	340 ppm	5.6 × Ref	NA	NA	NL
	Chromium	67.6 J ppm	10.1 ppm	6.6 × Ref	NA	NA	1,000 ppm
	Copper	370 ppm	6.1 J ppm	60.6 × Ref	NA	NA	1,000 ppm
	Cyanide	0.63 J ppm	0.05 UJ ppm	12.6 × SDL	NA	NA	100 ppm
	Lead	**24,500 ppm**	12.1 ppm	2,025 × Ref	NA	NA	300 ppm
	Nickel	84.7 ppm	6.7 ppm	12.6 × Ref	NA	NA	300 ppm
	Silver	2.2 ppm	0.27 U ppm	8.1 × SDL	NA	NA	100 ppm
	Zinc	759 J ppm	26.2 ppm	29.0 × Ref	NA	NA	2,500 ppm

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

ple	Compound/ Element	Sample Concentration			Reference Concentration			Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1	
MA	**SVOCs**											
	Anthracene	1,400	J	ppb	400	U	ppb	3.5 × SQL	NA	NA	1,000,000	ppb
	Benzo(a)anthracene	4,700	J	ppb	400	U	ppb	11.8 × SQL	NA	NA	700	ppb
	Benzo(a)pyrene	**5,700**	**J**	**ppb**	400	U	ppb	14.3 × SQL	NA	NA	700	ppb
	Benzo(b)fluoranthene	6,200	J	ppb	400	U	ppb	15.5 × SQL	NA	NA	700	ppb
	Benzo(g,h,i)perylene	2,700	J	ppb	400	U	ppb	6.8 × SQL	NA	NA	1,000,000	ppb
	Benzo(k)fluoranthene	4,900	J	ppb	400	U	ppb	12.3 × SQL	NA	NA	7,000	ppb
	Chrysene	5,300	J	ppb	400	U	ppb	13.3 × SQL	NA	NA	7,000	ppb
	Fluoranthene	8,500	J	ppb	400	U	ppb	21.3 × SQL	NA	NA	1,000,000	ppb
	Indeno(1,2,3-cd)pyrene	**2,600**	**J**	**ppb**	400	U	ppb	6.5 × SQL	NA	NA	700	ppb
	Phenanthrene	6,100	J	ppb	400	U	ppb	15.3 × SQL	NA	NA	100,000	ppb
	Pyrene	4,700	J	ppb	400	U	ppb	11.8 × SQL	NA	NA	700,000	ppb
	EPHs											
	C11-C22 Aro. Hyds. (Un.)	173,000		ppb	14,300	J	ppb	12.1 × Ref	NA	NA	200,000	ppb
	C19-C36 Aliph. Hyds.	186,000		ppb	24,100		ppb	7.7 × Ref	NA	NA	2,500,000	ppb
	C11-C22 Aro. Hyds.	135,000		ppb	14,300	J	ppb	9.4 × Ref	NA	NA	200,000	ppb
	PCBs											
	Aroclor-1248	210	J	ppb	40	U	ppb	5.3 × SQL	NA	NA	2,000	ppb
	Aroclor-1260	1,300	J	ppb	40	U	ppb	32.5 × SQL	NA	NA	2,000	ppb

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

ple c.	Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
7MA t.)	**PESTICIDES**						
	Chlordane, alpha-	23 J ppb	2.1 U ppb	11.0 × SQL	NA	NA	1,000 ppb
	Chlordane, gamma-	22 J ppb	2.1 U ppb	10.5 × SQL	NA	NA	1,000 ppb
	DDD, 4,4'-	5.0 J ppb	4.0 U ppb	1.3 × SQL	NA	NA	2,000 ppb
	INORGANICS						
	Antimony	**14.6 J ppm**	0.93 UJ ppm	15.7 × SDL	NA	NA	10 ppm
	Arsenic	14.1 J ppm	2.9 ppm	4.9 × Ref	NA	NA	30 ppm
	Barium	**3,550 ppm**	45.0 ppm	78.9 × Ref	NA	NA	1,000 ppm
	Cadmium	10.3 ppm	0.14 UJ ppm	79.2 × SDL	NA	NA	30 ppm
	Calcium	15,900 ppm	340 ppm	46.8 × Ref	NA	NA	NL
	Chromium	64.9 ppm	10.3 ppm	6.3 × Ref	NA	NA	1,000 ppm
	Copper	925 ppm	6.1 J ppm	151.6 × Ref	NA	NA	1,000 ppm
	Lead	4,550 ppm	12.1 ppm	376 × Ref	NA	NA	300 ppm
	Manganese	444 ppm	101 ppm	4.4 × Ref	NA	NA	NL
	Mercury	1.3 J ppm	0.08 J ppm	16.3 × Ref	NA	NA	20 ppm
	Nickel	183 J ppm	6.7 ppm	27.3 × Ref	NA	NA	300 ppm
	Silver	18.3 J ppm	0.27 U ppm	67.8 × SDL	NA	NA	100 ppm
	Sodium	7,340 ppm	400 U ppm	18.4 × SDL	NA	NA	NL

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

ple	Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
MA	**INORGANICS (Conc.)**						
	Thallium	1.0 J ppm	0.86 U ppm	1.2 × SDL	NA	NA	8 ppm
	Vanadium	79.8 ppm	23.6 ppm	8.4 × Ref	NA	NA	400 ppm
	Zinc	**4,600 ppm**	26.2 ppm	175.6 × Ref	NA	NA	2,500 ppm
RI	**VOCs**						
	Tetrachloroethene	91 ppb	10 U ppb	9.1 × SQL	12,000 ppb	100 ppb	NA
	SVOCs						
	Benzo(a)anthracene	**3,500 J ppb**	400 U ppb	8.8 × SQL	900 ppb	NL	NA
	Benzo(a)pyrene	**3,600 J ppb**	400 U ppb	9.0 × SQL	400 ppb	240,000 ppb	NA
	Benzo(b)fluoranthene	**3,300 J ppb**	400 U ppb	8.3 × SQL	900 ppb	NL	NA
	Benzo(k)fluoranthene	**2,800 J ppb**	400 U ppb	7.0 × SQL	900 ppb	NL	NA
	Benzo(g,h,i)perylene	**2,200 J ppb**	400 U ppb	5.5 × SQL	800 ppb	NL	NA
	Chrysene	**3,800 J ppb**	400 U ppb	9.5 × SQL	400 ppb	NL	NA
	Fluoranthene	6,300 J ppb	400 U ppb	15.8 × SQL	20,000 ppb	NL	NA
	Indeno(1,2,3-cd)pyrene	**2,200 J ppb**	400 U ppb	5.5 × SQL	900 ppb	NL	NA
	Phenanthrene	3,900 J ppb	400 U ppb	9.8 × SQL	40,000 ppb	NL	NA
	Pyrene	4,600 J ppb	400 U ppb	11.5 × SQL	13,000 ppb	NL	NA

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
EPHs						
C11-C22 Aro. Hyds. (Un.)	106,000 ppb	14,300 J ppb	7.4 × Ref	NL	NL	NA
C19-C36 Aliph. Hyds.	139,000 ppb	24,100 ppb	5.8 × Ref	NL	NL	NA
C11-C22 Aro. Hyds.	85,300 ppb	14,300 J ppb	6.0 × Ref	NL	NL	NA
PCBs						
Aroclor-1248	310 ppb	40 U ppb	7.8 × SQL	10,000 ppb	10,000 ppb	NA
Aroclor-1260	150 J ppb	40 U ppb	3.8 × SQL	10,000 ppb	10,000 ppb	NA
PESTICIDES						
Chlordane, alpha-	18 J ppb	2.1 U ppb	8.6 × SQL	500 ppb	1,400 ppb	NA
DDD, 4,4'-	615 J ppb	4.0 U ppb	1.6 × SQL	NL	NL	NA
DDE, 4,4'-	16 J ppb	4.0 U ppb	4.0 × SQL	NL	NL	NA
DDT, 4,4'-	67 J ppb	4.0 U ppb	16.8 × SQL	NL	NL	NA
Endrin Ketone	12 ppb	4.0 U ppb	3.0 × SQL	NL	NL	NA
INORGANICS						
Antimony	5.8 J ppm	0.93 UJ ppm	6.2 × SDL	10 ppm	NA	NA
Arsenic	14.2 J ppm	2.9 ppm	4.9 × Ref	1.7 ppm	NA	NA
Barium	1,300 ppm	45.0 ppm	28.9 × Ref	5,500 ppm	NA	NA
Cadmium	4.5 ppm	0.13 UJ ppm	34.6 × SDL	39 ppm	NA	NA
Calcium	29,600 ppm	340 ppm	87.1 × Ref	NL	NA	NA

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

ple c.	Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
8[RI] c.)	**INORGANICS (Conc.)**						
	Copper	650 ppm	6.1 J ppm	106.6 × Ref	3,100 ppm	NA	NA
	Lead	4,780 ppm	121 ppm	39.5 × Ref	150 ppm	NA	NA
	Magnesium	6,910 ppm	1,330 ppm	5.2 × Ref	NL	NA	NA
	Manganese	630 ppm	101 ppm	6.2 × Ref	390 ppm	NA	NA
	Mercury	0.37 J ppm	0.08 J ppm	4.6 × Ref	23 ppm	NA	NA
	Nickel	44.3 J ppm	6.7 ppm	6.6 × Ref	1,000 ppm	NA	NA
	Silver	3.5 J ppm	0.27 U ppm	13.0 × SDL	200 ppm	NA	NA
	Sodium	3,770 ppm	400 U ppm	9.4 × SDL	NL	NA	NA
	Zinc	2,080 ppm	26.2 ppm	79.4 × Ref	6,000 ppm	NA	NA
9[RI]	**PCBs**						
	Aroclor-1260	190 J ppb	40 U ppb	4.8 × SQL	10,000 ppb	10,000 ppb	NA
	PESTICIDES						
	DDT, 4,4'-	8.1 J ppb	4.0 U ppb	2.0 × SQL	NL	NL	NA
	INORGANICS						
	Antimony	2.9 J ppm	0.93 UJ ppm	3.1 × SDL	10 ppm	NA	NA
	Barium	135 ppm	45.0 ppm	3.0 × Ref	5,500 ppm	NA	NA
	Cadmium	3.8 ppm	0.13 UJ ppm	29.2 × SDL	39 ppm	NA	NA
	Copper	68.3 ppm	6.1 ppm	11.2 × Ref	3,100 ppm	NA	NA

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

ple c.	Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
)RI :.)	**INORGANICS (Conc.)**						
	Lead	**449 ppm**	12.1 ppm	37.1 × Ref	150 ppm	NA	NA
	Nickel	33.0 J ppm	6.7 ppm	4.9 × Ref	1,000 ppm	NA	NA
	Silver	0.39 J ppm	0.27 U ppm	1.4 × SDL	200 ppm	NA	NA
	Sodium	2,330 ppm	400 U ppm	5.8 × SDL	NL	NA	NA
	Zinc	1,530 ppm	26.2 ppm	58.4 × Ref	6,000 ppm	NA	NA
0RI	**VOCs**						
	Toluene	16 ppb	10 U ppb	1.6 × SQL	190,000 ppb	32,000 ppb	NA
	SVOCs						
	Benzo(a)anthracene	**920 J ppb**	400 U ppb	2.3 × SQL	900 ppb	NL	NA
	Benzo(a)pyrene	740 J ppb	400 U ppb	1.9 × SQL	400 ppb	240,000 ppb	NA
	Benzo(b)fluoranthene	800 J ppb	400 U ppb	2.0 × SQL	900 ppb	NL	NA
	Benzo(k)fluoranthene	690 J ppb	400 U ppb	1.7 × SQL	900 ppb	NL	NA
	Benzo(g,h,i)perylene	410 J ppb	400 U ppb	1.0 × SQL	800 ppb	NL	NA
	Chrysene	1,000 J ppb	400 U ppb	2.5 × SQL	400 ppb	NL	NA
	Fluoranthene	2,100 ppb	400 U ppb	5.3 × SQL	20,000 ppb	NL	NA
	Indeno(1,2,3-cd)pyrene	430 J ppb	400 U ppb	1.1 × SQL	900 ppb	NL	NA
	Phenanthrene	1,200 J ppb	400 U ppb	3.0 × SQL	40,000 ppb	NL	NA
	Pyrene	1,600 J ppb	400 U ppb	4.0 × SQL	13,000 ppb	NL	NA

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

ple c.	Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
)RI c.)	**PCBs**						
	Aroclor-1260	670 ppb	40 U ppb	16.8 × SQL	10,000 ppb	10,000 ppb	NA
	PESTICIDES						
	Endrin Aldehyde	17 J ppb	4.0 U ppb	4.3 × SQL	NL	NL	NA
	INORGANICS						
	Antimony	4.3 J ppm	0.93 UJ ppm	4.6 × SDL	10 ppm	NA	NA
	Barium	293 ppm	45.0 ppm	6.5 × Ref	5,500 ppm	NA	NA
	Cadmium	17.9 ppm	0.13 UJ ppm	137.7 × SDL	39 ppm	NA	NA
	Copper	204 ppm	6.18 ppm	33.4 × Ref	3,100 ppm	NA	NA
	Lead	**428 ppm**	12.1 ppm	35.4 × Ref	150 ppm	NA	NA
	Nickel	69.7 J ppm	6.7 ppm	10.4 × Ref	1,000 ppm	NA	NA
	Silver	0.77 J ppm	0.27 U ppm	2.9 × SDL	200 ppm	NA	NA
	Sodium	6,860 ppm	400 U ppm	17.2 × SDL	NL	NA	NA
	Zinc	4,880 ppm	26.2 ppm	186.3 × Ref	6,000 ppm	NA	NA
1RI	**PESTICIDES**						
	DDT, 4,4'-	5.8 J ppb	4.0 U ppb	1.5 × SQL	NL	NL	NA
	INORGANICS						
	Antimony	1.5 J ppm	0.93 UJ ppm	1.6 × SDL	10 ppm	NA	NA
	Barium	194 ppm	45.0 ppm	4.3 × Ref	5,500 ppm	NA	NA

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

ple c.	Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
1[RI] c.)	**INORGANICS (Conc.)**						
	Cadmium	0.83 ppm	0.13 UJ ppm	6.4 × SDL	39 ppm	NA	NA
	Copper	535 ppm	6.1 J ppm	88 × Ref	3,100 ppm	NA	NA
	Lead	269 ppm	12.1 ppm	22.2 × Ref	150 ppm	NA	NA
	Mercury	0.26 J ppm	0.08 J ppm	3.3 × Ref	23 ppm	NA	NA
	Silver	1.2 J ppm	0.27 U ppm	4.4 × SDL	200 ppm	NA	NA
	Sodium	1,110 J ppm	400 U ppm	2.8 × SDL	NL	NA	NA
	Zinc	411 ppm	26.2 ppm	15.7 × Ref	6,000 ppm	NA	NA
2[RI]	**INORGANICS**						
	Copper	26.2 J ppm	6.1 J ppm	4.3 × Ref	3,100 ppm	NA	NA
	Lead	121 ppm	12.1 ppm	10.0 × Ref	150 ppm	NA	NA
	Silver	0.46 J ppm	0.27 U ppm	1.7 × SDL	200 ppm	NA	NA
	Zinc	110 ppm	26.2 ppm	4.2 × Ref	6,000 ppm	NA	NA
3[RI]	**PCBs**						
	Aroclor-1254	150 J ppb	40 U ppb	3.8 × SQL	10,000 ppb	10,000 ppb	NA
	PESTICIDES						
	DDE, 4,4'-	9.7 ppb	4.0 U ppb	2.4 × SQL	NL	NL	NA
	DDT, 4,4'-	71 ppb	4.0 U ppb	17.8 × SQL	NL	NL	NA
	Endrin ketone	7.5 ppb	4.0 U ppb	1.9 × SQL	NL	NL	NA
	Methoxychlor	28 ppb	21 U ppb	1.3 × SQL	NL	NL	NA

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

ple c.	Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
3[RI] c.)	**INORGANICS (Conc.)**						
	Antimony	2.3 J ppm	0.93 UJ ppm	2.5 × SDL	10 ppm	NA	NA
	Barium	268 ppm	45.0 ppm	6.0 × Ref	5,500 ppm	NA	NA
	Cadmium	7.7 ppm	0.13 UJ ppm	59.2 × SDL	39 ppm	NA	NA
	Calcium	1,700 ppm	340 ppm	5.0 × Ref	NL	NA	NA
	Chromium[a]	38.1 ppm	10.3 ppm	3.7 × Ref	390 ppm	NA	NA
	Copper	167 ppm	6.1 J ppm	27.4 × Ref	3,100 ppm	NA	NA
	Lead	**801 ppm**	12.1 ppm	66.2 × Ref	150 ppm	NA	NA
	Manganese	657 ppm	101 ppm	6.5 × Ref	390 ppm	NA	NA
	Nickel	23.4 J ppm	6.7 ppm	3.5 × Ref	1,000 ppm	NA	NA
	Silver	2.5 J ppm	0.27 U ppm	9.3 × SDL	200 ppm	NA	NA
	Sodium	1,260 J ppm	400 U ppm	3.2 × SDL	NL	NA	NA
	Zinc	410 ppm	26.2 ppm	15.6 × Ref	6,000 ppm	NA	NA
4[RI]	**PCBs**						
	Aroclor-1254	140 J ppb	40 U ppb	3.5 × SQL	10,000 ppb	10,000 ppb	NA
	PESTICIDES						
	DDE, 4,4'-	6.9 J ppb	4.0 U ppb	1.7 × SQL	NL	NL	NA
	DDT, 4,4'-	61 ppb	4.0 U ppb	15.3 × SQL	NL	NL	NA
	Endrin ketone	4.5 J ppb	4.0 U ppb	1.1 × SQL	NL	NL	NA

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

ple :.	Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
RI :.)	**INORGANICS**						
	Antimony	2.2 J ppm	0.93 UJ ppm	2.4 × SDL	10 ppm	NA	NA
	Barium	219 ppm	450 ppm	1.9 × Ref	5,500 ppm	NA	NA
	Cadmium	6.3 ppm	0.13 UJ ppm	48.5 × SDL	39 ppm	NA	NA
	Calcium	1,350 ppm	340 ppm	4.0 × Ref	NL	NA	NA
	Copper	118 ppm	6.1 J ppm	19.3 × Ref	3,100 ppm	NA	NA
	Lead	**590** ppm	12.1 ppm	48.8 × Ref	150 ppm	NA	NA
	Manganese	**520** **ppm**	101 ppm	5.1 × Ref	390 ppm	NA	NA
	Silver	116 J ppm	0.27 U ppm	5.9 × SDL	200 ppm	NA	NA
	Sodium	1,040 J ppm	400 U ppm	2.6 × SDL	NL	NA	NA
	Zinc	316 ppm	26.2 ppm	12.1 × Ref	6,000 ppm	NA	NA
MA	**INORGANICS**						
	Calcium	1,680 ppm	340 ppm	4.9 × Ref	NA	NA	NL
RI	**VOCs**						
	Tetrachloroethene	33 ppb	10 U ppb	3.3 × SQL	12,000 ppb	100 ppb	NA
	SVOCs						
	Benzo(a)anthracene	480 J ppb	400 U ppb	1.2 × SQL	900 ppb	NL	NA
	Benzo(a)pyrene	560 J ppb	400 U ppb	1.4 × SQL	400 ppb	240,000 ppb	NA
	Benzo(b)fluoranthene	480 J ppb	400 U ppb	1.2 × SQL	900 ppb	NL	NA
	Benzo(k)fluoranthene	520 J ppb	400 U ppb	1.3 × SQL	900 ppb	NL	NA

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
SVOCs (Conc.)						
Benzo(g,h,i)perylene	400 J ppb	400 U ppb	1.0 × SQL	800 ppb	NL	NA
Chrysene	480 J ppb	400 U ppb	1.2 × SQL	400 ppb	NL	NA
Fluoranthene	720 J ppb	400 U ppb	1.8 × SQL	20,000 ppb	NL	NA
Indeno(1,2,3-cd)pyrene	410 J ppb	400 U ppb	1.0 × SQL	900 ppb	NL	NA
Pyrene	760 J ppb	400 U ppb	1.9 × SQL	13,000 ppb	NL	NA
EPHs						
C19-C36 Aliph. Hyds.	75,500 ppb	24,100 ppb	3.1 × Ref	NL	NL	NA
PESTICIDES						
Chlordane, alpha-	11 J ppb	2.1 U ppb	5.2 × SQL	500 ppb	1,400 ppb	NA
Chlordane, gamma-	10 ppb	2.1 U ppb	4.8 × SQL	500 ppb	1,400 ppb	NA
INORGANICS						
Calcium	1,490 ppm	340 ppm	4.4 × Ref	NL	NA	NA
Copper	52.2 J ppm	6.1 U ppm	8.6 × Ref	3,100 ppm	NA	NA
Lead	**270 ppm**	12.1 ppm	22.3 × Ref	150 ppm	NA	NA
Silver	1.5 ppm	0.27 U ppm	4.8 × SDL	200 ppm	NA	NA
Sodium	1,180 ppm	400 U ppm	3.0 × SDL	NL	NA	NA
Zinc	697 ppm	26.2 ppm	26.6 × Ref	6,000 ppm	NA	NA

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

ple c.	Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
02[RI]	**VOCs**						
	Butanone, 2-	130 ppb	25 ppb	5.2 × Ref	10,000,000 ppb	NL	NA
	Tetrachloroethene	180 ppb	10 U ppb	18.0 × SQL	12,000 ppb	100 ppb	NA
	SVOCs						
	Benzo(a)anthracene	**1,600 J ppb**	350 U ppb	4.6 × SQL	900 ppb	NL	NA
	Benzo(a)pyrene	1,900 J ppb	350 U ppb	5.4 × SQL	400 ppb	240,000 ppb	NA
	Benzo(b)fluoranthene	**1,600 J ppb**	350 U ppb	4.6 × SQL	900 ppb	NL	NA
	Benzo(g,h,i)perylene	1,300 J ppb	350 U ppb	3.7 × SQL	800 ppb	NL	NA
	Benzo(k)fluoranthene	**1,700 J ppb**	350 U ppb	4.9 × SQL	900 ppb	NL	NA
	Chrysene	1,600 J ppb	350 U ppb	4.6 × SQL	400 ppb	NL	NA
	Dibenzo(a,h)anthracene	**410 J ppb**	350 U ppb	1.2 × SQL	400 ppb	NL	NA
	Fluoranthene	2,000 J ppb	350 U ppb	5.7 × SQL	20,000 ppb	NL	NA
	Indeno(1,2,3-cd)pyrene	**1,200 J ppb**	350 U ppb	3.4 × SQL	900 ppb	NL	NA
	Phenanthrene	1,100 J ppb	350 U ppb	3.1 × SQL	40,000 ppb	NL	NA
	Pyrene	1,900 J ppb	350 U ppb	5.4 × SQL	13,000 ppb	NL	NA
	PESTICIDES						
	DDE, 4,4'-	4.0 J ppb	3.5 U ppb	1.1 × SQL	NL	NL	NA
	Endrin ketone	16 J ppb	3.5 U ppb	4.6 × SQL	NL	NL	NA

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

ple c.	Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
2[RI] c.)	**INORGANICS**						
	Antimony	3.4 J ppm	0.82 UJ ppm	4.1 × SDL	10 ppm	NA	NA
	Arsenic	6.1 U ppm	110 J ppm	6.1 × Ref	17 ppm	NA	NA
	Barium	611 ppm	37.2 ppm	16.4 × Ref	5,500 ppm	NA	NA
	Cadmium	1.4 ppm	0.11 U ppm	12.7 × SDL	39 ppm	NA	NA
	Calcium	19,200 ppm	481 ppm	39.9 × Ref	NL	NA	NA
	Chromium	16.1 ppm	52 ppm	31.1 × Ref	390 ppm	NA	NA
	Copper	215 ppm	7.4 J ppm	29.1 × Ref	3,100 ppm	NA	NA
	Lead	1,840 ppm	82 ppm	22.4 × Ref	150 ppm	NA	NA
	Mercury	0.12 J ppm	0.05 U ppm	2.4 × SDL	23 ppm	NA	NA
	Silver	0.87 J ppm	0.24 UJ ppm	3.6 × SDL	200 ppm	NA	NA
	Sodium	1,800 ppm	293 U ppm	6.1 × SDL	NL	NA	NA
	Zinc	884 ppm	23.2 ppm	38.1 × Ref	16,000 ppm	NA	NA
3[RI]	**VOCs**						
	Benzene	12 ppb	10 U ppb	1.2 × SQL	2,500 ppb	200 ppb	NA
	Dichloroethene, cis-1,2-	12 ppb	10 U ppb	1.2 × SQL	630,000 ppb	1,700 ppb	NA
	Isopropylbenzene	11 ppb	10 U ppb	1.1 × SQL	27,000 ppb	NL	NA
	Tetrachloroethene	31 ppb	10 U ppb	3.1 × SQL	12,000 ppb	100	NA
	Toluene	20 ppb	10 U ppb	2.0 × SQL	190,000 ppb	32,000 ppb	NA
	Trichlorobenzene, 1,2,4-	48 ppb	10 U ppb	4.8 × SQL	96,000 ppb	140,000 ppb	NA

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

ple	Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
3RI	**SVOCs**						
.)	Di-n-octylphthalate	31,000 ppb	350 U ppb	88.6 × SQL	NL	NL	NA
	PESTICIDES						
	BHC, delta-	5.6 J ppb	1.8 U ppb	3.1 × SQL	NL	NL	NA
	DDD, 4,4'-	9.1 J ppb	3.5 U ppb	2.6 × SQL	NL	NL	NA
	DDE, 4,4'-	14 J ppb	3.5 U ppb	4.0 × SQL	NL	NL	NA
	Methoxychlor	22 J ppb	18 U ppb	1.2 × SQL	NL	NL	NA
	INORGANICS						
	Antimony	**25.5 J ppm**	0.82 UJ ppm	31.1 × SDL	10 ppm	NA	NA
	Arsenic	3.3 J ppm	1.0 J ppm	3.3 × Ref	1.7 ppm	NA	NA
	Cadmium	0.85 ppm	0.11 U ppm	7.7 × SDL	39 ppm	NA	NA
	Copper	226 ppm	7.4 J ppm	30.5 × Ref	3,100 ppm	NA	NA
	Lead	**423 ppm**	8.2 ppm	51.6 × Ref	150 ppm	NA	NA
	Mercury	0.07 J ppm	0.052 U ppm	1.4 × SDL	23 ppm	NA	NA
	Sodium	865 ppm	293 U ppm	3.0 × SDL	NL	NA	NA
	Zinc	368 J ppm	23.2 ppm	15.9 × Ref	6,000 ppm	NA	NA
4RI	**VOCs**						
	Methyl tert-Butyl Ether	35 J ppb	10 U ppb	3.5 × SQL	390,000 ppb	900 ppb	NA

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
INORGANICS						
Cadmium	0.27 ppm	0.11 U ppm	2.5 × SDL	39 ppm	NA	NA
Calcium	1,790 ppm	481 ppm	3.7 × Ref	NL	NA	NA
Manganese	**2,200 ppm**	186 ppm	11.8 × Ref	390 ppm	NA	NA
Silver	0.26 UJ ppm	0.24 U ppm	1.1 × SDL	200 ppm	NA	NA
SVOCs						
Biphenyl, 1,1'-	350 J ppb	350 U ppb	1.0 × SQL	NA	NA	1,000 ppb
Bis(2-Ethylhexyl)phthalate	4,900 ppb	350 U ppb	14.0 × SQL	NA	NA	100,000 ppb
Butylbenzylphthalate	2,400 ppb	350 U ppb	6.9 × SQL	NA	NA	100,000 ppb
Phenanthrene	480 J ppb	350 U ppb	1.4 × SQL	NA	NA	100,000 ppb
EPHs						
C11-C22 Aro. Hyds. (Un.)	**610,000 ppb**	17,300 J ppb	35.3 × Ref	NA	NA	200,000 ppb
C9-C18 Aliph. Hyds	612,000 ppb	5,950 J ppb	102.9 × Ref	NA	NA	1,000,000 ppb
C19-C36 Aliph. Hyds.	**3,050,000 ppb**	20,200 ppb	151.0 × Ref	NA	NA	2,500,000 ppb
C11-C22 Aro. Hyds	606,000 ppb	17,300 J ppb	35.0 × Ref	NA	NA	200,000 ppb
VPHs						
C9-C12 Aliph. Hyds. (Un.)	15,700 ppb	6,900 U ppb	2.3 × SQL	NA	NA	1,000,000 ppb
C9-C10 Aro. Hyds. (Un.)	8,180 ppb	6,900 U ppb	1.2 × SQL	NA	NA	100,000 ppb
C9-C12 Aliph. Hyds.	7,540 J ppb	6,900 U ppb	1.1 × SQL	NA	NA	1,000,000 ppb

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

ple	Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
5MA	**PCBs**						
	Aroclor-1248	280 J ppb	35 U ppb	8.0 × SQL	NA	NA	2,000 ppb
	PESTICIDES						
	BHC, gamma- (Lindane)	13 ppb	1.8 U ppb	7.2 × SQL	NA	NA	100 ppb
	Chlordane, alpha	34 ppb	1.8 U ppb	19 × SQL	NA	NA	1,000 ppb
	Endrin ketone[b]	170 ppb	3.5 U ppb	48.6 × SQL	NA	NA	600 ppb
	Methoxychlor	85 ppb	1.8 U ppb	47 × SQL	NA	NA	30,000 ppb
	INORGANICS						
	Lead	152 ppm	8.2 ppm	18.5 × Ref	NA	NA	300 ppm
	Sodium	300 ppm	293 U ppm	1.0 × SDL	NA	NA	NL
5RI	**VOCs**						
	Methyl tert-Butyl Ether	230 J ppb	10 U ppb	23.0 × SQL	390,000 ppb	900 ppb	NA
	SVOCs						
	Bis(2-Ethylhexyl)phthalate	5,700 J ppb	350 U ppb	16.3 × SQL	46,000 ppb	NL	NA
	INORGANICS						
	Cadmium	0.17 J ppm	0.11 U ppm	1.5 × SDL	39 ppm	NA	NA
	Chromium[a]	48.7 ppm	5.2 ppm	9.4 × Ref	390 ppm	NA	NA
MA	**INORGANICS**						
	Manganese	558 ppm	186 ppm	3.0 × Ref	NA	NA	NL

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

ple	Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
RI	**VOCs**						
	Carbon disulfide	15 ppb	10 U ppb	1.5 × SQL	NL	NL	NA
	Methyl tert-Butyl Ether	11 ppb	10 U ppb	1.1 × SQL	390,000 ppb	900 ppb	NA
	PESTICIDES						
	Heptachlor	1.8 J ppb	1.8 U ppb	1.0 × SQL	NL	NL	NA
	INORGANICS						
	Cadmium	0.33 J ppm	0.11 U ppm	3.0 × SDL	39 ppm	NA	NA
	Calcium	1,450 ppm	48.1 ppm	3.0 × Ref	NL	NA	NA
	Selenium	0.71 J ppm	0.47 UJ ppm	1.5 × SDL	390 ppm	NA	NA
	Thallium	1.2 J ppm	0.75 UJ ppm	1.6 × SDL	5.5 ppm	NA	NA
RI	**INORGANICS**						
	Beryllium	**2.0 ppm**	0.51 ppm	3.9 × Ref	0.4 ppm	NA	NA
	Cadmium	0.58 ppm	0.11 U ppm	5.3 × SDL	39 ppm	NA	NA
	Selenium	1.0 J ppm	0.47 UJ ppm	2.1 × SDL	390 ppm	NA	NA
	Thallium	1.2 J ppm	0.75 U ppm	1.6 × SDL	5.5 ppm	NA	NA
MA	**VOCs**						
	Benzene	94 J ppb	10 U ppb	9.4 × SQL	NA	NA	10,000 ppb
	Carbon disulfide	20 J ppb	10 U ppb	2.0 × SQL	NA	NA	100,000 ppb
	Dichlorobenzene, 1,2-	200 J ppb	10 U ppb	20.0 × SQL	NA	NA	100,000 ppb
	Dichlorobenzene, 1,4-	27 J ppb	10 U ppb	2.7 × SQL	NA	NA	2,000 ppb

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
VOCs (Conc.)						
Dichloroethane, 1,1-	62 J ppb	10 U ppb	6.2 × SQL	NA	NA	3,000 ppb
Dichloroethene, cis-1,2-	45 J ppb	10 U ppb	4.5 × SQL	NA	NA	2,000 ppb
Ethylbenzene	980 J ppb	10 U ppb	98.0 × SQL	NA	NA	80,000 ppb
Methylcyclohexane	530 J ppb	10 U ppb	53.0 × SQL	NA	NA	100,000 ppb
Tetrachloroethene	92 J ppb	10 U ppb	9.2 × SQL	NA	NA	500 ppb
Toluene	2,100 J ppb	10 U ppb	210.0 × SQL	NA	NA	90,000 ppb
Tri., 1,1,2-	160 J ppb	10 U ppb	16.0 × SQL	NA	NA	NL
Vinyl chloride	33 J ppb	10 U ppb	3.3 × SQL	NA	NA	300 ppb
Xylene (total)	4,600 J ppb	10 U ppb	460.0 × SQL	NA	NA	500,000 ppb
SVOCs						
Acetophenone	1,600 ppb	350 U ppb	4.6 × SQL	NA	NA	1,000,000 ppb
Benzaldehyde	420 J ppb	350 UJ ppb	1.2 × SQL	NA	NA	100,000 ppb
Biphenyl, 1,1'-	680 ppb	350 U ppb	1.9 × SQL	NA	NA	1,000 ppb
Bis(2-Ethylhexyl)phthalate	1,100 ppb	350 U ppb	3.1 × SQL	NA	NA	100,000 ppb
Butylbenzylphthalate	650 ppb	350 U ppb	1.9 × SQL	NA	NA	100,000 ppb
Fluorene	380 ppb	350 U ppb	1.1 × SQL	NA	NA	400,000 ppb
Methylnaphthalene, 2-	3,800 ppb	350 U ppb	10.9 × SQL	NA	NA	4,000 ppb
Naphthalene	1,200 ppb	350 U ppb	3.4 × SQL	NA	NA	4,000 ppb
Phenanthrene	790 ppb	350 U ppb	2.3 × SQL	NA	NA	100,000 ppb

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
PCBs						
Aroclor-1242	**3,900 ppb**	35 U ppb	111.4 × SQL	NA	NA	2,000 ppb
Aroclor-1254	1,400 J ppb	35 U ppb	40.0 × SQL	NA	NA	2,000 ppb
PESTICIDES						
DDE, 4,4'-	56 ppb	3.5 U ppb	16.0 × SQL	NA	NA	2,000 ppb
Endosulfan II	11 ppb	3.5 U ppb	3.1 × SQL	NA	NA	50 ppb
INORGANICS						
Lead	138 J ppm	8.2 ppm	16.8 × Ref	NA	NA	300 ppm
VOCs						
Tetrachloroethene	31 J ppb	10 U ppb	3.1 × SQL	12,000 ppb	100 ppb	NA
SVOCs						
Anthracene	1,600 J ppb	350 U ppb	4.6 × SQL	35,000 ppb	NL	NA
Benzo(a)anthracene	7,200 ppb	350 U ppb	20.6 × SQL	900 ppb	NL	NA
Benzo(a)pyrene	**7,700 ppb**	350 U ppb	22.0 × SQL	400 ppb	240,000 ppb	NA
Benzo(b)fluoranthene	5,400 ppb	350 U ppb	15.4 × SQL	900 ppb	NL	NA
Benzo(g,h,i)perylene	**5,400 ppb**	350 U ppb	15.4 × SQL	800 ppb	NL	NA
Benzo(k)fluoranthene	7,800 ppb	350 U ppb	22.3 × SQL	900 ppb	NL	NA

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
SVOCs (Conc.)						
Carbazole	720 J ppb	350 U ppb	2.1 × SQL	NL	NL	NA
Chrysene	7,200 ppb	350 U ppb	20.6 × SQL	400 ppb	NL	NA
Dibenzo(a,h)anthracene	**2,300 J ppb**	350 U ppb	6.6 × SQL	400 ppb	NL	NA
Fluoranthene	11,000 ppb	350 U ppb	31.4 × SQL	20,000 ppb	NL	NA
Indeno(1,2,3-cd)pyrene	**5,500 ppb**	350 U ppb	15.7 × SQL	900 ppb	NL	NA
Phenanthrene	6,100 ppb	350 U ppb	17.4 × SQL	40,000 ppb	NL	NA
Pyrene	8,800 ppb	350 U ppb	25.1 × SQL	13,000 ppb	NL	NA
EPHs						
C11-C22 Aro. Hyds. (Un.)	251,000 ppb	17,300 J ppb	14.5 × Ref	NL	NL	NA
C19-C36 Aliph. Hyds.	197,400 ppb	20,200 ppb	9.8 × Ref	NL	NL	NA
C11-C22 Aro. Hyds.	173,000 ppb	17,300 J ppb	10.0 × Ref	NL	NL	NA
PCBs						
Aroclor-1248	130 J ppb	35 U ppb	3.7 × SQL	10,000 ppb	10,000 ppb	NA
PESTICIDES						
Chlordane, alpha-	5.0 J ppb	1.8 U ppb	2.8 × SQL	500 ppb	1,400 ppb	NA
DDE, 4,4'	12 ppb	1.5 U ppb	8.4 × SQL	NL	NL	NA

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

ole	Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
RI	**PESTICIDES (Conc.)**						
)	DDT, 4,4'-	46 J ppb	3.5 U ppb	13.1 × SQL	NL	NL	NA
	Endrin	9.7 ppb	3.5 U ppb	2.8 × SQL	NL	NL	NA
	Endrin ketone	27 ppb	3.5 U ppb	7.7 × SQL	NL	NL	NA
	Heptachlor	2.5 J ppb	1.8 U ppb	1.4 × SQL	NL	NL	NA
	INORGANICS						
	Antimony	6.5 J ppm	0.82 UJ ppm	7.9 × SDL	10 ppm	NA	NA
	Arsenic	11.8 J ppm	1.0 J ppm	11.8 × Ref	1.7 ppm	NA	NA
	Barium	1,460 ppm	37.2 ppm	39.2 × Ref	5,500 ppm	NA	NA
	Cadmium	6.1 ppm	0.11 U ppm	55.5 × SDL	39 ppm	NA	NA
	Calcium	38,000 ppm	481 ppm	79.0 × Ref	NL	NA	NA
	Chromium	34.9 ppm	5.2 ppm	6.7 × Ref	390 ppm	NA	NA
	Copper	1,280 ppm	7.4 J ppm	173.0 × Ref	3,100 ppm	NA	NA
	Lead	4,290 ppm	8.2 ppm	523.2 × Ref	150 ppm	NA	NA
	Mercury	0.35 J ppm	0.05 U ppm	7.0 × SDL	23 ppm	NA	NA
	Nickel	51.2 J ppm	7.3 ppm	7.0 × Ref	1,000 ppm	NA	NA
	Silver	1.7 J ppm	0.24 U ppm	7.1 × SDL	200 ppm	NA	NA

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
INORGANICS (Conc.)						
Sodium	5,550 ppm	293 U ppm	18.9 × SDL	NL	NA	NA
Vanadium	144 ppm	10.2 ppm	14.1 × Ref	550 ppm	NA	NA
Zinc	3,500 ppm	23.2 ppm	150.9 × Ref	6,000 ppm	NA	NA
SVOCs						
Benzaldehyde	1,300 J ppb	400 UJ ppb	3.3 × SQL	NA	NA	100,000 ppb
Benzo(b)fluoranthene	810 J ppb	400 U ppb	2.0 × SQL	NA	NA	700 ppb
Bis(2-Ethylhexyl)phthalate	15,000 J ppb	400 U ppb	37.5 × SQL	NA	NA	100,000 ppb
Chrysene	2,100 J ppb	400 U ppb	5.3 × SQL	NA	NA	7,000 ppb
Pyrene	1,100 J ppb	400 U ppb	2.8 × SQL	NA	NA	700,000 ppb
EPHs						
C11-C22 Aro. Hyds. (Un.)	**16,000,000 ppb**	14,300 J ppb	1,118.9 × Ref	NA	NA	200,000 ppb
C9-C18 Aliph. Hyds.	1,120,000 ppb	7,020 J ppb	159.5 × Ref	NA	NA	1,000,000 ppb
C19-C36 Aliph. Hyds.	**56,100,000 ppb**	24,100 ppb	2,327.8 × Ref	NA	NA	2,500,000 ppb
C11-C22 Aro. Hyds.	16,000,000 ppb	14,300 J ppb	1,118.9 × Ref	NA	NA	200,000 ppb
PCBs						
Aroclor-1248	**4,600 J ppb**	40 U ppb	115.0 × SQL	NA	NA	2,000 ppb
Aroclor-1254	6,100 ppb	40 U ppb	152.5 × SQL	NA	NA	2,000 ppb
Aroclor-1260	**4,100 ppb**	40 U ppb	102.5 × SQL	NA	NA	2,000 ppb

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 through 20 June 2002 (Continued)

ple	Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
1MA .)	**PESTICIDES**						
	Chlordane, alpha-	16 J ppb	2.1 U ppb	7.6 × SQL	NA	NA	1,000 ppb
	DDE 4,4'	200 J ppb	4.0 U ppb	50.0 × SQL	NA	NA	2,000 ppb
	Dieldrin	**36 J ppb**	4.0 U ppb	9.0 × SQL	NA	NA	30 ppb
	Endosulfan II	**110 J ppb**	4.0 U ppb	27.5 × SQL	NA	NA	50 ppb
	Endosulfan sulfate	49 J ppb	4.0 U ppb	12.3 × SQL	NA	NA	50 ppb
	INORGANICS						
	Antimony	2.9 J ppm	0.93 UJ ppm	3.1 × SDL	NA	NA	10 ppm
	Arsenic	14.6 J ppm	2.9 ppm	5.0 × SDL	NA	NA	30 ppm
	Barium	**2,220 J ppm**	45.0 ppm	49.3 × Ref	NA	NA	1,000 ppm
	Cadmium	17.1 ppm	0.13 UJ ppm	131.5 × SDL	NA	NA	30 ppm
	Calcium	3,680 ppm	340 ppm	10.8 × Ref	NA	NA	NL
	Chromium	193 J ppm	10.5 ppm	18.7 × Ref	NA	NA	1,000 ppm
	Copper	828 ppm	6.1 J ppm	135.7 × Ref	NA	NA	1,000 ppm
	Cyanide	1.2 J ppm	0.05 UJ ppm	24.0 × SDL	NA	NA	100 ppm
	Lead	**30,400 ppm**	12.1 ppm	2,512.4 × Ref	NA	NA	300 ppm
	Mercury	0.36 ppm	0.08 J ppm	4.5 × Ref	NA	NA	20 ppm
	Nickel	118 ppm	6.7 ppm	17.6 × Ref	NA	NA	300 ppm

Table 4

Summary of Analytical Results
Soil/Source Sample Analysis for Boulter Farm Area
Sample Collected by START on 17 through 20 June 2002 (Concluded)

ple :.	Compound/ Element	Sample Concentration	Reference Concentration	Comments	RI DEM Direct Exposure Criteria	RI DEM Leachability	MA DEP RCS-1
[MA :.)	**INORGANICS (Conc.)**						
	Silver	5.4 ppm	0.27 U ppm	20.0 × SDL	NA	NA	100 ppm
	Zinc	1,700 J ppm	26.2 ppm	64.9 × Ref	NA	NA	2,500 ppm

: Bolded concentrations meet or exceed the applicable state soil standard(s) for the substance listed.

Soil/source sample collected in the State of Rhode Island. Analytical result compared to the Rhode Island Department of Environmental Management (RI DEM) Remediation Regulations Residential Direct Exposure Criteria for soil. In addition, the volatile organic compound (VOC), semivolatile organic compound (SVOC), polychlorinated biphenyl (PCB), and pesticide analytical results are compared to RI DEM Remediation Regulations Leachability Criteria (for Class GA groundwater) for soil.
Soil/source sample collected in the State of Massachusetts. Analytical result compared to the Massachusetts Department of Environmental Protection (MA DEP) Massachusetts Oil and Hazardous Material List (MOHML) Reporting Category RCS-1 soil standard.
RI DEM Remedial Regulations Residential Direct Exposure Criteria soil standard for hexavalent chromium used, as no standard for total chromium exists.
MA DEP MOHML RCS-1 soil standard for endrin used, as no standard for endrin ketone exists.

= Location.
= Reference value.
= Not listed.
= Unadjusted.
s. = Hydrocarbons.
Cs. = Semivolatile organic compounds.
: = Continued.
1,1,2- = Trichloro-1,2,2-trifluoroethane, 1,1,2-.
= The compound/substance was detected in an aqueous field trip blank used to assess field contamination.
= Quantitation is approximate due to limitations identified during the quality control review.
= The compound/substance was analyzed for, but not detected. The associated numerical value is the SQL or SDL.
= The compound/substance was analyzed for, but not detected. The associated numerical value is the estimated SQL or SDL.

SQL = Sample Quantitation Limit.
ppb = Parts per billion.
EPHs = Extractable petroleum hydrocarbons.
VPHs = Volatile petroleum hydrocarbons.
Aro. = Aromatic.
PCBs = Polychlorinated biphenyls.

SDL = Sample Detection Limit.
ppm = parts per million.
NA = Not Applicable.
Aliph. = Aliphatic.
VOCs = Volatile organic compounds.
Conc. = Concluded.

-131; 133-135; 142-143; 145-146]

Former Solid Waste Disposal Area No. 1

START collected seven surface soil/source samples (SS-02, SS-03, SS-07, SS-11, SS-17, SS-18, and SS-26) and four subsurface soil samples (SO-02, SO-03, SO-07, and SO-11) from the vicinity of former solid waste disposal area No. 1. Eight samples, SS-02, SS-03, SS-11, SS-18, SS-26, SO-02, SO-03, and SO-11, were collected from the RI portion of this source area. Three samples, SS-07, SS-17, and SO-07, were collected from the MA portion of this source area. Fourteen VOCs, 16 SVOCs, two PCBs, 10 pesticides, and 17 inorganic substances along with EPHs and VPHs were detected in START soil/source samples at concentrations above reference criteria [4; 127-135; 142; 143]. The analytical results of surface and subsurface soil/source samples collected from the vicinity of former solid waste disposal area No. 1 are discussed in the following paragraphs.

RI Analytical Results For Former Solid Waste Disposal Area No. 1

Ten VOCs were detected in START surface soil/source samples collected from the RI portion of former solid waste disposal area No. 1 at concentrations above reference criteria. The maximum concentrations of VOCs detected above reference criteria are as follows: benzene (130 J ppb in SS-02); bromodichloromethane (25 J ppb in SS-02); chloroform (34 J ppb in SS-02); chloromethane (21 J ppb in SS-11); dibromochloromethane (60 J ppb in SS-11); methylcyclohexane (63 J ppb in SS-02); PCE (220 J ppb in SS-11); toluene (140 J ppb in SS-02); trichlorofluoromethane (10 J ppb in SS-11); and total xylene (71 J ppb in SS-02) [128-129; 142]. No VOCs were detected in surface soil/source samples collected from the RI portion of this source area at concentrations exceeding their respective RI DEM Residential Direct Exposure Criteria for soil. PCE was detected in SS-11 at a concentration exceeding its respective RI DEM Leachability Criteria for soil [146].

Seven VOCs were detected in START subsurface soil/source samples collected from the RI portion of former solid waste disposal area No. 1 at concentrations above reference criteria. The maximum concentrations of VOCs detected above reference criteria are as follows: benzene (12 ppb in SO-03); 2-butanone (130 ppb in SO-02); cis-1,2-dichloroethene (cis-1,2-DCE) (12 ppb in SO-03); isopropylbenzene (11 ppb in SO-03); PCE (180 ppb in SO-02); toluene (20 ppb in SO-03); and 1,2,4-trichlorobenzene (48 ppb in SO-03) [128-129; 142]. No VOCs were detected in subsurface soil/source samples collected from the RI portion of this source area at concentrations exceeding their respective RI DEM Residential Direct Exposure Criteria for soil. PCE was detected in SO-02 at a concentration exceeding its respective RI DEM Leachability Criteria for soil [146].

Fifteen SVOCs were detected in START surface soil/source samples collected from the RI portion of former solid waste disposal area No. 1 at concentrations above reference criteria. The maximum concentrations of SVOCs detected above reference criteria are as follows: anthracene (2,200 J ppb in SS-11); benzo(a)anthracene (8,900 ppb in SS-11); benzo(a)pyrene (8,500 ppb in SS-11); benzo(b)fluoranthene (7,200 ppb in SS-11); benzo(g,h,i)perylene (5,600 ppb in SS-11); benzo(k)fluoranthene (7,800 ppb in SS-11); carbazole (840 J ppb in SS-11); chrysene (8,600 ppb in SS-11); dibenzo(a,h)anthracene (2,400 J ppb in SS-11); fluoranthene (15,000 ppb in SS-11); fluorene (460 J ppb in SS-11); hexachlorobenzene (500 J ppb in SS-03); indeno(1,2,3-cd)pyrene (5,500 ppb in SS-11); phenanthrene (8,800 ppb in SS-11); and pyrene (12,000 ppb in SS-11) [128-131; 142]. Benzo(a)anthracene was detected in samples SS-02, SS-03, SS-11, and SS-18; benzo(a)pyrene was detected in samples SS-02, SS-03, SS-11, SS-18, and SS-26; benzo(b)fluoranthene was detected in samples SS-02, SS-03, SS-11, and SS-18; benzo(g,h,i)perylene was detected in samples SS-02, SS-

11, and SS-18; benzo(k)fluoranthene was detected in samples SS-02, SS-03, SS-11, and SS-18; chrysene was detected in samples SS-02, SS-03, SS-11, SS-18, and SS-26; dibenzo(a,h)anthracene was detected in sample SS-11; hexachlorobenzene was detected in sample SS-03; and indeno(1,2,3-cd)pyrene was detected in samples SS-02, SS-11, and SS-18 at concentrations exceeding their respective RI DEM Residential Direct Exposure Criteria for soil. No SVOCs were detected in surface soil/source samples collected from the RI portion of this source area at concentrations exceeding their respective RI DEM Leachability Criteria for soil [146].

Fourteen SVOCs were detected in START subsurface soil/source samples collected from the RI portion of former solid waste disposal area No. 1 at concentrations above reference criteria. The maximum concentrations of SVOCs detected above reference criteria are as follows: anthracene (1,600 J ppb in SO-11); benzo(a)anthracene (7,200 ppb in SO-11); benzo(a)pyrene (7,700 ppb in SO-11); benzo(b)fluoranthene (5,400 ppb in SO-11); benzo(g,h,i)perylene (5,400 ppb in SO-11); benzo(k)fluoranthene (7,800 ppb in SO-11); carbazole (720 J ppb in SO-11); chrysene (7,200 ppb in SO-11); dibenzo(a,h)anthracene (2,300 J ppb in SO-11); di-n-octylphthalate (31,000 ppb in SO-03); fluoranthene (11,000 ppb in SO-11); indeno(1,2,3-cd)pyrene (5,500 ppb in SO-11); phenanthrene (6,100 ppb in SO-11); and pyrene (8,800 ppb in SO-11) [128-131; 142]. Benzo(a)anthracene; benzo(a)pyrene; benzo(b)fluoranthene; benzo(g,h,i)perylene; benzo(k)fluoranthene; chrysene; dibenzo(a,h)anthracene; and indeno(1,2,3-cd)pyrene were detected in samples SO-02 and SO-11 at concentrations exceeding their respective RI DEM Residential Direct Exposure Criteria for soil. No SVOCs were detected in subsurface soil/source samples collected from the RI portion of this source area at concentrations exceeding their respective RI DEM Leachability Criteria for soil [146].

Due to the lack of state boundary information indicating the exact location of the RI/MA state line at the time of sample collection, samples SS-11, SS-18 and SS-26 (actually collected from the vicinity of the RI portion of solid waste disposal area No. 1) were collected and were analyzed for EPHs as a precaution, since START could not determine which state the samples were in at the time of collection. Analytical results of these samples indicated the presence of EPHs at concentrations above reference criteria. The maximum concentration of EPHs detected above reference criteria were detected in SS-11 and are as follows: C_9 through C_{18} aliphatic hydrocarbons (24,900 ppb); C_{19} through C_{36} aliphatic hydrocarbons (264,000 ppb); C_{11} through C_{22} aromatic hydrocarbons (140,000 ppb); and unadjusted C_{11} through C_{22} aromatic hydrocarbons (210,000 ppb) [132]. No RI DEM Direct Exposure Criteria (Residential or Industrial/Commercial) exists for EPHs in soils [146].

Sample SO-11, collected from the vicinity of solid waste disposal area No. 1 in RI, was collected and was analyzed for EPHs as a precaution, since START could not determine which state the sample was in at the time of collection. Analytical results of sample SO-11 indicated the presence of EPHs at concentrations above reference criteria. The maximum concentration of EPHs detected above reference criteria are as follows: C_{19} through C_{36} aliphatic hydrocarbons (97,400 ppb); C_{11} through C_{22} aromatic hydrocarbons (173,000 ppb); and unadjusted C_{11} through C_{22} aromatic hydrocarbons (251,000 ppb) [132]. No RI DEM Direct Exposure Criteria (Residential or Industrial/Commercial) exists for EPHs in soil [146].

Samples SS-11, SS-18, SS-26, SO-11 (collected from the vicinity of the RI portion of solid waste disposal area No. 1) were also collected and were analyzed for VPHs as a precaution, since START could not determine which state the samples were in at the time collection. Analytical results

indicated that no VPHs were detected in surface or subsurface soil/source samples collected from the RI portion of this source area at concentrations above reference criteria [132].

Two PCBs were detected in START surface soil/source samples collected from the RI portion of former solid waste disposal area No. 1 at concentrations above reference criteria. No PCBs were detected above reference criteria in samples SS-02, SS-03, and SS-26. The maximum concentrations of PCBs detected above reference criteria were detected in sample SS-18 and are as follows: Aroclor-1248 (310 ppb) and Aroclor-1260 (150 J ppb) [128-131; 142]. No PCBs were detected in surface soil/source samples collected from the RI portion of this source area at concentrations exceeding their respective RI DEM Residential Direct Exposure or Leachability Criteria for soil [146].

One PCB was detected in START subsurface soil/source samples collected from the RI portion of former solid waste disposal area No. 1 at a concentration above reference criteria. Aroclor-1248 (130 J ppb) was detected above reference criteria in sample SO-11. No PCBs were detected above reference criteria in samples SO-02 and SO-03 [128-131; 142]. Aroclor-1248 was not detected in subsurface soil/source samples collected from the RI portion of this source area at a concentration exceeding its respective RI DEM Residential Direct Exposure or Leachability Criteria for soil [146].

Seven pesticides were detected in START surface soil/source samples collected from the RI portion of former solid waste disposal area No. 1 at concentrations above reference criteria. The maximum concentrations of pesticides detected above reference criteria are as follows: alpha-Chlordane (18 J ppb in SS-18); gamma-Chlordane (10 ppb in SS-26); 4,4'-DDD (6.5 J ppb in SS-18); 4,4'-DDE (21 ppb in SS-11); 4,4'-DDT (67 J ppb in SS-18); endrin (5.0 ppb in SS-02); and endrin ketone (23 J ppb in SS-11) [128-131; 142]. No pesticides were detected in surface soil/source samples collected from the RI portion of this source area at concentrations exceeding their respective RI DEM Residential Direct Exposure or Leachability Criteria for soil [146].

Nine pesticides were detected in START subsurface soil/source samples collected from the RI portion of former solid waste disposal area No. 1 at concentrations above reference criteria. The maximum concentrations of pesticides detected above reference criteria are as follows: delta-BHC (5.6 J ppb in SO-03); alpha-Chlordane (5.0 J ppb in SO-11); 4,4'-DDD (9.1 J ppb in SO-03); 4,4'-DDE (14 J ppb in SO-02); 4,4'-DDT (46 J ppb in SO-11); endrin (9.7 ppb in SO-11); endrin ketone (27 ppb in SO-11); heptachlor (2.5 J ppb in SO-11); and methoxychlor (22 J ppb in SO-03) [128-131; 142]. No pesticides were detected in subsurface soil/source samples collected from the RI portion of this source area at concentrations exceeding their respective RI DEM Residential Direct Exposure or Leachability Criteria for soil [146].

Sixteen inorganics were detected in START surface soil/source samples collected from the RI portion of former solid waste disposal area No. 1 at concentrations above reference criteria. The maximum concentrations of inorganics detected above reference criteria are as follows: antimony (7.1 J ppm in SS-11); arsenic (14.5 J ppm in SS-11); barium (2,330 ppm in SS-02); cadmium (7.3 ppm in SS-11); calcium (47,300 ppm in SS-02); chromium (41.1 ppm in SS-11); copper (650 ppm in SS-18); lead (15,200 ppm in SS-11); magnesium (6,910 ppm in SS-18); manganese (630 ppm in SS-18); mercury (0.37 J ppm in SS-18); nickel (51.8 J ppm in SS-11); silver (3.5 J ppm in SS-18); sodium (4,300 ppm in SS-11); vanadium (120 ppm in SS-11); and zinc (2,570 ppm in SS-11) [133-135; 143]. Arsenic was detected in samples SS-11 and SS-18; lead was detected in samples SS-02, SS-03, SS-11, SS-18, and SS-26; and manganese was detected in samples SS-11 and SS-18 at

concentrations exceeding their respective RI DEM Residential Direct Exposure Criteria for soil [146]. Cyanide was not detected above SDLs in surface soil/source samples collected from the RI portion of this source area [133-135; 143].

Fourteen inorganics were detected in START subsurface soil/source samples collected from the RI portion of former solid waste disposal area No. 1 at concentrations above reference criteria. The maximum concentrations of inorganics detected above reference criteria are as follows: antimony (25.5 J ppm in SO-11); arsenic (11.8 J ppm in SO-11); barium (1,460 ppm in SO-11); cadmium (6.1 ppm in SO-11); calcium (38,000 ppm in SO-11); chromium (34.9 ppm in SO-11); copper (1,280 ppm in SO-11); lead (4,290 ppm in SO-11); mercury (0.35 J ppm in SO-11); nickel (51.2 J ppm in SO-11); silver (1.7 J ppm in SO-11); sodium (5,550 ppm in SO-11); vanadium (144 ppm in SO-11); and zinc (3,500 ppm in SO-11) [133-135; 143]. Antimony was detected in sample SO-03; arsenic was detected in samples SO-02, SO-03, and SO-11; and lead was detected in samples SO-02, SO-03, and SO-11 at concentrations exceeding their respective RI DEM Residential Direct Exposure Criteria for soil [146]. Cyanide was not detected above SDLs in subsurface soil/source samples collected from the RI portion of this source area [133-135; 143].

MA Analytical Results For Former Solid Waste Disposal Area No. 1

No VOCs were detected in the two START surface (SS-07 and SS-17) and one subsurface (SO-07) soil/source samples collected from the MA portion of former solid waste disposal area No. 1 at concentrations above reference criteria [128-129].

Eleven SVOCs were detected in START surface soil/source samples collected from the MA portion of former solid waste disposal area No. 1 at concentrations above reference criteria. No SVOCs were detected above reference criteria in sample SS-07. The concentrations of SVOCs detected above reference criteria in sample SS-17 are as follows: anthracene (1,400 J ppb); benzo(a)anthracene (4,700 J ppb); benzo(a)pyrene (5,700 J ppb); benzo(b)fluoranthene (6,200 J ppb); benzo(g,h,i)perylene (2,700 J ppb); benzo(k)fluoranthene (4,900 J ppb); chrysene (5,300 J ppb); fluoranthene (8,500 J ppb); indeno(1,2,3-cd)pyrene (2,600 J ppb); phenanthrene (6,100 J ppb); and pyrene (4,700 J ppb) [130-131]. Benzo(a)anthracene; benzo(a)pyrene; benzo(b)fluoranthene; and indeno(1,2,3-cd)pyrene were detected in sample SS-17 at concentrations exceeding their respective MOHML Reporting Category RCS-1 soil standard [145].

No SVOCs were detected in START subsurface soil/source sample SO-07 at concentrations above reference criteria [132].

EPHs were detected in one of the two START surface soil/source samples collected from the MA portion of former solid waste disposal area No. 1 at concentrations above reference criteria. No EPHs were detected above reference criteria in sample SS-07. The concentrations of EPHs detected above reference criteria in sample SS-17 are as follows: C_{19} through C_{36} aliphatic hydrocarbons (185,000 ppb); C_{11} through C_{22} aromatic hydrocarbons (135,000 ppb); and unadjusted C_{11} through C_{22} aromatic hydrocarbons (173,000 ppb) [132]. No EPHs were detected in sample SS-17 at concentrations exceeding their respective MOHML Reporting Category RCS-1 soil standard [145].

No EPHs were detected in START subsurface soil/source sample SO-07 at concentrations above reference criteria [132].

No VPHs were detected in the two surface or one subsurface soil/source samples collected from the MA portion of former solid waste disposal area No. 1 at concentrations above reference criteria [132].

Two PCBs were detected in one of the two START surface soil/source samples collected from the MA portion of former solid waste disposal area No. 1 at concentrations above reference criteria. No PCBs were detected above reference criteria in sample SS-07. The concentrations of PCBs detected above reference criteria in SS-17 are as follows: Aroclor-1248 (210 J ppb) and Aroclor-1260 (1,300 J ppb) [130-131]. No PCBs were detected in surface soil/source samples collected from the MA portion of this source area at concentrations exceeding their respective MOHML Reporting Category RCS-1 soil standard [145].

No PCBs were detected in START subsurface soil/source sample SO-07 at concentrations above reference criteria [130-131].

Three pesticides were detected in START surface soil/source samples collected from the MA portion of former solid waste disposal area No. 1 at concentrations above reference criteria. The maximum concentrations of pesticides detected above reference criteria were detected in sample SS-17 and are as follows: alpha-Chlordane (23 J ppb); gamma-Chlordane (22 J ppb); and 4,4'-DDD (5.0 J ppb) [130-131]. No pesticides were detected in surface soil/source samples collected from the MA portion of this source area at concentrations exceeding their respective MOHML Reporting Category RCS-1 soil standard [145].

No pesticides were detected in START subsurface soil/source sample SO-07 at concentrations above reference criteria [130-131].

Sixteen inorganics were detected in START surface soil/source samples collected from the MA portion of former solid waste disposal area No. 1 at concentrations above reference criteria. The maximum concentrations of inorganics detected above reference criteria are as follows: antimony (14.6 J ppm in SS-17); arsenic (14.1 J ppm in SS-17); barium (3,550 ppm in SS-17); cadmium (10.3 ppm in SS-17); calcium (15,900 ppm in SS-17); chromium (64.9 ppm in SS-17); copper (925 ppm in SS-17); lead (4,550 ppm in SS-17); manganese (4,010 ppm in SS-07); mercury (1.3 J ppm in SS-17); nickel (183 J ppm in SS-17); silver (18.3 J ppm in SS-17); sodium (7,340 ppm in SS-17); thallium (1.0 J ppm in SS-17); vanadium (79.8 ppm in SS-11); and zinc (4,600 ppm in SS-17). Antimony, barium, lead and zinc were detected in sample SS-17 at concentrations exceeding their respective MOHML Reporting Category RCS-1 soil standard [145]. Cyanide was not detected above SDLs in surface soil/source samples collected from the MA portion of this source area [133-135; 143].

One inorganic, manganese (558 ppm), was detected in subsurface soil/source sample SO-07 at a concentration above reference criteria. No MOHML Reporting Category RCS-1 soil standard exists for manganese. Cyanide was not detected above SDLs in subsurface soil/source sample SO-07 [135; 145].

Former Solid Waste Disposal Area No. 2

START collected four surface soil/source samples (SS-21 through SS-24) from the vicinity of former solid waste disposal area No. 2 which is located in the RI portion of the BFA property. One PCB,

four pesticides, and 13 inorganic substances were detected in START soil/source samples at concentrations above reference criteria [4; 127; 129; 131; 133; 135]. The analytical results of surface soil/source samples collected from the vicinity of former solid waste disposal area No. 2 are discussed in the following paragraphs.

RI Analytical Results For Former Solid Waste Disposal Area No. 2

No VOCs or SVOCs were detected in START surface soil/source samples collected from the vicinity of former solid waste disposal area No. 2 at concentrations above reference criteria [129; 131].

One PCB, Aroclor-1254 (150 J ppb in SS-23), was detected in START surface soil/source samples collected from the vicinity of former solid waste disposal area No. 2 at a concentration above reference criteria [131]. Aroclor-1254 was not detected in surface soil/source samples collected from this source area at a concentration exceeding its respective RI DEM Residential Direct Exposure or Leachability Criteria for soil [146].

Four pesticides were detected in START surface soil/source samples collected from the vicinity of former solid waste disposal area No. 2 at concentrations above reference criteria. The maximum concentrations of pesticides detected above reference criteria were detected in sample SS-23 and are as follows: 4,4'-DDE (9.7 ppb); 4,4'-DDT (71 ppb); endrin ketone (7.5 ppb); and methoxychlor (28 ppb) [131]. No pesticides were detected in surface soil/source samples collected from this source area at concentrations exceeding their respective RI DEM Residential Direct Exposure or Leachability Criteria for soil [146].

Thirteen inorganics were detected in START surface soil/source samples collected from the vicinity of former solid waste disposal area No. 2 at concentrations above reference criteria. The maximum concentrations of inorganics detected above reference criteria are as follows: antimony (2.3 J ppm in SS-23); barium (268 ppm in SS-23); cadmium (7.7 ppm in SS-23); calcium (1,700 ppm in SS-23); chromium (38.1 ppm in SS-23); copper (167 ppm in SS-23); lead (801 ppm in SS-23); manganese (657 ppm in SS-23); mercury (0.26 J ppm in SS-21); nickel (23.4 J ppm in SS-23); silver (2.5 J ppm in SS-23); sodium (1,260 ppm in SS-23); and zinc (411 ppm in SS-21) [133; 135]. Lead was detected in surface soil/source samples SS-21, SS-23 and SS-24; and manganese was detected in samples SS-23 and SS-24 at concentrations exceeding their respective RI DEM Residential Direct Exposure Criteria for soil [146]. Cyanide was not detected above reference criteria in surface soil/source samples collected from this source area [133; 135].

Former Lagoon No. 1

START collected three surface soil/source samples (SS-08 through SS-10) and two subsurface soil/source samples (SO-08 and SO-09) from the vicinity of former Lagoon No. 1 which is located in the RI portion of the BFA property. Two VOCs, one pesticide, and six inorganic substances were detected in START soil/source samples at concentrations above reference criteria [4; 127-128; 131; 134-135]. The analytical results of surface and subsurface soil/source samples collected from the vicinity of Former Lagoon No. 1 are discussed in the following paragraphs.

RI Analytical Results For Former Lagoon No. 1

One VOC was detected in one START surface soil/source sample (SS-08) collected from the vicinity of former Lagoon No. 1 at a concentration above reference criteria. Methyl tert-butyl ether (MTBE) was detected in SS-08 at 10 ppb [128]. MTBE was not detected in sample SS-08 at a concentration exceeding its respective RI DEM Residential Direct Exposure or Leachability Criteria for soil [146].

Two VOCs were detected in one START subsurface soil/source sample (SO-08) collected from the vicinity of former Lagoon No. 1 at concentrations above reference criteria. The maximum concentrations of VOCs detected above reference criteria are as follows: carbon disulfide (15 ppb in SO-08) and MTBE (11 ppb in SO-08) [128]. Carbon disulfide and MTBE were not detected in sample SO-08 at concentrations exceeding their respective RI DEM Residential Direct Exposure or Leachability Criteria for soil [146].

No SVOCs or PCBs were detected in START surface and subsurface soil/source samples collected from the vicinity of former Lagoon No. 1 at concentrations above reference criteria [128; 131].

No pesticides were detected in START surface soil/source samples collected from the vicinity of former Lagoon No. 1 at concentrations above reference criteria. Analytical results of START subsurface soil/source samples collected from the vicinity of former Lagoon No. 1 indicated the presence of one pesticide at a concentration above reference criteria. Heptachlor was detected in sample SO-08 at 1.8 J ppb [128; 131]. Heptachlor was not detected in sample SO-08 at a concentration exceeding its respective RI DEM Residential Direct Exposure or Leachability Criteria for soil [146].

Four inorganics were detected in START surface soil/source samples collected from the vicinity of former Lagoon No. 1 at concentrations above reference criteria. The maximum concentrations of inorganics detected above reference criteria are as follows: cadmium (0.40 J ppm in SS-09); calcium (1,420 ppm in SS-10); lead (313 J ppm in SS-08); and thallium (1.0 J ppm in SS-09) [134-135]. Lead was detected in sample SS-08 at a concentration exceeding its respective RI DEM Residential Direct Exposure Criteria for soil [146]. Cyanide was not detected above reference criteria in surface soil/source samples collected from the vicinity of former Lagoon No. 1 [134-135].

Five inorganics were detected in START subsurface soil/source samples collected from the vicinity of former Lagoon No. 1 at concentrations above reference criteria. The maximum concentrations of inorganics detected above reference criteria are as follows: beryllium (2.0 ppm in SO-09); cadmium (0.58 ppm in SO-09); calcium (1,450 ppm in SO-08); selenium (1.0 J ppm in SO-09); and thallium (1.2 J ppm in SO-09) [134-135]. Beryllium was detected in sample SO-09 at a concentration exceeding its respective RI DEM Residential Direct Exposure Criteria for soil [146]. Cyanide was not detected above reference criteria in subsurface soil/source samples collected from the vicinity of former Lagoon No. 1 [134-135].

Suspected Lagoon No. 2

START collected six surface soil/source samples (SS-05, SS-13 through SS-16, and SC-01) and two subsurface soil/source samples (SO-05 and SO-10) from the vicinity of suspected Lagoon No. 2 which is located in the MA portion of the BFA property. Eighteen VOCs, 14 SVOCs, four PCBs,

12 pesticides, and 14 inorganic substances along with EPHs and VPHs were detected in START soil/source samples at concentrations above reference criteria [4; 127-128; 130-135; 142; 143]. The analytical results of surface and subsurface soil/source samples collected from the vicinity of suspected Lagoon No. 2 are discussed in the following paragraphs.

MA Analytical Results For Suspected Lagoon No. 2

Sixteen VOCs were detected in START surface soil/source samples collected from the vicinity of suspected Lagoon No. 2 at concentrations above reference criteria. The maximum concentrations of VOCs detected above reference criteria are as follows: benzene (370 J ppb in SS-15); cyclohexane (1,400 J ppb in SS-15); 1,2-dichlorobenzene (2,700 J ppb in SS-15); 1,3-dichlorobenzene (610 J ppb in SS-15); 1,4-dichlorobenzene (1,300 J ppb in SS-15); cis-1,2-DCE (2,600 J ppb in SS-15); ethylbenzene (3,600 J ppb in SS-15); isopropylbenzene (930 J ppb in SS-15); methylcyclohexane (920 J ppb in SS-14); styrene (290 J ppb in SS-15); 1,1,2,2-PCA (87 J TB ppb in SS-13); PCE (510 J ppb in SS-15); toluene (19,000 J ppb in SS-15); TCE (200 J ppb in SS-15); vinyl chloride (400 J ppb in SS-15); and total xylene (22,000 J ppb in SS-15) [128; 142]. 1,1,2,2-PCA was detected in sample SS-13 and PCE and vinyl chloride were detected in sample SS-15 at concentrations exceeding their respective MOHML Reporting Category RCS-1 soil standard [145].

Thirteen VOCs were detected in START subsurface soil/source samples collected from the vicinity of suspected Lagoon No. 2 at concentrations above reference criteria. The maximum concentrations of VOCs detected above reference criteria were detected in sample SO-10 and are as follows: benzene (94 J ppb); carbon disulfide (20 J ppb); 1,2-dichlorobenzene (200 J ppb); 1,4-dichlorobenzene (27 J ppb); 1,1-DCA (62 J ppb); cis-1,2-DCE (45 J ppb); ethylbenzene (980 J ppb); methylcyclohexane (530 J ppb); PCE (92 J ppb); toluene (2,100 J ppb); 1,1,2-trichloro-1,2,2-trifluoroethane (160 J ppb); vinyl chloride (33 J ppb); and total xylene (4,600 J ppb) [128; 142]. No VOCs were detected in sample SO-10 at concentrations exceeding their respective MOHML Reporting Category RCS-1 soil standard [145].

Fourteen SVOCs were detected in START surface soil/source samples collected from the vicinity of suspected Lagoon No. 2 at concentrations above reference criteria. The maximum concentrations of SVOCs detected above reference criteria are as follows: benzaldehyde (1,300 J ppb in SC-01); benzo(a)anthracene (710 J ppb in SS-14); benzo(b)fluoranthene (810 J ppb in SC-01); benzo(g,h,i)perylene (1,000 J ppb in SS-16); bis(2-ethylhexyl)phthalate (140,000 J ppb in SS-15); 1,1-biphenyl (4,200 J ppb in SS-14); butylbenzylphthalate (37,000 J ppb in SS-15); chrysene (2,100 J ppb in SC-01); fluoranthene (1,200 J ppb in SS-15); fluorene 2,500 J ppb in SS-15); 2-methylnaphthalene (16,000 ppb in SS-14); naphthalene (12,000 ppb in SS-14); phenanthrene (5,600 J ppb in SS-14); and pyrene (3,300 J ppb in SS-15) [130-131; 142]. Benzo(a)anthracene was detected in sample SS-14; benzo(b)fluoranthene was detected in sample SC-01; 1,1-biphenyl was detected in samples SS-13 through SS-16; bis(2-ethylhexyl)phthalate was detected in sample SS-15; 2-methylnaphthalene was detected in samples SS-13 through SS-16; and naphthalene was detected in samples SS-13 though SS-16 at concentrations exceeding their respective MOHML Reporting Category RCS-1 soil standard [145].

Nine SVOCs were detected in START subsurface soil/source samples collected from the vicinity of suspected Lagoon No. 2 at concentrations above reference criteria. The maximum concentrations of SVOCs are as follows: acetophenone (1,600 ppb in SO-10); benzaldehyde (420 ppb in SO-10);

1,1-biphenyl (680 ppb in SO-10); bis(2-ethylhexyl)phthalate (4,900 ppb in SO-05); butylbenzylphthalate (2,400 ppb in SO-05); fluorene (380 ppb in SO-10); 2-methylnaphthalene (3,800 ppb in SO-10); naphthalene (1,200 ppb in SO-10); and phenanthrene (790 ppb in SO-10) [131; 142]. No SVOCs were detected in START subsurface soil/source samples collected from this source area at concentrations exceeding their respective MOHML Reporting Category RCS-1 soil standard [145].

EPHs were detected in START surface soil/source samples collected from the vicinity of suspected Lagoon No. 2 at concentrations above reference criteria. The maximum concentration of EPHs detected above reference criteria are as follows: C_9 through C_{18} aliphatic hydrocarbons (18,100,000 ppb in SS-15); C_{19} through C_{36} aliphatic hydrocarbons (72,800,000 ppb in SS-16); C_{11} through C_{22} aromatic hydrocarbons (16,000,000 ppb in SC-01); and unadjusted C_{11} through C_{22} aromatic hydrocarbons (16,000,000 ppb in SC-01) [132]. The C_{19} through C_{36} aliphatic hydrocarbons, C_{11} through C_{22} aromatic hydrocarbons, and unadjusted C_{11} through C_{22} aromatic hydrocarbons were detected in sample SS-05; and all EPHs were detected in samples SS-13 through SS-16 and SC-01 collected from the vicinity of suspected Lagoon No. 2 at concentrations exceeding their respective MOHML Reporting Category RCS-1 soil standard [145].

EPHs were also detected in one START subsurface soil/source sample (SO-05) collected from the vicinity of suspected Lagoon No. 2 at concentrations above reference criteria. The concentrations of EPHs detected above reference criteria in sample SO-05 are as follows: C_9 through C_{18} aliphatic hydrocarbons (612,000 ppb); C_{19} through C_{36} aliphatic hydrocarbons (3,050,000 ppb); C_{11} through C_{22} aromatic hydrocarbons (606,000 ppb); and unadjusted C_{11} through C_{22} aromatic hydrocarbons (610,000 ppb) [132]. The C_{11} through C_{22} aromatic hydrocarbons, the C_{19} through C_{36} aliphatic hydrocarbons, and the unadjusted C_{11} through C_{22} aromatic hydrocarbons were detected in sample SO-05 at concentrations exceeding their respective MOHML Reporting Category RCS-1 soil standard [145].

VPHs were detected in START surface soil/source samples collected from the vicinity of suspected Lagoon No. 2 at concentrations above reference criteria. The maximum concentration of VPHs detected above reference criteria are as follows: C_5 through C_8 aliphatic hydrocarbons (86,800 ppb in SS-15); C_9 through C_{12} aliphatic hydrocarbons (577,000 ppb in SS-15); unadjusted C_5 through C_8 aliphatic hydrocarbons (97,900 ppb in SS-15); unadjusted C_9 through C_{10} aromatic hydrocarbons (579,000 ppb in SS-15); and unadjusted C_9 through C_{12} aliphatic hydrocarbons (1,170,000 ppb in SS-15) [132]. The unadjusted C_9 through C_{10} aromatic hydrocarbons were detected in SS-13, and the unadjusted C_9 through C_{10} aromatic hydrocarbons and the unadjusted C_9 through C_{12} aliphatic hydrocarbons were detected in SS-15 at concentrations exceeding their respective MOHML Reporting Category RCS-1 soil standard [145].

VPHs were also detected in one START subsurface soil/source sample (SO-05) collected from the vicinity of suspected Lagoon No. 2 at concentrations above reference criteria. The concentrations of VPHs detected above reference criteria in sample SO-05 are as follows: C_9 through C_{12} aliphatic hydrocarbons (7,540 J ppb); unadjusted C_9 through C_{10} aromatic hydrocarbons (8,130 ppb); and unadjusted C_9 through C_{12} aliphatic hydrocarbons (15,700 ppb) [132]. No VPHs were detected in sample SO-05 at concentrations exceeding their respective MOHML Reporting Category RCS-1 soil standard [145].

Three PCBs were detected in START surface soil/source samples collected from the vicinity of suspected Lagoon No. 2 at concentrations above reference criteria. The maximum concentrations of PCBs detected above reference criteria are as follows: Aroclor-1248 (7,800 J ppb in SS-16); Aroclor-1254 (6,100 J ppb in SC-01); and Aroclor-1260 (4,100 J ppb in SC-01) [130-131; 142]. Aroclor-1248 and Aroclor-1254 were detected in samples SS-15 and SS-16, and all three PCBs were detected in sample SC-01 at concentrations exceeding their respective MOHML Reporting Category RCS-1 soil standard [145].

Three PCBs were detected in START subsurface soil/source samples collected from the vicinity of suspected Lagoon No. 2 at concentrations above reference criteria. The maximum concentrations of PCBs detected above reference criteria are as follows: Aroclor-1242 (3,900 ppb in SO-10); Aroclor-1248 (280 J ppb in SO-05); and Aroclor-1254 (1,400 J ppb in SO-10) [130-131; 142]. Aroclor-1242 was detected in SO-10 at a concentration exceeding its respective MOHML Reporting Category RCS-1 soil standard [145].

Nine pesticides were detected in START surface soil/source samples collected from the vicinity of suspected Lagoon No. 2 at concentrations above reference criteria. The maximum concentrations of pesticides detected above reference criteria are as follows: aldrin (280 J ppb in SS-16); alpha-Chlordane (110 ppb in SS-15); 4,4'-DDE (290 J ppb in SS-16); 4,4'-DDT (41 J ppb in SS-13); dieldrin (36 J ppb in SC-01); endosulfan II (110 J ppb in SS-16 and SC-01); endosulfan sulfate (49 J ppb in SC-01); endrin aldehyde (80 J ppb in SS-16); and heptachlor epoxide (140 J ppb in SS-15) [130-131; 142]. Aldrin was detected in sample SS-15; dieldrin was detected in sample SC-01; endosulfan II was detected in samples SS-15, SS-16, and SC-01; and heptachlor epoxide was detected in sample SS-15 at concentrations exceeding their respective MOHML Reporting Category RCS-1 soil standard [145].

Six pesticides were detected in START subsurface soil/source samples collected from the vicinity of suspected Lagoon No. 2 at concentrations above reference criteria. The maximum concentrations of pesticides are as follows: gamma-BHC (13 ppb in SO-05); alpha-Chlordane (3.4 ppb in SO-05); 4,4'-DDE (56 ppb in SO-10); endosulfan II (11 ppb in SO-10); endrin ketone (170 ppb in SO-05); and methoxychlor (85 ppb in SO-05) [130-131; 142]. No pesticides were detected in subsurface soil/source samples collected from this source area at concentrations exceeding their respective MOHML Reporting Category RCS-1 soil standard [145].

Thirteen inorganics (twelve metals and cyanide) were detected in START surface soil/source samples collected from the vicinity of suspected Lagoon No. 2 at concentrations above reference criteria. The maximum concentrations of inorganics detected above reference criteria are as follows: antimony (3.2 J ppm in SS-16); arsenic (14.6 J ppm in SC-01); barium (2,220 J ppm in SC-01); cadmium (17.1 ppm in SC-01); calcium (3,680 ppm in SC-01); chromium (193 J ppm in SC-01); copper (828 ppm in SC-01); lead (30,400 ppm in SC-01); mercury (0.36 ppm in SC-01); nickel (281 ppm in SS-13); silver (5.4 ppm in SC-01); zinc (1,700 J ppm in SC-01); and cyanide (6.9 J ppm in SS-13) [133; 135; 143]. Barium was detected in samples SS-16 and SC-01, and lead was detected in samples SS-13 through SS-16 and SC-01 at concentrations exceeding their respective MOHML Reporting Category RCS-1 soil standard [133; 135; 143; 145].

Two inorganics were detected in START subsurface soil/source samples collected from the vicinity of suspected Lagoon No. 2 at concentrations above reference criteria. The maximum concentrations

of inorganics detected above reference criteria were detected in SO-05 and are as follows: lead (152 ppm) and sodium (300 ppm) [134-135; 143]. No inorganics were detected in sample SO-05 at concentrations exceeding their respective MOHML Reporting Category RCS-1 soil standard [145]. Cyanide was not detected above reference criteria in subsurface soil/source samples collected from the vicinity of suspected Lagoon No. 2 [134-135; 143].

Former Acid Drum Storage Area

START personnel collected two surface soil/source samples (SS-19 and SS-20) from the vicinity of the former acid drum storage area which is located in the RI portion of the BFA property. One VOCs, 10 SVOCs, one PCB, two pesticides, and nine inorganic substances were detected in START soil/source samples at concentrations above reference criteria [4; 127-128-131; 133; 135]. The analytical results of surface soil/source samples collected from the vicinity of the former acid drum storage area are discussed in the following paragraphs.

RI Analytical Results For Former Acid Drum Storage Area

One VOC was detected in START surface soil/source sample SS-20 at a concentration above reference criteria. Toluene was detected above reference criteria at a concentration of 16 ppb [128-129]. Toluene was not detected in sample SS-20 at a concentration exceeding its respective RI DEM Residential Direct Exposure or Leachability Criteria for soil [146].

Ten SVOCs were detected in one START surface soil/source sample (SS-20) collected from the vicinity of the former acid drum storage area at concentrations above reference criteria. The concentrations of SVOCs detected above reference criteria in sample SS-20 are as follows: benzo(a)anthracene (920 J ppb); benzo(a)pyrene (740 J ppb); benzo(b)fluoranthene (800 J ppb); benzo(g,h,i)perylene (410 J ppb); benzo(k)fluoranthene (690 J ppb); chrysene (1,000 J ppb); fluoranthene (2,100 ppb); indeno(1,2,3-cd)pyrene (430 J ppb); phenanthrene (1,200 J ppb); and pyrene (1,600 J ppb) [130-131]. Benzo(a)anthracene, benzo(a)pyrene, and chrysene were detected in sample SS-20 at concentrations exceeding their respective RI DEM Residential Direct Exposure Criteria for soil. No SVOCs were detected in surface soil/source samples collected from this source area at concentrations exceeding their respective RI DEM Leachability Criteria for soil [146].

One PCB was detected in START surface soil/source samples collected from the vicinity of the former acid drum storage area at a concentration above reference criteria. Aroclor-1260 was detected above reference criteria at a maximum concentration of 670 ppb in sample SS-20 [130-131]. Aroclor-1260 was not detected in sample SS-20 at a concentration exceeding its respective RI DEM Residential Direct Exposure or Leachability Criteria for soil [146].

Two pesticides were detected in START surface soil/source samples collected from the vicinity of the former acid drum storage area at concentrations above reference criteria. The maximum concentrations of pesticides detected above reference criteria are as follows: 4,4'-DDT (8.1 J ppb in SS-19) and endrin aldehyde (17 J ppb in SS-20) [130-131]. No pesticides were detected in START surface soil/source samples collected from the vicinity of the former acid drum storage area at concentrations exceeding their respective RI DEM Residential Direct Exposure or Leachability Criteria for soil [146].

Nine inorganics were detected in START surface soil/source samples collected from the vicinity of the former acid drum storage area at concentrations above reference criteria. The maximum concentrations of inorganics detected above reference criteria are as follows: antimony (4.3 J ppm in SS-20); barium (293 ppm in SS-20); cadmium (17.9 ppm in SS-20); copper (204 ppm in SS-20); lead (449 ppm in SS-19); nickel (69.7 ppm in SS-20); silver (0.77 J ppm in SS-20); sodium (6,860 ppm in SS-20); and zinc (4,880 ppm in SS-20) [133; 135]. Lead was detected in samples SS-19 and SS-20 collected from the vicinity of the former acid drum storage area at concentrations exceeding its respective RI DEM Residential Direct Exposure Criteria for soil [146]. Cyanide was not detected above reference criteria in surface soil/source samples collected from the vicinity of the former acid drum storage area [133; 135].

Salvage Yard

START personnel collected two surface soil/source samples (SS-04 and SS-06) and two subsurface soil/source samples (SO-04 and SO-06) from the Advanced salvage yard which is located in the RI portion of the BFA property. Three VOCs, one SVOC, and 10 inorganics were detected in START soil/source samples at concentrations above reference criteria [4; 127-131; 133; 135; 142]. The analytical results of surface and subsurface soil/source samples collected from the salvage yard are discussed in the following paragraphs.

RI Analytical Results For The Salvage Yard

Three VOCs were detected in one START surface soil/source sample (SS-06) collected from the salvage yard at concentrations above reference criteria. The concentrations of VOCs detected above reference criteria in sample SS-06 are as follows: methylcyclohexane (12 ppb), MTBE (30 ppb), and total xylene (22 ppb) [128-129; 142]. No VOCs were detected in START surface soil/source samples collected from the salvage yard at concentrations exceeding their respective RI DEM Residential Direct Exposure or Leachability Criteria for soil [146].

One VOC (MTBE) was detected in START subsurface soil/source samples collected from the salvage yard at a concentration above reference criteria. MTBE was detected at a maximum concentration of 230 J ppb in sample SO-06 [128-129]. MTBE was not detected in subsurface soil/source samples collected from the salvage yard at concentrations exceeding its respective RI DEM Residential Direct Exposure or Leachability Criteria for soil [146].

No SVOCs, PCBs, or pesticides were detected in START surface soil/source samples collected from the salvage yard at concentrations above reference criteria [130-131].

One SVOC was detected in one START subsurface soil/source sample (SO-06) collected from the salvage yard at a concentration above reference criteria. Bis(2-ethylhexyl)phthalate was detected in sample SO-06 at a concentration of 5,700 J ppb [130-131]. Bis(2-ethylhexyl)phthalate was not detected in sample SO-06 at a concentration exceeding its respective RI DEM Residential Direct Exposure or Leachability Criteria for soil [146].

No PCBs or pesticides were detected in START subsurface soil/source samples collected from the salvage yard at concentrations above reference criteria [130-131].

Nine inorganics were detected in START surface soil/source samples collected from the salvage yard at concentrations above reference criteria. The maximum concentrations of inorganics detected above reference criteria are as follows: cadmium (0.21 J ppm in SS-06); calcium (1,980 ppm in SS-04); copper (86.2 ppm in SS-06); lead (41.3 ppm in SS-06); manganese (770 ppm); nickel (20.5 J ppm in SS-06); potassium (1,630 ppm); silver (0.27 J ppm in SS-06); and zinc (138 ppm in SS-06) [133; 135]. Manganese was detected in sample SS-04 at a concentration exceeding its respective RI DEM Residential Direct Exposure Criteria for soil [146]. Cyanide was not detected above reference criteria in surface soil/source samples collected from the salvage yard [133; 135].

Five inorganics were detected in START subsurface soil/source samples collected from the salvage yard at concentrations above reference criteria. The maximum concentrations of inorganics detected above reference criteria are as follows: cadmium (0.27 ppm in SO-04); calcium (1,790 ppm in SO-04); chromium (48.7 ppm in SO-06); manganese (2,200 J ppm); and silver (0.26 J ppm) [128; 133; 135]. Manganese was detected in sample SO-04 at a concentration exceeding its respective RI DEM Residential Direct Exposure Criteria for soil [146]. Cyanide was not detected above reference criteria in subsurface soil/source samples collected from the salvage yard [128; 133; 135].

Former Sand And Gravel Pit

START personnel collected one surface soil/source sample (SS-25) from a portion (Lot No. 16) of the former Courtois sand and gravel pit which is located north and northeast of the BFA property in MA. One inorganic substance was detected in sample SS-25 at concentrations above reference criteria [4; 127;133; 135]. The analytical results of surface soil/source sample SS-25 is discussed in the following paragraphs.

MA Analytical Results For Former Sand And Gravel Pit

No VOCs, SVOCs, PCBs, or pesticides were detected in START surface soil/source sample SS-25 at concentrations above reference criteria [128-129; 131].

One inorganic, calcium, was detected in START surface soil/source sample SS-25 at a concentration above reference criteria. Calcium was detected in sample SS-25 at a concentration of 1,680 ppm [133; 135]. No MOHML Reporting Category RCS-1 soil standard exists for calcium [145].

START performed surface and subsurface soil/source sampling as part of the BFA ESI. Based on analytical results, areas of soil contamination containing 26 VOCs, 23 SVOCs, EPHs, VPHs, four PCBs, 17 pesticides, 18 inorganic substances (metals and cyanide) has been documented. Of these contaminants, nine SVOCs and five inorganics were detected at concentrations exceeding their respective RI DEM Residential Direct Exposure Criteria for soil. One VOC, PCE, was detected at concentrations exceeding its respective RI DEM Leachability Criteria for soil. In addition, three VOCs, eight SVOCs, EPHs, VPHs, four pesticides, four PCBs, and four inorganics were detected at concentrations exceeding their respective MOHML Reporting Category RCS-1 soil standards. No impacts to surrounding populations or sensitive environments are known. However, portions of the BFA property are regularly used by trespassers for riding bikes and off-road recreational vehicles who may come into direct contact with contaminants. To date, no actions have been taken to address these contaminated soil/source areas.

GROUNDWATER PATHWAY

Approximately 5 percent of the BFA property is covered by asphalt paving and buildings [4, pp. 2, 8]. Soil on the majority of the property has been classified as Udorthents-Urban land complex (UD), which is described as moderately well drained to excessively well drained soils that have been disturbed by "cutting or filling", and areas that are covered by buildings and pavement. In the case of the BFA property, "cutting" likely refers to historical on-site sand and gravel excavation operations. Soil on portions of the northern part of the property has been classified as Canton-Charleton-Rock outcrop complex (CaD), which indicates moderately steep to steep (15 to 35 percent slopes); well drained soils (typically fine sandy loam to gravelly loam) intermingled with areas of bare, hard exposed bedrock [51, pp. 11-12, 42, Sheet 18]. The mean annual precipitation for Providence, RI, located approximately 5 miles south of the property, is 44.1 inches. START personnel assume for this evaluation that 44.1 inches of rain per year is representative of the precipitation rate for the property [50].

The surficial and bedrock geology of the BFA property differs between the northern and southern portions of the property. The property lies on the contact between two classes of surficial and bedrock geology. This contact generally runs east-west and is located at approximately the boundary between Lot Nos. 363 and 366. To the south of the contact, the surficial geology is classified as Qkt, which indicates kame terrace deposits of glacial sand and gravel. Bedrock located south of the contact has been described as Pondville conglomerate and Rhode Island formation (Cpr), a gray to black sedimentary rock, including beds of conglomerate, sandstone, shale, black shale, and coaly material. To the north of the contact, the surficial geology is classified as Qgm, which indicates a ground moraine composed of two types of till; one is loose, sandy, and generally light gray with thin oxidation zone, and the other is compact, slightly indurated, and brownish. Bedrock located north of the contact has been characterized as Wamsutta formation, a red conglomerate, sandstone, and shale with irregular color, bedding, and degree of sorting. Several Wamsutta formation outcrops are visible at the ground surface in the northern portion of the property [4, p. 5; 52; 53].

Groundwater in the southern portion of the property is designated as Class GAA by RI DEM [54]. This designation indicates that the groundwater resource is suitable for public drinking water use without treatment and is located in groundwater reservoirs and portions of their recharge areas, wellhead protection areas (WHPAs) for community drinking water supply wells, and groundwater dependent areas [56, p. 9]. Groundwater in the northern portion of the property (*i.e.,* the area in which former solid waste disposal occurred) is designated as Class GAA Non-attainment (GAA-NA) by RI DEM [54]. Non-attainment areas are those areas that have pollutant concentrations greater than the groundwater quality standards for the applicable classification [56, p. 11]. The MA portion of the BFA property is located within the Interim Wellhead Protection Area (IWPA) for KGWC Well No. 1 [39, p. 4; 145; 154].

The former on-site residence (Lot No. 10) was reportedly served by a 50-ft-deep overburden water supply well. Available information does not indicate when this well was installed; however, file information indicates that in August 1946, groundwater was encountered at 1 ft bgs in the well [24, p. 5; 58, p. 13]. As part of the environmental site assessment of Lot Nos. 362, 364, and 365, ERA personnel gauged the depth to groundwater in overburden monitoring wells LM-1 through LM-3. ERA reported that direction of groundwater flow appeared to be southeasterly [39, p. 4]. START noted during SDDW installation an undulating bedrock surface with sharply varying depths to

bedrock. START also noted areas where groundwater appeared to be perched even though the regional flow direction appears to be southeasterly [4, pp. 33-48; 127, pp. 2-3]. Advanced is currently served by an on-site bedrock water supply well which is used for sanitary purposes only. Potable water for Advanced is supplied by municipal public water supply [4, p. 21].

All or part of the following RI and MA cities and/or towns are located within 4 radial miles of the BFA property: Attleboro, MA (population 38,383); Central Falls, RI (population 17,637); Cumberland, RI (population 29,038); Lincoln, RI (18,045); North Attleborough, MA (population 25,038); Pawtucket, RI (population 72,644); Plainville, MA (population 6,871); and Seekonk, MA (population 13,046) [9-10; 57; 59].

The nearest public drinking water supply wells are the KGWC's [MA DEP public water supplier/system identification number (PWS ID No.) 4211001] overburden Well Nos. 1 and 2 (MA DEP PWS Source ID Nos. 4211001-01G and 4211001-02G, respectively), located in the Town of North Attleborough, MA, approximately 0.4 miles east-northeast of the BFA property [2, pp. 13-14; 9-10; 66; 69; 79]. Well No. 2 was installed as an emergency backup well; it is not used otherwise. According to MA DEP, KGWC is a "community public water system", which indicates that the system serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents [60, p. 714; 69; 79]. The KGWC wells serve a residential community of 134 homes. According to the U.S. Department of Commerce, there are 2.69 people per household in North Attleborough, MA [67, p. 44]. As a result, the KGWC system serves an estimated 360 people [68]. The BFA property is located within the IWPA for KGWC Well No. 1 [154].

VOCs have been detected in groundwater samples collected from KGWC's Well No. 1. On 8 July 1980, three VOCs, including TCA (10.4 ppb), TCE (0.4 ppb), and 1,1-DCA (2.0 ppb), were detected in a groundwater sample collected from KGWC's Well No. 1 [24, p. 8; 27, Table 1; 32, Appendix D, Plan 1]. On 4 January 1984, 2.6 ppb of TCA was detected in a sample collected from KGWC's Well No. 1 [32, pp. 47-48, 53, Appendix D]. Based on available information, contaminants have not been detected in the well since 1984 [27, p. 9; 122].

One additional community public water system is located in North Attleborough, MA: the North Attleborough Water Department (MA DEP PWS ID No. 4211000) [69; 79]. The North Attleborough Water Department receives its drinking water from nine overburden groundwater wells located throughout North Attleborough and Plainville, MA. Only two of the nine wells are located within 4 radial miles of the BFA property: the Adamsdale Well (MA DEP PWS Source ID No. 4211000-08G), located approximately 0.5 miles south-southeast of the property, and the Hillman Well (MA DEP PWS Source ID No. 4211000-09G), located approximately 0.7 miles northeast of the property [9-10; 69]. According to the North Attleborough Water Department, which serves an estimated 26,000 people, no single source in the system contributes more than 40 percent of the total system. As a result, the estimated 26,000 persons served by the system are apportioned evenly among the nine sources (2,889 persons each) [2, p. 13; 61-62].

One community public water system is located in the City of Attleboro, MA: the Attleboro Water Department (MA DEP PWS ID No. 4016000) [79]. The Attleboro Water Department receives its drinking water from two surface water intakes; however, neither intake is located along the downstream surface water pathway from the property [2, p. 14, 9-10; 69].

One community public water system is located in the Town of Seekonk, MA: the Seekonk Water District (MA DEP PWS ID No. 4265000) [79]. The Seekonk Water District receives its drinking water from six overburden groundwater wells; however, none of the wells are located within 4 radial miles of the BFA property [2, p. 14; 9-10; 69].

The Plainville Water Department (MA DEP PWS ID No. 4238000) is the only community public water system located in the Town of Plainville, MA [79]. The Plainville Water Department receives its drinking water from four groundwater wells; however, none of these wells are located within 4 radial miles of the property [2, p. 13; 9-10; 63; 69].

The Cumberland Water Department (RI DEM PWS ID No. 1647530) is one of two community public water systems that serve the Town of Cumberland, RI [70]. The Cumberland Water Department serves all of Cumberland except the Valley Falls section of Cumberland, which is served by PWSB (see below). The Cumberland Water Department is a blended system that serves approximately 24,000 people. The primary source of the Cumberland Water Department's drinking water is wholesale water purchased from PWSB (PWSB's sources of drinking water are discussed in greater detail below). Based on the average annual capacity of water purchased from PWSB [approximately 450 million gallons per year (mg/yr)], START estimated that approximately 55 percent of the Cumberland Water Department's system is water purchased from PWSB [83].

The Cumberland Water Department also supplements its drinking water supply with four overburden groundwater wells (Abbot Run Well Nos. 2 and 3, and Manville Well Nos. 1 and 2) and with a surface water intake located along Sneech Pond. Abbot Run Well Nos. 2 and 3 (used only during peak demand in summer) are located approximately 1.1 miles north of the BFA property; however, Manville Well Nos. 1 and 2 are not located within 4 radial miles of the BFA property. In addition, the surface water intake along Sneech Pond is not located along the downstream surface water pathway from the property [9-10; 70]. Based on pumping rates, START estimated that Abbot Run Well Nos. 2 and 3 contribute approximately 2 percent of water to the system; Manville Well Nos. 1 and 2 contribute approximately 5 percent of water to the system; and the Sneech Pond intake contributes approximately 38 percent of water to the system. Since this water system is blended and a single water supply source (*i.e.*, wholesale water purchased from PWSB) supplies more than 40 percent of the Cumberland Water Department's system, the population served (*i.e.*, 24,000 persons) is apportioned to each water supply source based on the percent of water the source supplies. As a result, an estimated 480 persons in the Cumberland Water Department's system are served by Abbot Run Well Nos. 2 and 3 [2, p. 13; 64; 71-72; 83].

PWSB (RI DEM PWS ID No. 1592021) is the only community public water system that serves the City of Pawtucket, RI. PWSB is a blended system that receives all of its drinking water from sources located in Cumberland; no public drinking water supply sources are located in Pawtucket [70-72]. The primary source of drinking water for PWSB is a surface water intake located in Happy Hollow Pond, which is the terminal pond on Abbot Run, just prior to the confluence with the Blackstone River. Other surface water impoundments and ponds on Abbot Run (upstream of Happy Hollow Pond) include Diamond Hill Reservoir, Arnold Mills Reservoir, Rawson Pond, Howard Pond, and Robin Hollow Pond [74]. Robin Hollow Pond and Happy Hollow Pond are located along the downstream surface water pathway for the BFA property [9-10]. The Happy Hollow Pond intake contributes approximately 13 million gallons per day (mgd) or 95 percent to PWSB's system [2, p. 13; 73]. PWSB also operates 10 overburden groundwater wells (Pawtucket Well Nos. 2 through 11)

located in Cumberland. Pawtucket Well No. 2 is located approximately 1.6 miles south of the BFA property; Pawtucket Well No. 3 is located approximately 1.4 miles south of the BFA property; Pawtucket Well Nos. 4 and 5 are located approximately 1.3 miles south of the BFA property; Pawtucket Well No. 6 is located approximately 0.9 miles south of the BFA property; Pawtucket Well No. 7 is located approximately 0.7 miles south of the BFA property; Pawtucket Well Nos. 8 and 9 are located approximately 0.6 miles south of the BFA property; Pawtucket Well No. 10 is located approximately 2.5 miles north of the BFA property; and Pawtucket Well No. 11 is located approximately 2.6 miles north of the BFA property [9-10; 70]. The 10 wells contribute the remaining 5 percent of water to PWSB's system [123, p. 6]. PWSB serves approximately 110,000 people in the Cities of Pawtucket and Central Falls, and the Valley Falls section of the Town of Cumberland. In addition, approximately 55 percent of the Cumberland Water Department's system (an estimated 13,200 persons) is supplied with water from PWSB. In total, START estimates that PWSB serves 123,200 persons. As a result, the population apportioned to Pawtucket Well Nos. 2 through 11 is 6,160 persons, or 616 persons per well [2, p. 13; 72-74; 82].

At an undisclosed time between 1983 and 1984, two VOCs (TCA and chloroform) were detected in a groundwater sample collected from Pawtucket Well No. 9 [27, p. 8; 32, pp. 53, Plan 1, Appendix D]. In 1987, Pawtucket Well No. 1 was closed after analysis of a groundwater sample collected from the well revealed TCE at 5 ppb; apparently, the well has not been used since [27, p. 8]. In general, routine groundwater sampling of Pawtucket Well Nos. 2, 8, and 9 has consistently revealed the presence of one or more of the following VOCs: chloroform; TCA; TCE; and MTBE. However, concentrations at which these contaminants have been detected were below applicable standards [71].

The Lincoln Water Department (RI DEM PWS ID No. 1858423) is the only community public water system that operates in the Town of Lincoln [71]. The primary source of drinking water for the Lincoln Water Department is wholesale water purchased from the Providence Water Supply Board, which receives its drinking water from a surface water intake on the Scituate Reservoir. The Scituate Reservoir is not located along the downstream surface water pathway for the BFA property [11; 75-78]. The Lincoln Water Department also supplements its drinking water supply with nine groundwater wells located throughout three wellfields. These wellfields include the Manville Wellfield (Well Nos. 3, 5, and 10), located greater than 4 radial miles from the BFA property; the Quinville Wellfield (Well Nos. 1, 6, and 9), located approximately 2.1 miles west-southwest of the BFA property; and the Lonsdale Avenue Wellfield (Well Nos. 2, 4, and 11), located approximately 2.3 miles southwest of the BFA property [9-10; 70]. All of these wells are backup/standby wells except for Well No. 4 (and therefore are not included in Table 5), which contributes approximately 6 percent of the drinking water to the Lincoln Water Department's system. For the purposes of this evaluation, START assumes that the remaining 94 percent of Lincoln's water is purchased from the Providence Water Supply Board. The Lincoln Water Department serves approximately 18,000 persons. As a result, the population apportioned to Well No. 4 is 1,080 persons [75-78; 81].

One community public water system, the Central Falls Water Department, is located in the City of Central Falls. The Central Falls Water Department obtains all of its drinking water from PWSB (see above); no public drinking water supply sources are located in Central Falls [2, pp. 13-14; 65; 70; 72].

One non-transient/non-community water system [a system which regularly serves more than 25 of the same people (not residents) over 6 months of the year (*i.e.*, such as those serving schools or places of employment)] is located within 4 radial miles of the BFA property. This non-transient/non-community water system is operated by the Crest Manufacturing Company in Lincoln, RI, consists of one bedrock groundwater well (Well No. 1), and is located approximately 3.2 miles west of the BFA property. This well serves approximately 40 people. For the purposes of this evaluation, transient/non-community water systems [systems which do not regularly serve the same people, but do serve at least 25 people over 6 months of the year (*i.e.*, such as those serving restaurants, motels, or parks)] located within 4 radial miles of the BFA property have been omitted [9-10; 70-71]. Table 5 summarizes the public groundwater supply sources within 4 radial miles of the BFA property.

Table 5

Public Groundwater Supply Sources Within 4 Radial Miles of Boulter Farm Area

Distance/Direction from Site	Source Name	Location of Source[a]	Estimated Population Served	Source Type[b]
0.4 miles east-northeast	KGWC's - Well Nos. 1 and 2	North Attleborough	360	Overburden
0.5 miles south-southeast	North Attleborough Water Department - Adamsdale Well	North Attleborough	2,889	Overburden
0.6 miles south	Pawtucket Water Supply Board - Pawtucket Well Nos. 8 and 9	Cumberland	1,232	Overburden
0.7 miles northeast	North Attleborough Water Department - Hillman Well	North Attleborough	2,889	Overburden
0.7 miles south	Pawtucket Water Supply Board - Pawtucket Well No. 7	Cumberland	616	Overburden
0.9 miles south	Pawtucket Water Supply Board - Pawtucket Well No. 6	Cumberland	1,616	Overburden
1.1 miles north	Cumberland Water Department - Abbot Run Well Nos. 2 and 3	Cumberland	480	Overburden
1.3 miles south	Pawtucket Water Supply Board - Pawtucket Well Nos. 4 and 5	Cumberland	1,232	Overburden

Table 5

Public Groundwater Supply Sources Within 4 Radial Miles of Boulter Farm Area (Concluded)

Distance/Direction from Site	Source Name	Location of Source[a]	Estimated Population Served	Source Type[b]
1.4 miles south	Pawtucket Water Supply Board - Pawtucket Well No. 3	Cumberland	616	Overburden
2.16 miles south	Pawtucket Water Supply Board - Pawtucket Well No. 2	Cumberland	616	Overburden
2.3 miles southwest	Lincoln Water Department - Well No. 4	Lincoln	1,080	Overburden
2.6 miles north	Pawtucket Water Supply Board - Pawtucket Well No. 10	Cumberland	616	Overburden
2.6 miles north	Pawtucket Water Supply Board - Pawtucket Well No. 11	Cumberland	616	Overburden
2.92 miles west	Crest Manufacturing Company Well No.	Lincoln	200	Bedrock

[a] Indicates Town in which well is located.

[b] Overburden, Bedrock, or Unknown.

KGWC = King's Grant Water Company

[2; 60-83]

Private groundwater supplies located within 4 radial miles of the property were estimated using equal distribution calculations of U.S. Census CENTRACTS data identifying population, households, and private water wells for "Block Groups" which lie within or partially within individual radial distance rings measured from the BFA property. The nearest private drinking water supply well is estimated to be located within 0.25 radial miles from the property, but has not been specifically identified due to lack of private well information for Cumberland and North Attleborough. Neither State nor local officials were able to identify the nearest private drinking water supply well location. The total population which relies on groundwater within 4 radial miles of the property is estimated to be 16,594 persons [5]. Table 6 summarizes the estimated drinking water populations served by groundwater sources within 4 radial miles of the BFA property.

Table 6

Estimated Drinking Water Populations Served by Groundwater Sources Within 4 Radial Miles of Boulter Farm Area

Radial Distance from Boulter Farm Area (miles)	Estimated Population Served by Private Wells	Estimated Population Served by Public Wells	Total Estimated Population Served by Groundwater Sources Within the Ring
≥ 0.00 to 0.25	17	0	17
> 0.25 to 0.50	54	3,249	3,303
> 0.50 to 1.00	238	5,353	5,591
> 1.00 to 2.00	592	2,944	3,465
> 2.00 to 3.00	840	2,312	3,152
> 3.00 to 4.00	1,026	40	1,066
TOTAL	2,696	13,898	16,594

[2; 5-6; 60-83]

On 24 April 1980, MA DEQE collected a groundwater sample from the Adamsdale Well. The groundwater sample was submitted to MA DEQE's LES in Lawrence, MA, and analyzed for VOCs (method unknown) and for the presence of radionuclides by EPA Method 600/475-008. Analysis of the sample revealed contamination with three VOCs, including TCA (7.0 ppb); TCE (4.1 ppb); and PCE (1.1 ppb). In addition, gross beta radiation was detected at 4 pico Curie per liter (pCi/l), which was "...in excess of the drinking water standard of 3 pCi/l." The presence of radionuclides would not be confirmed in later samples [28; 32, pp. 1, 47, 52, Appendix D].

On 14 May 1980, MA DEQE again collected groundwater samples from the Adamsdale Well and analyzed them for VOCs at LES. Analysis again revealed the presence of VOCs, including TCA (6.0 ppb), TCE (2.1 ppb), and trans-1,2-DCE (4.9 ppb) [24, p. 8; 27, Table 1; 32, pp. 52-53, Appendix D].

On 10 June 1980, in an effort to try to identify the extent of the groundwater contamination, MA DEQE collected groundwater samples from two wells located in MA, in the vicinity of the BFA property. One groundwater sample (sample identified by START as CS-6/80 for clarity) was collected by MA DEQE from the private water supply well (screened in overburden) serving the Courtois Sand and Gravel Co. property, located approximately 0.2 miles east of the BFA property; and from a test well (T-80) (sample identified by START as T-80-6/80, for clarity), located approximately 0.2 miles southeast of the BFA property. The samples were analyzed for VOCs (method unknown) at LES. No VOCs were detected in groundwater sample CS-6/80 collected from the Courtois Well. Two VOCs, including trans-1,2-DCE (0.4 ppb) and TCA (6.4 ppb), were detected in groundwater sample T-80-6/80 collected from T-80 [24, p. 8; 27, Table 1; 32, Appendix D, Plan 1].

On 8 July 1980, continuing to try to identify the extent of the groundwater contamination, MA DEQE collected groundwater samples from the KGWC's Well No. 1, an overburden drinking water supply well located approximately 0.4 miles east-northeast of the BFA property, and from the private water supply well (sample identified by START as CS-7/80 for clarity) serving the Courtois Sand and Gravel Co. property. The samples were analyzed for VOCs (method unknown) at LES. No VOCs were detected in the groundwater sample collected from the "Courtois Well." Three VOCs, including TCA (10.4 ppb), TCE (0.4 ppb), and 1,1-DCA (2.0 ppb), were detected in the groundwater sample collected from the KGWC's Well No. 1 [24, p. 8; 27, Table 1; 32, Appendix D, Plan 1].

On 8 October 1980, MA DEQE collected groundwater samples from the Adamsdale Well and analyzed them for VOCs (method unknown) at LES. Four VOCs, including 1,1-DCA (0.8 ppb); trans-1,2-DCE (4.8 ppb); carbon tetrachloride (2.6 ppb); and TCE (2.6 ppb), were detected above instrument detection limits [27, Table 1; 32, Appendix D].

On 24 February 1981, MA DEQE collected a groundwater sample (samples identified by START as T-80-2/81 for clarity) from test well T-80. The sample was analyzed for VOCs (method unknown) at LES; however, no VOCs were detected in the sample [27, Table 1; 32, Appendix D].

On 4 January 1984, MA DEQE collected groundwater samples from the Adamsdale Well and the KGWC's Well No. 1. The samples were submitted to LES and analyzed for VOCs by EPA Method 624. In addition, the samples were analyzed for radionuclides. Subsequent analysis revealed the presence of 2.6 ppb of TCA in the sample collected from the KGWC's Well No. 1, and of 2 ppb of total-1,2-DCE; 15 ppb of TCA; and 2 ppb of TCE in the sample collected from the Adamsdale Well. Results of the radionuclide analysis were reported to be inconclusive [32, pp. 47-48, 53, Appendix D].

In 1984, on behalf of MA DEQE and the Town of North Attleborough, W&H initiated a hydrogeological investigation regarding the source of the contamination in the aquifer from which the Adamsdale Well draws water. W&H's study area comprised approximately 1.2 mi^2 in the vicinity of the Adamsdale Well. The investigation consisted of installing piezometers, monitoring wells, and stream depth gages (staffs); conducting seismic, land use, waste disposal area, and water quality hazard surveys; and collecting groundwater and surface water samples. Because the BFA property is located within the drainage basin of the aquifer that serves the Adamsdale Well, W&H identified the BFA property, in addition to several other properties, as a potential (and possibly primary) source of the VOC contamination in the Adamsdale Well [32, pp. 1-2, 20].

On 20 February 1985, W&H personnel collected groundwater samples from the Adamsdale Well. The samples were submitted to RAI and analyzed for VOCs by EPA Method 624; base/neutral and acid extractable compounds by EPA Method 625; pesticides and PCBs by EPA Method 606; phenols, cyanide, and the 13 priority pollutant total metals (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc) by a variety of methods [32, pp. 25-26, Appendix D]. In addition, samples were submitted to Chemical Waste Management, Inc. of Natick, MA and analyzed for radionuclides. The following substances were detected above instrument detection limits: methylene chloride (16 ppb), TCA (12 ppb), acetone (35 ppb), and zinc (0.008 ppm). In addition, a "trace" concentration (< 5 ppb) of trans-1,2-DCE was detected. Gross alpha and beta radiation were not detected above drinking water standards and, as a result, were dropped from later analyses [32, pp. 47-48, 54, Appendix D].

On 2 May 1985, in addition to collecting groundwater samples from several piezometers and test wells that they had installed in the study area, W&H personnel collected a groundwater sample (sample identified by START as GW-01 for clarity) from the private water supply well (screened in bedrock) referred to as the "Ferreira Well" located on the southern portion of the BFA property (located on Lot No. 363). The sample was submitted to RAI and analyzed for VOCs by EPA Method 624; however, no VOCs were detected [32, Appendix D].

In July 1985, as part of W&H's investigation, Clarence Welti Associates, Inc., installed 11 overburden monitoring wells (M-1, M-2S, M-2D, M-3S, M-3I, M-3D, M-4S, M-4I, M-4D, M-5S, and M-5D) at five locations in the study area. W&H reported that the monitoring wells were "concentrated northwest of the Adamsdale Well [southeast of the BFA property] because we [W&H] suspected the former Boulter Farm to be the prime contamination source" [32, p. 20]. None of the monitoring wells were installed on the BFA property; the nearest monitoring well (M-1) was installed approximately 600 ft south of the BFA property [32, Plan 1].

On 22 August 1985, W&H collected groundwater samples from the Adamsdale Well, from the recently installed 11 monitoring wells, and from four piezometers (P-1, P-6, P-7D, and P-8). The nearest of these piezometers to the BFA property is P-1, located in the southern portion of the Courtois Sand and Gravel Co. property. See Figure 4 for monitoring well and piezometer locations. All the samples were submitted to RAI and analyzed for VOCs by EPA Method 624 [32, pp. 25, 54, Plan 1, Appendix D].

No VOCs were detected in groundwater samples collected from M-1, M-2S, or M-2D (samples identified by START as M-1-8/85, M-2-8/85, and M-2D-8/85, respectively), all of which were located southeast of the BFA property. Three VOCs were detected in the sample collected from the Adamsdale Well, including TCA (9 ppb), carbon disulfide (5 ppb), and TCE ["trace" concentration (< 5 ppb)]. One VOC (carbon disulfide at 40 ppb) was detected in the sample collected from P-1 (sample identified by START as P-1-8/85), located southeast of the BFA property [32, pp. 25, 54, Appendix D].

In September 1986, W&H completed its investigation for MA DEQE and the Town of North Attleborough. W&H concluded in their September 1986 report, entitled *Final Report on Contamination Correction Study Adamsdale Well*, that an approximately 500- to- 1,000-ft-wide low-level (less than 25 ppb) VOC-contaminated plume was flowing south in the center and deepest part of the aquifer toward the Adamsdale Well. The plume reportedly extended from somewhere north of KGWC's Well No. 1 south to Pawtucket Well No. 9, a VOC-contaminated public drinking water supply well located in Cumberland, RI, approximately 0.6 miles south of the BFA property. W&H reported that the concentrations of VOCs detected in groundwater samples collected from the Adamsdale Well and from other groundwater samples collected from the plume were below the (then current) EPA proposed RMCLs and MCLs. With regard to the BFA property, W&H's report stated that "...the former Boulter farm, which was initially considered a probable source, does not appear to be related to the current plume. This does not necessarily preclude the farm from past releases" [32, p. 62]. In addition, W&H reported that although operations by Joe's Auto Recycling on the BFA property were apparently releasing VOCs, as evidenced by the analysis of sample SW-1 collected (on 28 December 1984) from the drainage ditch, the VOCs did not chemically match the contaminants found in the Adamsdale Well [32, p. 43]. Moreover, none of the VOCs detected in

the Adamsdale Well were detected in monitoring wells located "directly downgradient" of the BFA property [32, p. 41-44].

Sometime in early 1987, ERA was retained by LM Nursing to conduct an environmental site assessment of their portion of the BFA property (Lot Nos. 362, 364, and 365). On 12 June 1987, GZA Drilling Company, under ERA supervision, installed three overburden groundwater monitoring wells (LM-1 through LM-3) on LM Nursing's portion of the BFA property. Soil samples were collected from the borings during the monitoring well installations. The soil samples were later screened for VOCs with a PID at ERA. ERA reported that no PID readings above background levels were recorded for the samples. Based on groundwater table elevations in the monitoring wells, ERA reported that direction of groundwater flow was southeasterly [39, p. 4].

On 2 July 1987, ERA collected groundwater samples from monitoring wells LM-1 through LM-3. In addition, since a monitoring well was not installed north of the ponds (Pond Nos. 4, 5, and 6), because of drilling rig access restrictions, and because direction of groundwater flow was presumed to be southeasterly, ERA collected one surface water sample and one sediment sample from the "northernmost pond" on their portion of the BFA property (assumed by START to be Pond No. 4). The surface water and sediment sample were collected to determine groundwater quality upgradient of Lot Nos. 362, 364, and 365. All the samples were submitted to RIAL of Warwick, RI. The groundwater samples and the surface water sample were analyzed for VOCs (method unknown), and the sediment sample was analyzed for metals (method unknown) [39, p. 5. Appendix].

One VOC (methylene chloride) was detected in several of the aqueous samples; concentrations included 1 ppb in LM-1, 6 ppb in LM-2, 2 ppb in LM-3, and 4 ppb in the surface water sample collected to determine groundwater quality upgradient of Lot Nos. 362, 364, and 365. Toluene was also detected in LM-2 at 1 ppb. No metals were detected in the sediment sample [39, p. 5, Appendix].

In August 1987, based on the presence of methylene chloride in the July 1987 groundwater samples, ERA again collected groundwater samples from each of the monitoring wells and one surface water sample from (presumably) Pond No. 4. The samples were submitted to RIAL and analyzed for methylene chloride; however, it was not detected [39, pp. 6-7].

On 13 December 2000, RI DEM personnel collected two drinking water samples, including a duplicate, from a private residential drinking water supply well (screened in overburden) located at 133 Rabbit Hill Road, approximately 0.5 miles southwest of the BFA property [9; 124]. No reference samples were collected in association with this sampling event. The samples were submitted to ESSL of Cranston, RI and analyzed for low-level VOCs by EPA Method 524.2 and for the 13 priority pollutant total metals (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc) by EPA Methods 200.7/200.9/245.1 [125].

One VOC (MTBE) was detected in both samples. MTBE was detected at 1.22 ppb and 1.32 ppb. Metals were only detected in the duplicate sample and included copper (0.06 ppm) and zinc (0.06 ppm) [125]. These substances were not detected at concentrations exceeding their respective RI DEM Remedial Regulations GA Groundwater objectives [146].

On 17 through 20 June 2002, as part of the ESI, START personnel installed 10 SDDWs (SDDW-01 through SDDW-10) on and in the vicinity of the BFA property. SDDW-01 was installed on Lot No. 9, northwest of the BFA property. SDDW-02 and SDDW-09 were installed in the western portion of Lot No. 363, east of Pond No. 4. SDDW-09 was installed in the northwestern portion of Lot No. 363. SDDW-03 was installed in the northeastern portion of Lot No. 366 in the vicinity of former solid waste disposal area No. 1 (and Former Pond No. 2). SDDW-05 and SDDW-07 were installed on Lot No. 15, east of suspected Lagoon No. 2 . SDDW-06 and SDDW-08 were installed on Lot No. 366 in the vicinity of former Lagoon No. 1. SDDW-10 was installed on Lot No. 16, northeast of suspected Lagoon No. 2. All the SDDWs are screened in overburden, and range in depth from 11 to 17.5 ft bgs. The SDDWs are constructed from a 0.75-inch-diameter stainless steel screen containing 20/40 grade sand, 0.75-inch-diameter polyvinyl chloride (PVC) risers, a bentonite plug, and either a stick-up or flush-mounted steel outer casing. Soil boring and SDDW construction logs are included in Attachment B. Shallow bedrock was encountered during the installation of SDDW-02, SDDW-06, SDDW-09, and SDDW-10. Furthermore, non-aqueous phase liquid (NAPL) with a strong odor typical of fuel oil was observed during the installation of SDDW-05 and SDDW-07 [4, pp. 33-48; 127, pp. 2-7].

On 15 and 16 July 2002, as part of the ESI, START personnel collected nine groundwater samples (GW-02, GW-05 through GW-09, GW-11 through GW-13), including a replicate, from six SDDWs (SDDW-02 and SDDW-05 through SDDW-09) and one on-site bedrock water supply well located on the property. The samples were collected to determine if there has been a release of hazardous substances, associated with the BFA property, to groundwater [127, pp. 8-18]. Four groundwater samples [GW-01 (background sample), GW-03, GW-04, and GW-10] could not be collected because an insufficient amount of groundwater or no groundwater was present in the SDDWs at the time of sampling [127, pp. 10-12]. Because the originally proposed background sample could not be collected, the analytical results from sample GW-02/GW-13 (collected from SDDW-02, located southeast of Pond No. 4) were used to document reference groundwater conditions. This sample was chosen to document reference conditions because it contained the lowest concentrations of contaminants and appears to be slightly crossgradient of on-site source areas (see Figure 8) [136-141].

Groundwater samples GW-02, GW-06, GW-08, GW-09, and GW-13 were analyzed through an EPA CLP laboratory for VOCs, SVOCs, pesticides, PCBs, total metals, and cyanide. Sample GW-12 was analyzed through a DAS laboratory for low-level VOCs, and through an EPA CLP laboratory for SVOCs, pesticides, PCBs, total metals, and cyanide [136; 138; 140]. Because of potential high concentrations of contaminants, groundwater samples GW-05, GW-07, and GW-11 were analyzed through a DAS laboratory for VOCs, SVOCs, pesticides, PCBs, total metals, and cyanide. In addition, GW-02, GW-05, and GW-07 were also analyzed through a DAS laboratory for VPHs and EPHs, and GW-05 and GW-07 were also analyzed through a DAS laboratory for TPHs. Groundwater samples were analyzed for TPHs by gas chromatography (GC)-fingerprint analysis [137; 139]. Table 7 summarizes the groundwater samples collected by START on 15 and 16 July 2002.

Table 7

Groundwater Sample Summary: Boulter Farm Area
Samples Collected by START on 15 and 16 July 2002

Sample Location No.	Traffic Report No.	Date/ Time (hrs)	Remarks	Sample Depth	Sample Description/Rationale
MATRIX: Groundwater					
GW-02 (MS/DUP - VPH and EPH only)	D06795 A0QC2 MA0QC2	7/16/02 1035	Grab	Intake located at 12 feet from the top of the casing.	Sample collected from SDDW-02, located in the western portion of Lot No. 363, south of Pond No. 4, in order to establish potential impacts on local overburden groundwater. FID = 3.7, and PID = 33.7 units above background. 41° 55' 50.5" North Latitude 71° 22' 60.0" West Longitude
GW-05	D06786 D06792	7/15/02 1045	Grab	Intake located at 14 feet from the top of the casing.	Sample collected from SDDW-05, located in the northern portion of Lot No. 15, northeast of suspected Lagoon No. 2, in order to establish potential impacts on local overburden groundwater. Petroleum odor typical of fuel oil noted. FID = 1244 and PID = 956 units above background. 41° 55' 59.9" North Latitude 71° 22' 51.9" West Longitude
GW-06	A0QC6 MA0QC6	7/16/02 1110	Grab	Intake located at 8 feet from the top of the casing.	Sample collected from SDDW-06, located in the western portion of Lot No. 366 and north of boring SB-08, in the vicinity of former lagoon No. 1 and east of Pond No. 3, in order to establish potential impacts on local overburden groundwater. FID = 1.6, and PID = 1.7 units above background. 41° 55' 56.1" North Latitude 71° 23' 1.7" West Longitude
GW-07	D06787 D06793	7/15/02 1210	Grab	Intake located at 12.5 feet from the top of the casing.	Sample collected from SDDW-07, located in the northern portion of Lot No. 15, east of suspected Lagoon No. 2, in order to establish potential impacts on local overburden groundwater. Petroleum odor typical of fuel oil noted. FID = 3144 and PID = 976 units above background. 41° 55' 59.0" North Latitude 71° 22' 52.0" West Longitude
GW-08	A0QC8 MA0QC8	7/16/02 1245	Grab	Intake located at 13 feet from the top of the casing.	Sample collected from SDDW-08, located in the western portion of Lot No. 366, in the vicinity of former lagoon No. 1 and east of Pond No. 3, in order to establish potential impacts on local overburden groundwater. PID = 0 units above background. FID was inoperable. 41° 55' 55.5" North Latitude 71° 23' 1.8" West Longitude

Table 7

Groundwater Sample Summary: Boulter Farm Area
Samples Collected by START on 15 and 16 July 2002 (Concluded)

Sample Location No.	Traffic Report No.	Date/ Time (hrs)	Remarks	Sample Depth	Sample Description/Rationale
MATRIX: Groundwater (Concluded)					
GW-09	A0QC9 MA0QC9	7/15/02 1600	Grab	Intake located at 7.5 feet from the top of the casing.	Sample collected from SDDW-09, located in the western portion of Lot No. 363, east of Pond No. 4, in order to establish potential impacts on local overburden groundwater. FID = 0 and PID = 0.6 units above background. 41° 55' 52.1" North Latitude 71° 22' 59.4" West Longitude
GW-11	D06800	7/15/02 1045	Grab	Same as GW-05	Replicate sample of GW-05, collected for quality control (DAS).
GW-12 (MS/MSD)	D06788 A0QD2 MA0QD2	7/15/02 1140	Grab	NA	Sample collected from the bedrock water supply well serving Advanced Auto Recycling, located in the south-southwestern portion of Lot No. 363. FID and PID = 0 units above background. No geographic coordinates were recorded.
GW-13	A0QD1 MA0QD1	7/16/02 1055	Grab	Same as GW-02	Replicate sample of GW-02, collected for quality control (CLP).

MS/MSD = Matrix spike/matrix spike duplicate.
MS/DUP = Matrix spike/duplicate.
PID = Photoionization detector.
FID = Flame ionization detector.
SDDW = Small-diameter driven well.
NA = Not applicable.
VPH = Volatile petroleum hydrocarbons.
EPH = Extractable petroleum hydrocarbons.
CLP = Contract Laboratory Program.
DAS = Delivery of Analytical Services.
hrs = Hours.

[4, pp. 33-48; 127, pp. 2-7]

Complete analytical results of START groundwater samples including quantitation and detection limits are presented in Attachment C. Sample results qualified with a "J" on analytical tables are considered approximate because of limitations identified during data validation of CLP and DAS analytical results. In addition, organic sample results reported at concentrations below quantitation limits and confirmed by mass spectrometry are also qualified by a "J" and considered approximate.

Table 8 is a summary of organic compounds and inorganic elements detected through CLP and DAS analyses of START groundwater samples collected on 15 and 16 July 2002. For each sample location, a compound or element is listed if it is detected at three times or greater than the highest concentrations detected in the reference samples (GW-02/GW-13) for each specific substance. However, if the compound or element is not detected in the reference sample, the reference sample's SQL (for organic analyses) or SDL (for inorganic analyses) is used as the reference value. These compounds or elements are listed if they occurred at a value equal to or greater than the reference sample's SQL or SDL and are designated by their approximate relative concentration above these values. Groundwater sample GW-02/GW-13 was selected to document reference concentrations in overburden groundwater because it contained the lowest concentrations of contaminants [136-141]. Analytical results of groundwater samples collected in MA are compared to MOHML Reporting Category RCGW-1 groundwater standards. Under the MCP, reporting category RCGW-1 groundwater standards are applied to groundwater samples that are collected from a current or potential drinking water source area [145]. The MA portion of the BFA property is located within the IWPA for KGWC Well No. 1 [39, p. 4; 145; 154]. Analytical results of groundwater samples collected in RI are compared to the RI DEM Remedial Regulations GA groundwater objectives [146]. Sample concentrations in bold text indicate sample concentrations that exceed applicable state standards. It is important to note that no substances were detected in groundwater sample GW-02/GW-13 at concentrations exceeding applicable state standards [136; 140; 146].

Table 8

Summary of Analytical Results
Groundwater Sample Analysis for Boulter Farm Area
Samples Collected by START on 15 and 16 July 2002

Sample Location	Compound/ Element	Sample Concentration	Reference Concentration	Comments	Applicable State Standard
GW-05[MA]	**VOCs**				
	Methyl tert-Butyl Ether	10 ppb	0.3 J ppb	33 × Ref	70 ppb
	VPHs				
	C9-C10 Aro. Hyds.	92 ppb	70 U ppb	1.3 × SQL	200 ppb
	C9-C12 Aliph. Hyds. (Un-)	190 ppb	100 U ppb	1.9 × SQL	1,000 ppb
	Total Petroleum Hydrocarbons	**6,100 ppb**	NA	NA	200 ppb
	INORGANICS				
	Iron	13,100 ppb	2,360 ppb	5.6 × Ref	NL
GW-06[RI]	**VOCs**				
	Methyl tert-Butyl Ether	**160 ppb**	0.3 J ppb	533 × Ref	40 ppb
	INORGANICS				
	Aluminum	300 ppm	184 U ppm	1.6 × SDL	NL

Table 8

Summary of Analytical Results
Groundwater Sample Analysis for Boulter Farm Area
Samples Collected by START on 15 and 16 July 2002 (Continued)

Sample Location	Compound/ Element	Sample Concentration	Reference Concentration	Comments	Applicable State Standard
GW-07[MA]	**VOCs**				
	Benzene	**52 ppb**	10 U ppb	5.2 × SQL	5 ppb
	Dichlorobenzene, 1,2-	11 ppb	10 U ppb	1.1 × SQL	600 ppb
	Dichloroethane, 1,1-	**130 ppb**	10 U ppb	13 × SQL	70 ppb
	Dichloroethene, cis-1,2-	**96 ppb**	10 U ppb	9.6 × SQL	70 ppb
	Dichloroethene, trans-1,2-	11 ppb	10 U ppb	1.1 × SQL	100 ppb
	Ethylbenzene	39 ppb	10 U ppb	3.9 × SQL	700 ppb
	Methyl tert-Butyl Ether	**1,300 ppb**	0.3 J ppb	4,333 × Ref	70 ppb
	Methyl-2-Pentanone, 4- (MIBK)	13 ppb	10 U ppb	1.3 × SQL	400 ppb
	Toluene	360 J ppb	10 U ppb	36 × SQL	1,000 ppb
	Trichloro-1,2,2-trifluoroethane, 1,1,2-	14 J ppb	10 U ppb	1.4 × SQL	NL
	Xylene (total)	180 ppb	10 U ppb	18 × SQL	6,000 ppb
	Vinyl chloride	**340 J ppb**	0.7 J ppb	486 × Ref	2 ppb
	SVOCs				
	Chloro-3-Methylphenol, 4-	13 ppb	10 U ppb	1.3 × SQL	10,000 ppb
	Di-n-butylphthalate	46 ppb	10 U ppb	4.6 × SQL	500 ppb
	Dimethylphenol, 2,4-	96 ppb	10 U ppb	9.6 × SQL	100 ppb
	Methylnaphthalene, 2-	**19 ppb**	10 U ppb	1.9 × SQL	10 ppb
	Methylphenol, 2-	14 ppb	10 U ppb	1.4 × SQL	5,000 ppb
	Methylphenol, 4-	3.5 ppb	10 U ppb	0.35 × SQL	5,000 ppb
	Naphthalene	**30 ppb**	10 U ppb	3.0 × SQL	20 ppb
	EPHs				
	C11-C22 Aro. Hyds. (Un.)	110 ppb	86 U ppb	1.3 × SQL	200 ppb
	VPHs				
	C5-C8 Aliph. Hyds.	1,000 ppb	240 U ppb	4.2 × SQL	400 ppb
	C9-C12 Aliph. Hyds.	1,000 ppb	100 U ppb	10 × SQL	1,000 ppb
	C9-C10 Aro. Hyds.	650 ppb	70 U ppb	9.3 × SQL	200 ppb
	C5-C8 Aliph. Hyds. (Un.)	2,300 ppb	240 U ppb	9.6 × SQL	400 ppb
	C9-C12 Aliph. Hyds. (Un.)	1,900 ppb	100 U ppb	.19 × SQL	1,000 ppb
	Total Petroleum Hydrocarbons	6,900 ppb	NA	NA	200 ppb

Table 8

Summary of Analytical Results
Groundwater Sample Analysis for Boulter Farm Area
Samples Collected by START on 15 and 16 July 2002 (Continued)

Sample Location	Compound/ Element	Sample Concentration	Reference Concentration	Comments	Applicable State Standard
GW-07[MA] (Conc.)	**INORGANICS**				
	Iron	13,400 ppb	2,360 ppb	5.7 × Ref	NL
	Lead	73 ppb	2.9 U ppb	25 × SDL	20 ppb
	Manganese	3,750 ppb	495 ppb	7.6 × Ref	NL
	Potassium	6,910 ppb	933 ppb	7.4 × Ref	NA
GW-08[RI]	**VOCs**				
	Methyl tert-Butyl Ether	**130 ppb**	0.3 J ppb	433 × Ref	40 ppb
	INORGANICS				
	Aluminum	1,210 ppb	184 U ppb	6.6 × SDL	NL
	Barium	163 ppb	48.8 ppb	3.3 × Ref	2,000 ppb
	Copper	7.2 ppb	2.6 U ppb	2.8 × SDL	NL
	Iron	12,600 ppb	2,360 ppb	5.3 × Ref	NL
	Lead	**26.7 ppb**	2.9 U ppb	9.2 × SDL	15 ppb
	Magnesium	5,240 ppb	1,670 ppb	3.1 × Ref	NL
	Manganese	3,860 ppb	495 ppb	7.8 × Ref	NL
	Mercury	0.24 J ppb	0.20 UJ ppb	1.2 × SDL	2 ppb
GW-09[RI]	**VOCs**				
	Methyl tert-Butyl Ether	7 J ppb	0.3 J ppb	23 × SQL	40 ppb
	INORGANICS				
	Aluminum	398 ppb	184 U ppb	2.2 × SDL	NL
GW-11[MA]	**VOCs**				
	Methyl tert-Butyl Ether	10 ppb	0.3 J ppb	33 × Ref	70 ppb
	SVOCs				
	Di-n-butylphthalate	16 ppb	10 U ppb	1.6 × SQL	500 ppb
	INORGANICS				
	Iron	13,400 ppb	2,360 ppb	5.7 × Ref	NL

Table 8

Summary of Analytical Results
Groundwater Sample Analysis for Boulter Farm Area
Samples Collected by START on 15 and 16 July 2002 (Concluded)

Sample Location	Compound/ Element	Sample Concentration	Reference Concentration	Comments	Applicable State Standard
GW-12[RI]	**INORGANICS**				
	Barium	158 ppb	48.8 ppb	3.2 × Ref	2,000 ppb
	Sodium	43,600 ppb	2,510 ppb	18 × Ref	NL

Note: Bolded values indicate a concentration greater than or equal to the applicable State groundwater standard.

RI Groundwater sample collected in the State of Rhode Island. Analytical result compared to the Rhode Island Department of Environmental Management (RI DEM) Remedial Regulations GA Groundwater Objectives.

MA Groundwater sample collected in the State of Massachusetts. Analytical result compared to the Massachusetts Department of Environmental Protection (MA DEP) Massachusetts Oil and Hazardous Material List (MOHML) Reporting Category RCGW-1 groundwater standards.

Ref = Reference value.
J = Quantitation is approximate due to limitations identified during the quality control review.
U = The compound/substance was analyzed for, but not detected. The associated numerical value is the SQL or SDL.
UJ = The compound/substance was analyzed for, but not detected. The associated numerical value is the estimated SQL or SDL.
ppb = Parts per billion.
NA = Not applicable.
VOCs = Volatile organic compounds.
SVOCs = Semivolatile organic compounds.
SQL = Sample quantitation limit.
SDL = Sample detection limit.
NL = Not Listed.
Aliph. = Aliphatic.
Aro. = Aromatic.
Hyds. = Hydrocarbons.
Un. = Unadjusted.
Cont. = Continued.
Conc. = Concluded.
EPHs = Extractable petroleum hydrocarbons.
VPHs = Volatile petroleum hydrocarbons.
MIBK = Methyl Isobutyl Ketone.

[136-141; 145-146]

START personnel collected seven groundwater samples (GW-05, GW-06, GW-07, GW-08, GW-09, GW-11, and GW-12), including one groundwater sample from the on-site bedrock water supply well (GW-12), from the BFA property. Samples GW-06, GW-08, GW-09, and GW-12 were collected from the RI portion of the property, and samples GW-05, GW-07, and GW-11 were collected from the MA portion of the BFA property. The analytical results of groundwater samples collected from the BFA property are discussed in the following paragraphs.

RI Groundwater Analytical Results

One VOC (MTBE) was detected in START groundwater samples collected from the RI portion of the BFA property at a concentrations above reference criteria [136-137]. MTBE was detected at a maximum concentration of 160 ppb in sample GW-06. MTBE was detected in samples GW-06 and GW-08 at concentrations exceeding its respective RI DEM Remedial Regulations GA groundwater objective [145-146]. MTBE was also detected above reference criteria in soil/source samples collected from the BFA property by START [128; 142]. As a result, the presence MTBE in the groundwater samples collected from the RI portion of the property by START is considered to be at least partially attributable to source areas located on the BFA property.

No SVOCs, PCBs, or pesticides were detected in START groundwater samples collected from the RI portion of the BFA property at concentrations above SQLs [136-137].

Eight inorganics were detected in START groundwater samples collected from the RI portion of the property at concentrations above reference criteria. The maximum concentrations of inorganics are as follows: aluminum (1,210 ppb in GW-08); barium (163 ppb in GW-08); copper (7.2 ppb in GW-08); iron (12,600 ppb in GW-08); lead (26.7 ppb in GW-08); magnesium (5,240 ppb in GW-08); manganese (3,860 ppb in GW-08); and sodium (43,600 ppb in GW-12). Lead was detected in groundwater sample GW-08 at a concentration exceeding its respective RI DEM Remedial Regulations GA groundwater objective [146]. Barium, copper, lead, magnesium, manganese, and sodium were also detected above reference criteria in soil/source samples collected from the BFA property by START [133; 135]. As a result, the presence of barium, copper, lead, magnesium, manganese, and sodium in groundwater samples is considered to be at least partially attributable to source areas located on the BFA property. Aluminum and iron were not detected above reference criteria in soil/source samples collected from the property [133-135; 143]. However, based on the historical disposal of metal debris in the vicinity of former solid waste disposal areas, START considers the presence of aluminum and iron in the groundwater samples to be at least partially attributable to source areas on the BFA property [92-97].

Cyanide was not detected in START groundwater samples collected from the RI portion of the BFA property at a concentration above SDLs [140-141].

The analytical results for the VOC portion of the groundwater sample collected from the on-site bedrock water supply well were rejected because the sample did not meet temperature preservation criteria [138]. No SVOCs, pesticides, or PCBs were detected above SQLs in the groundwater sample collected from the on-site bedrock water supply well (GW-12) [136]. Two inorganics, barium (158 ppb) and sodium (43,600 ppb), were detected in the sample above SDLs; however, these inorganics were detected at concentrations below their respective RI DEM Remedial Regulations GA groundwater objectives [140; 146]. According to Mr. Yarbroudy, this water supply well is not used for drinking purposes [4, p. 21].

MA Groundwater Analytical Results

Twelve VOCs were detected in START groundwater samples collected from the MA portion of the BFA property at concentrations above reference criteria. The maximum concentrations of VOCs were detected in GW-07 and are as follows: benzene (52 ppb); 1,2-dichlorobenzene (11 ppb); 1,1-

DCA (130 ppb); cis-1,2-DCE (96 ppb); trans-1,2-DCE (11 ppb); ethylbenzene (39 ppb); MTBE (1,300 ppb); MIBK (13 ppb); toluene (360 J ppb); 1,1,2-trichloro-1,2,2-trifluoroethane (14 ppb); vinyl chloride (340 J ppb); and xylene (180 ppb). Benzene; 1,1-DCA; cis-1,2-DCE; MTBE; and vinyl chloride were detected in sample GW-07 at concentrations exceeding their respective MOHML Reporting Category RCGW-1 groundwater standard [136-137; 145]. Moreover, benzene; 1,2-dichlorobenzene; 1,1-DCA; cis-1,2-DCE; ethylbenzene; MTBE; toluene; 1,1,2-trichloro-1,2,2-trifluoroethane; vinyl chloride; and xylene were also detected above reference criteria in soil/source samples collected from the BFA property by START [128; 142]. MIBK was not detected above reference criteria in soil/source samples collected from the property [128-129; 142]. In addition, based on available file information, the use and/or disposal of MIBK on the property is not suspected. However, MIBK was detected in sample SW-1, collected from the drainage ditch located along the southwestern property boundary in 1984 by W&H [27, p. 4, Table 5]. Trans-1,2-DCE was detected in a water sample (003-JPH-BF) collected from former Lagoon No. 1 by RI DEM personnel on 11 October 1985 [27, Table 5; 103]. As a result, the presence of benzene; 1,2-dichlorobenzene; 1,1-DCA; cis-1,2-DCE; ethylbenzene; MIBK; MTBE; toluene; trans-1,2-DCE; 1,1,2-trichloro-1,2,2-trifluoroethane; vinyl chloride; and xylene in groundwater samples collected from the MA portion of the property by START is considered to be at least partially attributable to source areas located on the BFA property.

Seven SVOCs were detected in START groundwater samples collected from the MA portion of the BFA property at concentrations above reference criteria. The maximum concentrations of SVOCs were detected in GW-07 and are as follows: 4-chloro-3-methylphenol (13 ppb); di-n-butylphthalate (46 ppb); 2,4-dimethylphenol (96 ppb); 2-methylnaphthalene (19 ppb); 2-methlyphenol (14 ppb); 4-methylphenol (35 ppb); and naphthalene (30 ppb). 2-Methylnaphthalene and naphthalene were detected in sample GW-07 at concentrations exceeding their respective MOHML Reporting Category RCGW-1 groundwater standard [136-137; 145]. 4-Chloro-3-methylphenol; di-n-butylphthalate; 2,4-dimethylphenol; 2-methylphenol; and 4-methylphenol were not detected above reference criteria in soil/source samples collected from the property by START [128-131; 142]. Based on available file information, the use and/or disposal of these substances on the property is not known. However, 2-methylnaphthalene and naphthalene were detected above reference criteria in soil/source samples collected from the BFA property by START [128; 131]. As a result, the presence of 2-methylnaphthalene and naphthalene in groundwater samples collected from the MA portion of the property is considered to be at least partially attributable to source areas located on the BFA property.

No pesticides or PCBs were detected in START groundwater samples collected from the MA portion of the BFA property at concentrations above SQLs [136-137].

One EPH was detected in one of the two START groundwater samples collected from the MA portion of the BFA property at a concentration above reference criteria. No EPHs were detected above reference criteria in sample GW-05. The unadjusted C_{11} through C_{22} aromatic hydrocarbons were detected in sample GW-07 at 110 ppb [139]. The unadjusted C_{11} through C_{22} aromatic hydrocarbons were not detected in sample GW-07 at a concentration exceeding their respective MOHML Reporting Category RCGW-1 groundwater standard [145].

VPHs were detected in START groundwater samples GW-05 and GW-07 at concentrations above reference criteria. The maximum concentrations of VPHs detected above reference criteria were

detected in GW-07 and are as follows: C_5 through C_8 aliphatic hydrocarbons (1,000 ppb); C_9 through C_{12} aliphatic hydrocarbons (1,000 ppb); C_9 through C_{10} aromatic hydrocarbons (650 ppb); unadjusted C_5 through C_8 aliphatic hydrocarbons (2,300 ppb); and unadjusted C_9 through C_{12} aliphatic hydrocarbons (1,900 ppb). All of these VPHs were detected in sample GW-07 at concentrations exceeding their respective MOHML Reporting Category RCGW-1 groundwater standard [139; 145].

TPHs were detected in START groundwater samples GW-05 and GW-07 at 6,100 ppb and 6,900 ppb, respectively. GC-fingerprint analysis of sample GW-05 indicated that the "characteristics [of the sample] are similar to a combination of fuel oil No. 2/diesel fuel and heavy molecular weight components in the lubricating oil range. The absence of straight chain aliphatics indicates that the sample is weathered." GC-fingerprint analysis of sample GW-07 indicated that the "characteristics [of the sample] are similar to a combination of gasoline and fuel oil No. 6. The absence of straight chain aliphatics indicates that the sample is weathered" [139]. The concentrations of TPHs detected in groundwater samples GW-05 and GW-07 exceeded MOHML Reporting Category RCGW-1 groundwater standard for TPHs [145].

Four inorganics were detected in START groundwater samples collected from the MA portion of the BFA property at concentrations above reference criteria. The maximum concentrations of inorganics are as follows: iron (13,400 ppb in GW-07); lead (7.3 ppb in GW-07); manganese (3,750 ppb in GW-07); and potassium (6,910 ppb in GW-07) [140-141]. No inorganics were detected in groundwater samples collected in MA above their respective MOHML Reporting Category RCGW-1 groundwater standard [145]. However, lead, manganese, and potassium were also detected above reference criteria in soil/source samples collected from the BFA property by START [133; 135]. As a result, the presence of lead, manganese, and potassium in groundwater samples is considered to be at least partially attributable to source areas located on the BFA property. Iron was not detected above reference criteria in soil/source samples collected from the property [133-135; 143]. However, based on the historical disposal of metal debris in the vicinity of former solid waste disposal areas, START considers the presence of iron in the groundwater samples to be at least partially attributable to source areas on the BFA property [92-97].

Cyanide was not detected in START groundwater samples collected from the MA portion of the BFA property at a concentration above SDLs [140-141].

START performed groundwater sampling as part of the BFA ESI. Four groundwater samples were collected from the RI portion of the BFA property and three groundwater samples were collected from the MA portion of the property. Based on the analytical results, a release of hazardous substances (12 VOCs, two SVOCs, EPHs, VPHs, TPHs, and nine inorganics) to groundwater from on-site sources has been documented. Two of the contaminants, MTBE and lead, detected in samples collected from the RI portion of the property, were detected at concentrations exceeding their respective RI DEM Remedial Regulations GA groundwater objectives [146]. Five VOCs, two SVOCs, VPHs, and TPHs were detected in samples collected from the MA portion of the property at concentrations exceeding their respective MOHML Reporting Category RCGW-1 groundwater standards [145]. No public water supply wells are known to have been impacted by the release from on-site sources. VOC contamination has been documented in nearby public and residential groundwater supply wells; however, insufficient information is available which indicates that the BFA property is the source of that VOC contamination. To date, no actions have been taken to address the release of contaminants to groundwater.

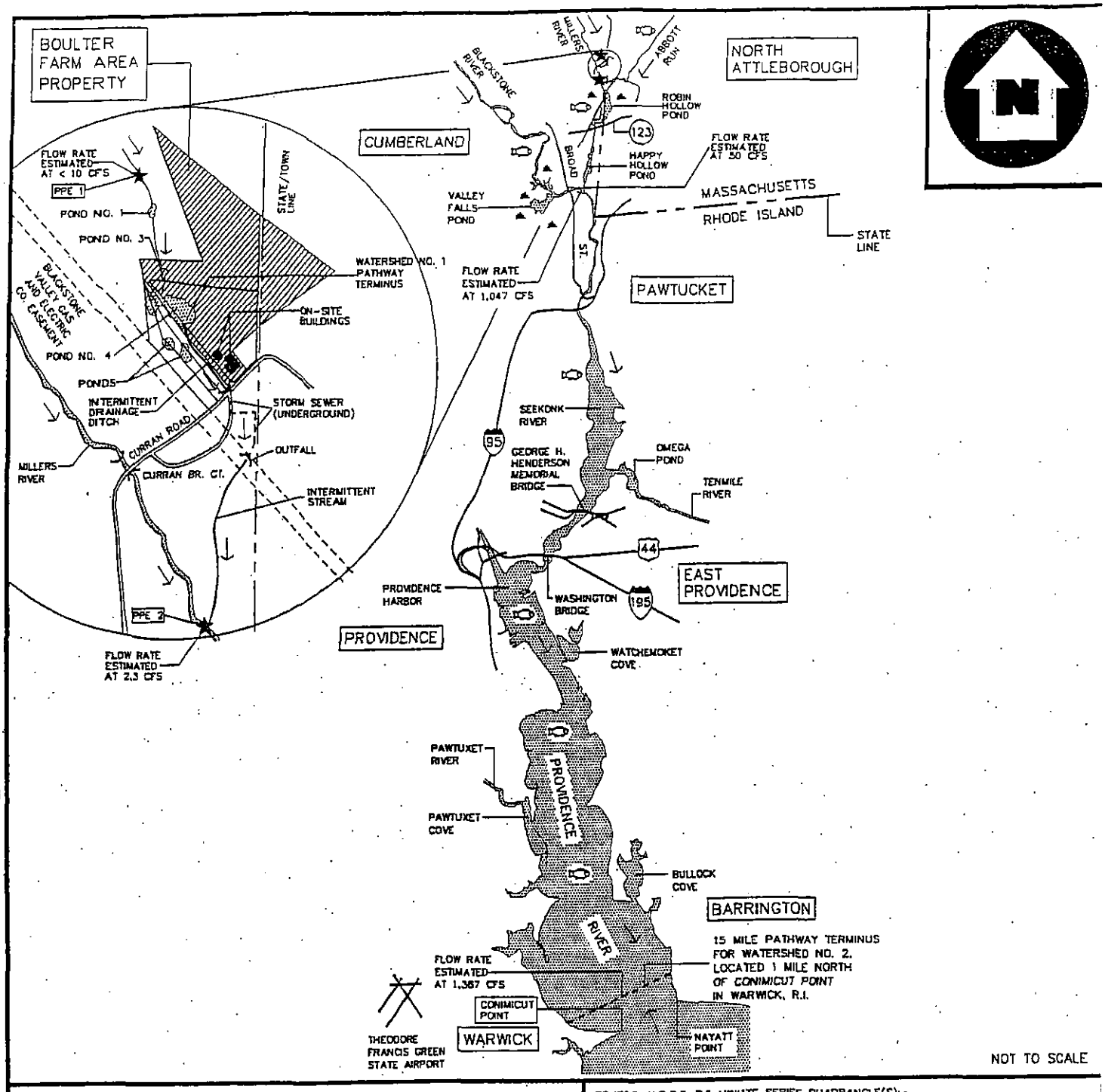
SURFACE WATER PATHWAY

The BFA property is located in the Blackstone River Drainage Basin [84, pp. A-5, A-6]. No stormdrains or catchbasins are located on the property [4, p. 11]. The property is located outside the 500-year floodplain [18-19].

In general, the topography of the property slopes gently to the south-southwest. As a result, stormwater runoff from the property generally flows overland into the unnamed stream and Pond Nos. 1, 3, and 4 (perennial water bodies) located on and along the western property boundary. Stormwater in the southern portion of the property, particularly in the vicinity of the on-site buildings, likely flows overland directly into the drainage ditch located along the southwest property boundary [9]. The drainage ditch (a non-permanent water body) conveys stormwater runoff (and occasional discharge from Pond Nos. 4 and 6) southeasterly and discharges into a 24-inch underground culvert at its junction with Curran Road. The underground culvert, which also serves several catchbasins on Curran Road and Curran Brook Court, conveys stormwater southerly and discharges via an outfall to an intermittent stream located approximately 400 ft south of the BFA property. The intermittent stream conveys stormwater runoff southerly for approximately 0.3 miles before discharging into the Millers River, the next permanent (perennial) water body [4, pp. 6-7; 8-9]. Since the unnamed stream and Pond Nos. 1, 3, and 4 are connected to the Millers River via non-perennial water bodies (the drainage ditch, the underground culvert, and the intermittent stream), they are considered a separate, isolated watershed (Watershed No. 1). As a result, the most upstream probable point of entry (PPE) to surface water for Watershed No. 1 is the unnamed stream (PPE^1), upstream of Pond No. 1. Moreover, the confluence of the Millers River and the intermittent stream [a second PPE (PPE^2)] is considered the start of a second watershed (Watershed No. 2) (Figure 9) [9-10; 87].

From PPE^1, surface water flows southerly via the unnamed stream for approximately 300 ft before discharging into Pond No. 1. From the mouth of Pond No. 1, surface water flows south via the unnamed stream for approximately 500 ft to Pond No. 3, which in turn flows for approximately 100 ft and discharges into the unnamed stream. Surface water continues south for approximately 200 ft via the unnamed stream and discharges into Pond No. 4, which is approximately 200 ft at its widest point. The downstream surface water pathway terminus for Watershed No. 1 occurs in Pond No. 4 [9].

From PPE^2, the Millers River conveys surface water south for approximately 0.3 miles and then discharges into Abbot Run which, in turn, immediately discharges into Robin Hollow Pond. Surface water continues to flow southerly through Robin Hollow Pond and Happy Hollow Pond, and then discharges into the Blackstone River approximately 2.1 miles downstream of PPE^2. The Blackstone River flows southerly for approximately 2.0 miles before forming the headwaters of the Seekonk River. Surface water continues to flow southerly for approximately 4.5 miles before discharging into Providence Harbor, and the Providence River, which flows south for the remaining 6.4 miles of the 15-mile downstream pathway. The 15-mile downstream surface water pathway terminus for Watershed No. 2 occurs in the Providence River, approximately 1.0 mile north of Conimicut Point in Warwick, RI (Figure 9) [9-17].



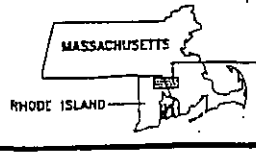
LEGEND

- WETLANDS
- PROBABLE POINT OF ENTRY (PPE) TO SURFACE WATER PATHWAY
- FISHERY
- FLOW DIRECTION
- CULVERT
- SURFACE WATER

ROUTE MARKER

- INTERSTATE ROUTE
- U.S. ROUTE
- STATE ROUTE

SOURCE: U.S.G.S. 7.5 MINUTE SERIES QUADRANGLE(S):-
ATTLEBORO, MASSACHUSETTS-RHODE ISLAND 1987
BRISTOL, RHODE ISLAND-MASSACHUSETTS 1955, PHOTOREVISED 1970 AND 1975
EAST GREENWICH, RHODE ISLAND 1957, PHOTOREVISED 1970 AND 1975
PROVIDENCE, RHODE ISLAND-MASSACHUSETTS 1957, 1987



SURFACE WATER PATHWAY SKETCH

BOULTER FARM AREA
CURRAN ROAD AND DEPOT STREET
CUMBERLAND, RHODE ISLAND

WESTON SOLUTIONS

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD #	DRAWN BY:	DATE
03-05-0148	W. SHAW	4/3/03

FILE NAME: S:\02050121\FIGURES\SW_PATHWAY.DWG

FIGURE 9

Based on field observations, START assumes the flow rate of the water bodies that comprise Watershed No. 1 (*i.e.*, the unnamed stream and Pond Nos. 1, 3 and 4) to be less than (<) 10 cubic feet per second (cfs) [4, p. 4].

With regard to flow rates of surface water bodies that comprise Watershed No. 2, there are no USGS gaging stations located on the Millers River or Abbot Run. The drainage basin area of the Millers River at its confluence with Abbot Run is approximately 1.3 mi^2. Using the USGS conversion factor of 1.8 cfs/mi^2, the Millers River has an estimated flow rate of 2.3 cfs at its confluence with Abbot Run. Therefore, since PPE^2 is located upstream of the confluence of Millers River and Abbot Run, the estimated flow rate at PPE^2 is <2.3 cfs [9; 11; 114]. The drainage basin area of Abbot Run at its mouth (2.1 miles downstream of PPE^2) is 27.8 mi^2. Using the USGS conversion factor of 1.8 cfs/mi^2, Abbot Run has an estimated flow rate of 50 cfs at its mouth (at its confluence with the Blackstone River) [9; 76; 107; 114].

There are no USGS gaging stations located on the Blackstone River downstream of its confluence with Abbot Run. The drainage basin area of the Blackstone River measured at a USGS gaging station (No. 01112500) located in Woonsocket, RI, approximately 12 miles upstream of its confluence with Abbot Run, is 416 mi^2. Using the USGS conversion factor of 1.8 cfs/mi^2, the Blackstone River has an estimated flow rate of 749 cfs at the gaging station. The drainage basin area of the Blackstone River measured at a USGS gaging station (No. 01110500) located in Northbridge, MA, approximately 20 miles upstream of station No. 01112500 (32 miles upstream of its confluence with Abbot Run), is 141 mi^2. Using the USGS conversion factor of 1.8 cfs/mi^2, the Blackstone River has an estimated flow rate of 254 cfs at this gaging station. Interpolating between the two gaging stations, it is estimated that the flow rate of the Blackstone River increases at 24.8 cfs/mi. Extrapolating from station No. 01112500, the Blackstone River has an estimated flow rate of 1,047 cfs at its confluence with Abbot Run. Furthermore, using extrapolation, it is estimated that the flow rate of the Blackstone River is 1,000 cfs approximately 1.9 miles upstream of its confluence with Abbot Run [9-11; 87; 108; 110-114].

The Seekonk River and the Providence River, although both tidally influenced water bodies, are considered rivers, not coastal tidal waters (flow not applicable), under this investigation. Using extrapolation, the Providence River has an estimated flow rate of 1,367 cfs at the 15-mile downstream surface water pathway terminus. Moreover, the Seekonk River has an estimated flow between 1,047 cfs and 1,367 cfs [9-11; 87; 108; 110-114]. Table 9 summarizes the surface water bodies along the 15-mile downstream pathway from the BFA property.

Table 9

Surface Water Bodies Along the 15-Mile Downstream Pathway from Boulter Farm Area

Surface Water Body	Descriptor[a]	Length of Reach (miles)	Flow Characteristics (cfs)[b]	Length of Wetland Frontage (miles)
Watershed No. 1				
Unnamed Stream (including Pond Nos. 1, 3, and 4)	Minimal Stream	0.27 (1,400 feet)	< 10	0
Millers River	Minimal Stream	0.5	2.3	0
Abbot Run (including Robin Hollow Pond and Happy Hollow Pond)	Small to Moderate Stream	1.8	10 to 50	0.2
Watershed No. 2				
Blackstone River	Large Stream to River	2.0	1,047 to 1,367	0
Seekonk River	Large Stream to River	3.5	1,047 to 1,367	0
Providence River	Large Stream to River	6.4	~ 1,367	0

[a] Minimal stream <10 cfs. Small to moderate stream 10-100 cfs. Large stream to river >1,000-10,000 cfs.
[b] Cubic feet per second.

[9-17; 76; 87; 108; 110-114]

There are no known surface water drinking water intakes located along the downstream surface water pathway from the BFA property for Watershed No. 1. One surface water drinking water intake is located along the 15-mile downstream surface water pathway from the BFA property for Watershed No. 2. This surface water intake is operated by PWSB and is located on Happy Hollow Pond, which is the last in a series of ponds on Abbot Run, just prior to the confluence with the Blackstone River [9-10; 74]. The Happy Hollow Pond intake contributes approximately 13 mgd or 95 percent to PWSB's system, which serves approximately 110,000 people in the Cities of Pawtucket and Central Falls, and the Valley Falls section of the Town of Cumberland. In addition, approximately 55 percent of the Cumberland Water Department's system (an estimated 13,200 persons) is supplied with water from PWSB. In total, START estimates that PWSB serves 123,200 persons. As a result, the population apportioned to the Happy Hollow Pond intake is 117,040 persons [2, p. 13; 72-74; 82].

All the water bodies located in Watershed No. 1, and the Millers River and Abbot Run (including Robin Hollow Pond and Happy Hollow Pond) of Watershed No. 2, are designated by RI DEM as freshwater Class A waterways along their entire lengths of reach downstream of the property. Class A waterways are designated as "a source of public drinking water supply, for primary and secondary contact recreational activities and for fish and wildlife habitat." Class A waterways are further defined as "suitable for compatible industrial processes and cooling, hydropower, aquacultural uses, navigation, and irrigation and other agricultural uses" [9; 84, pp. 11-12, Appendix A].

The Blackstone River is designated as a freshwater Class B1 waterway for the initial 0.2 miles of its length of reach; the remaining 1.8 miles of reach is designated as a Class B1{a} waterway by RI DEM. Class B1 waterway designations are the same as Class A waterway designations; however, primary contact recreational activities in Class B1 waterways may be impacted due to pathogens from approved wastewater discharges. A Class B1{a} designation indicates that the waterway may be further impacted by combined sewer overflows (CSOs) [9; 84, pp. 11-12, Appendix A].

The Seekonk River is designated as a seawater Class SB1{a} waterway along its entire length of reach by RI DEM. Class SB1{a} waterways "are designated for primary and secondary contact recreational activities and fish and wildlife habitat", and "suitable for aquacultural uses, navigation, and industrial cooling." A Class SB1{a} designation also indicates that primary contact recreational activities may be impacted due to pathogens from approved wastewater discharges. These waterways are also likely impacted by CSOs [9-10; 84, pp. 11-12; Appendix A].

The Providence River is designated as a seawater Class SB1{a} waterway for the initial 5.5 miles of its length of reach; the remaining 0.9 miles of reach is designated as a seawater Class SB{a} waterway by RI DEM. Class SB{a} waterways "are designated for primary and secondary contact recreational activities and fish and wildlife habitat", and "suitable for aquacultural uses, navigation, and industrial cooling" [10; 84, pp. 11-12, Appendix A; 110-111].

No wetland frontage is located along the downstream surface water pathway for Watershed No. 1. Approximately 0.2 miles of wetland frontage exist along the downstream pathway for Watershed No. 2 [12-17; 116].

START assumes that the ponds in Watershed No. 1 are recreational fisheries. With regard to Watershed No. 2, START assumes that Millers River is also a recreational fishery. Abbot Run (including Robin Hollow Pond and Happy Hollow Pond), the Blackstone River, the Seekonk River, and the Providence River are known fisheries. Additionally, Abbot Run and the Blackstone River are periodically stocked with trout [117-119].

There are no known Federal/State-endangered/threatened species habitats located along the downstream pathway for Watershed No. 1. Two State-threatened species habitats are located along the 15-mile downstream pathway from the property for Watershed No. 2 [120-121]. Table 10 summarizes the sensitive environments along the 15-mile downstream pathway from the BFA property.

Table 10

Sensitive Environments Along the 15-Mile Downstream Pathway from Boulter Farm Area

Sensitive Environment Name	Sensitive Environment Type	Surface Water Body	Downstream Distance from PPE (miles)	Flow Rate at Environment (cfs)[a]
Watershed No. 1				
Unnamed Stream (including Pond Nos. 1, 3 and 4)	Water body protected under CWA	Pond No. 1	0	< 10
Watershed No. 2				
Millers River	Water body protected under CWA	Millers River	0	< 2.3
Abbot Run (including Robin Hollow Pond and Happy Hollow Pond) Wetlands	Wetlands (0.2 miles)	Abbot Run (including Robin Hollow Pond and Happy Hollow Pond)	0.3 to 2.1	< 50
Two State-threatened Species*	State-threatened species habitat	Robin Hollow Pond	0.3 to 0.9	< 50
Spawning Ground for Alewife	Spawning Ground Within A River System	Seekonk River	4.1 to 5.1	> 1,047 to < 1,367
Migratory Pathway for *Alewife*	Anadromous Fish Migratory Pathway	Seekonk River	4.1 to 5.1	> 1,047 to < 1,367

[a] Cubic feet per second
PPE = Probable Point of Entry
CWA = Clean Water Act
* = START personnel were unable to obtain detailed information regarding the identified species.

[9-17; 108; 115-116; 120]

On 23 and 27 April 1987, in support of the SSI, personnel from RI DEM and ESS collected two sediment samples (SD-1 and SD-2) and two surface water samples (SW-1 and SW-2) from Pond Nos. 1 and 3. Samples SD-1 and SW-1 were collected from Pond No. 1, and samples SD-2 and SW-2 were collected from Pond No. 3 [27, pp. 4-5, Tables 6-8; 36-37]. All the samples were submitted to RIAL for analysis. The surface water samples were analyzed for VOCs, select metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver), and total organic carbon (TOC). The sediment samples were analyzed for PCBs, pesticides by EP Toxicity, select metals by EP Toxicity, and oil and grease [27, Tables 6-8; 36-37]. START personnel were unable to determine the methods used to analyze the samples.

No metals were detected in the surface water samples. One VOC (methylene chloride at 3 ppb) was detected in a duplicate sample of SW-3. No PCBs or pesticides were detected in the sediment samples. One metal (mercury at 0.001 ppm) was detected in sediment sample SD-1. Oil and grease concentrations ranged from 0.02 to 0.05 percent in the sediment samples [27, Tables 6-7].

On 8 May 1995, RI DEM collected one surface water sample (SW-01) from the unnamed stream, just downstream (south) of Pond No. 3 [49, Figure]. The sample was submitted to ESSL and analyzed for VOCs by EPA Method 8260, SVOCs by EPA Method 8270, pesticides and PCBs by EPA Method 8080, and 13 priority pollutant total metals (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc) by EPA Methods 6010/7421/7470 [49, p. 1, Appendix A]. No VOCs, SVOCs, pesticides, or PCBs were detected in the sample; however, two metals [cadmium (0.006 ppm) and lead (0.028 ppm)] were detected [49, Appendix A].

Historically, several sediment and surface water samples have been collected from the drainage ditch located along the southwestern boundary of the property. Analyses from these samples indicate that a release of VOCs has occurred; however, since the drainage ditch is a non-permanent water body, no release could be documented. These sampling events are discussed in greater detail in the Operational and Regulatory History and Waste Characteristics section of this report.

On 17 through 20 June 2002, as part of the ESI, START personnel collected nine sediment samples (SD-01 through SD-09), including a duplicate, from the unnamed stream and Pond Nos. 1, 3, and 4, to determine if there has been a release of hazardous substances, associated with the BFA property, to Watershed No. 1. Sediment samples SD-08 and SD-09 were collected from the unnamed stream, upstream of the BFA property, in order to document reference concentrations for sediment sample comparisons. Sediment samples were analyzed through a DAS laboratory for VOCs, SVOCs, pesticides, PCB, metals, and cyanide, with the exception of SD-09, which was analyzed through a DAS laboratory for metals only [142-143]. Table 11 summarizes the sediment samples collected by START on 17 June 2002.

Table 11

Sediment Sample Summary: Boulter Farm Area
Samples Collected by START on 17 June 2002

Sample Location No.	Traffic Report No.	Date/ Time (hrs)	Remarks	Sample Depth (feet)	Sample Source
MATRIX: Sediment					
SD-01	D06291	6/17/02 1405	Grab	0 to 1	Sample collected from Pond No. 4, in the vicinity of the outlet to the drainage ditch located along the southwestern boundary of Lot No. 363, in order to establish potential impact on targets along the downstream pathway. Material was brown, medium SAND, some fine gravel. FID and PID = 0 units above background. Conductivity = 46.6 μS/cm; temperature = 23.4°C; pH = 6.13. 41° 55' 53.6" North Latitude 71° 23' 0.8" West Longitude
SD-02	D06292	6/17/02 1330	Grab	0 to 1	Sample collected from the northeastern portion of Pond No. 4, in order to establish potential impact on targets along the downstream pathway. Material was brown, coarse SAND, little fine gravel. FID and PID = 0 units above background. Conductivity = 47 μS/cm; temperature = 20.2°C; pH = 6.58. 41° 55' 54.3" North Latitude 71° 23' 1.6" West Longitude
SD-03	D06293	6/17/02 1250	Grab	0 to 1	Sample collected from the north central portion of Pond No. 4, in the vicinity of the inlet from the unnamed stream, in order to establish potential impact on targets along the downstream pathway. Material was brown, coarse SAND, little fine gravel. FID and PID = 0 units above background. Conductivity = 48.9 μS/cm; temperature = 21.3°C; pH = 6.60. 41° 55' 54.6" North Latitude 71° 23' 4.2" West Longitude
SD-04	D06294	6/17/02 1615	Grab	0 to 1	Sample collected from Pond No. 3, in order to establish potential impact on targets along the downstream pathway. Material was brown, medium SAND, trace fine gravel. FID and PID = 0 units above background. Conductivity = 47 μS/cm; temperature = 19°C; pH = 6.20. 41° 55' 54.7" North Latitude 71° 23' 2.6" West Longitude

Table 11

Sediment Sample Summary: Boulter Farm Area
Samples Collected by START on 17 June 2002 (Continued)

Sample Location No.	Traffic Report No.	Date/ Time (hrs)	Remarks	Sample Depth (feet)	Sample Source
MATRIX: Sediment (Continued)					
SD-05	D06295	6/17/02 1615	Grab	0 to 1	Duplicate sample of SD-04, collected for quality control.
SD-06 (MS/MSD)	D06296	6/17/02 1700	Grab	0 to 1	Sample collected from the unnamed stream between Pond No. 3 and Pond No. 1, in order to establish potential impact on targets along the downstream pathway. Material was brown, medium SAND, little fine gravel. FID and PID = 0 units above background. Conductivity = 28 µS/cm; temperature = 19.1°C; pH = 6.50. 41° 55' 56.5" North Latitude 71° 23' 5.8" West Longitude
SD-07	D06297	6/17/02 1730	Grab	0 to 1	Sample collected from Pond No. 1, in order to establish potential impact on targets along the downstream pathway. Material was brown, coarse SAND, little fine gravel. FID and PID = 0 units above background. Conductivity = 45.3 µS/cm; temperature = 18.3°C; pH = 5.84. 41° 56' 0.5" North Latitude 71° 23' 2.9" West Longitude
SD-08	D06298	6/17/02 1830	Grab	0 to 1	Sample collected from the unnamed stream, approximately 500 feet upstream of Pond No. 1, in order to establish reference concentrations for sediment sample comparisons. Material was brown, fine SAND. FID and PID = 0 units above background. Conductivity = 47 µS/cm; temperature = 19°C; pH = 6.40. 41° 56' 13.7" North Latitude 71° 23' 12.1" West Longitude

Table 11

Sediment Sample Summary: Boulter Farm Area
Samples Collected by START on 17 June 2002 (Concluded)

Sample Location No.	Traffic Report No.	Date/ Time (hrs)	Remarks	Sample Depth (feet)	Sample Source
MATRIX: Sediment (Concluded)					
SD-09	D06299	6/17/02 1830	Grab	0 to 1	Sample collected from the unnamed stream, approximately 500 feet upstream of Pond No. 1, in order to establish reference concentrations for sediment sample comparisons (metals analyses only). Material was brown, fine SAND, trace organics. FID and PID = 0 units above background. Conductivity = 47 μS/cm; temperature = 19°C; pH = 6.40. 41° 56' 13.7" North Latitude 71° 23' 12.1" West Longitude

MS/MSD = Matrix spike/matrix spike duplicate.
PID = Photoionization detector.
FID = Flame ionization detector.
μS/cm = Microsiemens per centimeter.
°C = Degrees Centigrade.
CLP = Contract Laboratory Program.
DAS = Delivery of Analytical Services.
hrs = Hours.

[4, pp. 33-48; 127, pp. 2-7]

Complete analytical results of START sediment samples including quantitation and detection limits are presented in Attachment A. Sample results qualified with a "J" on analytical tables are considered approximate because of limitations identified during DAS sample data validation. In addition, organic sample results reported at concentrations below quantitation limits and confirmed by mass spectrometry are also qualified by a "J" and considered approximate.

Table 12 is a summary of organic compounds and inorganic elements detected through DAS analyses of START sediment samples. For each sample location, a compound or element is listed if it is detected at three times or greater than the reference sample concentration. However, if the compound or element is not detected in the reference sample, the reference sample's SQL (for organic analyses) or SDL (for inorganic analyses) is used as the reference value. These compounds or elements are listed if they occurred at a value equal to or greater than the reference sample's SQL or SDL and are designated by their approximate relative concentration above these values. Sediment samples SD-08 and SD-09 were collected to document reference concentrations for sediment samples. Analytical results of sediment samples are compared to National Oceanic and Atmospheric Administration (NOAA) Probable Effects Levels (PELs). PELs are sediment quality benchmarks used to identify substances which are probably elevated to toxic levels. At a level above the PEL, adverse effects to benthic organisms are frequently expected [144]. The NOAA PELs are included for comparison purposes only. Sample concentrations in bold text indicate sample concentrations that exceed applicable sediment guidelines.

Table 12

Summary of Analytical Results
Sediment Sample Analysis for Boulter Farm Area
Samples Collected by START on 17 June 2002

Sample Location	Compound/ Element	Sample Concentration	Reference Concentration	Comments	NOAA PEL Standard
SD-01	**VOCs**				
	Methyl tert-Butyl Ether	47 ppb	10 U ppb	4.7 × SQL	NL
	SVOCs				
	Benzo(a)anthracene	**420 J ppb**	30 J ppb	14.0 × Ref	385 ppb
	Benzo(a)pyrene	**370 J ppb**	37 J ppb	10 × Ref	782 ppb
	Benzo(b)fluoranthene	380 J ppb	50 J ppb	7.6 × Ref	NL
	Benzo(ghi)perylene	320 J ppb	35 J ppb	9.1 × Ref	NL
	Chrysene	460 J ppb	44 J ppb	10.5 × Ref	862 ppb
	Fluoranthene	740 J ppb	61 J ppb	12.1 × Ref	2355 ppb
	Indeno(1,2,3-cd)pyrene	280 J ppb	35 J ppb	8.0 × Ref	NL
	Phenanthrene	550 J ppb	36 J ppb	15.3 × Ref	515 ppb
	Pyrene	710 J ppb	64 J ppb	11.1 × Ref	875 ppb
	PESTICIDES				
	DDD, 4,4'-	**11 ppb**	5.5 U ppb	2 × SQL	8.51 ppb

Note: Bolded values indicate a concentration greater than or equal to the National Oceanic and Atmospheric Administration (NOAA) Probable Effects Level (PEL) standard. Included for comparison purposes only.

Ref = Reference value.
U = The compound/substance was analyzed for, but not detected. The associated numerical value is the SQL or SDL.
J = Quantitation is approximate due to limitations identified during the quality control review.
ppb = Parts per billion.
VOCs = Volatile Organic Compounds.
SVOCs = Semivolatile Organic Compounds.
SQL = Sample Quantitation Limit.
NL = Not Listed.
NOAA = National Oceanic and Atmospheric Administration.
PEL = Probable Effects Level.

[142-144]

START personnel collected seven sediment samples associated with the BFA property. Only one sample, SD-01, was found to contain concentrations of contaminants above reference criteria. The analytical results of sediment sample SD-01 are discussed in the following paragraphs.

One VOC was detected in START sediment sample SD-01 at a concentration above reference criteria. MTBE was detected at a concentration of 47 ppb [142]. MTBE was detected above

reference criteria in START soil/source samples, and, therefore, its presence in sample SD-01 will be considered at least partially attributable to source areas located on the BFA property [128-129; 142]. No NOAA PEL exists for MTBE [144].

Nine SVOCs were detected in START sediment sample SD-01 at concentrations above reference criteria. The concentrations of SVOCs detected in SD-01 are as follows: benzo(a)anthracene (420 J ppb); benzo(a)pyrene (370 J ppb); benzo(b)fluoranthene (380 J ppb); benzo(g,h,i)perylene (320 J ppb); chrysene (460 J ppb); fluoranthene (740 J ppb); indeno(1,2,3-cd)pyrene (280 J ppb); phenanthrene (550 J ppb); and pyrene (710 J ppb). These SVOCs were also detected above reference criteria in soil/source samples collected from the property by START [142]. As a result, the presence of benzo(a)anthracene; benzo(a)pyrene; benzo(b)fluoranthene; benzo(g,h,i)perylene; chrysene; fluoranthene; indeno(1,2,3-cd)pyrene; phenanthrene; and pyrene in sediment sample SD-01 is considered at least partially attributable to source areas located on the BFA property. Benzo(a)anthracene and phenanthrene were detected at concentrations exceeding their respective NOAA PELs [144].

One pesticide was detected in START sediment sample SD-01 at a concentration above reference criteria. 4,4'-DDD was detected at a concentration of 11 ppb [142]. 4,4'-DDD was also detected above reference criteria in START soil/source samples. Therefore, its presence in sample SD-01 will be considered at least partially attributable to source areas located on the BFA property. 4,4'-DDD was detected at a concentration above its respective NOAA PEL [144].

No PCBs were detected in START sediment samples at concentrations above SQLs [142]. No inorganics (metals or cyanide) were detected in START sediment samples at concentrations above reference criteria [143].

Based on available file information, no surface water pathway samples associated with the BFA property have been collected from surface water bodies in Watershed No. 2. Information obtained from RI DOH regarding analytical results of routine surface water sampling at the Happy Hollow Pond intake during 1995 and 1996 indicates that no organic analytes, including a variety of VOCs, SVOCs, pesticides, and PCBs, have been detected. Analysis has revealed the presence of some inorganic analytes, including barium, calcium, magnesium, nitrate, sodium, and sulfate; however, concentrations of barium, nitrate, and sodium were below their respective MCLs. No MCLs for calcium, magnesium, and sulfate exist; however, maximum concentrations detected included 10 ppm of calcium, 2.1 ppm of magnesium, and 26.4 ppm of sulfate [126].

START performed sediment sampling as part of the BFA ESI. Based on analytical results, a release of hazardous substances (one VOC, nine SVOCs, and one pesticide) to Watershed No. 1 has been documented. Two SVOCs, benzo(a)anthracene and phenanthrene, and one pesticide, 4,4'-DDD, were detected at concentrations exceeding their respective NOAA PELs. As a result of the release, a Clean Water Act (CWA)-protected water body and a presumed fishery have been impacted. To date, no actions have been taken to address the release to Watershed No. 1.

Attribution of potential contaminants in Watershed No. 2 to the BFA property would be difficult to establish based on the overland distance from the BFA property to PPE[2] (approximately 2,000 ft) and the likelihood that several off-site potential sources are located upstream of PPE[2]. As a result, START did not conduct surface water pathway sampling in Watershed No. 2.

SOIL EXPOSURE PATHWAY

There are no residents on the property. The nearest residence (Lot No. 10) is located to the south-southeast [4, pp. 4-5; 7; 9]. Advanced employs approximately eight full-time employees on the property [4, p.11]. Pedestrian and vehicular access to Lot No. 363 (*i.e.*, the southern portion of the property) is restricted by a chain-link fence [4, p. 8]. During the 2 August 2000 on-site reconnaissance, START personnel observed that northern portions of Lot Nos. 366 appear to be used as a gathering place for local youths, as evidence of recent campfires and empty bottles were observed. Further evidence that this portion of the property is used by trespassers as a recreational area included trails, bike tire tracks, and a tree stand typical of those used for hunting [4, pp. 4-5]. During additional on-site reconnaissances, START personnel observed that the trails located in the northern portion of Lot No. 366 extend to portions of Lot Nos. 15, 16, and 162, indicating that these areas of the BFA property are also used by trespassers. In addition, during sampling activities, START personnel observed several children on bicycles trespassing on Lot No. 16 [4, pp. 26, 28, 44]. The nearest schools to the property are located approximately 0.9 miles southwest and west [9]. No terrestrial sensitive environments were noted on the property [4, pp. 1-11]. Including the employee population of eight, there are an estimated 4,200 people located within 1 radial mile of the BFA property [4-6].

On 23 and 27 April 1987, in support of the SSI, personnel from RI DEM and ESS collected 16 soil samples (SS-1 through SS-6, SS-7A, SS-7B, SS-7C, SS-8, SS-9A, SS-9B, SS-9C, SS-10A, SS-10B, and SS-10C) from the BFA property (reported to be occupied at that time by "Joes Auto Salvage"). Sample SS-1 (6 inches bgs) was collected from an area of oil-stained soil located in the vicinity of a "...former dump area [consisting of fiberglass, cardboard, and wood]", an unnamed pond (referred to as Pond No. 2), and an empty "oil tank", located in the northern portion of the property. Samples SS-2 (1 ft bgs) and SS-3 (1.5 ft bgs) were also collected from a "former dump area" in an open field located along the eastern property boundary (possibly in MA). Samples SS-4 (3 ft bgs) (described to be a "tar-like material"), SS-5 (5 ft bgs), and SS-6 (depth unknown) were collected from Lagoon No. 1, which was reported to have been backfilled with sand and gravel at that time. Samples SS-7A (2 ft bgs), SS-7B (2 ft bgs), and SS-7C (2.5 ft bgs), which were later composited into sample SS-7, were collected from an area of stressed vegetation located within the open field along the eastern property boundary (possibly in MA). Sample SS-8 (8 inches bgs) was collected from the acid drum storage area. Samples SS-9A (1 ft bgs), SS-9B (1 ft bgs), and SS-9C (2.5 ft bgs), which were later composited into sample SS-9, were collected southeast of Pond No. 6. Samples SS-10A (1 ft bgs), SS-10B (8 inches bgs), and SS-10C (1 ft bgs), which were later composited into sample SS-10, were collected from the southern portion of Lot Nos. 362, 364, and 365. No known reference samples were collected during this sampling event [27, pp. 4-5, Tables 6-8; 36-37].

All the samples were submitted to RIAL for analysis. Soil samples SS-1, SS-4, and SS-7 through SS-10 were analyzed for PCBs, pesticides by EP Toxicity, and select metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) by EP Toxicity. In addition, soil samples SS-4 and SS-7 through SS-10 were analyzed for VOCs; and samples SS-1, SS-4, and SS-8 were analyzed for oil and grease. Soil samples SS-2, SS-3, SS-5, and SS-6 were not analyzed [27, Tables 6-8; 36-37]. START personnel were unable to determine the methods used to analyze the samples.

Laboratory analysis of soil samples SS-1 and SS-4 revealed the presence of two PCBs (Aroclor-1242 and Aroclor-1260) above instrument detection limits. Maximum concentrations were detected in sample SS-1 and consisted of 24,000 ppb of Aroclor-1242 and 28,000 ppb of Aroclor-1260. VOCs were only detected in sample SS-4 and included trans-1,2-DCE (6,000 ppb); TCA (5,000 ppb); TCE (7,000 ppb); PCE (2,000 ppb); toluene (2,000 ppb); and xylenes (9,000 ppb). Only one pesticide (lindane at 3 ppb in SS-4) was detected (by EP Toxicity) in the soil samples. The following metals were detected (by EP Toxicity) in the soil samples above instrument detection limits: barium (1.31 ppm in SS-7), cadmium (0.01 ppm in SS-8), and lead (0.17 ppm in SS-1 and 0.73 ppm in SS-4). Concentrations of oil and grease were detected in samples SS-1, SS-4, and SS-8, with the maximum concentration detected in SS-1 (26.7 percent) [27, p. 5, Table 8; 38; 39, Appendix].

In June 1995, RI DEM submitted a Site Monitoring Report to EPA regarding the BFA property. The report indicated that on 8 May 1995, RI DEM collected four soil samples (SS-01 through SS-04), including a duplicate, from the BFA property (occupied at that time as Joe's Recycling) [49, p. 1]. Sample SS-01 was collected from former Lagoon No. 1; sample SS-02 (the "background" soil sample) was collected west of Pond No. 3; and samples SS-03 and SS-04 were collected from the former acid drum storage area. Samples SS-02, SS-03, and SS-04 were collected from less than 2 ft below grade. Conflicting file information exists regarding the depth at which sample SS-01 was collected [85-86]. For the purposes of this ESI, START assumes that sample SS-01 was collected from a depth of less than 2 ft below grade (consistent with other samples). The samples were submitted to ESSL and analyzed for VOCs by EPA Method 8260, SVOCs by EPA Method 8270, pesticides and PCBs by EPA Method 8080, and 13 priority pollutant total metals (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc) by EPA Method 6010/7421/7470 [49, p. 1, Appendix A].

One VOC (methylene chloride) was detected in samples SS-01 and SS-02 at 7 ppb and 8 ppb, respectively. No SVOCs or pesticides were detected in any of the 1995 RI DEM soil samples. Laboratory analysis revealed the presence of the two PCBs [Aroclor-1248 (93 ppb) and Aroclor-1260 (93 ppb)] in sample SS-01. No PCBs were detected in the other soil samples. Laboratory analysis indicated that nine metals were present in soil on the property; however, only three metals (copper, lead, and nickel) were detected at concentrations significantly above "background" concentrations. These concentrations included copper at 51 ppm (SS-01); lead at 218 ppm (SS-01), 16 ppm (SS-03), and 11 ppm (SS-04); and nickel at 19 ppm (SS-01) [49, Appendix A].

On 17 through 20 June 2002, as part of the ESI, START personnel collected 39 soil/source samples [26 surface soil/source samples (SS-01 through SS-26), 12 subsurface soil/source samples (SO-01 through SO-12), and one source sample (SC-01)] from potential source areas on the BFA property [4, pp. 33-48; 127, pp. 2-7]. Of these, 25 soil/source samples (SS-02 through SS-11, SS-13 through SS-26, and SC-01) were collected at a depth of less than 2 ft bgs, and are, therefore, evaluated for potential soil exposure. Analytical results of surface soil/source samples collected by START are discussed in detail in the Waste/Source Sampling section of this report.

START personnel collected surface soil/source samples as part of the BFA ESI. START analytical results indicated that 21 VOCs, 20 SVOCs, EPHs, VPHs, three PCBs, 13 pesticides, 19 inorganics (metals and cyanide) were detected above reference criteria in surface soil/source samples. Sixteen VOCs, 18 SVOCs, EPHs, VPHs, three PCBs, 11 pesticides, 16 inorganics, and cyanide were detected in surface soil/source samples collected in MA, of which three VOCs, eight SVOCs, EPHs,

VPHs, three PCBs, four pesticides, and four inorganics were detected at concentrations exceeding their respective MOHML Reporting Category RCS-1 soil standard. Eleven VOCs, 15 SVOCs, EPHs, three PCBs, nine pesticides, and 18 inorganics were detected in surface soil/source samples collected in RI, of which nine SVOCs and three inorganics were detected at concentrations exceeding their respective RI DEM Residential Direct Exposure Criteria for soil. One VOC, PCE, was detected at concentrations exceeding its respective RI DEM Leachability Criteria for soil. Based on site observations and the use of the property by trespassers, impacts to trespassers and surrounding populations are possible. To date, no actions have been taken to address these areas of soil contamination.

AIR PATHWAY

There are no residents on the property. The nearest residence (Lot No. 10) is located to the south-southeast [4, pp. 4-5; 7; 9]. Advanced employs approximately eight full-time employees on the property [4, p.11]. Pedestrian and vehicular access to Lot No. 363 (*i.e.*, the southern portion of the property) is restricted by a chain-link fence [4, p. 8]. During the on-site reconnaissance, START personnel observed that northern portions of Lot No. 366 appear to be used as a gathering place for local youths, as evidence of recent campfires and empty bottles were observed. Further evidence that this portion of the property is used by trespassers as a recreational area included trails, bike tire tracks, and a tree stand typically used for hunting [4, pp. 4-5]. The nearest schools to the property are located approximately 0.9 miles southwest and west [9]. No terrestrial sensitive environments were noted on the property [4, pp. 1-11]. Including the employee population of eight, there are an estimated 109,820 people located within 4 radial miles of the BFA property [4-6]. Table 13 summarizes the estimated population within 4 radial miles of the property.

Table 13

Estimated Population Within 4 Radial Miles of Boulter Farm Area

Radial Distance from Boulter Farm Area (miles)	Estimated Population
On a Source	8*
0.00 to 0.25	195
> 0.25 to 0.50	691
> 0.50 to 1.00	3,306
> 1.00 to 2.00	15,488
> 2.00 to 3.00	33,305
> 3.00 to 4.00	56,827
TOTAL	109,820

*Represents eight workers at the BFA property.

Approximately 1,438 acres of wetlands are located within 4 radial miles of the property [116]. Two State-endangered and 10 State-threatened species are also located within 4 radial miles of the property [120-121]. Table 14 summarizes the sensitive environments located within 4 radial miles of the property.

Table 14

Sensitive Environments Located Within 4-Radial Miles of Boulter Farm Area

Radial Distance from Boulter Farm Area (miles)	Sensitive Environments/Species (status)
On a Source	None*
> 0.00 to 0.25	0 acres wetlands
	Waterbodies protected by Clean Water Act
	Two State-threatened species**
> 0.25 to 0.50	43 acres wetlands
> 0.50 to 1.00	89 acres wetlands
	Two State-threatened species
> 1.00 to 2.00	271 acres wetlands
	One State-threatened species
> 2.00 to 3.00	483 acres wetlands
	Two State-threatened species
> 3.00 to 4.00	552 acres wetlands
	Three State-threatened species
	Two State-endangered species

* During the on-site reconnaissance, START personnel observed what appeared to be wetlands in the vicinity of suspected Lagoon No. 2; however, a review of the wetland inventory map shows no wetlands in that area.

** The two State-threatened species habitats were reported to be located within 1 radial mile of the property; however, available reference material does not indicate the exact locations of these habitats. For the purposes of this ESI, START will assume that the habitats are located greater than 0.00 to 0.25 radial miles from the property.

[9; 116; 120-121]

During the START on-site reconnaissance, ambient air was monitored using an FID. No readings above background levels were noted [4, pp. 1-11].

START did not collect ambient air samples as part of this ESI. No laboratory quantitative or qualitative air samples are known to have been collected from the BFA property. Based on available data, no release of hazardous substances to the ambient air from on-site sources is known or suspected to have occurred, and no impacts to nearby residential populations or sensitive environments are known or suspected.

SUMMARY

The Boulter Farm Area (BFA) property is located along the Rhode Island (RI)/Massachusetts (MA) State line in the vicinity of Curran Road in Cumberland, Providence County, RI, and in the vicinity of Depot Street and Mendon Road in North Attleborough, Bristol County, MA. The portion of the 39.4-acre property located in RI (Lot Nos. 363 and 366) is currently owned by the Joseph I. Ferreira Trust and occupied by an automobile salvage yard operated by Advanced Auto Recycling, Inc. (Advanced). Property representatives of Advanced include Mr. Robert Yarbroudy, Treasurer, and Mr. Joseph I. Ferreira, Trustee. The portion of the property located in MA (Lot No. 15) is currently owned by the Town of North Attleborough.

The BFA property is located in a predominantly residential area, and is bordered to the north by undeveloped woodland and inactive sand and gravel pits formerly owned and operated by the Courtois Sand and Gravel Co. (historically referred to as the "Courtois Borrow Pits"); to the south by Curran Road and residential properties; to the east by Mendon Road and residential properties; and to the west by undeveloped woodland and an electric transmission line right-of-way operated by the Blackstone Valley Gas & Electric Company. Several trails and dirt roads, which are used by bikes and off-road recreational vehicles, are located on and adjacent to several portions of the BFA property. The property is also bordered to the west-southwest by unnamed ponds interconnected by an unnamed stream and undeveloped meadows; and to the east-southeast by a residence.

The southern portion of Lot No. 363 contains two single-story buildings, miscellaneous automobile parts storage areas, and a parking area, located south-southeast of the buildings. The buildings contain office space, a customer service area, multiple garage bays, and an area used for storage of automobile parts. The central and northern portions of Lot No. 363 are used to store several rows of salvaged automobiles. Lot No. 363 is surrounded by a chain-link fence except in the northwestern corner.

In general, Lot No. 366 consists of unpaved roads, salvaged automobile storage areas, miscellaneous automobile parts piles, tire piles, a pond, former sand and gravel extraction areas, and densely wooded undeveloped areas, and several bedrock outcrops. In addition, the approximate southern portion of Lot No. 366 and/or the northern portion of Lot No. 363 is underlain by a underground pipeline operated by the Mobil Pipe Line Company. Lot No. 15 consists of undeveloped woodland containing waste disposal areas.

In the 1960s, Mr. Samuel Boulter began storing "junk" cars on the property. Between the late 1960s until 1976, Mr. Boulter operated a non-licensed solid waste disposal area on the property, primarily on portions of what is currently Lot Nos. 15 and 366. Historical file information indicates that solid waste disposal occurred in portions of the site located in both MA and RI.

On 24 April 1980, the Massachusetts Department of Environmental Quality Engineering (MA DEQE) collected a groundwater sample from the Adamsdale Well, a public drinking water supply well located in North Attleborough, MA, approximately 3,000 ft south-southeast of the BFA property. Analysis of the groundwater sample revealed the presence of three volatile organic compounds (VOCs).

In June 1981, in support of a Preliminary Assessment (PA) and a Site Inspection (SI) being conducted by the Environmental Protection Agency (EPA), both EPA and Rhode Island Department of Environmental Management (RI DEM) personnel performed an inspection of the BFA property. EPA reported that the site was "inactive", and use of the property at the time was limited to off-road motorcycle riding and a gathering place for local youths. No visible evidence of any other potential sources of contamination, except for scattered trash, including glass, tires, and shingles, were reported by EPA.

In 1984, on behalf of MA DEQE and the Town of North Attleborough, Whitman & Howard, Inc. (W&H) initiated a hydrogeological investigation regarding the source of the contamination in the aquifer from which the Adamsdale Well draws water. Since the BFA property is located within the drainage basin of the aquifer that serves the Adamsdale Well, W&H identified the BFA property as a potential source of the VOC contamination in the Adamsdale Well. In September 1986, W&H completed its investigation for MA DEQE and the Town of North Attleborough. W&H's report stated that "...the former Boulter farm, which was initially considered a probable source, does not appear to be related to the current plume. This does not necessarily preclude the farm from past releases". In addition, W&H reported that although operations by Joe's Auto Recycling (Advanced) on the BFA property were apparently releasing VOCs, the VOCs did not chemically match the contaminants found in the Adamsdale Well. Moreover, none of the VOCs detected in the Adamsdale Well were detected in monitoring wells located directly downgradient of the BFA property.

In April 1987, in support of the Screening Site Inspection (SSI), personnel from RI DEM and Environmental Science Services (ESS) of Providence, RI, collected sediment, surface water, and soil samples from the BFA property. One VOC was detected in surface water samples. One metal was detected in the sediment samples. Oil and grease were also detected in the sediment samples. Two polychlorinated biphenyls (PCBs), six VOCs, one pesticide, and three metals were detected in the soil samples collected from the BFA property.

In December 1997 and January 1998, Roy F. Weston, Inc. (now known as Weston Solutions, Inc.) Superfund Technical Assessment and Response Team (START) personnel conducted on-site reconnaissances of the BFA property as part of a Site Inspection Prioritization (SIP) completed on 29 September 1998. No samples were collected as part of the SIP.

In June 2002, as part of an Expanded Site Inspection (ESI), START personnel collected soil/source samples from potential source areas on the BFA property; installed small-diameter driven wells (SDDWs) on and adjacent to the BFA property; and collected sediment samples from the unnamed stream and ponds. In July 2002, as part of the ESI, START personnel collected groundwater samples from the SDDWs and an on-site bedrock water supply well located on the property.

Analytical results of the soil/source samples collected by START indicated that sixteen VOCs, 16 semivolatile organic compounds (SVOCs), 11 pesticides, three PCBs, extractable petroleum hydrocarbons (EPHs), volatile petroleum hydrocarbons (VPHs), and 19 inorganics were detected in soil/source samples collected in RI; and nineteen VOCs, 20 SVOCs, 14 pesticides, four PCBs, EPHs, VPHs, 16 inorganics (metals and cyanide) were detected in soil/source samples collected in MA. Of these contaminants, one VOC, nine SVOCs and five inorganics were detected in RI at concentrations exceeding RI State soil standards, and three VOC, eight SVOCs, four pesticides, four

PCBs, EPHs, VPHs, and four inorganics were detected in MA at concentrations exceeding MA State soil standards.

Twelve VOCs, seven SVOCs, and four inorganics along with EPHs, VPHs, and total petroleum hydrocarbons (TPHs) were detected in groundwater samples in MA; and one VOC and eight inorganics were detected in groundwater samples collected in RI. One VOC and one inorganic substance detected in groundwater samples collected in RI were detected at concentrations exceeding RI groundwater standards. Five VOCs, two SVOCs, VPHs, and TPHs were detected in groundwater samples collected in MA at concentrations exceeding MA groundwater standards.

One VOC and nine SVOCs were detected in sediment samples, of which two SVOCs and one pesticide were detected at concentrations exceeding national sediment quality guidelines.

The depth to groundwater in overburden, as measured in SDDWs by START in July 2002, is 3.0 to 7.5 ft below ground surface. The direction of groundwater flow is generally southeasterly, but START also noted areas where groundwater appeared to be perched. The estimated population served by public drinking water supply wells within 4 radial miles of the property is 13,898. The nearest community drinking water supply wells (King's Grant Water Company Well Nos. 1 and 2) are located 0.4 miles east-northeast of the property. The estimated population served by private drinking water supply wells within 4 radial miles of the property is 2,696. The nearest private drinking water supply well is estimated to be located within 0.25 radial miles of the BFA property but has not been identified.

Stormwater runoff from the property generally flows overland into the unnamed stream and ponds located on and along the western property boundary. Stormwater in the southern portion of the property, particularly in the vicinity of the on-site buildings, likely flows overland directly into a drainage ditch located along the southwest property boundary. There are two separate surface water pathways for the BFA property, Watershed No. 1 and Watershed No. 2. Watershed No. 1 consists of the unnamed stream and unnamed ponds on and adjacent to the west-southwest portion of the property. Watershed No. 2 consists of the Millers River, Abbot Run, Robin Hollow Pond, Happy Hollow Pond, the Blackstone River, the Seekonk River, Providence Harbor, and the Providence River. No wetland frontage is located along the downstream surface water pathway for Watershed No. 1. Approximately 0.2 miles of wetland frontage exists along the downstream pathway for Watershed No. 2. There are no known Federal/State-endangered/threatened species habitats located along the downstream pathway for Watershed No. 1. Two State-threatened species habitats are located along the 15-mile downstream pathway from the property for Watershed No. 2.

There are no residents on the property. The nearest residence is located to the east-southeast. Advanced employs approximately eight full-time employees on the property. Pedestrian and vehicular access to Lot No. 363 is partially restricted by a chain-link fence. Portions of the BFA property are regularly used by trespassers for riding bikes and off-road recreational vehicles. An estimated 4,200 people reside within 1 radial mile of the BFA property. An estimated 109,820 people, approximately 1,438 acres of wetlands, and two State-endangered and 10 State-threatened species habitats are located within 4 radial miles of the BFA property.

BOULTER FARM AREA
REFERENCES

[1] Schrot, P. (START). 2000. Phone Conversation Record with Town of Cumberland Tax Assessor's Office, RE: Property Ownership for Boulter Farm Area, 290 Curran Road. TDD No. 00-05-0079. 14 June.

[2] Roy F. Weston, Inc. (WESTON), Superfund Technical Assessment and Response Team (START). 1998. Final Site Inspection Prioritization Report For Boulter Farm Area, Cumberland, Rhode Island. TDD No. 98-05-0158. 29 September.

[3] EPA (U.S. Environmental Protection Agency). 1998. Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database, Superfund Program Region I. Printout dated: 7 August.

[4] START. 2000. Field Logbook for Boulter Farm Area (Lots 363 and 366) Logbook No. 00267-S. TDD No. 00-05-0079. 2 August.

[5] Frost Associates. 1997. Boulter Farm Area, RE: CENTRACTS Database Printout of Population and Private Well Users, Massachusetts Portion. 22 September.

[6] Frost Associates. 1997. Boulter Farm Area, RE: CENTRACTS Database Printout of Population and Private Well Users. 22 September.

[7] Esten & Black Civil Engineers. 1950. City of Cumberland Assessor's Map, Plat No. 19.

[8] Scott, R. B. 1969. Town of Cumberland, Rhode Island; Plan and Profile of Curran Brook Court and Leroy Road, Proposed Streets for New Proposed Development "Curran Brook". Drawing No. 5, Sheet No. 200, File No. 199. July.

[9] USGS (U.S. Geological Survey). 1987. Attleboro, Massachusetts - Rhode Island Quadrangle (7.5 × 15-minute series topographic map).

[10] USGS (U.S. Geological Survey). 1987. Providence, Rhode Island - Massachusetts Quadrangle (7.5 × 15-minute series topographic map).

[11] USGS (U.S. Geological Survey). 1984. Providence, Rhode Island - Massachusetts - Connecticut Quadrangle (30 × 60-minute series topographic map).

[12] FWS (U.S. Fish & Wildlife Service). Undated. National Wetlands Inventory Map. Pawtucket, Rhode Island Quadrangle.

[13] FWS (U.S. Fish & Wildlife Service). Undated. National Wetlands Inventory Map. Attleboro, Massachusetts - Rhode Island Quadrangle.

BOULTER FARM AREA
REFERENCES (Continued)

[14] FWS (U.S. Fish & Wildlife Service). Undated. National Wetlands Inventory Map. Providence, Rhode Island Quadrangle.

[15] FWS (U.S. Fish & Wildlife Service). Undated. National Wetlands Inventory Map. East Providence, Massachusetts - Rhode Island Quadrangle.

[16] FWS (U.S. Fish & Wildlife Service). Undated. National Wetlands Inventory Map. East Greenwich, Rhode Island Quadrangle.

[17] FWS (U.S. Fish & Wildlife Service). Undated. National Wetlands Inventory Map. Bristol, Rhode Island - Massachusetts Quadrangle.

[18] FEMA (Federal Emergency Management Agency). 1992. Flood Insurance Rate Map (FIRM), Town of Cumberland, Rhode Island, Providence County. Map Index and Street Index. Community-Panel Nos. 440016 0001-0007. Map revised 16 June.

[19] FEMA (Federal Emergency Management Agency). 1990. Flood Insurance Rate Map (FIRM), Town of Cumberland, Rhode Island, Providence County. Community-Panel No. 440016 0001-0006 B. Map revised 16 February.

[20] Schrot, P. (START). 2001. Project Note, Boulter Farm Area, RE: Calculation of Latitude and Longitude for Boulter Farm Area, Cumberland, Rhode Island. TDD No. 00-05-0079. 15 January.

[21] Hayes. S. M. (U.S. Environmental Protection Agency). 1990. Letter to Louis P. Paolino, RE: Boulter Farm Area. 17 August.

[22] DeVillars, J. P. (U.S. Environmental Protection Agency). 1996. Letter to Mr. Jeffrey S. Michealson (Michealson & Michealson, Attorneys at Law). 27 November.

[23] Audet, M. R. (U.S. Environmental Protection Agency). 2000. Letter to Mr. Rick Johnston. 15 May.

[24] EPA (U.S. Environmental Protection Agency). 1981. Final Site Assessment Report- Boulter Farm Site - Cumberland, RI.

[25] EPA (U.S. Environmental Protection Agency). 1981. Identification and Preliminary Assessment (Form No. T2070-2) for Boulter Farm Site. 19 June.

[26] EPA (U.S. Environmental Protection Agency). 1981. Site Inspection Report (Form No. T2070-3) for Boulter Farm. 19 June.

BOULTER FARM AREA
REFERENCES (Continued)

[27] RI DEM (Rhode Island Department of Environmental Management). 1989. Final Screening Site Inspection Letter Report For Boulter Farm, Cumberland, Rhode Island. October.

[28] Payson, R. A. (Director - Department of Public Works, North Attleborough, Massachusetts). 1981. Letter to Mr. John Hackler (U.S. Environmental Protection Agency). 27 February.

[29] RI DEM (Rhode Island Department of Environmental Management). 1981. Field Investigation Report, Boulter's Farm, Curran Road, Cumberland. 13 April.

[30] RI DEM (Rhode Island Department of Environmental Management). 1981. Field Investigation Report, Boulter's Farm, Curran Road, Cumberland, RI. 16 April.

[31] Perrotti, A. E. (R.I. Analytical Services, Inc). 1981. Certificate of Analysis to Mr. John Leo (Rhode Island Department of Environmental Management), RE: Paint Sludge Samples from Boulter's Landfill. 24 April.

[32] Whitman & Howard, Inc. (1986). Final Report on Contamination Correction Study, Adamsdale Well, North Attleborough, Massachusetts. September.

[33] RI DEM (Rhode Island Department of Environmental Management). 1985. Inter-Office Memo, RE: Boulter's Farm, Cumberland. 3 June.

[34] RI DEM (Rhode Island Department of Environmental Management). 1985. Inter-Office Memo, RE: Joe's Recycling in Cumberland, Rhode Island. 11 October.

[35] RI DEM (Rhode Island Department of Environmental Management). 1985. Inter-Office Memo, RE: Site Inspection of Boulter Farm Site, Cumberland. 11 October.

[36] RI DEM (Rhode Island Department of Environmental Management). 1987. Memo, RE: Boulter Farm Sampling. 7 May.

[37] RI DEM (Rhode Island Department of Environmental Management). 1987. Inter-Office Memo, RE: Boulter Farm Sampling. 30 June.

[38] RI DEM (Rhode Island Department of Environmental Management). 1987. News Release, RE: DEM Announces Results of Sampling at Cumberland Site. 8 July.

[39] Environmental Resource Associates, Inc. 1987. Site Assessment of Property Located at Curran Road, Cumberland, Rhode Island. 24 September.

[40] Shopay, N. T. (Environmental Science Services). 1987. Letter to Mr. Gene Graves, Right-of-Way Supervisor (Mobil Pipe Line). 20 April.

BOULTER FARM AREA
REFERENCES (Continued)

[41] DiRocco, J. J. (Mobil Pipe Line Company). 1987. Letter to Mr. Norman T. Shopay (Environmental Science Services). 1 May.

[42] Paolino, L. P. 1990. Letter to Ms. Sharon Hayes (U.S. Environmental Protection Agency). 19 July.

[43] Evening Times. 1986. Revelations about dump site spur developer to dump plan. 18 July.

[44] RI DEM (Rhode Island Department of Environmental Management). 1990. Field Investigation Report, Boulter Farm. 11 December.

[45] R.I. Analytical Laboratories, Inc. 1990. Certificate of Analysis. 21 December.

[46] O'Conner, T.M. (Rhode Island Department of Environmental Management). 1993. Letter to Mr. Louis Paolino. 30 July.

[47] NUS/FIT (NUS Corporation/Field Investigation Team). 1991. Final Target Memo for Boulter Farm Area. TDD No. F1-9103-23. 16 August.

[48] NUS/FIT (NUS Corporation/Field Investigation Team). 1991. Preliminary Assessment Scoresheets. TDD No. F1-9103-23. 19 July.

[49] RI DEM (Rhode Island Department of Environmental Management). 1995. Site Monitoring Report. June.

[50] World Climate. 2000. Average Rainfall for years 1950 through 1953, Providence, Rhode Island USA. Available from http://www.worldclimate.com. Internet, accessed 31 October 2000.

[51] USDA (U.S. Department of Agriculture), Soil Conservation Service. 1981. Soil Survey of Rhode Island. July.

[52] USGS (U.S. Geological Survey). 1949. Geologic Map of the Pawtucket Quadrangle, Rhode Island - Massachusetts, Surficial Geology.

[53] USGS (U.S. Geological Survey). 1949. Geologic Map of the Pawtucket Quadrangle, Rhode Island - Massachusetts, Bedrock Geology.

[54] RI DEM GIS (Rhode Island Department of Environmental Management Geographic Information System). 1991. Groundwater Classification Map of Rhode Island.

[55] RI DEM GIS (Rhode Island Department of Environmental Management Geographic Information System). 1997. Wellhead Protection Area Map of Rhode Island.

BOULTER FARM AREA
REFERENCES (Continued)

[56] State of Rhode Island and Providence Plantations, Department of Environmental Protection, Division of Groundwater and Individual Sewage Disposal Systems. 1996. Rules and Regulations for Groundwater Quality. August.

[57] U.S. Census Bureau-U.S. Gazetteer. 1990. Population Data. Available from http://www.census.gov/cgi-bin/gazetteer?. Internet, accessed 7 June 2000.

[58] Rhode Island Water Resources Board. 1974. Hydrologic Bulletin 7, Geologic and Hydrologic Data for the Blackstone River Area, Rhode Island. Prepared by USGS (U.S. Geological Survey).

[59] Schrot, P. (START). 2000. Project Note, Boulter Farm Area, RE: Towns Located Within 4-Radial Miles of the Property. TDD No. 00-05-0079. 7 November.

[60] Commonwealth of Massachusetts. 1997. 310 CMR (Code of Massachusetts Regulations), Department of Environmental Protection, Section 22.00, Drinking Water. 21 March.

[61] Schrot, P. (START). 2000. Phone Conversation Record with Mr. Mike Reading, Water Quality Manager - North Attleborough Water Department, RE: Public Drinking Water Supply, North Attleborough, MA. TDD No. 00-08-0029. 27 September.

[62] Schrot, P (START). 2000. Project Note, Boulter Farm Area, RE: North Attleborough Water Department Apportionment Calculations. TDD No. 00-05-0079. 9 November.

[63] Schrot, P. (START). 2000. Phone Conversation Record with Mr. Jim Marshall, Superintendent - Plainville Water and Sewer Department, RE: Public Drinking Water Sources, Plainville, MA. TDD No. 00-08-0029. 25 September.

[64] Schrot, P. (START). 2000. Phone Conversation Record with Mr. Neal Fiorio, Superintendent - Cumberland Water Department, RE: Public Drinking Water Sources, Cumberland, RI. TDD No. 00-05-0079. 9 November.

[65] Lenard, S. (START). 2000. Phone Conversation Record with Central Falls Water Department, RE: Water Supplies in Central Falls. TDD No. 00-05-0076. 17 August.

[66] Schrot, P. (START). 2000. Phone Conversation Record with Mr. John Brady, King's Grant Water Co., RE: Community Well in North Attleborough, MA. TDD No. 00-05-0079. 13 November.

[67] U.S. Department of Commerce. (1991). 1990 Census of Population and Housing, Summary Population and Housing Characteristics - Massachusetts. August.

[68] Schrot, P (START). 2000. Project Note, Boulter Farm Area, RE: Estimated Population Served by the King's Grant Water Co. TDD No. 00-05-0079. 13 November.

BOULTER FARM AREA
REFERENCES (Continued)

[69] MassGIS (Massachusetts Geographic Information System). 2000. Public Water Supplies Datalayer. Available from http://www.state.ma.us/mgis/pws.html. Internet, accessed 11 September.

[70] RIGIS (Rhode Island Geographic Information System). 2000. Community and Non-Community Well Datalayers. Available from http://www.edc.uri.edu/rigis-spf/Statewide/state.html. Internet, accessed 13 November.

[71] Deborah L. Lafleur (RI DOH). 2000. Letter to Daniel Keefe, START, RE: Report Detailing Active Public Water System List. 12 October.

[72] Lenard, S. (START). 2000. Phone Conversation Record with Ms. Pamela Marchandt, Pawtucket Water Department, RE: Drinking Water Sources in Pawtucket. TDD No. 00-05-0076. 17 August.

[73] Schrot, P. (START). 2000. Phone Conversation Record with Ms. Pamela Marchandt, Superintendent, Pawtucket Water Department, RE: Public Drinking Water Sources. TDD No. 00-05-0079. 13 November.

[74] Pawtucket Water Supply Board. 2000. System Overview; Quantity Data, and 1999 Annual Water Quality Report (Consumer Confidence Report). Available from http://www.pwsb.org. Internet, accessed 15 November.

[75] Schrot, P. (START). 2000. Phone Conversation Record with Mr. Morris Trudeau, Superintendent, Lincoln Water Department, RE: Public Drinking Water Sources. TDD No. 00-05-0079. 14 November.

[76] Providence Water Supply Board. 2000. Introduction. Available from http://www.provwater.com. Internet, accessed 15 November.

[77] Lenard, S. (START). 2000. Phone Conversation Record with Mr. Morris Trudeau, Lincoln Water Department, RE: Water Supplies in Lincoln. TDD No. 00-05-0076. 17 August.

[78] Lenard, S. (START). 2000. Phone Conversation Record with Mr. Peter McGlaughlin, Providence Water Supply Board, RE: Drinking Water Sources in Providence. TDD No. 00-05-0076. 17 August.

[79] Massachusetts Public Water Supply Contacts List. 2000. Available from http://www.state.ma.us/dep/brp/dws/contdwp.htm. Internet, accessed 10 September.

[80] Schrot, P. (START). 2000. Project Note, Boulter Farm Area, RE: Town of North Attleborough Tax Assessor's. TDD No. 00-05-0079. 2 November.

BOULTER FARM AREA
REFERENCES (Continued)

[81] Schrot, P (START). 2000. Project Note, Boulter Farm Area, RE: Lincoln Water Department Apportionment Calculations. TDD No. 00-05-0079. 1 December.

[82] Schrot, P (START). 2000. Project Note, Boulter Farm Area, RE: Pawtucket Water Supply Board Apportionment Calculations. TDD No. 00-05-0079. 4 December.

[83] Schrot, P (START). 2000. Project Note, Boulter Farm Area, RE: Cumberland Water Department Apportionment Calculations. TDD No. 00-05-0079. 4 December.

[84] State of Rhode Island and Providence Plantations, Department of Environmental Management, Water Resources. 1997. Water Quality Regulations. 6 August.

[85] Combs, S. (START). 1997. Phone Conversation Record with Mr. Gary Waldeck, Rhode Island Department of Environmental Management, RE: Depth of Soil Samples in Site Monitoring Report. TDD No. 97-06-0020. 14 January.

[86] Waldeck, G. (Rhode Island Department of Environmental Management). 1995. Inter-Office Memo to File, RE: Sampling at Boulter Farm. 8 May.

[87] USGS (U.S. Geological Survey). 1949; Photorevised 1970 and 1975. Pawtucket, R.I.-Mass. Quadrangle (7.5-minute series topographic map).

[88] U.S. EPA (U.S. Environmental Protection Agency). 1952. Aerial Photograph of Boulter Farm, Cumberland, RI - Environmental Photographic Interpretation Center (EPIC) Frame No. 18144 (Scale 1:4,100). 2 June.

[89] U.S. EPA (U.S. Environmental Protection Agency). 1963. Aerial Photograph of Boulter Farm, Cumberland, RI - Environmental Photographic Interpretation Center (EPIC) Frame No. 18142 (Scale 1:3,400). 2 September.

[90] U.S. EPA (U.S. Environmental Protection Agency). 1970. Aerial Photograph of Boulter Farm, Cumberland, RI - Environmental Photographic Interpretation Center (EPIC) Frame No. 17950 (Scale 1:3,800). 9 March.

[91] U.S. EPA (U.S. Environmental Protection Agency). 1981. Aerial Photograph of Boulter Farm, Cumberland, RI - Environmental Photographic Interpretation Center (EPIC) Frame No. 18053 (Scale 1:4,200). 13 April.

[92] RI DOH (Rhode Island Department of Health - Division of Air Pollution Control). 1968. Complaint Report, RE: Sam Boulter Farm, Cumberland, Rhode Island. 2 April.

[93] RI DOH (Rhode Island Department of Health - Division of Air Pollution Control). 1970. Complaint Report, RE: Sam Boulter, Curran Road, Cumberland; Dump Site, North Attleborough, MA. 17 February.

BOULTER FARM AREA
REFERENCES (Continued)

[94] RI DOH (Rhode Island Department of Health - Division of Air Pollution Control). 1970. Complaint Report, RE: Boulter's Farm, Curran Road, Cumberland, North Attleborough. 15 April.

[95] Quinn, J. S. (Rhode Island Department of Health - Division of Solid Waste Management). 1972. Letter to Mr. Samuel Boulter, RE: Refuse Disposal. 2 February.

[96] Donovan, R. E. (Massachusetts Department of Public Health). 1972. Letter to Mr. Samuel Boulter, RE: Demolition Debris Burning. 10 July.

[97] RI DOH (Rhode Island Department of Health - Division of Solid Waste Management). Various Landfill Disposal Site Inspection Reports from 1974 and 1975.

[98] RI DOH (Rhode Island Department of Health - Division of Solid Waste Management). 1976. Inspection Report, RE: Boulter's Farm. 15 June.

[99] Maine, C. A. (Rhode Island Department of Health - Division of Water Supply and Pollution Control). 1976. Letter to Mr. Sam Boulter, RE: Disposal of Cesspool and Septic Tank Cleaning. 22 June.

[100] RI DOH (Rhode Island Department of Health - Division of Solid Waste Management). 1976. Inspection Report, RE: Boulter's Farm Disposal Site. 22 September June.

[101] Stevenson, F. B. (Rhode Island Department of Health - Division of Solid Waste Management). 1976. Letter to Mr. Samuel Boulter, RE: Closure of Solid Waste Management Facility. 19 July.

[102] Pratt, L. N. (Rhode Island Department of Environmental Management - Division of Enforcement). 1981. Memo to Mr. Stephen P. Fougere (RI DEM), RE: Investigation of Wildland Fire Resulting in Hazardous Materials Cache. 15 April.

[103] Klebacher, F. R. (New England Testing Laboratory, Inc.). 1985. Certificate of Analysis to Mr. John Hartley (RI DEM). 28 October.

[104] Schrot, P (START). 2000. Project Note, Boulter Farm Area, RE: Estimation of Area of Former Solid Waste Disposal Areas. TDD No. 00-05-0079. 13 December.

[105] START. 1998. Field Logbook for Boulter Farm, Logbook No. 00262-S. TDD No. 97-06-0020. 13 January.

[106] USGS (U.S. Geological Survey). 1944 and 1949. Pawtucket, Rhode Island- Massachusetts Quadrangle (7.5-minute series topographic maps) 1894. Providence, MA-RI Quadrangle (15-minute series topographic map). Available from http://docs.unh.edu/nhtopos/nhtopos.htm. Internet, accessed 20 December 2000.

[107] USGS (U.S. Geological Survey). 1974. Availability of Ground Water in the Blackstone River Area, Rhode Island and Massachusetts. Water Resources Investigation 4-74. July.

[108] USGS (U.S. Geological Survey). 1989. Boston, Massachusetts Rhode Island- Connecticut Quadrangle (30 × 60-minute series topographic map).

[109] Majkut, S. (Rhode Island Department of Environmental Management - Division of Air and Hazardous Materials). 1980. Memo, RE: Boulter Farm on Curran Road, Cumberland. 19 June.

[110] USGS (U.S. Geological Survey). 1955; Photorevised 1970 and 1975. Bristol, R.I.-Mass. Quadrangle (7.5-minute series topographic map).

[111] USGS (U.S. Geological Survey). 1957; Photorevised 1970 and 1975. East Greenwich, R.I. Quadrangle (7.5-minute series topographic map).

[112] USGS (U.S. Geological Survey). 2000. Information on Gaging Station No. 01112500. Available from http://waterdata.usgs.gov/nwis-w/RI/?statnum=01112500. Internet, accessed 7 June.

[113] USGS (U.S. Geological Survey). 2001. Information on Gaging Station No. 01110500 Available from http://waterdata.usgs.gov/nwis-w/MA/?statnum=01110500. Internet, accessed 9 January.

[114] Schrot, P. (START). 2001. Project Note, Boulter Farm Area (Lots 363 and 366), RE: Surface Water Pathway Calculations, Flow Rate Information. TDD No. 00-05-0079. 9 January.

[115] U.S. Fish & Wildlife Service. 1980. Atlantic Coast Ecological Inventory Map. Providence, R.I.-Conn.-Mass.-N.Y.

[116] Schrot, P. (START). 2001. Project Note, Boulter Farm Area (Lots 363 and 366), RE: Wetland Acreage Within 4-Radial Miles of the Property and Along the Surface Water Pathway. TDD No. 00-05-0079. 10 January.

[117] Combs, S. (START). 1997. Phone Conversation Record with Mr. Alan Libby, Rhode Island Fish and Wildlife, RE: Fisheries Along Downstream Surface Water Pathway. TDD No. 97-06-0020. 9 December.

[118] Combs, S. (START). 1997. Phone Conversation Record with Mr. Najih Lazar, Rhode Island Coastal Fisheries, RE: Coastal Fisheries Along Downstream Surface Water Pathway. TDD No. 97-06-0020. 9 December.

BOULTER FARM AREA
REFERENCES (Continued)

[119] RI DEM (Rhode Island Department of Environmental Management)/Fish and Wildlife. 2001. Designated Trout Waters. Available from http://www.state.ri.us/dem/org/fwstuff/troutwaters.htm. Internet, accessed 10 January.

[120] Spina, P. (Signal Corporation). 2000. Boulter Farm Area, RE: Rare and Endangered Species Report for Massachusetts. TDD No. 00-05-0079. 28 June.

[121] Enser, R. W. (Rhode Island Department of Environmental Management - Division of Planning and Development). 1997. Letter to Ms. Michele Anderson, Roy F. Weston, Inc., RE: Boulter Farm Area, Cumberland, Rhode Island. 15 October.

[122] U.S. EPA (U.S. Environmental Protection Agency). 2001. Safe Drinking Water Information Violation Report for Kings Grant Water Co., Inc. Available from http://www.epa.gov/safewater. Internet, accessed 17 January.

[123] Rhode Island Department of Environmental Management - Office of Water Resources. The Rhode Island Wellhead Protection Program. Biennial Report, October 1997 - September 1999.

[124] Schrot, P. (START). 2001. Phone Conversation Record with Mr. Louis Maccarone II, Rhode Island Department of Environmental Management, RE: Boulter Farm Area - Private Well Sampling. TDD No. 00-05-0079. 6 April.

[125] Maccarone II, L. (Rhode Island Department of Environmental Management - Office of Waste Management). 2001. Letter and Enclosures to Mr. Paul Schrot (START), RE: Boulter Farms Site Residential Sampling. 13 April.

[126] Lafleur, D. L. (Rhode Island Department of Health - Division of Drinking Water Quality). 2001. E-mail (and file attachments) to Mr. Steven Lenard, Roy F. Weston, Inc. (START), RE: History of Testing Done For All Surface Water Sources for Community and NTNC Public Water Systems from 01/01/95 Forward. 13 September.

[127] START. 2002. Field Logbook for Boulter Farm Area (Lots 363 and 366) Logbook No. 01144-S. TDD No. 02-05-0121. 2 August.

[128] Switalski, G. (START). 2003. Letter to C. Clark (EPA), RE: Case No. 0493F, SDG No. D06351. Boulter Farm Area (Lots 363 and 366) Site. TDD No. 02-05-0121. 2 January.

[129] Switalski, G. (START). 2003. Letter to C. Clark (EPA), RE: Case No. 0493F. SDG No. D06367. Boulter Farm Area (Lots 363 and 366) Site. TDD No. 02-05-0121. 7 January.

[130] Sulkowski, L. (START). 2003. Letter to C. Clark (EPA), RE: Case No. 30630. SDG No. A0JC2. Boulter Farm Area (Lots 363 and 366) Site. TDD No. 02-05-0121. 2 January.

BOULTER FARM AREA
REFERENCES (Continued)

[131] Sulkowski, L. (START). 2003. Letter to C. Clark (EPA), RE: Case No. 30630. SDG No. A0JD3. Boulter Farm Area (Lots 363 and 366) Site. TDD No. 02-05-0121. 2 January.

[132] Fasolino, M. (START). 2002. Letter to C. Clark (EPA), RE: Case No. 0496F. SDG No. D06402. Boulter Farm Area (Lots 363 and 366) Site. TDD No. 02-05-0121. 14 November.

[133] Switalski, G. (START). 2002. Letter to C. Clark (EPA), RE: Case No. 30630. SDG No. MA0KB2. Boulter Farm Area (Lots 363 and 366) Site. TDD No. 02-05-0121. 18 October.

[134] Fasolino, M. (START). 2002. Letter to C. Clark (EPA), RE: Case No. 0495F. SDG No. D06351. Boulter Farm Area (Lots 363 and 366) Site. TDD No. 02-05-0121. 27 December.

[135] Switalski, G. (START). 2002. Letter to C. Clark (EPA), RE: Case No. 30630. SDG No. MA0KC6. Boulter Farm Area (Lots 363 and 366) Site. TDD No. 02-05-0121. 1 October.

[136] Spargo, A. (START). 2002. Letter to C. Clark (EPA), RE: Case No. 30702. SDG No. A0JS9. Boulter Farm Area (Lots 363 and 366) Site. TDD No. 02-05-0121. 2 December.

[137] Switalski, G. (START). 2003. Letter to C. Clark (EPA), RE: Case No. 0512F. SDG No. D06787_O. Boulter Farm Area (Lots 363 and 366) Site. TDD No. 02-05-0121. 2 January.

[138] Fasolino, M. (START). 2002. Letter to C. Clark (EPA), RE: Case No. 0510F. SDG No. D06788. Boulter Farm Area (Lots 363 and 366) Site. TDD No. 02-05-0121. 2 December.

[139] Fasolino, M. (START). 2003. Letter to C. Clark (EPA), RE: Case No. 0511F. SDG No. D06792. Boulter Farm Area (Lots 363 and 366) Site. TDD No. 02-05-0121. 2 January.

[140] Switalski, G. (START). 2002. Letter to C. Clark (EPA), RE: Case No. 30702. SDG No. MA0K84. Boulter Farm Area (Lots 363 and 366) Site. TDD No. 02-05-0121. 18 December.

[141] Switalski, G. (START). 2002. Letter to C. Clark (EPA), RE: Case No. 0512F. SDG No. D06786_I. Boulter Farm Area (Lots 363 and 366) Site. TDD No. 02-05-0121. 18 December.

[142] Switalski, G. (START). 2003. Letter to C. Clark (EPA), RE: Case No. 0493F. SDG No. D06291. Boulter Farm Area (Lots 363 and 366) Site. TDD No. 02-05-0121. 2 January.

[143] Sulkowski, L. (START). 2003. Letter to C. Clark (EPA), RE: Case No. 0495F. SDG No. D06291. Boulter Farm Area (Lots 363 and 366) Site. TDD No. 02-05-0121. 2 January.

[144] National Oceanic and Atmospheric Administration. 1999. Screening Quick Reference Tables. September.

[145] Massachusetts Department of Environmental Protection. 1999. Massachusetts Contingency Plan. 29 October.

BOULTER FARM AREA
REFERENCES (Continued)

[146] Rhode Island Department of Environmental Management, Office of Waste Management. 1993. Rules and Regulations for Investigation and Remediation of Hazardous Material Releases. 31 March. As Amended: August 1996.

[147] Envirofacts Warehouse. CERCLIS Query Results for Cumberland, Rhode Island. 2003. Available from http://www.epa.gov/cgi-bin/epaprintonly.cgi. Internet; accessed 24 January.

[148] Envirofacts Warehouse. CERCLIS Query Results for North Attleborough, Massachusetts. 2003. Available from http://www.epa.gov/cgi-bin/epaprintonly.cgi. Internet; accessed 24 January.

[149] Envirofacts Warehouse. RCRIS Query Results for Cumberland Rhode Island. 2003. Available from http://www.epa.gov/cgi-bin/epaprintonly.cgi. Internet; accessed 3 February.

[150] Envirofacts Warehouse. RCRIS Query Results for North Attleborough, Massachusetts. 2003. Available from http://www.epa.gov/cgi-bin/epaprintonly.cgi. Internet; accessed 3 February.

[151] Welch Associates Land Surveyors, Inc. 2003. State Line & Boundary Retracement Survey For a Portion of the Boulter Farm Area, Cumberland, Rhode Island. 7 Marcy.

[152] Town of North Attleborough, Massachusetts Tax Assessor's Map No. 29. Undated.

[153] Town of North Attleborough. 2003 Tax Assessor's Parcel Summary for Map No. 29, Lot No. 15. Available from http://www.visionappraisal.com/DATABASES/INDEX.HTM. Internet; accessed 26 February.

[154] Massachusetts Department of Environmental Protection Agency. 2003. MASS GIS Water Supply Protection Areas Map. Internet; accessed 3 February.

[155] Massachusetts Department of Environmental Protection Agency, Bureau of Waste Site Cleanup. 2003. Site/Reportable Release Look Up. Available from http://www.state.ma.us/dep/bwsc/sites/report.htm. Internet; accessed 3 February.

[156] Manderbach, R. (START). 2004. Phone Conversation Record with Mr. Robert Yarbroudy, Treasurer, Advanced Auto Recycling, Inc., RE: Current Operator and Ownership of RI Side of Site. TDD No. 03-05-0148. 12 February.

[157] Manderbach, R. (START). 2004. Phone Conversation Record with Mr. William Moffitt, Treasurer, Town of North Attleborough, RE: Current Status of MA Portion of Site. TDD No. 03-05-0148. 13 February.

BOULTER FARM AREA
REFERENCES (Concluded)

[158] Schrot, P. (START). 2004. Electronic Mail (e-mail) Correspondence with Ms. Cynthia Gianfrancesco, Rhode Island Department of Environmental Management, RE: Boulter Farm Area Final ESI Report. TDD No. 03-05-0148. 22 March.

[159] W.T. Whalen Engineering Co. Town of North Attleborough Zoning Map. Last updated: January 1999, by Freeman Engineering Co.

ATTACHMENT A

BOULTER FARM AREA

SOIL/SOURCE AND SEDIMENT SAMPLE ANALYTICAL RESULTS
START

Samples collected 17 through 20 June 2002

DATA SUMMARY KEY
ORGANIC DATA VALIDATION

J	=	The associated numerical value is an estimated quantity.
R	=	The data are unusable (compound may or may not be present). Resampling and reanalysis are necessary for verification. The R replaces the numerical value or SQL.
U	=	The compound was analyzed for, but not detected. The associated numerical value is the SQL or the adjusted SQL.
UJ	=	The compound was analyzed for, but not detected. The associated numerical value is the estimated SQL.
EB	=	The compound was identified in an aqueous EB that was used to assess field contamination associated with soil/sediment samples.
TB	=	The compound was identified in an aqueous TB that was used to assess field contamination associated with soil/sediment samples.
BB	=	The compound was identified in an aqueous BB that was used to assess field contamination associated with soil/sediment samples.

ACRONYM LIST
ORGANIC DATA VALIDATION

AQ	aqueous
AQ FB	aqueous field blank
BB	Bottle Blank
B/N	base/neutral compound
°C	degrees Celsius
CC	Continuing Calibration
CLP	Contract Laboratory Program
COC	Chain-of-Custody record
CRQL	Contract Required Quantitation Limit
CSF	Complete SDG File
%D	percent difference
DAS	Delivery of Analytical Services
DEP	Department of Environmental Protection
DQO	Data Quality Objective
DV	Data Validation
DW	drinking water
EB	Equipment Blank
EPH	Extractable Petroleum Hydrocarbons
GC/ECD	Gas Chromatograph/Electron Capture Detector
GC/MS	Gas Chromatograph/Mass Spectrometry
GW	groundwater
IC	Initial Calibration
IS	Internal Standard
kg	kilogram
L	liter
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NA	Not Applicable
ND	non-detected result
OSC	On-Scene Coordinator
PCB	polychlorinated biphenyl compound
P/PCB	pesticide/polychlorinated biphenyl compound
PE	Performance Evaluation
Pos	positive result
QC	Quality Control
%R	percent recovery
RPD	Relative Percent Difference
Rf	Response Factor
RRF	Relative Response Factor
RSD	Relative Standard Deviation
SDG	Sample Delivery Group
SOW	Statement of Work
SQL	Sample Quantitation Limit
S/S	soil/sediment
S/S (m)	soil/sediment medium level
START	Superfund Technical Assessment and Response Team
SVOC	semivolatile organic compound
SW	surface water
SW-846	EPA Test Methods for Evaluating Solid Waste
TB	Trip Blank
TCL	Target Compound List
TIC	Tentatively Identified Compound
TPH	Total Petroleum Hydrocarbons
µg	microgram
VOC	volatile organic compound
VPH	Volatile Petroleum Hydrocarbons
WESTON	Weston Solutions, Inc. (formerly known as Roy F. Weston, Inc.)

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 0493F SDG: D06351
LABORATORY: SOUTHWEST LABORATORY OF OKLAHOMA, INC.

TABLE 1
VOLATILE SOIL ANALYSES
µg/kg

SAMPLE NUMBER:		D06351	D06354	D06357	D06358	D06359
SAMPLE LOCATION:		SS-01	SS-04	SS-07	SS-08	SS-09
LABORATORY NUMBER:		50115.01	50115.17A	50115.02	50115.03	50115.04
COMPOUND	CRQL					
Dichlorodifluoromethane	10	10 U	10 UJ	10 U	10 U	10 U
Chloromethane	10	10 U	10 UJ	10 U	10 U	10 U
Vinyl Chloride	10	10 U	10 UJ	10 U	10 U	10 U
Bromomethane	10	10 U	10 UJ	2 J	10 U	10 U
Chloroethane	10	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Trichlorofluoromethane	10	10 U	10 UJ	10 U	10 U	10 U
1,1-Dichloroethene	10	10 U	10 UJ	10 U	10 U	10 U
1,1,2-Trichloro-1,2,2-trifluoroethane	10	10 U	10 UJ	10 U	10 U	10 U
Acetone	10	*1300 U	43 UJ	*1300 U	120 U	61 U
Carbon Disulfide	10	10 U	10 UJ	10 U	10 U	10 U
Methyl Acetate	10	10 U	10 UJ	10 U	10 U	10 U
Methylene Chloride	10	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
trans-1,2-Dichloroethene	10	10 U	10 UJ	10 U	10 U	10 U
Methyl tert-Butyl Ether	10	10 U	9 J	10 U	10	10 U
1,1-Dichloroethane	10	10 U	10 UJ	10 U	10 U	10 U
cis-1,2-Dichloroethene	10	10 U	10 UJ	10 U	10 U	10 U
2-Butanone	10	75	10 UJ	85	28	10 U
Chloroform	10	10 U	10 UJ	10 U	10 U	10 U
1,1,1-Trichloroethane	10	10 U	10 UJ	10 U	10 U	10 U
Cyclohexane	10	10 U	10 UJ	10 U	10 U	10 U
Carbon Tetrachloride	10	10 U	10 UJ	10 U	10 U	10 U
Benzene	10	10 U	10 UJ	10 U	10 U	10 U
1,2-Dichloroethane	10	10 U	10 UJ	10 U	10 U	10 U
Trichloroethene	10	10 U	10 UJ	10 U	10 U	10 U
Methylcyclohexane	10	10 U	10 UJ	10 U	10 U	10 U
1,2-Dichloropropane	10	10 U	10 UJ	10 U	10 U	10 U
Bromodichloromethane	10	10 U	10 UJ	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 UJ	10 U	10 U	10 U
4-Methyl-2-Pentanone	10	10 U	10 UJ	10 U	10 U	10 U
Toluene	10	10 U	0.8 J	10 U	10 U	10 U
trans-1,3-Dichloropropene	10	10 U	10 UJ	10 U	10 U	10 U
1,1,2-Trichloroethane	10	10 U	10 UJ	10 U	10 U	10 U
Tetrachloroethene	10	10 U	10 UJ	10 U	10 U	10 U
2-Hexanone	10	10 U	10 UJ	10 U	10 U	10 U
Dibromochloromethane	10	10 U	10 UJ	10 U	10 U	10 U
1,2-Dibromoethane	10	10 U	10 UJ	10 U	10 U	10 U
Chlorobenzene	10	10 U	10 UJ	10 U	10 U	10 U
Ethylbenzene	10	10 U	10 UJ	10 U	10 U	10 U
Xylene (Total)	10	10 U	10 UJ	10 U	10 U	10 U
Styrene	10	10 U	10 UJ	10 U	10 U	10 U
Bromoform	10	10 U	10 UJ	10 U	10 U	10 U
Isopropylbenzene	10	10 U	10 UJ	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10	10 U	10 UJ	10 U	10 U	10 U
1,3-Dichlorobenzene	10	10 U	10 UJ	10 U	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 UJ	10 U	10 U	10 U
1,2-Dichlorobenzene	10	10 U	10 UJ	10 U	10 U	10 U
1,2-Dibromo-3-chloropropane	10	10 U	10 UJ	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10	10 U	10 UJ	10 U	10 U	10 U
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0
DATE SAMPLED:		06/19/02	06/18/02	06/20/02	06/19/02	06/20/02
DATE ANALYZED:		07/03/02	07/03/02	07/03/02	07/03/02	07/03/02
% MOISTURE:		16	3	21	11	6

* - Result reported from medium level analysis.

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 0493F SDG: D06351
LABORATORY: SOUTHWEST LABORATORY OF OKLAHOMA, INC.

TABLE 1
VOLATILE SOIL ANALYSES
µg/kg

SAMPLE NUMBER:		D06380	D06381	D06384	D06387	D06388
SAMPLE LOCATION:		SS-10	SO-01	SO-04	SO-07	SO-08
LABORATORY NUMBER:		50115.05	50115.06	50115.07A	50115.08A	50115.09A
COMPOUND	CRQL					
Dichlorodifluoromethane	10	10 U	10 U	10 UJ	10 U	10 U
Chloromethane	10	10 U	10 U	10 UJ	10 U	10 U
Vinyl Chloride	10	10 U	10 U	10 UJ	10 U	10 U
Bromomethane	10	10 U	10 U	10 UJ	10 U	10 U
Chloroethane	10	10 UJ	10 UJ	10 UJ	10 U	10 U
Trichlorofluoromethane	10	10 U	10 U	10 UJ	10 UJ	10 UJ
1,1-Dichloroethene	10	10 U	10 U	10 UJ	10 U	10 U
1,1,2-Trichloro-1,2,2-trifluoroethane	10	10 U	10 U	10 UJ	10 U	10 U
Acetone	10	*1300 U	*1300 U	42 UJ	*1300 U	67 U
Carbon Disulfide	10	10 U	10 U	10 UJ	10 U	15
Methyl Acetate	10	10 U	10 U	10 UJ	10 U	10 U
Methylene Chloride	10	10 UJ	10 UJ	10 UJ	10 U	10 U
trans-1,2-Dichloroethene	10	10 U	10 U	10 UJ	10 U	10 U
Methyl tert-Butyl Ether	10	0.8 J	10 U	35 J	10 U	11
1,1-Dichloroethane	10	10 U	10 U	10 UJ	10 U	10 U
cis-1,2-Dichloroethene	10	10 U	10 U	10 UJ	10 U	10 U
2-Butanone	10	15	25	10 UJ	10 U	10 U
Chloroform	10	10 U	10 U	10 UJ	10 U	10 U
1,1,1-Trichloroethane	10	10 U	10 U	10 UJ	10 U	10 U
Cyclohexane	10	10 U	10 U	10 UJ	10 U	10 U
Carbon Tetrachloride	10	10 U	10 U	10 UJ	10 U	10 U
Benzene	10	10 U	10 U	10 UJ	10 U	10 U
1,2-Dichloroethane	10	10 U	10 U	10 UJ	10 U	10 U
Trichloroethene	10	10 U	10 U	10 UJ	10 U	10 U
Methylcyclohexane	10	10 U	10 U	10 UJ	10 U	6 J
1,2-Dichloropropane	10	10 U	10 U	10 UJ	10 U	10 U
Bromodichloromethane	10	10 U	10 U	10 UJ	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 UJ	10 U	10 U
4-Methyl-2-Pentanone	10	10 U	10 U	10 UJ	10 U	10 U
Toluene	10	1 J	10 U	10 UJ	10 U	10 U
trans-1,3-Dichloropropene	10	10 U	10 U	10 UJ	10 U	10 U
1,1,2-Trichloroethane	10	10 U	10 U	10 UJ	10 U	10 U
Tetrachloroethene	10	10 U	10 U	10 UJ	10 U	10 U
2-Hexanone	10	10 U	10 U	10 UJ	10 U	10 U
Dibromochloromethane	10	10 U	10 U	10 UJ	10 U	10 U
1,2-Dibromoethane	10	10 U	10 U	10 UJ	10 U	10 U
Chlorobenzene	10	10 U	10 U	10 UJ	10 U	10 U
Ethylbenzene	10	10 U	10 U	10 UJ	10 U	10 U
Xylene (Total)	10	10 U	10 U	10 UJ	10 U	10 U
Styrene	10	10 U	10 U	10 UJ	10 U	10 U
Bromoform	10	10 U	10 U	10 UJ	10 U	10 U
Isopropylbenzene	10	10 U	10 U	10 UJ	10 U	10 U
1,1,2,2-Tetrachloroethane	10	10 U	10 U	10 UJ	10 U	10 U
1,3-Dichlorobenzene	10	10 U	10 U	10 UJ	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 U	10 UJ	10 U	10 U
1,2-Dichlorobenzene	10	10 U	10 U	10 UJ	10 U	10 U
1,2-Dibromo-3-chloropropane	10	10 U	10 U	10 UJ	10 U	10 U
1,2,4-Trichlorobenzene	10	10 U	10 U	10 UJ	10 U	10 U
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0
DATE SAMPLED:		06/19/02	06/19/02	06/18/02	06/20/02	06/19/02
DATE ANALYZED:		07/03/02	07/03/02	07/03/02	07/03/02	07/03/02
% MOISTURE:		9	6	9	12	9

* - Result reported from medium level analysis.

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 0493F SDG: D06351
LABORATORY: SOUTHWEST LABORATORY OF OKLAHOMA, INC.

TABLE 1
VOLATILE SOIL ANALYSES
µg/kg

SAMPLE NUMBER:		D06389	D06390
SAMPLE LOCATION:		SO-09	SO-10
LABORATORY NUMBER:		50115.10A	50115.11A
COMPOUND	CRQL		
Dichlorodifluoromethane	10	10 U	11 UJ
Chloromethane	10	10 U	11 UJ
Vinyl Chloride	10	10 U	33 J
Bromomethane	10	10 U	11 UJ
Chloroethane	10	10 U	11 UJ
Trichlorofluoromethane	10	10 UJ	11 UJ
1,1-Dichloroethene	10	10 U	11 UJ
1,1,2-Trichloro-1,2,2-trifluoroethane	10	10 U	160 J
Acetone	10	49 U	11 UJ
Carbon Disulfide	10	4 J	20 J
Methyl Acetate	10	10 U	11 UJ
Methylene Chloride	10	10 U	11 UJ
trans-1,2-Dichloroethene	10	10 U	11 UJ
Methyl tert-Butyl Ether	10	4 J	11 UJ
1,1-Dichloroethane	10	10 U	62 J
cis-1,2-Dichloroethene	10	10 U	45 J
2-Butanone	10	10 U	11 UJ
Chloroform	10	10 U	11 UJ
1,1,1-Trichloroethane	10	10 U	11 UJ
Cyclohexane	10	10 U	11 UJ
Carbon Tetrachloride	10	10 U	11 UJ
Benzene	10	10 U	94 J
1,2-Dichloroethane	10	10 U	11 UJ
Trichloroethene	10	10 U	11 UJ
Methylcyclohexane	10	10 U	*630 J
1,2-Dichloropropane	10	10 U	11 UJ
Bromodichloromethane	10	10 U	11 UJ
cis-1,3-Dichloropropene	10	10 U	11 UJ
4-Methyl-2-Pentanone	10	10 U	11 UJ
Toluene	10	10 U	*2100
trans-1,3-Dichloropropene	10	10 U	11 UJ
1,1,2-Trichloroethane	10	10 U	11 UJ
Tetrachloroethene	10	10 U	92 J
2-Hexanone	10	10 U	11 UJ
Dibromochloromethane	10	10 U	11 UJ
1,2-Dibromoethane	10	10 U	11 UJ
Chlorobenzene	10	10 U	11 UJ
Ethylbenzene	10	10 U	*980 J
Xylene (Total)	10	10 U	*4600
Styrene	10	10 U	11 UJ
Bromoform	10	10 U	11 UJ
Isopropylbenzene	10	10 U	11 UJ
1,1,2,2-Tetrachloroethane	10	10 U	11 UJ
1,3-Dichlorobenzene	10	10 U	9 J
1,4-Dichlorobenzene	10	10 U	27 J
1,2-Dichlorobenzene	10	10 U	200 J
1,2-Dibromo-3-chloropropane	10	10 U	11 UJ
1,2,4-Trichlorobenzene	10	10 U	5 J
DILUTION FACTOR:		1.0	1.0
DATE SAMPLED:		06/20/02	06/20/02
DATE ANALYZED:		07/03/02	07/03/02
% MOISTURE:		7	7

* - Result reported from medium level analysis.

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 0493F SDG: D06367
LABORATORY: SOUTHWEST LABORATORY OF OKLAHOMA, INC.

TABLE 1
VOLATILE SOIL ANALYSES - LOW LEVEL
µg/kg

SAMPLE NUMBER:		D06373	D06374	D06375	D06382	D06383
SAMPLE LOCATION:		SS-23	SS-24	SS-25	SO-02	SO-03
LABORATORY NUMBER:		50065.11	50065.12	50065.13	50065.14	50065.15
COMPOUND	CRQL					
Dichlorodifluoromethane	10	10 U	10 U	10 UJ	10 UJ	11 UJ
Chloromethane	10	10 U	10 U	10 UJ	10 UJ	2 J
Vinyl Chloride	10	10 U	10 U	10 UJ	10 U	11 U
Bromomethane	10	10 U	10 U	10 UJ	10 U	11 U
Chloroethane	10	10 U	10 U	10 UJ	10 U	11 U
Trichlorofluoromethane	10	10 U	10 U	10 UJ	10 U	11 U
1,1-Dichloroethene	10	10 U	10 U	10 UJ	10 U	11 U
1,1,2-Trichloro-1,2,2-trifluoroethane	10	10 U	10 U	10 UJ	10 U	11 U
Acetone	10	26 UJ	29 UJ	32 UJ	*1300 UJ	190 UJ
Carbon Disulfide	10	10 U	10 U	0.6 J	2 J	11 U
Methyl Acetate	10	10 U	10 U	10 UJ	10 U	11 U
Methylene Chloride	10	10 U	10 U	10 U	10 U	11 U
trans-1,2-Dichloroethene	10	10 U	10 U	10 UJ	10 U	11 U
Methyl tert-Butyl Ether	10	10 U	10 U	10 UJ	10 U	11 U
1,1-Dichloroethane	10	10 U	10 U	10 UJ	10 U	11 U
cis-1,2-Dichloroethene	10	10 U	10 U	10 UJ	10 U	12
2-Butanone	10	10 U	10 U	10 UJ	130	46
Chloroform	10	10 U	10 U	10 UJ	10 U	11 U
1,1,1-Trichloroethane	10	10 U	10 U	10 UJ	10 U	11 U
Cyclohexane	10	10 U	10 U	10 UJ	10 U	11 U
Carbon Tetrachloride	10	10 U	10 U	10 UJ	10 U	11 U
Benzene	10	1 J	0.9 J	10 UJ	10 U	12
1,2-Dichloroethane	10	10 U	10 U	10 UJ	10 U	11 U
Trichloroethene	10	10 U	10 U	10 UJ	2 J	3 J
Methylcyclohexane	10	10 U	10 U	10 UJ	10 U	11 U
1,2-Dichloropropane	10	10 U	10 U	10 UJ	10 U	11 U
Bromodichloromethane	10	10 U	10 U	10 UJ	10 U	11 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 UJ	10 U	11 U
4-Methyl-2-Pentanone	10	10 U	10 U	10 UJ	10 UJ	11 UJ
Toluene	10	10 U	10 U	10 UJ	3 J	20
trans-1,3-Dichloropropene	10	10 U	10 U	10 UJ	10 UJ	11 UJ
1,1,2-Trichloroethane	10	10 U	10 U	10 UJ	10 U	11 U
Tetrachloroethene	10	10 U	10 U	10 UJ	180	31
2-Hexanone	10	10 U	10 U	10 UJ	10 U	11 U
Dibromochloromethane	10	10 U	10 U	10 UJ	10 U	11 U
1,2-Dibromoethane	10	10 U	10 U	10 UJ	10 U	11 U
Chlorobenzene	10	10 U	10 U	10 UJ	10 U	11 U
Ethylbenzene	10	10 U	10 U	10 UJ	10 U	11 U
Xylene (Total)	10	10 U	10 U	10 UJ	10 U	3 J
Styrene	10	10 U	10 U	10 UJ	10 U	11 U
Bromoform	10	10 U	10 U	10 UJ	10 U	11 U
Isopropylbenzene	10	10 U	10 U	10 UJ	10 U	11
1,1,2,2-Tetrachloroethane	10	10 U	10 U	10 UJ	10 U	11 U
1,3-Dichlorobenzene	10	10 U	10 U	10 UJ	10 U	7 J
1,4-Dichlorobenzene	10	10 U	10 U	10 UJ	10 U	7 J
1,2-Dichlorobenzene	10	10 U	10 U	10 UJ	10 U	6 J
1,2-Dibromo-3-chloropropane	10	10 U	10 U	10 UJ	10 U	11 U
1,2,4-Trichlorobenzene	10	10 U	10 U	10 UJ	10 U	48
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0
DATE SAMPLED:		06/18/02	06/18/02	06/17/02	06/18/02	06/18/02
DATE ANALYZED:		07/02/02	07/02/02	07/03/02	06/27/02	06/27/02
% MOISTURE:		13	12	4	19	16

* - Result reported from medium level analysis.

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 0493F SDG: D06367
LABORATORY: SOUTHWEST LABORATORY OF OKLAHOMA, INC.

TABLE 1
VOLATILE SOIL ANALYSES - LOW LEVEL
µg/kg

SAMPLE NUMBER:		D06386	D06391	D06392	D06397
SAMPLE LOCATION:		SO-06	SO-11	SS-26	MB-05
LABORATORY NUMBER:		50065.16	50065.17	50065.18	50065.22
COMPOUND	CRQL				
Dichlorodifluoromethane	10	10 UJ	13 UJ	10 UJ	10 UJ
Chloromethane	10	10 UJ	13 UJ	10 UJ	10 UJ
Vinyl Chloride	10	10 U	13 UJ	10 U	10 UJ
Bromomethane	10	10 U	13 UJ	10 U	10 UJ
Chloroethane	10	10 U	13 UJ	10 U	10 UJ
Trichlorofluoromethane	10	10 U	13 UJ	10 U	10 UJ
1,1-Dichloroethene	10	10 U	13 UJ	10 U	10 UJ
1,1,2-Trichloro-1,2,2-trifluoroethane	10	10 U	13 UJ	10 U	10 UJ
Acetone	10	22 UJ	13 UJ	59 UJ	29 J
Carbon Disulfide	10	10 U	13 UJ	10 U	10 UJ
Methyl Acetate	10	10 U	13 UJ	10 U	10 UJ
Methylene Chloride	10	10 U	13 UJ	10 U	10 UJ
trans-1,2-Dichloroethene	10	10 U	13 UJ	10 U	10 UJ
Methyl tert-Butyl Ether	10	*230 J	13 UJ	10 U	10 UJ
1,1-Dichloroethane	10	10 U	13 UJ	10 U	10 UJ
cis-1,2-Dichloroethene	10	10 U	13 UJ	10 U	10 UJ
2-Butanone	10	10 U	13 UJ	12	10 UJ
Chloroform	10	10 U	13 UJ	10 U	10 UJ
1,1,1-Trichloroethane	10	10 U	13 UJ	10 U	10 UJ
Cyclohexane	10	10 U	13 UJ	10 U	10 UJ
Carbon Tetrachloride	10	10 U	13 UJ	10 U	10 UJ
Benzene	10	3 J	13 UJ	2 J	10 UJ
1,2-Dichloroethane	10	10 U	13 UJ	10 U	10 UJ
Trichloroethene	10	10 U	13 UJ	2 J	10 UJ
Methylcyclohexane	10	10 U	13 UJ	10 U	10 UJ
1,2-Dichloropropane	10	10 U	13 UJ	10 U	10 UJ
Bromodichloromethane	10	10 U	13 UJ	10 U	10 UJ
cis-1,3-Dichloropropene	10	10 U	13 UJ	10 U	10 UJ
4-Methyl-2-Pentanone	10	10 UJ	13 UJ	10 UJ	10 UJ
Toluene	10	10 U	13 UJ	3 J	10 UJ
trans-1,3-Dichloropropene	10	10 UJ	13 UJ	10 UJ	10 UJ
1,1,2-Trichloroethane	10	10 U	13 UJ	10 U	10 UJ
Tetrachloroethene	10	10 U	31 J	33	10 UJ
2-Hexanone	10	10 U	13 UJ	10 U	10 UJ
Dibromochloromethane	10	10 U	13 UJ	10 U	10 UJ
1,2-Dibromoethane	10	10 U	13 UJ	10 U	10 UJ
Chlorobenzene	10	10 U	13 UJ	10 U	10 UJ
Ethylbenzene	10	10 U	13 UJ	10 U	10 UJ
Xylene (Total)	10	10 U	13 UJ	10 U	10 UJ
Styrene	10	10 U	13 UJ	10 U	10 UJ
Bromoform	10	10 U	13 UJ	10 U	10 UJ
Isopropylbenzene	10	10 U	13 UJ	10 U	10 UJ
1,1,2,2-Tetrachloroethane	10	10 U	13 UJ	10 U	10 UJ
1,3-Dichlorobenzene	10	10 U	13 UJ	10 U	10 UJ
1,4-Dichlorobenzene	10	10 U	13 UJ	10 U	10 UJ
1,2-Dichlorobenzene	10	10 U	13 UJ	10 U	10 UJ
1,2-Dibromo-3-chloropropane	10	10 U	13 UJ	10 U	10 UJ
1,2,4-Trichlorobenzene	10	10 U	13 UJ	10 U	10 UJ
DILUTION FACTOR:		1.0	1.0	1.0	1.0
DATE SAMPLED:		06/18/02	06/18/02	06/18/02	06/17/02
DATE ANALYZED:		06/27/02	07/03/02	06/27/02	07/03/02
% MOISTURE:		1	19	11	NA

* - Result reported from medium level analysis.

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 0493F SDG: D06367
LABORATORY: SOUTHWEST LABORATORY OF OKLAHOMA, INC.

TABLE 2
VOLATILE SOIL ANALYSES - MEDIUM LEVEL
µg/kg

SAMPLE NUMBER:		D06372	D06394	D06395	D06396
SAMPLE LOCATION:		SS-22	MB-02	MB-03	MB-04
LABORATORY NUMBER:		50065.08	50065.19	50065.20	50065.21
COMPOUND	CRQL				
Dichlorodifluoromethane	1300	1300 UJ	1300 UJ	1300 UJ	1300 UJ
Chloromethane	1300	1300 U	1300 U	1300 U	1300 UJ
Vinyl Chloride	1300	1300 U	1300 U	1300 U	1300 UJ
Bromomethane	1300	1300 U	1300 U	1300 U	1300 UJ
Chloroethane	1300	1300 U	1300 U	1300 U	1300 UJ
Trichlorofluoromethane	1300	1300 U	1300 U	1300 U	1300 UJ
1,1-Dichloroethene	1300	1300 UJ	1300 U	1300 U	1300 UJ
1,1,2-Trichloro-1,2,2-trifluoroethane	1300	1300 U	1300 U	1300 U	1300 UJ
Acetone	1300	1300 UJ	1300 U	1300 U	1300 UJ
Carbon Disulfide	1300	1300 U	1300 U	1300 U	1300 UJ
Methyl Acetate	1300	1300 U	1300 U	1300 U	1300 UJ
Methylene Chloride	1300	1300 UJ	2300 U	2200 U	1300 UJ
trans-1,2-Dichloroethene	1300	1300 U	1300 U	1300 U	1300 UJ
Methyl tert-Butyl Ether	1300	1300 U	1300 U	1300 U	1300 UJ
1,1-Dichloroethane	1300	1300 U	1300 U	1300 U	1300 UJ
cis-1,2-Dichloroethene	1300	1300 U	1300 U	1300 U	1300 UJ
2-Butanone	1300	1300 U	1300 UJ	1300 UJ	1300 UJ
Chloroform	1300	1300 U	1300 U	1300 U	1300 UJ
1,1,1-Trichloroethane	1300	1300 U	1300 U	1300 U	1300 UJ
Cyclohexane	1300	1300 U	1300 U	1300 U	1300 UJ
Carbon Tetrachloride	1300	1300 U	1300 U	1300 U	1300 UJ
Benzene	1300	1300 U	1300 U	1300 U	1300 UJ
1,2-Dichloroethane	1300	1300 U	1300 U	1300 U	1300 UJ
Trichloroethene	1300	1300 U	1300 U	1300 U	1300 UJ
Methylcyclohexane	1300	1300 U	1300 U	1300 U	1300 UJ
1,2-Dichloropropane	1300	1300 U	1300 U	1300 U	1300 UJ
Bromodichloromethane	1300	1300 U	1300 U	1300 U	1300 UJ
cis-1,3-Dichloropropene	1300	1300 U	1300 U	1300 U	1300 UJ
4-Methyl-2-Pentanone	1300	1300 U	1300 U	1300 U	1300 UJ
Toluene	1300	1300 U	1300 U	1300 U	1300 UJ
trans-1,3-Dichloropropene	1300	1300 U	1300 U	1300 U	1300 UJ
1,1,2-Trichloroethane	1300	1300 U	1300 U	1300 U	1300 UJ
Tetrachloroethene	1300	1300 U	1300 U	1300 U	1300 UJ
2-Hexanone	1300	1300 UJ	1300 UJ	1300 UJ	1300 UJ
Dibromochloromethane	1300	1300 U	1300 U	1300 U	1300 UJ
1,2-Dibromoethane	1300	1300 U	1300 U	1300 U	1300 UJ
Chlorobenzene	1300	1300 U	1300 U	1300 U	1300 UJ
Ethylbenzene	1300	1300 U	1300 U	1300 U	1300 UJ
Xylene (Total)	1300	1300 U	1300 U	1300 U	1300 UJ
Styrene	1300	1300 U	1300 U	1300 U	1300 UJ
Bromoform	1300	1300 U	1300 U	1300 U	1300 UJ
Isopropylbenzene	1300	1300 U	1300 U	1300 U	1300 UJ
1,1,2,2-Tetrachloroethane	1300	1300 U	1300 U	1300 U	1300 UJ
1,3-Dichlorobenzene	1300	1300 U	1300 U	1300 U	1300 UJ
1,4-Dichlorobenzene	1300	1300 U	1300 U	1300 U	1300 UJ
1,2-Dichlorobenzene	1300	1300 U	1300 U	1300 U	1300 UJ
1,2-Dibromo-3-chloropropane	1300	1300 U	1300 U	1300 U	1300 UJ
1,2,4-Trichlorobenzene	1300	1300 U	1300 U	1300 U	1300 UJ
DILUTION FACTOR:		1.0	1.0	1.0	1.0
DATE SAMPLED:		06/18/02	06/17/02	06/17/02	06/17/02
DATE ANALYZED:		06/21/02	06/28/02	06/28/02	07/03/02
% MOISTURE:		16	NA	NA	NA

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 0493F SDG: D06291
LABORATORY: SOUTHWEST LABORATORY OF OKLAHOMA, INC.

TABLE 1
VOLATILE SOIL ANALYSES - LOW LEVEL
µg/kg

SAMPLE NUMBER:		D06291	D06292	D06293	D06294	D06295
SAMPLE LOCATION:		SD-01	SD-02	SD-03	SD-04	SD-05
LABORATORY NUMBER:		50064.01	50064.02	50064.03	50064.04	50064.05
COMPOUND	CRQL					
Dichlorodifluoromethane	10	10 U	10 U	10 U	10 U	10 U
Chloromethane	10	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride	10	10 U	10 U	10 U	10 U	10 U
Bromomethane	10	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Chloroethane	10	10 U	10 U	10 U	10 U	10 U
Trichlorofluoromethane	10	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloro-1,2,2-trifluoroethane	10	10 U	10 U	10 U	10 U	10 U
Acetone	10	62 UJ	66 UJ	58 UJ	100 UJ	150 UJ
Carbon Disulfide	10	10 U	10 U	0.8 J	10 U	10 U
Methyl Acetate	10	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	10	10 U	10 U	10 U	10 U	10 U
trans-1,2-Dichloroethene	10	10 U	10 U	10 U	10 U	10 U
Methyl tert-Butyl Ether	10	10 U	47	10 U	10 U	10 U
1,1-Dichloroethane	10	10 U	10 U	10 U	10 U	10 U
cis-1,2-Dichloroethene	10	10 U	10 U	10 U	10 U	10 U
2-Butanone	10	8 J	10 J	7 J	11 J	16 J
Chloroform	10	10 U	10 U	10 U	10 U	10 U
1,1,1-Trichloroethane	10	10 U	10 U	10 U	10 U	10 U
Cyclohexane	10	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10	10 U	10 U	10 U	10 U	10 U
Benzene	10	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10	10 U	10 U	10 U	10 U	10 U
Trichloroethene	10	10 U	10 U	10 U	10 U	10 U
Methylcyclohexane	10	10 U	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	10	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-Pentanone	10	10 U	10 U	10 U	10 U	10 U
Toluene	10	1 J	0.9 J	2 J	10 U	10 U
trans-1,3-Dichloropropene	10	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,1,2-Trichloroethane	10	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	10	10 U	10 U	10 U	10 U	10 U
2-Hexanone	10	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	10	10 U	10 U	10 U	10 U	10 U
1,2-Dibromoethane	10	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	10	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	10	10 U	10 U	10 U	10 U	10 U
Xylene (Total)	10	10 U	10 U	10 U	10 U	10 U
Styrene	10	10 U	10 U	10 U	10 U	10 U
Bromoform	10	10 U	10 U	10 U	10 U	10 U
Isopropylbenzene	10	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10	10 U	10 U	10 U	10 U	10 U
1,2-Dibromo-3-chloropropane	10	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U	10 U	10 U
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0
DATE SAMPLED:		06/17/02	06/17/02	06/17/02	06/17/02	06/17/02
DATE ANALYZED:		06/24/02	06/24/02	06/24/02	06/24/02	06/24/02
% MOISTURE:		31	26	12	35	35

J - Result reported from medium level analysis.

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 0493F SDG: D06291
LABORATORY: SOUTHWEST LABORATORY OF OKLAHOMA, INC.

TABLE 1
VOLATILE SOIL ANALYSES - LOW LEVEL
µg/kg

SAMPLE NUMBER:		D06296	D06297	D06298	D06350	D06352
SAMPLE LOCATION:		SD-06	SD-07	SD-08	SC-01	SS-02
LABORATORY NUMBER:		50064.06	50064.09	50064.10	50064.16	50064.19
COMPOUND	CRQL					
Dichlorodifluoromethane	10	10 U	15 U	10 U	10 U	R
Chloromethane	10	10 U	15 U	10 U	10 U	R
Vinyl Chloride	10	10 U	15 U	10 U	10 U	R
Bromomethane	10	10 UJ	15 U	10 U	3 J	R
Chloroethane	10	10 U	15 U	10 U	10 U	R
Trichlorofluoromethane	10	10 U	15 U	10 U	10 U	R
1,1-Dichloroethene	10	10 U	15 U	10 U	10 U	R
1,1,2-Trichloro-1,2,2-trifluoroethane	10	10 U	15 U	10 U	10 U	R
Acetone	10	*1300 U	160 UJ	100 UJ	120 UJ	R
Carbon Disulfide	10	10 U	15 U	1 J	10 U	R
Methyl Acetate	10	10 U	15 U	10 U	10 U	R
Methylene Chloride	10	10 U	15 U	10 U	10 U	R
trans-1,2-Dichloroethene	10	10 U	15 U	10 U	10 U	R
Methyl tert-Butyl Ether	10	10 U	15 U	10 U	10 U	R
1,1-Dichloroethane	10	10 U	15 U	10 U	10 U	R
cis-1,2-Dichloroethene	10	10 U	15 U	10 U	10 U	R
2-Butanone	10	12 J	15 UJ	37 J	20 J	R
Chloroform	10	10 U	15 U	10 U	10 U	34 J
1,1,1-Trichloroethane	10	10 U	15 U	10 U	10 U	R
Cyclohexane	10	10 U	15 U	10 U	10 U	R
Carbon Tetrachloride	10	10 U	15 U	10 U	10 U	R
Benzene	10	10 U	15 U	10 U	10 U	130 J
1,2-Dichloroethane	10	10 U	15 U	10 U	10 U	R
Trichloroethene	10	10 U	15 U	10 U	10 U	R
Methylcyclohexane	10	10 U	15 U	10 U	10 U	53 J
1,2-Dichloropropane	10	10 U	15 U	10 U	10 U	R
Bromodichloromethane	10	10 U	15 U	10 U	10 U	25 J
cis-1,3-Dichloropropene	10	10 U	15 UJ	10 UJ	10 UJ	R
4-Methyl-2-Pentanone	10	10 U	15 U	10 U	10 U	R
Toluene	10	10 U	4 J	10 U	10 U	140 J
trans-1,3-Dichloropropene	10	10 UJ	15 UJ	10 UJ	10 UJ	R
1,1,2-Trichloroethane	10	10 U	15 U	10 U	10 U	R
Tetrachloroethene	10	10 U	15 U	10 U	10 U	42 J
2-Hexanone	10	10 U	15 UJ	10 UJ	10 UJ	R
Dibromochloromethane	10	10 U	15 U	10 U	10 U	R
1,2-Dibromoethane	10	10 U	15 U	10 U	10 U	R
Chlorobenzene	10	10 U	15 U	10 U	10 U	R
Ethylbenzene	10	10 U	15 U	10 U	10 U	8 J
Xylene (Total)	10	10 U	15 U	10 U	10 U	71 J
Styrene	10	10 U	15 U	10 U	10 U	R
Bromoform	10	10 U	15 U	10 U	10 U	R
Isopropylbenzene	10	10 U	15 U	10 U	10 U	R
1,1,2,2-Tetrachloroethane	10	10 U	15 U	10 U	10 U	R
1,3-Dichlorobenzene	10	10 U	15 U	10 U	10 U	R
1,4-Dichlorobenzene	10	10 U	15 U	10 U	10 U	R
1,2-Dichlorobenzene	10	10 U	15 U	10 U	10 U	R
1,2-Dibromo-3-chloropropane	10	10 UJ	15 UJ	10 UJ	10 UJ	R
1,2,4-Trichlorobenzene	10	10 U	15 U	10 U	10 U	R
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0
DATE SAMPLED:		06/17/02	06/17/02	06/17/02	06/17/02	06/18/02
DATE ANALYZED:		06/24/02	06/25/02	06/25/02	06/25/02	06/25/02
% MOISTURE:		24	41	45	9	12

* - Result reported from medium level analysis.

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 0493F SDG: D06291
LABORATORY: SOUTHWEST LABORATORY OF OKLAHOMA, INC.

TABLE 1
VOLATILE SOIL ANALYSES - LOW LEVEL
µg/kg

SAMPLE NUMBER:		D06353	D06355	D06356	D06361	D06366
SAMPLE LOCATION:		SS-03	SS-05	SS-06	SS-11	SS-16
LABORATORY NUMBER:		50064.20	50064.21	50064.22	50064.23	50064.27
COMPOUND	CRQL					
Dichlorodifluoromethane	10	15 U	10 U	10 U	R	10 U
Chloromethane	10	15 U	10 U	10 U	21 J	10 U
Vinyl Chloride	10	15 U	10 U	10 U	R	10 U
Bromomethane	10	3 J	10 U	10 U	R	10 U
Chloroethane	10	15 U	10 U	10 U	R	10 U
Trichlorofluoromethane	10	15 U	10 U	10 U	10 J	10 U
1,1-Dichloroethene	10	15 U	10 U	10 U	R	10 U
1,1,2-Trichloro-1,2,2-trifluoroethane	10	15 U	10 U	10 U	R	8 J
Acetone	10	170 UJ	*1300 U	52 UJ	R	*1300 UJ
Carbon Disulfide	10	15 U	10 U	10 U	R	2 J
Methyl Acetate	10	15 U	10 U	10 U	R	10 U
Methylene Chloride	10	15 U	10 U	10 U	R	10 U
trans-1,2-Dichloroethene	10	15 U	10 U	10 U	R	10 U
Methyl tert-Butyl Ether	10	15 U	10 U	30	R	10 U
1,1-Dichloroethane	10	15 U	10 U	10 U	R	10 U
cis-1,2-Dichloroethene	10	3 J	10 U	10 U	R	21
2-Butanone	10	33 J	26 J	10 J	R	100 J
Chloroform	10	15 U	10 U	10 U	R	10 U
1,1,1-Trichloroethane	10	15 U	10 U	10 U	R	10 U
Cyclohexane	10	15 U	10 U	10 U	R	10 U
Carbon Tetrachloride	10	15 U	10 U	10 U	R	10 U
Benzene	10	5 J	10 U	2 J	54 J	10 U
1,2-Dichloroethane	10	15 U	10 U	10 U	R	10 U
Trichloroethene	10	2 J	0.7 J	1 J	R	7 J
Methylcyclohexane	10	15 U	10 U	12	R	22
1,2-Dichloropropane	10	15 U	10 U	10 U	R	10 U
Bromodichloromethane	10	15 U	10 U	10 U	R	10 U
cis-1,3-Dichloropropene	10	15 UJ	10 UJ	10 UJ	R	10 UJ
4-Methyl-2-Pentanone	10	15 U	10 U	10 U	R	10 U
Toluene	10	6 J	10 U	7 J	30 J	140
trans-1,3-Dichloropropene	10	15 UJ	10 UJ	10 UJ	R	10 UJ
1,1,2-Trichloroethane	10	15 U	10 U	10 U	R	10 U
Tetrachloroethene	10	12 J	1 J	3 J	220 J	13
2-Hexanone	10	15 UJ	10 UJ	10 UJ	R	10 UJ
Dibromochloromethane	10	15 U	10 U	10 U	60 J	10 U
1,2-Dibromoethane	10	15 U	10 U	10 U	R	10 U
Chlorobenzene	10	15 U	10 U	10 U	R	10 U
Ethylbenzene	10	15 U	10 U	2 J	R	10 U
Xylene (Total)	10	15 U	10 U	22	R	6 J
Styrene	10	15 U	10 U	10 U	R	10 U
Bromoform	10	15 U	10 U	10 U	R	10 U
Isopropylbenzene	10	15 U	10 U	10 U	R	10 U
1,1,2,2-Tetrachloroethane	10	15 U	10 U	10 U	R	10 U
1,3-Dichlorobenzene	10	2 J	10 U	10 U	R	10 U
1,4-Dichlorobenzene	10	15 U	10 U	10 U	R	10 U
1,2-Dichlorobenzene	10	2 J	10 U	10 U	R	10 U
1,2-Dibromo-3-chloropropane	10	15 UJ	10 UJ	10 UJ	R	10 UJ
1,2,4-Trichlorobenzene	10	3 J	10 U	10 U	R	10 U
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0
DATE SAMPLED:		06/18/02	06/17/02	06/18/02	06/18/02	06/17/02
DATE ANALYZED:		06/25/02	06/25/02	06/25/02	06/25/02	06/25/02
% MOISTURE:		12	12	6	20	19

* - Result reported from medium level analysis.

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 0493F SDG: D06291
LABORATORY: SOUTHWEST LABORATORY OF OKLAHOMA, INC.

TABLE 1
VOLATILE SOIL ANALYSES - LOW LEVEL
µg/kg

SAMPLE NUMBER:	D06385
SAMPLE LOCATION:	SO-05
LABORATORY NUMBER:	50064.28

COMPOUND	CRQL	
Dichlorodifluoromethane	10	10 U
Chloromethane	10	10 U
Vinyl Chloride	10	10 U
Bromomethane	10	10 U
Chloroethane	10	10 U
Trichlorofluoromethane	10	10 U
1,1-Dichloroethene	10	10 U
1,1,2-Trichloro-1,2,2-trifluoroethane	10	10 U
Acetone	10	10 UJ
Carbon Disulfide	10	4 J
Methyl Acetate	10	10 U
Methylene Chloride	10	10 U
trans-1,2-Dichloroethene	10	10 U
Methyl tert-Butyl Ether	10	0.7 J
1,1-Dichloroethane	10	10 U
cis-1,2-Dichloroethene	10	10 U
2-Butanone	10	10 UJ
Chloroform	10	10 U
1,1,1-Trichloroethane	10	10 U
Cyclohexane	10	10 U
Carbon Tetrachloride	10	10 U
Benzene	10	10 U
1,2-Dichloroethane	10	10 U
Trichloroethene	10	10 U
Methylcyclohexane	10	8 J
1,2-Dichloropropane	10	10 U
Bromodichloromethane	10	10 U
cis-1,3-Dichloropropene	10	10 UJ
4-Methyl-2-Pentanone	10	10 U
Toluene	10	10 U
trans-1,3-Dichloropropene	10	10 UJ
1,1,2-Trichloroethane	10	10 U
Tetrachloroethene	10	10 U
2-Hexanone	10	10 UJ
Dibromochloromethane	10	10 U
1,2-Dibromoethane	10	10 U
Chlorobenzene	10	10 U
Ethylbenzene	10	10 U
Xylene (Total)	10	1 J
Styrene	10	10 U
Bromoform	10	10 U
Isopropylbenzene	10	10 U
1,1,2,2-Tetrachloroethane	10	10 U
1,3-Dichlorobenzene	10	10 U
1,4-Dichlorobenzene	10	10 U
1,2-Dichlorobenzene	10	10 U
1,2-Dibromo-3-chloropropane	10	10 UJ
1,2,4-Trichlorobenzene	10	7 J

DILUTION FACTOR:	1.0
DATE SAMPLED:	06/17/02
DATE ANALYZED:	06/25/02
% MOISTURE:	12

* - Result reported from medium level analysis.

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 0493F SDG: D06291
LABORATORY: SOUTHWEST LABORATORY OF OKLAHOMA, INC.

TABLE 2
VOLATILE SOIL ANALYSES - MEDIUM LEVEL
µg/kg

SAMPLE NUMBER:		D06363	D06364	D06365
SAMPLE LOCATION:		SS-13	SS-14	SS-15
LABORATORY NUMBER:		50064.24	50064.25	50064.26
COMPOUND	CRQL			
Dichlorodifluoromethane	1300	1300 UJ	1300 UJ	1300 UJ
Chloromethane	1300	1300 U	1300 UJ	1300 U
Vinyl Chloride	1300	1300 U	1300 UJ	400 J
Bromomethane	1300	1300 U	1300 UJ	1300 U
Chloroethane	1300	1300 U	1300 UJ	1300 U
Trichlorofluoromethane	1300	1300 U	1300 UJ	1300 U
1,1-Dichloroethene	1300	1300 U	1300 UJ	1300 U
1,1,2-Trichloro-1,2,2-trifluoroethane	1300	1300 U	1300 UJ	1300 U
Acetone	1300	1300 U	1300 UJ	1300 U
Carbon Disulfide	1300	1300 U	1300 UJ	1300 U
Methyl Acetate	1300	1300 U	1300 UJ	1300 U
Methylene Chloride	1300	1300 U	1300 UJ	1300 U
trans-1,2-Dichloroethene	1300	1300 U	1300 UJ	1300 U
Methyl tert-Butyl Ether	1300	1300 U	1300 UJ	1300 U
1,1-Dichloroethane	1300	1300 U	1300 UJ	1300 U
cis-1,2-Dichloroethene	1300	1300 U	1300 UJ	2600 J
2-Butanone	1300	1300 UJ	1300 UJ	1300 U
Chloroform	1300	1300 U	1300 UJ	1300 U
1,1,1-Trichloroethane	1300	1300 U	1300 UJ	1300 U
Cyclohexane	1300	1300 U	1300 UJ	1400 J
Carbon Tetrachloride	1300	1300 U	1300 UJ	1300 U
Benzene	1300	1300 U	1300 UJ	370 J
1,2-Dichloroethane	1300	1300 U	1300 UJ	1300 U
Trichloroethene	1300	1300 U	1300 UJ	200 J
Methylcyclohexane	1300	140 J	920 J	1300 U
1,2-Dichloropropane	1300	1300 U	1300 UJ	1300 U
Bromodichloromethane	1300	1300 U	1300 UJ	1300 U
cis-1,3-Dichloropropene	1300	1300 U	1300 UJ	1300 U
4-Methyl-2-Pentanone	1300	1300 U	1300 UJ	1300 UJ
Toluene	1300	370 J	620 J	19000 J
trans-1,3-Dichloropropene	1300	1300 U	1300 UJ	1300 U
1,1,2-Trichloroethane	1300	1300 U	1300 UJ	1300 U
Tetrachloroethene	1300	1300 U	1300 UJ	510 J
2-Hexanone	1300	1300 UJ	1300 UJ	1300 UJ
Dibromochloromethane	1300	1300 U	1300 UJ	1300 U
1,2-Dibromoethane	1300	1300 U	1300 UJ	1300 U
Chlorobenzene	1300	1300 U	1300 UJ	1300 U
Ethylbenzene	1300	240 J	600 J	3600 J
Xylene (Total)	1300	1300 J	2800 J	22000 J
Styrene	1300	1300 U	1300 UJ	290 J
Bromoform	1300	1300 U	1300 UJ	1300 U
Isopropylbenzene	1300	75 J	1300 UJ	930 J
1,1,2,2-Tetrachloroethane	1300	87 J TB	1300 UJ	1300 U
1,3-Dichlorobenzene	1300	1300 U	1300 UJ	610 J
1,4-Dichlorobenzene	1300	1300 U	170 J	1300 J
1,2-Dichlorobenzene	1300	1300 U	610 J	2700 J
1,2-Dibromo-3-chloropropane	1300	1300 U	1300 UJ	1300 UJ
1,2,4-Trichlorobenzene	1300	1300 U	1300 UJ	1300 U
DILUTION FACTOR:		1.0	1.0	1.0
DATE SAMPLED:		06/17/02	06/17/02	06/17/02
DATE ANALYZED:		06/28/02	06/24/02	06/24/02
% MOISTURE:		27	26	26

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 30630 SDG: A0JD3
LABORATORY: CEIMIC CORPORATION

TABLE 1
SEMIVOLATILE SOIL ANALYSES
µg/kg

SAMPLE NUMBER:		A0JC1	A0JC7	A0JD3	A0JD4	A0JD5	A0JD6
SAMPLE LOCATION:		SS-01	SS-07	SS-21	SS-22	SS-23	SS-24
LABORATORY NUMBER:		020613-08	020613-09	020613-01	020613-02	020613-03	020613-04
COMPOUND	CRQL						
Benzaldehyde	330	400 UJ	420 UJ	380 UJ	400 UJ	1900 UJ	1900 UJ
Phenol	330	400 U	420 U	380 U	400 U	1900 U	1900 U
bis(2-Chloroethyl)Ether	330	400 U	420 U	380 U	400 U	1900 U	1900 U
2-Chlorophenol	330	400 U	420 U	380 U	400 U	1900 U	1900 U
2-Methylphenol	330	400 U	420 U	380 U	400 U	1900 U	1900 U
2,2'-oxybis(1-Chloropropane)	330	400 U	420 U	380 U	400 U	1900 U	1900 U
Acetophenone	330	67 J	420 U	380 U	400 U	1900 U	1900 U
4-Methylphenol	330	400 U	420 U	380 U	400 U	1900 U	1900 U
N-Nitroso-di-n-propylamine	330	400 U	420 U	380 U	400 U	1900 U	1900 U
Hexachloroethane	330	400 U	420 U	380 U	400 U	1900 U	1900 U
Nitrobenzene	330	400 U	420 U	380 U	400 U	1900 U	1900 U
Isophorone	330	400 U	420 U	380 U	400 U	1900 U	1900 U
2-Nitrophenol	330	400 U	420 U	380 U	400 U	1900 U	1900 U
2,4-Dimethylphenol	330	400 U	420 U	380 U	400 U	1900 U	1900 U
bis(2-Chloroethoxy)methane	330	400 U	420 U	380 U	400 U	1900 U	1900 U
2,4-Dichlorophenol	330	400 U	420 U	380 U	400 U	1900 U	1900 U
Naphthalene	330	400 U	420 U	380 U	400 U	1900 U	1900 U
4-Chloroaniline	330	400 U	420 U	380 U	400 U	1900 U	1900 U
Hexachlorobutadiene	330	400 U	420 U	380 U	400 U	1900 U	1900 U
Caprolactam	330	400 U	420 U	380 U	400 U	1900 U	1900 U
4-Chloro-3-methylphenol	330	400 U	420 U	380 U	400 U	1900 U	1900 U
2-Methylnaphthalene	330	400 U	420 U	380 U	400 U	1900 U	1900 U
Hexachlorocyclopentadiene	330	400 U	420 U	380 U	400 U	1900 U	1900 U
2,4,6-Trichlorophenol	330	400 U	420 U	380 U	400 U	1900 U	1900 U
2,4,5-Trichlorophenol	830	1000 U	1000 U	950 U	990 U	4800 U	4800 U
1,1'-Biphenyl	330	400 U	420 U	380 U	400 U	1900 U	1900 U
2-Chloronaphthalene	330	400 U	420 U	380 U	400 U	1900 U	1900 U
2-Nitroaniline	830	1000 U	1000 U	950 U	990 U	4800 U	4800 U
Dimethylphthalate	330	400 U	420 U	380 U	400 U	1900 U	1900 U
2,6-Dinitrotoluene	330	400 U	420 U	380 U	400 U	1900 U	1900 U
Acenaphthylene	330	400 U	420 U	380 U	400 U	1900 U	1900 U
3-Nitroaniline	830	1000 U	1000 U	950 U	990 U	4800 U	4800 U
Acenaphthene	330	400 U	420 U	380 U	400 U	1900 U	1900 U
2,4-Dinitrophenol	830	1000 U	1000 U	950 U	990 U	4800 U	4800 U
4-Nitrophenol	830	1000 U	1000 U	950 U	990 U	4800 U	4800 U
Dibenzofuran	330	400 U	420 U	380 U	400 U	1900 U	1900 U
2,4-Dinitrotoluene	330	400 U	420 U	380 U	400 U	1900 U	1900 U
Diethylphthalate	330	400 U	420 U	380 U	400 U	1900 U	1900 U
Fluorene	330	400 U	420 U	380 U	400 U	1900 U	1900 U
4-Chlorophenyl-phenylether	330	400 U	420 U	380 U	400 U	1900 U	1900 U
4-Nitroaniline	830	1000 U	1000 U	950 U	990 U	4800 U	4800 U
4,6-Dinitro-2-methylphenol	830	1000 U	1000 U	950 U	990 U	4800 U	4800 U
N-Nitrosodiphenylamine (1)	330	400 U	420 U	380 U	400 U	1900 U	1900 U
4-Bromophenyl-phenylether	330	400 U	420 U	380 U	400 U	1900 U	1900 U
Hexachlorobenzene	330	400 U	420 U	380 U	400 U	1900 U	1900 U
Atrazine	330	400 U	420 U	380 U	400 U	1900 U	1900 U
Pentachlorophenol	830	1000 U	1000 U	950 U	990 U	4800 U	4800 U
Phenanthrene	330	400 U	420 U	380 U	400 U	1900 U	1900 U
Anthracene	330	400 U	420 U	380 U	400 U	1900 U	1900 U
Carbazole	330	400 U	420 U	380 U	400 U	1900 U	1900 U
Di-n-butylphthalate	330	400 U	420 U	380 U	400 U	1900 U	1900 U
Fluoranthene	330	400 U	420 U	380 U	64 J	1900 U	1900 U
Pyrene	330	400 U	420 U	380 U	56 J	1900 U	1900 U
Butylbenzylphthalate	330	400 U	420 U	380 U	400 U	1900 U	1900 U
3,3'-Dichlorobenzidine	330	400 U	420 U	380 U	400 U	1900 U	1900 U
Benzo(a)anthracene	330	400 U	420 U	380 U	400 U	1900 U	1900 U
Chrysene	330	400 U	420 U	380 U	64 J	1900 U	1900 U
bis(2-Ethylhexyl)phthalate	330	400 U	420 U	380 U	1700 U	1900 U	1900 U
Di-n-octylphthalate	330	400 U	420 U	380 U	400 U	1900 U	1900 U
Benzo(b)fluoranthene	330	400 U	420 U	380 U	96 J	1900 U	1900 U
Benzo(k)fluoranthene	330	400 U	420 U	380 U	65 J	1900 U	1900 U
Benzo(a)pyrene	330	400 U	420 U	380 U	51 J	1900 U	1900 U
Indeno(1,2,3-cd)pyrene	330	400 U	420 U	380 U	400 U	1900 U	1900 U
Dibenzo(a,h)anthracene	330	400 U	420 U	380 U	400 U	1900 U	1900 U
Benzo(g,h,i)perylene	330	400 U	420 U	380 U	400 U	1900 U	1900 U
DILUTION FACTOR:		1.0	1.0	1.0	1.0	5.0	5.0
DATE SAMPLED:		06/19/02	06/20/02	06/18/02	06/18/02	06/18/02	06/18/02
DATE EXTRACTED:		06/24/02	06/24/02	06/24/02	06/24/02	06/24/02	06/24/02
DATE ANALYZED:		06/28/02	07/01/02	06/27/02	06/27/02	06/28/02	07/01/02
% MOISTURE:		19	22	14	18	14	15

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 30630 SDG: A0JD3
LABORATORY: CEIMIC CORPORATION

TABLE 1
SEMIVOLATILE SOIL ANALYSES
µg/kg

SAMPLE NUMBER:		A0JD7	A0JD6	A0JD9	A0JE0	A0JE4
SAMPLE LOCATION:		SS-25	SO-01	SO-02	SO-03	SO-07
LABORATORY NUMBER:		020613-05	020613-10	020613-06	020613-07	020613-11
COMPOUND	CRQL					
Benzaldehyde	330	380 UJ	350 UJ	4000 UJ	11000 UJ	360 UJ
Phenol	330	380 U	350 U	4000 U	11000 U	360 U
bis(2-Chloroethyl)Ether	330	380 U	350 U	4000 U	11000 U	360 U
2-Chlorophenol	330	380 U	350 U	4000 U	11000 U	360 U
2-Methylphenol	330	380 U	350 U	4000 U	11000 U	360 U
2,2'-oxybis(1-Chloropropane)	330	380 U	350 U	4000 U	11000 U	360 U
Acetophenone	330	380 U	350 U	4000 U	11000 U	360 U
4-Methylphenol	330	380 U	350 U	4000 U	11000 U	360 U
N-Nitroso-di-n-propylamine	330	380 U	350 U	4000 U	11000 U	360 U
Hexachloroethane	330	380 U	350 U	4000 U	11000 U	360 U
Nitrobenzene	330	380 U	350 U	4000 U	11000 U	360 U
Isophorone	330	380 U	350 U	4000 U	11000 U	360 U
2-Nitrophenol	330	380 U	350 U	4000 U	11000 U	360 U
2,4-Dimethylphenol	330	380 U	350 U	4000 U	11000 U	360 U
bis(2-Chloroethoxy)methane	330	380 U	350 U	4000 U	11000 U	360 U
2,4-Dichlorophenol	330	380 U	350 U	4000 U	11000 U	360 U
Naphthalene	330	380 U	350 U	4000 U	11000 U	360 U
4-Chloroaniline	330	380 U	350 U	4000 U	11000 U	360 U
Hexachlorobutadiene	330	380 U	350 U	4000 U	11000 U	360 U
Caprolactam	330	380 U	350 U	4000 U	11000 U	360 U
4-Chloro-3-methylphenol	330	380 U	350 U	4000 U	11000 U	360 U
2-Methylnaphthalene	330	380 U	350 U	4000 U	11000 U	360 U
Hexachlorocyclopentadiene	330	380 U	350 U	4000 U	11000 U	360 U
2,4,6-Trichlorophenol	330	380 U	350 U	4000 U	11000 U	360 U
2,4,5-Trichlorophenol	830	950 U	890 U	10000 U	28000 U	910 U
1,1'-Biphenyl	330	380 U	350 U	4000 U	11000 U	360 U
2-Chloronaphthalene	330	380 U	350 U	4000 U	11000 U	360 U
2-Nitroaniline	830	950 U	890 U	10000 U	28000 U	910 U
Dimethylphthalate	330	380 U	350 U	4000 U	11000 U	360 U
2,6-Dinitrotoluene	330	380 U	350 U	4000 U	11000 U	360 U
Acenaphthylene	330	380 U	350 U	4000 U	11000 U	360 U
3-Nitroaniline	830	950 U	890 U	10000 U	28000 U	910 U
Acenaphthene	330	380 U	350 U	4000 U	11000 U	360 U
2,4-Dinitrophenol	830	950 U	890 U	10000 U	28000 U	910 U
4-Nitrophenol	830	950 U	890 U	10000 U	28000 U	910 U
Dibenzofuran	330	380 U	350 U	4000 U	11000 U	360 U
2,4-Dinitrotoluene	330	380 U	350 U	4000 U	11000 U	360 U
Diethylphthalate	330	380 U	350 U	4000 U	11000 U	360 U
Fluorene	330	380 U	350 U	4000 U	11000 U	360 U
4-Chlorophenyl-phenylether	330	380 U	350 U	4000 U	11000 U	360 U
4-Nitroaniline	830	950 U	890 U	10000 U	28000 U	910 U
4,6-Dinitro-2-methylphenol	830	950 U	890 U	10000 U	28000 U	910 U
N-Nitrosodiphenylamine (1)	330	380 U	350 U	4000 U	11000 U	360 U
4-Bromophenyl-phenylether	330	380 U	350 U	4000 U	11000 U	360 U
Hexachlorobenzene	330	380 U	350 U	4000 U	11000 U	360 U
Atrazine	330	380 U	350 U	4000 U	11000 U	360 U
Pentachlorophenol	830	950 U	890 U	10000 U	28000 U	910 U
Phenanthrene	330	380 U	350 U	1100 J	11000 U	360 U
Anthracene	330	380 U	350 U	4000 U	11000 U	360 U
Carbazole	330	380 U	350 U	4000 U	11000 U	360 U
Di-n-butylphthalate	330	380 U	350 U	4000 U	11000 U	360 U
Fluoranthene	330	380 U	350 U	2000 J	11000 U	360 U
Pyrene	330	380 U	350 U	1900 J	11000 U	360 U
Butylbenzylphthalate	330	380 U	350 U	4000 U	11000 U	360 U
3,3'-Dichlorobenzidine	330	380 U	350 U	4000 U	11000 U	360 U
Benzo(a)anthracene	330	380 U	350 U	1600 J	11000 U	360 U
Chrysene	330	380 U	350 U	1600 J	11000 U	360 U
bis(2-Ethylhexyl)phthalate	330	1500 U	350 U	4000 U	90000 U	360 U
Di-n-octylphthalate	330	380 U	350 U	4000 U	31000	360 U
Benzo(b)fluoranthene	330	380 U	350 U	1600 J	11000 U	360 U
Benzo(k)fluoranthene	330	380 U	350 U	1700 J	11000 U	360 U
Benzo(a)pyrene	330	380 U	350 U	1900 J	11000 U	360 U
Indeno(1,2,3-cd)pyrene	330	380 U	350 U	1200 J	11000 U	360 U
Dibenzo(a,h)anthracene	330	380 U	350 U	410 J	11000 U	360 U
Benzo(g,h,i)perylene	330	380 U	350 U	1300 J	11000 U	360 U
DILUTION FACTOR:		1.0	1.0	10.0	30.0	1.0
DATE SAMPLED:		06/17/02	06/19/02	06/18/02	06/18/02	06/20/02
DATE EXTRACTED:		06/24/02	06/24/02	06/24/02	06/24/02	06/24/02
DATE ANALYZED:		06/28/02	06/28/02	07/01/02	07/01/02	06/28/02
% MOISTURE:		14	7	18	12	9

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 30530 SDG: A0JC2
LABORATORY: CEIMIC CORPORATION

TABLE 1
SEMIVOLATILE SOIL ANALYSES - LOW LEVEL
µg/kg

SAMPLE NUMBER:		A0JC2	A0JC3	A0JC4	A0JC6	A0JC8	A0JC9
SAMPLE LOCATION:		SS-02	SS-03	SS-04	SS-06	SS-11	SS-17
LABORATORY NUMBER:		020612-01	020612-02	020612-03	020612-05	020612-06	020612-07
COMPOUND	CRQL						
Benzaldehyde	330	13000 UJ	3600 UJ	360 UJ	350 UJ	4200 UJ	12000 UJ
Phenol	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
bis(2-Chloroethyl)Ether	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
2-Chlorophenol	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
2-Methylphenol	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
2,2'-oxybis(1-Chloropropane)	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
Acetophenone	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
4-Methylphenol	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
N-Nitroso-di-n-propylamine	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
Hexachloroethane	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
Nitrobenzene	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
Isophorone	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
2-Nitrophenol	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
2,4-Dimethylphenol	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
bis(2-Chloroethoxy)methane	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
2,4-Dichlorophenol	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
Naphthalene	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
4-Chloroaniline	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
Hexachlorobutadiene	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
Caprolactam	330	13000 UJ	3600 U	360 U	350 UJ	4200 UJ	12000 U
4-Chloro-3-methylphenol	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
2-Methylnaphthalene	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
Hexachlorocyclopentadiene	330	13000 U	3600 U	360 U	350 U	4200 U	12000 UJ
2,4,6-Trichlorophenol	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
2,4,5-Trichlorophenol	830	33000 U	9100 U	900 U	880 U	11000 U	30000 U
1,1'-Biphenyl	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
2-Chloronaphthalene	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
2-Nitroaniline	830	33000 UJ	9100 U	900 U	880 UJ	11000 UJ	30000 U
Dimethylphthalate	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
2,6-Dinitrotoluene	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
Acenaphthylene	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
3-Nitroaniline	830	33000 U	9100 U	900 U	880 U	11000 U	30000 U
Acenaphthene	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
2,4-Dinitrophenol	830	33000 U	9100 U	900 U	880 U	11000 U	30000 U
4-Nitrophenol	830	33000 UJ	9100 U	900 U	880 UJ	11000 UJ	30000 U
Dibenzofuran	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
2,4-Dinitrotoluene	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
Diethylphthalate	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
Fluorene	330	13000 U	3600 U	360 U	350 U	460 J	12000 U
4-Chlorophenyl-phenylether	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
4-Nitroaniline	830	33000 U	9100 U	900 U	880 U	11000 U	30000 U
4,6-Dinitro-2-methylphenol	830	33000 U	9100 U	900 U	880 U	11000 U	30000 U
N-Nitrosodiphenylamine (1)	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
4-Bromophenyl-phenylether	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
Hexachlorobenzene	330	13000 U	500 J	360 U	350 U	4200 U	12000 U
Atrazine	330	13000 U	3600 UJ	360 UJ	350 U	4200 U	12000 UJ
Pentachlorophenol	830	33000 U	9100 U	900 U	880 U	11000 U	30000 U
Phenanthrene	330	4800 J	2900 J	360 U	38 J	8800	6100 J
Anthracene	330	13000 U	470 J	360 U	350 U	2200 J	1400 J
Carbazole	330	13000 U	380 J	360 U	350 U	840 J	12000 U
Di-n-butylphthalate	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
Fluoranthene	330	9800 J	4100	360 U	64 J	15000	8500 J
Pyrene	330	8400 J	3000 J	360 U	65 J	12000	4700 J
Butylbenzylphthalate	330	13000 UJ	3600 U	360 U	350 UJ	4200 UJ	12000 U
3,3'-Dichlorobenzidine	330	13000 U	3600 U	360 U	350 U	4200 U	12000 U
Benzo(a)anthracene	330	5500 J	1700 J	360 U	350 U	8900	4700 J
Chrysene	330	5300 J	1800 J	360 U	42 J	8600	5300 J
bis(2-Ethylhexyl)phthalate	330	13000 UJ	3600 U	360 U	350 UJ	4700 UJ	12000 U
Di-n-octylphthalate	330	13000 UJ	3600 U	360 U	350 UJ	4200 UJ	12000 U
Benzo(b)fluoranthene	330	3900 J	1300 J	360 U	38 J	7200	6200 J
Benzo(k)fluoranthene	330	5100 J	1200 J	360 U	350 U	7800	4900 J
Benzo(a)pyrene	330	5000 J	1400 J	360 U	350 U	8500	5700 J
Indeno(1,2,3-cd)pyrene	330	3300 J	810 J	360 U	350 U	5500	2600 J
Dibenzo(a,h)anthracene	330	13000 U	3600 U	360 U	350 U	2400 J	12000 U
Benzo(g,h,i)perylene	330	3400 J	790 J	360 U	350 U	5600	2700 J
DILUTION FACTOR:		30.0	10.0	1.0	1.0	10.0	30.0
DATE SAMPLED:		06/18/02	06/18/02	06/18/02	06/17/02	06/18/02	06/18/02
DATE EXTRACTED:		06/23/02	06/23/02	06/23/02	06/23/02	06/23/02	06/23/02
DATE ANALYZED:		06/28/02	06/27/02	06/27/02	06/28/02	06/28/02	06/26/02
% MOISTURE:		26	9	8	7	22	19

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 30630 SDG: A0JC2
LABORATORY: CEIMIC CORPORATION

TABLE 1
SEMIVOLATILE SOIL ANALYSES - LOW LEVEL
µg/kg

SAMPLE NUMBER:		A0JD0	A0JD1	A0JD2	A0JE1	A0JE3	A0JE5
SAMPLE LOCATION:		SS-18	SS-19	SS-20	SO-04	SO-06	SO-11
LABORATORY NUMBER:		020612-08	020612-09	020612-10	020612-18	020612-19	020612-20
COMPOUND	CRQL						
Benzaldehyde	330	13000 UJ	750 UJ	1900 UJ	350 UJ	350 UJ	4200 UJ
Phenol	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
bis(2-Chloroethyl)Ether	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
2-Chlorophenol	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
2-Methylphenol	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
2,2'-oxybis(1-Chloropropane)	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
Acetophenone	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
4-Methylphenol	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
N-Nitroso-di-n-propylamine	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
Hexachloroethane	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
Nitrobenzene	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
Isophorone	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
2-Nitrophenol	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
2,4-Dimethylphenol	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
bis(2-Chloroethoxy)methane	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
2,4-Dichlorophenol	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
Naphthalene	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
4-Chloroaniline	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
Hexachlorobutadiene	330	13000 U	750 U	1900 UJ	350 U	350 U	4200 UJ
Caprolactam	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
4-Chloro-3-methylphenol	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
2-Methylnaphthalene	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
Hexachlorocyclopentadiene	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
2,4,6-Trichlorophenol	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
2,4,5-Trichlorophenol	830	32000 U	1900 U	4700 U	880 U	870 U	10000 U
1,1'-Biphenyl	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
2-Chloronaphthalene	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
2-Nitroaniline	830	32000 U	1900 U	4700 UJ	880 U	870 U	10000 UJ
Dimethylphthalate	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
2,6-Dinitrotoluene	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
Acenaphthylene	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
3-Nitroaniline	830	32000 U	1900 U	4700 U	880 U	870 U	10000 U
Acenaphthene	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
2,4-Dinitrophenol	830	32000 U	1900 U	4700 U	880 U	870 U	10000 U
4-Nitrophenol	830	32000 U	1900 U	4700 UJ	880 U	870 U	10000 UJ
Dibenzofuran	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
2,4-Dinitrotoluene	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
Diethylphthalate	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
Fluorene	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
4-Chlorophenyl-phenylether	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
4-Nitroaniline	830	32000 U	1900 U	4700 U	880 U	870 U	10000 U
4,6-Dinitro-2-methylphenol	830	32000 U	1900 U	4700 U	880 U	870 U	10000 U
N-Nitrosodiphenylamine (1)	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
4-Bromophenyl-phenylether	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
Hexachlorobenzene	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
Atrazine	330	13000 UJ	750 UJ	1900 U	350 UJ	350 UJ	4200 U
Pentachlorophenol	830	32000 U	1900 U	4700 U	880 U	870 U	10000 U
Phenanthrene	330	3900 J	750 U	1200 J	350 U	350 U	8100
Anthracene	330	13000 U	750 U	230 J	350 U	350 U	1600 J
Carbazole	330	13000 U	750 U	1900 U	350 U	350 U	720 J
Di-n-butylphthalate	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
Fluoranthene	330	6300 J	240 J	2100	350 U	350 U	11000
Pyrene	330	4800 J	170 J	1600 J	350 U	350 U	8800
Butylbenzylphthalate	330	13000 U	750 U	1900 UJ	350 U	350 U	4200 UJ
3,3'-Dichlorobenzidine	330	13000 U	750 U	1900 U	350 U	350 U	4200 U
Benzo(a)anthracene	330	3500 J	130 J	920 J	350 U	350 U	7200
Chrysene	330	3800 J	160 J	1000 J	350 U	350 U	7200
bis(2-Ethylhexyl)phthalate	330	13000 U	750 U	1900 UJ	350 U	*5700 J	4200 UJ
Di-n-octylphthalate	330	13000 U	750 U	1900 UJ	350 U	350 U	4200 UJ
Benzo(b)fluoranthene	330	3300 J	150 J	800 J	350 U	350 U	5400
Benzo(k)fluoranthene	330	2800 J	110 J	690 J	350 U	350 U	7800
Benzo(a)pyrene	330	3600 J	120 J	740 J	350 U	350 U	7700
Indeno(1,2,3-cd)pyrene	330	2200 J	750 U	430 J	350 U	350 U	5500
Dibenzo(a,h)anthracene	330	13000 U	750 U	200 J	350 U	350 U	2300 J
Benzo(g,h,i)perylene	330	2200 J	750 U	410 J	350 U	350 U	5400
DILUTION FACTOR:		30.0	2.0	5.0	1.0	1.0/5.0*	10.0
DATE SAMPLED:		06/18/02	06/18/02	06/18/02	06/18/02	06/18/02	06/18/02
DATE EXTRACTED:		06/23/02	06/23/02	06/25/02	06/23/02	06/23/02	06/23/02
DATE ANALYZED:		06/27/02	06/27/02	06/28/02	06/27/02	06/27/02	06/28/02
% MOISTURE:		24	12	13	6	5	22

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

SITE: BOULTER FARM AREA (LOT NOS. 363 and 356)
CASE: 30630 SDG: A0JC2
LABORATORY: CEIMIC CORPORATION

TABLE 1
SEMIVOLATILE SOIL ANALYSES - LOW LEVEL
µg/kg

SAMPLE NUMBER:	A0JE6	
SAMPLE LOCATION:	SS-26	
LABORATORY NUMBER:	020612-11	
COMPOUND	CRQL	
Benzaldehyde	330	1900 UJ
Phenol	330	1900 U
bis(2-Chloroethyl)Ether	330	1900 U
2-Chlorophenol	330	1900 U
2-Methylphenol	330	1900 U
2,2'-oxybis(1-Chloropropane)	330	1900 U
Acetophenone	330	1900 U
4-Methylphenol	330	1900 U
N-Nitroso-di-n-propylamine	330	1900 U
Hexachloroethane	330	1900 U
Nitrobenzene	330	1900 U
Isophorone	330	1900 U
2-Nitrophenol	330	1900 U
2,4-Dimethylphenol	330	1900 U
bis(2-Chloroethoxy)methane	330	1900 U
2,4-Dichlorophenol	330	1900 U
Naphthalene	330	1900 U
4-Chloroaniline	330	1900 U
Hexachlorobutadiene	330	1900 U
Caprolactam	330	1900 UJ
4-Chloro-3-methylphenol	330	1900 U
2-Methylnaphthalene	330	1900 U
Hexachlorocyclopentadiene	330	1900 U
2,4,6-Trichlorophenol	330	1900 U
2,4,5-Trichlorophenol	830	4800 U
1,1'-Biphenyl	330	1900 U
2-Chloronaphthalene	330	1900 U
2-Nitroaniline	830	4800 UJ
Dimethylphthalate	330	1900 U
2,6-Dinitrotoluene	330	1900 U
Acenaphthylene	330	1900 U
3-Nitroaniline	830	4800 U
Acenaphthene	330	1900 U
2,4-Dinitrophenol	830	4800 U
4-Nitrophenol	830	4800 UJ
Dibenzofuran	330	1900 U
2,4-Dinitrotoluene	330	1900 U
Diethylphthalate	330	1900 U
Fluorene	330	1900 U
4-Chlorophenyl-phenylether	330	1900 U
4-Nitroaniline	830	4800 U
4,6-Dinitro-2-methylphenol	830	4800 U
N-Nitrosodiphenylamine (1)	330	1900 U
4-Bromophenyl-phenylether	330	1900 U
Hexachlorobenzene	330	1900 U
Atrazine	330	1900 U
Pentachlorophenol	830	4800 U
Phenanthrene	330	230 J
Anthracene	330	1900 U
Carbazole	330	1900 U
Di-n-butylphthalate	330	1900 U
Fluoranthene	330	720 J
Pyrene	330	760 J
Butylbenzylphthalate	330	1900 UJ
3,3'-Dichlorobenzidine	330	1900 U
Benzo(a)anthracene	330	480 J
Chrysene	330	480 J
bis(2-Ethylhexyl)phthalate	330	1900 UJ
Di-n-octylphthalate	330	1900 UJ
Benzo(b)fluoranthene	330	480 J
Benzo(k)fluoranthene	330	520 J
Benzo(a)pyrene	330	560 J
Indeno(1,2,3-cd)pyrene	330	410 J
Dibenzo(a,h)anthracene	330	1900 U
Benzo(g,h,i)perylene	330	400 J
DILUTION FACTOR:	5.0	
DATE SAMPLED:	06/18/02	
DATE EXTRACTED:	06/23/02	
DATE ANALYZED:	06/28/02	
% MOISTURE:	15	

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 30630 SDG: A0JC2
LABORATORY: CEIMIC CORPORATION

TABLE 2
SEMIVOLATILE SOIL ANALYSES - MEDIUM LEVEL
µg/kg

SAMPLE NUMBER:	A0JC5	
SAMPLE LOCATION:	SS-05	
LABORATORY NUMBER:	020612-04	
COMPOUND	CRQL	
Benzaldehyde	10000	23000 UJ
Phenol	10000	23000 U
bis(2-Chloroethyl)Ether	10000	23000 U
2-Chlorophenol	10000	23000 U
2-Methylphenol	10000	23000 U
2,2'-oxybis(1-Chloropropane)	10000	23000 U
Acetophenone	10000	23000 U
4-Methylphenol	10000	23000 U
N-Nitroso-di-n-propylamine	10000	23000 U
Hexachloroethane	10000	23000 U
Nitrobenzene	10000	23000 U
Isophorone	10000	23000 U
2-Nitrophenol	10000	23000 U
2,4-Dimethylphenol	10000	23000 U
bis(2-Chloroethoxy)methane	10000	23000 U
2,4-Dichlorophenol	10000	23000 U
Naphthalene	10000	23000 U
4-Chloroaniline	10000	23000 U
Hexachlorobutadiene	10000	23000 U
Caprolactam	10000	23000 U
4-Chloro-3-methylphenol	10000	23000 U
2-Methylnaphthalene	10000	23000 U
Hexachlorocyclopentadiene	10000	23000 U
2,4,6-Trichlorophenol	10000	23000 U
2,4,5-Trichlorophenol	25000	57000 U
1,1'-Biphenyl	10000	23000 U
2-Chloronaphthalene	10000	23000 U
2-Nitroaniline	25000	57000 U
Dimethylphthalate	10000	23000 U
2,6-Dinitrotoluene	10000	23000 U
Acenaphthylene	10000	23000 U
3-Nitroaniline	25000	57000 U
Acenaphthene	10000	23000 U
2,4-Dinitrophenol	25000	57000 U
4-Nitrophenol	25000	57000 U
Dibenzofuran	10000	23000 U
2,4-Dinitrotoluene	10000	23000 U
Diethylphthalate	10000	23000 U
Fluorene	10000	23000 U
4-Chlorophenyl-phenylether	10000	23000 U
4-Nitroaniline	25000	57000 U
4,6-Dinitro-2-methylphenol	25000	57000 U
N-Nitrosodiphenylamine (1)	10000	23000 U
4-Bromophenyl-phenylether	10000	23000 U
Hexachlorobenzene	10000	23000 U
Atrazine	10000	23000 U
Pentachlorophenol	25000	57000 U
Phenanthrene	10000	23000 U
Anthracene	10000	23000 U
Carbazole	10000	23000 U
Di-n-butylphthalate	10000	23000 U
Fluoranthene	10000	23000 U
Pyrene	10000	23000 U
Butylbenzylphthalate	10000	23000 U
3,3'-Dichlorobenzidine	10000	23000 U
Benzo(a)anthracene	10000	23000 U
Chrysene	10000	23000 U
bis(2-Ethylhexyl)phthalate	10000	5000 J
Di-n-octylphthalate	10000	23000 U
Benzo(b)fluoranthene	10000	23000 U
Benzo(k)fluoranthene	10000	23000 U
Benzo(a)pyrene	10000	23000 U
Indeno(1,2,3-cd)pyrene	10000	23000 U
Dibenzo(a,h)anthracene	10000	23000 U
Benzo(g,h,i)perylene	10000	23000 U
DILUTION FACTOR:	2.0	
DATE SAMPLED:	06/17/02	
DATE EXTRACTED:	06/26/02	
DATE ANALYZED:	07/02/02	
% MOISTURE:	13	

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 0493F SDG: D06351
LABORATORY: SOUTHWEST LABORATORY OF OKLAHOMA, INC.

TABLE 3
SEMIVOLATILE SOIL ANALYSES
µg/kg

SAMPLE NUMBER:		D06358	D06359	D06360	D06388	D06389	D06390
SAMPLE LOCATION:		SS-08	SS-09	SS-10	SO-08	SO-09	SO-10
LABORATORY NUMBER:		50115.03	50115.04	50115.05	50115.09	50115.10	50115.11
COMPOUND	CRQL						
Benzaldehyde	330	31 J	350 U	160 J	19 J	340 U	420
Phenol	330	370 U	350 U	350 U	360 U	340 U	350 U
bis(2-Chloroethyl)Ether	330	370 U	350 U	350 U	360 U	340 U	350 U
2-Chlorophenol	330	370 U	350 U	350 U	360 U	340 U	350 U
2-Methylphenol	330	370 U	350 U	350 U	360 U	340 U	350 U
2,2'-oxybis(1-Chloropropane)	330	370 UJ	350 UJ	350 UJ	360 UJ	340 UJ	350 UJ
Acetophenone	330	370 U	350 U	350 U	360 U	340 U	1600
4-Methylphenol	330	370 U	350 U	350 U	360 U	340 U	350 U
N-Nitroso-di-n-propylamine	330	370 U	350 U	350 U	360 U	340 U	350 U
Hexachloroethane	330	370 U	350 U	350 U	360 U	340 U	350 U
Nitrobenzene	330	370 U	350 U	350 U	360 U	340 U	350 U
Isophorone	330	370 U	350 U	350 U	360 U	340 U	350 U
2-Nitrophenol	330	370 U	350 U	350 U	360 U	340 U	350 U
2,4-Dimethylphenol	330	370 U	350 U	350 U	360 U	340 U	350 U
bis(2-Chloroethoxy)methane	330	370 U	350 U	350 U	360 U	340 U	350 U
2,4-Dichlorophenol	330	370 U	350 U	350 U	360 U	340 U	350 U
Naphthalene	330	370 U	350 U	350 U	360 U	340 U	1200
4-Chloroaniline	330	370 U	350 U	350 U	360 U	340 U	350 U
Hexachlorobutadiene	330	370 U	350 U	350 U	360 U	340 U	350 U
Caprolactam	330	370 U	350 U	350 U	360 U	340 U	350 U
4-Chloro-3-methylphenol	330	370 U	350 U	350 U	360 U	340 U	350 U
2-Methylnaphthalene	330	370 U	350 U	350 U	360 U	340 U	*3800
Hexachlorocyclopentadiene	330	370 U	350 U	350 U	360 U	340 U	350 U
2,4,6-Trichlorophenol	330	370 U	350 U	350 U	360 U	340 U	350 U
2,4,5-Trichlorophenol	830	930 U	870 U	890 U	910 U	870 U	870 U
1,1'-Biphenyl	330	370 U	350 U	350 U	360 U	340 U	680
2-Chloronaphthalene	330	370 U	350 U	350 U	360 U	340 U	350 U
2-Nitroaniline	830	930 U	870 U	890 U	910 U	870 U	870 U
Dimethylphthalate	330	370 U	350 U	350 U	360 U	340 U	350 U
2,6-Dinitrotoluene	330	370 U	350 U	350 U	360 U	340 U	350 U
Acenaphthylene	330	370 U	350 U	350 U	360 U	340 U	90 J
3-Nitroaniline	830	930 U	870 U	890 U	910 U	870 U	870 U
Acenaphthene	330	370 U	350 U	350 U	360 U	340 U	350 U
2,4-Dinitrophenol	830	930 U	870 U	890 U	910 U	870 U	870 U
4-Nitrophenol	830	930 U	870 U	890 U	910 U	870 U	870 U
Dibenzofuran	330	370 U	350 U	350 U	360 U	340 U	350 U
2,4-Dinitrotoluene	330	370 U	350 U	350 U	360 U	340 U	350 U
Diethylphthalate	330	370 U	350 U	350 U	360 U	340 U	350 U
Fluorene	330	370 U	350 U	350 U	25 J	340 U	380
4-Chlorophenyl-phenylether	330	370 U	350 U	350 U	360 U	340 U	350 U
4-Nitroaniline	830	930 U	870 U	890 U	910 U	870 U	870 U
4,6-Dinitro-2-methylphenol	830	930 U	870 U	890 U	910 U	870 U	870 U
N-Nitrosodiphenylamine (1)	330	370 U	350 U	350 U	360 U	340 U	350 U
4-Bromophenyl-phenylether	330	370 U	350 U	350 U	360 U	340 U	350 U
Hexachlorobenzene	330	370 U	350 U	350 U	360 U	340 U	350 U
Atrazine	330	370 U	350 U	350 U	360 U	340 U	350 U
Pentachlorophenol	830	930 U	870 U	890 U	910 U	870 U	870 U
Phenanthrene	330	370 U	46 J	350 U	360 U	340 U	790
Anthracene	330	370 U	350 U	350 U	360 U	340 U	350 U
Carbazole	330	370 U	350 U	350 U	360 U	340 U	350 U
Di-n-butylphthalate	330	370 U	350 U	350 U	20 J EB	25 J EB	350 U
Fluoranthene	330	19 J	77 J	350 U	19 J	340 U	350 U
Pyrene	330	370 U	59 J	350 U	38 J	340 U	320 J
Butylbenzylphthalate	330	370 U	20 J	350 U	360 U	340 U	650
3,3'-Dichlorobenzidine	330	370 U	350 U	350 U	360 U	340 U	350 U
Benzo(a)anthracene	330	370 UJ	35 J	350 UJ	360 UJ	340 UJ	59 J
Chrysene	330	370 UJ	40 J	350 UJ	360 UJ	340 UJ	120 J
bis(2-Ethylhexyl)phthalate	330	370 U	59 J	350 U	280 J	51 J	1100
Di-n-octylphthalate	330	370 U	350 U	350 U	360 U	340 U	350 U
Benzo(b)fluoranthene	330	370 U	41 J	350 U	360 U	340 U	49 J
Benzo(k)fluoranthene	330	370 UJ	31 J	350 UJ	360 UJ	340 UJ	350 UJ
Benzo(a)pyrene	330	370 U	33 J	350 U	360 U	340 U	350 U
Indeno(1,2,3-cd)pyrene	330	370 U	28 J	350 U	360 U	340 U	350 U
Dibenzo(a,h)anthracene	330	370 U	350 U	350 U	360 U	340 U	350 U
Benzo(g,h,i)perylene	330	370 U	26 J	350 U	360 U	340 U	100 J
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0/*2.0
DATE SAMPLED:		06/19/02	06/20/02	06/19/02	06/19/02	06/20/02	06/20/02
DATE EXTRACTED:		06/24/02	06/24/02	06/24/02	06/24/02	06/24/02	06/24/02
DATE ANALYZED:		06/28/02	06/28/02	06/29/02	06/28/02	06/28/02	06/29/02
% MOISTURE:		11	6	9	9	7	7

* - Result reported from diluted analysis.

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 0493F SDG: D06291
LABORATORY: SOUTHWEST LABORATORY OF OKLAHOMA, INC.

TABLE 5
SEMIVOLATILE SOIL ANALYSES - MEDIUM LEVEL
µg/kg

SAMPLE NUMBER:		D06350	D06363	D06364	D06365
SAMPLE LOCATION:		SC-01	SS-13	SS-14	SS-15
LABORATORY NUMBER:		50064.16	50064.24	50064.25	50064.26
COMPOUND	CRQL				
Benzaldehyde	10000	1300 J	10000 U	10000 U	11000 U
Phenol	10000	10000 U	10000 U	10000 U	11000 U
bis(2-Chloroethyl)Ether	10000	10000 U	10000 U	10000 U	11000 U
2-Chlorophenol	10000	10000 U	10000 U	10000 U	11000 U
2-Methylphenol	10000	10000 U	10000 U	10000 U	11000 U
2,2'-oxybis(1-Chloropropane)	10000	10000 U	10000 U	10000 U	11000 U
Acetophenone	10000	10000 U	10000 U	10000 U	11000 U
4-Methylphenol	10000	10000 U	10000 U	10000 U	11000 U
N-Nitroso-di-n-propylamine	10000	10000 U	10000 U	10000 U	11000 U
Hexachloroethane	10000	10000 U	10000 U	10000 U	11000 U
Nitrobenzene	10000	10000 U	10000 U	10000 U	11000 U
Isophorone	10000	10000 U	10000 U	10000 U	11000 U
2-Nitrophenol	10000	10000 U	10000 U	10000 U	11000 U
2,4-Dimethylphenol	10000	10000 U	10000 U	10000 U	11000 U
bis(2-Chloroethoxy)methane	10000	10000 U	10000 U	10000 U	11000 U
2,4-Dichlorophenol	10000	10000 U	10000 U	10000 U	11000 U
Naphthalene	10000	10000 U	9900 J	12000	7200 J
4-Chloroaniline	10000	10000 U	10000 U	10000 U	11000 U
Hexachlorobutadiene	10000	10000 U	10000 U	10000 U	11000 U
Caprolactam	10000	10000 U	10000 U	10000 U	11000 U
4-Chloro-3-methylphenol	10000	10000 U	10000 U	10000 U	11000 U
2-Methylnaphthalene	10000	10000 U	13000	16000	9300 J
Hexachlorocyclopentadiene	10000	10000 U	10000 U	10000 U	11000 U
2,4,6-Trichlorophenol	10000	10000 U	10000 U	10000 U	11000 U
2,4,5-Trichlorophenol	25000	25000 U	25000 U	25000 U	28000 U
1,1'-Biphenyl	10000	10000 U	3100 J	4200 J	2700 J
2-Chloronaphthalene	10000	10000 U	10000 U	10000 U	11000 U
2-Nitroaniline	25000	25000 U	25000 U	25000 U	28000 U
Dimethylphthalate	10000	10000 U	10000 U	10000 U	11000 U
2,6-Dinitrotoluene	10000	10000 U	10000 U	10000 U	11000 U
Acenaphthylene	10000	10000 U	10000 U	10000 U	11000 U
3-Nitroaniline	25000	25000 U	25000 U	25000 U	28000 U
Acenaphthene	10000	10000 U	10000 U	10000 U	11000 U
2,4-Dinitrophenol	25000	25000 U	25000 U	25000 U	28000 U
4-Nitrophenol	25000	25000 U	25000 U	25000 U	28000 U
Dibenzofuran	10000	10000 U	10000 U	10000 U	11000 U
2,4-Dinitrotoluene	10000	10000 U	10000 U	10000 U	11000 U
Diethylphthalate	10000	10000 U	10000 U	10000 U	11000 U
Fluorene	10000	10000 U	2000 J	2400 J	2500 J
4-Chlorophenyl-phenylether	10000	10000 U	10000 U	10000 U	11000 U
4-Nitroaniline	25000	25000 U	25000 U	25000 U	28000 U
4,6-Dinitro-2-methylphenol	25000	25000 U	25000 U	25000 U	28000 U
N-Nitrosodiphenylamine (1)	10000	10000 UJ	10000 UJ	10000 UJ	11000 UJ
4-Bromophenyl-phenylether	10000	10000 U	10000 U	10000 U	11000 U
Hexachlorobenzene	10000	10000 U	10000 U	10000 U	11000 U
Atrazine	10000	10000 U	10000 U	10000 U	11000 U
Pentachlorophenol	25000	25000 U	25000 U	25000 U	28000 U
Phenanthrene	10000	10000 U	3700 J	5600 J	4800 J
Anthracene	10000	10000 U	10000 U	10000 U	11000 U
Carbazole	10000	10000 U	10000 U	10000 U	11000 U
Di-n-butylphthalate	10000	10000 U	10000 U	10000 U	11000 U
Fluoranthene	10000	10000 U	740 J	970 J	1200 J
Pyrene	10000	1100 J	2200 J	3000 J	3300 J
Butylbenzylphthalate	10000	10000 UJ	10000 UJ	10000 UJ	37000 J
3,3'-Dichlorobenzidine	10000	10000 UJ	10000 U	10000 U	11000 U
Benzo(a)anthracene	10000	10000 UJ	490 J	710 J	610 J
Chrysene	10000	2100 J	860 J	1000 J	1400 J
bis(2-Ethylhexyl)phthalate	10000	15000 J	10000 UJ	5900 J	*140000 J
Di-n-octylphthalate	10000	10000 UJ	10000 UJ	10000 UJ	11000 UJ
Benzo(b)fluoranthene	10000	810 J	10000 U	10000 U	11000 U
Benzo(k)fluoranthene	10000	10000 UJ	10000 U	10000 U	11000 U
Benzo(a)pyrene	10000	10000 UJ	10000 U	10000 U	11000 U
Indeno(1,2,3-cd)pyrene	10000	10000 UJ	10000 U	10000 U	11000 U
Dibenzo(a,h)anthracene	10000	10000 UJ	10000 U	10000 U	11000 U
Benzo(g,h,i)perylene	10000	10000 UJ	840 J	10000 U	11000 U
DILUTION FACTOR:		1.0	1.0	1.0	1.0/2.0*
DATE SAMPLED:		06/17/02	06/17/02	06/17/02	06/17/02
DATE EXTRACTED:		06/21/02	06/21/02	06/21/02	06/21/02
DATE ANALYZED:		07/01/02	07/01/02	07/01/02	07/01/02
% MOISTURE:		9	27	26	26

* - Result reported from diluted analysis.

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 0493F SDG: D06291
LABORATORY: SOUTHWEST LABORATORY OF OKLAHOMA, INC.

TABLE 4
SEMIVOLATILE SOIL ANALYSES - LOW LEVEL
µg/kg

SAMPLE NUMBER:		D06291	D06292	D06293	D06294	D06295	D06296
SAMPLE LOCATION:		SD-01	SD-02	SD-03	SD-04	SD-05	SD-06
LABORATORY NUMBER:		50064.01	50064.02	50064.03	50064.04	50064.05	50064.06
COMPOUND	CRQL						
Benzaldehyde	330	120 J	130 J	57 J	190 J	94 J	88 J
Phenol	330	930 U	440 U	370 U	500 U	500 U	430 U
bis(2-Chloroethyl)Ether	330	930 U	440 U	370 U	500 U	500 U	430 U
2-Chlorophenol	330	930 U	440 U	370 U	500 U	500 U	430 U
2-Methylphenol	330	930 U	440 U	370 U	500 U	500 U	430 U
2,2'-oxybis(1-Chloropropane)	330	930 U	440 U	370 U	500 U	500 U	430 U
Acetophenone	330	930 U	440 U	370 U	500 U	500 U	430 U
4-Methylphenol	330	930 U	440 U	370 U	130 J	74 J	430 U
N-Nitroso-di-n-propylamine	330	930 U	440 U	370 U	500 U	38 J	430 U
Hexachloroethane	330	930 U	440 U	370 U	500 U	500 U	430 U
Nitrobenzene	330	930 U	440 U	370 U	500 U	500 U	430 U
Isophorone	330	930 U	440 U	370 U	500 U	500 U	430 U
2-Nitrophenol	330	930 U	440 U	370 U	500 U	500 U	430 U
2,4-Dimethylphenol	330	930 U	440 U	370 U	500 U	500 U	430 U
bis(2-Chloroethoxy)methane	330	930 U	440 U	370 U	500 U	500 U	430 U
2,4-Dichlorophenol	330	930 U	440 U	370 U	500 U	500 U	430 U
Naphthalene	330	930 U	440 U	370 U	500 U	500 U	430 U
4-Chloroaniline	330	930 U	440 U	370 U	500 U	500 U	430 U
Hexachlorobutadiene	330	930 U	440 U	370 U	500 U	500 U	430 U
Caprolactam	330	930 U	440 U	370 UJ	500 U	500 UJ	430 UJ
4-Chloro-3-methylphenol	330	930 U	440 U	370 U	500 U	500 U	430 U
2-Methylnaphthalene	330	930 U	440 U	370 U	500 U	500 U	430 U
Hexachlorocyclopentadiene	330	930 U	440 U	370 UJ	500 U	500 UJ	430 UJ
2,4,6-Trichlorophenol	330	930 U	440 U	370 UJ	500 U	500 UJ	430 UJ
2,4,5-Trichlorophenol	830	2300 U	1100 U	930 U	1300 U	1300 U	1100 U
1,1'-Biphenyl	330	930 U	440 U	370 U	500 U	500 U	430 U
2-Chloronaphthalene	330	930 U	440 U	370 U	500 U	500 U	430 U
2-Nitroaniline	830	2300 U	1100 U	930 U	1300 U	1300 U	1100 U
Dimethylphthalate	330	930 U	440 U	370 U	500 U	500 U	430 U
2,6-Dinitrotoluene	330	930 U	440 U	370 U	500 U	500 U	430 U
Acenaphthylene	330	930 UJ	440 U	370 U	500 U	500 U	430 U
3-Nitroaniline	830	2300 U	1100 U	930 U	1300 U	1300 U	1100 U
Acenaphthene	330	930 U	440 U	370 U	500 U	500 U	430 U
2,4-Dinitrophenol	830	2300 U	1100 UJ	930 U	1300 UJ	1300 U	1100 U
4-Nitrophenol	830	2300 U	1100 U	930 U	1300 U	1300 U	1100 U
Dibenzofuran	330	930 U	440 U	370 U	500 U	500 U	430 U
2,4-Dinitrotoluene	330	930 U	440 U	370 U	500 U	500 U	430 U
Diethylphthalate	330	930 U	440 U	370 U	190 J	500 U	430 U
Fluorene	330	930 U	440 U	370 U	500 U	500 U	430 U
4-Chlorophenyl-phenylether	330	930 U	440 U	370 U	500 U	500 U	430 U
4-Nitroaniline	830	2300 U	1100 U	930 U	1300 U	1300 U	1100 U
4,6-Dinitro-2-methylphenol	830	2300 U	1100 U	930 U	1300 U	1300 U	1100 U
N-Nitrosodiphenylamine (1)	330	930 UJ	440 U	370 U	500 U	500 U	430 U
4-Bromophenyl-phenylether	330	930 U	440 U	370 U	500 U	500 U	430 U
Hexachlorobenzene	330	930 U	440 U	370 U	500 U	500 U	430 U
Atrazine	330	930 U	440 U	370 U	500 U	500 U	430 U
Pentachlorophenol	830	2300 U	1100 U	930 U	1300 U	1300 U	1100 U
Phenanthrene	330	550 J	32 J	370 U	36 J	35 J	430 U
Anthracene	330	120 J	440 U	370 U	500 U	500 U	430 U
Carbazole	330	71 J	440 U	370 U	500 U	500 U	430 U
Di-n-butylphthalate	330	930 U	33 J EB	41 J EB	37 J EB	26 J EB	430 U
Fluoranthene	330	740 J	50 J	20 J	58 J	63 J	430 U
Pyrene	330	710 J	51 J	20 J	56 J	59 J	430 U
Butylbenzylphthalate	330	930 UJ	440 U	370 UJ	500 U	500 UJ	430 UJ
3,3'-Dichlorobenzidine	330	930 U	440 U	370 UJ	500 U	500 UJ	430 UJ
Benzo(a)anthracene	330	420 J	24 J	370 U	26 J	27 J	430 U
Chrysene	330	460 J	40 J	370 U	40 J	37 J	430 U
bis(2-Ethylhexyl)phthalate	330	930 UJ	440 U	370 UJ	500 U	500 UJ	430 UJ
Di-n-octylphthalate	330	930 UJ	440 U	370 U	500 U	500 U	430 U
Benzo(b)fluoranthene	330	380 J	48 J	370 U	55 J	43 J	22 J
Benzo(k)fluoranthene	330	380 J	440 U	370 U	500 U	500 U	430 U
Benzo(a)pyrene	330	370 J	34 J	370 U	26 J	33 J	430 U
Indeno(1,2,3-cd)pyrene	330	280 J	25 J	370 U	28 J	28 J	430 U
Dibenzo(a,h)anthracene	330	140 J	440 U	370 U	500 U	500 U	430 U
Benzo(g,h,i)perylene	330	320 J	32 J	370 U	500 U	30 J	430 U
DILUTION FACTOR:		2.0	1.0	1.0	1.0	1.0	1.0
DATE SAMPLED:		06/17/02	06/17/02	06/17/02	06/17/02	06/17/02	06/17/02
DATE EXTRACTED:		06/20/02	06/20/02	06/20/02	06/20/02	06/20/02	06/20/02
DATE ANALYZED:		07/04/02	07/01/02	07/02/02	07/01/02	07/02/02	07/02/02
% MOISTURE:		31	26	12	35	35	24

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 0493F SDG: D06291
LABORATORY: SOUTHWEST LABORATORY OF OKLAHOMA, INC.

TABLE 4
SEMIVOLATILE SOIL ANALYSES - LOW LEVEL
µg/kg

SAMPLE NUMBER:		D06297	D06298	D06366	D06385
SAMPLE LOCATION:		SD-07	SD-08	SS-16	SO-05
LABORATORY NUMBER:		50064.09	50064.10	50064.27	50064.28
COMPOUND	CRQL				
Benzaldehyde	330	100 J	130 J	4100 U	730 U
Phenol	330	550 U	580 U	4100 U	730 U
bis(2-Chloroethyl)Ether	330	550 U	580 U	4100 U	730 U
2-Chlorophenol	330	550 U	580 U	4100 U	730 U
2-Methylphenol	330	550 U	580 U	4100 U	730 U
2,2'-oxybis(1-Chloropropane)	330	550 U	580 U	4100 U	730 U
Acetophenone	330	550 U	580 U	4100 U	730 U
4-Methylphenol	330	95 J	580 U	4100 U	730 U
N-Nitroso-di-n-propylamine	330	550 U	580 U	4100 U	730 U
Hexachloroethane	330	550 U	580 U	4100 U	730 U
Nitrobenzene	330	550 U	580 U	4100 U	730 U
Isophorone	330	550 U	580 U	4100 U	730 U
2-Nitrophenol	330	550 U	580 U	4100 U	730 U
2,4-Dimethylphenol	330	550 U	580 U	4100 U	730 U
bis(2-Chloroethoxy)methane	330	550 U	580 U	4100 U	730 U
2,4-Dichlorophenol	330	550 U	580 U	4100 U	730 U
Naphthalene	330	550 U	580 U	5500	240 J
4-Chloroaniline	330	550 U	580 U	4100 U	730 U
Hexachlorobutadiene	330	550 U	580 U	4100 U	730 U
Caprolactam	330	550 UJ	580 UJ	4100 UJ	730 U
4-Chloro-3-methylphenol	330	550 U	580 U	4100 U	730 U
2-Methylnaphthalene	330	550 U	580 U	12000	730 U
Hexachlorocyclopentadiene	330	550 UJ	580 UJ	4100 U	730 U
2,4,6-Trichlorophenol	330	550 UJ	580 UJ	4100 U	730 U
2,4,5-Trichlorophenol	830	1400 U	1500 U	10000 U	1800 U
1,1'-Biphenyl	330	550 U	580 U	2100 J	350 J
2-Chloronaphthalene	330	550 U	580 U	4100 U	730 U
2-Nitroaniline	830	1400 U	1500 U	10000 UJ	1800 U
Dimethylphthalate	330	550 U	580 U	4100 U	730 U
2,6-Dinitrotoluene	330	550 U	580 U	4100 U	730 U
Acenaphthylene	330	550 U	580 U	4100 U	730 U
3-Nitroaniline	830	1400 U	1500 U	10000 UJ	1800 U
Acenaphthene	330	550 U	580 U	4100 U	730 U
2,4-Dinitrophenol	830	1400 U	1500 U	10000 U	1800 U
4-Nitrophenol	830	1400 U	1500 U	10000 U	1800 U
Dibenzofuran	330	550 U	580 U	350 J	730 U
2,4-Dinitrotoluene	330	550 U	580 U	4100 U	730 U
Diethylphthalate	330	550 U	580 U	4100 U	730 U
Fluorene	330	550 U	580 U	970 J	120 J
4-Chlorophenyl-phenylether	330	550 U	580 U	4100 U	730 U
4-Nitroaniline	830	1400 U	1500 U	10000 U	1800 U
4,6-Dinitro-2-methylphenol	830	1400 U	1500 U	10000 U	1800 U
N-Nitrosodiphenylamine (1)	330	550 U	580 U	4100 U	730 U
4-Bromophenyl-phenylether	330	550 U	580 U	4100 U	730 U
Hexachlorobenzene	330	550 U	580 U	4100 U	730 U
Atrazine	330	550 U	580 U	4100 U	730 U
Pentachlorophenol	830	1400 U	1500 U	10000 U	1800 U
Phenanthrene	330	45 J	36 J	2700 J	480 J
Anthracene	330	550 U	580 U	4100 U	730 U
Carbazole	330	550 U	580 U	4100 U	730 U
Di-n-butylphthalate	330	62 J EB	66 J EB	4100 U	730 U
Fluoranthene	330	550 U	61 J	4100 U	110 J
Pyrene	330	71 J	64 J	2400 J	180 J
Butylbenzylphthalate	330	550 UJ	580 UJ	4100 U	2400
3,3'-Dichlorobenzidine	330	550 UJ	580 UJ	4100 UJ	730 U
Benzo(a)anthracene	330	37 J	30 J	500 J	730 U
Chrysene	330	47 J	44 J	4100 U	730 U
bis(2-Ethylhexyl)phthalate	330	550 UJ	580 UJ	17000	4900
Di-n-octylphthalate	330	550 U	580 U	4100 U	730 U
Benzo(b)fluoranthene	330	48 J	50 J	4100 U	730 U
Benzo(k)fluoranthene	330	550 U	580 U	4100 U	730 U
Benzo(a)pyrene	330	34 J	37 J	4100 U	730 U
Indeno(1,2,3-cd)pyrene	330	39 J	35 J	300 J	730 U
Dibenzo(a,h)anthracene	330	500 U	580 U	4100 U	730 U
Benzo(g,h,i)perylene	330	41 J	35 J	1000 J	46 J
DILUTION FACTOR:		1.0	1.0	10.0	2.0
DATE SAMPLED:		06/17/02	06/17/02	06/17/02	06/17/02
DATE EXTRACTED:		06/20/02	06/20/02	06/20/02	06/20/02
DATE ANALYZED:		07/02/02	07/02/02	07/12/02	07/08/02
% MOISTURE:		41	45	19	12

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 0496F SDG: D06402
LABORATORY: ACCUTEST LABORATORIES

TABLE 1
VOLATILE PETROLEUM HYDROCARBON (VPH) SOIL ANALYSES
µg/kg

NOT VALIDATED DATA

SAMPLE NUMBER:		D06402	D06403	D06404	D06406	D06407	D06408
SAMPLE LOCATION:		SS-01	SS-05	SS-07	SS-13	SS-14	SS-15
LABORATORY NUMBER:		M25963-1	M25963-2	M25963-3	M25963-5	M25963-6	M25963-7
PERCENT SOLIDS:		83.1	87.4	77.7	74.4	74.1	74.4
PARAMETER	RL						
Benzene	250	550 U	480 U	680 U	470 U	450 U	261 J
Ethylbenzene	250	550 U	480 U	680 U	1370	623	5960
Methyl Tert Butyl Ether	100	220 U	190 U	270 U	190 U	180 U	213
Naphthalene	250	550 U	480 U	680 U	1240	693	10000
Toluene	250	550 U	480 U	680 U	1100	479	10600
m,p-Xylene	250	494 J	480 U	680 U	662	262 J	6060
o-Xylene	250	550 U	480 U	680 U	350 J	450 U	5490
C5-C8 Aliphatics (Unadjusted)	5000	11000 U	9500 U	14000 U	41700	19600	97900
C9-C12 Aliphatics (Unadjusted)	5000	11000 U	9500 U	14000 U	272000	153000	1170000
C9-C10 Aromatics (Unadjusted)	5000	11000 U	9500 U	14000 U	136000	80100	579000
C5-C8 Aliphatics	5000	11000 U	9500 U	14000 U	40500	19100	86800
C9-C12 Aliphatics	5000	11000 U	9500 U	14000 U	133000	72300	577000
DILUTION FACTOR:		1	1	1	1	1	1
DATE SAMPLED:		06/19/02	06/17/02	06/20/02	06/17/02	06/17/02	06/17/02
DATE ANALYZED:		07/08/02	07/08/02	07/08/02	07/08/02	07/08/02	07/08/02

NOTE:
J = VALUE IS ESTIMATED, SINCE IT BELOW THE RL.
U = VALUE IS NON-DETECTED.
NA = NOT APPLICABLE.
RL = REPORTING LIMIT.

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

A Tier I validation was performed. No qualifiers were applied to the data.

SITE: ULTER ARM AREA (LOT NOS. 363 and 366)
CASE: 0496F SDG: D06402
LABORATORY: ACCUTEST LABORATORIES

TABLE 1
VOLATILE PETROLEUM HYDROCARBON (VPH) SOIL ANALYSES
µg/kg

NOT VALIDATED DATA

SAMPLE NUMBER:		D06409	D06410	D06411	D06412	D06413	D06414
SAMPLE LOCATION:		SS-16	SS-17	SS-18	SS-25	SO-01	SO-05
LABORATORY NUMBER:		M25963-8	M25963-9	M25963-10	M25963-11	M25963-12	M25963-13
PERCENT SOLIDS:		65.9	82.5	76.4	94.7	92.8	84.3
PARAMETER	RL						
Benzene	250	760 U	640 U	720 U	440 U	350 U	380 U
Ethylbenzene	250	760 U	640 U	720 U	440 U	350 U	380 U
Methyl Tert Butyl Ether	100	300 U	260 U	290 U	180 U	140 U	150 U
Naphthalene	250	829	744	720 U	440 U	350 U	380 U
Toluene	250	1100	596 J	720 U	440 U	350 U	380 U
m,p-Xylene	250	760 U	830	651 J	307 J	350 U	380 U
o-Xylene	250	760 U	335 J	720 U	440 U	350 U	380 U
C5-C8 Aliphatics (Unadjusted)	5000	15000 U	13000 U	14000 U	8900 U	6900 U	7600 U
C9-C12 Aliphatics (Unadjusted)	5000	80300	7050 J	8360 J	8900 U	6900 U	15700
C9-C10 Aromatics (Unadjusted)	5000	48300	13000 U	14000 U	8900 U	6900 U	8130
C5-C8-Aliphatics	5000	15000 U	13000 U	14000 U	8900 U	6900 U	7600 U
C9-C12 Aliphatics	5000	31400	13000 U	14000 U	8900 U	6900 U	7540 J
DILUTION FACTOR:		1	1	1	1	1	1
DATE SAMPLED:		06/17/02	06/18/02	06/18/02	06/17/02	06/18/02	06/17/02
DATE ANALYZED:		07/08/02	07/08/02	07/09/02	07/09/02	07/09/02	07/09/02

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RL = REPORTING LIMIT.

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

A Tier I validation was performed. No qualifiers were applied to the data.

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 0496F SDG: D06402
LABORATORY: ACCUTEST LABORATORIES

TABLE 1
VOLATILE PETROLEUM HYDROCARBON (VPH) SOIL ANALYSES
µg/kg

NOT VALIDATED DATA

SAMPLE NUMBER:		D06415	D06416	D06417	D06418	D06429
SAMPLE LOCATION:		SO-07	SO-11	SS-26	SC-01	MB-01
LABORATORY NUMBER:		M25963-14	M25963-15	M25963-16	M25963-17	M25963-24
PERCENT SOLIDS:		93.7	82.0	87.1	95.0	NA
PARAMETER	RL					
Benzene	250	390 U	530 U	540 U	840 U	250 U
Ethylbenzene	250	390 U	530 U	540 U	840 U	250 U
Methyl Tert Butyl Ether	100	150 U	210 U	220 U	340 U	100 U
Naphthalene	250	390 U	530 U	540 U	840 U	250 U
Toluene	250	390 U	530 U	540 U	840 U	250 U
m,p-Xylene	250	390 U	530 U	540 U	840 U	250 U
o-Xylene	250	390 U	530 U	540 U	840 U	250 U
C5-C8 Aliphatics (Unadjusted)	5000	7700 U	11000 U	11000 U	17000 U	5000 U
C9-C12 Aliphatics (Unadjusted)	5000	7700 U	11000 U	11000 U	17000 U	5000 U
C9-C10 Aromatics (Unadjusted)	5000	7700 U	11000 U	11000 U	17000 U	5000 U
C5-C8-Aliphatics	5000	7700 U	11000 U	11000 U	17000 U	5000 U
C9-C12 Aliphatics	5000	7700 U	11000 U	11000 U	17000 U	5000 U
DILUTION FACTOR:		1	1	1	1	1
DATE SAMPLED:		06/20/02	06/18/02	06/18/02	06/17/02	06/17/02
DATE ANALYZED:		07/09/02	07/09/02	07/09/02	07/10/02	07/09/02

NOTE:
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RL = REPORTING LIMIT.

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

A Tier I validation was performed. No qualifiers were applied to the data.

SITE: ULTEF M AREA (LOT NOS. 363 and 366)
CASE 36F SDG: D06402
LABORATORY: ACCUTEST LABORATORIES

TABLE 3
EXTRAC E PETROLEUM HYDROCARBON (EPH) SOIL ANALYSES
µg/kg

NOT VALIDATED DATA

SAMPLE NUMBER:		D06402	D06403	D06404	D06405	D06406	D06407
SAMPLE LOCATION:		SS-01	SS-05	SS-07	SS-11	SS-13	SS-14
LABORATORY NUMBER:		M25963-1	M25963-2	M25963-3	M25963-4	M25963-5	M25963-6
PERCENT SOLIDS:		83.1	87.4	77.7	77.0	74.4	74.1
PARAMETER	RL						
Acenaphthene	500	600 U	560 U	620 U	447 J	3790	3610
Acenaphthylene	500	600 U	560 U	620 U	640 U	640 U	660 U
Anthracene	500	600 U	560 U	620 U	2030	640 U	546 J
Benzo(a)anthracene	500	600 U	560 U	620 U	6040	640 U	660 U
Benzo(a)pyrene	500	600 U	560 U	620 U	6300	640 U	660 U
Benzo(b)fluoranthene	500	600 U	560 U	620 U	6210	640 U	660 U
Benzo(g,h,i)perylene	500	600 U	560 U	620 U	3790	640 U	660 U
Benzo(k)fluoranthene	500	600 U	560 U	620 U	4950	640 U	660 U
Chrysene	500	600 U	560 U	620 U	6550	640 U	660 U
Dibenzo(a,h)anthracene	500	600 U	560 U	620 U	818	640 U	660 U
Fluoranthene	500	600 U	560 U	620 U	11900	396 J	660 U
Fluorene	500	600 U	560 U	620 U	475 J	1680	1540
Indeno(1,2,3-cd)pyrene	500	600 U	560 U	620 U	3810	640 U	660 U
2-Methylnaphthalene	500	600 U	560 U	620 U	640 U	22100	20400
Naphthalene	500	600 U	560 U	620 U	640 U	7160	6390
Phenanthrene	500	600 U	560 U	620 U	7580	2320	2190
Pyrene	500	600 U	560 U	620 U	8950	640 U	660 U
C11-C22 Aromatics (Unadjusted)	17,000	14300 J	1020000	24100	210000	3510000	2970000
C9-C18 Aliphatics	5,900	7020 J	814000	8780	24900	*5280000	*4620000
C19-C36 Aliphatics	7,900	24100	9050000	40600	264000	*25400000	*22200000
C11-C22 Aromatics	17,000	14300 J	1020000	24100	140000	3470000	2930000
DILUTION FACTOR:		1	1	1	1	1/5*	1/5*
DATE SAMPLED:		06/19/02	06/17/02	06/20/02	06/18/02	06/17/02	06/17/02
DATE ANALYZED:		07/09/02	07/10/02	07/10/02	07/10/02	07/10/02	07/10/02

NOTE:
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NA = NOT APPLICABLE.
RL = REPORTING LIMIT.
* = RESULT REPORTED FROM DILUTED ANALYSIS.

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

A Tier I validation was performed. No quailifiers were applied to the data.

SITE ULTF RM AREA (LOT NOS. 363 and 366)
CASE 96F SDG: D06402
LABORATORY: ACCUTEST LABORATORIES

TABLE 3
EXTRAC E PETRO UM HYDROCARBON (EPH) SOIL ANALYSES
µg/kg

NOT VALIDATED DATA

SAMPLE NUMBER:		D06408	D06409	D06410	D06411	D06412	D06413
SAMPLE LOCATION:		SS-15	SS-16	SS-17	SS-18	SS-25	SO-01
LABORATORY NUMBER:		M25963-7	M25963-8	M25963-9	M25963-10	M25963-11	M25963-12
PERCENT SOLIDS:		74.4	65.9	82.5	76.4	94.7	92.8
PARAMETER	RL						
Acenaphthene	500	6940	3800 U	580 U	640 U	530 U	530 U
Acenaphthylene	500	497 J	3800 U	580 U	640 U	530 U	530 U
Anthracene	500	660 U	3800 U	635	385 J	530 U	530 U
Benzo(a)anthracene	500	660 U	3800 U	3910	1930	530 U	530 U
Benzo(a)pyrene	500	660 U	3800 U	3050	1940	530 U	530 U
Benzo(b)fluoranthene	500	660 U	3800 U	3680	2070	530 U	530 U
Benzo(g,h,i)perylene	500	660 U	3800 U	2850	1520	530 U	530 U
Benzo(k)fluoranthene	500	660 U	3800 U	4130	1680	530 U	530 U
Chrysene	500	660 U	3800 U	3280	1800	530 U	530 U
Dibenzo(a,h)anthracene	500	660 U	3800 U	1260	335 J	530 U	530 U
Fluoranthene	500	781	3800 U	4690	3150	530 U	530 U
Fluorene	500	3810	1920 J	580 U	640 U	530 U	530 U
Indeno(1,2,3-cd)pyrene	500	660 U	3800 U	2730	1440	530 U	530 U
2-Methylnaphthalene	500	28600	3800 U	580 U	640 U	530 U	530 U
Naphthalene	500	6910	3800 U	580 U	640 U	530 U	530 U
Phenanthrene	500	660 U	3800 U	2950	1860	530 U	530 U
Pyrene	500	660 U	3800 U	4010	2690	530 U	530 U
C11-C22 Aromatics (Unadjusted)	17,000	7640000	12300000	173000	106000	9100 J	17300 J
C9 C18 Aliphatics	5,900	*18100000	5020000	13800	8390	10100	5950 J
C19-C36 Aliphatics	7,900	*42400000	72800000	185000	139000	15800	20200
C11-C22 Aromatics	17,000	7590000	12300000	135000	85300	9100 J	17300 J
DILUTION FACTOR:		1/5*	1	1	1	1	1
DATE SAMPLED:		06/17/02	06/17/02	06/18/02	06/18/02	06/17/02	06/18/02
DATE ANALYZED:		07/10/02	07/10/02	07/11/02	07/10/02	07/10/02	07/11/02

NOTE:
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U = VALUE IS NON-DETECTED.
NA = NOT APPLICABLE.
RL = REPORTING LIMIT.
* = RESULT REPORTED FROM DILUTED ANALYSIS.

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

A Tier I validation was performed. No quailifiers were applied to the data.

SITE ULTE. RM AREA (LOT NOS. 363 and 366)
CASE: 496F SDG: D06402
LABORATORY: ACCUTEST LABORATORIES

TABLE 3
EXTRACTABLE PETROLEUM HYDROCARBON (EPH) SOIL ANALYSES
µg/kg

NOT VALIDATED DATA

SAMPLE NUMBER:		D06414	D06415	D06416	D06417	D06418
SAMPLE LOCATION:		SO-05	SO-07	SO-11	SS-26	SC-01
LABORATORY NUMBER:		M25963-13	M25963-14	M25963-15	M25963-16	M25963-17
PERCENT SOLIDS:		84.3	93.7	82.0	87.1	95.0
PARAMETER	RL					
Acenaphthene	500	570 U	520 U	439 J	570 U	2600 U
Acenaphthylene	500	570 U	520 U	580 U	570 U	2600 U
Anthracene	500	1360	520 U	2460	570 U	2600 U
Benzo(a)anthracene	500	570 U	520 U	12500	474 J	2600 U
Benzo(a)pyrene	500	570 U	520 U	6080	570 U	2600 U
Benzo(b)fluoranthene	500	570 U	520 U	6980	570 U	2600 U
Benzo(g,h,i)perylene	500	570 U	520 U	3200	570 U	2600 U
Benzo(k)fluoranthene	500	570 U	520 U	4120	570 U	2600 U
Chrysene	500	570 U	520 U	6430	570 U	2600 U
Dibenzo(a,h)anthracene	500	570 U	520 U	1380	570 U	2600 U
Fluoranthene	500	570 U	520 U	12200	570 U	2600 U
Fluorene	500	439 J	520 U	516 J	570 U	2600 U
Indeno(1,2,3-cd)pyrene	500	570 U	520 U	3460	570 U	2600 U
2-Methylnaphthalene	500	540 J	520 U	580 U	570 U	2600 U
Naphthalene	500	570 U	520 U	580 U	570 U	2600 U
Phenanthrene	500	349 J	520 U	9210	570 U	1380 J
Pyrene	500	558 J	520 U	9120	570 U	2600 U
C11-C22 Aromatics (Unadjusted)	17,000	610000	15200 J	251000	40900	16000000
C9-C18 Aliphatics	5,900	612000	6480	6590 J	9690	*1120000
C19-C36 Aliphatics	7,900	3050000	21600	97400	75500	*56100000
C11-C22 Aromatics	17,000	606000	15200 J	173000	40400	16000000
DILUTION FACTOR:		1	1	1	1	1/2*
DATE SAMPLED:		06/17/02	06/20/02	06/18/02	06/18/02	06/17/02
DATE ANALYZED:		07/11/02	07/11/02	07/11/02	07/11/02	07/11/02

NOTE:
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U = VALUE IS NON-DETECTED.
NA = NOT APPLICABLE.
RL = REPORTING LIMIT.
* = RESULT REPORTED FROM DILUTED ANALYSIS.

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

A Tier I validation was performed. No qualifiers were applied to the data.

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 30630 SDG: A0JD3
LABORATORY: CEIMIC CORPORATION

TABLE 3
PESTICIDE/POLYCHLORINATED BIPHENYL SOIL ANALYSES
µg/kg

SAMPLE NUMBER:		A0JC1	A0JC7	A0JD3	A0JD4	A0JD5	A0JD6
SAMPLE LOCATION:		SS-01	SS-07	SS-21	SS-22	SS-23	SS-24
LABORATORY NUMBER:		020613-08	020613-09	020613-01	020613-02	020613-03	020613-04
COMPOUND	CRQL						
alpha-BHC	1.7	2.1 U	2.2 U	2.0 U	2.0 U	2.0 U	2.0 U
beta-BHC	1.7	2.1 U	2.2 U	2.0 U	2.0 U	2.0 U	2.0 U
delta-BHC	1.7	2.1 U	2.2 U	2.0 U	2.0 U	2.0 U	2.0 U
gamma-BHC (Lindane)	1.7	2.1 U	2.2 U	2.0 U	2.0 U	2.0 U	2.0 U
Heptachlor	1.7	2.1 U	2.2 U	2.0 U	2.0 U	2.0 U	2.0 U
Aldrin	1.7	2.1 U	2.2 U	2.0 U	2.0 U	2.0 U	2.0 U
Heptachlor Epoxide	1.7	2.1 U	2.2 U	2.0 U	2.0 U	2.0 U	2.0 U
Endosulfan I	1.7	2.1 U	2.2 U	2.0 U	2.0 U	2.0 U	2.0 U
Dieldrin	3.3	4.0 U	4.2 U	3.8 U	4.0 U	3.8 U	3.9 U
4,4'-DDE	3.3	4.0 U	4.2 U	3.8 U	4.0 U	9.7	6.9 J
Endrin	3.3	4.0 U	4.2 U	3.8 U	4.0 U	3.8 U	3.9 U
Endosulfan II	3.3	4.0 U	4.2 U	3.8 U	4.0 U	3.8 U	*39 U
4,4'-DDD	3.3	4.0 U	4.2 U	3.8 U	4.0 U	3.8 U	3.9 U
Endosulfan Sulfate	3.3	4.0 U	4.2 U	3.8 U	4.0 U	3.8 U	3.9 U
4,4'-DDT	3.3	4.0 U	4.2 U	5.8 J	4.0 U	*71	*61
Methoxychlor	17	21 U	22 U	20 U	20 U	28	20 U
Endrin Ketone	3.3	4.0 U	4.2 U	3.8 U	4.0 U	7.5	4.5 J
Endrin Aldehyde	3.3	4.0 U	4.2 U	3.8 U	4.0 U	3.8 U	3.9 U
alpha-Chlordane	1.7	2.1 U	2.2 U	2.0 U	2.0 U	2.0 U	2.0 U
gamma-Chlordane	1.7	2.1 U	2.2 U	2.0 U	2.0 U	*20 U	*20 U
Toxaphene	170	210 U	220 U	200 U	200 U	200 U	200 U
Aroclor-1016	33	40 U	42 U	38 U	40 U	38 U	39 U
Aroclor-1221	67	82 U	86 U	77 U	80 U	78 U	78 U
Aroclor-1232	33	40 U	42 U	38 U	40 U	38 U	39 U
Aroclor-1242	33	40 U	42 U	38 U	40 U	38 U	39 U
Aroclor-1248	33	40 U	42 U	38 U	40 U	38 U	39 U
Aroclor-1254	33	40 U	42 U	18 J	40 U	150 J	140 J
Aroclor-1260	33	40 U	42 U	38 U	40 U	38 U	39 U
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0/10.0*	1.0/10.0*
DATE SAMPLED:		06/19/02	06/20/02	06/18/02	06/18/02	06/18/02	06/18/02
DATE EXTRACTED:		06/24/02	06/24/02	06/24/02	06/24/02	06/24/02	06/24/02
DATE ANALYZED:		06/30/02	06/30/02	06/30/02	06/30/02	07/01/02	07/01/02
% MOISTURE:		19	22	14	18	14	15

*- RESULT REPORTED FROM DILUTED ANALYSIS.

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

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SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 30630 SDG: A0JD3
LABORATORY: CEIMIC CORPORATION

TABLE 3
PESTICIDE/POLYCHLORINATED BIPHENYL SOIL ANALYSES
µg/kg

SAMPLE NUMBER:		A0JD7	A0JD8	A0JD9	A0JE0	A0JE4
SAMPLE LOCATION:		SS-25	SO-01	SO-02	SO-03	SO-07
LABORATORY NUMBER:		020613-05	020613-10	020613-06	020613-07	020613-11
COMPOUND	CRQL					
alpha-BHC	1.7	2.0 U	1.8 U	2.1 U	1.9 U	1.9 U
beta-BHC	1.7	2.0 U	1.8 U	2.1 U	1.9 U	1.9 U
delta-BHC	1.7	2.0 U	1.8 U	2.1 U	5.6 J	1.9 U
gamma-BHC (Lindane)	1.7	2.0 U	1.8 U	2.1 U	*19 U	1.9 U
Heptachlor	1.7	2.0 U	1.8 U	2.1 U	*19 U	1.9 U
Aldrin	1.7	2.0 U	1.8 U	2.1 U	1.9 U	1.9 U
Heptachlor Epoxide	1.7	2.0 U	1.8 U	2.1 U	1.9 U	1.9 U
Endosulfan I	1.7	2.0 U	1.8 U	2.1 U	1.9 U	1.9 U
Dieldrin	3.3	3.8 U	3.5 U	4.0 U	3.8 U	3.6 U
4,4'-DDE	3.3	3.8 U	3.5 U	4.0 J	14 J	3.6 U
Endrin	3.3	3.8 U	3.5 U	4.0 U	3.8 U	3.6 U
Endosulfan II	3.3	3.8 U	3.5 U	4.0 U	3.8 U	3.6 U
4,4'-DDD	3.3	3.8 U	3.5 U	4.0 U	9.1 J	3.6 U
Endosulfan Sulfate	3.3	3.8 U	3.5 U	4.0 U	3.8 U	3.6 U
4,4'-DDT	3.3	3.8 U	3.5 U	4.0 U	*38 U	3.6 U
Methoxychlor	17	20 U	18 U	21 U	22 J	19 U
Endrin Ketone	3.3	3.8 U	3.5 U	16 J	*38 U	3.6 U
Endrin Aldehyde	3.3	3.8 U	3.5 U	4.0 U	3.8 U	3.6 U
alpha-Chlordane	1.7	2.0 U	1.8 U	2.1 U	1.9 U	1.9 U
gamma-Chlordane	1.7	2.0 U	1.8 U	R	*19 U	1.9 U
Toxaphene	170	200 U	180 U	210 U	190 U	190 U
Aroclor-1016	33	38 U	35 U	40 U	38 U	36 U
Aroclor-1221	67	77 U	72 U	81 U	76 U	74 U
Aroclor-1232	33	38 U	35 U	40 U	38 U	36 U
Aroclor-1242	33	38 U	35 U	40 U	38 U	36 U
Aroclor-1248	33	38 U	35 U	40 U	38 U	36 U
Aroclor-1254	33	38 U	35 U	40 U	38 U	36 U
Aroclor-1260	33	38 U	35 U	40 U	38 U	36 U
DILUTION FACTOR:		1.0	1.0	1.0	1.0/10.0*	1.0
DATE SAMPLED:		06/17/02	06/19/02	06/18/02	06/18/02	06/20/02
DATE EXTRACTED:		06/24/02	06/24/02	06/24/02	06/24/02	06/24/02
DATE ANALYZED:		06/30/02	06/30/02	07/01/02	07/01/02	06/30/02
% MOISTURE:		14	7	18	12	9

* - RESULT REPORTED FROM DILUTED ANALYSIS.

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 30630 SDG: A0JC2
LABORATORY: CEIMIC CORPORATION

TABLE 4
PESTICIDE/POLYCHLORINATED BIPHENYL SOIL ANALYSES
µg/kg

SAMPLE NUMBER:		A0JC2	A0JC3	A0JC4	A0JC5	A0JC6	A0JC8
SAMPLE LOCATION:		SS-02	SS-03	SS-04	SS-05	SS-06	SS-11
LABORATORY NUMBER:		020612-01	020612-02	020612-03	020612-04	020612-05	020612-06
COMPOUND	CRQL						
alpha-BHC	1.7	2.3 U	1.8 U	1.8 U	1.9 U	1.8 U	2.2 U
beta-BHC	1.7	2.3 U	1.8 U	1.8 U	1.9 U	1.8 U	2.2 U
delta-BHC	1.7	2.3 U	1.8 U	1.8 U	1.9 U	1.8 U	2.2 U
gamma-BHC (Lindane)	1.7	2.3 U	1.8 U	1.8 U	1.9 U	1.8 U	2.2 U
Heptachlor	1.7	2.3 U	1.8 U	1.8 U	1.9 U	1.8 U	2.2 U
Aldrin	1.7	2.3 U	1.8 U	1.8 U	1.9 U	1.8 U	2.2 U
Heptachlor Epoxide	1.7	2.3 U	1.8 U	1.8 U	1.9 U	1.8 U	2.2 U
Endosulfan I	1.7	2.3 U	1.8 U	1.8 U	1.9 U	1.8 U	2.2 U
Dieldrin	3.3	4.4 U	3.6 U	3.5 U	3.8 U	3.5 U	*42 U
4,4'-DDE	3.3	4.4 U	3.6 U	3.5 U	R	3.5 U	21
Endrin	3.3	5.0	3.6 U	3.5 U	3.8 U	3.5 U	*42 U
Endosulfan II	3.3	4.4 U	3.6 U	3.5 U	3.8 U	3.5 U	4.2 U
4,4'-DDD	3.3	4.4 U	3.6 U	3.5 U	3.8 U	3.5 U	4.2 U
Endosulfan Sulfate	3.3	4.4 U	3.6 U	3.5 U	3.8 U	3.5 U	4.2 U
4,4'-DDT	3.3	44 J	12 J	3.5 U	24 J	3.5 U	45 J
Methoxychlor	17	23 U	18 U	18 U	19 U	18 U	22 U
Endrin Ketone	3.3	17	6.7 J	3.5 U	3.8 U	3.5 U	23 J
Endrin Aldehyde	3.3	4.4 U	3.6 U	3.5 U	3.8 U	3.5 U	4.2 U
alpha-Chlordane	1.7	2.3 U	1.8 U	1.8 U	11 U	4.3	3.9 J
gamma-Chlordane	1.7	2.3 U	1.8 U	1.8 U	1.9 U	3.3 J	*22 U
Toxaphene	170	230 U	180 U	180 U	190 U	180 U	220 U
Aroclor-1016	33	44 U	36 U	35 U	38 U	35 U	42 U
Aroclor-1221	67	90 U	73 U	72 U	77 U	72 U	86 U
Aroclor-1232	33	44 U	36 U	35 U	38 U	35 U	42 U
Aroclor-1242	33	44 U	36 U	35 U	38 U	35 U	42 U
Aroclor-1248	33	44 U	R	35 U	*1000 J	35 U	140 J
Aroclor-1254	33	44 U	36 U	35 U	38 U	35 U	42 U
Aroclor-1260	33	44 U	36 U	35 U	270 J	35 U	42 U
DILUTION FACTOR:		1.0	1.0	1.0	1.0/10.0*	1.0	1.0/10.0*
DATE SAMPLED:		06/18/02	06/18/02	06/18/02	06/17/02	06/17/02	06/18/02
DATE EXTRACTED:		06/23/02	06/23/02	06/23/02	06/23/02	06/23/02	06/23/02
DATE ANALYZED:		06/30/02	06/30/02	06/29/02	06/29/02	06/30/02	06/30/02
% MOISTURE:		26	9	8	13	7	22

* - RESULT REPORTED FROM DILUTED ANALYSIS.

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

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SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 30630 SDG: A0JC2
LABORATORY: CEIMIC CORPORATION

TABLE 4
PESTICIDE/POLYCHLORINATED BIPHENYL SOIL ANALYSES
µg/kg

SAMPLE NUMBER:		A0JC9	A0JD0	A0JD1	A0JD2	A0JE1	A0JE3
SAMPLE LOCATION:		SS-17	SS-18	SS-19	SS-20	SO-04	SO-06
LABORATORY NUMBER:		020612-07	020612-08	020612-09	020612-10	020612-18	020612-19
COMPOUND	CRQL						
alpha-BHC	1.7	2.1 U	2.2 U	1.9 UJ	1.9 U	1.8 UJ	1.8 U
beta-BHC	1.7	2.1 U	2.2 U	1.9 UJ	1.9 U	1.8 UJ	1.8 U
delta-BHC	1.7	2.1 U	2.2 U	1.9 UJ	1.9 U	1.8 UJ	1.8 U
gamma-BHC (Lindane)	1.7	2.1 U	2.2 U	1.9 UJ	1.9 U	1.8 UJ	1.8 U
Heptachlor	1.7	2.1 U	2.2 U	1.9 UJ	1.9 U	1.8 UJ	1.8 U
Aldrin	1.7	2.1 U	R	1.9 UJ	1.9 U	1.8 UJ	1.8 U
Heptachlor Epoxide	1.7	2.1 U	2.2 U	1.9 UJ	1.9 U	1.8 UJ	1.8 U
Endosulfan I	1.7	2.1 U	2.2 U	1.9 UJ	1.9 U	1.8 UJ	1.8 U
Dieldrin	3.3	*40 UJ	4.3 U	3.7 UJ	3.8 U	3.5 UJ	3.4 U
4,4'-DDE	3.3	*40 U	16 J	3.7 UJ	3.8 U	3.5 UJ	3.4 U
Endrin	3.3	4.0 U	4.3 U	3.7 UJ	3.8 U	3.5 UJ	3.4 U
Endosulfan II	3.3	4.0 U	4.3 U	3.7 UJ	3.8 U	3.5 UJ	3.4 U
4,4'-DDD	3.3	5.0 J	6.5 J	3.7 UJ	3.8 U	3.5 UJ	3.4 U
Endosulfan Sulfate	3.3	4.0 U	4.3 U	3.7 UJ	3.8 U	3.5 UJ	3.4 U
4,4'-DDT	3.3	*40 U	67 J	8.1 J	3.8 U	3.5 UJ	3.4 U
Methoxychlor	17	21 U	22 U	19 UJ	19 U	18 UJ	18 U
Endrin Ketone	3.3	4.0 U	12	3.7 UJ	3.8 U	3.5 UJ	3.4 U
Endrin Aldehyde	3.3	4.0 U	4.3 U	3.7 UJ	17 J	3.5 UJ	3.4 U
alpha-Chlordane	1.7	23 J	18 J	1.9 UJ	1.9 U	1.8 UJ	1.8 U
gamma-Chlordane	1.7	22 J	R	1.9 UJ	1.9 U	1.8 UJ	1.8 U
Toxaphene	170	210 U	220 U	190 UJ	190 U	180 UJ	180 U
Aroclor-1016	33	40 U	43 U	37 UJ	38 U	35 UJ	34 U
Aroclor-1221	67	82 U	88 U	75 UJ	76 U	71 UJ	70 U
Aroclor-1232	33	40 U	43 U	37 UJ	38 U	35 UJ	34 U
Aroclor-1242	33	40 U	43 U	37 UJ	38 U	35 UJ	34 U
Aroclor-1248	33	210 J	310	37 UJ	38 U	35 UJ	34 U
Aroclor-1254	33	40 U	43 U	37 UJ	38 U	35 UJ	34 U
Aroclor-1260	33	*1300 J	150 J	190 J	*670	35 UJ	34 U
DILUTION FACTOR:		1.0/10.0*	1.0	1.0	1.0/5.0*	1.0	1.0
DATE SAMPLED:		06/18/02	06/18/02	06/18/02	06/18/02	06/18/02	06/18/02
DATE EXTRACTED:		06/23/02	06/23/02	06/23/02	06/23/02	06/23/02	06/23/02
DATE ANALYZED:		06/30/02	06/30/02	06/30/02	06/30/02	06/30/02	06/30/02
% MOISTURE:		19	24	12	13	6	5

* - RESULT REPORTED FROM DILUTED ANALYSIS.

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 30630 SDG: A0JC2
LABORATORY: CEIMIC CORPORATION

TABLE 4
PESTICIDE/POLYCHLORINATED BIPHENYL SOIL ANALYSES
µg/kg

SAMPLE NUMBER:		A0JE5	A0JE6
SAMPLE LOCATION:		SO-11	SS-26
LABORATORY NUMBER:		020612-20	020612-11
COMPOUND	CRQL		
alpha-BHC	1.7	2.2 U	2.0 U
beta-BHC	1.7	2.2 U	2.0 U
delta-BHC	1.7	2.2 U	2.0 U
gamma-BHC (Lindane)	1.7	R	2.0 U
Heptachlor	1.7	2.5 J	2.0 U
Aldrin	1.7	R	2.0 U
Heptachlor Epoxide	1.7	R	2.0 U
Endosulfan I	1.7	2.2 U	2.0 U
Dieldrin	3.3	R	3.9 U
4,4'-DDE	3.3	12	3.9 U
Endrin	3.3	9.7	3.9 U
Endosulfan II	3.3	4.2 U	3.9 U
4,4'-DDD	3.3	4.2 U	3.9 U
Endosulfan Sulfate	3.3	4.2 U	3.9 U
4,4'-DDT	3.3	46 J	3.9 U
Methoxychlor	17	22 U	20 U
Endrin Ketone	3.3	27	3.9 U
Endrin Aldehyde	3.3	4.2 U	3.9 U
alpha-Chlordane	1.7	5.0 J	11 J
gamma-Chlordane	1.7	R	10
Toxaphene	170	220 U	200 U
Aroclor-1016	33	42 U	39 U
Aroclor-1221	67	85 U	79 U
Aroclor-1232	33	42 U	39 U
Aroclor-1242	33	42 U	39 U
Aroclor-1248	33	130 J	39 U
Aroclor-1254	33	42 U	39 U
Aroclor-1260	33	42 U	39 U
DILUTION FACTOR:		1.0	1.0
DATE SAMPLED:		06/18/02	06/18/02
DATE EXTRACTED:		06/23/02	06/23/02
DATE ANALYZED:		07/01/02	06/30/02
% MOISTURE:		22	15

* - RESULT REPORTED FROM DILUTED ANALYSIS.

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 0493F SDG: D06351
LABORATORY: SOUTHWEST LABORATORY OF OKLAHOMA, INC.

TABLE 5
PESTICIDE/POLYCHLORINATED BIPHENYL SOIL ANALYSES
µg/kg

SAMPLE NUMBER:		D06358	D06359	D06360	D06388	D06389	D06390
SAMPLE LOCATION:		SS-08	SS-09	SS-10	SO-08	SO-09	SO-10
LABORATORY NUMBER:		50115.03	50115.04	50115.05	50115.09	50115.10	50115.11
COMPOUND	CRQL						
alpha-BHC	1.7	1.9 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
beta-BHC	1.7	1.9 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
delta-BHC	1.7	1.9 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
gamma-BHC (Lindane)	1.7	1.9 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Heptachlor	1.7	1.9	1.1 J	R	1.8 J	1.5 J	R
Aldrin	1.7	1.9 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Heptachlor Epoxide	1.7	1.9 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Endosulfan I	1.7	1.9 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Dieldrin	3.3	3.7 U	3.5 U	3.5 U	3.6 U	3.5 U	3.5 U
4,4'-DDE	3.3	R	3.5 U	R	3.6 U	3.5 U	56
Endrin	3.3	3.7 U	3.5 U	3.5 U	3.6 U	3.5 U	3.5 U
Endosulfan II	3.3	3.7 U	3.5 U	3.5 U	3.6 U	3.5 U	11
4,4'-DDD	3.3	3.7 U	3.5 U	1.3 J	3.6 U	3.5 U	*35 U
Endosulfan Sulfate	3.3	3.7 U	3.5 U	3.5 U	3.6 U	3.5 U	*35 U
4,4'-DDT	3.3	R	3.5 U	0.81 J	3.6 U	3.5 U	3.5 U
Methoxychlor	17	19 U	18 U	18 U	18 U	3.1 J	18 U
Endrin Ketone	3.3	3.7 U	3.5 U	3.5 U	3.6 U	3.5 U	*35 U
Endrin Aldehyde	3.3	3.7 U	3.5 U	3.5 U	3.6 U	3.5 U	3.5 U
alpha-Chlordane	1.7	R	R	1.8 U	1.8 U	1.8 U	*18 U
gamma-Chlordane	1.7	R	0.84 J	R	R	R	*18 U
Toxaphene	170	190 U	180 U	180 U	180 U	180 U	180 U
Aroclor-1016	33	37 U	35 U	35 U	36 U	35 U	35 U
Aroclor-1221	67	74 U	71 U	71 U	72 U	72 U	71 U
Aroclor-1232	33	37 U	35 U	35 U	36 U	35 U	35 U
Aroclor-1242	33	37 U	35 U	35 U	36 U	35 U	3900
Aroclor-1248	33	37 U	35 U	35 U	36 U	35 U	35 U
Aroclor-1254	33	37 U	35 U	35 U	36 U	35 U	1400 J
Aroclor-1260	33	37 U	35 U	35 U	36 U	35 U	35 U
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0/10.0*
DATE SAMPLED:		06/19/02	06/20/02	06/19/02	06/19/02	06/20/02	06/20/02
DATE EXTRACTED:		06/24/02	06/24/02	06/24/02	06/24/02	06/24/02	06/24/02
DATE ANALYZED:		06/29/02	06/29/02	06/29/02	06/29/02	06/29/02	06/29/02
% MOISTURE:		11	6	9	9	7	7

* - RESULT REPORTED FROM DILUTED ANALYSIS.

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

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SITE: JULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 0493F SDG: D06291
LABORATORY: SOUTHWEST LABORATORY OF OKLAHOMA, INC.

TABLE 7
PESTICIDE/POLYCHLORINATED BIPHENYL SOIL ANALYSES
µg/kg

SAMPLE NUMBER:		D06291	D06292	D06293	D06294	D06295	D06296
SAMPLE LOCATION:		SD-01	SD-02	SD-03	SD-04	SD-05	SD-06
LABORATORY NUMBER:		50064.01	50064.02	50064.03	50064.04	50064.05	50064.06
COMPOUND	CRQL						
alpha-BHC	1.7	2.4 U	2.3 U	1.9 U	2.6 U	2.5 U	2.2 U
beta-BHC	1.7	2.4 U	2.3 U	1.9 U	2.6 U	2.5 U	2.2 U
delta-BHC	1.7	2.4 U	2.3 U	1.9 U	2.6 U	2.5 U	2.2 U
gamma-BHC (Lindane)	1.7	2.4 U	2.3 U	1.9 U	2.6 U	2.5 U	2.2 U
Heptachlor	1.7	3.0 U	3.2 U	2.7 U	3.7 U	3.9 U	3.4 U
Aldrin	1.7	2.4 U	2.3 U	1.9 U	2.6 U	2.5 U	2.2 U
Heptachlor Epoxide	1.7	2.4 U	2.3 U	1.9 U	2.6 U	2.5 U	2.2 U
Endosulfan I	1.7	2.4 U	2.3 U	1.9 U	1.6 J	2.5 U	2.2 U
Dieldrin	3.3	4.8 U	4.4 U	3.7 U	5.0 U	4.9 U	4.3 U
4,4'-DDE	3.3	R	1.2 J	0.17 J	5.0 U	4.9 U	4.3 U
Endrin	3.3	4.8 U	4.4 U	3.7 U	5.0 U	4.9 U	4.3 U
Endosulfan II	3.3	4.8 U	4.4 U	3.7 U	5.0 U	4.9 U	4.3 U
4,4'-DDD	3.3	11	R	3.7 U	5.0 U	4.9 U	4.3 U
Endosulfan Sulfate	3.3	4.8 U	4.4 U	3.7 U	5.0 U	4.9 U	4.3 U
4,4'-DDT	3.3	4.0 J	3.7 J	3.7 U	5.0 U	4.9 U	4.3 U
Methoxychlor	17	24 U	23 U	19 U	26 U	25 U	22 U
Endrin Ketone	3.3	3.3 J	R	3.7 U	5.0 U	4.9 U	4.3 U
Endrin Aldehyde	3.3	4.8 U	4.4 U	3.7 U	5.0 U	4.9 U	4.3 U
alpha-Chlordane	1.7	R	0.74 J	0.53 J	2.4 J	2.5 U	2.2 U
gamma-Chlordane	1.7	2.4 U	2.3 U	1.9 U	2.6 U	2.5 U	2.2 U
Toxaphene	170	240 U	230 U	190 U	260 U	250 U	220 U
Aroclor-1016	33	48 U	44 U	37 U	50 U	49 U	43 U
Aroclor-1221	67	96 U	90 U	75 U	100 U	100 U	87 U
Aroclor-1232	33	48 U	44 U	37 U	50 U	49 U	43 U
Aroclor-1242	33	48 U	44 U	37 U	50 U	49 U	43 U
Aroclor-1248	33	48 U	44 U	37 U	50 U	49 U	43 U
Aroclor-1254	33	48 U	44 U	37 U	50 U	49 U	43 U
Aroclor-1260	33	48 U	44 U	37 U	50 U	49 U	43 U
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0
DATE SAMPLED:		06/17/02	06/17/02	06/17/02	06/17/02	06/17/02	06/17/02
DATE EXTRACTED:		06/20/02	06/20/02	06/20/02	06/20/02	06/20/02	06/20/02
DATE ANALYZED:		06/29/02	06/27/02	06/27/02	06/27/02	06/27/02	06/27/02
% MOISTURE:		31	26	12	35	35	24

* - RESULT REPORTED FROM DILUTED ANALYSIS.

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

SITE: POULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 0493F SDG: D06291
LABORATORY: SOUTHWEST LABORATORY OF OKLAHOMA, INC.

TABLE 7
PESTICIDE/POLYCHLORINATED BIPHENYL SOIL ANALYSES
µg/kg

SAMPLE NUMBER:		D06297	D06298	D06350	D06363	D06364	D06365
SAMPLE LOCATION:		SD-07	SD-08	SC-01	SS-13	SS-14	SS-15
LABORATORY NUMBER:		50064.09	50064.10	50064.16	50064.24	50064.25	50064.26
COMPOUND	CRQL						
alpha-BHC	1.7	2.8 U	3.0 U	9.3 U	R	R	11 U
beta-BHC	1.7	2.8 U	3.0 U	9.3 U	*23 U	*23 U	*110 U
delta-BHC	1.7	2.8 U	3.0 U	9.3 U	R	*23 U	*110 U
gamma-BHC (Lindane)	1.7	2.8 U	3.0 U	9.3 U	R	R	11 U
Heptachlor	1.7	4.6 U	4.6 U	28 U	R	R	11 U
Aldrin	1.7	2.8 U	3.0 U	9.3 U	*23 U	*23 U	*110 U
Heptachlor Epoxide	1.7	2.8 U	3.0 U	9.3 U	R	R	140 J
Endosulfan I	1.7	2.8 U	3.0 U	9.3 U	R	R	11 U
Dieldrin	3.3	5.5 U	5.8 U	36 J	*45 U	*44 U	*220 U
4,4'-DDE	3.3	5.5 U	5.8 U	200 J	R	R	140 J
Endrin	3.3	5.5 U	5.8 U	18 U	*45 U	*44 U	22 U
Endosulfan II	3.3	5.5 U	5.8 U	110 J	R	R	60 J
4,4'-DDD	3.3	5.5 U	5.8 U	18 U	R	R	22 U
Endosulfan Sulfate	3.3	5.5 U	5.8 U	49 J	R	R	*220 U
4,4'-DDT	3.3	5.5 U	5.8 U	18 U	41 J	30 J	22 U
Methoxychlor	17	28 U	30 U	*930 U	R	R	110 U
Endrin Ketone	3.3	5.5 U	5.8 U	*180 U	R	*44 U	22 U
Endrin Aldehyde	3.3	R	5.8 U	18 U	R	8.0 J	22 U
alpha-Chlordane	1.7	2.8 U	R	*16 J	*23 U	*23 U	110
gamma-Chlordane	1.7	2.8 U	3.0 U	R	*23 U	R	12 U
Toxaphene	170	280 U	300 U	930 U	R	R	1100 U
Aroclor-1016	33	55 U	58 U	180 U	R	R	220 U
Aroclor-1221	67	110 U	120 U	370 U	R	R	450 U
Aroclor-1232	33	55 U	58 U	180 U	R	R	220 U
Aroclor-1242	33	55 U	58 U	180 U	R	R	220 U
Aroclor-1248	33	55 U	58 U	4600 J	1800 J	1100 J	3100 J
Aroclor-1254	33	55 U	58 U	6100	1000 J	750 J	2100 J
Aroclor-1260	33	55 U	58 U	4100	350 J	420 J	1100 J
DILUTION FACTOR:		1.0	1.0	5.0/50.0*	1.0/10.0*	1.0/10.0*	5.0/50.0*
DATE SAMPLED:		06/17/02	06/17/02	06/17/02	06/17/02	06/17/02	06/17/02
DATE EXTRACTED:		06/20/02	06/20/02	06/20/02	06/20/02	06/20/02	06/20/02
DATE ANALYZED:		06/27/02	06/27/02	06/29/02	06/29/02	06/29/02	06/29/02
% MOISTURE:		41	45	9	27	26	26

* - RESULT REPORTED FROM DILUTED ANALYSIS.

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

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SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 0493F SDG: D06291
LABORATORY: SOUTHWEST LABORATORY OF OKLAHOMA, INC.

TABLE 7
PESTICIDE/POLYCHLORINATED BIPHENYL SOIL ANALYSES
µg/kg

SAMPLE NUMBER:		D06366	D06385
SAMPLE LOCATION:		SS-16	SO-05
LABORATORY NUMBER:		50064.27	50064.28
COMPOUND	CRQL		
alpha-BHC	1.7	R	1.9 U
beta-BHC	1.7	R	*19 U
delta-BHC	1.7	R	*19 U
gamma-BHC (Lindane)	1.7	R	13
Heptachlor	1.7	R	3.1 U
Aldrin	1.7	*280 J	1.9 U
Heptachlor Epoxide	1.7	*42 U	1.9 U
Endosulfan I	1.7	R	1.9 U
Dieldrin	3.3	*81 U	3.7 U
4,4'-DDE	3.3	*290 J	5.0 U
Endrin	3.3	R	3.7 U
Endosulfan II	3.3	110 J	3.7 U
4,4'-DDD	3.3	R	3.7 U
Endosulfan Sulfate	3.3	R	3.7 U
4,4'-DDT	3.3	R	3.7 U
Methoxychlor	17	R	85
Endrin Ketone	3.3	R	*170
Endrin Aldehyde	3.3	80 J	3.7 U
alpha-Chlordane	1.7	R	3.4
gamma-Chlordane	1.7	*42 U	1.9 U
Toxaphene	170	R	190 U
Aroclor-1016	33	R	37 U
Aroclor-1221	67	R	74 U
Aroclor-1232	33	R	37 U
Aroclor-1242	33	R	37 U
Aroclor-1248	33	7800 J	280 J
Aroclor-1254	33	6000 J	37 U
Aroclor-1260	33	R	37 U
DILUTION FACTOR:		2.0/20.0*	1.0/10.0*
DATE SAMPLED:		06/17/02	06/17/02
DATE EXTRACTED:		06/20/02	06/20/02
DATE ANALYZED:		07/05/02	06/27/02
% MOISTURE:		19	12

* - RESULT REPORTED FROM DILUTED ANALYSIS.

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

DATA SUMMARY KEY
INORGANIC DATA VALIDATION

J	=	The associated numerical value is an estimated quantity.
R	=	The result is rejected due to gross deficiencies in quality control criteria. The result is unusable (compound may or may not be present). Resampling and reanalysis are necessary for verification.
U	=	The compound was analyzed for but not detected. The associated numerical value is the SDL or the adjusted SDL.
UJ	=	The compound was analyzed for but not detected. The associated numerical value is the estimated SDL.

ACRONYM LIST
INORGANIC DATA VALIDATION

AQ	aqueous
°C	degrees Celsius
CLP	Contract Laboratory Program
COC	Chain-of-Custody record
CRDL	Contract Required Detection Limit
CRI	CRDL Standard for ICP
CSF	Complete SDG File
%D	percent difference
DAS	Delivery of Analytical Services
DQO	Data Quality Objective
DV	Data Validation
DW	drinking water
GW	groundwater
Cr+6	Hexavalent Chromium
ICP	Inductively Coupled Plasma
ICS	Interference Check Sample
IDL	Instrument Detection Limit
kg	kilogram
L	liter
LCS	Laboratory Control Sample
mg	milligram
MS	Matrix Spike
MSA	Method of Standard Additions
NA	not applicable
ND	non-detected result
OSC	On-Scene Coordinator
PE	Performance Evaluation
Pos	positive result
QC	Quality Control
%R	percent recovery
RPD	Relative Percent Difference
RSD	Relative Standard Deviation
SDG	Sample Delivery Group
SDL	Sample Detection Limit
SOW	Statement of Work
S/S	soil/sediment
START	Superfund Technical Assessment and Response Team
SW	surface water
SW-846	EPA Test Methods for the Evaluation of Solid Waste
TAL	Target Analyte List
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
TPH	Total Petroleum Hydrocarbons
µg	microgram
WESTON	Weston Solutions, Inc. (formerly known as Roy F. Weston Inc.)

SITE: BOULTER FARM AREA (LOT NOS. 363 AND 366)
CASE: 30630 SDG: MA0KC6
LABORATORY: SENTINEL, INC.

TABLE 1
INORGANIC SOIL ANALYSES
mg/kg

SAMPLE NUMBER:			MA0KB1	MA0KB7	MA0KB9	MA0KC6	MA0KD1	MA0KD7	MA0KD9	
SAMPLE LOCATION:			SS-01	SS-07	SS-12	SS-22	SO-01	SO-07	SO-12	
LABORATORY NUMBER:			45340S	45341S	45342S	45304S	45343S	45344S	45345S	
PERCENT SOLIDS:			82.8	78.7	81.4	83.0	93.6	86.2	92.9	
INORGANIC ANALYTES	METHOD	INSTRUMENT DETECTION LIMITS (mg/kg)								CONTRACT DETECTION LIMITS (mg/kg)
ALUMINUM	P	3.7	10700	14000	12000	9660	5300	7940	3170	40
ANTIMONY	P	0.76	0.92 UJ	0.97 UJ	0.93 UJ	0.92 UJ	0.81 UJ	0.88 UJ	0.82 UJ	12
ARSENIC	P	0.60	2.8	3.3	2.9	3.8	1.0 J	2.0	0.65 U	2
BARIUM	P	0.08	45.0	202	40.8	111	31.0	39.3	37.2	40
BERYLLIUM	P	0.06	0.51	0.97	0.56	0.55	0.49	0.36	0.49	1
CADMIUM	P	0.10	0.12 U	0.17 UJ	0.13 UJ	0.53 U	0.11 U	0.12 U	0.11 U	1
CALCIUM	P	19.1	340	285	277	773	481	305	234	1000
CHROMIUM	P	0.16	10.3	11.2	9.9	7.6	5.2	7.9	3.1	2
COBALT	P	0.24	4.5	6.8	4.8	2.8	6.1	6.3	3.9	10
COPPER	P	0.28	5.8 J	21.2 J	6.1 J	26.2 J	7.4 J	13.3 J	5.5 J	5
IRON	P	3.4	13500	18500	14000	11600	9700	9420	7050	20
LEAD	P	0.56	12.1	34.5	12.1	121	8.2	9.9	6.8	0.6
MAGNESIUM	P	5.0	1330	1030	1220	661	1650	1560	662	1000
MANGANESE	P	0.08	94.6	4010	101	107	186	558	132	3
MERCURY	CV	0.05	0.06 U	0.07 J	0.08 J	0.08 J	0.05 U	0.06 U	0.05 U	0.1
NICKEL	P	0.34	6.3	12.2	6.7	5.6	7.3	6.7	5.8	8
POTASSIUM	P	3.6	374 J	550 J	280 J	231 J	500 J	581 J	418 J	1000
SELENIUM	P	0.44	0.99 J	1.3 J	1.1 J	0.70 J	0.47 UJ	0.51 UJ	0.47 UJ	1
SILVER	P	0.22	0.27 U	0.70	0.27 U	0.46 J	0.24 U	0.26 U	0.24 U	2
SODIUM	P	60.3	380 U	602 U	400 U	523 U	293 U	370 U	226 U	1000
THALLIUM	P	0.70	0.85 U	0.89 U	0.86 U	0.84 U	0.75 U	0.81 U	0.75 U	2
VANADIUM	P	0.14	23.6	28.6	22.4	19.1	10.2	15.1	4.3	10
ZINC	P	0.28	25.1	43.9	26.2	110	23.2	23.3	17.9	4
CYANIDE	CA	0.04	0.05 UJ	0.17 UJ	NA	0.04 UJ	0.05 UJ	0.04 UJ	NA	0.5

ANALYTICAL METHOD
P - ICP
CV - COLD VAPOR
CA - MIDI-DISTILLATION SPECTROPHOTOMETRIC

NOTE:
J = QUANTITATION IS ESTIMATED DUE TO LIMITATIONS IDENTIFIED IN THE QUALITY CONTROL REVIEW (DATA REVIEW).
U = VALUE IS NON-DETECTED.
UJ = VALUE IS NON-DETECTED AND DETECTION LIMIT IS ESTIMATED.
R = VALUE IS REJECTED.
NA = NOT ANALYZED.

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

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SI... BOULTER FARM AREA (LOT NOS. 363 AND 366)
CASE: 30630 SDG: MA0KC6
LABORATORY: SENTINEL, INC.

TABLE 1
INORGANIC SOIL ANALYSES
mg/kg

SAMPLE NUMBER:	MA0KE0
SAMPLE LOCATION:	SS-26
LABORATORY NUMBER:	45305S
PERCENT SOLIDS:	86.1

INORGANIC ANALYTES	METHOD	INSTRUMENT DETECTION LIMITS (mg/kg)		CONTRACT DETECTION LIMITS (mg/kg)
ALUMINUM	P	3.7	5320	40
ANTIMONY	P	0.76	0.88 UJ	12
ARSENIC	P	0.60	1.9	2
BARIUM	P	0.08	69.0	40
BERYLLIUM	P	0.06	0.17 U	1
CADMIUM	P	0.10	0.65 U	1
CALCIUM	P	19.1	1490	1000
CHROMIUM	P	0.16	7.7	2
COBALT	P	0.24	2.9	10
COPPER	P	0.28	52.2 J	5
IRON	P	3.4	7390	20
LEAD	P	0.56	270	0.6
MAGNESIUM	P	5.0	741	1000
MANGANESE	P	0.08	86.6	3
MERCURY	CV	0.05	0.16	0.1
NICKEL	P	0.34	15.9	8
POTASSIUM	P	3.6	282 J	1000
SELENIUM	P	0.44	0.51 UJ	1
SILVER	P	0.22	1.3	2
SODIUM	P	60.3	1180	1000
THALLIUM	P	0.70	0.81 U	2
VANADIUM	P	0.14	11.4	10
ZINC	P	0.28	697	4
CYANIDE	CA	0.04	0.04 UJ	0.5

ANALYTICAL METHOD
P - ICP
CV - COLD VAPOR
CA - MIDI-DISTILLATION SPECTROPHOTOMETRIC

NOTE:
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NA = NOT ANALYZED.

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

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SITE: BOULTER FARM AREA (LOT NOS. 363 AND 366)
CASE: 30630 SDG: MA0KB2
LABORATORY: SENTINEL, INC.

TABLE 1
INORGANIC SOIL ANALYSES
mg/kg

SAMPLE NUMBER:			MA0KB2	MA0KB3	MA0KB4	MA0KB5	MA0KB6	MA0KB8	MA0KC1	
SAMPLE LOCATION:			SS-02	SS-03	SS-04	SS-05	SS-06	SS-11	SS-17	
LABORATORY NUMBER:			45285S	45286S	45287S	45288S	45289S	45290S	45291S	
PERCENT SOLIDS:			85.1	87.7	96.7	86.5	95.5	80.8	81.1	
INORGANIC ANALYTES	METHOD	INSTRUMENT DETECTION LIMITS (mg/kg)								CONTRACT DETECTION LIMITS (mg/kg)
ALUMINUM	P	3.7	4450	10000	6060	9720	4830	9200	7520	40
ANTIMONY	P	0.76	4.8 J	4.7 J	0.79 UJ	0.88 UJ	0.80 UJ	7.1 J	14.6 J	12
ARSENIC	P	0.60	7.5 J	2.8 J	2.8 J	2.3 J	1.5 J	14.5 J	14.1 J	2
BARIUM	P	0.08	2330	35.6	55.0	47.1	34.2	1760	3550	40
BERYLLIUM	P	0.06	0.21	0.28	0.87	0.19	0.24	0.24	0.21	1
CADMIUM	P	0.10	2.5	0.29	0.12 J	0.12 U	0.21 J	7.3	10.3	1
CALCIUM	P	19.1	47300	1650	1980	201 U	878	32900	15900	1000
CHROMIUM	P	0.16	18.0	12.0	6.8	8.8	6.3	41.1	64.9	2
COBALT	P	0.24	4.6	5.1	7.1	4.0	3.6	10.2 J	10.2 J	10
COPPER	P	0.28	370	43.8	14.7	8.4	86.2	336	925	5
IRON	P	3.4	10200	12800	12000	10600	7210	41500	40800	20
LEAD	P	0.56	4340	588	6.0 U	261	41.3	15200	4550	0.6
MAGNESIUM	P	5.0	5370	1600	3280	1120	1680	4360	3510	1000
MANGANESE	P	0.08	234	114	770	109	152	409	444	3
MERCURY	CV	0.05	0.60 J	0.06 J	0.05 UJ	0.07 J	0.05 UJ	0.30 J	1.3 J	0.1
NICKEL	P	0.34	16.3 J	8.8 J	7.1 J	5.4 J	20.5 J	51.8 J	183 J	8
POTASSIUM	P	3.6	742	525	1630	374	688	867	821	1000
SELENIUM	P	0.44	0.97 UJ	0.82 UJ	0.47 UJ	0.99 UJ	0.46 UJ	1.9 UJ	2.0 UJ	1
SILVER	P	0.22	0.92 J	0.25 UJ	0.23 UJ	0.25 UJ	0.27 J	3.1 J	18.3 J	2
SODIUM	P	60.3	2920	615 U	588 U	442 U	515 U	4300 J	7340	1000
THALLIUM	P	0.70	0.82 U	0.80 U	0.72 U	0.81 U	0.73 U	0.87 UJ	1.0 J	2
VANADIUM	P	0.14	27.6	19.1	13.1	17.4	9.2	120	79.8	10
ZINC	P	0.28	1850	138	34.4	29.6	138	2570	4600	4
CYANIDE	CA	0.04	0.17 UJ	0.04 UJ	0.04 UJ	0.04 UJ	0.04 UJ	0.09 UJ	0.43 UJ	0.5

ANALYTICAL METHOD
P - ICP
CV - COLD VAPOR
CA - MIDI-DISTILLATION SPECTROPHOTOMETRIC

NOTE:
J = QUANTITATION IS ESTIMATED DUE TO LIMITATIONS IDENTIFIED IN THE QUALITY CONTROL REVIEW (DATA REVIEW).
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R = VALUE IS REJECTED.
NA = NOT ANALYZED.

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

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SITE: BOULTER FARM AREA (LOT NOS. 363 AND 366)
CASE: 30630 SDG: MA0KB2
LABORATORY: SENTINEL, INC.

TABLE 1
INORGANIC SOIL ANALYSES
mg/kg

SAMPLE NUMBER:			MA0KC2	MA0KC3	MA0KC4	MA0KC5	MA0KC7	MA0KC8	MA0KC9	
SAMPLE LOCATION:			SS-18	SS-19	SS-20	SS-21	SS-23	SS-24	SS-25	
LABORATORY NUMBER:			45292S	45293S	45294S	45295S	45296S	45297S	45298S	
PERCENT SOLIDS:			75.2	88.1	85.2	83.3	86.8	86.1	94.0	
INORGANIC ANALYTES	METHOD	INSTRUMENT DETECTION LIMITS (mg/kg)								CONTRACT DETECTION LIMITS (mg/kg)
ALUMINUM	P	3.7	9010	10600	9210	12100	9870	10500	3230	40
ANTIMONY	P	0.76	5.8 J	2.9 J	4.3 J	1.5 J	2.3 J	2.2 J	0.81 UJ	12
ARSENIC	P	0.60	14.2 J	2.6 J	3.5 J	3.3 J	7.2 J	5.4 J	1.8 J	2
BARIUM	P	0.08	1300	135	293	194	268	219	29.8	40
BERYLLIUM	P	0.06	0.35	0.43	0.46	0.49	0.42	0.43	0.48	1
CADMIUM	P	0.10	4.5	3.8	17.9	0.83	7.7	6.3	0.11 U	1
CALCIUM	P	19.1	29600	309 U	428	936	1700	1350	1680	1000
CHROMIUM	P	0.16	29.0	9.6	11.4	16.9	38.1	29.2	3.4	2
COBALT	P	0.24	7.0	3.7	4.1	5.0 J	7.2 J	5.3 J	2.7	10
COPPER	P	0.28	650	68.3	204	53.5	167	118	7.2	5
IRON	P	3.4	26900	14700	14400	31000	41700	27700	4790	20
LEAD	P	0.56	4780	449	428	269	801	590	6.7 U	0.6
MAGNESIUM	P	5.0	6910	915	825	723	1140	1100	851	1000
MANGANESE	P	0.08	630	91.1	141	163	657	520	173	3
MERCURY	CV	0.05	0.37 J	0.06 UJ	0.07 J	0.26 J	0.18 J	0.15 J	0.05 UJ	0.1
NICKEL	P	0.34	44.3 J	33.0 J	69.7 J	10.6 J	23.4 J	15.4 J	3.2 J	8
POTASSIUM	P	3.6	870	282	288	259	335	316	633	1000
SELENIUM	P	0.44	1.1 UJ	0.93 UJ	1.1 UJ	1.8 UJ	1.3 UJ	1.0 UJ	0.47 UJ	1
SILVER	P	0.22	3.5 J	0.39 J	0.77 J	1.2 J	2.5 J	1.6 J	0.23 UJ	2
SODIUM	P	60.3	3770	2330	6860	1110 J	1260 J	1040 J	415 U	1000
THALLIUM	P	0.70	0.93 U	0.79 U	0.82 U	0.84 UJ	0.81 UJ	0.81 UJ	0.74 U	2
VANADIUM	P	0.14	42.3	17.7	18.5	21.0	19.9	19.4	7.1	10
ZINC	P	0.28	2080	1530	4880	411	410	316	12.2 U	4
CYANIDE	CA	0.04	0.09 UJ	0.04 UJ	0.04 UJ	0.04 UJ	0.06 UJ	0.13 UJ	0.04 UJ	0.5

ANALYTICAL METHOD
P - ICP
CV - COLD VAPOR
CA - MIDI-DISTILLATION SPECTROPHOTOMETRIC

NOTE:
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NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

SITE: BOULTER FARM AREA (LOT NOS. 363 AND 366)
CASE: 30630 SDG: MA0KB2
LABORATORY: SENTINEL, INC.

TABLE 1
INORGANIC SOIL ANALYSES
mg/kg

SAMPLE NUMBER:	MA0KD2	MA0KD3	MA0KD4	MA0KD6	MA0KD8
SAMPLE LOCATION:	SO-02	SO-03	SO-04	SO-06	SO-11
LABORATORY NUMBER:	45299S	45300S	45301S	45302S	45303S
PERCENT SOLIDS:	83.5	88.4	89.9	97.1	81.1

INORGANIC ANALYTES	METHOD	INSTRUMENT DETECTION LIMITS (mg/kg)										CONTRACT DETECTION LIMITS (mg/kg)
ALUMINUM	P	3.7	9760		6810		3020		4000		12700		40
ANTIMONY	P	0.76	3.4	J	25.5	J	0.85	UJ	0.78	UJ	6.5	J	12
ARSENIC	P	0.60	6.1	J	3.3	J	1.8	J	1.3	J	11.8	J	2
BARIUM	P	0.08	611		100		46.3		17.4		1460		40
BERYLLIUM	P	0.06	0.19		0.15		0.83		0.19		0.09	J	1
CADMIUM	P	0.10	1.4		0.85		0.27		0.17	J	6.1		1
CALCIUM	P	19.1	19200		1360		1790		583		38000		1000
CHROMIUM	P	0.16	16.1		15.2		4.0		48.7		34.9		2
COBALT	P	0.24	5.9		4.0		3.8		3.4		8.3		10
COPPER	P	0.28	215		226		7.8		8.8		1280		5
IRON	P	3.4	20000		9940		4240		7420		25000		20
LEAD	P	0.56	1840		423		8.5		10.0		4290		0.6
MAGNESIUM	P	5.0	2570		1300		1510		1090		4180		1000
MANGANESE	P	0.08	182		114		2200		155		399		3
MERCURY	CV	0.05	0.12	J	0.07	J	0.06	UJ	0.05	UJ	0.35	J	0.1
NICKEL	P	0.34	13.2	J	9.9	J	5.1	J	6.2	J	51.2	J	8
POTASSIUM	P	3.6	526		464		457		483		1020		1000
SELENIUM	P	0.44	2.0	UJ	1.0	UJ	0.49	UJ	0.45	UJ	0.95	UJ	1
SILVER	P	0.22	0.87	J	0.25	UJ	0.26	J	0.23	UJ	1.7	J	2
SODIUM	P	60.3	1800		865		541	U	378	U	5550		1000
THALLIUM	P	0.70	0.84	U	0.79	U	0.78	U	0.72	U	0.86	U	2
VANADIUM	P	0.14	23.3		16.2		7.7		7.6		144		10
ZINC	P	0.28	884		368		18.8	U	37.7		3500		4
CYANIDE	CA	0.04	0.26	UJ	0.04	UJ	0.04	UJ	0.04	UJ	0.47	UJ	0.5

ANALYTICAL METHOD
P - ICP
CV - COLD VAPOR
CA - MIDI-DISTILLATION SPECTROPHOTOMETRIC

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NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

ITE: BU[illegible]ER F[illegible] AREA (LOTS NOS. 363 and 366)
ASE: 0495F SDG: D06351
ABORATORY: SOUTHWEST LABORATORY OF OKLAHOMA, INC.

TABLE 1
INORGANIC SOIL ANALYSES
mg/kg

SAMPLE NUMBER:			D06358	D06359	D06360	D06388	D06389	D06390	
SAMPLE LOCATION:			SS-08	SS-09	SS-10	SO-08	SO-09	SO-10	
LABORATORY NUMBER:			50114.01	50114.02	50114.03	50114.04	50114.05	50114.06	
PERCENT SOLIDS:			89.1	95.3	90.5	90.4	93.3	93.5	
IORGANIC NALYTES	METHOD	INSTRUMENT DETECTION LIMITS (mg/kg)							CONTRACT DETECTION LIMITS (mg/kg)
LUMINUM	P	2.8	6070	6710	7530	5390	5320	2660	40
NTIMONY	P	0.60	0.69 J	0.62 U	0.63 U	0.73 J	0.63 U	0.64 U	12
RSENIC	P	0.40	1.5	2.4	1.8	1.8	1.8	1.3	2
ARIUM	P	0.20	64.5	29.0	48.3	57.3	32.6	20.9	40
ERYLLIUM	P	0.20	0.36 J	0.41 J	0.41 J	0.71	2.0	0.21 U	1
ADMIUM	P	0.20	0.31 J	0.40 J	0.33 J	0.33 J	0.58	0.21 U	1
ALCIUM	P	4.0	849	797	1420	1450	1020	580	1000
HROMIUM	P	0.20	6.3 J	7.9 J	7.4 J	5.3 J	5.1 J	2.4 J	2
OBALT	P	0.40	3.8	5.1	5.1	4.5	4.9	2.0	10
OPPER	P	0.20	7.7	12.5	6.1	9.8	8.4	3.5	5
RON	P	1.4	9790	12300	11000	11200	13700	4850	20
EAD	P	0.20	313 J	14.4 J	32.6 J	13.4 J	7.5 J	138 J	0.6
AGNESIUM	P	5.6	1560	2360	1730	2020	1950	805	1000
ANGANESE	P	0.20	156	283	193	268	260	93.5	3
ERCURY	AV	0.05	0.05 U	0.05 U	0.06 U	0.05 U	0.05 U	0.05 U	0.1
ICKEL	P	0.20	5.4	7.5	6.2	5.4	5.9	2.2	8
OTASSIUM	P	5.8	428	637	525	853	990	352	1000
ELENIUM	P	0.60	0.85 J	0.62 U	0.85 J	0.71 J	1.0 J	0.64 U	1
ILVER	P	0.20	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	2
ODIUM	P	2.6	239	261	286	289	290	210	1000
HALLIUM	P	0.60	0.64 U	1.0 J	0.71 J	1.2 J	1.2 J	0.64 U	2
ANADIUM	P	0.20	13.0	14.3	17.0	14.2	11.2	5.0	10
INC	P	0.60	27.9	31.3	35.7	21.3	39.6	21.0	4
YANIDE	AS	0.10	0.11 UJ	0.10 UJ	0.11 UJ	0.11 UJ	0.11 UJ	0.10 UJ	0.5

ANALYTICAL METHOD
P - ICP
AV - AUTOMATED COLD VAPOR
AS - SEMI AUTOMATED SPECTROPHOTOMETRIC

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NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

SITE: BOULTER FARM AREA (LOT Nos. 363 and 366)
CASE: 0495F SDG: D06291
LABORATORY: SOUTHWEST LABORATORY OF OKLAHOMA, INC.

TABLE 1
INORGANIC SOIL ANALYSES
mg/kg

SAMPLE NUMBER:			D06291	D06292	D06293	D06294	D06295	D06296	D06297	
SAMPLE LOCATION:			SD-01	SD-02	SD-03	SD-04	SD-05	SD-06	SD-07	
LABORATORY NUMBER:			50087.01	50087.03	50087.04	50087.05	50087.06	50087.07	50087.10	
PERCENT SOLIDS:			59.8	69.6	76.2	61.6	73.1	68.9	48.3	
INORGANIC ANALYTES	METHOD	INSTRUMENT DETECTION LIMITS (mg/kg)								CONTRACT DETECTION LIMITS (mg/kg)
ALUMINUM	P	10.8	4510	5590	5830	8740	6680	5320	11700	40
ANTIMONY	P	1.8	3.0 U	2.5 U	2.4 U	2.9 U	2.4 U	2.5 U	3.7 U	12
ARSENIC	P	0.80	1.8 J	1.1 UJ	1.0 UJ	1.9 J	1.3 J	3.4 J	1.6 UJ	2
BARIUM	P	2.0	57.4 J	26.0 J	112 J	135 J	97.9 J	279 J	121 J	40
BERYLLIUM	P	0.20	0.42 J	1.2	0.57	1.5	1.2	1.5	2.1	1
CADMIUM	P	0.20	0.33 U	0.27 U	0.26 U	0.32 U	0.27 U	0.34 J	0.41 U	1
CALCIUM	P	69.8	690	908	1080	2190	1580	1500	1020	1000
CHROMIUM	P	0.40	5.3	5.7	7.5	8.8	7.1	R	3.9	2
COBALT	P	1.0	3.5	3.2	4.5	3.6	4.2	25.0	2.0 U	10
COPPER	P	0.40	6.1 J	2.0 J	1.7 J	4.5 J	1.6 J	2.0 J	7.6 J	5
IRON	P	5.4	8090	7480	10300	10400	8040	17000	2710	20
LEAD	P	0.60	197 J	66.1 J	22.9 J	96.7 J	47.8 J	30.0 J	82.4 J	0.6
MAGNESIUM	P	81.2	1040	2260	1620	1870	1560	527	349	1000
MANGANESE	P	0.20	223 J	166 J	224 J	259 J	205 J	6590 J	17.7 J	3
MERCURY	CV	0.05	0.08 U	0.08 J	0.07 U	0.06 U	0.07 U	0.07 U	0.10 U	0.1
NICKEL	P	1.0	6.5 J	8.5 J	7.1 J	8.3 J	7.2 J	8.3 J	4.5 J	8
POTASSIUM	P	56.4	299	298	443	571	442	292	508	1000
SELENIUM	P	0.80	R	R	R	R	R	R	R	1
SILVER	P	0.20	0.33 U	0.27 U	0.26 U	0.32 U	0.27 U	0.28 U	0.41 U	2
SODIUM	P	94.0	360	302	328	406	315	314	501	1000
THALLIUM	P	1.4	2.3 U	1.9 U	1.8 U	2.3 U	1.9 U	3.1	2.8 U	2
VANADIUM	P	0.80	12.6	11.2	17.6	20.2	15.5	19.0	6.4	10
ZINC	P	1.4	77.1 J	26.7 J	36.7 J	45.6 J	36.0 J	41.8 J	21.6 J	4
CYANIDE	CA	0.10	0.17 U	0.14 U	0.12 U	0.16 U	0.14 J	0.16 J	0.20 U	0.5

ANALYTICAL METHOD
P - ICP
CV - COLD VAPOR
CA - MIDI-DISTILLATION SPECTROPHOTOMETRIC

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NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

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SITE: OULTER FARM AREA (LOT Nos. 363 and 366)
CASE: 0495F SDG: D06291
LABORATORY: SOUTHWEST LABORATORY OF OKLAHOMA, INC.

TABLE 1
INORGANIC SOIL ANALYSES
mg/kg

SAMPLE NUMBER:			D06298	D06299	D06350	D06363	D06364	D06365	D06366	
SAMPLE LOCATION:			SD-08	SD-09	SC-01	SS-13	SS-14	SS-15	SS-16	
LABORATORY NUMBER:			50087.11	50087.18	50087.21	50087.16	50087.17	50087.19	50087.20	
PERCENT SOLIDS:			54.9	31.3	94.1	73.0	76.8	76.7	76.2	
INORGANIC ANALYTES	METHOD	INSTRUMENT DETECTION LIMITS (mg/kg)								CONTRACT DETECTION LIMITS (mg/kg)
ALUMINUM	P	10.8	28400	25200	3530	11000	9060	4760	3570	40
ANTIMONY	P	1.8	3.3 U	5.5 U	2.9 J	2.4 U	2.2 U	2.3 U	3.2 J	12
ARSENIC	P	0.80	5.1 J	4.3 J	14.6 J	4.1 J	3.5 J	6.8 J	9.9 J	2
BARIUM	P	2.0	568 J	386 J	2220 J	450 J	425 J	586 J	1040 J	40
BERYLLIUM	P	0.20	6.5	5.8	0.37 J	0.49 J	0.25 U	0.25 U	0.25 U	1
CADMIUM	P	0.20	0.36 U	0.61 U	17.1	2.2	2.3	5.3	6.8	1
CALCIUM	P	69.8	2270	2800	3680	1860	1450	3000	1900	1000
CHROMIUM	P	0.40	21.1 J	20.2	193 J	61.0 J	28.8 J	82.8 J	67.6 J	2
COBALT	P	1.0	15.4	7.1	6.5	7.2	5.0	6.8	2.7	10
COPPER	P	0.40	6.7 J	7.5 J	828	174	128	243	370	5
IRON	P	5.4	34100	24100	34600	15200	13700	20300	14700	20
LEAD	P	0.60	38.7 J	84.0 J	30400	6820	7190	10700	24500	0.6
MAGNESIUM	P	81.2	2130	2280	550	3590	1710	803	400	1000
MANGANESE	P	0.20	5380 J	593 J	100 J	218 J	182 J	114 J	46.3 J	3
MERCURY	CV	0.05	0.14 J	0.16 U	0.36	0.12 J	0.08 J	0.23	0.08 J	0.1
NICKEL	P	1.0	20.8 J	18.2 J	118	281	224	72.0	84.7	8
POTASSIUM	P	56.4	730	746	86.7 J	582	417	235	133 J	1000
SELENIUM	P	0.80	R	5.1 J	0.87 J	R	R	1.5 J	2.2 J	1
SILVER	P	0.20	0.36 U	0.61 U	5.4	2.8	1.1	1.3	2.2	2
SODIUM	P	94.0	526	649	260	393	327	288	337	1000
THALLIUM	P	1.4	3.4 J	4.3 U	1.5 U	1.9 U	1.7 U	1.8 U	1.8 U	2
VANADIUM	P	0.80	47.6	48.8	14.5	32.1	27.3	17.9	21.5	10
ZINC	P	1.4	79.6 J	81.4 J	1700 J	454 J	496 J	771 J	759 J	4
CYANIDE	CA	0.10	0.57	NA	1.2 J	6.9 J	1.5 J	3.1 J	0.63 J	0.5

ANALYTICAL METHOD
P - ICP
CV - COLD VAPOR
CA - MIDI-DISTILLATION SPECTROPHOTOMETRIC

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SITE: JULTER FARM AREA (LOT Nos. 363 and 366)
CASE: 0495F SDG: D06291
LABORATORY: SOUTHWEST LABORATORY OF OKLAHOMA, INC.

TABLE 1
INORGANIC SOIL ANALYSES
mg/kg

SAMPLE NUMBER:	D06385
SAMPLE LOCATION:	SO-05
LABORATORY NUMBER:	50087.22
PERCENT SOLIDS:	86.3

INORGANIC ANALYTES	METHOD	INSTRUMENT DETECTION LIMITS (mg/kg)			CONTRACT DETECTION LIMITS (mg/kg)
ALUMINUM	P	10.8	4310		40
ANTIMONY	P	1.8	2.1	U	12
ARSENIC	P	0.80	2.3	J	2
BARIUM	P	2.0	40.2	J	40
BERYLLIUM	P	0.20	0.28	J	1
CADMIUM	P	0.20	0.23	U	1
CALCIUM	P	69.8	1030		1000
CHROMIUM	P	0.40	5.0	J	2
COBALT	P	1.0	4.7		10
COPPER	P	0.40	4.6	J	5
IRON	P	5.4	7820		20
LEAD	P	0.60	152		0.6
MAGNESIUM	P	81.2	1490		1000
MANGANESE	P	0.20	136	J	3
MERCURY	CV	0.05	0.06	U	0.1
NICKEL	P	1.0	6.4	J	8
POTASSIUM	P	56.4	486		1000
SELENIUM	P	0.80		R	.1
SILVER	P	0.20	0.23	U	2
SODIUM	P	94.0	300		1000
THALLIUM	P	1.4	1.6	U	2
VANADIUM	P	0.80	8.7		10
ZINC	P	1.4	46.5	J	4
CYANIDE	CA	0.10	0.11	UJ	0.5

ANALYTICAL METHOD
P - ICP
CV - COLD VAPOR
CA - MIDI-DISTILLATION SPECTROPHOTOMETRIC

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ATTACHMENT B

BOULTER FARM AREA

SOIL BORING/WELL COMPLETION LOGS
START

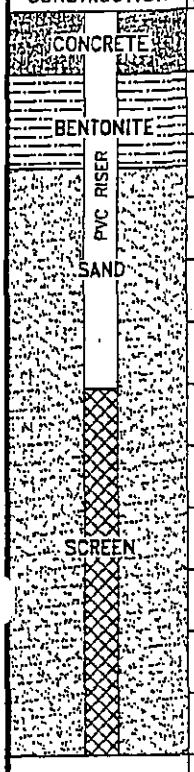
GEOPROBE TEST BORING LOG

BORING ID: SB-01 (SDDW-01)
SAMPLE ID: SS-01 and SO-01

PROJECT: BOULTER FARM AREA (LOT NOS. 363 AND 366)
LOCATION: CUMBERLAND, RHODE ISLAND
TDD No.: 03-05-0148
TASK No.: 6153

DATE/TIME STARTED:	19 June 2002
DATE/TIME FINISHED:	19 June 2002
LOG COMPLETED BY:	Kurt Zeppetello
SOIL BORING METHOD:	DUAL TUBE
OPERATOR:	Paul Schrot
ASSISTANT:	Ryan Manderbach

WELL CONSTRUCTION



DEPTH (FEET)	SAMPLE NO./ COLLECTION TIME	REC. % OR ft.	CLASSIFICATION
0	SS-01/1040	32" Rec. PID = 0.0	0 – 10" Brown to dark brown, SILT and clay, extraneous roots. 10 – 18" Brown, SILT and clay, trace broken rock fragments (quartz?) [Moist]. 18 – 32" Brown, fine SAND, little fine-to-medium gravel, trace rock fragments.
4	SO-01/1105	36" Rec. PID = 0.0	0 – 6" Brown, fine SAND, little fine-to-medium gravel, trace rock fragments [Moist]. 6 – 14" Brown to tan , rock fragments (granite boulder?). 14 – 24" Brown to tan, fine SAND and silt, some fine-to-medium gravel. 24 – 30" Brown, SILT and clay, some fine-to-medium gravel. 30 – 36" Brown, medium-to-coarse sand, some rock fragments (granite) [WET].
8		36" Rec. PID = 0.0	0 – 16" Brown, coarse SAND and fine gravel, some fine-to-medium sand and medium gravel [WET]. 16 – 24" Brown, SILT and clay [DRY]. 24 – 36" Brown to gray, SILT and clay, some broken rock fragments.
12		6" Rec. PID = 0.0	0 – 6" Brown to gray, SILT and clay (till?), some broken rock.
14			
16			
18			
20			

Comments:
PID readings in units above background.
Depth of well = 12 feet below ground surface.
Depth to groundwater = approximately 7.5 feet below ground surface.
Sample SS-01 collected from 0 to 2 feet below ground surface.
Sample SO-01 collected from 4 to 8 feet below ground surface.

Well Construction:
6 feet of 0.5 inch diameter solid PVC riser.
Sand pack from 2 to 12 feet.
Divider seal (bentonite) from 0.5 to 2 feet.
Inner diameter of well casing = 0.75 inches.
Well completed with a 4-inch diameter stick-up steel guard casing.

S:\0 48\Boring logs\boring log SB-01.dwg

GEOPROBE TEST BORING LOG

BORING ID: SB-02
SAMPLE ID: SS-02 and SO-02

PROJECT: BOULTER FARM AREA (LOT NOS. 363 AND 366)
LOCATION: CUMBERLAND, RHODE ISLAND
TDD No.: 03-05-0148
TASK No.: 6153

DATE STARTED:	18 June 2002
DATE FINISHED:	18 June 2002
LOG COMPLETED BY:	Kurt Zeppetello
SOIL BORING METHOD:	DUAL TUBE
OPERATOR:	Paul Schrot
ASSISTANT:	Ryan Manderbach

WELL CONSTRUCTION	DEPTH (FEET)	SAMPLE NO./ COLLECTION TIME	REC. % OR ft.	CLASSIFICATION
NO WELL INSTALLED	0	SS-02/1530	12" Rec. PID = 0.0 FID = 0.0	0 – 10" Dark brown to black, SILT and fine sand, some extraneous roots, brick fragments, organic rich. 10 – 12" Gray, coal slag fragments.
	2			
	4	SO-02/1600	26" Rec. PID = 0.0 FID = 0.0	0 – 4" Black and white, SILT and fine sand, some wood and ash [Moist]. 4 – 26" Brown to tan, SILT and clay, little fine sand [Moist].
	6			
	8			
	10			
	12			
	14			
	16			
	18			
	20			

Comments:
PID and FID readings in units above background.
Sample SS-02 collected from 0 to 2 feet below ground surface.
Sample SO-02 collected from 4 to 6 feet below ground surface.

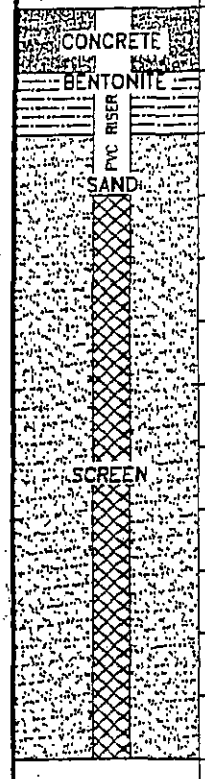
305017 ring boring log SB-02.dwg

GEOPROBE TEST BORING LOG

BORING ID: SDDW-02
SAMPLE ID:

PROJECT: BOULTER FARM AREA (LOT NOS. 363 AND 366)
LOCATION: CUMBERLAND, RHODE ISLAND
TDD No.: 03-05-0148
TASK No.: 6153

DATE/TIME STARTED:	20 June 2002
DATE/TIME FINISHED:	20 June 2002
LOG COMPLETED BY:	Kurt Zeppetello
SOIL BORING METHOD:	DUAL TUBE
OPERATOR:	James Dick
ASSISTANT:	Kyle Brennan



DEPTH (FEET)	SAMPLE NO./ COLLECTION TIME	REC. % OR ft.	CLASSIFICATION	
0		32" Rec. PID = 0.0	0 – 19"	Red, silt and fine sand, some broken rock fragments (granite)/quartzite).
			19 – 23"	Yellow Orange, coarse gravel and fine to medium gravel (broken rock, oxidized) [Wet].
2	▽		23 – 32"	Tan to White, medium sand [WET].
4		20" Rec. PID = 0.0	0 – 14"	Yellow Brown, coarse sand and fine to medium gravel. (broken rock)
			14 – 16"	Black, fine sand and silt (weathered rock?).
6			16 – 20"	Red, silt and fine sand, some broken rock.
8		20" Rec. PID = 0.0	0 – 20"	Red, coarse sand, some medium to fine gravel. [WET]
10				
12				
14				
16				
18				
20				

Comments:
PID eadings in units above background.
Depth of well = 12 feet below ground surface.
Depth to groundwater = approximately 3 feet below ground surface.
No samples taken from this boring.

Well Construction:
9 feet of 0.5 inch diameter solid PVC riser.
Sand pack from 2 to 12 feet.
Divider seal (bentonite) from 1 to 2 feet.
Concrete seal from 0 to 1 foot.
Inner diameter of well casing = 0.75 inches.
Well completed with a 4-inch diameter stick-up steel guard casing.

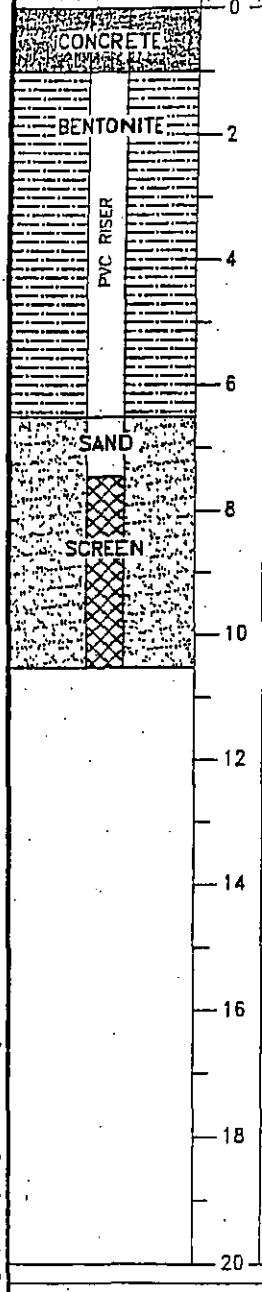
S:\030! \Boring logs\boring log SDDW-02-2.dwg

GEOPROBE TEST BORING LOG

BORING ID: SB-03 (SDDW-03)
SAMPLE ID: SS-03

PROJECT: BOULTER FARM AREA (LOT NOS. 363 AND 366)
LOCATION: CUMBERLAND, RHODE ISLAND
TDD No.: 03-05-0148
TASK No.: 6153

DATE/TIME STARTED:	18 June 2002
DATE/TIME FINISHED:	18 June 2002
LOG COMPLETED BY:	John Kelly
SOIL BORING METHOD:	DUAL TUBE
OPERATOR:	James Dick
ASSISTANT:	Kyle Brennan



WELL CONSTRUCTION	DEPTH (FEET)	SAMPLE NO./ COLLECTION TIME	REC. % OR ft.	CLASSIFICATION
	0	SS-03/0845	18" Rec.	0 – 10" Brown to dark brown, SILT and clay, extraneous roots. 10 – 18" Brown, SILT and clay, trace broken rock fragments (quartz?) [Moist]. 18 – 32" Brown, fine SAND, little fine-to-medium gravel, trace rock fragments.
	4		26" Rec.	0 – 6" Brown, fine SAND, little fine-to-medium gravel, trace rock fragments [Moist]. 6 – 14" Brown to tan , rock fragments (granite boulder?). 14 – 24" Brown to tan, fine SAND and silt, some fine-to-medium gravel. 24 – 30" Brown, SILT and clay, some fine-to-medium gravel.
	8		0.9" Rec.	0 – 16" Brown, coarse SAND and fine gravel, some fine-to-medium sand and medium gravel [WET].

Comments:

Depth of well = 10.5 feet below ground surface.
Sample SS-03 collected from 0 to 2 feet below ground surface.

Well Construction:

3 feet of 0.5 inch diameter solid PVC riser.
Sand pack from 6.5 to 10.5 feet.
Divider seal (bentonite) from 1 to 6.5 feet.
Inner diameter of well casing = 0.75 inches.
Well completed with a 4-inch diameter stick-up steel guard casing.

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GEOPROBE TEST BORING LOG

BORING ID: SB-03A
SAMPLE ID: SO-03

DATE STARTED:	18 June 2002
DATE FINISHED:	18 June 2002
LOG COMPLETED BY:	John Kelly
SOIL BORING METHOD:	MACRO CORE
OPERATOR:	James Dick
ASSISTANT:	Kyle Brennan

PROJECT: BOULTER FARM AREA (LOT NOS. 363 AND 366)
LOCATION: CUMBERLAND, RHODE ISLAND
TDD No.: 03-05-0148
TASK No.: 6153

WELL CONSTRUCTION	DEPTH (FEET)	SAMPLE NO./ COLLECTION TIME	REC. % OR ft.	CLASSIFICATION
NO WELL INSTALLED	0		30" Rec.	0 – 18" Medium brown, sandy SILT, trace rock fragments. 18 – 30" Dark brown to black, SILT, little glass, brick and rubber fragments.
	2	SO-03/0950		
	4		36" Rec.	0 – 13" Dark brown to black, SILT, little glass, brick, rubber, and rock fragments. 13 – 31" Light brown to grayish white, poorly sorted fine SAND, trace rock fragments. 31 – 33" Light brown, medium-to-coarse SAND, trace silt and fine gravel. 33 – 35" Reddish brown, fine-to-coarse SAND, trace silt. 35 – 36" Rock Fragments.
	6			
	8			
	10			
	12			
	14			
	16			
	18			
	20			

Comments:
Sample SO-03 collected from 2 to 5 feet below ground surface.

S:\03-48\Boring logs\boring log SB-03A.dwg

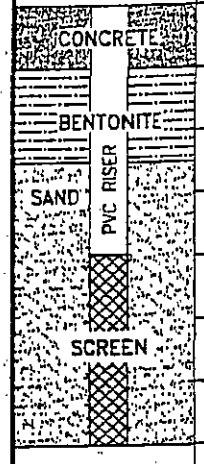
GEOPROBE TEST BORING LOG

BORING ID: SB-04 (SDDW-04)
SAMPLE ID: SS-04 and SO-04

PROJECT: BOULTER FARM AREA (LOT NOS. 363 AND 366)
LOCATION: CUMBERLAND, RHODE ISLAND
TDD No.: 03-05-0148
TASK No.: 6153

DATE/TIME STARTED:	18 June 2002
DATE/TIME FINISHED:	18 June 2002
LOG COMPLETED BY:	John Kelly
SOIL BORING METHOD:	MACRO CORE
OPERATOR:	James Dick
ASSISTANT:	Kyle Brennan

WELL CONSTRUCTION



DEPTH (FEET)	SAMPLE NO./ COLLECTION TIME	REC. % OR ft.	CLASSIFICATION	
0	SS-04/1620	32" Rec. PID = 0.0	0 - 6 "	Medium brown rock fragments, some silt.
			6 - 14 "	Light gray rock fragments, some silty poorly sorted coarse sand, trace fine-to-medium sand, trace angular gravel.
2			14 - 17 "	Pink to reddish brown fine SAND and SILT, trace gravel, trace medium-to-coarse sand.
			17 - 21 "	Light brown poorly sorted fine SAND, some silt, large gravel pieces 1-1.5" diameter, trace medium-to-coarse sand.
			21 - 24 "	Dark Red to purple fine-to-medium SAND and SILT [Moist]. Sample leaves residue, possibly oil/tar like material
4	SO-04/1710	36" Rec. PID = 0.0	0 - 8 "	Dark red/ pink-purple, SILTwith fine sand, little rock fragments (angular fragments of red and black rocks).
			8 - 10 "	Dark red pink SILTwith trace fine sand [Saturated].
6			10 - 20 "	Dark red/ pink fine SAND and SILT, some medium-to-coarse sand, trace angular rock fragments. Rock fragments increasing towards bottom.
8				
10			* Cutting shoe contained dryrock fragments Cut round - appears to be bedrock (Rod con?)	
12				
14				
16				
18				
20				

Comments:
Inner diameter of well casing = 0.75 inches.
Well completed with a 4-inch diameter stick-up steel guard casing.
PID readings in units above background.
Depth of well = 7 feet below ground surface.
Depth to groundwater = approximately 5.5 feet below ground surface.
Sample SS-04 collected from 0 to 2 feet below ground surface.
Sample SO-04 collected from 4 to 6 feet below ground surface.

Well Construction:
4 feet of 0.5 inch diameter solid PVC riser.
Sand pack from 2.5 to 7 feet.
Divider seal (bentonite) from 1 to 2.5 feet.

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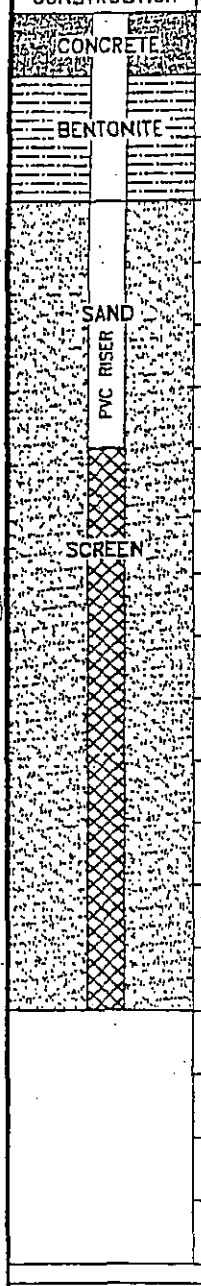
GEOPROBE TEST BORING LOG

BORING ID: SB-05 (SDDW-05)
SAMPLE ID: SS-05 and SO-05

PROJECT: BOULTER FARM AREA (LOT NOS. 363 AND 366)
LOCATION: CUMBERLAND, RHODE ISLAND
TDD No.: 03-05-0148
TASK No.: 6153

DATE/TIME STARTED:	19 June 2002
DATE/TIME FINISHED:	19 June 2002
LOG COMPLETED BY:	Kurt Zeppetello
SOIL BORING METHOD:	DUAL TUBE
OPERATOR:	Paul Schrot
ASSISTANT:	Ryan Manderbach



DEPTH (FEET)	SAMPLE NO./ COLLECTION TIME	REC. % OR ft.	CLASSIFICATION
0	SS-05/1605	34" Rec. PID = 0.0 FID = 0.0	0 – 2" Dark brown, SILT and clay, extraneous roots, organic rich. 2 – 26" Brown to tan, SILT and clay. 26 – 34" Brown to tan, SILT and clay, some sand.
4		24" Rec. PID = 28.5 FID = 3.7	0 – 18" Brown to white, fine-to-coarse SAND, some fine-to-medium gravel. 18 – 24" Brown, medium-to-coarse SAND, some medium gravel.
8	SO-05/1645	18" Rec. PID = 0.0 FID = 0.0	0 – 18" Gray to black, coarse SAND and fine gravel, some medium sand.
12		18" Rec. PID = 92.1 FID = 39.9	0 – 18" Gray to black, coarse SAND and fine gravel, some medium sand.

Comments:

PID and FID readings in units above background.
Depth of well = 16 feet below ground surface.
Depth to groundwater = approximately 7.5 feet below ground surface.
Sample SS-05 collected from 0 to 4 feet below ground surface.
Sample SO-05 collected from 8 to 16 feet below ground surface.

Well Construction:

9 feet of 0.5 inch diameter solid PVC riser.
Sand pack from 3 to 16 feet.
Divider seal (bentonite) from 1 to 3 feet.
Inner diameter of well casing = 0.75 inches.
Well completed with a 4-inch diameter stick-up steel guard casing.

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GEOPROBE TEST BORING LOG

BORING ID: SB-06
SAMPLE ID: SS-06

PROJECT: BOULTER FARM AREA (LOT NOS. 363 AND 366)
LOCATION: CUMBERLAND, RHODE ISLAND
TDD No.: 03-05-0148
TASK No.: 6153

DATE STARTED:	18 June 2002
DATE FINISHED:	18 June 2002
LOG COMPLETED BY:	John Kelly
SOIL BORING METHOD:	MACRO CORE
OPERATOR:	James Dick
ASSISTANT:	Kyle Brennan

WELL CONSTRUCTION	DEPTH (FEET)	SAMPLE NO./ COLLECTION TIME	REC. % OR ft.	CLASSIFICATION
NO WELL INSTALLED	0	SS-06/1410	28" Rec. PID = 0.0 FID = 0.0	0 – 8" Medium brown, silty medium SAND, little organic material, trace gravel and debris (wood, rug, glass). 8 – 20" Light to medium brown, fine SAND, trace medium sand and gravel. 20 – 28" Light to medium brown, poorly sorted fine-to-coarse SAND, some gravel, trace silt.
	2			
	4		6" Rec. PID = 0.0 FID = 0.0	0 – 6" Light brown to light gray, poorly sorted fine-to-coarse SAND, some gravel.
	6			
	8			
	10			
	12			
	14			
	16			
	18			
	20			

Comments:

PID and FID readings in units above background.
Sample SS-06 collected from 0 to 2 feet below ground surface.

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GEOPROBE TEST BORING LOG

BORING ID: SB-07
SAMPLE ID: SS-07 and SO-07

PROJECT: BOULTER FARM AREA (LOT NOS. 363 AND 366)
LOCATION: CUMBERLAND, RHODE ISLAND
TDD No.: 03-05-0148
TASK No.: 6153

DATE STARTED:	20 June 2002
DATE FINISHED:	20 June 2002
LOG COMPLETED BY:	Kurt Zeppetello
SOIL BORING METHOD:	GEOPROBE
OPERATOR:	Paul Schrol
ASSISTANT:	Ryan Manderbach

WELL CONSTRUCTION	DEPTH (FEET)	SAMPLE NO./ COLLECTION TIME	REC. % OR ft.	CLASSIFICATION	
NO WELL INSTALLED	0	SS-07/0835	38" Rec. PID = 0.0	0 - 6"	Dark Brown, silt and clay, some roots.
	2			6 - 26"	Brown to Light Brown, silt and clay, trace roots.
				26 - 38"	Tan, silt and clay.
	4	SO-07/0910	32" Rec. PID = 0.0	0 - 3"	Dark Brown, silt and clay.
				3 - 19"	Light Brown to Tan, silt and fine sand.
	6			19 - 32"	Light Brown to Tan, medium sand, some fine sand, little fine to medium gravel.
	8		24" Rec. PID = 0.0	0 - 8"	Light Brown to Tan, medium sand, some fine sand, little fine to medium gravel.
	10			8 - 24"	Light Brown, medium to coarse sand, some fine to medium gravel, little broken rock.
	12				
	14				
	16				
	18				
	20				

Comments:
PID readings in units above background.
Sample SS-07 collected from 0 to 2 feet below ground surface.
Sample SO-07 collected from 4 to 6 feet below ground surface.

S:\148\Boring logs\boring log SB-07.dwg

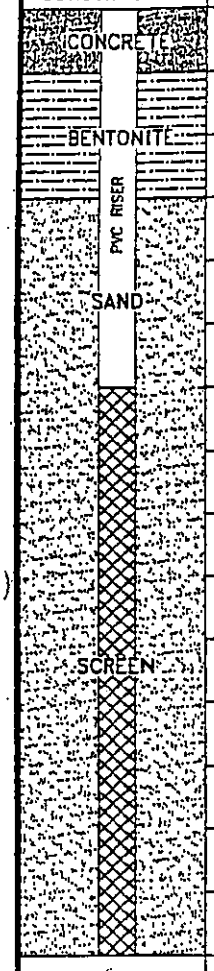
GEOPROBE TEST BORING LOG

BORING ID: SDDW-07
SAMPLE ID: SO-10

PROJECT: BOULTER FARM AREA (LOT NOS. 363 AND 366)
LOCATION: CUMBERLAND, RHODE ISLAND
TDD No.: 03-05-0148
TASK No.: 6153

DATE/TIME STARTED:	20 June 2002
DATE/TIME FINISHED:	20 June 2002
LOG COMPLETED BY:	Kurt Zeppetello
SOIL BORING METHOD:	DUAL TUBE
OPERATOR:	Paul Schrot
ASSISTANT:	Ryan Manderbach

WELL CONSTRUCTION



DEPTH (FEET)	SAMPLE NO./ COLLECTION TIME	REC. % OR ft.	CLASSIFICATION	
0		36" Rec. PID = 0.0	0 – 17"	Dark Brown, silt and clay, some roots.
			17 – 36"	Brown to Light Brown, fine to medium sand, some medium gravel, little rock fragments.
4		25" Rec. PID = 52.8 (oily odor)	0 – 8"	Tan to Gray, fine to coarse sand, some medium gravel, and rock fragments (granite).
6			8 – 19"	Gray to Brown to Green, coarse sand and medium gravel, rock fragments [Damp].
	▽		19 – 25"	Black, coarse sand and medium gravel, rock fragments (granite) [WET]
8	SO-10/1440	28" Rec. PID= 111.0 (oily odor)	0 – 28"	Black, coarse sand and medium gravel, rock fragments [WET] (oily sheen).
12		39" Rec. PID = (oily odor)	0 – 39"	Black, coarse sand and medium gravel, rock fragments [WET] (oily sheen).
16				
18				
20				

Comments:

PID readings in units above background.
Depth of well = 15 feet below ground surface.
Depth to groundwater = approximately 7.5 feet below ground surface.
No samples taken from this boring.

Well Construction:

6 feet of 0.5 inch diameter solid PVC riser.
Sand pack from 3 to 15 feet.
Divider seal (bentonite) from 1 to 3 feet.
Concrete seal from 0 to 1 foot.
Inner diameter of well casing = 0.75 inches.
Well completed with a 4-inch diameter stick-up steel guard casing.

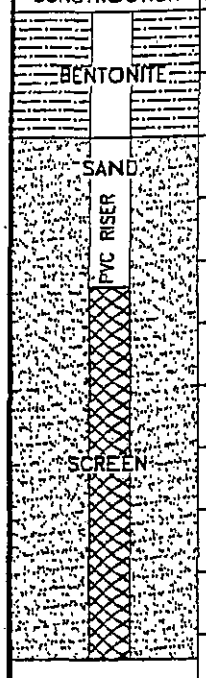
GEOPROBE TEST BORING LOG

BORING ID: SB-08 (SDDW-08)
SAMPLE ID: SS-08 and SO-08

PROJECT: BOULTER FARM AREA (LOT NOS. 363 AND 366)
LOCATION: CUMBERLAND, RHODE ISLAND
TDD No.: 03-05-0148
TASK No.: 6153

DATE/TIME STARTED:	19 June 2002
DATE/TIME FINISHED:	19 June 2002
LOG COMPLETED BY:	John Kelly
SOIL BORING METHOD:	DUAL TUBE
OPERATOR:	James Dick
ASSISTANT:	Kyle Brennan

WELL CONSTRUCTION



DEPTH (FEET)	SAMPLE NO./ COLLECTION TIME	REC. % OR ft.	CLASSIFICATION	
0	SS-08/0930	2.7' Rec.	0 - 5"	Moderate Brown, organic rich, silty fine sand (silt=30-40%), trace (5-10%) medium to coarse sand, trace 5% gravel.
		PID = 12.6		
		FID = 6.2	5 - 17"	Moderate to Light Brown, silty fine sand, some (30%) rock fragments, trace (10-15%) medium to coarse sand.
2			17 - 20"	Moderate to Light Brown, medium to coarse sand, (30%) fine sand, (10%) silt, trace (10-15%) gravel [Saturated].
			20 - 22"	Light Brown, silty fine sand (silt = 30%) [Saturated].
			22 - 28"	Mod. Brown silt with 10-20% fine sand, with trace gravel.
			28 - 35"	Fill material - Black silt with 10% fine sand [Dry]. glass marble and fibrous materials, red brick fragments.
4		3.5' Rec.	0 - 14"	Moderate Brown, poorly sorted coarse sand, trace gravel little (10-15%) gravel, trace 5-10% silt.
			14 - 25"	Dark Brown to Yellow Brown, fine to coarse sand with (20-30%) silt, 10-15% gravel, rock fragments.
			25 - 29"	Red & Gray, rock fragments [Dry].
6			29 - 31"	Grey & Light Brown, well sorted medium sand [Moist].
			31 - 33"	Red, silty fine sand [Moist].
			33 - 35"	Black coarse sand well sorted [Saturated].
	▽		35 - 42"	Reddish Brown, silty fine sands (silt=40%), 2 bands of Black medium to coarse sand (0.5" thick) [Saturated].
8	SO-08/1010	2.1' Rec.	0 - 6"	Sandy silt (fine sand=40%), trace gravel and coarse sand (5%) [Saturated].
			6 - 9"	Dark Gray to Black, medium to coarse sand.
			9 - 11"	Moderate to Light Brown, fine gravel with silt (30-40%).
			11 - 18"	Moderate to Light Brown, poorly sorted medium to coarse sand, silt (20%), fine sand (20%), gravel (5%).
10			18 - 21"	Mod. Brown silty angular gravel. [Saturated]
			21 - 26"	Reddish Pink fine to medium sand, trace coarse sand (5-10%), silt (5-10%).
12				
14				
16				
18				
20				

Comments:

PID and FID readings in units above background.
Depth of well = 10.4 feet below ground surface.
Depth to groundwater = approximately 7.5 feet below ground surface.
Sample SS-08 collected from 0.25 to 2 feet below ground surface.
Sample SO-08 collected from 7 to 10.5 feet below ground surface.

Well Construction:

4.4 feet of 0.5 inch diameter solid PVC riser.
Sand pack from 2 to 10.4 feet.
Divider seal (bentonite) from 0 to 2 feet.
Inner diameter of well casing = 0.75 inches.
Well completed with a 4-inch diameter stick-up steel guard casing.

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GEOPROBE TEST BORING LOG

BORING ID: SB-09
SAMPLE ID: SS-09 and SO-09

PROJECT: BOULTER FARM AREA (LOT NOS. 363 AND 366)
LOCATION: CUMBERLAND, RHODE ISLAND
TDD No.: 03-05-0148
TASK No.: 6153

DATE STARTED:	20 June 2002
DATE FINISHED:	20 June 2002
LOG COMPLETED BY:	John Kelly
SOIL BORING METHOD:	DUAL TUBE
OPERATOR:	James Dick
ASSISTANT:	Kyle Brennan

WELL CONSTRUCTION	DEPTH (FEET)	SAMPLE NO./ COLLECTION TIME	REC. % OR ft.	CLASSIFICATION	
NO WELL INSTALLED	0	SS-09/1135	35" Rec.	0 - 6"	Yellow Brown to Moderate Brown, poorly sorted, silty fine sand, with medium to coarse sand & gravel.
				6 - 13"	Green to Light Brown, fine sand, with 1-2" gravel (semi-rounded).
	2			13 - 26"	Light Brown to Yellow Brown, poorly sorted silty sand, (35% fine sand, 20% medium, 10% coarse), (30% silt), 10-15% gravel.
				28 - 35"	Light Brown to White/Gray, poorly sorted sand with silt (30%) and trace gravel (sand= 35% fine, 20% medium, 10% coarse) [DRY]
	4	SO-09/1155	28" Rec.	0 - 4"	Light Brown to Gray, poorly sorted sand (35% fine, 20% medium, 10% coarse) with silt (30%) and trace gravel.
	6			4 - 28"	Light to Moderate Brown, poorly sorted sand (20% fine, 30% medium, 20% coarse), some silt (~20%), trace (10-15%) gravel.
					Wet @ 14". Saturated @ 19"
	8		18" Rec.	0 - 18"	Moderate to Light Brown, poorly sorted medium to coarse sand, silt (20%), fine sand (20%), gravel (5%).
	10				
	12		36" Rec.	0 - 4"	Moderate Brown, well sorted fine sand.
				4 - 11"	Moderate to Dark Brown, sandy gravel with silt (30-40%), dark gray angular gravel, 30% fine sand fill in gravel spaces.
	14			11 - 31"	Brown to Dark Brown, gravelly sand with silt (15%), sand (30% fine, 10% medium, 20% coarse), gravel (25%).
				31 - 34"	Olive Brown, very light, well sorted fine sand.
				34 - 36"	Brown to Dark Brown, gravelly sand with silt (15%), sand (30% fine, 10% medium, 20% coarse), gravel (25%).
	16		43" Rec.	0 - 16"	Gray to White, well sorted fine to coarse sand (very classic section).
	18			16 - 21"	Moderate Brown, poorly sorted clayey sand with silt, clay (25%) sand (25% fine, 20% medium, 10% coarse), silt (15%), gravel (5%).
				21 - 43"	Pinkish to Red Brown, poorly sorted gravelly clayey sand, sand (10% fine, 10% medium, 25% coarse), clay (30%), gravel (25%). (appears to be till layer)
	20				

Comments:
PID and FID readings in units above background. (not recorded-inoperable)
Sample SS-09 collected from 0 to 2 feet below ground surface.
Sample SO-09 collected from 4.5 to 6.5 feet below ground surface.

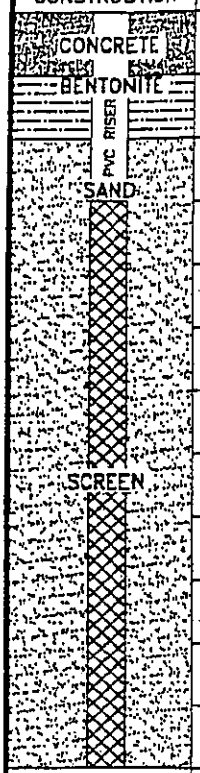
GEOPROBE TEST BORING LOG

BORING ID: SDDW-09
SAMPLE ID:

PROJECT: BOULTER FARM AREA (LOT NOS. 363 AND 366)
LOCATION: CUMBERLAND, RHODE ISLAND
TDD No.: 03-05-0148
TASK No.: 6153

DATE/TIME STARTED:	20 June 2002
DATE/TIME FINISHED:	20 June 2002
LOG COMPLETED BY:	Kurt Zeppetello
SOIL BORING METHOD:	DUAL TUBE
OPERATOR:	James Dick
ASSISTANT:	Kyle Brennan

WELL CONSTRUCTION



DEPTH (FEET)	SAMPLE NO./ COLLECTION TIME	REC. % OR ft.	CLASSIFICATION	
0		32" Rec. PID = 0.0	0 - 6"	Red-Brown, silt and clay, some roots and medium gravel.
			6 - 14"	Brown, silt and fine sand, some medium gravel and broken rock (slate) [Damp].
2			14 - 23"	Brown, silt, some fine sand [Damp].
	▽		23 - 32"	Tan to White, medium sand [WET].
4		40" Rec. PID = 0.0		
6			0 - 40"	Tan to White, medium sand [WET].
8		36" Rec. PID = 0.0	0 - 36"	Tan to White, medium sand [WET]. (sleeve stuck in the casing).
10			16 - 24"	Brown, silt and clay [DRY].
12				
14				
16				
18				
20				

Comments:

PID readings in units above background.
Depth of well = 12 feet below ground surface.
Depth to groundwater = approximately 3 feet below ground surface.

Well Construction:

3 feet of 0.5 inch diameter solid PVC riser.
Sand pack from 2 to 12 feet.
Divider seal (bentonite) from 1 to 2 feet.
Concrete seal from 0 to 1 foot.
Inner diameter of well casing = 0.75 inches.
Well completed with a 4-inch diameter stick-up steel guard casing.

030501 ...oring logs\boring log SDDW-11.dwg

GEOPROBE TEST BORING LOG

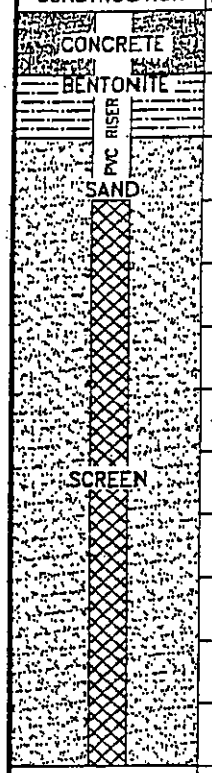
BORING ID: SB-10 (SDDW-06)
SAMPLE ID: SS-10

WESTON SOLUTIONS

PROJECT: BOULTER FARM AREA (LOT NOS. 363 AND 366)
LOCATION: CUMBERLAND, RHODE ISLAND
TDD No.: 03-05-0148
TASK No.: 6153

DATE/TIME STARTED:	19 June 2002
DATE/TIME FINISHED:	19 June 2002
LOG COMPLETED BY:	John Kelly
SOIL BORING METHOD:	DUAL TUBE
OPERATOR:	James Dick
ASSISTANT:	Kyle Brennan

WELL CONSTRUCTION



DEPTH (FEET)	SAMPLE NO./ COLLECTION TIME	REC. % OR ft.	CLASSIFICATION	
0	SS-10/1135	35" Rec.	0 - 12"	Dark Brown, medium to fine sand with small cobbles.
			12 - 14"	Brownish Black, medium to fine sand and broken rock fragments.
2			14 - 24"	Orange Brown, fine sand, with some small cobbles.
			24 - 32"	Brown, fine sand, with some silt and little small cobbles.
			32 - 35"	Orange Brown, fine sand, with little small cobbles. [Moist]
4		48" Rec.	0 - 9"	Brown silt with little fine sand.
			9 - 12"	Brown silt, medium to coarse sand.
			12 - 17"	Brown small to medium cobbles with little silt.
6			17 - 23"	Orange Brown small cobbles and silt with some fine sand.
			23 - 30"	Purple, small cobbles and coarse sand with some silt.
			30 - 40"	Red, fine silt, weathered mudstone.
	∇		40 - 48"	Orange large cobbles and medium sand with little silt.
8		26" Rec.		
10			0 - 26"	Reddish, fine to medium sand weathered mudstone bedrock fragments.
12				
14				
16				
18				
20				

Comments:

PID readings in units above background. (not recorded - unit inoperable)
Depth of well = 12 feet below ground surface.
Depth to groundwater = approximately - feet below ground surface.
Sample SS-10 collected from 0 to 2 foot below ground surface.

Well Construction:

9 feet of 0.5 inch diameter solid PVC riser.
Sand pack from 2 to 12 feet.
Divider seal (bentonite) from 1 to 2 feet.
Concrete seal from 0 to 1 foot.
Inner diameter of well casing = 0.75 inches.
Well completed with a 4-inch diameter stick-up steel guard casing.

\0305 \Boring logs\boring log SB-10.dwg

GEOPROBE TEST BORING LOG

BORING ID: SB-11
SAMPLE ID: SS-11 and SO-11

PROJECT: BOULTER FARM AREA (LOT NOS. 363 AND 366)
LOCATION: CUMBERLAND, RHODE ISLAND
TDD No.: 03-05-0148
TASK No.: 6153

DATE STARTED:	18 June 2002
DATE FINISHED:	18 June 2002
LOG COMPLETED BY:	Kurt Zeppetello
SOIL BORING METHOD:	HAND AUGER
OPERATOR:	Paul Schrot
ASSISTANT:	Ryan Manderbach

WELL CONSTRUCTION	DEPTH (FEET)	SAMPLE NO./ COLLECTION TIME	REC. % OR ft.	CLASSIFICATION	
NO WELL INSTALLED	0	SS-11/1410	24" Rec. PID = 0.0 FID = 0.0	0 - 24"	Dark Brown to Brown, silt and clay and fine sand, some extraneous material including bricks, broken glass, metal pipes, metal sheets, wood chips, burnt wood, fibrous material (fiberglass).
	2	SO-11/1530	24" Rec. PID = 0.0 FID = 0.0	0 - 24"	Dark Brown to Brown, silt and clay and fine sand, some extraneous material including bricks, broken glass, metal pipes, metal sheets, wood chips, burnt wood, fibrous material (fiberglass).
	4				
	6				
	8				
	10				
	12				
	14				
	16				
	18				
	20				

Comments:
PID and FID readings in units above background.
Sample SS-11 collected from 0 to 2 feet below ground surface.
Sample SO-11 collected from 2 to 4 feet below ground surface.

:\0305 Borin s\boring log SB-11.dwg

GEOPROBE TEST BORING LOG

BORING ID: SB-12
SAMPLE ID: SS-12 and SO-12

PROJECT: BOULTER FARM AREA (LOT NOS. 363 AND 366)
LOCATION: CUMBERLAND, RHODE ISLAND
TDD No.: 03-05-0148
TASK No.: 6153

DATE STARTED:	19 June 2002
DATE FINISHED:	19 June 2002
LOG COMPLETED BY:	Kurt Zeppetello
SOIL BORING METHOD:	DUAL TUBE
OPERATOR:	Paul Schrot
ASSISTANT:	Ryan Manderbach

WELL CONSTRUCTION	DEPTH (FEET)	SAMPLE NO./ COLLECTION TIME	REC. % OR ft.	CLASSIFICATION	
NO WELL INSTALLED	0	SS-12/1440	29" Rec. PID = 0.0	0 - 17"	Brown, silt and clay, some extraneous roots, trace medium gravel.
	2			17 - 29"	Light brown to tan, medium to coarse sand, some medium gravel.
	4	SO-12/1455	33" Rec. PID = 0.0	0 - 11"	Brown to tan, fine to medium sand, some medium gravel.
				11 - 18"	Brown, coarse sand, some medium gravel.
	6			18 - 33"	Brown, silt and clay and medium sand, some medium gravel and broken rock. [DAMP]
	8				
	10				
	12				
	14				
	16				
	18				
	20				

Comments:
PID and FID readings in units above background.
Sample SS-12 collected from 0 to 2 feet below ground surface.
Sample SO-12 collected from 4 to 6 feet below ground surface.

03050 ...\Boring logs\boring log SB-12.dwg

ATTACHMENT C

BOULTER FARM AREA

GROUNDWATER SAMPLE ANALYTICAL RESULTS
START

Samples collected 15 and 16 July 2002

DATA SUMMARY KEY
ORGANIC DATA VALIDATION

J	=	The associated numerical value is an estimated quantity.
R	=	The data are unusable (compound may or may not be present). Resampling and reanalysis are necessary for verification. The R replaces the numerical value or SQL.
U	=	The compound was analyzed for, but not detected. The associated numerical value is the SQL or the adjusted SQL.
UJ	=	The compound was analyzed for, but not detected. The associated numerical value is the estimated SQL.
EB	=	The compound was identified in an aqueous EB that was used to assess field contamination associated with soil/sediment samples.
TB	=	The compound was identified in an aqueous TB that was used to assess field contamination associated with soil/sediment samples.
BB	=	The compound was identified in an aqueous BB that was used to assess field contamination associated with soil/sediment samples.

ACRONYM LIST
ORGANIC DATA VALIDATION

AQ	aqueous
AQ FB	aqueous field blank
BB	Bottle Blank
B/N	base/neutral compound
°C	degrees Celsius
CC	Continuing Calibration
CLP	Contract Laboratory Program
COC	Chain-of-Custody record
CRQL	Contract Required Quantitation Limit
CSF	Complete SDG File
%D	percent difference
DAS	Delivery of Analytical Services
DEP	Department of Environmental Protection
DQO	Data Quality Objective
DV	Data Validation
DW	drinking water
EB	Equipment Blank
EPH	Extractable Petroleum Hydrocarbons
GC/FID	Gas Chromatograph/Flame Ionization Detector
GC/MS	Gas Chromatograph/Mass Spectrometry
GW	groundwater
IC	Initial Calibration
IS	Internal Standard
kg	kilogram
L	liter
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NA	Not Applicable
ND	non-detected result
OSC	On-Scene Coordinator
PCB	polychlorinated biphenyl compound
P/PCB	pesticide/polychlorinated biphenyl compound
PE	Performance Evaluation
Pos	positive result
QC	Quality Control
%R	percent recovery
RPD	Relative Percent Difference
Rf	Response Factor
RRF	Relative Response Factor
RSD	Relative Standard Deviation
SDG	Sample Delivery Group
SOW	Statement of Work
SQL	Sample Quantitation Limit
S/S	soil/sediment
S/S (m)	soil/sediment medium level
START	Superfund Technical Assessment and Response Team
SVOC	semivolatile organic compound
SW	surface water
SW-846	EPA Test Methods for Evaluating Solid Waste
TB	Trip Blank
TCL	Target Compound List
TIC	Tentatively Identified Compound
TPH	Total Petroleum Hydrocarbons
µg	microgram
VOC	volatile organic compound
VPH	Volatile Petroleum Hydrocarbons
WESTON	Weston Solutions, Inc. (formerly known as Roy F. Weston, Inc.)

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 30702 SDG: A0JS9
LABORATORY: COMPUCHEM

TABLE 1
VOLATILE AQUEOUS ANALYSES
µg/L

SAMPLE NUMBER:		A0QC2	A0QC6	A0QC8	A0QC9	A0QD1
SAMPLE LOCATION:		GW-02	GW-06	GW-08	GW-09	GW-13
LABORATORY NUMBER:		A0JS9-4	A0JS9-5	A0JS9-6	A0JS9-7	A0JS9-8
COMPOUND	CRQL					
Dichlorodifluoromethane	10	0.9 J	10 U	10 U	10 U	10 U
Chloromethane	10	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride	10	0.7 J	10 U	10 U	10 U	10 U
Bromomethane	10	10 U	10 U	10 U	10 U	10 U
Chloroethane	10	10 U	10 U	10 U	10 U	10 U
Trichlorofluoromethane	10	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloro-1,2,2-trifluoroethane	10	10 U	10 U	10 U	10 U	10 U
Acetone	10	10 U	10 U	10 U	10 U	10 U
Carbon Disulfide	10	10 U	10 U	10 U	10 U	10 U
Methyl Acetate	10	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	10	10 U	10 U	10 U	10 U	10 U
trans-1,2-Dichloroethene	10	10 U	10 U	10 U	10 U	10 U
Methyl tert-Butyl Ether	10	0.3 J	160	130	7 J	10 U
1,1-Dichloroethane	10	10 U	10 U	10 U	10 U	10 U
cis-1,2-Dichloroethene	10	10 U	10 U	10 U	10 U	10 U
2-Butanone	10	10 U	10 U	10 U	10 U	10 U
Chloroform	10	10 U	10 U	10 U	10 U	10 U
1,1,1-Trichloroethane	10	10 U	10 U	10 U	10 U	10 U
Cyclohexane	10	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10	10 U	10 U	10 U	10 U	10 U
Benzene	10	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10	10 U	10 U	10 U	10 U	10 U
Trichloroethene	10	10 U	10 U	10 U	10 U	10 U
Methylcyclohexane	10	10 U	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	10	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-Pentanone	10	10 U	10 U	10 U	10 U	10 U
Toluene	10	10 U	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	10	10 U	10 U	10 U	10 U	10 U
2-Hexanone	10	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	10	10 U	10 U	10 U	10 U	10 U
1,2-Dibromoethane	10	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	10	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	10	10 U	10 U	10 U	10 U	10 U
Xylene (Total)	10	10 U	10 U	10 U	10 U	10 U
Styrene	10	10 U	10 U	10 U	10 U	10 U
Bromoform	10	10 U	10 U	10 U	10 U	10 U
Isopropylbenzene	10	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10	10 U	10 U	10 U	10 U	10 U
1,2-Dibromo-3-chloropropane	10	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10	10 U	10 U	10 U	10 U	10 U
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0
DATE SAMPLED:		07/16/02	07/16/02	07/16/02	07/15/02	07/16/02
DATE ANALYZED:		07/26/02	07/26/02	07/26/02	07/26/02	07/26/02

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 0512F SDG: D06786_O
LABORATORY: GPL LABORATORIES, LLLP

TABLE 1
VOLATILE AQUEOUS ANALYSES
µg/L

SAMPLE NUMBER:		D06786	D06787	D06791	D06800
SAMPLE LOCATION:		GW-05	GW-07	TB-07	GW-11
LABORATORY NUMBER:		207110-001	207110-002	207110-003	207110-009
COMPOUND	CRQL				
Dichlorodifluoromethane	10	10 UJ	10 UJ	10 UJ	10 UJ
Chloromethane	10	10 U	10 U	10 U	10 U
Bromomethane	10	10 U	10 U	10 U	10 U
Vinyl Chloride	10	10 UJ	*340 J	10 UJ	10 UJ
Chloroethane	10	10 UJ	6 J	10 UJ	10 UJ
1,1,2-Trichloro-1,2,2-trifluoroethane	10	10 U	14	10 U	10 U
Trichlorofluoromethane	10	10 U	10 U	10 U	10 U
Methylene Chloride	10	10 U	10 U	10 U	10 U
Acetone	10	39 UJ	22 UJ	10 UJ	10 UJ
Carbon Disulfide	10	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10	10 U	10 U	10 U	10 U
trans-1,2-Dichloroethene	10	10 U	11	10 U	10 U
Methyl tert-Butyl Ether	10	10	*1300	4 J	10
1,1-Dichloroethane	10	10 U	130	10 U	10 U
Methyl Acetate	10	10 U	10 U	10 U	10 U
cis-1,2-Dichloroethene	10	10 U	96	10 U	10 U
Chloroform	10	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10	10 U	2 J	10 U	10 U
2-Butanone	10	10 U	10 U	10 U	10 U
1,1,1-Trichloroethane	10	10 U	10 U	10 U	10 U
Cyclohexane	10	10 U	3 J	10 U	1 J
Carbon Tetrachloride	10	10 U	10 U	10 U	10 U
Bromodichloromethane	10	10 U	10 U	10 U	10 U
Methylcyclohexane	10	1 J	3 J	10 U	1 J
1,2-Dichloropropane	10	10 U	4 J	10 U	10 U
cis-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
Trichloroethene	10	10 U	10 U	10 U	10 U
Benzene	10	10 U	52	10 U	10 U
Dibromochloromethane	10	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10	10 U	10 U	10 U	10 U
Bromoform	10	10 U	10 U	10 U	10 U
4-Methyl-2-Pentanone	10	10 U	13	10 U	10 U
2-Hexanone	10	8 J	10 U	10 U	10 U
Tetrachloroethene	10	10 U	1 J	10 U	10 U
1,2-Dibromoethane	10	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10	3 J	10 UJ	10 UJ	10 UJ
Toluene	10	10 U	*360 J	1 J	10 U
Chlorobenzene	10	10 U	10 U	10 U	10 U
Ethylbenzene	10	4 J	39	10 U	4 J
Styrene	10	2 J	10 U	10 U	10 U
Xylene (Total)	10	2 J	180	10 U	10 U
Isopropylbenzene	10	2 J	6 J	10 U	2 J
1,3-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10	2 J	11	10 U	2 J
1,2-Dibromo-3-chloropropane	10	8 J	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10	3 J	10 U	10 U	4 J
DILUTION FACTOR:		1.0	1.0/50.0*	1.0	1.0
DATE SAMPLED:		07/15/02	07/15/02	07/15/02	07/15/02
DATE ANALYZED:		07/18/02	07/18/02	07/18/02	07/18/02

* - Result reported from diluted analysis.

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
DAS CASE: 0510F SDG: D06788
LABORATORY: M.J. REIDER ASSOCIATES, INC.

TABLE 1
VOA Modified Method 524.2 Water Analyses
µg/L

SAMPLE NUMBER:		D06788	D06797
SAMPLE LOCATION:		GW-12	TB-10
LABORATORY NUMBER:		68681	68682
COMPOUND	RL		
Dichlorodifluoromethane	1.0	R	R
Chloromethane	1.0	R	R
Vinyl Chloride	1.0	R	R
Bromomethane	1.0	R	R
Chloroethane	1.0	R	R
Trichlorofluoromethane	1.0	R	R
Acetone	5.0	R	R
2-Butanone	5.0	R	R
Tetrahydrofuran	5.0	R	R
4-Methyl-2-Pentanone	5.0	R	R
2-Hexanone	5.0	R	R
1,1-Dichloroethene	1.0	R	R
Methylene Chloride	1.0	R	R
Carbon Disulfide	1.0	R	R
Trans-1,2-Dichloroethene	1.0	R	R
1,1-Dichloroethane	1.0	R	R
2,2-Dichloropropane	1.0	R	R
Cis-1,2-Dichloroethene	1.0	R	R
Chloroform	1.0	R	R
Bromochloromethane	1.0	R	R
1,1,1-Trichloroethane	1.0	R	R
1,1-Dichloropropene	1.0	R	R
Carbon Tetrachloride	1.0	R	R
1,2-Dichloroethane	1.0	R	R
Benzene	1.0	R	R
Trichloroethene	1.0	R	R
1,2-Dichloropropane	1.0	R	R
Bromodichloromethane	1.0	R	R
Dibromomethane	1.0	R	R
Cis-1,3-Dichloropropene	1.0	R	R
Toluene	1.0	R	R
Trans-1,3-Dichloropropene	1.0	R	R
1,1,2-Trichloroethane	1.0	R	R
1,3-Dichloropropane	1.0	R	R
Tetrachloroethene	1.0	R	R
Dibromochloromethane	1.0	R	R
1,2-Dibromoethane	1.0	R	R
Chlorobenzene	1.0	R	R
1,1,1,2-Tetrachloroethane	1.0	R	R
Ethylbenzene	1.0	R	R
m/p-Xylene	1.0	R	R
o-Xylene	1.0	R	R
Styrene	1.0	R	R
Bromoform	1.0	R	R
Isopropylbenzene	1.0	R	R
1,1,2,2-Tetrachloroethane	1.0	R	R
1,2,3-Trichloropropane	1.0	R	R
Bromobenzene	1.0	R	R
n-Propylbenzene	1.0	R	R
2-Chlorotoluene	1.0	R	R
1,3,5-Trimethylbenzene	1.0	R	R
4-Chlorotoluene	1.0	R	R
p-Isopropyltoluene	1.0	R	R
1,2,4-Trimethylbenzene	1.0	R	R
sec-Butylbenzene	1.0	R	R
tert-Butylbenzene	1.0	R	R
1,3-Dichlorobenzene	1.0	R	R
1,4-Dichlorobenzene	1.0	R	R
n-Butylbenzene	1.0	R	R
1,2-Dichlorobenzene	1.0	R	R
1-2-Dibromo-3-Chloropropane	1.0	R	R
1,2,4-Trichlorobenzene	1.0	R	R
Hexachlorobutadiene	1.0	R	R
Naphthalene	1.0	R	R
1,2,3-Trichlorobenzene	1.0	R	R
DILUTION FACTOR:		1	1
DATE SAMPLED:		07/15/02	07/15/02
DATE ANALYZED:		07/25/02	07/25/02

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 30702 SDG: A0JS9
LABORATORY: COMPUCHEM

TABLE 2
SEMIVOLATILE AQUEOUS ANALYSES
µg/L

SAMPLE NUMBER:		A0QC2	A0QC5	A0QC8	A0QC9	A0QD1	A0QD2
SAMPLE LOCATION:		GW-02	GW-06	GW-08	GW-09	GW-13	GW-12
LABORATORY NUMBER:		A0JS9-4	A0JS9-5	A0JS9-6	A0JS9-7	A0JS9-8	A0JS9-9
COMPOUND	CRQL						
Benzaldehyde	10	10 U	10 U	10 U	10 U	10 U	10 U
Phenol	10	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethyl)Ether	10	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	10	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	10	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-oxybis(1-Chloropropane)	10	10 U	10 U	10 U	10 U	10 U	10 U
Acetophenone	10	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	10	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	10	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	10	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	10	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethoxy)methane	10	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	10	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10	10 U	10 U	10 U	10 U	10 U	10 U
Caprolactam	10	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	10	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25	26 U	25 U	25 U	25 U	25 U	25 U
1,1'-Biphenyl	10	10 U	10 U	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	25	26 U	25 U	25 U	25 U	25 U	25 U
Dimethylphthalate	10	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	10	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	25	26 UJ	25 UJ	25 UJ	25 UJ	25 UJ	25 UJ
Acenaphthene	10	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25	26 UJ	25 UJ	25 UJ	25 UJ	25 UJ	25 UJ
4-Nitrophenol	25	26 U	25 U	25 U	25 U	25 U	25 U
Dibenzofuran	10	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	10	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	10	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	10	10 U	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	25	26 U	25 U	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25	26 U	25 U	25 U	25 U	25 U	25 U
N-Nitrosodiphenylamine (1)	10	10 U	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	10	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	10	10 U	10 U	10 U	10 U	10 U	10 U
Atrazine	10	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	25	26 U	25 U	25 U	25 U	25 U	25 U
Phenanthrene	10	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	10	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	10	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	10	10 U	10 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Benzo(a)anthracene	10	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	10	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	10	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10	10 U	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzo(a,h)anthracene	10	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10	10 U	10 U	10 U	10 U	10 U	10 U
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0
DATE SAMPLED:		07/16/02	07/16/02	07/16/02	07/15/02	07/16/02	07/15/02
DATE EXTRACTED:		07/19/02	07/19/02	07/19/02	07/19/02	07/19/02	07/19/02
DATE ANALYZED:		07/25/02	07/25/02	07/25/02	07/25/02	07/25/02	07/25/02

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 0512F SDG: D06786_C
LABORATORY: GPL LABORATORIES, LLLP

TABLE 2
SEMIVOLATILE AQUEOUS ANALYSES
µg/L

SAMPLE NUMBER:		D06786	D06787	D06800
SAMPLE LOCATION:		GW-05	GW-07	GW-11
LABORATORY NUMBER:		207110-001	207110-002	207110-009
COMPOUND	CRQL			
Benzaldehyde	10	11 UJ	11 UJ	11 UJ
Phenol	10	11 U	11 U	11 U
bis(2-Chloroethyl)Ether	10	11 U	11 U	11 U
2-Chlorophenol	10	11 U	11 U	11 U
2-Methylphenol	10	11 U	14	11 U
2,2'-oxybis(1-Chloropropane)	10	11 U	11 U	11 U
Acetophenone	10	11 U	11 U	11 U
4-Methylphenol	10	11 U	35	11 U
N-Nitroso-di-n-propylamine	10	11 U	11 U	11 U
Hexachloroethane	10	11 U	11 U	11 U
Nitrobenzene	10	11 U	11 U	11 U
Isophorone	10	11 U	11 U	11 U
2-Nitrophenol	10	11 U	11 U	11 U
2,4-Dimethylphenol	10	11 U	*96	11 U
bis(2-Chloroethoxy)methane	10	11 U	11 U	11 U
2,4-Dichlorophenol	10	11 U	11 U	11 U
Naphthalene	10	11 U	30	11 U
4-Chloroaniline	10	11 U	11 U	11 U
Hexachlorobutadiene	10	11 U	11 U	11 U
Caprolactam	10	11 U	11 U	11 U
4-Chloro-3-methylphenol	10	11 U	13	11 U
2-Methylnaphthalene	10	11 U	19	11 U
Hexachlorocyclopentadiene	10	11 U	11 U	11 U
2,4,6-Trichlorophenol	10	11 U	11 U	11 U
2,4,5-Trichlorophenol	25	28 U	26 U	26 U
1,1'-Biphenyl	10	1 J	2 J	1 J
2-Chloronaphthalene	10	11 U	11 U	11 U
2-Nitroaniline	25	28 U	26 U	26 U
Dimethylphthalate	10	11 U	11 U	11 U
2,6-Dinitrotoluene	10	11 U	11 U	11 U
Acenaphthylene	10	11 U	11 U	11 U
3-Nitroaniline	25	28 U	26 U	26 U
Acenaphthene	10	11 U	11 U	11 U
2,4-Dinitrophenol	25	28 U	26 U	26 U
4-Nitrophenol	25	28 U	26 U	26 U
Dibenzofuran	10	11 U	11 U	11 U
2,4-Dinitrotoluene	10	11 U	11 U	11 U
Diethylphthalate	10	11 U	11 U	11 U
Fluorene	10	11 U	11 U	11 U
4-Chlorophenyl-phenylether	10	11 U	11 U	11 U
4-Nitroaniline	25	28 U	26 U	26 U
4,6-Dinitro-2-methylphenol	25	28 U	26 U	26 U
N-Nitrosodiphenylamine (1)	10	11 U	11 U	11 U
4-Bromophenyl-phenylether	10	11 U	11 U	11 U
Hexachlorobenzene	10	11 U	11 U	11 U
Atrazine	10	11 U	11 U	11 U
Pentachlorophenol	25	28 U	26 U	26 U
Phenanthrene	10	11 U	11 U	11 U
Anthracene	10	11 U	11 U	11 U
Carbazole	10	11 U	11 U	11 U
Di-n-butylphthalate	10	7 J	46	16
Fluoranthene	10	11 U	11 U	11 U
Pyrene	10	11 U	11 U	11 U
Butylbenzylphthalate	10	5 J	3 J	6 J
3,3'-Dichlorobenzidine	10	11 U	11 U	11 U
Benzo(a)anthracene	10	11 U	11 U	11 U
Chrysene	10	11 U	11 U	11 U
bis(2-Ethylhexyl)phthalate	10	11 U	2 J	2 J
Di-n-octylphthalate	10	11 U	11 U	11 U
Benzo(b)fluoranthene	10	11 U	11 U	11 U
Benzo(k)fluoranthene	10	11 U	11 U	11 U
Benzo(a)pyrene	10	11 U	11 U	11 U
Indeno(1,2,3-cd)pyrene	10	11 U	11 U	11 U
Dibenzo(a,h)anthracene	10	11 U	11 U	11 U
Benzo(g,h,i)perylene	10	11 U	11 U	11 U
DILUTION FACTOR:		1.0	1.0/2.0*	1.0
DATE SAMPLED:		07/15/02	07/15/02	07/15/02
DATE EXTRACTED:		07/18/02	07/18/02	07/18/02
DATE ANALYZED:		08/01/02	08/01/02	08/01/02

* - Result reported from diluted analysis.

SITE: SOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 0511F SDG: D06792
LABORATORY: WOODS HOLE GROUP

TABLE 1
VOLATILE PETROLEUM HYDROCARBON (VPH) AQUEOUS ANALYSES
µg/L

NOT VALIDATED DATA

SAMPLE NUMBER:		D06792	D06793	D06795	D06794
SAMPLE LOCATION:		GW-05	GW-07	GW-02	TB-09
LABORATORY NUMBER:		0207059-01	0207059-02	0207059-03	0207059-04
PARAMETER	RL				
C5-C8 Aliphatic Hydrocarbons	240	240 U	1000	240 U	240 U
C9-C12 Aliphatic Hydrocarbons	100	100 U	1000	100 U	100 U
C9-C10 Aromatic Hydrocarbons	70	92	650	70 U	70 U
Unadjusted C5-C8 Aliphatic Hydrocarbons	240	240 U	2300	240 U	240 U
Unadjusted C9-C12 Aliphatic Hydrocarbons	100	190	1900	100 U	100 U
Methyl Tert Butyl Ether (MTBE)	5.0	8.4	*1400	5.0 U	5.0 U
Benzene	5.0	5.0 U	43	5.0 U	5.0 U
Toluene	15	15 U	290	15 U	15 U
Ethylbenzene	5.0	5.0 U	37	5.0 U	5.0 U
p/m-Xylene	20	20 U	96	20 U	20 U
o-Xylene	10	10 U	56	10 U	10 U
Naphthalene	10	10 U	54	10 U	10 U
DILUTION FACTOR:		1	1/5*	1	1
DATE SAMPLED:		07/15/02	07/15/02	07/16/02	07/15/02
DATE ANALYZED:		07/27/02	07/27/02	07/27/02	07/26/02

* - Result reported from diluted analysis.
RL = Reporting Limit
U = The parameter was analyzed for, but not detected.

A Tier I validation was performed. No qualifiers were applied to the data.

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 0511F SDG: D06792
LABORATORY: WOODS HOLE GROUP

TABLE 2
EXTRACTABLE PETROLEUM HYDROCARBON (EPH) AQUEOUS ANALYSES
µg/L

NOT VALIDATED DATA

SAMPLE NUMBER:		D06792	D06793	D06795
SAMPLE LOCATION:		GW-05	GW-07	GW-02
LABORATORY NUMBER:		0207059-01	0207059-02	0207059-03
PARAMETER	RL			
C9-C18 Aliphatics	30	30 U	30 U	30 U
C19-C36 Aliphatics	40	40 U	40 U	40 U
C11-C22 Aromatics	85	85 U	86 U	86 U
Unadjusted C11-C22 Aromatics	85	85 U	110	86 U
Naphthalene	5.0	5.0 U	23	5.1 U
2-Methylnaphthalene	5.0	5.0 U	15	5.1 U
Acenaphthylene	5.0	5.0 U	5.1 U	5.1 U
Acenaphthene	5.0	5.0 U	5.1 U	5.1 U
Fluorene	5.0	5.0 U	5.1 U	5.1 U
Phenanthrene	5.0	5.0 U	5.1 U	5.1 U
Anthracene	5.0	5.0 U	5.1 U	5.1 U
Fluoranthene	5.0	5.0 U	5.1 U	5.1 U
Pyrene	5.0	5.0 U	5.1 U	5.1 U
Benzo(a)anthracene	5.0	5.0 U	5.1 U	5.1 U
Chrysene	5.0	5.0 U	5.1 U	5.1 U
Benzo(b)fluoranthene	5.0	5.0 U	5.1 U	5.1 U
Benzo(k)fluoranthene	5.0	5.0 U	5.1 U	5.1 U
Benzo(a)pyrene	5.0	5.0 U	5.1 U	5.1 U
Indeno(1,2,3-cd)pyrene	5.0	5.0 U	5.1 U	5.1 U
Dibenzo(a,h)anthracene	5.0	5.0 U	5.1 U	5.1 U
Benzo(g,h,i)perylene	5.0	5.0 U	5.1 U	5.1 U
DILUTION FACTOR:		1	1	1
DATE SAMPLED:		07/15/02	07/15/02	07/16/02
DATE EXTRACTED:		07/24/02	07/24/02	07/24/02
DATE ANALYZED:		08/06/02	08/06/02	08/06/02

RL = Reporting Limit
U = The parameter was analyzed for, but not detected.

A Tier I validation was performed. No qualifiers were applied to the data.

SITE: ULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 0511F SDG: D06792
LABORATORY: WOODS HOLE GROUP

TABLE 3
TOTAL PETROLEUM HYDROCARBON (TPH) AQUEOUS ANALYSES
mg/L

NOT VALIDATED DATA

SAMPLE NUMBER:	D06792	D06793
SAMPLE LOCATION:	GW-05	GW-07
LABORATORY NUMBER:	0207059-01	0207059-02
PARAMETER		
Total Petroleum Hydrocarbons	6.1	6.9
Qualitative Identification	@	#
DILUTION FACTOR:	1	1
DATE SAMPLED:	07/15/02	07/15/02
DATE EXTRACTED:	07/19/02	07/19/02
DATE ANALYZED:	07/22/02	07/22/02

@ - GC/FID characteristics are similar to a combination of fuel oil No. 2/diesel fuel and heavy molecular weight components in the lubricating oil range. The absence of straight chain aliphatics indicates that the sample is weathered.

- GC/FID characteristics are similar to a combination of gasoline and fuel oil No. 6. The absence of straight chain aliphatics indicates that the sample is weathered.

A Tier I validation was performed. No qualifiers were applied to the data.

SITE: BOULTER FARM AREA (LOT NOS. 363 and 366)
CASE: 30702 SDG: A0JS9
LABORATORY: COMPUCHEM

TABLE 3
PESTICIDE/POLYCHLORINATED BIPHENYL AQUEOUS ANALYSES
µg/L

SAMPLE NUMBER:		A0QC2	A0QC6	A0QC8	A0QC9	A0QD1	A0QD2
SAMPLE LOCATION:		GW-02	GW-06	GW-08	GW-09	GW-13	GW-12
LABORATORY NUMBER:		A0JS9-4	A0JS9-5	A0JS9-6	A0JS9-7	A0JS9-8	A0JS9-9
COMPOUND	CRQL						
alpha-BHC	0.050	0.051 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
beta-BHC	0.050	0.051 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
delta-BHC	0.050	0.051 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
gamma-BHC (Lindane)	0.050	0.051 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 UJ
Heptachlor	0.050	0.051 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 UJ
Aldrin	0.050	0.051 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Heptachlor Epoxide	0.050	0.051 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Endosulfan I	0.050	0.051 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Dieldrin	0.10	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 UJ
4,4'-DDE	0.10	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Endrin	0.10	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Endosulfan II	0.10	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDD	0.10	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Endosulfan Sulfate	0.10	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDT	0.10	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Methoxychlor	0.50	0.51 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Endrin Ketone	0.10	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Endrin Aldehyde	0.10	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
alpha-Chlordane	0.050	0.051 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
gamma-Chlordane	0.050	0.051 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Toxaphene	5.0	5.1 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Aroclor-1016	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Aroclor-1221	2.0	2.1 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Aroclor-1232	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Aroclor-1242	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Aroclor-1248	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Aroclor-1254	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Aroclor-1260	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0
DATE SAMPLED:		07/16/02	07/16/02	07/16/02	07/15/02	07/16/02	07/15/02
DATE EXTRACTED:		07/18/02	07/18/02	07/18/02	07/18/02	07/18/02	07/18/02
DATE ANALYZED:		07/18/02	07/18/02	07/18/02	07/18/02	07/18/02	07/18/02

SITE: ULTEN FARM AREA (LOT NOS. 363 and 366)
CASE: 0512F SDG: D06786_O
LABORATORY: GPL LABORATORIES, LLLP

TABLE 3
PESTICIDE/POLYCHLORINATED BIPHENYL AQUEOUS ANALYSES
µg/L

SAMPLE NUMBER:		D06786	D06787	D06800
SAMPLE LOCATION:		GW-05	GW-07	GW-11
LABORATORY NUMBER:		207110-001	207110-002	207110-009
COMPOUND	CRQL			
alpha-BHC	0.050	0.053 U	0.053 UJ	0.050 U
beta-BHC	0.050	0.053 U	0.053 UJ	0.050 U
delta-BHC	0.050	0.053 U	0.053 UJ	0.050 U
gamma-BHC (Lindane)	0.050	0.053 U	0.053 UJ	0.050 U
Heptachlor	0.050	0.053 U	0.053 UJ	0.050 U
Aldrin	0.050	0.053 U	0.053 UJ	0.050 U
Heptachlor Epoxide	0.050	0.053 U	0.053 UJ	0.050 U
Endosulfan I	0.050	0.053 U	0.053 UJ	0.050 U
Dieldrin	0.10	0.11 U	0.11 UJ	0.10 U
4,4'-DDE	0.10	0.11 U	0.11 UJ	0.10 U
Endrin	0.10	0.11 U	0.11 UJ	0.10 U
Endosulfan II	0.10	0.11 U	0.11 UJ	0.10 U
4,4'-DDD	0.10	0.11 U	0.11 UJ	0.10 U
Endosulfan Sulfate	0.10	0.11 U	0.11 UJ	0.10 U
4,4'-DDT	0.10	0.11 U	0.11 UJ	0.10 U
Methoxychlor	0.50	0.53 U	0.53 UJ	0.50 U
Endrin Ketone	0.10	0.11 U	0.11 UJ	0.10 U
Endrin Aldehyde	0.10	0.11 U	0.11 UJ	0.10 U
alpha-Chlordane	0.050	0.053 U	0.053 UJ	0.050 U
gamma-Chlordane	0.050	0.053 U	0.053 UJ	0.050 U
Toxaphene	5.0	5.3 U	5.3 UJ	5.0 U
Aroclor-1016	1.0	1.1 U	1.1 UJ	1.0 U
Aroclor-1221	2.0	2.1 U	2.1 UJ	2.0 U
Aroclor-1232	1.0	1.1 U	1.1 UJ	1.0 U
Aroclor-1242	1.0	1.1 U	1.1 UJ	1.0 U
Aroclor-1248	1.0	1.1 U	1.1 UJ	1.0 U
Aroclor-1254	1.0	1.1 U	1.1 UJ	1.0 U
Aroclor-1260	1.0	1.1 U	1.1 UJ	1.0 U
DILUTION FACTOR:		1.0	1.0	1.0
DATE SAMPLED:		07/15/02	07/15/02	07/15/02
DATE EXTRACTED:		07/18/02	07/18/02	07/18/02
DATE ANALYZED:		07/25/02	07/25/02	07/25/02

DATA SUMMARY KEY
INORGANIC DATA VALIDATION

J	=	The associated numerical value is an estimated quantity.
R	=	The result is rejected due to gross deficiencies in quality control criteria. The result is unusable (compound may or may not be present). Resampling and reanalysis are necessary for verification.
U	=	The compound was analyzed for but not detected. The associated numerical value is the SDL or the adjusted SDL.
UJ	=	The compound was analyzed for but not detected. The associated numerical value is the estimated SDL.

ACRONYM LIST
INORGANIC DATA VALIDATION

AQ	aqueous
°C	degrees Celsius
CLP	Contract Laboratory Program
COC	Chain-of-Custody record
CRDL	Contract Required Detection Limit
CRI	CRDL Standard for ICP
CSF	Complete SDG File
%D	percent difference
DAS	Delivery of Analytical Services
DQO	Data Quality Objective
DV	Data Validation
DW	drinking water
GW	groundwater
Cr+6	Hexavalent Chromium
ICP	Inductively Coupled Plasma
ICS	Interference Check Sample
IDL	Instrument Detection Limit
kg	kilogram
L	liter
LCS	Laboratory Control Sample
mg	milligram
MS	Matrix Spike
MSA	Method of Standard Additions
NA	not applicable
ND	non-detected result
OSC	On-Scene Coordinator
PE	Performance Evaluation
Pos	positive result
QC	Quality Control
%R	percent recovery
RPD	Relative Percent Difference
RSD	Relative Standard Deviation
SDG	Sample Delivery Group
SDL	Sample Detection Limit
SOW	Statement of Work
S/S	soil/sediment
START	Superfund Technical Assessment and Response Team
SW	surface water
SW-846	EPA Test Methods for the Evaluation of Solid Waste
TAL	Target Analyte List
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
TPH	Total Petroleum Hydrocarbons
µg	microgram
WESTON	Weston Solutions, Inc. (formerly known as Roy F. Weston, Inc.)

SITE: BOULTER FARM AREA
(LOT NOS. 363 AND 366)
CASE: 30702 SDG: MA0K84
LABORATORY: CHEMTECH CONSULTING GROUP

TABLE 1
INORGANIC AQUEOUS ANALYSES
µg/L

AMPLE NUMBER:			MA0QC2	MA0QC6	MA0QC8	MA0QC9	MA0QD1	MA0QD2	MA0QD3	
MPLE LOCATION:			GW-02	GW-06	GW-08	GW-09	GW-13	GW-12	RB-12	
ATORY NUMBER:			P3343-03S	P3343-04S	P3343-05S	P3343-06S	P3343-07S	P3343-08S	P3343-11S	
INORGANIC ANALYTES	METHOD	INSTRUMENT DETECTION LIMITS (µg/L)								CONTRACT DETECTION LIMITS (µg/L)
ALUMINUM	P	22.2	184 U	300	1210	398	184 U	57.6 U	22.2 U	200
ANTIMONY	P	8.7	8.7 U	8.7 U	8.7 U	8.7 U	8.7 U	8.7 U	8.7 U	60
ARSENIC	P	6.0	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	10
BARIUM	P	2.0	48.8	133	163	37.8	46.4	158	2.0 U	200
BERYLLIUM	P	0.10	0.10 U	0.10 U	0.24 U	0.14 UJ	0.10 U	0.10 U	0.10 U	5
CADMIUM	P	0.60	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	5
CALCIUM	P	49.6	21100	46100	39800	12800	20300	15100	49.6 U	5000
CHROMIUM	P	1.3	1.3 U	1.3 U	1.6 J	1.3 U	1.3 U	1.3 U	1.3 U	10
COBALT	P	1.4	2.2 J	1.4 U	2.4 J	2.6 J	2.5 J	1.4 U	1.4 U	50
COPPER	P	2.6	2.6 U	2.6 U	7.2	2.6 U	2.6 U	2.6 U	2.6 U	25
IRON	P	22.3	2360	719	12600	5150	2250	22.3 U	22.3 U	100
LEAD	P	2.9	2.9 U	2.9 U	26.7	2.9 U	2.9 U	2.9 U	2.9 U	3
MAGNESIUM	P	12.0	1670	4850	5240	1200	1600	2380	12.0 U	5000
MANGANESE	P	0.40	495	1380	3860	1020	476	9.5	0.40 U	15
MERCURY	CV	0.20	0.20 UJ	0.20 UJ	0.24 J	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.2
NICKEL	P	1.8	2.6 J	1.8 U	4.7	3.7	1.8 U	1.8 U	1.8 U	40
POTASSIUM	P	24.2	933	1600	1430	677	889	611	32.8 J	5000
SELENIUM	P	3.0	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	5
SILVER	P	2.0	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	10
SODIUM	P	753	2510	3410	3890	2320	2440	43600	753 U	5000
THALLIUM	P	8.8	8.8 U	8.8 U	8.8 U	8.8 U	8.8 U	8.8 U	8.8 U	10
VANADIUM	P	1.0	2.1 U	1.0 U	4.0 U	3.7 U	2.0 U	1.0 U	1.0 U	50
ZINC	P	2.6	6.9 U	11.6 U	14.4 U	11.8 U	7.6 U	6.2 U	13.1	20
CYANIDE	CA	4.3	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	10

ANALYTICAL METHOD
P - ICP
CV - COLD VAPOR
CA - MIDI-DISTILLATION SPECTROPHOTOMETRIC

NOTE:
J - QUANTITATION IS ESTIMATED DUE TO LIMITATIONS IDENTIFIED IN THE QUALITY CONTROL REVIEW (DATA REVIEW).
U - VALUE IS NON-DETECTED.
UJ - VALUE IS NON-DETECTED AND DETECTION LIMIT IS ESTIMATED.
R - VALUE IS REJECTED.

SITE: [illegible]OU[illegible]R FARM AREA (LOT NOS. 363 and 366)
CASE: 051[illegible] SDG: D06786_1
LABORATORY: GPL LABORATORIES, LLLP

TABLE 1
INORGANIC AQUEOUS ANALYSES
µg/L

SAMPLE NUMBER:			D06786	D06787	D06800	
SAMPLE LOCATION:			GW-05	GW-07	GW-11	
LABORATORY NUMBER:			207110-001	207110-002	207110-009	
INORGANIC ANALYTES	METHOD	INSTRUMENT DETECTION LIMITS (µg/L)				CONTRACT DETECTION LIMITS (µg/L)
ALUMINUM	P	13.6	124 U	127 U	90.4 U	200
ANTIMONY	P	2.3	2.3 UJ	2.3 UJ	2.3 UJ	60
ARSENIC	P	3.5	3.5 U	3.5 U	3.5 U	10
BARIUM	P	0.20	85.9	124	86.3	200
BERYLLIUM	P	0.10	0.10 U	0.10 U	0.10 U	5
CADMIUM	P	0.30	0.30 U	0.30 U	0.30 U	5
CALCIUM	P	7.9	16300	30300	17000	5000
CHROMIUM	P	0.80	0.80 U	0.80 U	0.80 U	10
COBALT	P	0.60	0.60 U	0.60 U	0.60 U	50
COPPER	P	0.70	1.2 UJ	0.70 U	1.5 U	25
IRON	P	25.2	13100	43000	13400	100
LEAD	P	1.5	2.8 J	7.3	2.8 J	3
MAGNESIUM	P	8.5	2480	4060	2530	5000
MANGANESE	P	0.40	843	3750	857	15
MERCURY	CV	0.10	0.10 U	0.10 U	0.10 U	0.2
NICKEL	P	1.0	1.0 U	1.0 U	1.1 J	40
POTASSIUM	P	18.5	1710	6910	1690	5000
SELENIUM	P	3.0	3.0 U	3.0 U	3.0 U	5
SILVER	P	1.3	1.3 UJ	1.3 UJ	1.3 UJ	10
SODIUM	P	271	3870	3410	3850	5000
THALLIUM	P	4.2	4.2 U	4.2 U	4.2 U	10
VANADIUM	P	1.3	1.3 U	1.3 U	1.3 U	50
ZINC	P	0.90	6.7 U	4.3 U	4.2 U	20
CYANIDE	CA	5.0	5.0 U	5.0 U	5.0 U	10

ANALYTICAL METHOD
P - ICP
CV - COLD VAPOR
CA - MIDI-DISTILLATION SPECTROPHOTOMETRIC

NOTE:
J - QUANTITATION IS ESTIMATED DUE TO LIMITATIONS IDENTIFIED IN THE QUALITY CONTROL REVIEW (DATA REVIEW).
U - VALUE IS NON-DETECTED.
UJ - VALUE IS NON-DETECTED AND DETECTION LIMIT IS ESTIMATED.
R - VALUE IS REJECTED.

S:\02050121\D06786_MA..123

Exhibit 16

RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
235 Promenade Street, Providence, RI 02908-5767 TDD 401-222-4462

LETTER OF RESPONSIBILITY
CASE #2005-092

October 5, 2005

CERTIFIED MAIL

J. Ferreira Trust
c/o Mr. Robert Yarbroudy
290 Curran Road
Cumberland, RI 02864

Advanced Auto Recycling
c/o Joseph Ferreira
290 Curran Road
Cumberland, RI 02864

RE: Boulter Farm Site, 290 Curran Road (Map 19, Lot 363), Cumberland RI; CERCLIS No. RID980672620

Dear Mr. Yarbroudy and Mr. Ferreira:

In February 2004, the Rhode Island Department of Environmental Management (the Department) enacted the amended Rules and Regulations for the Investigation and Remediation of Hazardous Materials Releases (the Remediation Regulations). The purpose of these regulations is to create an integrated program requiring reporting, investigation and remediation of contaminated sites in order to eliminate and/or control threats to human health and the environment in a timely and cost-effective manner. A Letter of Responsibility (LOR) is a preliminary document used by the Department to codify and define the relationship between the Department and a Responsible Party under the Remediation Regulations.

Please be advised of the following facts:

1. According to the Town of Cumberland Tax Assessor's Office, The J. Ferreira Trust is the current owner of the property located on Map 19, Lot 363, on Curran Road in Cumberland, Rhode Island.

2. The Department is in receipt of the following documents concerning property identified as the Boulter Farm in Cumberland, Rhode Island, further designated as Map 19, Lots 162 and 363 of the Town of Cumberland Tax Assessor's plat maps (the Site):

   - *Site Assessment of Property Located at Curran Road, Cumberland RI*, Environmental Resource Associates, Inc., 24 September 1987
   - *Screening Site Inspection*, Rhode Island Department of Environmental Management, Division of Air and Hazardous Materials, June 1989

30% post-consumer fiber

- *Final Site Inspection Prioritization Report for Boulter Farm Area, Cumberland, Rhode Island*, Roy F. Weston, Inc, 29 September 1998
- *Final Expanded Site Inspection Report for Boulter Farm Area, Cumberland, Rhode Island*, Weston Solutions, Inc., 19 April 2004

3. A file (the File) exists at the Department that describes the environmental conditions concerning the Site.

4. The File identifies elevated concentrations of contaminants as follows:

   - Benzo(a)pyrene, Benzo(a)anthracene, Dibenzo(a,h)anthracene, Arsenic, and lead in soil samples exceed the Rhode Island Residential Direct Exposure Criteria
   - Methyl tert-Butyl Ether and Lead in groundwater exceed the Rhode Island GA Groundwater Objectives
   - Benzo(a)anthracene, Phenanthrene and 4,4'-DDD in sediment samples collected from the downstream surface water pathway for the Site exceed the National Oceanic and Atmospheric Administration Probable Effect Levels

   All of these contaminants may have significant adverse impact on human health and/or the environment.

5. The identification of **hazardous materials** as defined by Rule 3.28, specifically the contaminants listed above associated with onsite processes of activities, constitutes a ***Release of hazardous materials*** to the environment as outlined in Rule 3.54 of the Remediation Regulations.

6. The J. Ferreira Trust, as the current owner of the property located on Map 19, Lot 363 at 290 Curran Road in Cumberland, Rhode Island, is a ***Responsible Party*** as defined by Rule 3.60 of the Remediation Regulations.

7. Advanced Auto Recycling, as the current operator of the property located on Map 19, Lot 363, at 290 Curran Road in Cumberland, Rhode Island, is a ***Responsible Party*** as defined by Rule 3.60 of the Remediation Regulations.

As a result of the information known and conditions observed at the site, the Department requests that you comply with the following:

A. In accordance with Rule 7 (Site Investigation) of the Remediation Regulations, conduct a full Site Investigation, and prepare and submit to the Office of Waste Management (OWM) a complete Site Investigation Report (SIR) within ninety (90) days of receipt of this letter. Given that certain environmental work has already been completed during previous investigations, you may wish to incorporate portions of the information gathered to address the requirements of Rule 7. The Department requests conclusive information regarding the following environmental issues and questions;

i. Determine the source and extent of soil, sediment and groundwater contamination at the site, and their potential impacts to nearby surface water pathways and off-site properties. Be sure to address, but not limit the investigation to, the following areas, as denoted in the April 2004 Expanded Site Investigation Report:

- Former Solid Waste Disposal Area 1 (Former Landfill)
- Former Acid Drum Disposal Area
- Former Lagoon No. 1
- On-site automobile recycling operations

ii. Submit the complete SIR in accordance with Rule 7.08, to include at least two remedial alternatives other than no action, if necessary;

iii. Be prepared to bring the site into compliance with the Remediation Regulation.

B Submit an SIR checklist (attached). The SIR checklist was created as a supplemental tool to expedite the reviewing and approval process by cross referencing specific sections and pages within the SIR that provide detailed information and addresses each stated requirement within Rule 7 of the Remediation Regulations.

C. After submission of a complete SIR and approval by the Department be prepared to submit a Remedial Action Work Plan (RAWP), subject to Department review and approval, and implement the remedy, if necessary, that will bring the site into compliance with the Remediation Regulations.

D. Be advised that any remedial alternatives that propose to leave contaminated soils on-site at levels which exceed Department criteria, will at a minimum necessitate the recording of an institutional control in the form of an Environmental Land Usage Restriction (ELUR) on the deed for the site, and will likely require implementation of additional engineered controls to restrict human exposure.

Please be advised that prior to the implementation of any field activities, all abutting property owners and tenants must be notified by the responsible party that further investigation and remediation is about to occur, in accordance with Rule 7.07 and 7.09 of the Remediation Regulations and the Industrial Properties Remediation and Reuse Act (Rhode Island General Law 23-19.14-5). The notice should briefly indicate the purpose of the investigation, the work to be performed and the approximate scheduled date(s) of planned activities. Failure to comply with any of the aforementioned laws and regulations may result in enforcement actions as specified I Rhode Island General Law 23-19.1-17 and 23-19.1-18.

Please notify this office within seven (7) days of the receipt of this letter of your plans to address these items. All correspondence should be sent to the attention of:

Louis R. Maccarone II, Engineer
RIDEM Office of Waste Management
235 Promenade Street, Providence, RI 02908-5767
(401) 222-2797, ext.7142; louis.maccarone@dem.ri.gov

If you have any questions regarding this letter or would like the opportunity to meet with us, please feel free to contact me.

Sincerely,

Louis R. Maccarone II
Engineer
Office of Waste Management
Department of Environmental Management

Authorized by:

Matthew D. DeStefano
Supervising Engineer
Office of Waste Management
Department of Environmental Management

cc: L. Hellested, OWM
C. Gianfrancesco, OWM
K. Owens, OWM
S. DeStefano, OWM
J. Langlois, OLS
N. Smith, EPA
B. Wolpert, Esq.

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LM 10505

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Certified Fee

Return Receipt Fee (Endorsement Required)

Restricted Delivery Fee (Endorsement Required)

Total Postage & Fees $

Postmark Here

Sent To: Robert Yarbroudy

Street, Apt. No.; or PO Box No.: 290 Curran Rd.

City, State, ZIP+4: Cumb., RI 02864

See Reverse for Instructions

PS Form 3800, June 2002

Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
Print your name and address on the reverse so that we can return the card to you.
Attach this card to the back of the mailpiece, or on the front if space permits.

Article Addressed to:

J. Ferreira Trust
c/o Mr. Robert Yarbroudy
290 Curran Rd
Cumb., RI 02864

A. Signature: X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name): C. Date of Delivery: 10/7/05

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label): 7003 3110 0001 4594 4507 LM 10305

PS Form 3811, August 2001 Domestic Return Receipt 102595-02-M-154

7003 3110 0001 4594 4507

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Postage $

Certified Fee

Return Receipt Fee (Endorsement Required)

Restricted Delivery Fee (Endorsement Required)

Total Postage & Fees $

Postmark Here

Sent To: Bruce Wolpert

Street, Apt. No.; or PO Box No.: 10 Dorrance St., Suite 530

City, State, ZIP+4: Prov., RI 02903

See Reverse for Instructions

PS Form 3800, June 2002

SENDER: COMPLETE THIS SECTION

Complete items 1, 2, and 3. Also complete
Restricted Delivery is desired.
ur name and address on the reverse
we can return the card to you.
this card to the back of the mailpiece,
e front if space permits.

Article Addressed to:

Bruce Wolpert
10 Dorrance St., Suite 530
Prov., RI 02903

COMPLETE THIS SECTION ON DELIVERY

A. Signature: X [signature] 11/2/05 ☐ Agent ☐ Addressee

B. Received by (Printed Name): C. Date of Delivery: 10/2/05

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label): 7003 3110 0001 4594 4521 LM 10505

PS Form 3811, August 2001 Domestic Return Receipt 102595-02-M-154

7003 3110 0001 4594 4521

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OFFICIAL USE

LM 10505

Postage $

Certified Fee

Return Receipt Fee (Endorsement Required)

Restricted Delivery Fee (Endorsement Required)

Total Postage & Fees $

Postmark Here

Sent To: J. Ferreira Trust c/o Mr. Robert Yarbroudy

Street, Apt. No.; or PO Box No.: 290 Curran Rd.

City, State, ZIP+4: Cumb., RI 02864

See Reverse for Instructions

PS Form 3800, June 2002

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Robert Yarbroudy
290 Curran Rd.
Cumb., RI 02864

COMPLETE THIS SECTION ON DELIVERY

A. Signature: X [signature] ☐ Agent ☐ Address

B. Received by (Printed Name): C. Date of Delive 10/7/05

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandi
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

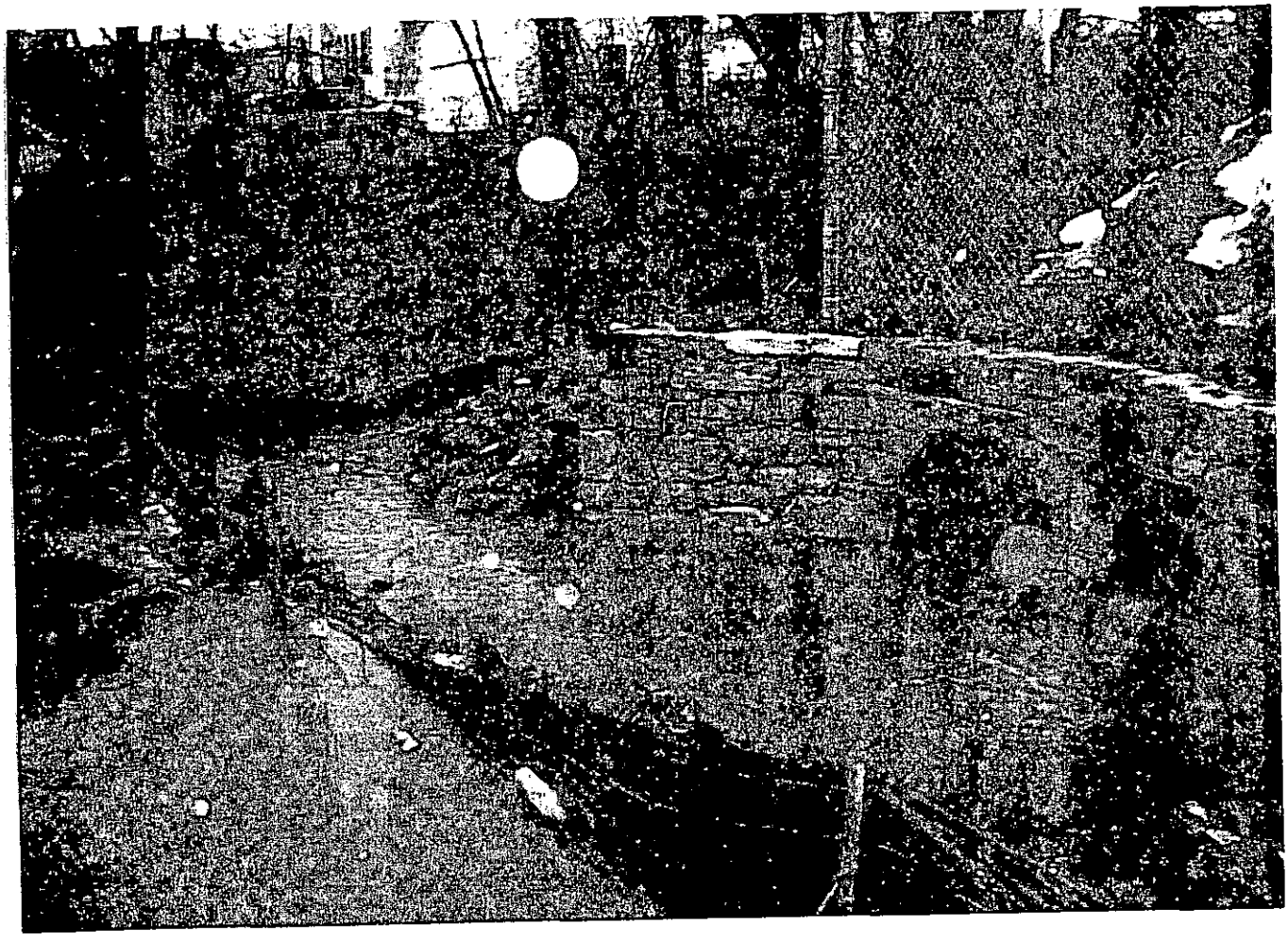
2. Article Number (Transfer from service label): 7003 3110 0001 4594 4514 LM 10505

PS Form 3811, August 2001 Domestic Return Receipt 102595-02-M-

7003 3110 0001 4594 4514

Exhibit 17

RECYCLED



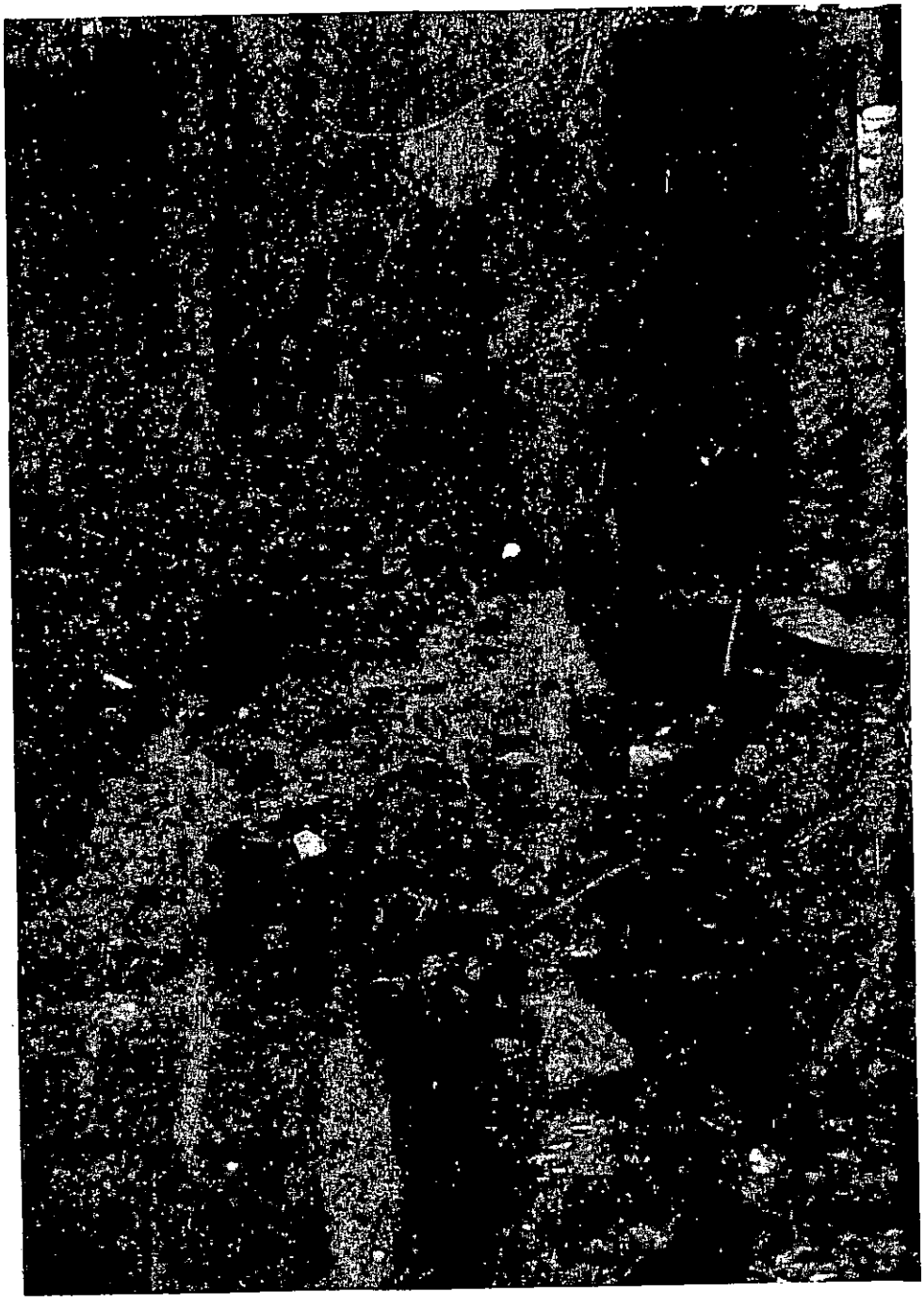


Exhibit 18

RECYCLED

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
PROVIDENCE, SC. SUPERIOR COURT

* * * * * * * * * * * * * * * * * * *

LM NURSING SERVICES, INC., C.A. NO. PC06-5973
LOUIS PAOLINO AND MARIE ISSA
vs.
MOBIL CORPORATION, MARK
DIAMOND, PHILIP DIAMOND, JOSEPH
FERREIRA, D/B/A ADVANCED AUTO
RECYCLING, INC., AND LKQ
CORPORATION
* * * * * * * * * * * * * * * * * * *

DEPOSITION OF JOSEPH FERREIRA, a Defendant in the above-entitled cause, taken on behalf of the Plaintiffs, before Cindy Ann Pannone, Notary Public in and for the State of Rhode Island at the offices of Allied Court Reporters, 115 Phenix Avenue, Cranston, Rhode Island, on May 5, 2008 at 2:00 P.M

PRESENT:
FOR THE PLAINTIFFS....MORETTI PERLOW & BONIN LAW OFFICES
BY: JEFFREY S. PERLOW, ESQUIRE

FOR THE DEFENDANT.....HOLLAND & KNIGHT
(MOBIL) BY: ELIZABETH A. MULCAHY, ESQUIRE
FOR THE DEFENDANTS....BURNS & LEVINSON, LLP
(FERREIRA, ADVANCED) BY: LYNNE M. RADICHES, ESQUIRE

FOR THE DEFENDANTS....ARAM P. JARRET, III, ESQUIRE
(DIAMONDS)

ALLIED COURT REPORTERS, INC.
115 PHENIX AVENUE
CRANSTON, RHODE ISLAND 02920
(401) 946-5500

1 I N D E X

2 WITNESS PAGE
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4 EXAMINATION BY MR. PERLOW..... 3
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6 EXAMINATION BY MS. MULCAHY..... 131
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E X H I B I T S

8

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1 (COMMENCED AT 2:05 P.M.)
2 JOSEPH FERREIRA
3 Being duly sworn, deposes and testifies as follows:
4 THE REPORTER: State your full name,
5 please.
6 THE WITNESS: Joseph Ferreira.
7 EXAMINATION BY MR. PERLOW
8 Q. Mr. Ferreira, I am going to ask you a series of
9 questions today. If at any point you don't understand
10 the question, I would be glad to repeat the question.
11 If you need the question repeated, the stenographer can
12 repeat the question?
13 A. Um-hum.
14 MR. PERLOW: Maybe we should identify
15 ourselves for the record. My name is Jeffrey Perlow.
16 I represent Mr. Paolino.
17 MS. MULCAHY: Elizabeth Mulcahy and I
18 represent Mobil Oil.
19 MR. JARRET: Jay Jarret for the
20 defendants, Philip and Mark Diamond.
21 MS. RADICHES: Lynne Radiches
22 representing Mr. Ferreira, JF Realty, and LKQ. Mr.
23 Perlow, I just wanted to, perhaps, stipulate for the
24 record that I am willing to reserve all objections for
25 the time of trial as well as motions to strike so we

1 can go forward with the depo.
2 MR. PERLOW: That's fine, that's
3 agreeable.
4 MS. RADICHES: And also that Mr. Ferreira
5 would like to reserve the opportunity to review the
6 transcript once it's been ready, pursuant to the rule
7 as well.
8 MR. PERLOW: That's fine as well.
9 Q. Mr. Ferreira, are you on any medication that would
10 affect your testimony here today?
11 A. No.
12 Q. What is your present address?
13 A. 11 Gladding Drive, Cumberland.
14 Q. How long have you resided at that address?
15 A. Since '89.
16 Q. Is that property you own individually?
17 A. Yes.
18 Q. Are you familiar with the property located at 290
19 Curran Road, Cumberland, Rhode Island?
20 A. Yes.
21 Q. At one point did you own that property individually?
22 A. Yes.
23 Q. When did you purchase that property?
24 A. 1983, or November of '83.
25 Q. Did you purchase that property in your own name?

1 A. Yes, I did.
2 Q. Was any person on that property with you jointly?
3 A. No.
4 Q. Exactly what did you purchase in November of 1983?
5 A. What I purchased in '83 was pretty much a piece of
6 land with nothing on it besides a small trailer and a
7 license.
8 Q. What was the license for?
9 A. Auto salvage and junk cars.
10 Q. What was the size of the land?
11 A. 26 to 20 acres, I am not really sure of the number.
12 Q. Do you know what the lot numbers were?
13 A. No, I don't.
14 Q. And you purchased that piece of land individually?
15 A. Yes.
16 Q. You weren't holding that land at any point with joint
17 tenants with anybody else?
18 A. No.
19 Q. You said the property in question just had a small
20 trailer on it?
21 A. Yes, he used to use it as an office for the salvage
22 yard or whatever the use was prior to when I purchased
23 it.
24 Q. Where was the small trailer located on the property?
25 A. Behind the house that is already -- that is there

1 where the Diamonds live.
2 Q. So the small trailer was on what, was subsequently the
3 Diamond property?
4 A. Yes, once the land got purchased and broken up, the
5 trailer became my property. We ended up cutting the
6 land ourselves.
7 Q. Was the trailer at some point moved?
8 A. No, it was just junked, they used it as an office,
9 I think.
10 Q. Who is the they used it as an office?
11 A. I don't know who, whoever ran the salvage yard
12 prior to me.
13 Q. You said you bought a piece of land with a small
14 trailer on it, is that correct?
15 A. Yes.
16 Q. Did you buy a salvage yard as well?
17 A. I bought an empty piece of land. There was no cars
18 there. There was nothing in the land besides some
19 debris and tires, there was no, nothing on it.
20 Q. What was the debris that was on the land?
21 A. Just debris from cars that they used to take apart,
22 whatever it was used for, I am not really sure.
23 Q. Can you give us an idea as to how much debris there was
24 on the property when you purchased it?
25 A. No, it was just parts here and there, just through

1 the entire area where, I guess, when they used to take
2 cars apart, I am not really sure what was the use prior
3 to my purchase.
4 Q. And you say when you purchased the property there was a
5 trailer on the property?
6 A. Yes.
7 Q. And how long did that trailer stay on the property?
8 A. That trailer stayed on the property until the
9 business started it, which was destroyed then and
10 junked.
11 Q. When did the business start?
12 A. The business started in the middle of '84, probably
13 around -- I purchased it in '83, it took about 6 months
14 to 9 months to put a building on it and level the land.
15 So the place was empty for a good 6 months to a year
16 before the business opened up.
17 Q. So the trailer that was already on the land when you
18 purchased the land was destroyed, is that correct?
19 A. Yes.
20 Q. And then you put up a building on the property?
21 A. Yes.
22 Q. Where did you put up a building?
23 A. The building was put right at the beginning, pretty
24 much if the frontage has 150 feet, the building was
25 pretty much in the center of the 150 feet.

1 Q. What was the size of the building?
2 A. At that time the building was probably 50 by 40.
3 Q. What was the purpose of constructing that building?
4 A. The purpose of the building was to dismantle the
5 cars and sell the parts out of it.
6 Q. Did you seek to obtain a permit before building this
7 building?
8 A. Yes, I did.
9 Q. Who did you seek to obtain a building with?
10 A. The Cumberland Town Hall.
11 Q. Did you seek any other permits other than with the
12 Cumberland Town Hall before constructing the building?
13 A. No, I didn't.
14 Q. Did you contact the Department of Environmental
15 Management before building the building?
16 A. No recall.
17 Q. You don't recall if you did or not?
18 A. I don't, no, I don't think I did.
19 Q. Did you contact the Army Corps of Engineers before
20 constructing that building?
21 A. No, I didn't.
22 Q. And that building was constructed in what year?
23 A. '84.
24 Q. How long did the property remain in your name,
25 individually?

1 A. I couldn't tell you.
2 Q. Well at some point did you transfer the property?
3 A. The property has always pretty much been in my
4 name, it might have been transferred to the corporation
5 as the business got going, is that what you are asking
6 me?
7 Q. I am trying to establish the history of the land and
8 how long it's in your name, whether at some point you
9 transferred it to another individual or not?
10 A. It's never been transferred to another individual,
11 it's always been under my name.
12 Q. Has it been transferred to a trust?
13 A. No.
14 Q. You never transferred that property to a trust?
15 A. I don't think so, as far as legal work, I don't
16 handle my legal work. My controller is the one who
17 does all of the legal work -- so I couldn't really
18 answer that, I have six, seven different businesses, so
19 I am not really sure if it has ever been in my trust
20 fund or not, I couldn't answer that.
21 Q. Do you know if it's ever been in the name of a realty
22 company?
23 A. No, I don't know.
24 Q. When that building that was built on the property in
25 1984 was finished, was it also meant to be an office?

1 A. It was meant to be an office and be a dismantling
2 building and storage.
3 Q. What was it to store?
4 A. To store the engines that were removed from the
5 cars.
6 Q. Where did you get these cars?
7 A. These cars came from towing off the streets, they
8 were towed cars from the police department.
9 Q. Did you receive cars from any other source?
10 A. There were a lot of cars that I had purchased, you
11 know, through auto salvage pools, insurance pools.
12 Q. Are you aware of this property that you had purchased
13 had been utilized as a junkyard before?
14 A. Yes.
15 Q. And was it used as a junkyard before?
16 A. According to what I was given, yes. According to
17 when I purchased from the Diamonds, I was told it had
18 been used for junkyard of cars.
19 Q. Who told you this?
20 A. The Diamonds.
21 Q. Did they tell you what the name of the junkyard was?
22 A. No, I don't recall.
23 Q. Who did you buy the land from?
24 A. From Phil Diamond and Mark Diamond.
25 Q. Does the name Simon's Auto Salvage ring a bell?

1 A. No.
2 Q. When you opened up the business that you referenced,
3 what was the name of the business?
4 A. Joe's Recycling.
5 Q. And it was named after you, Joe Ferreira?
6 A. Um-hum.
7 Q. At some point did it change its name?
8 A. Yes.
9 Q. When did it change its name?
10 A. Maybe four to five years down the road as the
11 business started picking up, I changed it to Advanced
12 Auto Recycling.
13 Q. Was that a business that you incorporated?
14 A. Yes.
15 Q. Were you the incorporator of the business?
16 A. Yes.
17 Q. Who were the shareholders of the business at that time?
18 A. I was.
19 Q. Were you 100 percent shareholder?
20 A. Yes.
21 Q. And how long did the building -- strike that. How long
22 did the business stay in the name of Advanced Auto
23 Recycling?
24 A. It's been Advanced Auto Recycling for maybe the
25 last ten years or so.

1 Q. Are you the president of Advanced Auto Recycling?
2 A. Yes.
3 Q. Are there any other officers of the business?
4 A. No.
5 Q. Are there any other members -- are there any other
6 individuals on the board of directors?
7 A. No.
8 Q. When you purchased the property in 1984, you said you
9 bought it from the Diamonds?
10 A. Um-hum.
11 Q. Did you have any agreement in place with the Diamonds
12 with respect to anything else other than the purchase
13 of this property?
14 THE WITNESS: What do you mean by
15 agreement?
16 Q. You bought a piece of land from the Diamonds, isn't
17 that correct?
18 A. Yes.
19 Q. Did you buy anything else from them?
20 A. No.
21 Q. Did you have an agreement with the Diamonds as to how
22 you would use the land?
23 A. Yes, subject to the license being transferred to --
24 being used as a salvage yard.
25 Q. So, who had the license before you?

1 A. The Diamonds.
2 Q. So the Diamonds had a license to operate a salvage yard
3 on the property?
4 A. Yes.
5 Q. And your purchase of the land was made subject to the
6 Diamonds being able to transfer that property, that
7 license to you?
8 A. Correct.
9 Q. Was this done?
10 A. Yes.
11 Q. And when was this done?
12 A. It was done at the time of the purchase.
13 Q. Who applied for that transfer of license, do you know?
14 A. I did.
15 Q. You did?
16 A. Well, my attorney, he and I, Tom Almeida was the
17 attorney that handled it.
18 Q. Was there any other contingency with respect to the
19 purchase?
20 A. No, just subject to license being approved.
21 Q. Was there any agreement in place between you and the
22 Diamonds when you purchased the property as to any
23 indemnification?
24 THE WITNESS: What do you mean by
25 indemnification?

1 Q. Did the Diamonds promise to indemnity you if there was
2 a problem with respect to storing the junk autos on the
3 land?
4 A. No.
5 Q. Could you please describe, name the Diamonds, their
6 names, please?
7 A. I think one is Phil Diamond and one was Mark
8 Diamond, those are the two I dealt with.
9 Q. So prior to your purchasing the land the Diamonds
10 didn't agree to remove any debris from the property?
11 A. No.
12 Q. So essentially when you bought the property, you bought
13 the property as is, is that correct?
14 A. Correct.
15 Q. Could you please describe the topography of the land
16 when you purchased it?
17 A. When I first purchased the land, Mr. Paolino's land
18 was also part of this land. When the purchase went
19 into -- when the deal started, Mr. Paolino's property
20 was part of this property, which was all used as a
21 salvage yard or a junkyard or whatever else they used
22 it for. At that time the Diamonds, they wanted a piece
23 of land out of the land. So if you're facing the
24 property, they wanted the two lots out of the
25 right-hand side instead of the left. When I walked the

1 property, I decided I did not want the left-hand side,
2 which is the property that Mr. Paolino owns right now.
3 I didn't like the looks of that piece of property, and
4 I told the Diamonds that I would not buy the property
5 unless they would take the property on the left instead
6 of the right. They wanted the property on the
7 right-hand side. That's where they wanted the land. I
8 did not agree to that because they wanted those two
9 lots on the right-hand side instead of the left, and I
10 said no. I will take the land only if I could have the
11 right and not the left. So we haggled for a week or
12 two, and then they decided we would split the land, and
13 they would take the land on the left-hand side, and I
14 would keep the land all of the right-hand side. That
15 was the agreement that was made before the number, the
16 figure, whatever you want to call it, because when I
17 walked the entire property, there was debris and there
18 was other objects on property. That piece of property
19 Mr. Paolino has. It was not to my likings.
20 Q. Why was that?
21 A. Because it was just too much debris, and it had the
22 two small ponds in the back that were, to my knowledge,
23 to my experience when I looked at it, I just didn't
24 like the looks, they were black, they were gunk, and
25 there was some stuff in there that I didn't like the

1 smell of it, and I said, I will buy the property, I do
2 not want this piece.
3 Q. And as compared to the ponds on your property, how
4 would you describe those?
5 A. My property had two ponds, it had a self-made pond
6 and it had the pond that still exists, which they call
7 it a pond or a lagoon, those particular two, the first
8 pond that on the right-hand side was a self-made pond,
9 that pond was pretty much they drain it every year
10 because they use the water out of it to wash crushed
11 stone, that water was being pumped all of the way up to
12 a gravel pit. So that pond was clean and the pond on
13 the right-hand side, which is the huge one, that pond
14 didn't seem to have any problems, the two ponds in the
15 Paolino, on the right-hand side, those ponds had some
16 issues, and I did not like it.
17 Q. My original question was, could you describe the
18 topography of the land that you purchased?
19 THE WITNESS: When I purchased, what do
20 you mean by topography?
21 Q. How did the land slope back to front? Were there trees
22 on it?
23 A. When I purchased the land, it was all, you know, up
24 and down, like, you know, nothing was straight. Like
25 the water would find its way through all creeks out to

1 the street.
2 Q. Is that because it sloped from back to front?
3 A. The land slopes from the back down, all of the land
4 slopes this way. So eventually once I purchased the
5 property, we straightened the land with all of the
6 water would run to the center, meaning I slumped this
7 way and slumped this way.
8 Q. When you say it slumped this way, did you mean toward
9 Curran Road?
10 A. Yes, everything gears towards Curran Road.
11 Q. And the property borders Curran Road, isn't that
12 correct?
13 A. Yes.
14 Q. How many feet of frontage are there on Curran Road?
15 A. 200.
16 Q. Is this considered the southbound portion of the
17 property?
18 A. That I don't know.
19 Q. Well, your property as it borders the Paolino property?
20 A. Yes, if I am facing the property, to the left is
21 Paolino and to the right is mine.
22 Q. Your border with the Paolino property, is that the
23 westerly portion of your property?
24 A. I don't know west and south.
25 Q. Is the property that you own located in Cumberland?

1 A. Yes.
2 Q. Is part of it located in another city?
3 A. No.
4 Q. You said one pond was, did you say it was a self-made
5 pond?
6 A. Yes.
7 Q. What do you mean by that?
8 A. The pond that I original filled in was a pond that
9 was self-made, self-done by Courtois Sand & Gravel, and
10 that pond, the water was being piped from the huge
11 pond, which is the lagoon that it would go into this
12 pond and from this pond the water would travel
13 approximately maybe 2000 feet or more into a gravel pit
14 where they used it to wash the stone, the crushed
15 stone, they used it to wash it, so that particular pond
16 was a pond that it was self-made and done by sand and
17 gravel and piped all of the way up to Attleboro.
18 Q. Where was the other pond located?
19 A. The other pond, if you are facing the property, the
20 pond that still exists is located to the left, and the
21 pond that was filled in is to my right.
22 Q. The pond that still exists to the left, is that the one
23 that feeds the intermittent stream on the left-hand
24 side of your property?
25 A. Correct, it feeds the stream from the center of

1 that pond, correct.
2 Q. At one point that pond fed another stream on your
3 property, isn't that correct?
4 A. That pond at one time fed, that particular pond
5 that you are talking about fed the pond that was a
6 self-made pond.
7 Q. There was a stream in the middle of the property at one
8 point, isn't that correct?
9 A. There was a stream in the middle, it was not a dug
10 stream, the water would find its way out. There was
11 never a stream dug out then until after I purchased the
12 property, then we dug the stream after the permits were
13 issued.
14 Q. I am not talking about a stream being dug out. I am
15 asking if there was, at one point, a stream that ran
16 through the center portion of your property towards
17 Curran Road?
18 A. There was never a stream, the water would just run
19 off the ponds and it would find its way. There was
20 never one particular scream where the water would just
21 go, the water would go zigzag out the yard.
22 Q. Did you ever file a permit request to have a stream
23 redirected on your property?
24 A. Yes, I had to file to get a permit to build the
25 stream from the pond out to the catch basin.

1 Q. I asked you if you sought a permit to redirect a stream
2 on your property?
3 THE WITNESS: What do you mean?
4 Q. Well, you are saying that there was --
5 A. The only permit that I got was the permit from the
6 original pond that is there now to the stream, no, I
7 did not file anything because there was really no
8 streams.
9 Q. So you didn't file a permit to redirect the stream?
10 A. No, I didn't.
11 Q. We will get to that. Did anyone assist you in
12 inspecting your property prior to purchasing it?
13 A. There was different -- well, not anyone that I
14 could particularly give a name. It was just different
15 people that I asked to walk the property with me before
16 purchasing it, but I can't really, I don't know.
17 Q. Do you know their names?
18 A. At that time I don't really recall who walked the
19 property with me.
20 Q. You didn't hire a separate company to inspect the
21 property?
22 A. No, I didn't.
23 Q. When you purchased the property, did you notice any
24 petroleum on the ground on this property?
25 A. No, I didn't.

1 Q. Did you notice any oil on the ground of the property?
2 A. No, I didn't.
3 Q. Did you notice any tires on the ground of the property?
4 A. Yes, did I.
5 Q. How many tires would you say there were?
6 A. A couple of thousand.
7 Q. A couple of thousand tires on the property?
8 A. Or more, it took me about four to five years to get
9 them out of there.
10 Q. Where did you get them out of there to?
11 A. I hauled them out to a tire company.
12 Q. What tire company?
13 A. Bob's Tire, and one other company that I don't
14 really recall, but pretty much throughout the years
15 they have been hauling it out, at that time I think I
16 was making maybe 50 or 75 cents per tire to be hauled
17 out.
18 Q. What was the process of these tires being hauled out?
19 THE WITNESS: What do you mean, the
20 process?
21 MR. PERLOW: Who hauled the tires out.
22 THE WITNESS: The company that removed
23 them?
24 MR. PERLOW: Yes.
25 A. We dumped them in containers, Bob's Tire was one of

1 the companies that hauled it out for years.
2 Q. Did you have containers on site that you would dump the
3 tires into?
4 A. Yes, they bring in the roll of containers and they
5 leave it on the ground and we would pick them up and
6 dump them in there and they would haul them out.
7 Q. How did you pay Bob's Tire to do this work?
8 A. By check.
9 Q. Did you pay for the containers by check as well?
10 A. Yes.
11 Q. Did they send you a bill for the amount of tires that
12 they were taking out?
13 A. Right, they would send a bill for the amount of
14 tires that they removed, correct.
15 Q. When did all of this happen?
16 A. It's been happening through, for all of the years
17 that I have been there, prior to about maybe five years
18 ago, so it had to be from '84 to -- '84 on. I didn't
19 start removing tires until the '90s because there was
20 really no law, and the area that I was working at, it
21 was clean. So it's when I moved up further into the
22 woods that I had to clear and straighten more land out
23 is when I had to start picking up tires again.
24 Q. So the tires were on your property from the time you
25 purchased it until approximately five or six years

1 later, you said, before they began to be removed?
2 A. The tires had been on the property for a good seven
3 to eight years before I removed them, they just always
4 had been there.
5 Q. Do you still have the paperwork regarding payments by
6 check and the renting of those containers?
7 A. I don't know, because when we had the fire, I think
8 we had the fire in '96.
9 Q. What fire was that?
10 A. Half of the place burnt down.
11 Q. Did you lose all of that paperwork?
12 A. Whatever was in the building, yes, we did lose it
13 all.
14 Q. So you are not sure if you still have the paperwork at
15 all?
16 A. I wouldn't have it because we lost it in the fire.
17 I have the paperwork since the fire.
18 Q. Where is Bob's Tire Company located?
19 A. I think they are out of New Bedford. They have
20 been removing tires out of there for the last good ten
21 years.
22 Q. Had you been in the automobile recycling business
23 before you purchased this property?
24 A. No.
25 Q. Do you know who Simon is, or Simon's Auto Salvage are?

1 A. No, I don't.
2 Q. Prior to your purchasing this piece of land, what type
3 of business were you in?
4 A. Auto body and car sales and towing.
5 Q. So you had no prior experience in the automobile
6 recycling business?
7 A. No, I didn't.
8 Q. When you initially started up the business and began
9 recycling automobiles, describe this process for me?
10 A. When I first started the auto salvage business, I
11 pretty much took, I would say maybe a good year and a
12 half to two years, cars would come in, and we had them
13 on the premise; and if somebody wanted to buy an engine
14 or a transmission, we would bring the car in the
15 building and dismantle the car in the building, and at
16 that point we would sell the engine or transmission to
17 the customer, and pretty much whatever any kind of
18 mechanical parts that were to be removed from the cars,
19 the cars always came in the building, and they were
20 always dismantled in the building, where there were no
21 fluids going on the ground, and before we sold the
22 engine or transmission, we drained the fluids before
23 the engine or transmission left the premises.
24 Q. What fluids did you drain?
25 A. Pretty the engines, we drained the engines and

1 transmissions, and we drained all of the oils, and the
2 radiator, we drained the anti-freeze and whatever other
3 fluids that contain -- that were visible. You couldn't
4 remove a radiator on the car unless you drained the
5 radiator, otherwise you would take a shower under the
6 car.
7 Q. Did you store these fluids someplace on the premises?
8 A. We stored them inside of the building, the first
9 building when we first started the operation.
10 Q. Where else have you stored these fluids on the property
11 since then?
12 A. We store in a container, like a roll-off container.
13 We put them in there -- in the barrels we put them in
14 the container once we put them in the barrels.
15 Q. Where is the container kept?
16 A. The container was kept in the other side of the
17 building.
18 Q. Have any of these products been stored outside of this
19 first building that you're referencing?
20 A. The first building, no. I am talking about when we
21 began the business. Is that what you are asking me?
22 Q. The building that you built?
23 A. The first building, yes. It was stored outside of
24 the building in a container.
25 Q. Have they been stored anywhere else?

1 A. Since then they have been stored, some of them at
2 one point were outside because the container was full.
3 Q. What was stored outside?
4 A. Outside of the container, the oil inside of the
5 barrels.
6 Q. Where were the barrels kept?
7 A. Next to the building outside.
8 Q. When you say next to the building outside, we are
9 talking about the original building, is that correct?
10 A. No.
11 Q. The original building that you constructed?
12 A. The original building, no. It was the further
13 building to the back, the building that is close to Mr.
14 Paolino's property.
15 Q. That was another building that was built on the
16 property?
17 A. That was another building that was built like five
18 or six years after that.
19 Q. When was that building built?
20 A. Maybe '88, '89 or something, four or five years
21 after the business started. The first two to three
22 years in the business it was only two employees, there
23 was one dismantler and one person over there selling
24 parts. So the business really never got going for the
25 first two to three years, because I still had all of my

1 other business, so I couldn't divert my time towards
2 it, so there was really not a lot going on over there.
3 Q. At some point you built another building, is that
4 correct?
5 A. Correct.
6 Q. I am trying to determine where you stored petroleum
7 products.
8 A. Inside of the building --
9 MS. RADICHES: Wait until he asks the
10 question.
11 Q. Other than inside of the first building that you
12 constructed, where else had you stored petroleum
13 products on those premises?
14 A. From what I could remember, it's always been in the
15 building because we use it to recycle it, so -- in the
16 building.
17 Q. Well, you stated earlier that you stored some in drums
18 outside of the building, is that right?
19 A. Outside of the building, correct, at one point we
20 would put it outside of the container before we bring
21 it in the container, but those were in a container and
22 they were sealed.
23 Q. But at some point there were petroleum products stored
24 in drums outside of a container, isn't that correct?
25 A. Correct, one or two, yes.

1 Q. One or two what?
2 A. One or two barrels.
3 Q. And where were those stored?
4 A. They were stored -- they were stored near the
5 building, you know, outside of the building.
6 Q. Which building?
7 A. The building that is to the middle of the property.
8 Q. Is that the building -- you don't have to draw anything
9 for me. Just explain it as best you can. The first
10 building that you constructed on the property, is that
11 what we are talking about that these drums were stored?
12 A. The first building that -- there were two different
13 additions from the first building. So when the last
14 building, the building that is facing Mr. Paolino, then
15 there is a building to the center of the property,
16 that's normally, there were a couple of containers at
17 one point was there and those two containers were there
18 for the use, because the containers that we had there
19 were full. So there was one or two there that was
20 outside.
21 Q. Are you saying containers or drums?
22 A. The oil was stored in a drum, but after once the
23 drums were full, we put it inside of the roll-off
24 container to use it in the winter because we recycle
25 the oil.

1 Q. How many times have petroleum products been stored in
2 drums outside of a container on the property?
3 A. I don't, maybe back then at the begin, I don't
4 know, once, twice, this is only probably 50 feet from
5 the street.
6 Q. After you would salvage a vehicle, what would you do
7 with the rest of the vehicle afterwards?
8 A. We would put it out in the yard to remove parts as
9 we needed it.
10 Q. Did you ever dispose of unwanted parts of these
11 vehicles?
12 THE WITNESS: What do you mean dispose of
13 parts?
14 Q. Well, there were parts of these cars that you didn't
15 resell, isn't that correct?
16 A. Right.
17 Q. Did you ever dispose of these parts?
18 A. We dispose of the car. If we had it on the
19 premises for 60 days or 90 days and nothing sells off
20 of it, we just crush it and dispose of the whole car.
21 Q. Where do you dispose of the car?
22 A. At that point there was a company that came in and
23 crushed it and hauled it out.
24 Q. What was the name of that company?
25 A. Metals Recycling.

1 Q. In the first year of your business how often would
2 Metals Recycling come onto the premises and take cars
3 away.
4 A. Metals Recycling then came into the premises
5 probably until, I don't know, a couple of years. They
6 took a long time to get cars on the premises. They
7 probably would start coming in on the premises around
8 '87, '86 or something. We were taking in maybe five to
9 ten cars a week. So they would only come out to crush
10 cars if you had 200 or 300 cars, as an example.
11 Q. Was the petroleum that you took out of the salvaged
12 vehicles sold to anybody else?
13 A. Yes, if we had more than two or three barrels, we
14 had West Oil come and pick them up. West Oil would
15 come once a month or every two months, and they would
16 come and just drain and take it. They came and removed
17 the fluids.
18 Q. When you bought the business, did you have a hands-on
19 operating control of the business?
20 A. Yes.
21 Q. Did you have a manager of the business at that time?
22 A. No.
23 Q. When you first started up the business in 1984, would
24 you appear on site, for example, on an average of
25 five days a week?

1 A. Um-hum, seven.
2 Q. Did you have a manager running the business for you?
3 A. No, I didn't.
4 Q. So you were running the business initially?
5 A. Yes.
6 Q. And how long did this continue?
7 A. Approximately about a year and a half or so, there
8 was really no business there. It was just, we were
9 just bringing the cars and kind of getting ready to
10 open the business.
11 Q. After this year and a half did you then hire somebody?
12 A. Yes, I hired a manager.
13 Q. Who was the manager?
14 A. It wasn't really a manager/employee. I think back
15 then it was -- I don't even recall his name.
16 Q. Do you recall how long he was there for?
17 A. He was there for a couple of years. There were so
18 many.
19 Q. Do you remember his name?
20 A. I am not sure if it was Frank Costa or Mike
21 Batista, one of the two, I am not really -- Mike
22 Batista was one of the dismantlers, and at that time I
23 think Frank Costa might have been the sales guy and the
24 guy who was managing the yard.
25 Q. Could you just take me briefly through the history of

1 managers who have managed this business for you from
2 when you purchased it until the present time?
3 A. I pretty much have been the manager.
4 Q. Tell me who was second in command from the time you
5 purchased the business until the present time?
6 A. My brother-in-law, Al Santos.
7 Q. What is his address?
8 A. 279 Curran Road, he lives across the street, 279,
9 280, I am not sure.
10 Q. Other than yourself and your brother-in-law, you
11 haven't had any other managers run the business since
12 you purchased it?
13 A. No, no.
14 Q. In the first five years that you operated this
15 business, tell me the names of your employees?
16 A. I couldn't tell. Those are the only two that I
17 could recall, I don't.
18 Q. You mentioned a Frank Costa?
19 A. He was a manager at one point, and then I had the
20 other guy in the back that was a dismantler.
21 Q. Who was the dismantler?
22 A. Mike Batista.
23 Q. Where does Mike Batista live now?
24 A. I don't know, this is 20 years ago, so I don't
25 know.

1 Q. When was the last time he worked for you?
2 A. Probably 15, 18 years ago.
3 Q. And Frank Costa, do you know where he lives?
4 A. No, I don't, 15, 18 years ago.
5 Q. That's it, let's talk about employees in the last five
6 years. Who has worked for your company in the last
7 five years other than you and your brother-in-law, Al
8 Santos?
9 THE WITNESS: Who has been working for me
10 in the last years?
11 MR. PERLOW: In the last five years.
12 A. Bobby Yarbroudy has been the controller, he is
13 pretty much the person who handles all of the
14 employees. He does the hiring and the firing. He does
15 all of the book work, he pretty much does all of that.
16 So I only know them by first name or whatever.
17 Q. Is that Y-a-r-b-r-o-u-d-y, is that his name?
18 A. Yes.
19 Q. But he is not an actual worker on the property, is he?
20 A. He is the controller, he controls it all.
21 Q. Who actually works on the property dismantling cars in
22 the past five years?
23 A. In the past five years, like I said, I could only
24 go by first name. I do not have their last names. I
25 would have to go back and take out my paperwork.

1 Q. What are their first names?
2 A. The first names is one of them is Jason, George,
3 Joe, Manny, Greg, Tony, Kenny, and Jim.
4 Q. Do you know any of their last names?
5 A. Jim Sandra.
6 Q. How do you spell that, please?
7 A. S-a-n-r, I am not even sure.
8 Q. Let's move on, Mr. Ferreira. Was the business at some
9 point sold to another entity?
10 A. Yes.
11 Q. Who was it sold to?
12 A. LKQ.
13 Q. When was it sold to LKQ?
14 A. Two years ago, two and a half years ago.
15 Q. What is LKQ?
16 A. LKQ is a nationwide auto recycler.
17 Q. How did you come into contact with them?
18 A. They came in contact with me.
19 Q. Prior to LKQ purchasing the business did any
20 representative of that company conduct an examination
21 of the property?
22 A. No.
23 Q. No one came on site and looked at the property from
24 LKQ?
25 A. They came outside, they walked the property, but

1 they didn't examine the property.
2 Q. Did they send anybody to inspect the property before
3 purchasing it?
4 A. Yes.
5 Q. Who did they send?
6 A. One of their private companies, I am not sure of
7 the name of the company that came in and walked the
8 property.
9 Q. Who did you primarily deal with at LKQ regarding the
10 sale of the business?
11 A. I didn't, I was not the one dealing with them, my
12 controller was, through me.
13 Q. So is the answer you don't know?
14 A. Mike Duframe was my contact.
15 Q. He is at LKQ?
16 A. Yes, he is a V.P.
17 Q. Do you presently have any interest in the business?
18 A. No.
19 Q. Were you given an employee contract when you sold the
20 business to LKQ?
21 A. No.
22 Q. Do you ever go to the property now?
23 A. Yes.
24 Q. Why do you go to the property now if you don't have an
25 interest in the business?

1 A. I am plant manager. I missed your question.
2 Q. That's all right.
3 A. I sold the company, but I run, and I sold the
4 company and I maintain, and I stay there, and I ran the
5 place for them.
6 Q. Are you still running the place for them?
7 A. Yes.
8 Q. Is that pursuant to an employment contract you have
9 with LKQ?
10 A. No, no.
11 Q. Is it a handshake agreement where you get compensated?
12 A. Yes.
13 Q. What is your compensation?
14 THE WITNESS: What do you mean? Do I get
15 paid to do it?
16 MR. PERLOW: Yes.
17 A. Yes, I get paid to do it.
18 Q. Is it a written agreement for your services?
19 A. No, no, no.
20 Q. Do you get paid on a week-to-week basis?
21 A. I get paid every week, yes.
22 Q. Did you have an agreement as to how long you would stay
23 on as the plant manager?
24 A. No, I didn't.
25 Q. So you could be terminated at any time?

1 A. Yes.
2 Q. Who do you report to at LKQ now?
3 A. Mike Duframe.
4 Q. Do you still own the land?
5 A. Yes.
6 Q. Did you receive 100 percent of the proceeds from the
7 sale of the business?
8 A. Yes.
9 Q. During the time period you owned the business, did you
10 have any contracts with any Governmental entity?
11 A. No.
12 Q. You didn't have any contracts with the Government for
13 purposes of disposing of Government vehicles?
14 A. No, I didn't.
15 Q. Did you have any contracts with the Government for
16 purposes of selling the Government any parts?
17 A. No.
18 Q. What are your job duties as plant manager?
19 A. I am in charge of the cars that are purchased daily
20 and overseeing, there is a -- I have an assistant
21 manager. I have two assistant managers and a
22 controller and everyone pretty much answers to me.
23 Q. Who are the two assistant managers?
24 A. Al Santos is the assistant manager and Dave Zinger.
25 Q. Dave who?

1 A. Zinger, I don't know how to spell it.
2 Q. Is that with a Z?
3 A. Z-i-n-g-e-r, or something.
4 Q. How long has he been there?
5 A. Oh, maybe five years or six.
6 Q. And he is an assistant plant manager?
7 A. Yes. Al Santos pretty much runs the operations
8 with the sales staff, and Dave in the back pretty much
9 oversees the employees.
10 Q. Do you know if LKQ has a contract with any Governmental
11 entity to purchase auto parts?
12 A. No, I don't.
13 Q. Do you get any Government vehicles into that facility
14 for disposal?
15 A. No, we don't.
16 Q. Do you sell any parts to any Governmental entity?
17 A. Not that I know of.
18 Q. So the business is presently operating under the name
19 of LKQ Corp.?
20 A. Correct.
21 Q. It's not Advanced Auto Recycling any longer?
22 A. No, it isn't.
23 Q. Did you liquidate the corporation when the business was
24 purchased by LKQ?
25 A. I don't know how to answer that.

1 Q. Well, is Advanced Auto Recycling still a viable
2 corporation?
3 A. Advanced, no, Advanced is no longer a corporation.
4 Q. So you own the property, but essentially Advanced Auto
5 Recycling is out of business, is that correct?
6 A. Correct.
7 Q. When you sold the business in 2004, is that when you
8 sold it?
9 A. Yes.
10 Q. How many junk automobiles did you have on site then?
11 A. I don't know, maybe a thousand or 1200, I am not
12 really sure.
13 Q. When you sold the business to LKQ, was there an
14 indemnification agreement signed between you and LKQ
15 Corporation with respect to any potential liability for
16 waste being on that property?
17 A. No.
18 Q. What did you sell LKQ?
19 A. I sold them the business, the name and the stock.
20 Q. Did they buy your debts as well?
21 A. No, I took care of the debts.
22 Q. Did they agree to assume any liabilities that you had
23 on the business when you sold it to them?
24 A. No.
25 Q. Before LKQ bought the business, did you have an

1 opportunity to meet with any DEM official and a
2 representative of LKQ?
3 A. No.
4 Q. There was never a meeting held at the Department of
5 Environmental manager between yourself and DEM?
6 A. Between myself and DEM, no, no.
7 Q. No?
8 A. Not by myself, there was -- Bob Yarbroudy had been
9 working with DEM on the water runoff and pretty much
10 all of the meetings and anything that was ever done
11 with DEM was with Mr. Yarbroudy.
12 Q. Was any such meeting attended of any such
13 representative of LKQ?
14 A. I don't recall, I don't know, if there was, that
15 question needs to be asked to Mr. Yarbroudy.
16 Q. Did you ever meet with a DEM official at their offices?
17 A. No.
18 Q. You have never been to the Department of Environmental
19 manager?
20 A. No, it's always been Bob Yarbroudy.
21 Q. You are familiar with the Paolino property located at
22 286 Curran Road, isn't that correct?
23 A. Yes.
24 Q. And along the border of those two properties there is a
25 stream, is that correct?

1 A. Correct.
2 Q. Please describe the stream?
3 A. The stream is what carries -- what the water runs
4 from the pond onto the catch basin in the street.
5 Q. Whose property is the stream on?
6 A. I don't know.
7 Q. Well at some point you dug the stream, didn't you?
8 A. It's on the property line, it's like a half on his
9 and a half on mine, the mark was there and we kind of
10 just dug it all of the way up. So I would assume it's
11 minor -- I am not sure.
12 Q. Who authorized the digging of the stream?
13 THE WITNESS: Who authorized it?
14 MR. PERLOW: Yes.
15 A. I was given a permit by DEM, I would assume it's on
16 my property.
17 Q. Because you dug the stream, your representatives dug
18 the stream, isn't that correct?
19 A. Correct.
20 Q. So you assume that the stream was on your property?
21 A. Correct.
22 Q. And the stream originates from one of the ponds?
23 A. From the ponds to the catch basin, correct.
24 Q. Is this pond in the northwesterly portion of your
25 property?

1 A. I don't know my north and west.
2 Q. But the pond is what feeds the stream, isn't that
3 correct?
4 A. Yes.
5 Q. And the pond is on your property?
6 A. Half on my property and half on Mr. Paolino's
7 property.
8 Q. But the stream, you authorized the digging of the
9 stream, isn't that correct?
10 A. Yes.
11 Q. Are you aware where the stream goes once it reaches
12 Curran Road?
13 A. It goes to the Pawtucket water.
14 Q. It goes to where?
15 A. The Pawtucket water, I mean the river, whatever,
16 Pawtucket, it goes to the Robin Hollow.
17 Q. Is that the Robin Hollow Reservoir?
18 A. Yes.
19 Q. Are you aware that the stream that feeds the Robin
20 Hallow Reservoir also feeds the water supply for that
21 area?
22 A. Yes.
23 Q. With respect to the ponds that were in place on your
24 property in 1984, are you aware of any of these ponds
25 being filled in at any point in time?

1 THE WITNESS: What do you mean, ponds?
2 Q. Well, the ponds that we talked about earlier, there
3 were two ponds on your property, one you referred to as
4 a self-made pond, is that correct?
5 A. Yes, that pond is the one that I filled.
6 Q. When you filled that pond, did you obtain any type of
7 DEM permit?
8 A. Yes, I did.
9 Q. Which office of the DEM did you file that permit
10 request with?
11 A. I don't know.
12 Q. Was that a local office in Rhode Island?
13 A. Yes.
14 Q. Who determined that that pond was self-made?
15 THE WITNESS: Who determined?
16 MR. PERLOW: Yes.
17 A. After I purchased the property I asked questions
18 because there was pipe, it was a pipe -- there was a
19 pipe that was dragging the water out of the pond. So I
20 questioned why it was that pipe going into the pond,
21 and I tracked the pipe back to Courtois Sand & Gravel,
22 and I said, you know, I just bought the property. I am
23 curious, what's the deal with this pipe coming out of
24 the pond, and he said, that was an agreement that I had
25 with Sam Bolter back then. We used the water to wash

1 the crushed stone, but we are no longer using the
2 water. So, I said was this pond something that you
3 dug, and he said, it's a pond that we normally dug so
4 the water would go into it, and then we would drain the
5 water out of it to wash the crushed stone, and that
6 pond was connected with the pond that exists there
7 right now.
8 Q. So the self-made pond that you are referring to was
9 connected to another pond that was a real pond?
10 A. It's the pond that exists there.
11 Q. When you refer to somebody that you spoke to at the
12 sand and gravel?
13 A. John Courtois.
14 Q. Is he still there?
15 A. No, he is not.
16 Q. Who made the ultimate determination that this was a
17 self-made pond as you call it?
18 A. Mr. Courtois told me that they dug the area itself.
19 They didn't call it a pond at that time. They called
20 it like a storage where the water -- where the pond
21 would go into, and they would take it from there to
22 wash the stone, which is about 2000 feet with the
23 piping.
24 Q. When you filled that in, did you take out the piping?
25 A. I took out the piping up to a certain area, yes, I

1 did.
2 Q. What did you fill the pond with?
3 A. Gravel.
4 Q. Where did you get the gravel?
5 A. From the embankment.
6 Q. From what embankment?
7 A. From the premises, from the land, where the Mobil
8 pipeline cuts across, just, there was probably a good
9 25 to 30 feet in front of it, so out of that area I
10 took the gravel and just filled it into the pond.
11 Q. Was there any debris on that gravel?
12 A. No.
13 Q. That was clean fill?
14 A. Yes, it was.
15 Q. How do you know that?
16 A. I didn't see any debris. All I saw was rocks and
17 dirt.
18 Q. Was that debris ever tested before you used it to fill
19 the pond?
20 A. No, it wasn't.
21 Q. Did you say you filed a permit with DEM before you
22 filled that pond?
23 A. I started to -- yes, I filed a permit to fill the
24 pond, correct.
25 Q. Was your permit granted?

1 A. Yes.
2 Q. So DEM would have a record of that permit?
3 A. Yes.
4 Q. And did you file a request to fill that pond with any
5 other Governmental agency?
6 A. No, not that I know.
7 Q. You didn't file a request with the Army Corps of
8 Engineers?
9 A. No, I don't, I don't know that.
10 Q. Do you know if this supposed self-made pond that you
11 are referring to was considered freshwater wetlands at
12 the time it was filled in?
13 A. No, I don't.
14 Q. Did you check with anybody before you filled it in
15 other than filing the application with DEM?
16 A. When DEM came up, one of the gentleman came up from
17 DEM when was filling in the pond. I explained that I
18 had spoken to Mr. Courtois and that Mr. Courtois had
19 said that that was a self-pond that they had dug, and I
20 ask him if what are the chances of filling this pond.
21 He said, you have to apply for it. He said, if it was
22 a self-made pond, there is a chance you might be able
23 to fill. If it is wetlands pond, you are not going to
24 be able to fill. So after the permit was issued, it
25 took about at least a month, then they sent a letter or

1 contacted Mr. Yarbroudy saying that it is okay to
2 backfill, but you have to hire an engineer to redo the
3 pond and show the exit, the water that exited out of
4 the pond that the one that is there now.
5 Q. Did you hire an engineer?
6 A. Yes.
7 Q. What engineer did you hire?
8 A. I don't recall the name, somebody out of Cranston,
9 I don't know who.
10 Q. Who was the individual that came to the site from DEM?
11 A. I don't know.
12 Q. Did you meet with the individual personally on your
13 site?
14 A. I did, when I first purchased the land, yes, I did.
15 It was just a younger person that came in from DEM.
16 Q. But you were sure that you were given a permit to
17 backfill the pond, is that your testimony?
18 A. Yes, I was.
19 Q. What other permits were there with respect to the
20 issuance of the permit?
21 A. When the permit was issued to fill the pond and
22 level the land, I was to raise the land around the pond
23 approximately a good four to six feet so the water or
24 anything that would be at the salvage yard would never
25 go into the pond. So where the pond, where the

1 existing pond that was there now, the land was raised
2 up to it. So if it rained or something, if it rained,
3 the water would always run into the street and not into
4 the pond. So where the pond is now, the land is raised
5 up to it. So whenever it rains or water runs, it runs
6 on the side of the pond, not into the pond.
7 Q. And this was done according to specifications given to
8 you by whom?
9 A. By DEM.
10 Q. Let's talk about the buildings on the property again.
11 You said when you first purchased the land, you
12 eventually during that first year constructed a
13 building, is that correct?
14 A. Yes.
15 Q. And what other buildings have you constructed on the
16 property?
17 A. Since then I had -- after that I put an addition,
18 if you're facing the property, I put an addition to the
19 left, which is a two-storage building. So that was one
20 addition, and I think there was one other addition to
21 the first building going back. So, when I had the
22 fire, I lost the building to the left if you're facing
23 the property, which is a two storage building,
24 including the first building, which was the first
25 addition, and that particular one was the one that we

1 rebuilt, because at the time of the fire, we were
2 underinsured. We were insured for about half of what
3 the damage was. So I did not put the buildings back
4 up. I did not have the money at the time to put the
5 buildings, so we did not put those two buildings back
6 up.
7 Q. You built the building on the property?
8 A. Yes.
9 Q. In 1984, isn't that correct?
10 A. Correct.
11 Q. Let's try to be as specific as possible here. At some
12 point did you build an addition to that building?
13 A. Yes, I did.
14 Q. What did that addition consist of?
15 A. Storage.
16 Q. Did you obtain a permit to build that building?
17 A. Yes.
18 Q. So who did you apply to get a permit to build that
19 addition to that first building?
20 A. The town hall.
21 Q. Did you apply for a permit with anybody else?
22 A. No, I didn't.
23 Q. On the westerly portion of your property, did you then
24 build another building there?
25 A. That's to my left.

1 Q. Facing the property standing on Curran Road bordering
2 your property and the Paolino property, did you build
3 another building?
4 A. There was a build -- that building on Mr. Paolino's
5 property, I am not sure what year that was built.
6 Q. I am talking about the property, the building on your
7 property, sir, did you build the property and earlier
8 you testified in late '80s you built another building,
9 is that correct?
10 A. An addition.
11 Q. An addition?
12 A. An addition to the original first building.
13 Q. At some point, not talking about an addition to that
14 first building, we already talked about that?
15 THE WITNESS: We are not talking about
16 the first building, we are talking about the second
17 building.
18 MR. PERLOW: Yes, tell me where the
19 second building is located.
20 A. The second building is located to the right of Mr.
21 Paolino's property.
22 Q. And that would be on the left-hand side of your
23 property, is that correct?
24 A. Correct.
25 Q. And that would be near the stream that we already

1 talked about, is that correct?
2 A. Correct.
3 Q. And please describe this building?
4 A. That building is pretty much a basic square
5 building, I don't know, 80 by 60, or I am not even
6 sure, 80 by 60 or 80 by 80, that was an original
7 building to store all of the mechanical parts such as
8 engines and transmissions and also loading the trucks.
9 Q. What else was that building originally to be used for?
10 A. That building was to be used as storage and loading
11 the cars and trucks.
12 Q. Did the use of that building ever change throughout the
13 years?
14 A. The use of that building has not changed, there was
15 an addition after the fire that we added to the front
16 of that building, which is the dismantling building
17 now, the original building maintains a warehouse but in
18 front of it we put an addition, once the two buildings
19 up front burnt down, after those building were burnt
20 down, we put an addition in front of the warehouse that
21 I went for a permit and that's where the dismantling is
22 done now, but the warehouse still maintains as a
23 warehouse.
24 Q. When did you apply for permit to build a warehouse?
25 A. I don't know.

1 Q. Could it have been in 1991?
2 A. I am not sure.
3 Q. Did you apply for a permit to build a warehouse?
4 A. Yes.
5 Q. Did you apply with the Army Corps of Engineers to build
6 that warehouse?
7 A. I don't know.
8 Q. Did you apply to anyone else other than DEM to build
9 that warehouse?
10 A. I don't know.
11 Q. When you built the addition to that warehouse, did you
12 seek to obtain a permit?
13 A. With the town hall.
14 Q. Did you file with anybody else in order to get
15 permission to build that addition?
16 A. I don't know that.
17 Q. You don't know if you requested DEM wetlands approval?
18 A. No, I don't.
19 Q. You don't know if the Army Corps of Engineers was
20 involved with the approval of that warehouse?
21 A. No, I don't.
22 Q. How close to that stream is that warehouse built?
23 A. Seven feet, approximately, when I went for that
24 permit, I was told I asked at that time, I am not even
25 sure who the building inspector was, what were the

1 requirements, and he said you have to be seven feet
2 away from the property line.
3 Q. He told you there was a seven-foot setback?
4 A. You had to be seven feet away from the property
5 line.
6 Q. So that warehouse is built approximately seven feet
7 from the stream?
8 A. From the property line, so if the stream is
9 two feet wide, that means the building is five feet
10 away. At that time I didn't really know -- I thought
11 that seven feet was from the property line, and it
12 started being from -- instead of giving a discount for
13 the stream, I didn't. So when I measured from the
14 property line, I didn't measure proper.
15 Q. How do you know that?
16 A. Because I had to go before back to the council, and
17 when -- I had to go back to the council because the
18 building was too close to the property, or was a
19 partial of it was on Mr. Paolino's property, so I had
20 to go before the council to get approved that I was
21 wrong, and they went, and they -- I guess they okayed
22 it, it was okay to leave it there.
23 Q. Are you talking about a variance?
24 A. Yes.
25 Q. When did you go for that variance before the Town

1 Council?
2 A. I don't recall.
3 Q. So you went to the Town Council to request a
4 variance --
5 A. I went to the Town Council to get a permit for the
6 building. When the permit was given, when I measured
7 the building from the property line to where the
8 building was going to go, which I was counting on
9 seven feet, because of the way the stream was done, the
10 stream wasn't straight up. So by the stream coming up
11 and zigzag, when I measure, I guess I end up not coming
12 out with the seven feet, I end up with six feet, as an
13 example.
14 Q. Are you sure the setback was seven feet, sir?
15 A. That's what I was told.
16 Q. So when you went back before the Town Council, what
17 happened?
18 A. When I went back, we explained that, you know, it
19 was a mistake. We didn't -- the building was not put
20 in the proper location, it was a foot or so onto Mr.
21 Paolino's property or whatever at that time.
22 Q. The building wouldn't be on Mr. Paolino's property if
23 it was on your side of the stream?
24 A. What I am saying is, the building is too close to
25 the property, meaning it should have been -- if, for

1 example, it was supposed to be seven feet, and it ended
2 up being five feet in one mark. So I -- if it was
3 five feet instead of seven, so the building was over
4 more than it should have been.
5 Q. So the building was six feet from the property line
6 versus the seven it was supposed to be?
7 A. Correct, correct.
8 Q. You didn't seek to obtain -- did you seek to obtain a
9 permit from DEM for the building so close to the
10 stream?
11 A. I don't recall.
12 Q. Did you obtain a permit from the Army Corps of
13 Engineers for building that close to a stream?
14 A. No. When I went before -- when I went to the town
15 hall for the permits, I was not asked to -- I was not
16 asked or told that you should, you know, apply with
17 somebody else. When I went before the town hall or
18 before the council, I was never asked that you need to
19 go do this before you build the building.
20 Q. Did you consider it their responsibility to tell you
21 who else to go before in order to get proper
22 authorization to build the building?
23 A. I don't know.
24 Q. So you didn't look anywhere else for authorization
25 because the town didn't tell you to look anywhere else?

1 A. So I didn't look someplace else. If the town was
2 telling me it was okay to go ahead and do that, I would
3 assume that I was okay to go ahead and do it.
4 Q. Have you ever seen any oil sheens or petroleum on your
5 property?
6 THE WITNESS: Oil sheens, what's that?
7 MR. PERLOW: A glistening of oil on your
8 property.
9 A. No.
10 Q. Have you ever seen debris in any of the ponds on your
11 property?
12 A. Debris near the pond, no.
13 Q. Have you ever seen --
14 THE WITNESS: What do you mean by debris?
15 Q. Solid waste, have you seen tires. Well, you have seen
16 tires on property, we have talked about that, right?
17 A. Yes.
18 Q. Have you ever seen oil on the ground of your property?
19 A. No.
20 Q. Have you ever seen petroleum products of any kind on
21 the ground of your property?
22 A. No.
23 Q. Have you ever seen any storm run-off water on the
24 property discharged into the stream?
25 A. No, the way the land is set, it sets higher than

1 the stream. It always runs to the middle of the yard.
2 Q. So no storm runoff from your property will find its way
3 to the stream, is that your testimony?
4 A. The water from the salvage yard runs out to the
5 street. It runs out to the street onto the manhole
6 cover, which is in the street. Then from there it runs
7 back into the catch basin. Whatever overflows,
8 whatever the manhole cover can't handle, it runs in the
9 street into the stream.
10 Q. It runs from the street into the stream, is that what
11 you are saying?
12 A. Yes, into the catch basin.
13 Q. That's at the base of the stream?
14 A. That's in the street. The street is right here and
15 the catch basin is right here.
16 Q. You really can't describe it that way because the
17 stenographer can't write that down. Let me ask you
18 again, the storm runoff from your property --
19 A. It runs to the street.
20 Q. Let me finish the question. Does it ever find its way
21 into the area at the bottom of the stream near Curran
22 Road?
23 A. It finds its way in the bottom at the catch basin.
24 Q. Which is at the bottom of the stream?
25 A. Which is at the end of the stream, correct.

1 Q. So storm runoff from your property does find its way
2 into the catch basin at the end of the stream at Curran
3 Road?
4 A. Well, it's not the stream, the catch basin at the
5 bottom is so open that the water runs into the -- the
6 stream expires probably 20 feet before the catch basin.
7 Q. Is that the same catch basin that feeds the Robin
8 Hollow Reservoir?
9 A. I would assume so, yes.
10 Q. So storm runoff from your property finds its way into
11 the catch basin, which eventually finds its way into
12 the Robin Hollow Reservoir, is that correct?
13 A. Right, right.
14 Q. And that's the same Robin Hollow Reservoir you
15 testified earlier that feeds the water supply for
16 residents in the area, isn't that correct?
17 A. Supposedly, yes, the water, yes.
18 Q. Have you ever seen any debris in that stream?
19 A. No.
20 Q. Did you ever dispose of any petroleum products onto the
21 Paolino property?
22 A. No.
23 Q. Did you ever dispose of any petroleum products onto the
24 property when it was the Diamonds' property?
25 A. No.

1 Q. Did you ever dispose of any solid waste onto the
2 Paolino property?
3 A. No.
4 Q. Did you ever dispose of any solid waste onto that
5 property when it was the Diamond property?
6 A. No.
7 Q. Have you seen, in the last ten years, for example, any
8 debris on the Paolino property?
9 A. No. In the last ten years I have not paid any
10 attention if there is any debris on the property. Like
11 I saw debris on the property before it was sold to Mr.
12 Paolino. Since then I have not seen any other debris.
13 Is that what the question is?
14 Q. Since you purchased the property, have you seen debris
15 on the Paolino property since he purchased it?
16 A. No, I have not paid attention to it.
17 Q. Are you aware of when he purchased it?
18 A. Yes, I was aware of it.
19 Q. When did he purchase the property?
20 A. Right after I was -- I would have to say, I don't
21 know, '84, '85, he purchased it after or prior to that.
22 Q. And you say you didn't notice any debris on the Paolino
23 property because you haven't paid attention to it?
24 A. Since then, no. After the purchase -- once Mr.
25 Paolino's property was backfilled and straightened out,

1 after that there was no debris there. It was debris
2 there when it was original when I original -- when the
3 original was sold to me and the property was split,
4 that's when the debris was there. Once after I
5 purchased my property, the Diamonds backfilled that
6 entire property approximately three to four feet. So
7 whatever was there, it was on -- it got covered up.
8 Q. When did the Diamonds backfill that property?
9 A. Right after they got the settlement with me, right
10 after they had the money.
11 Q. When you say they backfilled it, what did they
12 backfill, do you know?
13 A. Whatever was -- pretty much whatever was there it
14 got backfilled. There is a gravel pit. If you're
15 facing the property, to the left there is a gravel pit
16 under the power lines. They had equipment over there
17 for approximately a week to two, and they took that
18 gravel, that entire gravel and pushed it onto the land
19 and raised the land approximately some areas three to
20 four feet.
21 Q. Did they backfill a pond on that property?
22 A. I don't recall that.
23 Q. Did you ever see anyone backfilling that property?
24 A. Yes.
25 Q. Do you know who that was that was backfilling the

1 property?
2 A. John E. Case out of North Attleboro.
3 Q. Is that C-a-s-e?
4 A. C-a-s-e, John Case.
5 Q. What did he backfill the property with?
6 A. With the gravel that was under the power lines.
7 Q. Did he bring any fill onto the property?
8 A. Not that I saw.
9 Q. When you originally got involved with the property, you
10 had actually seen the property before the Diamonds sold
11 it to you, is that correct?
12 A. Correct.
13 Q. Did you notice any ponds on the portion of the property
14 that the Diamonds didn't sell to you?
15 A. Yes, there were two ponds further to the back and
16 those are the two ponds that I explained to you at the
17 beginning when I purchased the land, that I didn't like
18 the looks of it. I didn't like the way that particular
19 area looked.
20 Q. Well, after this backfilling took place, were the two
21 ponds still there?
22 A. The two ponds were still there, correct.
23 Q. Did you ever fill in any pond on the Diamond property
24 when the Diamonds owned it?
25 A. No.

1 Q. Did you ever fill in any pond on Mr. Paolino's
2 property?
3 A. No.
4 Q. Did you ever authorize any individual to fill in a pond
5 on Mr. Paolino's property?
6 A. No.
7 Q. Have you ever entered onto Mr. Paolino's property since
8 you purchased your land?
9 THE WITNESS: What do you mean, have I
10 ever walked on the property since I purchased my land?
11 MR. PERLOW: Yes.
12 A. Yes.
13 Q. And when was that?
14 A. When the filling was happening.
15 Q. When the filling of the stream was happening?
16 A. No, when the filling of the property was happening,
17 when the Diamonds owned it before they sold it.
18 Q. We are talking about after Mr. Paolino purchased it?
19 A. Yes, I did walk the property, yes.
20 Q. And why was that?
21 A. I just walked to see what was done.
22 Q. When did you finish that stream on the westerly portion
23 of your property, when was that done?
24 A. That was done probably at the beginning of '84,
25 probably a good three months after I purchased.

1 Q. Was any of this work done after Mr. Paolino bought the
2 property from the Diamonds, as far as you know?
3 A. After Mr. Paolino bought it, there was never any
4 work done to his property, no.
5 Q. Have you ever filled in the other ponds on your
6 property in any manner?
7 THE WITNESS: What do you mean?
8 Q. You mentioned there is a self-made pond on your
9 property that you filled in, is that correct, we talked
10 about that?
11 A. Yes.
12 Q. And you mentioned there is another pond on your
13 property, isn't that correct?
14 A. Yes.
15 Q. Have you ever filled in that property?
16 A. Yes.
17 Q. Have you ever put any debris on that property?
18 A. No.
19 Q. Is that property essentially in the same condition as
20 when you purchased that piece of land back in 1984?
21 A. It's actually cleaner because I have -- when it got
22 dry, there was debris in the pond, such as tires and
23 other objects there, and I removed them from the pond;
24 and when the pond went dry, I removed all of the tires
25 and all of the junk that was in it.

1 Q. Is it the same size as it was when you purchased the
2 property?
3 A. Yes, it was.
4 Q. Did you ever go in Mr. Paolino's property to construct
5 the building that's on the westerly border of your
6 property?
7 A. No.
8 Q. You never went on the Diamond/Paolino property in order
9 to construct the stream that separates the properties?
10 A. What do you mean? When the stream was done, the
11 property still belonged to the Diamonds.
12 Q. When the stream was made, did you ever go on the
13 property next door, be it when it was owned by the
14 Diamonds or Mr. Paolino?
15 A. Yes.
16 Q. In order to construct that stream?
17 A. Yes, the stream was dug from the Diamonds'
18 property, half and half, because it got to one point
19 where they couldn't have the machine on the Diamonds'
20 property and then they moved over to my property.
21 Q. The stream, let's talk about that for a moment again.
22 Is the stream entirely on your property?
23 A. I would assume yes.
24 Q. But you are not sure?
25 A. No, I am not.

1 Q. When this stream was constructed, the other bit of
2 running water that you referred to, you didn't call it
3 a stream, I don't want to put words in your mouth. Was
4 that filled in?
5 THE WITNESS: What's the question again?
6 Q. Well, when this stream was made, what happened to the
7 other portion of the property that had water running
8 down to Curran Road?
9 A. It got leveled off.
10 Q. Who leveled that off?
11 A. I did.
12 Q. Did you apply for any type of permit to level that off?
13 A. No, I didn't.
14 Q. You didn't apply to anybody to level that --
15 A. Property, no, I didn't.
16 Q. And that property that you leveled off was fed by the
17 same pond that now feeds the stream along the Paolino
18 property, is that correct?
19 THE WITNESS: The property?
20 MR. PERLOW: Well, you said you leveled
21 off the running water. You didn't want to call it a
22 stream, but you leveled off that running water that was
23 going through the property.
24 A. Once the stream was built, this other area, the
25 water no longer went through there. I leveled that

1 off. Is that what you are asking me?
2 Q. Yes.
3 A. Yes, I leveled that off.
4 Q. Why did you want to level off that area?
5 A. Because, so I could use it.
6 Q. And you directed the stream along the westerly portion
7 of your property, so essentially the water went before
8 went through your property and wouldn't be in your way,
9 is that safe to say?
10 A. I don't follow that.
11 Q. You wanted to get rid of the water that was going
12 through your property so you could use it, isn't that
13 correct?
14 A. The water that was going through my property it
15 maintained going through my property. The pond is fed
16 from way up in a different area, the pond that is there
17 is not fed through the salvage yard. This pond is fed
18 through way up near Cumberland somewhere, the water
19 comes from other areas into the pond.
20 Q. I understand that.
21 A. The salvage yard itself still, when it rains,
22 maintains -- it takes its water and it runs off the
23 street, is that what you are asking me?
24 Q. No, the pond that's on your property that's not the
25 man-made pond, did that result in some sort of runoff

1 through the center part of your property that
2 eventually ended up on Curran Road?
3 A. No.
4 Q. What did you level off in the middle of your property?
5 A. I straightened the land out, because there was no
6 longer -- the water was no longer being fed -- my
7 property was no longer being fed from the pond. When
8 it didn't have a stream, the water would run off the
9 pond onto my yard. We eliminated that from happening.
10 So the water no longer came from the pond to my yard.
11 Q. And the reason for that is what?
12 A. The reason for that was because the pond, now I had
13 a stream where the water would run off, so it would
14 not.
15 Q. What you are saying is the other area where the pond
16 eventually would run off through the middle of your
17 property, you are saying that wasn't a stream, is that
18 correct?
19 A. Yes.
20 Q. You are saying that was just water running through the
21 center of your property?
22 A. Yes, it would just run off whatever way they would
23 find a lower spot onto the street.
24 Q. But it wasn't a stream?
25 A. No, not that I know.

1 Q. Well, you saw it.
2 A. It didn't look like a stream to me.
3 Q. What did it look like?
4 A. Just zigzags through the property.
5 Q. Was it deep? Was it two or three feet deep?
6 A. No, it was just above the land.
7 Q. Above the land?
8 A. You know, on top of the land, it would just run
9 off.
10 Q. How long was the stream? Strike that. How long was
11 this runoff from the pond to Curran Road?
12 THE WITNESS: The distance?
13 MR. PERLOW: Yes.
14 A. I don't know, 150 feet, 200 feet.
15 Q. Did you use any fill to put in this water runoff area?
16 A. No.
17 Q. You just leveled it?
18 A. I just, pretty much whatever was there, I just
19 moved it around and straightened it out.
20 Q. Did your workers do this excavation work on this area
21 of water that was running through your property?
22 THE WITNESS: Did my workers?
23 MR. PERLOW: Yes, who leveled off this
24 water area that was on your property.
25 A. John Case, the same company that did the Diamonds.

1 Q. And did Mr. Case have a name of his business?
2 A. John E. Case.
3 Q. He is out of what city?
4 A. North Attleboro, I think I said.
5 Q. When the land was excavated between your property and
6 Mr. Paolino's property in order to build a stream, or
7 at the time it was the Diamond property, where was the
8 debris taken from when it was taken from that piece of
9 land?
10 THE WITNESS: What do you mean, what was
11 the debris?
12 Q. Well, dirt had to be removed in order to construct the
13 stream, isn't that correct?
14 A. There was debris on different areas, when the
15 stream was being built, that land was already flat.
16 Q. Well, you had to dig out an area for the stream, isn't
17 that correct?
18 A. Exactly, but that land already had been moved
19 around. So when we dug the area, it was pretty much
20 digging on fresh land that already had moved around.
21 The reason why we created this stream was because once
22 we move -- we both moved the land, earth around, the
23 Diamonds moved their land around, and I moved my land
24 around, and we pushed the land towards the pond. By
25 pushing the land towards the pond, we raised the water

1 level. By raising the water level, when the pond
2 overfilled, it just ran out and made a mess. So that's
3 why we had to go back, to build a stream so the water
4 would find its ways.
5 Q. I understand that. Let's talk about your building the
6 stream, though. When you built the stream, did the
7 stream have to be dug out? It is something you
8 constructed, isn't that correct?
9 A. Right, we dug three feet down, a straight line.
10 Q. When you dug three feet down, where did you take that
11 dirt and put it?
12 A. We splashed it to the sides.
13 Q. It wasn't removed from the property?
14 A. No, it wasn't.
15 Q. Who did that excavation work?
16 A. Roger Garaphy.
17 Q. Who is he?
18 A. Roger Garaphy.
19 Q. Could you spell that?
20 A. I don't know how to spell it.
21 Q. What does he do?
22 A. He, at that time he did construction, he did sort
23 of construction, he had equipment, I am not sure.
24 Q. What was the name of his business?
25 A. I don't think he had a business. He just was one

1 of those guys that had a machine and you hire, and you
2 go over there, and he does what you asked him to do.
3 Q. Could you spell his name for us?
4 A. I don't know how to spell his name.
5 Q. And you don't know the name of the business?
6 A. I don't think he had a business name, I am not
7 sure.
8 Q. Where was he from at the time?
9 A. Curran Road.
10 Q. When you built the additional building on your property
11 adjacent to the Paolino property, was there any type of
12 septic system installed?
13 A. No.
14 Q. Is there any type of bathroom facility in that
15 building?
16 A. No.
17 Q. Was any type of well dug when you built that building?
18 A. The well dug is in front of the first original
19 building that we talked about. The well is there in
20 front of that building, which is about 40 feet from the
21 street, which is, if you're facing the property, it's
22 approximately 40 feet to my left.
23 Q. So, was there any type of septic system built when the
24 addition was put onto the property, particularly the
25 Paolino property?

1 A. No, it's always been the same bathroom until
2 approximately three or four years ago that we hook up
3 to sewers.
4 Q. At any point in time did you become aware of petroleum
5 or oil products finding their way into the stream
6 between your property and the Paolino property?
7 A. No.
8 Q. Did you ever become aware at any point of any solid
9 waste finding its way into the stream between your
10 property and the Paolino property?
11 A. No.
12 Q. Well, at some point were you ever informed by any
13 Governmental agency that there was debris in the
14 stream?
15 A. No.
16 Q. You were never told that?
17 A. That there was debris in the stream, no.
18 Q. You were never told by any agency that there was waste
19 in the stream?
20 A. No.
21 Q. At some point in time were you informed by any
22 Governmental agency that there were ponds that had
23 waste in them on your property?
24 THE WITNESS: What?
25 MR. PERLOW: Do you want to read that,

1 please.
2 (PENDING QUESTION READ)
3 A. No, not to my knowledge.
4 Q. Were you ever told by any Governmental agency that
5 there was contamination on your property?
6 A. Not to my knowledge.
7 Q. Did you consult with any engineer in constructing the
8 stream between your property and what is now the
9 Paolino property?
10 THE WITNESS: Did I consult?
11 MR. PERLOW: With an engineer.
12 A. Yes.
13 Q. Who did you consult with?
14 A. I don't know.
15 Q. Were there any plans that were put in place for the
16 construction of the stream?
17 A. Back then, I don't know.
18 MR. PERLOW: I am going to show you a
19 document. This will be Plaintiffs' 1.
20 (PLAINTIFFS' EXHIBIT 1 MARKED FOR
21 IDENTIFICATION)
22 Q. Do you recognize that document?
23 A. This says someone is filling in the pond, yes, when
24 I was filling in, I recognize this, yes.
25 Q. And that document is regarding a complaint that's noted

1 received 11/22/83, do you see that?
2 A. Yes.
3 Q. And that document says someone is filling in a pond on
4 Curran Road in Cumberland, is that what that says?
5 A. Yes.
6 Q. Who does that list as the owner's name?
7 A. Joseph Ferreira.
8 Q. And that's you?
9 A. Yes.
10 Q. And when did you first see that document?
11 A. This document, this was issued the day that DEM
12 came in and the day that I discussed with them to that
13 the pond -- that they came the pond when it was a
14 self-made pond was starting to be filled in, someone
15 called and made a complaint, they came up, they showed
16 up, and they gave me this document to stop and go hire
17 an engineer before I continue filling the pond.
18 Q. And this was regarding your filling in the self-made
19 pond, is that your testimony?
20 A. Correct, correct.
21 Q. And it was your decision to fill in that self-made
22 pond?
23 A. Yes.
24 Q. Did you make that decision in conjunction with anybody
25 else?

1 A. No.
2 Q. And the filling of that pond was done at your
3 direction?
4 A. Yes.
5 Q. At some point you received a notice of violation on
6 that, isn't that correct?
7 A. Yes, the DEM showed up and they said they were
8 going to send me a violation, and I stopped working
9 that day.
10 Q. I am going to ask you to identify another document,
11 please. If you could take a moment to look at that
12 document. Do you recognize that document, sir?
13 A. Yes.
14 Q. What is that document?
15 A. This document was given to me when they came after,
16 and they asked me to raise the land up to the pond
17 level, which I had said before to raise the gravel up
18 to the pond level and to stay away from the pond at 40
19 to 50 feet, and they had me put bales of hey around the
20 pond, which I did.
21 MR. PERLOW: We are just talking about
22 the notice of violation for now. We will get to the
23 other things in a moment. If you could just mark that
24 as Exhibit 2.
25

1 (PLAINTIFFS' EXHIBIT 2 MARKED FOR
2 IDENTIFICATION)
3 Q. And that document which is entitled notice of
4 violation, that states that you did accomplish or
5 permit fill and grading in and within 50 feet of a
6 freshwater pond, is that correct?
7 A. Correct.
8 Q. And it also says that you did accomplish a permit fill
9 into an area subject to flooding and redirecting an
10 area subject to storm flowage, do you see that?
11 A. Yes.
12 MR. PERLOW: We'll mark this as 3.
13 (PLAINTIFFS' EXHIBIT 3 MARKED FOR
14 IDENTIFICATION)
15 Q. What area is this violation referencing when it talks
16 about filling and grading within 50 feet of a
17 freshwater pond?
18 A. I assume this is talking about the pond that I was
19 filling in.
20 Q. And that's the one that you said was man-made or
21 self-made?
22 A. Yes.
23 Q. And this document also references your redirecting an
24 area subject to storm flowage, what is that document
25 referencing?

1 A. Meaning that I could build a stream.
2 Q. Well, it says redirecting, what does the word
3 redirecting mean to you when you read this violation
4 here today?
5 A. Redirecting the water from the way it was being
6 directed.
7 Q. Is this notice of violation a violation because you
8 redirected that area you had talked about earlier where
9 the water was just flowing to the front of your
10 property and you were redirecting it to the stream
11 between your property and the Paolino property?
12 A. I would assume, yes.
13 Q. So according to this document, you were redirecting an
14 area subject to storm flowage, do you agree with that?
15 A. I was redirecting the water from here to the
16 stream, is that what you are saying?
17 Q. Well, from where it was running through the center of
18 your property to the stream, would you agree that it
19 says that?
20 A. I am not following you.
21 Q. Well, the area you leveled off was water that was
22 ambling, for lack of a better word, through the center
23 of your property down to Curran Road?
24 A. Yes.
25 Q. And subsequently you leveled that off?

1 A. Yes.
2 Q. So the pond would feed the new stream that bordered
3 your property and the Paolino property, is that
4 correct?
5 A. Yes.
6 Q. So is this notice of violation due to the fact that you
7 leveled off that area where the water was ambling
8 toward Curran Road and redirected it toward the stream
9 along your property with the Paolino property?
10 THE WITNESS: Was this violation given
11 before the stream or after the stream?
12 MR. PERLOW: Well, sir, this was received
13 March 8, 1984.
14 A. Okay, so this was after, okay, yeah, okay, yeah, I
15 redirected. What you are saying is I redirected the
16 water that was going through the yard to --
17 Q. The stream between, for the area between your property
18 and the Paolino property, is that what this means?
19 A. Yes.
20 Q. And you were given a notice of violation for doing
21 that, is that correct?
22 A. Yes.
23 Q. And that's what this is, isn't that correct?
24 A. Yes.
25 Q. When you received this notice of violation, you

1 received a receipt for this, isn't that correct?
2 THE WITNESS: I received a what?
3 Q. A receipt for this notice of violation. I am going to
4 show you a document that might make it easier for you.
5 As a result of receiving this notice of violation, you
6 requested a hearing, isn't that correct?
7 A. Yes.
8 Q. Subsequently you filed a freshwater wetlands
9 application for permission to alter, isn't that
10 correct?
11 A. Yes.
12 Q. And that's your freshwater application, is that
13 correct?
14 A. Yes.
15 Q. And that's application Number 6517, that's what it
16 says?
17 A. Yes.
18 MR. PERLOW: If you could mark that
19 plaintiffs' 4, please.
20 (PLAINTIFFS' EXHIBIT 4 MARKED FOR
21 IDENTIFICATION)
22 Q. According to that application, you describe the project
23 as being, to divert brook to property line and provide
24 for easier flow to existing culvert, isn't that
25 correct?

1 A. Yes.
2 Q. What brook were you diverting?
3 A. I don't know. What do you mean by brook?
4 Q. I am asking you, sir. You filed the application, is
5 that your signature at the bottom?
6 A. Yes.
7 Q. So you asked to divert a brook to the property line,
8 isn't that correct?
9 A. Yes.
10 Q. What brook were you diverting to the property line?
11 A. I am not sure, I don't know.
12 Q. Was it the water that was ambling through the property
13 that previously did not characterize as a stream?
14 A. I am not sure, I don't know, I don't really know, I
15 don't know.
16 Q. But you were diverting something?
17 A. I was diverting something, but I am not sure what
18 was it.
19 Q. Could it have been that water that was ambling through
20 the center of your property?
21 A. It could have been.
22 Q. And at this time you characterize that water as a
23 brook, isn't that correct?
24 A. I don't know anything about a brook, I don't know.
25 The catch basin, they used to call that a brook, I

1 don't know what.
2 Q. You're diverting something to the property line, isn't
3 that correct?
4 A. Am I diverting something to the property line, I
5 don't know.
6 Q. It says you are diverting a brook to the property line,
7 that's what it says, is that correct?
8 A. Yes, but I am not understanding it.
9 Q. Okay. This next document that you are looking at, it's
10 regarding formal application 6517, and that's addressed
11 to you, Joseph Ferreira, isn't that correct?
12 A. Yes.
13 Q. And that's regarding your application of 6517, isn't
14 that correct?
15 A. Yes.
16 MR. PERLOW: And if you could please read
17 the first paragraph of that. Let's first mark it.
18 (PLAINTIFFS' EXHIBIT 5 MARKED FOR
19 IDENTIFICATION)
20 A. "Department of Environmental" --
21 Q. This is the Department of Environmental Management's
22 response to your application, isn't that correct?
23 A. Yes.
24 Q. And according to this application -- strike that.
25 According to this document your application was

1 approved subject to a certain standard and special
2 conditions, isn't that correct?
3 A. Yes.
4 Q. If you could please read to yourself that first
5 paragraph, and that references your application for
6 permission to alter freshwater wetlands known as an
7 unnamed area subject to storm flowage and an unnamed
8 pond by grading, filling, and relocating the said area
9 subject to storm flowage and reconstructing a drainage
10 ditch 640 feet for the purpose of site development,
11 isn't that correct?
12 A. Yes.
13 Q. What does this first paragraph mean to you, sir?
14 A. Honestly, I don't know.
15 Q. Well, is this your application to redirect the pond?
16 A. Yes.
17 Q. Strike that. To redirect the stream?
18 A. Yes, as far as legal work and paperwork, I never
19 had any involvement with this. It's always been
20 Yarbroudy. This is not -- I can read this as many
21 times as you want me to. I am not going to understand
22 it.
23 Q. We are just going to do the best we can.
24 A. But like I am saying, I don't know.
25 Q. But this correspondence is addressed to you. If you

1 don't know the answer to any of my questions, you just
2 have to say I don't know?
3 A. I don't know.
4 Q. But I am asking you to respond to the questions as best
5 you can.
6 A. Okay.
7 Q. This document requires certain standard permit
8 conditions, isn't that correct?
9 A. Yes.
10 Q. And number 2 on the second page references that, "all
11 material for fill is clean and free of any matter,
12 which could pollute adjacent wetlands and water
13 courses," do you see that?
14 A. Yes.
15 Q. In doing this work, as referenced in this application,
16 did you use all clean fill?
17 A. Yes.
18 Q. Where did you purchase the clean fill from?
19 A. I used it from the ponds.
20 Q. Who determined that the fill was clean?
21 A. I guess I did.
22 Q. Did anyone else come in and test the fill before you
23 used it?
24 A. No, I didn't.
25 Q. This also states that you were required to notify

1 freshwater wetlands in writing prior to commencement of
2 construction and upon completion of the project. Was
3 this done?
4 A. I don't know.
5 Q. Did you do it yourself?
6 A. I don't know.
7 Q. Who would have been responsible to do it if not you?
8 A. To do the --
9 Q. To contact freshwater wetlands regarding this project?
10 A. I would assume whoever the person that was doing
11 the engineering work for me.
12 Q. And that was who?
13 A. I don't know.
14 Q. And the special conditions section, this talks about
15 erosion and sedimentation controls, isn't that correct?
16 A. Yes.
17 Q. In fact, earlier when we were talking, you referenced
18 bales of hay along the stream when this work was being
19 done, isn't that correct?
20 A. Bales of hay along the pond, not the stream.
21 Q. Not the stream?
22 A. No, the pond.
23 Q. Well, according to A of this Document 1A, if you could
24 reference that, it says, "the placement of staked hay
25 bales or a silt fence in all locations shown on the

1 approved site plan and where otherwise necessary to
2 prevent sediments from entering associated wetlands."
3 Didn't the site plan include the location of the
4 stream?
5 THE WITNESS: What are you referring to?
6 Q. Well, the site plan that you presented included the
7 stream along the Paolino property, isn't that correct?
8 A. Along the stream we did not have bales of hay, is
9 that what you are saying?
10 Q. I am asking you.
11 A. No, it didn't.
12 Q. Was that required according to the site plan?
13 A. I don't know.
14 Q. Do you remember what the site plan stated?
15 A. No, I don't.
16 Q. Do you see in B where, "the drainage ditch must be
17 graded to the cross-section design as shown on the
18 original site plans and the adjacent buffer area loamed
19 and reseeded." Was that adjacent area loamed and
20 reseeded?
21 A. Yes, it was cleaned and reseeded, yes.
22 Q. And we are talking about the area beside the drainage
23 ditch, isn't that correct?
24 A. Yes.
25 Q. And that's the stream?

1 A. That's the stream.
2 Q. And your testimony is that that area was loamed and
3 seeded?
4 A. Yes.
5 Q. And also it states in C that a hay bale dam must be
6 installed in the ditch just north of Curran Road prior
7 to any grading, was this done?
8 A. Yes.
9 Q. Was this along the stream?
10 A. The bales of hay were put along the catch basin,
11 yeah, coming up along the fence. This entire -- once
12 this stream was done, an entire fence went along the
13 stream. The bales of hay were placed inside of the
14 fence, probably a good six feet, seven feet from the
15 stream. Is that what you are asking me?
16 Q. I asked you earlier if bales of hay were put in all
17 locations on the approved site plan, and you said that
18 they weren't put along the stream?
19 A. No. You are asking me if I had put it while I was
20 doing the work?
21 Q. Yes.
22 A. No, it was put after the work was done.
23 Q. So, when were the bales of hay put along that stream?
24 A. The bales of hay were put along the stream after
25 the fence was put up, after the stream was already dug,

1 and the fence went up, and then the stream, the bales
2 of hay were put along the fence. We were still not in
3 business at this time.
4 Q. In D it says, "all restored buffer zones such as the 50
5 foot zone along the wetlands areas and the 20 foot zone
6 along the drainage ditch should be established on or
7 before July 1, 1986." What does this mean to you, sir?
8 THE WITNESS: What does it mean to me?
9 MR. PERLOW: Yeah, what does the term,
10 "50 foot zone along the wetlands area" mean to you?
11 A. To stay away from the stream.
12 Q. Well, it asks for a 50 foot zone along the wetlands
13 area, where was that zone?
14 A. The 50 foot zone is from around the pond and
15 50 feet away from it.
16 Q. Are you still 50 feet away from it?
17 A. Yes.
18 Q. So you don't have any automobiles stored within 50 feet
19 of the pond?
20 A. No.
21 Q. Since this document was given to you, have you ever
22 had -- strike that. Since you made these corrections,
23 as required in the special conditions, have any
24 vehicles ever been placed within 50 feet of the pond?
25 A. Yes.

1 Q. When was that?
2 A. Throughout the years that I have been operating
3 when the yard got a little filled up, there were cars
4 that were probably 25 or 30 feet away instead of
5 50 feet.
6 Q. How many different times did this occur?
7 A. I couldn't tell you.
8 Q. But it did happen on multiple occasions?
9 A. Yes, it has happened a few times, yes.
10 Q. And this D, what does the 20 foot zone along the
11 drainage ditch refer to?
12 A. Referring to stay away from the stream.
13 Q. Is there a 20 foot buffer zone along the drainage ditch
14 known as the stream, is that what this is establishing?
15 A. Yes. Again, this, along the stream, the cars were
16 approximately 20 feet away from it. Around the pond at
17 points they were not.
18 Q. Do you also see near the bottom of Page 2 here, the
19 next to the last paragraph, the reference is, "this
20 approval does not remove your obligation to obtain any
21 necessary permits from other state, local, or federal
22 agency"?
23 A. Yeah.
24 Q. Before commencing this work did you seek to obtain the
25 approval or obtain any necessary permits from other

1 state, local, or federal agency?
2 A. I don't recall, I don't know.
3 Q. Do you know if anyone did on your behalf?
4 A. No, I don't.
5 Q. Do you know why this wasn't done?
6 A. No, I don't.
7 Q. Is it your testimony, sir, that you complied with the
8 20 foot setback requirement with respect to the stream
9 as required in application 6517?
10 THE WITNESS: Is it what?
11 Q. Application 6517 is required that there be a 20 foot
12 setback from the stream. Would you comply with that at
13 the time?
14 A. Yes.
15 Q. Did you comply?
16 THE WITNESS: You meant I kept the cars
17 away from the stream, is that what you're saying?
18 MR. PERLOW: I asking if you adhered to
19 the 20 foot setback requirement as required.
20 MS. RADICHES: I think he was asking for
21 clarification.
22 Q. Okay, the stream is how long?
23 A. I don't know, 600 feet or so.
24 Q. Have you complied with the 20 foot setback with respect
25 to the stream at all times during your ownership of

1 this property?
2 THE WITNESS: Are you saying, have I
3 maintained the cars away from the stream 20 feet all of
4 the time that I had the pond, the property?
5 MR. PERLOW: I am asking you if you have
6 complied with the 20 foot setback requirement in all
7 respects.
8 A. Yes.
9 Q. Did you eventually receive a release of violation? You
10 received that release of violation at some point?
11 A. I would assume so.
12 MR. PERLOW: Mark this as 6.
13 (PLAINTIFFS' EXHIBIT 6 MARKED FOR
14 IDENTIFICATION)
15 Q. Prior to your receiving this release of violation, did
16 anyone from DEM come and inspect your property?
17 A. I don't know.
18 Q. You don't know if anybody came to the property site?
19 A. If they did, they went to see Mr. Yarbroudy, and he
20 probably just told me DEM came and you're all set. So
21 I never met with anyone, so I couldn't tell you yes or
22 no.
23 Q. Do you know if the 50 foot requirement, as stated in
24 that application and approval, is being complied with
25 today by the present owners?

1 A. It is being complied, yes.
2 Q. Are any of the vehicles now within 50 feet -- strike
3 that. Are any of the vehicles now within the 50-foot
4 buffer zone?
5 A. No.
6 Q. Going back to the application, 6517, the notice you
7 received on January 10, 1986, I am going to ask you to
8 go to the third page, number 3, it says, "all debris
9 such as tires, boards, metal, etc., with the remaining
10 wetland areas must be removed prior to July 1, 1986."
11 Was this done?
12 A. Yes.
13 Q. What debris was in the wetland areas?
14 A. Just old junk that had been there for years and
15 years, rusted pieces of cars, maybe 15, 20 years old.
16 Q. Was any of this debris in the pond?
17 A. In the pond the only debris that was in the pond --
18 no, not in the pond, just in the area.
19 Q. There was nothing in the pond?
20 A. Nothing in the pond, no, not at any time has
21 anything been in the pond besides prior to some tires,
22 like I said, that when the pond did get dry, there were
23 tires that probably had been there for years and years,
24 and I removed them and cleaned it up.
25 Q. Who removed the debris?

1 A. My employees.
2 Q. I am now going to show you a picture. Could you look
3 at that picture for a moment, please. What is that
4 picture dated, the bottom right-hand corner?
5 A. December 7, '07.
6 Q. Do you recognize anything in that picture?
7 A. Yes, I recognize an area that the cars are closer
8 to the pond.
9 Q. Well --
10 THE WITNESS: Is that what you are asking
11 me?
12 Q. No. Is that your business?
13 A. Yes.
14 Q. Is that picture a fair and accurate representation of
15 your property as it existed on December 7, 2007?
16 A. Yes.
17 MR. PERLOW: Plaintiffs' 7, please.
18 (PLAINTIFFS' EXHIBIT 7 MARKED FOR
19 IDENTIFICATION)
20 Q. And you just stated that you saw that the cars were
21 closer to the pond than the 50 feet, is that correct?
22 A. I am just assuming that this over here you are
23 saying it's probably close to the 50.
24 Q. I am just going to ask you, you are going to have to,
25 instead of just pointing, describe it as best you can,

1 and what we will do is, I am going to give you a pen;
2 and if we could talk about a couple of areas on this,
3 and I will ask you to mark those areas accordingly.
4 There's a pond, what appears to be a pond in the middle
5 of that picture, is that correct?
6 A. Yes.
7 Q. Could you please mark that pond with an A, please, if
8 you could use this pen to mark it?
9 (WITNESS COMPLIED)
10 Q. Looking at that pond and looking at the vehicles around
11 that pond, are any of those vehicles within a 50-foot
12 distance from that pond?
13 A. I don't know. From looking at it, at one time DEM
14 came and said I was too close to the pond. I never
15 actually measured from the inside of the pond outside.
16 So, I can't tell, I am, you know, 49.5 or 40 feet away,
17 I never went and measured. I assume that I am okay
18 with it, but at one time they came and said I was too
19 close, so I had to move them back. Since then I have
20 moved further back.
21 Q. When did DEM come?
22 A. Oh, this was mentioned to me probably a good three
23 or four months ago or something, that we needed to move
24 the cars further away from it, that we are getting a
25 little too close to it.

1 Q. When was that?
2 A. Since we have been working on the storm water that
3 we reviewed everything again and said the cars need to
4 move further back.
5 Q. There's a road along the left-hand side of your
6 property, isn't that correct?
7 THE WITNESS: A road along the side?
8 Q. What is that area, that's maybe not a road, is it a
9 passageway?
10 A. It's just a passageway, correct.
11 Q. And if you could mark that passageway with a B, please?
12 (WITNESS COMPLIED)
13 Q. And if you are driving up that passageway from Curran
14 Road, on the left-hand side there are cars, isn't that
15 correct?
16 A. Yes.
17 Q. And then to the left of that at some point is the pond,
18 isn't that correct?
19 A. Yes.
20 Q. In this picture how far are those cars from the pond?
21 A. Probably 50 feet or more some of them.
22 Q. Are any of them less than 50 feet?
23 A. I don't know.
24 Q. Along the left-hand side of this property near Curran
25 Road there appears to be a large building?

1 A. Yes.
2 Q. If you could please mark that with a C, please?
3 (WITNESS COMPLIED)
4 Q. Is that the warehouse we talked about earlier?
5 A. That's the warehouse with the combination of the
6 addition to dismantling.
7 Q. And this building was built when?
8 A. I don't know.
9 Q. But it's your testimony that you obtained a permit?
10 A. Yes. This building has two buildings combined with
11 two different permits, a building and an addition to
12 it.
13 Q. I think we talked about that earlier. Can we see the
14 addition in this photograph?
15 A. No.
16 Q. Who actually built that building?
17 A. 370 Construction.
18 Q. Where are they out of?
19 A. North Attleboro.
20 Q. Did they have someone on site managing the job?
21 A. Yes.
22 Q. What is his name?
23 A. I can't remember.
24 Q. Do you know anybody that was on site for this company?
25 A. Off the top of my head, no.

1 Q. Who submitted the request for the permit?
2 A. We did.
3 Q. Who is the we?
4 A. Advanced, Yarbroudy.
5 Q. Is this a copy of the permit?
6 A. I would assume, yes.
7 Q. And this permit is for the construction of this
8 building that we have marked with a C on Exhibit 7, is
9 that correct?
10 A. With the additional additions, yes.
11 Q. And this building was constructed after you received
12 the release regarding application 6517, isn't that
13 correct?
14 A. I would assume, yes, I don't know.
15 Q. Well, the application that we are talking about, sir,
16 that we have referenced earlier was dated January 10,
17 1986, isn't that correct?
18 A. Yes.
19 MR. PERLOW: And this permit has a date
20 on it, application at the top left-hand corner of
21 3/11/91, do you see that, if we could mark that as
22 plaintiffs' 8.
23 (PLAINTIFFS' EXHIBIT 8 MARKED FOR
24 IDENTIFICATION)
25 Q. According to this document in the bottom left-hand

1 corner, "G, foundation sets back from property lines."
2 What is the setback of this building along the
3 left-hand side of your property?
4 THE WITNESS: You are talking about this?
5 MR. PERLOW: I am talking about C, the
6 building we have referenced, yes.
7 A. It sets back.
8 Q. What's the setback required in the permit?
9 A. 10 feet.
10 Q. Is that the same building we spoke of earlier where you
11 referenced the setback was either six or seven feet?
12 A. Yes.
13 Q. Did you make a mistake when you were testifying
14 earlier?
15 A. No, I did not make a mistake. I was told seven.
16 Q. The building permit application talks about a setback
17 on the left side of 10 feet, isn't that correct?
18 A. Correct.
19 Q. And this building runs along the westerly portion of
20 the property, isn't that correct?
21 A. Yes.
22 Q. So this building was to be constructed how far from the
23 westerly edge of your border?
24 A. 10 feet.
25 Q. And how close to the stream on the westerly side of

1 your property is this?
2 A. I don't know.
3 Q. There is a 10-foot setback?
4 A. There is a 10-foot but I don't know how close it
5 is.
6 Q. To what?
7 THE WITNESS: You are asking me how close
8 is the building to the stream?
9 Q. Well, the building runs along the property?
10 A. Right.
11 Q. So there is a 10-foot setback on the left-hand side,
12 isn't that correct?
13 A. Right.
14 Q. And earlier you testified about the building being six
15 or seven feet from the stream?
16 A. I was under the impression seven feet, that's what
17 I was told when I asked, that it needed to be seven
18 feet away from the property line.
19 Q. And the stream runs along the property line, isn't that
20 correct?
21 A. Yes.
22 Q. So you would agree that the left-hand side, the left
23 side of this building, according to this building
24 permit application, the building is supposed to be
25 10 feet from the property line?

1 A. Yes.
2 Q. And that's the stream that runs between your property
3 and the Paolino property that is directly behind this
4 building, is that correct?
5 A. Yes.
6 Q. Sir, we talked earlier about a 20-foot buffer zone
7 along the westerly side of your property, do you recall
8 that?
9 THE WITNESS: 20 feet of buffer from the
10 stream?
11 Q. We talked about earlier how in your application, 6517,
12 you agreed to have a 20-foot buffer zone from the
13 westerly side of your property to any type of business
14 you were doing, do you recall we talked about that?
15 THE WITNESS: To where we put the cars?
16 Q. Sir, is that what the application says?
17 A. I don't know what the application says. You asked
18 me if I maintained the cars 20 feet away from the pond,
19 which I said yes.
20 Q. What this application calls for, does it not, is for
21 you to maintain a 20-foot buffer zone along the
22 westerly portion of your property, isn't that correct?
23 A. Yes.
24 Q. And it also talks about the stream in your application,
25 isn't that correct?

1 A. Yes.
2 Q. So according to that application, you were to maintain
3 a 20-foot buffer zone from the stream, is that correct?
4 A. Yes.
5 Q. And this building is constructed inside of that buffer
6 zone, isn't that correct?
7 A. Yes.
8 Q. How did that happen?
9 A. How did that happen? I don't know.
10 Q. You have no explanation as to how that happened?
11 A. No, I don't. The only explanation that I have --
12 MR. PERLOW: There's no question pending.
13 MS. RADICHES: I just need one minute.
14 MR. PERLOW: Off the record.
15 (OFF THE RECORD)
16 MR. PERLOW: Mark that as 9.
17 (PLAINTIFFS' EXHIBIT 9 MARKED FOR
18 IDENTIFICATION)
19 Q. I am going to show you a document, you don't have to
20 look through all of this document. If you could look
21 at the first page, and I will ask you to assume that
22 that's a complete copy of the final expanded site
23 inspection report for Boulter Farm area Cumberland,
24 Rhode Island. Sir, I am going to ask you to count down
25 17 pages on that, I am not going to go through this

1 whole report with you, if you could count down to the
2 17th page, and I probably should have marked it ahead
3 of time. First of all, do you recognize this document?
4 A. No, I don't recognize it.
5 Q. Have you ever seen this document before?
6 A. Have I ever seen it? No, again, I don't do any
7 paperwork, any legal work. Pretty much my controller
8 reads it and explains it to me. I don't get to read
9 it, I don't get to see it.
10 Q. Do you own lot 366 on Curran Road?
11 A. Yes.
12 Q. I am going to ask you to go down to the paragraph with
13 the word start, personnel, it's the large paragraph?
14 A. Yeah.
15 Q. I am going ask you to read that paragraph for me,
16 please, just the first ten lines or so. You can read
17 it to yourself. Do you see where it says in the first
18 several lines, "start personnel observed that the
19 ground in the northern portion of Lot No. 366 was
20 littered with scattered miscellaneous refuse and solid
21 waste, including but not limited to what appeared to be
22 rusted metal paint and/or thinner cans, metal oil cans,
23 large appliances, tires, empty glass bottles and pieces
24 of broken glass."
25 A. Yes.

1 Q. You also see where it says, "In addition, several empty
2 rusted 30-gallon metal drums and 55 gallon metal drums
3 were noted."
4 A. Yes.
5 Q. Prior to this investigation being conducted, and again,
6 this report is dated April 19, 2004, were you aware of
7 that debris on your property?
8 A. Was I aware of the debris on my property? While
9 the operation is on there is daily debris while we are
10 taking cars apart.
11 Q. Do you think they are referring to daily debris in this
12 paragraph?
13 A. I don't know.
14 Q. Had you ever seen any of the material that is stated
15 here on your property?
16 A. No. What do you mean by that?
17 Q. Well, this states that in the northern portion of your
18 property --
19 THE WITNESS: Where is the northern
20 portion?
21 Q. Maybe you can tell me, would the northern portion be
22 the back of your property?
23 A. I told you I don't know my north and south and
24 west. You point it out to me and I will tell you.
25 Q. Let's assume the northern portion of your property is

1 the back portion of your property?
2 THE WITNESS: Way in the back?
3 MR. PERLOW: Of lot 366.
4 A. Again, I don't know which lot 366 is.
5 Q. You own lots 363 and 366?
6 A. So 366 is the very back lot, yes, yes.
7 Q. So when they talk about the northern portion of lot
8 366, I will ask you to assume that this is the location
9 that they are talking about?
10 A. Right, the back of the property was the back of the
11 366 has been the lot is the property that I have been
12 cleaning for the last four to five years, yes, there
13 was rusty, and there was sort of trash and broken glass
14 and old cars in the back.
15 Q. Was there also rusty empty metal drums back there?
16 A. Yes.
17 Q. And how did this debris that's referenced in that
18 paragraph get back there?
19 A. Evidently it got dumped there.
20 Q. Did you or anyone you know dump it back there?
21 A. No.
22 Q. So is it your testimony that that debris was back there
23 when you purchased the property?
24 A. Yes.
25 Q. And it's been back there the entire time you have owned

1 the property?
2 A. The back piece of the property only in the last
3 four years, four to five years is when I got to the
4 back of it. Way in the back is 366 is where I found
5 more junk cars, more tires, more iron and debris.
6 Q. So the first 15 years or so that you owned the
7 property, you did not go back there and clean off this
8 debris?
9 A. No, I didn't, I didn't have access to it.
10 Q. How did you get access to it in the last four or five
11 years?
12 A. I have been clearing land a little at a time
13 getting access to it.
14 Q. I am going to show you another document entitled,
15 letter of responsibility dated October 5, 2005. Do you
16 recognize this document, sir?
17 THE WITNESS: When you ask me do I
18 recognize, meaning did I read it?
19 Q. Have you seen it before?
20 A. No, I haven't. Most of these documents when they
21 get sent to me, I explain before, I don't get to read
22 it. I only get an explanation from my controller.
23 Like so, Joe, we got a letter from the Department
24 Environmental Management, and we have a problem with a
25 certain area, we need to clean it up, we need to

1 straighten it out. So, I don't get to see any of these
2 at all, I get an explanation. If I read it, I don't
3 understand it. So I go to him, he reads it, and he
4 explains it to me what I need to do.
5 Q. So you don't recall seeing this document before?
6 A. I don't see any documents, it gets explained to me,
7 it gets broken down, explained to me, I don't get to
8 read it, because I couldn't understand it if I read it.
9 MR. PERLOW: I am going to ask you to
10 assume for purposes of this deposition that that
11 correspondence is from the Rhode Island Department of
12 Environmental Management letter of responsibility dated
13 October 5, 2005, case number 2005-092, if we could mark
14 it 10.
15 (PLAINTIFFS' EXHIBIT 10 MARKED FOR
16 IDENTIFICATION)
17 Q. Sir, is that letter addressed to the J. Ferreira Trust?
18 A. Yes.
19 Q. Care of Mr. Robert Yarbroudy?
20 A. Yes, yes, yes.
21 Q. And it's addressed to 290 Curran Road, do you see that?
22 A. Yes.
23 Q. And in this letter it says, IN RE: Boulter Farm site,
24 290 Curran Road, map 19 lot 363," is that your
25 property?

1 A. Yes.
2 Q. And according to the first page of that document,
3 number 1, do you see where it states, "According to the
4 Town of Cumberland, tax assessor's office, The J.
5 Ferreira Trust is the current owner of the property"?
6 A. Yes.
7 Q. And is it safe to say, sir, that the J. Ferreira that's
8 referenced in that sentence is you, Joseph Ferreira?
9 A. Yes.
10 Q. And that's a trust that you established?
11 A. Yes.
12 Q. If you could go to Page 2, number 4, please, sir?
13 A. Yes.
14 Q. Do you note that in this letter of responsibility
15 number 4 states that the file identifies elevated
16 concentrations of contaminants as follows and several
17 contaminants are referenced there?
18 A. Yes.
19 Q. Were you ever made aware that these contaminants
20 existed on your property?
21 A. Yes.
22 Q. Who made you aware of that fact?
23 A. When Mr. Yarbroudy read this, he explained it to me
24 that there were issues there.
25 Q. What did he tell you the issues were?

1 A. I don't recall at that time what he told me.
2 Q. And this document also states in number 4 that all of
3 these contaminants may have significant adverse impact
4 on human health and/or the environment, isn't that
5 correct?
6 A. Yes.
7 Q. And after this letter of responsibility was received,
8 do you know if any action was taken to correct what is
9 identified here as a contamination problem?
10 A. I think we hired an environmental firm to start
11 working on this problem, again I am not sure. We
12 always had environmental people working with whatever
13 problem that popped up. If there was an issue with
14 DEM, we went and got the right people to get the job
15 done, meaning we didn't try to correct it on our own,
16 we hired the right people to get -- to correct it.
17 Q. Well, after you received this correspondence, did you
18 conduct an inspection?
19 A. No, I don't recall.
20 Q. You don't recall going out to your property and trying
21 to determine where these contaminants were located?
22 A. Again, like I said, I walked the property but I
23 didn't -- I wasn't able to identify what I was looking
24 at.
25 Q. Did you hire somebody to identify it?

1 A. We hired -- yes, we did hire a firm, the firm that
2 has been working with us for the last eight to ten
3 years.
4 Q. And that firm again is who?
5 A. I can't even come up with the name, I don't know.
6 Q. You had worked with them for eight to ten years?
7 A. Not me, Mr. Yarbroudy.
8 Q. Do you recognize what any of these contaminants are,
9 sir?
10 A. No, I don't.
11 Q. Were you concerned when you received this
12 correspondence?
13 A. Yes, I was.
14 Q. Why were you concerned?
15 A. I was concerned -- why was I concerned? Because it
16 was my property that I should have properly inspected
17 before I bought it. I should have properly hired the
18 right people to inspect it before I purchased it.
19 Q. Do you think these contaminants were on your property
20 before you started working it?
21 A. Yes.
22 Q. Did you discuss this report with anybody other than Mr.
23 Yarbroudy?
24 A. Not to my knowledge, no.
25 Q. Prior to your receiving this correspondence, let's take

1 the one year time frame before you received this letter
2 of responsibility, did you see anything on your
3 property that you would have considered to be a
4 hazardous material?
5 THE WITNESS: Consider, I don't follow
6 you.
7 Q. In walking on your property in going to your business,
8 did you see anything on the ground that you would have
9 considered to be a contaminant?
10 A. I don't know, because I don't know enough about it.
11 Q. Were any representatives from LKQ Corporation made
12 aware of this letter of responsibility dated October 5,
13 2005?
14 A. Whatever we had from environmental issues were
15 turned over to LKQ. We did not withhold information
16 from whatever we had received. When they came to us,
17 we told them that we had environmental issues. We told
18 them that we were working on. We told them that we
19 were also working on the water zone.
20 Q. Who is the we?
21 A. Advanced, we, Bobby Yarbroudy.
22 Q. Did you participate in any of these discussions?
23 A. No, I did not.
24 Q. Did LKQ participate in any of these discussions?
25 A. I don't know. They participate on one issue with

1 DEM.
2 Q. What was the one issue with DEM?
3 A. About the water runoff, the runoff of the water.
4 Q. LKQ participated in that discussion?
5 A. Yes.
6 Q. As a result of this letter of responsibility, was any
7 remedial action taken?
8 THE WITNESS: Was there any what?
9 MR. PERLOW: Remedial action, did you do
10 anything to correct the problem?
11 A. I don't know, because I don't know what was there.
12 I don't know. I don't really know. We cleaned up
13 whatever was loose metal, whatever. I do not know what
14 you are saying. I don't know what you are asking me.
15 Q. Did you reference earlier something called a site
16 remediation plan, do you know what that is?
17 A. No.
18 Q. Do you know if a site remediation plan was put into
19 place to correct these problems as outlined in this
20 October 5, 2005, correspondence?
21 A. I don't know.
22 Q. Did you participate in any of the corrective action?
23 THE WITNESS: On cleaning up the junk?
24 MR. PERLOW: Yes, in correcting the
25 problem that this correspondence references.

1 A. On picking up junk, yes.
2 Q. What junk did you pick up?
3 A. Such as metal, tires, debris, that kind of stuff,
4 stuff that involved as far as iron, stuff that could be
5 put inside of cars.
6 Q. What about something that couldn't be put inside of
7 cars, for example, oil contaminants or petroleum?
8 A. I have never seen any of that.
9 Q. Was a solution put into place to correct any of these
10 problems as referenced in this letter?
11 A. I don't know, that would be a question for Mr.
12 Yarbroudy, I don't know.
13 Q. You are aware that their letter references arsenic in
14 lead and soil samples, isn't that correct?
15 A. Again, we have hired the firm that has been
16 handling that. Again, that's a question for Mr.
17 Yarbroudy.
18 Q. I am going to show you two pictures. Can you identify
19 those pictures for me, please?
20 THE WITNESS: Do I recognize it?
21 MR. PERLOW: Yes.
22 A. Yes.
23 Q. And the first picture it has two big, it looks like
24 drainage pipes in the middle?
25 A. Yes.

1 Q. What is that, please?
2 A. That is the main runoff off the water that it sort
3 of covers the entire salvage yard. This water is being
4 filtered before it exits out of those pipes.
5 Q. We will talk about that in a moment and the second
6 picture, sir, is that the stream on the westerly
7 portion of your property?
8 A. Yes, it is.
9 MR. PERLOW: If we could mark those 11
10 and 12, please.
11 (PLAINTIFFS' EXHIBITS 11 AND 12
12 MARKED FOR IDENTIFICATION)
13 Q. Please describe picture 11 and what that is?
14 A. What that is the water that it's running, the
15 entire salvage yard water runs into a water storage.
16 When the water comes from up the hills down the hills,
17 it's all going into a storage underground.
18 Q. Where is the underground storage?
19 A. It's throughout the entire, the area of the back
20 between the buildings all of the way up to the second
21 building to the right.
22 Q. When was this underwater storage constructed?
23 A. This is being worked on in the last five to
24 six months. This is a project that we have been
25 working with DEM for the last four to five years, and

1 the environmental people that we have hired again, that
2 the Commonwealth of Mass is the environmental company
3 that has been working with DEM for the last four or
4 five years.
5 Q. Why was this project commenced?
6 A. This project -- why, what do you mean commenced?
7 Q. Why was this project started, why did you do this?
8 A. I guess the rules, the new rules that have been set
9 by DEM on salvage yards.
10 Q. Was this work done in response to the letter of
11 responsibility dated October 5, 2005?
12 A. It could have been part of it, I am not sure.
13 Q. So this letter is dated approximately two and a half
14 years ago, is that correct?
15 A. Yes.
16 Q. So it's your testimony that this work involving water
17 storage and this runoff, how long has this been taking
18 place?
19 THE WITNESS: How long has this been
20 done?
21 MR. PERLOW: Yes.
22 A. Probably five or six months, this started around
23 November.
24 Q. Describe this storage facility that you are talking
25 about and how the water is cleaned for us, please?

1 A. I can't explain that, that's not my field.
2 Q. Who can?
3 A. The Commonwealth of Mass, the environmental people
4 that have been involved with this.
5 Q. You said the water was filtered before it leaves the
6 property?
7 A. I have been told the water is filtered, it gets
8 maintained every three months. I have seen the filters
9 being changed, and I have been told that the water goes
10 through the filters before it hits the catch base.
11 Q. What is the filtering process, do you know anything
12 about it?
13 A. No, I don't.
14 Q. Who would know the most about the flittering process?
15 A. The environmental people, Commonwealth of Mass is
16 the people that are working for me with DEM and Mr.
17 Yarbroudy.
18 Q. And there's a big round pipe to the left and a smaller
19 opening to the right, are those different?
20 A. Yes, the bigger pipe catches -- the bigger pipe is
21 from the storm water that is being stormed. The
22 smaller pipe catches the overflow that it runs through
23 the side of the building in the yard. When just before
24 it hits the street, it catches, so it doesn't go to the
25 street. So that's the smaller part. Like if you're

1 facing the -- if you are facing the first building,
2 you're facing the gate, right under the gate, that
3 water that it's running in the yard, in the salvage
4 yard off the buildings and on from the areas that are
5 near the buildings that over -- it comes from overflows
6 from the buildings, from the roof of the buildings, it
7 started going to the street before it's filtered, it
8 catches at the end of the building.
9 Q. Is water from both areas filtered?
10 A. Yes.
11 Q. And how do you know this?
12 A. Because it's blocked over there, the water can't go
13 out until it goes into the stream. Again, I don't know
14 enough, I am just giving only what information that I
15 have been able to pick from.
16 Q. Were permits obtained?
17 A. Yes.
18 Q. From the state to perform this work?
19 A. Through DEM, yes.
20 Q. Were permits obtained from the Army Corps of Engineers
21 to do this work?
22 A. I don't know.
23 Q. Do you know if permits were obtained from any federal,
24 state, any other federal or state agency to do this
25 work other than from DEM?

1 A. I only am aware of DEM permits over there.
2 Q. And the second picture that you have identified as a
3 stream, Exhibit 12, is water from those two pipes
4 running into that stream in that picture?
5 A. Correct.
6 Q. So it's your testimony that water from those two
7 pipes --
8 A. Run into the catch basin.
9 Q. ...go into the catch basin, which feeds the Robin
10 Hollow Reservoir, isn't that correct?
11 A. Yes.
12 Q. There is a fence that runs along the stream, is that
13 correct?
14 A. Yes.
15 Q. And there is a stone wall in that picture?
16 A. Yes.
17 Q. How close is the edge of that stone wall on the
18 left-hand side to the stream?
19 A. I don't know, 20 feet, 30 feet, I am not sure.
20 Q. Could it be inside of 20 feet?
21 A. I am not sure, I never measured.
22 Q. Did anyone measure it?
23 A. I don't know, I am not aware of it.
24 Q. When this wall was put in, was anyone aware of the
25 earlier 20-foot setback requirement in that application

1 6517?
2 A. I don't know, DEM -- there had been people from DEM
3 from the date it started this project. I couldn't tell
4 you that. From the date the project started, it's
5 always been DEM people checking while the ground was
6 dug, while the gravel was being moved around, while the
7 project was in the works.
8 MR. PERLOW: Sir, I am going to ask you
9 to look at what I hope is one final document.
10 (PLAINTIFFS' EXHIBIT 13 MARKED FOR
11 IDENTIFICATION)
12 Q. Do you recognize this correspondence?
13 A. No.
14 Q. Have you seen this before?
15 A. No.
16 Q. And this correspondence is addressed to Simon's Supply
17 Auto Salvage Yard, and it's dated January 18, 1984,
18 isn't that correct?
19 A. Yes.
20 Q. And when did you purchase this property?
21 A. November of '83, I think, the end of '83.
22 Q. So by the time this correspondence was written, you had
23 already owned this property, isn't that correct?
24 A. Correct.
25 Q. Do you see the second paragraph there where it states,

1 "It has come to our attention that your firm has plans
2 to salvage large numbers of used and wrecked
3 automobiles at your site."
4 THE WITNESS: Where is that?
5 MR. PERLOW: In the second paragraph on
6 the first page.
7 A. Yes, yes.
8 Q. And you also see where it says, "The facility which you
9 intend to use is located adjacent to the Robin Hollow
10 Reservoir, which is part of Abbott Run Stream, the sole
11 source of water supply for 100,000 people who use
12 Pawtucket Water Supply Board water." Do you see that?
13 A. Yes.
14 Q. And also paragraph 3, "Our concern is that any improper
15 draining of gasoline and crank case oil could lead to
16 serious consequences to our water supply." Do you see
17 that?
18 A. Yes.
19 Q. So it's safe to say, sir, you were aware since you
20 purchased this property from the onset, that the stream
21 to the left portion of your property fed the Robin
22 Hollow Reservoir, isn't that correct?
23 A. Yes.
24 Q. And you knew that was part of the Abbott Run Stream, it
25 was a source of water for local people?

1 A. That I don't know.
2 Q. Earlier you testified that the stream ran into drinking
3 supply, isn't that correct?
4 A. No, the stream run into the reservoir, the
5 reservoir, I have been told, runs into Pawtucket water.
6 Q. Which is a source of water supply for local residents?
7 A. I suppose it's what it is.
8 Q. When were you first told that?
9 A. I don't recall when I was told it, a few years ago,
10 back then, I don't know.
11 Q. You would agree, would you not, that the water
12 demonstrated or shown in pictures 11, Exhibits 11 and
13 12, is running into that stream?
14 A. Yes.
15 Q. But you contend that that water is now filtered?
16 A. I have been told that if it is filtered, there is a
17 filter in place, this water runs through the filter
18 before it runs to the catch basin.
19 Q. But you don't know if any permit was obtained from
20 anyone other than DEM?
21 A. No, I don't.
22 Q. To do this work?
23 A. No.
24 Q. And you are not sure how far the end of that wall is
25 from the stream, isn't that correct?

1 A. No, I don't.
2 Q. Mr. Ferreira, other than your attorneys, did you speak
3 to anyone in preparation for this deposition?
4 A. No, I didn't.
5 Q. Did you review any documents in preparing for this
6 deposition?
7 A. No, I didn't.
8 Q. We have talked about pollutants found in letters of
9 responsibility, and we have referenced those here
10 today. Can you think of anyone else, other than
11 yourself, and I am not saying you are, but anyone other
12 than yourself who would be responsible for pollutants
13 that have been found on your property?
14 A. I don't know.
15 Q. Are you aware of any pipelines that run through your
16 property?
17 A. Yes.
18 Q. What pipelines run through your property?
19 A. Mobil Gas.
20 Q. Where does the Mobil Gas line run?
21 A. It runs above the second level to the property
22 across.
23 Q. Is that in the back of the property?
24 A. It's pretty much in the middle of the property.
25 Q. Does it run across the entire length of your property?

1 A. It runs from the Mass across to the Rhode Island
2 line, yes.
3 Q. You said it runs from the Mass to the Rhode Island
4 line?
5 A. The property, my property line is Mass line. So
6 the Mobil line, the pipe comes from Mass or from Rhode
7 Island onto Mass, so it runs across.
8 Q. I think I asked you earlier if any of your property was
9 in Massachusetts?
10 A. No, I am saying the pipeline runs from Rhode Island
11 to Mass and Mass to Rhode Island.
12 Q. So it goes across the entire back of your property?
13 A. Across the middle, pretty much the middle of the
14 property, not the back, not the front, the middle of
15 the property.
16 Q. Does it then cut across the Paolino property?
17 A. No, it does not abut the Paolino property I don't
18 think at all.
19 Q. Where does the pipeline go after it leaves your
20 property?
21 A. I don't know, it goes to mass.
22 Q. Well, it faces your property and there's a pipeline
23 that runs across your property, correct?
24 A. Yes, yes.
25 Q. And if it leaves your property on the easterly side of

1 the property, the pipe goes into Massachusetts, isn't
2 that correct?
3 THE WITNESS: Can I point it out in a
4 picture?
5 MR. PERLOW: Yes.
6 MS. RADICHES: This one is exhibit 7.
7 A. This is the beginning of the property.
8 Q. You are going to have to say for the stenographer where
9 you're pointing to.
10 A. I am pointing to the front of the beginning of the
11 property.
12 MR. JARRET: On Curran Road?
13 THE WITNESS: On Curran Road.
14 Q. Is this our actual Exhibit 7?
15 MS. RADICHES: No, yours is color.
16 A. Okay, the property the pipeline cuts across here.
17 Q. Now, please try to explain what you're referencing,
18 sir?
19 A. I don't know how to explain how. This is my entire
20 property, and this is the middle of the property.
21 Q. Why don't you put a mark there, as best you can, and I
22 think we are up to D on this exhibit. If you could put
23 with a D where you think the property, if you're
24 referencing something, reference it first and then mark
25 it?

1 A. What I am saying is the gas pipe runs right here
2 this way.
3 Q. If you could put a D where it starts to come onto your
4 property?
5 A. It starts -- I don't really know where my property
6 line is, and I really don't know where the property
7 line is. I assume it's right here, so it starts right
8 here.
9 Q. Are you saying that the pipeline runs through your
10 property going north to south and not east to west?
11 A. I am saying it runs across, I don't know what.
12 Q. So, when you say across your property, if you're facing
13 your property standing on Curran Road, you're facing
14 your property standing on Curran Road, where does the
15 pipeline come across your property, if you could
16 describe it as best you could?
17 A. It starts over here, which is the Mass line.
18 Q. On the right-hand side of your property?
19 A. On the right property and it cuts across.
20 Q. It starts on the right-hand side of your property at
21 Curran Road and travels?
22 A. It continues through my property onto somebody
23 else's property.
24 Q. And that somebody else's property is not the Paolino
25 property?

1 A. No.
2 Q. Are you aware of any leaks of any kind with respect to
3 those pipelines?
4 A. No.
5 Q. Have you heard of any breaks in those pipelines since
6 you owned the property?
7 A. No.
8 Q. You don't know of anyone that has reported any breaks
9 in the pipeline since you owned the property?
10 A. No, I don't.
11 Q. Do you know if Mobil has an easement to come onto the
12 property?
13 A. Yes, they do.
14 Q. Have they ever come on to the property pursuant to the
15 easement?
16 A. Yes.
17 Q. When was that?
18 A. They constantly do it once a year or more.
19 Q. What are they doing when they come on the property?
20 A. They walk the pipeline to make sure that cars are
21 not on the pipeline and make sure that nothing has
22 happened, and any time I had to do any kind of gravel
23 pushing around, I had to call Mobil so to make sure
24 that it was okay to do it, that I was not near their
25 pipeline, any kind of disturbance along the pipeline.

1 Mobil always came up to make sure there wasn't going to
2 be any problem with their pipeline.
3 Q. Would you say if there was a disturbance with the
4 pipeline?
5 A. If there was a disturbance with the gravel, meaning
6 pushing gravel around near the pipe, before I did it,
7 they always came up to make sure I was not working near
8 the pipeline.
9 Q. Have they ever come onto the property to repair the
10 pipeline?
11 A. No.
12 Q. I am going show you one final picture. If you could
13 look in the bottom right-hand portion of that picture,
14 please. What is the date?
15 A. December 7, 2007.
16 Q. Let's go back to Exhibit 7, and I am going to ask you
17 to read about three quarters of way down, do you see
18 where it says figure 2E?
19 A. Yes.
20 Q. Could you read what that says, please?
21 A. Orthophotograph 2005.
22 Q. So that says, do you see the 2005?
23 A. Yes.
24 Q. In Exhibit 7 the picture is dated Orthophotograph 2005?
25 A. Yes.

1 Q. And I might have referenced the date 2007 earlier, and
2 I would like to correct that now. Does this picture in
3 Exhibit 7 represent a fair and accurate representation
4 of your property as it existed in 2005?
5 THE WITNESS: You are saying does this
6 represent -- has the property changed since 2005, is
7 that what you are asking me.
8 MR. PERLOW: No, I am asking you if it
9 represents how your property looked in 2005.
10 A. Well, if there is a picture, I assume what it is is
11 what it is.
12 Q. And in looking at the other picture I just handed to
13 you in the same section where it says figure 2A, what
14 does that say?
15 A. It says 1981. Is that what you are saying?
16 Q. Yes.
17 A. Yes.
18 Q. You didn't own the property in 1981, isn't that
19 correct?
20 A. Yes.
21 Q. So I am going to ask you to assume that that's a fair
22 and accurate representation of the picture of your
23 property as it existed in 1981. If we could mark that?
24 THE WITNESS: Are you saying this is what
25 the property looked like?

1 MR. PERLOW: Yes, in 1981.
2 A. I can't tell you yes or no.
3 Q. I am going to ask you to just look at that picture. Do
4 you see a pond on the right-hand side of that property?
5 THE WITNESS: This pond right here?
6 MR. PERLOW: Yes.
7 Q. Is that the self-made pond that you were referencing
8 earlier?
9 A. Yes.
10 Q. Is that the self-made pond that you filled in?
11 A. Yes.
12 (PLAINTIFFS' EXHIBIT 14 MARKED FOR
13 IDENTIFICATION)
14 Q. And that would account for the difference between the
15 2005 photograph and this 1981 photograph because in the
16 2005 photograph, this pond that you referenced as a
17 self-made pond is no longer in existence, is that
18 correct?
19 A. Yes.
20 MR. PERLOW: I have nothing further.
21 MS. RADICHES: I have no questions.
22 MR. JARRET: I have a couple of questions
23 for you, Mr. Ferreira.
24 EXAMINATION BY MR JARRET
25 Q. I believe you testified that when you purchased the

1 land, you knew what its prior use was, is that right?
2 A. That I knew what it was being used for, yes.
3 Q. What was that?
4 A. I was told it was being used for dismantling cars.
5 Q. Did you have any inspections done with respect to water
6 or soil at the time?
7 A. No, I did not.
8 Q. And why didn't you?
9 A. Because I didn't know any better.
10 Q. You said you purchased the property in 1983. Do you
11 know what lots you bought at the time?
12 A. No, I don't.
13 Q. Did you attend a closing?
14 A. Yes.
15 Q. And where was that closing?
16 A. I don't recall.
17 Q. Do you know who the closing attorney was?
18 A. Tom Almeida.
19 Q. Where is his office?
20 A. Pawtucket, High Street, Capineri & Almeida.
21 Q. Does he still practice, do you know?
22 A. The last I heard, no.
23 Q. Who else was there besides you and Mr. Almeida at the
24 closing?
25 A. I would assume the Diamonds, I don't recall.

1 Q. Do you specifically remember them being there?
2 A. No, I don't.
3 Q. The intent when you purchased the property was to use
4 this as an auto salvage business, is that right?
5 A. Correct.
6 Q. And so at the time you needed a substantial portion of
7 land, is that right?
8 A. At the time of the purchase of the land, it was
9 basically being purchased to store cars. I really did
10 not have intentions of becoming what became of it.
11 Q. It grew to be bigger than what you thought it would be
12 at the time?
13 A. Exactly.
14 Q. Would you agree with me that in choosing a site or a
15 lot to purchase, it would be less than ideal to
16 purchase a lot that was covered with ponds?
17 A. I don't know anything about -- I don't know enough
18 about environmental to answer that.
19 Q. With respect to the fact that your business was going
20 to be storing cars, I assume that you knew at the time
21 that you wouldn't be able to store cars on land that
22 was covered by ponds, is that right?
23 A. No, I didn't have enough education to know that.
24 Q. Well, just basic common sense. If you have a lot
25 that's 90 percent covered by a pond, unless you fill

1 the pond, you wouldn't have any place to store the
2 cars, would you agree with that?
3 A. I had plenty of space to park cars, but I just, at
4 that time, when I had spoken to Mr. Courtois, he said
5 that he no longer needed that pond, so I assume if he
6 didn't need it, I had the gravel there, I would just
7 flatten the land.
8 Q. But I guess I am not making my point because you are
9 talking about something different. I am talking about
10 with respect to prior to your purchase, when you are
11 looking toward purchasing land to run this particular
12 business, were you going to be storing a number of
13 cars?
14 A. Um-hum.
15 Q. Would you agree with me that it would be less than
16 ideal to purchase a lot of land that was covered or had
17 a large quantity of water or ponds on it?
18 A. When the land was purchased, the intention was to
19 store a couple of hundred cars, so I had no intention
20 of going near the ponds.
21 Q. If you were going to choose between purchasing a lot of
22 land with a pond or two on it and a lot, a similar lot
23 of land with no ponds, would it have been a better
24 business decision for you to purchase the lot that did
25 not have the ponds?

1 A. Today's market with the education that I have been
2 through it, yes, you're right.
3 Q. Why is that?
4 A. From what I have learned in the last 15 to 20 years
5 about how the business is run and how what the effect
6 is by having the cars near the pond, it's been a
7 learning on the job.
8 Q. You said that one of the individuals that did
9 excavation on the what is now the Paolino land, the lot
10 next door, you said that John Case had done excavation
11 work?
12 A. Yes, I believe he was hired.
13 Q. Do you know when that was?
14 A. At the same time I was working on my property, the
15 equipment moved back and forth.
16 Q. He was going back and forth?
17 A. He worked for me and worked for him and come back
18 to me and vice versa.
19 Q. Do you know why they were doing work on their property?
20 A. They were making it presentable, so they could sell
21 it.
22 MR. JARRET: I have no further questions.
23 MS. MULCAHY: I just have a few follow-up
24 questions.
25 EXAMINATION BY MS. MULCAHY

1 Q. Mr. Ferreira, you mentioned a couple of times that Mr.
2 Yarbroudy is the gentleman, your controller, who
3 handles all of the environmental work, is there anyone
4 else that works for you or with you that handles that?
5 A. No.
6 Q. Do you have an address for Mr. Yarbroudy?
7 A. No, I don't.
8 Q. Can he be reached at --
9 A. He can be reached at 334-0334.
10 Q. Okay. Does he still work for you?
11 A. Yes, he does.
12 Q. At?
13 A. He works in one of my other businesses.
14 Q. Does he currently work for LKQ?
15 A. No.
16 Q. Is there someone else who is handling the environment
17 permit for LKQ?
18 A. No.
19 Q. You just have an environmental contractor for LKQ?
20 THE WITNESS: Did I.
21 Q. Who handles the environmental permitting right now for
22 LKQ, if Mr. Yarbroudy is not?
23 A. Mr. Yarbroudy is the only one that has handled it
24 because it's still our property.
25 Q. He handles it for you as the owner of the property?

1 A. Yes, yes, yes.
2 Q. And I am going to actually refer back to Exhibit 7,
3 just to give us a better idea, you mentioned that
4 dismantling is handled in at least one of these
5 buildings?
6 A. Dismantling is handled all of the way down to this
7 building.
8 Q. That's what you marked as building C?
9 A. Building C, originally dismantling was handled on
10 this first building.
11 Q. Can we mark as E, that building that was formerly
12 handling.
13 A. The one now or before? Right now this is the
14 building that it's handled in, they do all of the
15 engines and the drainage in this building.
16 Q. Before it was handled in C?
17 A. Before it was this building.
18 Q. Can you mark that as E?
19 (WITNESS COMPLIED)
20 Q. Are there floor drains in either of those buildings?
21 A. No.
22 Q. Are there any French drains on the property?
23 A. No.
24 Q. Are there floor drains in any of the other buildings on
25 the property?

1 A. No.
2 MS. MULCAHY: I have no further
3 questions.
4 THE REPORTER: Would you like a
5 transcript?
6 MS. MULCAHY: Yes, please.
7 MR. JARRET: Yes.
8 MS. RADICHES: A mini, please.
9 (DEPOSITION CLOSED AT 5:00 p.m.)
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1 CERTIFICATE

2 I, CINDY ANN PANNONE, a Notary Public in and for the State of Rhode Island, duly commissioned and qualified to
3 administer oaths, do hereby certify that the foregoing deposition of JOSEPH FERREIRA, a Defendant in the
4 above-entitled cause, was taken before me on behalf of the Plaintiffs, at the offices of Allied Court Reporters, 115
5 Phenix Avenue, Cranston, Rhode Island, on May 5, 2008, at 2:00 P.M., that previous to examination of said witness, who was of
6 lawful age, he was first sworn by me and duly cautioned and sworn to testify to the truth, the whole truth, and nothing
7 but the truth, and that he thereupon testified as in the foregoing manner as set out in the aforesaid transcript.

8 I further certify that the foregoing deposition was taken down by me in machine shorthand and was later
9 transcribed and that the foregoing deposition is a true and accurate record of the testimony of said witness.

10 Pursuant to Rule 5 (d) and 30 (f) of the Federal Rules of Civil Procedure, original transcripts shall not be filed in
11 court; therefore, the original is delivered and retained by Plaintiffs' attorney, Jeffrey S. Perlow.

12 I have enclosed with the deposition a correction and signature page, which must be signed before a Notary Public.

13 IN WITNESS WHEREOF, I hereunto set my hand this 14th day of May, 2008.

14

15 Cindy Ann Pannone / Notary Public

16

CINDY ANN PANNONE

17 NOTARY PUBLIC/CERTIFIED COURT REPORTER

My Commission expires 8-02-09

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Exhibit 19

RECYCLED

Harold Ellis
Volume I

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
PROVIDENCE, SC. SUPERIOR COURT
* * * * * * * * * * * * * * * * * *
LM NURSING SERVICES, INC., C.A. NO. PC06-5973
LOUIS PAOLINO AND MARIE ISSA

vs.

MOBIL CORPORATION, MARK
DIAMOND, PHILIP DIAMOND, JOSEPH
FERREIRA, D/B/A ADVANCED AUTO
RECYCLING, INC., AND LKQ
CORPORATION

* * * * * * * * * * * * * * * * * *

DEPOSITION OF HAROLD K. ELLIS, a Witness in the above-entitled cause, taken on behalf of the Plaintiffs, before Cindy Ann Pannone, Notary Public in and for the State of Rhode Island at the offices of Allied Court Reporters, 115 Phenix Avenue, Cranston, Rhode Island, on July 8, 2008 at 2:00 P.M.

PRESENT:
FOR THE PLAINTIFFS....MORETTI PERLOW & BONIN LAW OFFICES
BY: JEFFREY S. PERLOW, ESQUIRE

FOR THE DEFENDANT.....HOLLAND & KNIGHT
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FOR THE DEFENDANTS....BURNS & LEVINSON, LLP
(FERREIRA, ADVANCED) BY: LYNNE M. RADICHES, ESQUIRE

FOR THE DEFENDANTS....ARAM P. JARRET, III, ESQUIRE
(DIAMONDS)
FOR THE DEPONENT.....JOHN A. LANGLOIS, ESQUIRE
Also Present:
Louis Paolino

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1 I N D E X

2 WITNESS PAGE

3 HAROLD K. ELLIS

4 EXAMINATION BY MR. PERLOW..... 3

5

6 E X H I B I T S

7 NO. DESCRIPTION (PLAINTIFFS') PAGE

8 1 Photocopy of wetlands inspection report dated 11/29/83, 3 pages..... 3

9 2 Photocopy of wetlands inspection report dated 12/5/83, 1 page..... 3

10 3 Photocopy of note dated 1/17/84, 1 page..... 3

4 Photocopy of notice of violation, 2 pages..... 3

11 5 Photocopy of interoffice memo, 1 page..... 3

6 Photocopy of note dated 2/16/84, 2 pages..... 3

12 7 Photocopy of consent agreement, 2 pages..... 3

8 Photocopy of letter dated 4/13/84, 1 page..... 3

13 9 Photocopy of letter dated 4/26/84, 1 page..... 3

10 Photocopy of letter dated 7/25/84, 1 page..... 3

14 11 Photocopy of wetlands engineering evaluation dated 8/22/84, 2 pages..... 3

15 12 Photocopy of wetlands data form, 8 pages..... 3

13 Photocopy of handwritten list, 2 pages..... 3

16 14 Photocopy of letter dated 1/10/86, 5 pages..... 3

15 Photocopy of letter dated 12/85, 2 pages..... 3

17 16 Photocopy of release of violation, 1 page..... 3

17 Photocopy of map, 1 page..... 3

18

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1 (COMMENCED AT 2:20 P.M.)
2 MR. PERLOW: Please mark these 1 through
3 17.
4 (PLAINTIFFS' EXHIBITS 1 THROUGH 17
5 MARKED FOR IDENTIFICATION)
6 HAROLD K. ELLIS
7 Being duly sworn, deposes and testifies as follows:
8 THE REPORTER: State your full name,
9 please.
10 THE WITNESS: Harold K. Ellis.
11 EXAMINATION BY MR. PERLOW
12 Q. Mr. Ellis, what is your home address?
13 A. I just closed on our house, so we are living in an
14 apartment.
15 Q. Okay, and you are employed by whom?
16 A. The Rhode Island DEM.
17 Q. And how long have you been employed by the State of
18 Rhode Island?
19 A. About 25, 26 years.
20 Q. And your job capacity now for the State of Rhode Island
21 is what?
22 A. Supervising environmental scientist.
23 Q. And what does a supervising environmental scientist do?
24 A. I supervise the activities of others in the
25 department, specifically within the office of

1 compliance and inspection, other biologists and
2 scientists, engineers, regarding complaints of the
3 Fresh Water Wetlands Act.
4 MR. PERLOW: Off the record.
5 (OFF THE RECORD)
6 (ATTORNEY RADICHES ENTERED ROOM)
7 Q. By the way, Mr. Ellis, I am going to be asking you a
8 series of question today. If at any point you don't
9 understand the question, I would be glad to rephrase
10 the question. If you need the question repeated, the
11 stenographer can repeat the question. Do you
12 understand that?
13 A. Yes.
14 Q. Are you on any drugs or medication that would prevent
15 you from testifying today accurately?
16 A. No.
17 Q. Do you have a college degree?
18 A. Yes.
19 Q. What is your degree in?
20 A. A Master's Degree of natural resources from URI.
21 Q. And your undergraduate degree is from where?
22 A. University of Rhode Island as well.
23 Q. You have been with the state, I believe, you testified
24 for 28 years?
25 A. 25 to 26, I think.

1 Q. And when you started with the state, what was your job
2 at that time?
3 A. I was a natural resource -- a senior natural
4 resource specialist.
5 Q. What were your job duties in that capacity?
6 A. To investigate complaints of the Fresh Water
7 Wetlands Act.
8 Q. Were you acting in that job capacity in 1983?
9 A. Yes, partly.
10 Q. What other job capacity were you acting in in 1983?
11 A. Originally I was hired to -- it's a long time ago.
12 Q. As best you can remember?
13 A. I worked for the Army Corps of Engineers, and I
14 would travel to Waltham to coordinate the violations
15 that we found with the Army Corps of Engineers.
16 Q. Were you an employee for the state when you were doing
17 that?
18 A. I was, but being paid by the Corps of Engineers
19 through a grant.
20 Q. So you were working for the state and being paid by the
21 state, is that correct, in some capacity?
22 A. Correct.
23 Q. And also being paid by the Federal Government in
24 another capacity?
25 A. I believe all of the money came from the Federal

1 Government through the state. It was basically on the
2 state payroll, but they were paying my pay.
3 Q. In 1983 were you reporting to a state official or a
4 federal official?
5 A. A state official.
6 Q. Who was your supervisor in 1983?
7 A. Peter Janaros.
8 Q. How do you spell that?
9 A. J-a-n-a-r-o-s.
10 Q. How long did he remain your supervisor after 1983?
11 A. I think three years.
12 Q. What was his job capacity, do you remember?
13 A. He was the chief of the Division of Land Resources.
14 Q. So his supervisory capacity over you ended in
15 approximately 1986?
16 A. Approximately, or late '85.
17 Q. Who became your supervisor in late '85?
18 A. I believe it was Michael Annarummo, but I am not
19 sure.
20 Q. What was his job title, do you recall?
21 A. He was a supervisor in some capacity, I don't
22 remember his job title.
23 Q. How long did he remain your immediate supervisor?
24 A. I can't remember exactly, I don't know.
25 Q. Would you report to him on a day-to-day basis?

1 A. Probably.
2 Q. Was he your supervisor in 1989?
3 A. No.
4 Q. Who was your supervisor in 1989?
5 A. As best I can remember, I believe it was Dean
6 Albro.
7 Q. Could you spell that, please?
8 A. A-l-b-r-o.
9 Q. And when did he become your supervisor?
10 A. Around 1989, '88, '89.
11 Q. And how long did he remain your supervisor?
12 A. He actually still is to this day.
13 Q. If a release is given on a particular violation, who
14 would sign off on the release?
15 A. In 19 -- well, right now, Mr. Albro.
16 Q. Who would sign off on the release in 1989?
17 A. Myself or anyone above me.
18 Q. So you have the capacity to sign off yourself?
19 A. At that time I did.
20 Q. Are there any requirements for continuing education and
21 training on your job?
22 A. Yes.
23 Q. And what are those requirements?
24 A. I am sorry, not really requirements, just the
25 opportunity to get additional education.

1 Q. Have you taken advantage of those opportunities over
2 the years?
3 A. I have.
4 Q. Just briefly, what type of continuing education have
5 you been engaged in over the past -- strike that, say
6 in 1983 through 1989?
7 A. I don't remember the time frames throughout this
8 entire time involving wetlands identification, soil
9 courses, things like that, impacts on wetlands.
10 Q. Are you familiar with the property located at 290
11 Curran Road, Cumberland, Rhode Island?
12 A. I don't remember the number 290, I am not sure
13 exactly what that is.
14 Q. Do you recall the name Ferreira?
15 A. Yes, I do.
16 Q. Did you inspect property on Curran Road that was owned
17 by Mr. Ferreira?
18 A. Yes.
19 Q. And when did you first become familiar with the
20 Ferreira property?
21 A. A date, I don't know.
22 Q. Did someone report something to you that was happening
23 at that property?
24 A. They must have, but again, I don't remember.
25 Q. I am going to ask you to go to Exhibit 1; and if the

1 record could reflect that we premarked 17 exhibits and
2 everyone has been provided with a copy of those
3 exhibits. If I am referring you to these exhibits, if
4 at any point you need a moment to look at the exhibits,
5 please feel free to stop me, and take a moment to look
6 at the exhibit. On Exhibit 1, the first page, at the
7 top it says complaint received, what's the date on that
8 exhibit?
9 A. 11/22/83.
10 Q. And it says by at the bottom, is that your signature?
11 A. Yes.
12 Q. So did you receive this complaint?
13 A. No.
14 Q. Is that your recommendation signature at the bottom?
15 A. It is.
16 Q. Do you know who received the complaint?
17 A. That would be at the top, B.W.
18 Q. Who is B.W.?
19 A. I believe it was Berneal Williams.
20 Q. Could you spell that please?
21 A. B-e-r-n-e-a-l, I believe, it's one of the women
22 that was in our office.
23 Q. Is Berneal Williams still with the state?
24 A. I don't believe so.
25 Q. When this complaint was received, did at some point it

1 come to your attention that there was a complaint
2 involving this particular property?
3 A. Yes.
4 Q. Who would have brought that to your attention?
5 A. Ms. Williams.
6 Q. Is this your handwriting on this document?
7 A. Some of it, yes.
8 Q. Could you tell me what part of this document is your
9 handwriting?
10 A. The date and time up in the right-hand corner, and
11 anything from the applicant/owner name on down.
12 Q. So the details of the complaint section of this report,
13 that's not your handwriting?
14 A. Correct.
15 Q. Someone wrote down on this document, "someone is
16 filling in a pond in Curran Road in Cumberland," is
17 that correct?
18 A. Correct.
19 Q. Do you know who would have written this down on this
20 document?
21 A. That would have been the B.W., Berneal Williams.
22 Q. It says also that this complaint was anonymous, is that
23 correct?
24 A. Correct.
25 Q. Is that what anon stands for?

1 A. Yes, typically for us, yes.
2 Q. With respect to the observations mentioned in this
3 report, were these your personal observations?
4 A. Yes.
5 Q. After the complaint was received on 11/22/83, you went
6 out to the property, is that fair to say?
7 A. Correct.
8 Q. Do you know when you went out to the property?
9 A. On 11/29/83.
10 Q. And that's because you took this piece of paper with
11 you to the site, is that correct?
12 A. Correct.
13 Q. And this time of 12:45, is that the time you completed
14 or you conducted your inspection?
15 A. Correct.
16 Q. Under the observation section of this report, it states
17 "fill and grading in," and I can't read that, it's your
18 handwriting, can you read that first line for us,
19 please?
20 A. "Fill and grading in and within 50 feet of
21 freshwater pond."
22 Q. Do you recall where that was being done on the
23 property?
24 A. Actually, no, I don't.
25 Q. It also says there, "fill into an ASF." What is an

1 ASF?
2 A. An area subject to flooding.
3 Q. Where would that have been on the property?
4 A. I don't remember.
5 Q. Did you take any notes other than this piece of paper
6 here?
7 A. I drew a sketch.
8 Q. Where is the sketch?
9 A. I think it's the next page.
10 Q. That's the second page of Exhibit 1?
11 A. Correct.
12 Q. Can you tell from that sketch where the ASF is located?
13 A. Yes, I believe that would be the dash/dot line
14 running through the center of the paper.
15 Q. Would you please mark with an X on stenographer's
16 Exhibit 1, please.
17 (WITNESS COMPLIED)
18 Q. So an ASF is what again, sir?
19 A. An area subject to flooding; no, I am not sure
20 that's correct, then, what I said.
21 Q. Would you like to correct what you just testified to?
22 A. Right. There's areas ASSF also, areas subject to
23 storm flowage, and then areas subject to flooding.
24 Areas subject to flooding are typically a wider area
25 that just collects water.

1 Q. And the second ASSF?
2 A. It's subject to storm flowage, is a channel that
3 carries water during storm events.
4 Q. That would be a stream?
5 A. An intermittent stream after it rains.
6 Q. It states here in Exhibit 1 that someone was, quote,
7 and you underlined it, "redirected," and I can't read
8 it after that, I am sorry, "redirecting or creating a
9 new ASSR," is that what that says?
10 A. "Fill into an ASF and redirecting" -- I could look
11 at the original and maybe read that better, I am not
12 sure what that says.
13 Q. Please, if you have an original, yes.
14 A. Yes, it's parens, "or creating a new ASSF from the
15 pond south off the property."
16 Q. What were you referencing when you were writing this?
17 A. Presumably my sketch.
18 Q. And the new ASSF was located where?
19 A. That is the dash dot line in the middle of the
20 page.
21 Q. That's the new stream that was being created, or the
22 old stream?
23 A. I don't recall.
24 Q. It says that the ASSF was being created from the pond,
25 is that south of the property?

1 A. I believe that's what it is.
2 Q. And on your diagram on the second page of this exhibit,
3 where is the southern portion of that lot?
4 A. It would be to the bottom towards the bottom of the
5 page.
6 Q. Does this diagram that you have on the second page of
7 Exhibit 1 have the area in question where the new
8 stream was being created?
9 A. I believe it's the channel in the middle of the
10 page with the dash dot line.
11 Q. That would be the new channel?
12 A. I am not sure.
13 Q. I guess what I am asking, if that's the new channel,
14 where is the old channel?
15 A. I don't recall.
16 Q. The stream that was in the middle of the property that
17 was being directed, can you describe that stream, if
18 you recall?
19 A. I don't, actually.
20 Q. Do your notes here on the second page of this exhibit
21 reference any dimensions of the stream?
22 A. Yes, the length.
23 Q. How long was the stream?
24 A. 560 feet.
25 Q. How wide was the stream?

1 A. It doesn't say.
2 Q. Is there a 40-foot document there, 40-foot number
3 there?
4 A. There is.
5 Q. What is that referencing?
6 A. I believe that's the ASF, the area subject to
7 flooding, the little water area.
8 Q. Would that have been a pond?
9 A. No, that would have been just an area where the
10 water collected.
11 Q. So does this pond in this document feed the
12 intermittent stream?
13 A. I believe the pond is the bigger area up above all
14 of it, and then it feeds the area, ASF and the ASSF.
15 Q. I want you to assume for purposes of my questioning
16 that that intermittent stream we are looking at is the
17 original stream?
18 A. Okay.
19 Q. I want you to assume that that intermittent stream is
20 the stream that was redirected to another portion of
21 the property. Is there any identification on this
22 diagram as to where that new stream is located?
23 A. The only other dimension is 140 feet, and I believe
24 that's off some building, and in line there is a little
25 i looking on line with the side of the building.

1 Q. On Page 1 of this document it states also under
2 observation, "issued a C & D to contractor for work in
3 above areas." Could you explain what that means,
4 please?
5 A. Issued a cease and desist to the contractor that
6 was working there at the time.
7 Q. Who was the contractor that was working there?
8 A. It says Roger Gariepy.
9 Q. Do you know what his job capacity was?
10 A. I don't recall.
11 Q. Was he the only one you met at that time?
12 A. I don't recall that, either.
13 Q. You don't recall how many individuals you met on
14 November 29, 1983?
15 A. Not unless it says it somewhere in my reports.
16 Q. So, it was this individual contractor that was given
17 the cease and desist order?
18 A. Yes.
19 Q. What was he given a cease and desist order for?
20 A. For working within freshwater wetlands with a
21 permit without sedimentation controls.
22 Q. Where was the freshwater wetland on this diagram, on
23 Page 2 of Exhibit 1?
24 A. It's not labeled, but it would have been the pond
25 up above the beginning, the top of the sketch, the area

1 subject to flooding, which would be the 60-by 40-foot
2 area, and the channel that runs 560 feet from the pond,
3 and it goes somewhere.
4 Q. We will talk about where it goes in a few moments, but
5 it says on the top of Page 2, "channel has been dredged
6 deeper than the original channel, thus lowering the
7 pond level." Would you please describe what you meant
8 by this at the time?
9 A. Apparently, again, I don't recall specifically, I
10 don't.
11 Q. You note on this second page of this document down the
12 bottom, four type of requirements: "Place hay bales
13 downstream; return dredged material to channel; dredged
14 edge of pond to 1972 conditions; bring stakes/hammer,"
15 am I reading that correctly?
16 A. Yes.
17 Q. Are these your recommendations of what had to be done
18 at the time?
19 A. Yes.
20 Q. And as part of the cease and desist order, was the
21 contractor told that these were things that had to be
22 done?
23 A. I don't recall what I told him.
24 Q. So after someone is given a cease and desist order,
25 what's the next step that takes place?

1 A. We will -- well, at that time and now, we will
2 either tell them on site what they need to do and
3 presumably, I could have done that, or we will go back
4 to the office and prepare a notice of intent to enforce
5 or a notice of violation.
6 Q. Do you recall what was done in this case?
7 A. I know ultimately we issued a notice of violation,
8 but I don't recall whether I told him right at the time
9 that he had to do certain things.
10 Q. When you went out to this property on November 29,
11 1983, was anyone else from your department with you?
12 A. I don't believe so.
13 Q. And the cease and desist order on Page 3 of Exhibit 1,
14 is that the cease and desist order that was issued on
15 that date, November 29, 1983?
16 A. I can't really read this, but maybe I could check.
17 Q. If you could check your original, maybe it would be
18 something that's easier to read?
19 A. I issued a cease and desist to Roger Gariepy on the
20 29th of November, 1983.
21 Q. During the time period you were involved with
22 inspections on this particular piece of property, did
23 any other member of your department work with you?
24 THE WITNESS: During the 1983 time frame?
25 MR. PERLOW: I would say 1983, yes.

1 THE WITNESS: On site or in the office?
2 MR. PERLOW: Both.
3 A. Probably; I don't recall on site. In the office
4 there might have been typists that typed things up.
5 Q. Did you ever go to the property with any other member
6 from your department?
7 A. I don't recall doing that.
8 Q. Did you ever go to the property with any member of any
9 other state department?
10 A. I don't think so.
11 Q. During the time period you were conducting your
12 inspections, did you ever go to the property with a
13 representative of the owner of the property?
14 A. Probably.
15 Q. Do you recall who that was?
16 A. I think I met Mr. Ferreira out there.
17 Q. Do you remember when you met him?
18 A. No.
19 Q. After the complaint was received, do you recall
20 speaking to anybody in your department prior to going
21 out to the site?
22 A. No.
23 Q. Are you aware of any tests that were conducted on this
24 property by any member of your department other than
25 yourself?

1 A. No.
2 Q. When you first went out to the property on November 29,
3 1983, did you conduct any tests?
4 A. No.
5 Q. When you stated on Page 2 of Exhibit 1 that the channel
6 has been dredged deeper than the original channel thus
7 lowering the pond level, what did you mean by this?
8 A. Well, I don't remember where the original channel
9 was, but, apparently the dredging of this new channel
10 was causing the pond up above to drain.
11 Q. The dredging of the new channel was causing the pond to
12 drain?
13 A. Correct. Well, it was draining apparently from the
14 original channel, but now it was draining even more
15 because this was lower elevation.
16 Q. On this particular piece of property, would a permit
17 have been required to dredge a new channel?
18 A. Yes.
19 Q. And why is that?
20 A. It's an integration of any defined wetland area
21 subject to storm flowage or flooding or a pond or an
22 area within 50 feet of a pond.
23 Q. What area of the property was considered a wetland?
24 A. I can only describe that based on that approximate
25 sketch I have there.

1 Q. And again, you would consider the part of this property
2 to be a wetland, the ponds that were on the property?
3 A. Correct.
4 Q. And the original stream on the property for purposes of
5 what we talked about earlier, assuming it ran through
6 the center of the property as per this diagram, was
7 that intermittent stream considered a wetland?
8 A. That was an area subject to storm flowage, yes, and
9 that was considered a wetland.
10 Q. Had you had any prior contacts with Mr. Ferreira before
11 November of 1983?
12 A. I don't believe so.
13 Q. Had you been to the property next door prior to
14 November 1983 and inspected the property owned by the
15 Diamonds?
16 A. I don't know.
17 Q. How did you eventually become aware who owned the prior
18 property, obviously now we know it was Mr. Ferreira,
19 but at some point had you known been told it was his
20 property?
21 A. By that original complaint that came in anonymous,
22 that was the first time we heard it.
23 Q. How was it determined who actually owned the property?
24 A. I either went to the town hall to find out, or I
25 met Mr. Ferreira on the site, I don't remember, unless

1 it's written down.
2 Q. Following your investigation of the property in
3 November of 1983, do you recall speaking to anyone else
4 about your investigation regarding this property over,
5 say, the next three months?
6 THE WITNESS: Could you read it back?
7 (PENDING QUESTION READ)
8 A. Perhaps one of the biologists in just general
9 questions, but I don't really know, I don't recall,
10 actually.
11 Q. Do you recall the name of that biologist, by any
12 chance?
13 A. There were four, there was a supervisor, and just
14 the general questions, the guy would have been John
15 Travers, but he is not there anymore.
16 Q. Any other names that you can recall?
17 A. No, not really.
18 Q. Do you recall talking to this Roger Gariepy after this
19 initial occasion in November of 1983?
20 A. I don't.
21 Q. But at some point after that you did speak to Mr.
22 Ferreira, isn't that correct?
23 A. I believe I did.
24 Q. But you don't recall when that was?
25 A. No.

1 Q. Is it reflected in your inspection report anywhere what
2 was being filled into the original stream?
3 A. No.
4 Q. Do you recall from personal observation what was being
5 placed into the original stream?
6 A. No, I don't.
7 Q. You don't recall what that original stream looked like
8 from your personal memories?
9 A. No.
10 Q. Going to Exhibit 2, it references details of complaint,
11 it appears as though a complaint was received on
12 November 29, 1983, isn't that correct?
13 A. Correct.
14 Q. Did you then go back out to the property on December 5,
15 1983?
16 A. Yes.
17 Q. I notice there aren't many notes with respect to that
18 inspection. Under observation it states, "previously
19 inspected complaint," what is that referencing?
20 A. I could just surmise that it's referring back to
21 the original 11/29 inspection.
22 Q. Under proposal/details of complaint, is that your
23 writing?
24 A. No.
25 Q. Would that have been B.W.'s writing?

1 A. Yes.
2 Q. Do you recall any other details with respect to your
3 December 5, 1983, inspection?
4 A. No.
5 Q. Going to Exhibit 3, do you recall who met you on the
6 property on November 29, 1983?
7 A. Oh, I do not know if anyone met me on that date.
8 Q. Part of the details of the complaint were, and I am
9 going back to Exhibit 2, filling in a pond, do you see
10 that at the top of Exhibit 2?
11 A. Yes.
12 Q. As part of your investigation, would you make a
13 determination as to what the pond was being filled in
14 with?
15 A. I may have, but not necessarily.
16 Q. So you don't have any other notes with respect to that
17 inspection on December 5, 1983?
18 A. No.
19 Q. Also on Exhibit 2, it notes under proposal details of
20 complaint, it says April, 1981, do you know what that's
21 referencing?
22 A. I don't.
23 Q. When you went out to the property on November 2 --
24 strike that. When you went out to the property on
25 December 5, 1983, did anyone else from your office

1 accompany you?
2 A. I don't believe so.
3 Q. And you don't recall meeting Mr. Ferreira on site on
4 that date?
5 A. No, I don't. Usually I would write down who I met.
6 Q. Going to Exhibit 3, your initials at the bottom of that
7 exhibit, HKE, do you recognize those initials?
8 A. Yes.
9 Q. Are those your initials?
10 A. Yes.
11 Q. Is that your handwriting?
12 A. Yes.
13 Q. It states in this document, "I met Daniel Alves,
14 councilman," is that correct?
15 A. Correct.
16 Q. Did you meet Mr. Alves on site?
17 A. Yes, I believe so, that's usually what I would
18 write, a date and time for a site visit.
19 Q. Is it customary that your site visit would just be
20 reduced to one paragraph on plain stationery like that?
21 A. At that time anything was customary.
22 Q. Was Mr. Alves the attorney for Mr. Ferreira?
23 A. That wasn't clear to me at the time, and it still
24 isn't.
25 Q. Do you know if Mr. Alves was speaking to you in his

1 capacity as Mr. Ferreira's attorney?
2 MR. JARRET: Objection.
3 A. No, I don't.
4 Q. He didn't represent to you that, I am an attorney for
5 Mr. Ferreira, is that correct?
6 A. I don't remember what he said.
7 Q. Well, you put in the report that he was a councilman,
8 so was he speaking to you for a constituent?
9 A. Perhaps, the only way I would have known that he
10 was a councilman, he would have told me that, so I
11 wrote that down. If he was an attorney, I would --
12 Q. According to this document, it states, "He will relay
13 what must be done to restore the wetlands area," is
14 that correct?
15 A. Correct.
16 Q. And that is dated January 17, 1984, isn't that correct?
17 A. Yes.
18 Q. Who was going to relay what must be done?
19 A. Mr. Alves was going to relay to Mr. Ferreira what
20 must be done.
21 Q. And Mr. Alves was to get back to the department after
22 contacting Mr. Ferreira?
23 A. Correct.
24 Q. Do you know if Mr. Ferreira ever got back to the
25 department?

1 A. I don't remember.
2 Q. And it states at the bottom of that document that a PHE
3 has been requested. What is a PHE?
4 A. Actually, it's a PHC, for prehearing conference has
5 been requested.
6 Q. With respect to Exhibit 4, actually going back to
7 Exhibit 3, this is noted January 17, 1984, correct?
8 A. Yes.
9 Q. And the notice of violation, Exhibit 4, was sent out
10 when?
11 A. On Exhibit 4, January 4, 1984.
12 Q. So a notice of violation was sent out to Mr. Ferreira
13 first, and then the meeting took place with Councilman
14 Alves approximately two weeks after that, is that
15 correct?
16 A. Correct.
17 Q. Regarding Exhibit 4, have you had an opportunity to
18 look at that?
19 A. Yes.
20 Q. And that document, you will notice, is a violation that
21 was sent to Mr. Ferreira, isn't that correct?
22 A. Correct.
23 Q. And it states that Mr. Ferreira, referencing the middle
24 of the notice of violation, the first page, "did
25 accomplish or permit fill and grading in and within 50

1 feet of a freshwater pond; fill into an area subject to
2 flooding; and redirecting an area subject to storm
3 flowage." Would you please tell us what you meant by
4 that?
5 A. That's referring back to my sketch, the filling and
6 grading within 50 feet of a freshwater pond. We
7 regulate ponds that are greater than a quarter of an
8 acre. We regulated that area within 50 feet
9 surrounding that pond. We regulated an area subject to
10 flooding, the small depressions that hold water
11 temporarily, and we regulated areas subject to storm
12 flowage, which, apparently, they had redirected.
13 Q. Again, the storm flowage would apply to what particular
14 area on the property?
15 A. That long, that 560-foot long channel.
16 Q. But again, you only have one stream in that diagram,
17 isn't that correct?
18 A. Correct.
19 Q. And there was an original stream and a stream that was
20 being redirected to, isn't that correct?
21 A. I can't remember the details of that, but there
22 were a lot of scenarios of what that could mean.
23 Q. When you talk about, in your notice of violation,
24 "redirecting an area subject to storm flowage," what
25 was being redirected?

1 A. See, I don't really remember, I could tell you what
2 I think I remember.
3 Q. No, really, if you can't remember, I am only going to
4 ask you to testify to what you remember, okay?
5 A. Yes.
6 Q. Would you please describe the investigation you
7 conducted in order to have sent out this notice of
8 violation?
9 A. I responded to the complaint that was received by
10 the office. I went out there on 11/29, and I viewed
11 the site and noticed that work was being undertaken by
12 Mr. Roger Gariepy. I issued a cease and desist for
13 working within the area subject to storm flowage, area
14 subject to flooding, and filling and grading in a pond,
15 and within 50 feet of a pond.
16 Q. Who was the violation addressed to?
17 A. The owner of the property, Joseph Ferreira.
18 Q. And the property that was allegedly in violation
19 pursuant to the terms of the notice of violation was
20 located where?
21 A. North of Curran Road.
22 Q. Would that be 290 Curran Road?
23 A. Again, I don't know. It was plat 19, lot 10 at the
24 time.
25 Q. For the purposes of my question I want you to assume

1 that the notice of violation was regarding 290 Curran
2 Road, all right?
3 A. Okay.
4 Q. Do you recall what business was being operated on the
5 property in 1984?
6 A. I think it was a junkyard, I am not sure.
7 Q. The notice of violation references fill and grading in
8 and within 50 feet of a freshwater pond, do you see
9 that on the notice of violation?
10 A. Yes.
11 Q. Which freshwater pond on the property was that
12 violation addressing?
13 A. I believe it was that pond on my sketch at the head
14 of the area subject to storm flowage. It's not
15 labeled, but it's got an outline, a half of an outline.
16 Q. Would you please put a Y on that part you're
17 referencing, that's back to Exhibit 1.
18 (WITNESS COMPLIED)
19 Q. After the violation was sent out, a hearing was
20 scheduled, isn't that correct?
21 A. I don't remember.
22 Q. Well, we will get to that shortly as well. Referencing
23 Exhibit 5, in this document it was sent out from Peter
24 Janaros, isn't that correct?
25 A. Yes.

1 Q. Is that the same individual you referenced earlier as
2 being your supervisor at one point in time?
3 A. Yes.
4 Q. And this document was cc'd to you, isn't that correct?
5 A. It was.
6 Q. Is this an interoffice memo from your department?
7 A. Yes.
8 Q. And this interoffice memo, do you recall seeing this
9 before?
10 A. I must have.
11 Q. Because you received a copy of it, isn't that correct?
12 A. Yes.
13 Q. And this was addressed to Thomas Wright, isn't that
14 correct?
15 A. Correct.
16 Q. And the interoffice memo states that Hank Ellis of the
17 wetlands section is working on resolution of the
18 violation, isn't that correct?
19 A. Correct.
20 Q. And who is Tom Wright?
21 A. At the time he was the assistant director of
22 regulations.
23 Q. Is that a job capacity above Mr. Janaros?
24 A. Yes, that was his boss.
25 Q. Mr. Janaros' boss was Mr. Wright?

1 A. Yes.
2 Q. And this is dated February 9, 1984, isn't that correct?
3 A. Correct.
4 Q. What were you doing specifically in working on a
5 resolution of the notice of violation?
6 A. At that time I was probably waiting on -- I wasn't
7 doing anything, actually.
8 Q. The last inspection that you conducted prior to
9 February 9, 1984, was that the one in November, I
10 believe, 29, 1983?
11 A. Unless there is another in the file, I would have
12 to say yes.
13 Q. As part of the process that you were going through
14 after your second inspection, were you then formulating
15 what corrections had to be made to cure the violations?
16 A. I believe they were very generically written in the
17 notice of violation.
18 Q. So, the notice of violation references those items that
19 had to be corrected in order to cure the violation,
20 isn't that correct?
21 A. Correct.
22 Q. Because as of February 9, 1984, that notice of
23 violation had already been sent out, isn't that
24 correct?
25 A. Yes.

1 Q. And in referencing Exhibit 6, if you could take a
2 moment to look at that exhibit, can you identify that
3 document?
4 A. It's a site inspection that I performed on 2/16/84.
5 Q. So it's not signed by you, but you performed it, isn't
6 that correct?
7 A. Correct.
8 Q. And the notes you took, were those notes taken at the
9 scene?
10 A. Yes.
11 Q. And this document says a site meeting took place at
12 10:00 A.M., isn't that correct?
13 A. Correct.
14 Q. Who was present at that meeting?
15 A. I believe it was Joseph Ferreira.
16 Q. Anybody else?
17 A. According to the report, Tom Almeida.
18 Q. Do you recall who Tom Almeida is?
19 A. I put in parentheses, town solicitor.
20 Q. And that would be for the Town of Cumberland?
21 A. I would assume so.
22 Q. Do you know why he was there?
23 A. No.
24 Q. Did you ask him to be there?
25 A. No.

1 Q. Was anyone else present at the meeting?
2 A. Probably not, because I didn't put their names
3 down.
4 Q. Do you recall what Mr. Almeida's participation was in
5 the meeting?
6 A. I don't recall anything beyond this, the report.
7 Q. On Page 1 of the report at the top it says, "a heavy
8 sediment load is being carried by the rapidly moving
9 stream, channel west of the property." Is that your
10 writing?
11 A. Yes.
12 Q. What is a heavy sediment load?
13 A. It's a silt that's coming off the land and getting
14 into the stream course.
15 Q. Where was the channel west of the property?
16 A. I don't know, I don't know where the property lines
17 were.
18 Q. Well, if you could look at that diagram in Exhibit 1,
19 the second page, again, please. According to that
20 diagram, where is the western portion of the property?
21 A. It would be to the left side of the page.
22 Q. Would you put a V where you believe the western portion
23 of the property would be located?
24 A. I don't know where it ends or begins.
25 Q. Well, this diagram that you have here, it states,

1 300 feet. What is that referencing on Exhibit 1? Is
2 that a 300 at the bottom?
3 A. Yes.
4 Q. Do you know what that references?
5 A. It could be another channel, a stream channel, I am
6 not sure.
7 Q. Could it reference the width of the Ferreira property?
8 MR. JARRET: Objection.
9 A. I wouldn't have known it.
10 Q. It states also in the exhibit we are referencing, your
11 inspection, 2/16/84, Exhibit 6, "all roadside work by
12 Mr. Ferreira has left unstable soil, which is also
13 being picked up by runoff from the road." What
14 roadside work was being performed?
15 A. I don't remember.
16 Q. What does the term "unstable soil" mean?
17 A. Not grass not held by vegetation subject to rain,
18 just moving it into other water courses.
19 Q. The rapidly moving stream that you're referencing in
20 the report of 2/16/84, is that the stream that had been
21 diverted?
22 A. I don't recall.
23 Q. On November 23, you reference that somebody is
24 redirecting or creating a new ASSF, isn't that correct?
25 A. Correct.

1 Q. And approximately three months later you returned to
2 the site and noted that a heavy sediment load was being
3 carried by the rapidly moving stream, isn't that
4 correct?
5 A. Yes.
6 Q. So, is a rapidly moving stream referenced in February
7 of 1984 the new stream?
8 A. It could be.
9 Q. Well, it wouldn't be the old stream if it had already
10 been redirected, isn't that correct?
11 MS. RADICHES: Objection.
12 A. The thing is is that it also talked about unstable
13 soil being picked up by roadside work. So, I am not
14 sure if there was some other water coming off the road.
15 Q. But you are sure referencing this 2/16/84 report that a
16 heavy sediment load was being carried by a rapidly
17 moving stream, isn't that correct?
18 A. Yes.
19 Q. Was that sediment load tested at all?
20 A. No.
21 Q. Was any testing done with respect to what was in the
22 stream at that point in time?
23 A. No.
24 Q. Would that have been your job to perform those tests?
25 A. No.

1 Q. Whose job would that have been at DEM?
2 A. That was just a visual assessment of whether there
3 was sediment in the stream or not.
4 Q. And it also says, according to this document, "drainage
5 water and the stream run under Curran Road into the
6 drain system in the subdivision to the south," do you
7 see that?
8 A. Yes.
9 Q. Do you recall what subdivision it was to the south?
10 A. I don't. I would have to look at aerial photos to
11 recall.
12 Q. Do you recall how the drainage water would run under
13 Curran Road?
14 A. It must have been through pipes or a bridge.
15 Q. Or a culvert?
16 A. Yes.
17 Q. You also state in your report of 2/16/84, "the stream
18 finds its way across open fields and eventually into
19 one of the main streams which feed the South Attleboro
20 Reservoir," isn't that correct?
21 A. Correct.
22 Q. Could you please describe how these open fields then
23 feed into the main stream, which then feeds the South
24 Attleboro Reservoir?
25 A. I don't recall that, it was research I did on a

1 photograph.
2 Q. So what type of research would you have done?
3 A. Looked at aerial photographs of the -- that were
4 taken prior to the alteration.
5 Q. So based upon your investigation at that time, it's
6 fair to say that that stream at some point would feed
7 its way into the South Attleboro Reservoir, is that
8 correct?
9 A. Correct.
10 Q. Now, at the bottom of this 2/16/84 document it states,
11 "there is evidence of the gas, oil, and pollution into
12 the field," is that correct?
13 A. Correct.
14 Q. Where was that gas and pollution coming from?
15 MS. MULCAHY: Objection.
16 A. It's not obvious in the way that I wrote this
17 report, I don't know.
18 MR. PERLOW: Off the record.
19 (OFF THE RECORD)
20 Q. When you see gas and pollution in field as you
21 described in this 2/16/84 report, is there any protocol
22 for having that investigated?
23 A. Yes, there is now. I don't know if there was then.
24 Q. Do you know if this gas and oil pollution that you saw
25 at that time was ever investigated?

1 A. I don't.
2 Q. What's the protocol in place now when gas and oil
3 pollution are seen in fields?
4 A. Typically we would write a complaint and submit it
5 to the office that would investigate that.
6 Q. It says on the second page of that same exhibit that
7 the stream, and I am trying to read your writing, that
8 it's dirty brown in color, 1500 to 2000 feet south of
9 the junkyard, is that correct?
10 A. Correct.
11 Q. When you say dirty brown in color, could you give us a
12 description of what you actually saw that day?
13 A. I could only say typically. It would have been
14 silt, a sediment color.
15 Q. But you don't know what's in that silt or sediment?
16 A. No.
17 Q. Is there any protocol in place today when a stream is
18 seen as dirty brown in color as to what procedure
19 should take place?
20 A. Yes.
21 Q. What is that protocol?
22 A. We would send out personnel to investigate water
23 pollution problems.
24 Q. This stream that was dirty brown in color, was that
25 part of a protected air, is that part of the watershed?

1 A. It would all be protected. I just don't recall the
2 regulations for the water pollution site of things, and
3 we didn't do that at that time.
4 Q. Also in Exhibit 6, with respect to your inspection on
5 February 16, 1984, there were certain instructions that
6 were given to Mr. Ferreira, could you please describe
7 what those instructions were on the second page?
8 A. I told Mr. Ferreira that ADLs should be placed
9 immediately.
10 Q. Do you know if this was done?
11 A. I don't recall.
12 Q. Was any inspection conducted as a follow-up to this
13 inspection to determine if the hay bales had been put
14 in place?
15 A. I don't recall that, either.
16 Q. Where were the hay bales supposed to be in place?
17 A. At the source of the sediment.
18 Q. Which is where?
19 A. Where the brown soil would be originating into the
20 water.
21 Q. Would that have been around the intermittent stream?
22 A. Probably, or even up in the pond area.
23 Q. Was there any protocol in place at the time after an
24 instruction like that was given as to the next
25 follow-up step to insure that the work had been done?

1 A. It was based upon the availability of the inspector
2 to check whether it was done or not.
3 Q. And do you have any other written reports, to your
4 knowledge, to determine if that was done?
5 A. I don't know. If there is something in the file,
6 it would have to speak for itself.
7 Q. Going to Exhibit 7, please, it's a consent agreement
8 that's dated April 11, 1984, isn't that correct?
9 A. Correct.
10 Q. You represented the department at the prehearing
11 conference, is that correct?
12 A. Correct.
13 Q. Who was present when this consent agreement was entered
14 into?
15 A. Based upon the document, it would have been Carolyn
16 Waymauth and Mr. Ferreira.
17 Q. Who is Carolyn Waymauth?
18 A. She was the enforcement liaison at the time.
19 Q. Was anyone there representing Mr. Ferreira?
20 A. I believe Tom Almeida was there as well.
21 Q. Tom Almeida is who? Was he the city solicitor?
22 A. I believe that was in another inspection report
23 that indicated that he was.
24 Q. Do you know if Mr. Almeida was Mr. Ferreira's legal
25 representative?

1 A. I don't.
2 Q. It was agreed under this consent agreement that Mr.
3 Ferreira would submit a freshwater wetlands application
4 to alter, isn't that correct?
5 A. Correct.
6 Q. And that application and the alterations would have to
7 be according to the consent agreement, completed to the
8 satisfaction of the department, isn't that correct?
9 A. Correct.
10 Q. In order for the project to be completed to the
11 satisfaction of the department, would all of the
12 corrections have to be made that were cited in the
13 notice of violation?
14 A. No.
15 Q. And is that because an application would be filed
16 subsequently by Mr. Ferreira?
17 A. Yes.
18 Q. And the correction would have to be made pursuant to
19 the terms and conditions of the application, isn't that
20 correct?
21 A. Correct.
22 Q. Now, when the notice of violation was given, Mr.
23 Ferreira was ordered to correct certain problems, is
24 that safe to say?
25 A. Yes.

1 Q. After such a notice of violation is given, was it
2 customary in 1984 to meet with an individual and enter
3 into a consent agreement?
4 A. Whenever possible, only on notices of violation.
5 Q. Well, according to the order and the notice of
6 violation, certain fines were to be set in place if the
7 wetlands area wasn't restored, isn't that correct?
8 A. Correct.
9 Q. Is an individual then given an opportunity to enter
10 into a consent agreement before those violations are
11 enforced?
12 THE WITNESS: I am sorry, I didn't --
13 Q. I will rephrase it. In the notice of violation Mr.
14 Ferreira was told he had to do certain things, isn't
15 that correct?
16 A. Yes.
17 Q. He was ordered to do certain things, isn't that
18 correct?
19 A. Yes.
20 Q. But before he completed those certain things, a consent
21 agreement was entered into, is that correct?
22 A. Correct.
23 Q. Did that consent agreement stay the order of your
24 department?
25 A. Yes.

1 Q. Was that order stayed until the application was
2 subsequently filed after the consent agreement?
3 A. Yes.
4 Q. So, as part of that consent order, it was agreed that
5 Mr. Ferreira would file an application?
6 A. Correct.
7 Q. And it was agreed, as part of the consent order,
8 specifically on Page 2, is that correct, that the
9 department agrees to grant one extension of the
10 June 11, 1984 deadline, is that correct?
11 A. Yes.
12 Q. Now, again, this document on the second page, that's
13 your signature on the second page?
14 A. It is.
15 Q. And that's the consent agreement that was signed by
16 both yourself, Mr. Ferreira and Carolyn Waymauth, is
17 that correct?
18 A. Correct.
19 Q. How many extensions was Mr. Ferreira granted?
20 A. I don't know.
21 Q. Could it have been more than one?
22 A. I don't know.
23 Q. Is it customary to grant more than one extension to an
24 individual?
25 THE WITNESS: On a consent agreement?

1 MR. PERLOW: Yes.
2 A. There is no established amount. It depends on the
3 issues, both then and now.
4 Q. It also states that, according to this consent
5 agreement, that Mr. Ferreira would install temporary
6 erosion controls, and I believe that's in number 3, is
7 that correct?
8 A. Correct.
9 Q. Were those installed?
10 A. I don't recall.
11 Q. Was there any indication in your file as to whether or
12 not erosion controls were installed immediately?
13 A. I would have to look at the file. I don't recall.
14 I would hope so.
15 Q. If you could take a look through your file and advise
16 me if you see anything in your file that documents
17 temporary erosion controls were installed after the
18 4/11/84 consent agreement.
19 A. Unless I missed it, I don't see anything.
20 Q. So, you don't have any documentation in your file that
21 temporary erosion controls, as specified by the
22 department, were put in place pursuant to the consent
23 agreement, is that correct?
24 A. Correct.
25 Q. These erosion controls were supposed to be in place by

1 May 1, 1984, isn't that correct, according to number 3?
2 A. Yes.
3 Q. On Page 2 of the consent agreement?
4 A. Yes.
5 Q. So is it safe to say that you don't know whether they
6 were ever put in place?
7 A. I don't.
8 Q. If the erosion controls had been put in place, would it
9 have been somewhere reflected in your file?
10 A. Most likely, yes.
11 Q. In fact, the department agreed to postpone the
12 restoration order as per number 4 of the consent
13 agreement, in view of the fact that the temporary
14 erosion controls would be put in place, is that fair to
15 say?
16 A. Yes.
17 Q. And if the erosion controls weren't put in place, there
18 would have been no postponement of the restoration
19 order, is that fair to say?
20 A. Correct.
21 Q. And that restoration order was supposed to be completed
22 by August 1, 1984, isn't that correct?
23 A. Yes.
24 Q. According to Exhibit Number 8, there's a letter
25 addressed, I believe, it's to you, it's dated April 13,

1984, isn't that correct?

A. Yes.

Q. And that letter is addressed to you?

A. Yes.

Q. Do you recall seeing that correspondence?

A. No.

Q. It's signed by Robert Rahill. I want you to assume for purposes of these questions that that letter was directed to you on April 13, 1984, and that it is signed by Robert Rahill. That correspondence says in the first paragraph, "thank you for the invitation to the meeting on Wednesday, the 11th," did a meeting take place in your office on Wednesday, the 11th as that references?

A. I don't know, presumably.

Q. Would that have been April 11th, or don't you recall?

A. I don't recall.

Q. It states in that correspondence, reading that second paragraph, "I believe the suggestion that the water be channelized through piping along with the construction of a berm to contain the pond will help to prevent surface water, oil and gas runoff." Do you recall whose suggestion that was?

A. I guess it was Mr. Rahill.

Q. Was he acting in his capacity for the Water Supply

1 Board, do you recall?
2 A. I don't remember who he was.
3 Q. The concern was expressed at the time of the meeting on
4 April 13, 1984, that oil and gas could get into the
5 aquifer, is that correct?
6 A. Correct.
7 Q. And what is the aquifer that's being referred to there?
8 A. Presumably, the water supply for the local area.
9 Q. Was a request made of DEM in that correspondence of
10 April 13, 1984, as to what steps would be taken to
11 eliminate the risk of oil and gas getting into the
12 aquifer?
13 THE WITNESS: What was the first part of
14 that question?
15 (PENDING QUESTION READ)
16 A. Yes.
17 Q. Were any steps provided to Mr. Rahill following this
18 correspondence as to what would be done to eliminate
19 this potential problem?
20 A. I don't know, it would have been another division.
21 Q. What division would that have been?
22 A. At the time, Water Resources.
23 Q. Well, this letter was addressed to you, is that
24 correct?
25 A. Correct.

1 Q. Would you have passed it on to Water Resources?
2 A. I would have, I would hope so.
3 Q. You don't know if they got it, though?
4 A. I don't.
5 Q. With respect to Exhibit 9, that correspondence is dated
6 April 26, 1984, and it is also addressed to you, is
7 that correct?
8 A. Yes.
9 Q. It's also signed by Mr. Rahill?
10 A. Yes.
11 Q. Do you recall receiving that correspondence?
12 A. I don't.
13 Q. This correspondence, though, is dated approximately
14 two weeks after that earlier correspondence, is that
15 safe to say?
16 A. Yes.
17 Q. And he is thanking you for allowing him to participate
18 in a meeting, is that correct?
19 A. Correct.
20 Q. Where was the meeting?
21 A. I don't know. If he was thanking me, it would have
22 been in my office, presumably.
23 Q. Do you recall who was at the meeting?
24 A. I don't.
25 Q. In this correspondence he states, "I believe that the

1 actions taken will respond to the wetlands
2 alterations." Do you see that?
3 A. I do.
4 Q. What actions are being referred to in this
5 correspondence?
6 A. Again, I don't know.
7 Q. Could those be the actions that were part of the
8 application that was filed to correct the problem?
9 A. I don't know if he was aware of the consent.
10 Q. So you are not sure what actions he was referencing in
11 this correspondence?
12 A. No, I am not.
13 Q. It also states in the April 26, 1984, correspondence
14 that, quote, "Nonetheless, based upon your observations
15 and ours, there is a runoff of oil and gas when it
16 rains," do you see that?
17 A. Yes.
18 Q. What observations did you make regarding the oil and
19 gas runoff when it rains?
20 A. In that previous site inspection that we talked.
21 Q. Is that what you were referencing?
22 A. Yes.
23 Q. In this correspondence, Mr. Rahill was asking that
24 other appropriate offices in DEM and health help review
25 the problem to determine the extent of their authority

1 to do anything, isn't that correct?
2 A. Correct.
3 Q. Was this ever followed up on?
4 A. Again, I would like to think I did that, but I
5 don't know.
6 Q. So if you did follow up on that, as per this
7 correspondence, what department would that be in?
8 A. It would have been in the Division of Water
9 Resources.
10 Q. Is that a separate file from the file you have?
11 A. Yes.
12 Q. And who would you have reported that to in Water
13 Resources?
14 A. I don't recall who was in charge.
15 Q. If you had followed up on that investigation, would
16 your request have been in writing?
17 A. It could have been in writing or a phone call, I am
18 not sure.
19 Q. So just in summarizing our understanding of this, you
20 don't know if other appropriate offices in DEM helped
21 review the problem, is that safe to say?
22 A. I don't know, correct.
23 Q. Going to Exhibit 10, that's correspondence sent by Mr.
24 Rahill dated July 25, 1984, isn't that correct?
25 A. Yes.

1 Q. And this is also addressed to you?
2 A. It is.
3 Q. And in this correspondence Mr. Rahill asked what steps
4 if any were taken by DEM to review the above-entitled
5 property in the results of the inspection, isn't that
6 correct?
7 A. Correct.
8 Q. And did you respond to this correspondence?
9 A. I don't know.
10 Q. Do you have any correspondence in your file noting this
11 letter -- strike that, any notes in your file
12 reflecting that this correspondence was followed up on?
13 A. Probably not, but I don't know.
14 Q. Was there protocol in place in July of 1984 to respond
15 to correspondence such as this?
16 A. Protocol that each individual made, I mean, there
17 was no official department protocol, no.
18 Q. Going to Exhibit 11, that is a two-page exhibit, it's
19 dated, it says date received, 8/22/84, is that correct?
20 A. Correct.
21 Q. It says on the top left of that document, "biologist,
22 Hank Ellis," isn't that correct?
23 A. Yes.
24 Q. And this evaluation was performed by a Mr. Larson, is
25 that correct?

1 A. Correct.
2 Q. And is this your writing on either of these two pages?
3 A. Mostly it's Ray Larson's writing.
4 Q. Is any of this writing yours?
5 A. I don't believe so.
6 Q. So, the top left-hand corner of this document is your
7 name, Hank Ellis, as biologist, is that your signature?
8 A. No, it's not a signature. I don't know who wrote
9 that. It could have been me, but I think it's somebody
10 else.
11 Q. And this is regarding file Number 6517, is that
12 correct?
13 A. Yes.
14 Q. And it says file number, Ferreira/Cumberland, is that
15 correct?
16 A. Correct.
17 Q. Again, this is dated August 1984, is that correct?
18 A. Correct.
19 Q. On the second page it says, deficiencies, and it also
20 says specialist, HKE, 8/31/84, are these your initials?
21 A. Yes.
22 Q. Is that your handwriting on the second page?
23 A. Yes, some of it.
24 Q. Under deficiencies, is that all of your handwriting?
25 A. It is.

1 Q. On the second page it states, quote, "you must show
2 original contours, existing contours," is that correct?
3 A. Correct.
4 Q. So, did you personally inspect the property in August
5 of 1984?
6 A. I don't know.
7 Q. How would you make a determination that the contours
8 for proposed work -- strike that. Did you make a
9 determination that the contours for the proposed work
10 were insufficient?
11 A. I guess I did, based on the plan that was
12 submitted.
13 Q. According to your writing in August of 1984 on this
14 document in number 4, "the original pond configuration
15 and size is entirely deficient," could you explain what
16 you meant by this?
17 A. It either had been changed due to alterations or, I
18 guess that's what it would have meant, and that's why I
19 referred him to the 1972 aerial photograph.
20 Q. Did you discuss this matter with Ray Larson, the
21 engineer?
22 A. Presumably, but I am not sure.
23 Q. Going to Exhibit 12, this is a multi-page document. In
24 fact, it's eight pages, and at the top it's dated
25 10/9/85, and a biologist is listed as HKE, is that you?

1 A. It is.
2 Q. And it says location, "700 feet northwest of Curran
3 Road and Curran Brook Street," is that correct?
4 A. Correct.
5 Q. And is this wetland data form regarding the Ferreira
6 property that you had inspected previously?
7 A. Yes.
8 Q. It says in this document that the surface location has
9 a, quote, "small tributary runs through the pond and
10 eventually enters the Miller's River just above Robin
11 Hollow Pond," do you see that in number 2?
12 A. Yes.
13 Q. Please describe the path of this small tributary as it
14 would run through the pond and enter Miller's River
15 just above Robin Hollow Road?
16 A. I wouldn't be able to do that now. I don't recall.
17 Q. Do you know which small tributary this is referencing?
18 A. No.
19 Q. It says in Number 6 on Page 1, "proximity to other
20 wetlands," would you please read that for us and
21 explain that?
22 A. "Approximately one-half mile from flood plain swamp
23 north of Robin Hollow Pond on Abbott Run River," I
24 don't recall what that means.
25 Q. Does Robin Hollow Pond feed any water supply in the

1 Town of Cumberland?
2 A. I don't recall that, either.
3 Q. But you found it important enough to note that there
4 was a close proximity with respect to this stream from
5 the flood plain and the swamp north of Robin Hollow
6 Road, isn't that correct?
7 A. I was just writing down observations based on the
8 review of aerial photos.
9 Q. Under C on Page 4, would you please read where it says
10 evidence of pollution?
11 A. Yes, "oil/gas? Slicks in small amounts through
12 area, recommend," that's it.
13 Q. There is nothing following that word "recommend," isn't
14 that correct?
15 A. Correct.
16 Q. Do you recall what your personal observations were at
17 that time?
18 A. Only what I had seen previous times in my reports.
19 Q. With respect to this particular time you saw oil and
20 gas and slick on the Ferreira property, isn't that
21 correct?
22 A. Well, this was a report. So it is summarizing
23 previous stuff.
24 Q. Had you gone on site on October 9, 1984?
25 A. Probably not.

1 Q. Well, let me reference you back to the first page. It
2 says dates inspected, 10/7/85, 2/16/84 and 11/23/83.
3 So is it safe to say you were on the property
4 inspecting it two days before this report was written?
5 A. Yes.
6 Q. And this would have been approximately a year and a
7 half after the consent agreement was entered into,
8 isn't that correct?
9 A. Correct.
10 Q. Does your inspection report of 10/9/85 reference
11 whether the temporary controls that were supposed to be
12 put in place in April of 1984 were ever put in place?
13 A. I don't believe so.
14 Q. On Page 6 under H?
15 A. Yes.
16 Q. It states a notice of violation has been placed on the
17 subject property for work done by Mr. Ferreira, is that
18 correct?
19 A. Correct.
20 Q. It says it also includes work done by a previous owner,
21 isn't that correct?
22 A. It does say that.
23 Q. Who was that previous owner?
24 A. I don't know.
25 Q. Is that previous owner referenced in any of your

1 records or reports?
2 A. I don't believe so, I don't know.
3 Q. With respect to the inspection conducted on 10/7/85,
4 can you give an explanation as to why no inspection was
5 conducted at that time to see if the temporary erosion
6 controls that had been provided for approximately a
7 year and a half beforehand and a consent agreement were
8 not initiated by Mr. Ferreira?
9 A. I don't know why they weren't mentioned. They
10 could have been in place all of this time, they may not
11 have been in place, I don't know. The purpose of this
12 inspection here was to do an evaluation of the wetlands
13 and whether that was there or not, I didn't make a
14 comment, apparently.
15 Q. But with respect to that consent agreement, there was
16 supposed to be tight control by your department with
17 respect to those erosion controls, even though they
18 were temporary, isn't that correct?
19 A. Correct.
20 Q. And you don't have anything in your file that shows
21 that those temporary erosion controls were put in
22 place, is that correct?
23 A. That's right.
24 Q. It states approximately 0.9 acres have been filled for
25 15 years and that's Exhibit 12 on Page 6, is that

1 correct?
2 A. Yes.
3 Q. How did you reach that assessment?
4 A. Review of aerial photographs prior to the
5 alterations and then after the alterations.
6 Q. Did you make a determination as to when that acreage
7 had been filled?
8 A. I don't know if I noted it in my report. It would
9 have been after the Freshwater Wetlands Act came into
10 place.
11 Q. Which was when?
12 A. July 16, 1971.
13 Q. Was any determination made as to what that acreage was
14 filled with?
15 A. I don't believe so.
16 Q. Would that be a concern of your department as to what
17 fill was being used to fill acreage?
18 A. I would think so, yes.
19 Q. Is that a job function that you would undertake?
20 A. Depending on what it was.
21 Q. Do you know if there was any determination made as to
22 what fill was being used to fill that 0.9 acres?
23 A. I don't, it was reviewed on aerial photograph
24 basis, which is a small scale that you're looking at,
25 but I wouldn't know.

1 Q. On Page 7, under K, recommendations, is that your
2 handwriting?
3 A. Yes.
4 Q. And it stays there that there are numerous problems
5 with the plan submitted to this office. Was that your
6 assessment at the time?
7 A. At the time.
8 Q. And that was in October of 1984, isn't that correct?
9 A. Yes.
10 Q. And this was approximately a year after the notice of
11 violation was initially sent out, isn't that correct?
12 A. Correct.
13 Q. Is it customary for your department to wait that long a
14 period of time before problems are corrected?
15 A. It all depends on the manpower of the department.
16 So it's not customary, but it depends on how much
17 manpower you have.
18 Q. When you saw that there were numerous problems with
19 respect to the plan, was there any consideration given
20 to ordering another cease and desist order or some
21 other measure because the problem wasn't being
22 corrected?
23 A. Typically that means there were problems with the
24 plan that was submitted, not necessarily what's going
25 on out in the field, trying to get this out to public

1 notice, it's needed to be accurate, and it could be
2 very frustrated dealing with different environmental
3 consultants trying to get this thing accurate for
4 public review.
5 Q. But there was a problem at the time of this inspection,
6 wasn't there, with respect to a pond having a fill with
7 sediment, auto parts? I am referencing on Page 7,
8 Number 2?
9 A. That was his proposal at the time.
10 Q. By his proposal, you're referencing Mr. Ferreira?
11 A. Yes.
12 Q. And also in his proposal on Page 7, J., the first
13 sentence, would you please read that?
14 A. "The proposal will eliminate a productive
15 pond/shallow marsh and a smaller, deeper pond. Many
16 other species of wildlife observed and those
17 anticipated to utilize the site will be effectively
18 eliminated."
19 Q. So this was a significant concern of yours at the time,
20 isn't that correct?
21 A. Correct.
22 Q. So you thought there was a problem with the proposal
23 that was in place, at least as of the date of this
24 inspection, isn't that correct?
25 A. Correct.

1 MR. LANGLOIS: Can I interrupt, I note
2 from my watch that it's five of four. I am not
3 authorized to keep any state employee after
4 four o'clock. Business hours for the Rhode Island are
5 8:30 to four o'clock. I don't have any authority to
6 keep Mr. Ellis here after four o'clock, and I have no
7 authority to authorize overtime for him. So, I am
8 under instructions that all depositions have to end at
9 four. I apologize for not raising this sooner, but I
10 didn't know how long we were going to go.
11 MR. PERLOW: Well, there is certainly no
12 problem coming back. I would hate to inconvenience
13 everybody to have to come back. I have about another
14 45 minutes, tops, probably, plus questions by others.
15 So we can plan our schedules around that for the next
16 time. There is no sense of going another five minutes
17 if we are up against four o'clock. We will contact
18 your offices.
19 MR. LANGLOIS: We both would be available
20 at your convenience, and Mr. Ellis will also bring the
21 file that he brought with him today.
22 MR. PERLOW: Can we note that we don't
23 have to reissue the subpoena?
24 MS. RADICHES: Absolutely.
25 MR. PERLOW: All right.

1 THE REPORTER: Would you like a
2 transcript?
3 MR. JARRET: Yes.
4 MS. RADICHES: Yes.
5 MS. MULCAHY: Yes.
6 MR. LANGLOIS: Yes.
7 (DEPOSITION ADJOURNED AT 3:56 p.m.)
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C E R T I F I C A T E

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4 I hereby certify that I am expressly approved as a
5 person qualified and authorized to take depositions
6 pursuant to the Rules of Civil Procedure of the
7 Superior Court; especially, but without restriction
8 thereto, under Rule 30 of said Rules; that the witness
9 was first sworn by me; that the transcript contains a
10 true record of the proceedings.
11 IN WITNESS WHEREOF, I have hereunto set my hand this
12 30th day of July, 2008.
13
14 Cindy Ann Pannone / Notary Public
15
16 CINDY ANN PANNONE
NOTARY PUBLIC/CERTIFIED COURT REPORTER
17 My commission expires: 8-02-09
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Harold Ellis
Volume II

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
PROVIDENCE, SC. SUPERIOR COURT

LM Nursing Services, Inc., Louis Paolino and Marie Issa	:	
VS.	:	C.A. NO.: 2006-5973
	:	VOLUME II
Mobil Corp., Mark Diamond, Phillip Diamond, Joseph Ferreira, d/b/a Advanced Auto Recycling, Inc., and LKQ Corporation	:	

DEPOSITION OF HAROLD ELLIS, a Witness for the above-entitled cause, taken on behalf of the Plaintiffs, before Elizabeth Greeley, Notary Public, in and for the State of Rhode Island, at Allied Court Reporters, 115 Phenix Avenue, Cranston, Rhode Island, on July 9, 2008 at 10:30 a.m.

PRESENT:

FOR THE PLAINTIFFS.....MORETTI, PERLOW & BONIN
BY: JEFFREY PERLOW, ESQUIRE

FOR THE DEFENDANT.....LAW OFFICE OF JAY JARRET
(DIAMONDS) BY: JAY JARRET, ESQUIRE
FOR THE DEFENDANT.....BURNS & LEVINSON, LLP
(LKQ) BY: LYNNE RADICHES, ESQUIRE

FOR THE DEFENDANT.....HOLLAND & KNIGHT
(MOBIL) BY: ELIZABETH MULCAHY, ESQUIRE
FOR THE DEPONENT.....STATE OF RHODE ISLAND
DEPT. OF ENVIRONMENTAL MANAGEMENT
BY: JOHN LANGOIS, ESQUIRE

ALLIED COURT REPORTERS
115 PHENIX AVENUE
CRANSTON, RI 02920
401-946-5500

1 I N D E X

2 WITNESS PAGE

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4 EXAMINATION BY MR. PERLOW..... 3

5 EXAMINATION BY MS. MULCAHY..... 41

6

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8

PLAINTIFFS' EXHIBITS FOR I.D.

9

EXHIBIT DESCRIPTION PAGE

10

18 AERIAL PHOTO (1 PG)..... 14

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1 (DEPOSITION COMMENCED AT 10:40 A.M.)
2 HAROLD ELLIS
3 Being previously sworn, deposes and testifies as
4 follows:
5 EXAMINATION BY MR. PERLOW
6 Q. I guess we're back on the record. Are we all set
7 to go? Just a continuation. I'm going to ask you to
8 go, Mr. Ellis, to Page 7 of Exhibit 12. You made
9 certain recommendations in Letter K; is that correct?
10 A. Correct.
11 Q. Was it your idea that these recommendations would
12 be incorporated in Mr. Ferreira's application?
13 A. I was hopeful they would be, yes.
14 Q. Was it your opinion that these recommendations
15 were a necessity, in terms of correcting the problems
16 that you had cited on the site?
17 A. I believe so.
18 Q. On the bottom of Page 7 you state, and this is
19 your handwriting, I believe, "In the past I have
20 traced small oil slicks almost one half mile
21 downstream." Is that your writing?
22 A. Yes.
23 Q. Do you recall where that was downstream?
24 A. I don't.
25 Q. Do you recall anything about those oil slicks

1 that you had seen at that time?
2 A. I don't.
3 Q. You don't recall what you saw on these occasions?
4 A. Not really, other than what is written.
5 Q. You also suggest on Page 8 at the top, I believe,
6 that some type of oil trap be employed on the
7 property; is that correct?
8 A. Correct.
9 Q. What do you mean by that, by an oil trap?
10 A. They have catch basins that will separate the
11 water from the oil, and if you have runoff, hopefully
12 the oil would be trapped in a catch basin, and clean
13 water will continue downstream.
14 Q. When you make a suggestion of this type, who are
15 you making the suggestion to?
16 A. My supervisor or the chief.
17 Q. Do you know if in the final plans an oil trap was
18 part of the application?
19 A. I don't.
20 Q. We'll get to the application shortly, but as far
21 as the oil trap itself, could you go into any greater
22 detail as to the function of an oil trap and what it
23 does to alleviate pollutants on a site?
24 A. I'm not sure exactly how it's constructed.
25 It's several chambers that basically separate the oil

1 out from the water. In fact, there are different
2 densities, one floats and the others don't, but I
3 don't know specifically.
4 Q. Do you know where the oil trap would have been
5 placed on this property?
6 A. I don't.
7 Q. You also insisted on a 50-foot buffer as part of
8 this report; isn't that correct? That would be
9 Number 4 on Page 7.
10 A. I'm not sure what you mean by that question.
11 Q. Well, I'll rephrase the question. On the bottom
12 of Page 7, Number 4, I'll read to you as follows: "I
13 suggest that all autos stay a minimum of 50 feet away
14 from the edge of the pond." Is that your writing?
15 A. Yes.
16 Q. What was the purpose of that 50-foot requirement?
17 A. Just to keep all the automobiles away from
18 the pond, so that the area could revegetate.
19 Q. What was the risk if automobiles stayed in a 50
20 foot area from the pond?
21 A. You wouldn't have revegetation of trees or
22 shrubs or grasses.
23 Q. In writing that 50-foot minimum requirement, were
24 you also concerned that parts from the cars could find
25 their way into the pond?

1 A. I don't know about parts.
2 Q. How about oil?
3 A. Perhaps, perhaps.
4 Q. You don't recall what your exact concerns were at
5 that time?
6 A. Typically you want something like that to
7 stay as far away from a watercourse as possible.
8 Q. If not, the cars could do damage to the water?
9 MS. RADICHES: Objection.
10 Q. Is that correct?
11 A. Yes.
12 Q. On Page 8 -- strike that. On Page 7, Number 3,
13 would you please read that out loud?
14 A. "The plans thus submitted are entirely
15 inadequate. If the 1985 photos had been here prior to
16 this, an indication going to public notice, we never
17 should have sent it out."
18 Q. Would you please describe what you meant by that?
19 A. I don't remember the deficiency, the reasons
20 for it being inadequate.
21 Q. Do you recall what you saw, in terms of the 1985
22 photos?
23 A. Presumably that it was not accurately
24 depicted, what was being altered.
25 Q. Is it fair to say that you wrote this report on

1 October 9, 1985, that you considered the plans that
2 were presently in place before your department
3 entirely inadequate to rectify the situation on this
4 site?
5 A. It's hard to just, I don't remember the exact
6 issues. I would say that the plans did not depict
7 exactly what was being altered, and you needed to make
8 sure that the public was aware of exactly what was
9 happening. If they didn't have the wetlands correct
10 to begin with prior to their alteration, then the
11 public has no idea what is being altered or being
12 proposed to be filled after the fact.
13 Q. In this paragraph, K3, you weren't, you didn't
14 mention anything about the public. You said that the
15 plans were entirely inadequate; isn't that correct?
16 A. It talks about public notice on the next part
17 of the sentence.
18 Q. I understand that, but you state here, "The plans
19 thus submitted are entirely inadequate"?
20 A. Correct, but you said that I didn't say
21 anything about the public.
22 Q. All right, no, I'm not questioning that. At the
23 time in 1985 did you consider the plans that were
24 submitted at that time and before your department to
25 be entirely inadequate?

1 A. Yes.
2 Q. Because that's what this says; isn't that
3 correct?
4 A. That's correct.
5 Q. On Page 8, Number 6, about halfway down you also
6 recommend that, I'm quoting, "A culvert of adequate
7 size be installed to prevent sedimentation of the
8 pond"; is that correct?
9 A. Correct.
10 Q. Do you know if this recommendation was
11 subsequently made part of the application?
12 A. I don't.
13 Q. What was the reason that you requested that
14 culvert?
15 A. I don't remember that either.
16 Q. Well, it says here you wanted to prevent
17 sedimentation of the pond; isn't that correct?
18 A. Correct.
19 Q. Would you please describe what sedimentation of
20 the pond would do to the pond?
21 A. It would cause sedimentation. It's
22 self-explanatory. It would cause sediment to fall
23 into the pond and prevent growth of vegetation and as
24 far as any wildlife that might be there.
25 Q. What is sediment?

1 A. It's generally soil that's loose.
2 Q. Were you concerned at the time that the loose
3 soil could have been polluted soil?
4 A. I don't know.
5 Q. I'm going to ask you to look at Exhibit 13,
6 please. On the second -- are those your initials?
7 A. Yes.
8 Q. Is that your handwriting on both Pages 1 and 2?
9 A. Yes.
10 Q. What is this report dated?
11 A. This specific exhibit doesn't appear to be
12 dated, but I think it's part of the original
13 evaluation.
14 Q. Is that part of Exhibit, actually, 12?
15 A. It's a follow-up to Number 12, yes.
16 Q. Was it written at the same time as Number 12 was
17 written, on October 9, 1985?
18 A. I don't know.
19 Q. Is it safe to say that Exhibit 13, those two
20 pages came at the same time or after the report of
21 10/9/85?
22 A. Definitely after, yes.
23 Q. On Page 1, Number 3, just for reference, this
24 says Joseph Ferreira at the top, Curran Road,
25 Cumberland, is that correct, on Page 1?

1 A. Yes.
2 Q. It references file 6517; that would be your file
3 number at the time?
4 A. Correct.
5 Q. In Number 3, would you read that, please?
6 A. "All debris (tires, boards, metal, et cetera)
7 within the remaining wetland areas must be removed
8 prior to July 1, 1986. No vehicles should enter the
9 wetlands areas to accomplish this task."
10 Q. How did you go about establishing the July 1,
11 1986 deadline?
12 A. It must have been -- I don't recall exactly.
13 It must have been based upon the time that this was
14 being written up and the time the permit was being
15 issued and the time frames that they would have had to
16 do this work that's required. Hopefully it was a
17 legitimate, reasonable deadline for them to complete
18 that work.
19 Q. You talk about debris. Do you recall how much
20 debris there was on site that you personally observed?
21 A. I don't.
22 Q. But you saw debris in the form of tires, boards,
23 metal, et cetera; is that correct?
24 A. I must have, yes.
25 Q. Otherwise, you would not have written it in this

1 report; isn't that correct?
2 A. Right, correct.
3 Q. Do you recall where you saw this debris on the
4 site?
5 A. I don't.
6 Q. Would you please read Number 5 on the same page?
7 A. "A, the drainage ditch must be graded to the
8 approved cross section design and loamed/seeded on or
9 before July 1, 1986. Please note: No changes may be
10 made to the invert elevation at the outlet of the
11 pond."
12 Q. Do you know what drainage that you're referencing
13 there?
14 A. I don't. Again, I presume it was one that
15 was being requested to be altered.
16 Q. Is it the one that was being relocated?
17 A. I would guess that, yes.
18 Q. This requirement was also to be put in place by
19 July 1, 1986; isn't that correct?
20 A. Correct.
21 Q. In Number 2 on the same page of Exhibit 13, it
22 states, "No work disturbance of any kind should occur
23 in the 50-foot buffer adjacent to the remaining
24 wetland areas with the exception of loaming, seeding,
25 previously disturbed unvegetated areas." Is that your

1 writing?
2 A. Yes.
3 Q. What was the reason for requesting this 50-foot
4 buffer?
5 A. To keep the area, to allow it to become
6 revegetated on its own.
7 Q. You were making these recommendations in order to
8 correct what you perceived as a continuing nature of
9 violations on site; isn't that correct?
10 A. It was, I don't know if they were continuing
11 violations, but they were violations initially that
12 weren't fixed. So that was part of it.
13 Q. Were you concerned about pollution finding its
14 way into the watershed?
15 A. Sure.
16 Q. This is based upon the fact that you saw, at some
17 point, problems at least a half mile downstream; isn't
18 that correct?
19 A. Correct.
20 Q. Were you concerned about pollution finding its
21 way into the water supply?
22 A. Sure, yes.
23 Q. As a result of these concerns, you recommended
24 these alterations to Mr. Ferreira's application; isn't
25 that correct?

1 A. Correct.
2 Q. On Page 2 of Exhibit 13 you reference a 20-foot
3 zone along the drainage ditch; is that correct?
4 A. Correct.
5 Q. You stated that this should be established on or
6 before July 1, 1986; isn't that correct?
7 A. Correct.
8 Q. Where would this buffer zone start with respect
9 to the drainage ditch?
10 A. Immediately at its edge where the water and
11 the land interfaced.
12 Q. Is that from the top of the ditch or the bottom
13 of the ditch?
14 A. No, in a horizontal direction, right at the
15 edge of the watercourse where it interfaced with the
16 land, dry land. That would start from there, 20 feet.
17 Q. Right at the edge of the watercourse?
18 A. Yes.
19 Q. It also states in Exhibit 13, Number 7, that upon
20 completion of the work your office must be notified;
21 isn't that correct?
22 A. Correct.
23 MR. PERLOW: We've premarked some
24 exhibits. I'm going to show you another exhibit now.
25 I think the best way to do this probably is consider

1 this Exhibit 18. I'm going out of order. I'm going
2 to circulate it around the table before we mark this.
3 (PLAINTIFFS' EXHIBIT 18 MARKED FOR ID)
4 Q. Mr. Ellis, I'm going to ask you to look at this
5 photograph again and tell me if you can identify that
6 photograph.
7 A. I can tell you what it says it is. I don't
8 recall this photograph.
9 Q. At the bottom does it say Curran Road,
10 Cumberland, Rhode Island?
11 A. Yes, it does, Orthophotograph 2005, Curran
12 Road.
13 Q. Do you see a couple of buildings in that
14 photograph?
15 A. Yes.
16 Q. There's a building on the left-hand side?
17 A. Yes.
18 Q. Could you mark that with the number one, please?
19 A. There are several, actually.
20 Q. The building closest to the red line on the
21 left-hand side, would you mark that with a one?
22 A. There's this as well. I'm not sure about the
23 building.
24 Q. On the top -- there is a large building towards
25 the bottom of the photograph?

1 A. Yes.
2 Q. Would you please put a one there?
3 (WITNESS COMPLYING)
4 Q. I'm going to ask you for purposes of this
5 deposition to assume that that photograph is a
6 photograph of 290 Curran Road in Cumberland, Rhode
7 Island. I'm also going to ask you to assume for
8 purposes of this deposition that the red line
9 immediately to the left of the building you marked
10 with a one is the location of the intermittent stream
11 we've been talking about here today. Do you recognize
12 any of the ponds on this photograph?
13 A. They look similar to the ones I have on my
14 sketch, but I don't know if they're the same.
15 Q. Is it difficult because this is an aerial view,
16 and it's been so long since you've been to the site?
17 A. Absolutely. It's been 25 years.
18 Q. You haven't been to the site in 25 years?
19 A. 23, anyway.
20 Q. You haven't returned to the site since?
21 A. No.
22 Q. Since October of 1985, I believe?
23 A. Whatever the last date is in the file. I
24 don't, I haven't.
25 Q. Well, the last report we've referenced is

1 October 9, 1985; isn't that correct? That would be
2 Exhibit 13 on Page 1.
3 A. I don't recall if I was out there after that
4 date. Presumably I would have been, but I don't know
5 when that would be.
6 Q. Do you have any reports in your possession
7 regarding inspections after that date?
8 A. Not unless they're in the file.
9 Q. If you could take a quick look at your file,
10 please, and tell us if there are any reports in your
11 file after October 9, 1985.
12 A. I don't see any.
13 Q. Going to Exhibit 14, would you please look at
14 that? Do you recognize that five-page document?
15 A. I recognize what it is, yes.
16 Q. What is it?
17 A. It's an approval for the application
18 submitted by Mr. Joseph Ferreira, application number
19 6517.
20 Q. What's the date of the application?
21 A. The approval date is 10 January 1986.
22 Q. This approval came approximately three months
23 after your last report; isn't that correct?
24 A. Correct.
25 Q. So this document constitutes the approval of the

1 application?
2 A. Correct.
3 Q. That's because it has a notice of permit
4 attached; isn't that correct?
5 A. It does, correct.
6 Q. In this report are certain standard permit
7 conditions and special conditions that Mr. Ferreira
8 was instructed to comply with to bring the property, I
9 don't want to say up to code, but to alleviate the
10 violations; isn't that correct?
11 A. Correct.
12 Q. Was your recommendation for a culvert included in
13 this application approval?
14 A. I don't see it.
15 Q. Was your recommendation for an oil trap included
16 in this approval notice?
17 A. I don't see that either.
18 Q. You recommended the culvert, because you thought
19 it was a necessity to help correct the problem; isn't
20 that correct?
21 A. Correct.
22 Q. You recommended the oil trap, because you thought
23 that was a necessity to help correct the problem;
24 isn't that correct?
25 A. Correct.

1 Q. Do you know why those two elements were not
2 incorporated into the approval?
3 A. I don't.
4 Q. Do you know who approved Mr. Ferreira's
5 application?
6 A. The person signing is Michael Anarumey.
7 Q. Do you know if Mr. Anarumey consulted with anyone
8 else prior to giving this approval?
9 A. I don't.
10 Q. Did he consult with you prior to the approval?
11 A. I don't remember.
12 Q. Are you personally aware as to whether he read
13 your recommendations before giving the approval?
14 A. I would assume he did, but I don't know if he
15 did.
16 Q. Did you talk to him about your recommendations?
17 A. I don't remember that. We didn't have much
18 time to do those things.
19 Q. So you don't know why the culvert was not
20 required to be in the order; is that correct?
21 A. I don't.
22 Q. You don't know why the oil trap was not required
23 to be in the application approval; is that correct?
24 A. Correct.
25 Q. Did you consider all of your recommendations

1 necessary to help protect the watershed?
2 A. At the time, yes.
3 Q. You considered all of your recommendations
4 necessary to help protect the water supply; is that
5 correct?
6 A. Correct.
7 Q. I'm going to ask you for the time being to go
8 ahead to Exhibit 15. This correspondence is addressed
9 to who, please?
10 A. Mr. Joseph Ferreira.
11 Q. This is signed by who?
12 A. Peter Generous.
13 Q. Was he your supervisor at the time?
14 A. He was. He was the chief of the office.
15 Q. What type of document is this?
16 A. It's a deficiency letter. We would call it a
17 deficiency letter.
18 Q. This deficiency letter is regarding formal
19 application number 6517?
20 A. Correct.
21 Q. That would be Mr. Ferreira's property on Curran
22 Road in Cumberland?
23 A. Correct.
24 Q. What is the date of this?
25 A. December, and then it's blank, and it's 1985.

1 Q. So this document could have been sent to
2 Mr. Ferreira at any time in December of 1985; isn't
3 that correct?
4 A. Or even after that, yes.
5 Q. The approval of the application was granted on
6 January 10, 1986; isn't that correct?
7 A. Correct.
8 Q. With respect to these deficiencies as noted on
9 Page 2, is that your writing?
10 A. Under the word deficiencies, yes.
11 Q. Would you please take a moment to review those?
12 A. Yes.
13 Q. In Number 3, would you please read that?
14 A. "Nothing has been shown to
15 eliminate/alleviate oil/gas runoff from the site
16 (e.g. berms, basins, oil separator)."
17 Q. Do you know if this deficiency was corrected
18 before the application was approved?
19 A. I don't.
20 Q. Would there be any indication in your file that
21 this, these five deficiencies were corrected before
22 the approval was sent out?
23 A. I don't believe there is.
24 Q. So how would somebody from your department
25 determine if the deficiencies were corrected before

1 the application was approved?
2 A. By looking at the plan. Presumably another
3 plan would come in that would show these changes.
4 Q. Do you have any indication in your file if
5 another plan came in after this notice was sent out in
6 December of 1985?
7 A. We have plans received on December 6, 1985,
8 but I don't know whether they're any different.
9 Q. Can you tell from looking at those plans if the
10 deficiencies that we just referenced in Exhibit 15
11 were corrected?
12 A. I see just some subtle changes in the
13 submission from the one received on November 25, 1985,
14 and later one received on December 6, 1985. They
15 don't seem to address, at least, comment number three,
16 the deficiency that you just spoke of.
17 Q. As far as you can tell from the plans you have in
18 your possession, that the deficiencies mentioned in
19 the form of berms, basins, and oil separators, that
20 was never corrected; is that safe to say?
21 A. Yes, correct.
22 Q. Then the application for approval went out
23 anyway; is that correct?
24 A. Correct.
25 Q. Going back to Exhibit 14, there was standard

1 permitting conditions in that application and the
2 approval; isn't that correct?
3 THE WITNESS: I'm sorry, I was busy.
4 MR. PERLOW: That's all right. Could you
5 read back the question?
6 (QUESTION READ BACK)
7 A. Correct.
8 Q. These conditions were supposed to be complied
9 with pursuant to the order; isn't that correct?
10 A. Correct.
11 Q. With respect to permit condition number two, was
12 that complied with?
13 A. I don't know.
14 Q. Standard permit two states, "That all material
15 for fill is clean and free of any matter which could
16 pollute adjacent wetland and watercourse"; isn't that
17 what that says?
18 A. Correct.
19 Q. How would a determination be made if the
20 conditions of this order were complied with?
21 A. They would notify us that the work was done,
22 and we would go out and inspect to make sure it was
23 done properly.
24 Q. Would they notify you in writing?
25 A. They're required to be under number three,

1 but we were required to be notified about it.
2 Q. You are required to be notified in writing prior
3 to the commencement of construction as well; isn't
4 that correct?
5 A. Correct.
6 Q. It was a requirement that you should be informed
7 in writing upon completion of the project; isn't that
8 correct?
9 A. Correct.
10 Q. If you had been notified in writing prior to the
11 commencement of construction, would that be reflected
12 in your file?
13 A. Correct. There would be a letter from
14 whoever.
15 Q. You would also be notified in writing upon
16 completion of the project; isn't that correct?
17 A. Correct.
18 Q. That would be reflected in your file; is that
19 correct?
20 A. Correct.
21 Q. You would have, that would be file number 6517;
22 isn't that correct?
23 A. Correct.
24 Q. Do you have any type of written communication
25 from Mr. Ferreira or anyone on his behalf that --

1 strike that, regarding the commencement of
2 construction or the completion of the project?
3 A. I don't believe so.
4 Q. With respect to the special conditions, would you
5 please read number one?
6 A. "Erosion and sedimentation controls must be
7 installed at the site prior to the start of
8 construction and shall be maintained for the duration
9 of the project, including but not limited to" --
10 Q. You don't have to repeat all of those, but there
11 is A through I; isn't that correct?
12 A. Right.
13 Q. These special conditions were a requirement that
14 had to be complied with by Mr. Ferreira; isn't that
15 correct?
16 A. Correct.
17 Q. Were these special conditions complied with?
18 A. I don't recall.
19 Q. Could you please look at Exhibit 16? Could you
20 please identify that?
21 A. It's a release of violation for complaint
22 C1372.
23 Q. What is complaint 1372?
24 A. That was for the notice of violation issued
25 to Joseph Ferreira.

1 Q. What's the date of that release of violation?
2 A. May 10, 1989.
3 Q. So the release of that violation is over three
4 years after the application was approved and sent out
5 to Mr. Ferreira; isn't that correct?
6 A. Correct.
7 Q. Who determined that the release of violation was
8 appropriate on May 10, 1989?
9 A. I don't know.
10 Q. Well, you signed the release of violation; isn't
11 that correct?
12 A. I did.
13 Q. Did anyone instruct you to sign the release of
14 violation?
15 A. I don't remember.
16 Q. Why did you sign the release of violation on
17 May 10, 1989?
18 A. Presumably things were taken care of out
19 there, in terms of the approval that was issued. I
20 don't recall, though.
21 Q. Do you know personally if the standard permit
22 conditions were complied with?
23 A. I don't.
24 Q. Do you know if the special conditions were
25 complied with?

1 A. I don't.
2 Q. Did you conduct a personal inspection of the site
3 prior to giving the release of violation?
4 A. No.
5 Q. Did anyone in your office conduct an inspection
6 prior to giving the release of violation?
7 A. I don't know if permitting would have been
8 involved, the other group that we have in our office.
9 We separated it around 1988, and we became an
10 enforcement group versus the permitting group. The
11 permitting program went one way, and we went another
12 way. I don't know if someone from the permitting
13 group was required to go out there for some reason to
14 look at a potential application. If they did, perhaps
15 they noticed what was going on. I don't know.
16 Q. Well, it was your office that issued the approval
17 on the application on January 10, 1986; isn't that
18 correct?
19 A. We were all one, yes.
20 Q. So whose responsibility would it be to give a
21 release of violation?
22 A. The enforcement group, as we split up.
23 Q. Who was in the enforcement group?
24 A. Myself, Dean Albro, several other biologists.
25 Q. What I'm trying to determine here is that a

1 release of violation was given on May 10, 1989; what
2 was the basis for the release of violation?
3 A. Again, I don't know. I don't know what
4 generated that.
5 Q. Do you know if anybody from your office inspected
6 the property?
7 A. Presumably they did, and it may be in another
8 application file, but I don't know that.
9 Q. That application file would be where?
10 A. In the permitting section of DEM for
11 freshwater wetlands.
12 Q. You do not have anything in your file to document
13 that an inspection was conducted of the property
14 before this release of violation was issued?
15 A. I didn't see anything as I was looking
16 through the other, for other documents.
17 Q. I want you to assume in permitting there is no
18 such investigation in writing with respect to this
19 property.
20 A. Right.
21 Q. Okay? Why would a release of violation be given
22 if no inspection was done on a piece of property?
23 A. It wouldn't. It doesn't make sense.
24 Q. So somebody would have to have inspected this
25 property, this property prior to giving a release of

1 violation; isn't that correct?
2 MR. LANGLOIS: Objection.
3 A. In all likelihood, yes. It only makes sense.
4 Q. You signed the release of violation; isn't that
5 correct?
6 A. That's correct.
7 Q. Would your signing of the release of violation be
8 based upon something that you saw in writing?
9 A. Or was told.
10 Q. Do you recall who told you anything with respect
11 to this application?
12 A. No, I don't.
13 Q. So as we sit here today, you're not sure why you
14 signed the release of violation?
15 A. That's correct.
16 Q. The conditions that were stated in application
17 number 6517, were they conditions meant to be
18 permitting conditions?
19 A. I'm not sure what you mean by permitting.
20 Q. Well, the special conditions in the form of --
21 strike that. In D, under special conditions, it
22 states, "All restored buffer zones, such as the
23 50-foot zone along the wetland areas and the 20-foot
24 zone along the drainage ditch should be established on
25 or before July 1, 1986." Isn't that what it says?

1 A. Yes.
2 Q. After the establishment of those buffer zones
3 before July 1, 1986, were they to stay in place for an
4 indefinite period of time into the future?
5 A. Unless another application came in to change
6 things.
7 Q. Do you know if those buffer zones were put in
8 place by July 1, 1986?
9 A. I don't.
10 Q. Because you don't have anything in your file that
11 reflects an inspection after July 1, 1986; isn't that
12 correct?
13 A. Correct.
14 Q. Going back to the release of violation dated
15 May 10, 1989, would you please read the bottom three
16 lines beginning with the words DEM?
17 A. "DEM being satisfied that all regulatory and
18 statutory violations set forth within said notices of
19 violation have been abated."
20 Q. Again, as we sit here today, you do not know how
21 DEM came to be satisfied that all regulatory and
22 statutory violations were abated; isn't that correct?
23 A. Correct.
24 Q. If that 50-foot buffer zone, as referenced in
25 special condition D, is not in place today, does your

1 office have any procedure in place as to how to
2 correct that situation?
3 THE WITNESS: If it's not in place as
4 required in this permit?
5 MR. PERLOW: Yes.
6 A. And if it's not been approved through another
7 application, then it would be a violation.
8 Q. Is the same true of the 20-foot zone along the
9 drainage ditch?
10 A. Correct.
11 Q. If a building were built within 20 feet of the
12 drainage ditch after July 1, 1986, and that building,
13 again, is within the 20-foot buffer zone, is that
14 considered a violation?
15 A. I'm trying to think of the rules. See,
16 typically we cannot regulate areas beyond the edge of
17 the channel, unless it's for a protective reason. I
18 don't know what rule was in place.
19 Q. Well, there was a 20-foot buffer zone; isn't that
20 correct?
21 A. Correct.
22 Q. As testified to earlier, that 20-foot buffer zone
23 would run from the, what you described, the
24 watercourse of the stream 20 feet into the Ferreira
25 property; isn't that correct?

1 A. Correct.
2 Q. So the purpose of that buffer zone is to protect
3 the stream; isn't that correct?
4 A. Correct.
5 Q. Can a building be placed within that buffer zone,
6 according to your orders and your application here?
7 A. Not according to this, no.
8 Q. So there would have to be something else that
9 would have to take place, in terms of a modification
10 of this order, in order to allow a building to be
11 placed within the buffer zone; isn't that correct?
12 A. That's correct.
13 Q. What action would your office take if it became
14 aware that a building was placed within the 20-foot
15 buffer zone?
16 A. We would go back out and probably issue
17 another notice of violation, or ask the person to put
18 it back into compliance with the original approval.
19 Q. And what would that involve?
20 A. Moving the building back out of the 20-foot
21 zone.
22 Q. Looking at Exhibit 17 -- I believe that's the
23 loose exhibit -- do you recognize that document?
24 A. No.
25 Q. In the top left-hand section of that document it

1 states, "Existing intermittent stream." Is that what
2 that says?
3 A. Yes.
4 Q. DEM number 03-0032 is also written on the top
5 left-hand section of that document, correct?
6 A. Correct.
7 Q. What is 03-0032?
8 A. It's the application, apparently an
9 application to the permitting group. That's their
10 number, numbering system. 03 would mean the year. 32
11 would be the number.
12 Q. So what type of application is that?
13 A. To alter a freshwater wetland.
14 Q. When was this filed?
15 A. Presumably in the year 2003.
16 Q. It states on this document, existing concrete
17 block building, does it not?
18 A. Yes.
19 Q. Could you put a number three there, just so we're
20 sure what we're referencing?
21 (WITNESS COMPLYING)
22 Q. That number three says what?
23 A. It's identifying an existing concrete block
24 building.
25 Q. According to this document, how far is the

1 existing concrete block building from the property
2 line?
3 A. Zero feet off the property line.
4 Q. And the intermittent stream is to the left of
5 that existing concrete block building; isn't that
6 correct?
7 A. Correct.
8 Q. So how far is the building, according to this
9 diagram, from the intermittent stream?
10 A. There is no scale, so I don't really know.
11 Not very far.
12 Q. Well, the building is 10 feet from the property
13 line; isn't that correct?
14 A. No, it's zero feet.
15 Q. I'm sorry, zero feet from the property line;
16 isn't that correct?
17 A. Correct.
18 Q. And the intermittent stream is on the property
19 line; isn't that correct?
20 A. It's further away from the property line.
21 Q. I want you to assume for purposes of this
22 deposition that the intermittent stream to the left of
23 that building is on the Ferreira property.
24 MS. RADICHES: Objection.
25 A. I don't see how it can. It's showing two

1 different lines.
2 Q. Well, there is a line, solid line there; is that
3 correct?
4 A. Correct.
5 Q. What is a solid line?
6 A. I'm assuming that's the property line.
7 Q. According to this diagram, that intermittent
8 stream is not on the Ferreira property; is that your
9 testimony?
10 A. I'm not sure. I'm assuming this dotted line,
11 the dashed line is the intermittent stream, which is
12 to the west of the property line.
13 Q. In fact, this document references that dotted
14 line, as you call it, as being the intermittent
15 stream; isn't that correct?
16 A. Correct.
17 Q. Again, I want you to assume for purposes of this
18 deposition that that intermittent stream that is
19 referenced on Exhibit 17 is the intermittent stream
20 that was redirected by Mr. Ferreira to the western
21 portion of his property, all right?
22 A. Okay.
23 Q. Can you tell from this diagram how far that
24 concrete building is from the border of the property?
25 A. Actually, I can't. There is no scale.

1 Q. Well, it does say that the building is zero feet
2 from the property line; isn't that correct?
3 A. Right.
4 Q. Can you tell from this diagram how far the
5 building is from the intermittent stream?
6 THE WITNESS: The dashed dotted line?
7 MR. PERLOW: Yes.
8 A. It's very close. I don't know its distance.
9 Q. Based upon your review of this diagram, do you
10 feel that the dotted line, the intermittent stream, is
11 20 feet from the concrete block building?
12 MS. RADICHES: Objection.
13 A. I can't tell from this sketch.
14 Q. But you can tell from, what you can tell from
15 this sketch is that the concrete block building is on
16 the property line; isn't that correct?
17 A. That's what it says.
18 Q. That's what it says?
19 A. Right.
20 Q. You can only go by what this diagram says,
21 correct?
22 A. Yes.
23 Q. All right. You were able to sign off releases in
24 1989; is that correct?
25 A. Correct.

1 Q. Are you able to sign off releases today?
2 A. Yes.
3 Q. Is the same procedure in place today as was in
4 place in 1989?
5 A. I would say so, yes.
6 Q. You also stated in your earlier testimony that
7 you worked for the Army Corps of Engineers when you
8 first began working for the state; is that correct?
9 A. Right. I was a liaison between the state and
10 the Army Corps.
11 Q. Did you have any responsibility to report any of
12 your findings to the Army Corps of Engineers?
13 A. I did, the more serious cases. They don't
14 regulate nearly as much as the state does.
15 Q. Was there any protocol in place when you found
16 the initial violations on the Ferreira property with
17 respect to reporting those violations to the Army
18 Corps of Engineers?
19 THE WITNESS: What was the first part of
20 your question?
21 MR. PERLOW: If you can read it back.
22 (QUESTION READ BACK)
23 A. There was protocol in terms of significant
24 violations. We would go up every month and report to
25 them types of violations that we found.

1 Q. Was this violation reported?
2 A. I don't recall.
3 Q. Did you consider this to be a significant
4 violation at the time when you initially found the
5 problems on site?
6 MR. JARRET: Objection.
7 A. Similar to all others that I would find. Not
8 anymore significant or less significant.
9 Q. Are you acquainted with Raymond Azar?
10 A. I met him, but I don't really remember who he
11 is.
12 Q. Do you know his brother?
13 A. No.
14 Q. Did the Army Corps of Engineers ever direct your
15 actions in any way when you were working for the
16 state?
17 A. No.
18 Q. They never told you what inspections to conduct
19 and what inspections not to conduct?
20 A. No. That didn't last very long. It was like
21 six to eight months long, and it ended.
22 Q. After that, you worked strictly for the state?
23 A. Yes. I switched over.
24 Q. In 1989, when the release was given on the
25 Ferreira property, were you aware of any other types

1 of inspections that were being conducted regarding
2 that property by any other government entity?
3 A. No.
4 Q. You weren't aware of a super-site inspection
5 being conducted at that time?
6 A. No.
7 Q. Were you aware of any types of inspections being
8 conducted on that property after 1989?
9 A. No.
10 Q. Did your involvement with the Ferreira property
11 end when you signed that release of violation?
12 A. I believe so.
13 Q. Are you sure?
14 A. No. I mean, I don't, it's been since '89. I
15 don't know.
16 Q. Other than your attorneys, have you talked to
17 anybody in your office about the Ferreira site since
18 1989?
19 A. Since November when I last received the
20 subpoena to show up, I talked to several people.
21 Q. Who did you speak to?
22 A. My immediate supervisor, Dave Chopy,
23 C-H-O-P-Y, probably Steven Terrell and Pat Hogan, who
24 is a PE in our group. He had some previous experience
25 with some of the, I don't know, pollution on site in

1 another capacity. He was, I don't remember what
2 division he was within, waste management or --
3 Q. Going back to Exhibit 1 for just a moment, on the
4 second page, do you recall testifying yesterday that
5 the stream as referenced on that diagram was 560 feet
6 long?
7 A. Yes.
8 Q. If a stream is over 500 feet long, does that
9 require involvement by the federal government when
10 that stream is being redirected?
11 A. No, not necessarily.
12 Q. There is no 500-foot requirement, in terms of
13 contacting the federal government, when a stream is
14 being redirected?
15 A. Not that I'm aware of.
16 Q. Is there any type of requirement within the state
17 when a stream is being redirected and it's over 500
18 feet long?
19 A. Well, they need a permit.
20 Q. A permit for what?
21 A. To redirect the stream.
22 Q. If the stream is over how long?
23 A. It doesn't matter how long it is.
24 Q. The length of the stream doesn't matter?
25 A. No.

1 Q. Are you sure?
2 A. For the freshwater wetland regulations, yes.
3 Q. All right. Are you familiar with a Mr. Yabroudi,
4 Y-A-B-R-O-U-D-I?
5 A. I don't think so.
6 Q. Yabroudi?
7 A. I don't think so.
8 Q. You never met with a representative of
9 Mr. Ferreira by the name of Mr. Yabroudi?
10 A. I don't recall.
11 Q. Have you met with any representatives of
12 Mr. Ferreira with respect to this site?
13 A. Only those two that were in those reports,
14 and, I guess, Dan Alves.
15 Q. Other than those we mentioned?
16 A. No.
17 Q. Carolyn Weymouth, does she still work in your
18 department?
19 A. She's deceased.
20 Q. Did she also work for the federal government in
21 any capacity as far as you're aware?
22 A. No.
23 Q. What was her job capacity in your department?
24 A. Up until 1986 she was that title, enforcement
25 liaison with the freshwater wetlands group, the

1 division of land resources at the time.
2 Q. Do you recall when she retired?
3 A. She switched over into another group, water
4 resources, I believe, after 1986. She died a couple
5 of years ago.
6 Q. You stated that you worked for DEM for
7 approximately 25 or 26 years; is that correct?
8 A. Correct.
9 Q. Do you provide any consulting services on the
10 side?
11 A. No. I'm not allowed to do that.
12 MR. PERLOW: One moment, please. I have
13 no further questions.
14 MS. RADICHES: I have no questions.
15 MR. JARRET: No questions.
16 EXAMINATION BY MS. MULCAHY
17 Q. I have a couple of quick questions. Mr. Ellis,
18 I'm Beth Mulcahy. I represent Exxon Mobil. I have a
19 couple of quick questions for you. Are you aware at
20 all of the location of the Mobil pipeline in relation
21 to Mr. Ferreira's property or the Plaintiffs'
22 property?
23 A. No.
24 Q. Are you aware of any releases for leaks from the
25 Mobil pipeline in the area of Cumberland, Rhode

1 Island?
2 A. No.
3 MS. MULCAHY: No further questions.
4 MR. PERLOW: All set.
5 MR. JARRET: I'll take a mini.
6 MS. MULCAHY: I'd like a transcript,
7 please.
8 MS. RADICHES: I'll take a mini.
9 (DEPOSITION CLOSED AT 11:30 A.M.)
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1 C-E-R-T-I-F-I-C-A-T-E

2 I, ELIZABETH GREELEY, a Notary Public, do hereby
certify that I am expressly approved as a person
3 qualified and authorized to take depositions pursuant
to Rules of Civil Procedure of the Superior Court;
4 especially, but without restriction thereto, under
Rule 30 of said Rules; that the witness was sworn by
5 me; that the transcript contains a true record of the
proceedings.
6
Reading and signing of the transcript was not
7 requested by the deponent or any parties involved upon
completion of the deposition.
8
IN WITNESS WHEREOF, I have hereunto set my hand this
9 30th day of July, 2008.
10 Elizabeth Greeley Notary Public

11 ELIZABETH GREELEY, NOTARY PUBLIC
CERTIFIED COURT REPORTER
12 MY COMMISSION EXPIRES: 04/07/2010
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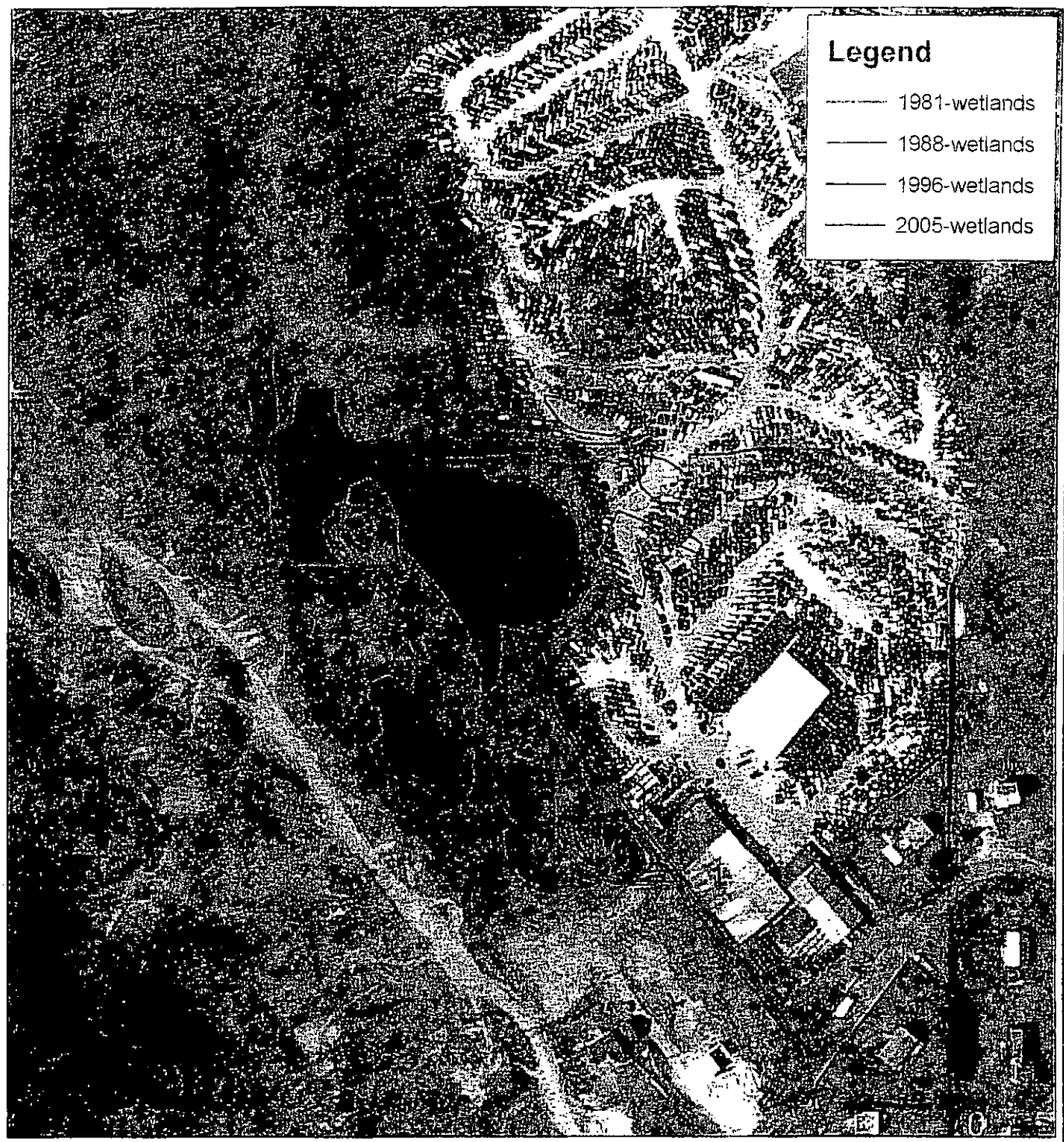

Figure 2E: Orthophotograph 2005
Curran Road
Cumberland, RI

NEW ENGLAND ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTING SERVICES
9 Research Drive • Amherst, MA 01002
(413) 256-0202 • Fax: (413) 256-1092

Data Source: MassGIS
Date of Orthophotograph: 2005
NEE Job # 07-3090

Latitude 41° 23'1"N
Longitude 71° 55'51"W

Feet
180

N

December 7, 2007

PLAINTIFF'S EXHIBIT 18