

COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS  
BOARD OF REGISTRATION OF  
HAZARDOUS WASTE SITE CLEANUP PROFESSIONALS

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In the Matter of: )  
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)

James J. Decoulos,  
Respondent )  
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Docket No.: LSP-10AP-01

**AFFIDAVIT OF IAN M. PHILLIPS, LSP**

I, Ian M. Phillips, under the pains and penalties of perjury, state that I am the Ian M. Phillips whose prepared rebuttal testimony is attached to this affidavit. I further state that, if asked the questions contained in the text of such testimony, I would give the answers that are set forth in the text of such testimony. I adopt the aforesaid answers as my rebuttal testimony in this proceeding.

Signed under the pains and penalties of perjury this 7<sup>th</sup> day of October, 2010.

  
\_\_\_\_\_  
Ian M. Phillips

**COMMONWEALTH OF MASSACHUSETTS  
BOARD OF REGISTRATION OF HAZARDOUS WASTE SITE  
CLEANUP PROFESSIONALS  
before the  
OFFICE OF APPEALS AND DISPUTE RESOLUTION**

**In the Matter of James J. Decoulos                      Docket No. 10 AP 01**

**Prepared Rebuttal Testimony of  
Ian M. Phillips, LSP  
Witness in support of the Initial Determination of the  
Board of Registration of Hazardous Waste Site Cleanup Professionals**

1           **Q1.    Please state your name and business address.**

2           A.       My name is Ian M. Phillips and my business address is Roux Associates,  
3           Inc., 67 South Bedford Street, Burlington, MA 01803.

4

5           **Q.       Have you reviewed the full text of the rebuttal and direct testimony of**  
6           **Mr. Decoulos and his witnesses and the Exhibits submitted in support of that**  
7           **testimony?**

8           A.       Yes.

9

**EAGLE GAS SITE, CARVER, MA**

10          **Q.       Did any of the testimony filed by Mr. Decoulos and his witnesses alter**  
11          **your opinion regarding his work at the Eagle Gas site in Carver, Massachusetts?**

12          A.       No. Mr. Decoulos has offered no testimony to explain why he did not  
13          collect adequate data to support his opinion that the diesel release at the Eagle Gas site  
14          was not a source of the diesel release that was detected at the outfall of the storm drain  
15          pipe. The central facts in this case are as follows:

- A release of diesel LNAPL occurred at the Eagle Gas station in close proximity to the storm drain pipe in the Main Street right of way and continued to appear in well BP-5RR over a two-year period and thus its source had not been controlled; and
- Petroleum emulsion and high concentrations of diesel compounds (EPH) appeared at the outfall in May and June 2003, and petroleum emulsion continued to appear at the outfall multiple times over a two-year period beginning May 16, 2003 and continuing into 2005.

These facts give rise to an inference that the diesel LNAPL release at the Eagle Gas station may have been a primary source of the contamination at the outfall. Mr. Decoulos has not offered evidence sufficient to outweigh that inference and support his assertion that surface runoff from Eagle Gas to the catch basin was the source of the contamination at the outfall. His claim that there was no sheen on the water in the catch basin in front of the Eagle Gas station until April 2005 is contradicted by his own field notes and in any case is inadequate to disprove the inference, because he did not adequately assess whether the groundwater and LNAPL were in contact with the storm drain pipe, as discussed in my Direct Testimony and below. Furthermore, for surface runoff to cause the gross contamination observed on multiple occasions at the outfall to the brook, as Mr. Decoulos opined, the amount of contamination on the surface of the gas station would have to be comparable to the amount of contamination at the outfall. Mr. Decoulos has not presented any evidence that gross volumes of contamination were present on the surface of the station.

**Q. In paragraphs 86, 89, and 91-92 of his rebuttal testimony, Mr. Decoulos asserts his justification for his conclusion that active LNAPL recovery was not warranted and his support for the LNAPL recovery actions he proposed for the Eagle Gas site. Does this testimony alter your opinion?**

1           A.       No. Mr. Decoulos's testimony offers little site-specific information that  
2 supports his assertion that active LNAPL recovery would not be effective. Until  
3 November 2004, Mr. Decoulos proposed only passive recovery, with active recovery  
4 only as a backup. During the one plus years that Mr. Decoulos performed only passive  
5 recovery, LNAPL remained continuously in well BP-5RR in close proximity to the storm  
6 drain pipe, indicating that the potential source of LNAPL entering the pipe had not been  
7 controlled and that passive recovery was insufficient.

8           Mr. Decoulos states in paragraph 91 that soils at the site would impede active  
9 recovery of LNAPL, because "soil conditions between four and ten feet below grade  
10 consisted of silt and clay." The quoted statement is not true, because the soil boring logs  
11 show that silt and clay did not appear until 6-8 feet below ground surface, two feet deeper  
12 than Mr. Decoulos is claiming. See Exhibit B-30 Appendix K. The soils less than six  
13 feet deep were more permeable. The bottom of the storm drain pipe was located less than  
14 six feet below ground surface, and therefore LNAPL could have been migrating below  
15 the storm drain pipe and above the silt-clay layer and, therefore, be more amenable to  
16 active recovery. See December 22, 2004 IRA Plan Modification, Exhibit B-42 at cross  
17 section, and Exhibit RR-40 Attachment A at page 58 dated December 10, 2004.

18  
19           **Q.     In paragraphs 87 and 99 of his rebuttal testimony, Mr. Decoulos**  
20 **states that he made visual observations of the storm drain pipe on four dates and**  
21 **did not see any sheen or evidence of diesel fuel impacting the stormwater collection**  
22 **system," and states, "In order for the diesel LNAPL release to discharge at the**  
23 **outfall, it had to either travel through this junction [the drain manhole in front of**

1 **the Eagle Gas site] or be present in the pervious bedding outside the pipe. The**  
2 **latter possibility was immediately ruled out with the first subsurface investigation in**  
3 **June 2003.” Does this testimony influence your opinion?**

4 A. No. Mr. Decoulos’s statement in paragraph 99 that the first time there was  
5 a sheen at the drain manhole in front of the gas station was April 20, 2005 is not true.  
6 Page 17 of Mr. Decoulos’s field notes states that on September 4, 2003, a sheen appeared  
7 in both the manhole in front of the gas station and the manhole downgradient from the  
8 station. See Exhibit RR-40 Attachment A at pp. 16-17 dated September 4, 2003. In  
9 addition, Mr. Decoulos should not have ruled out the possibility that LNAPL had  
10 migrated into the bedding of the pipe, because soil in the boring that was taken when  
11 DCW-1 was drilled in June 2003 was showed evidence of contamination, as indicated by  
12 the field screening of vapor headspace of 270 ppm at a depth of six feet. See Exhibit B-  
13 30 Appendix K, boring logs for DCF/DCW-1. Thus although LNAPL did not appear in  
14 that well in June 2003, there were indications of petroleum concentrations in that location  
15 that Mr. Decoulos did not pursue (soil samples were not submitted for laboratory analysis  
16 from this boring).

17  
18 **Q. Richard E. Doherty, on pages 3-6 of his testimony states that several**  
19 **lines of evidence support Mr. Decoulos’s conclusion that the petroleum**  
20 **contamination at the outfall to South Meadow Brook originated from surface**  
21 **sources such as stormwater runoff from the Eagle Gas property. Does his testimony**  
22 **influence your opinion?**

1           A.     No. After reading Mr. Doherty's testimony, my opinion that Mr.  
2     Decoulos did not adequately assess the Eagle Gas site has not changed. The salient facts  
3     were that there was a release of diesel fuel at the Eagle Gas site detected in January of  
4     2003, and there was a release of diesel-range petroleum at the outfall of the storm drain  
5     pipe detected in May 2003. In the face of these facts, the data collected by Mr. Decoulos  
6     did not support his assertion that the LNAPL was not a source of the contamination at the  
7     outfall.

8           In addition, three of the lines of evidence discussed by Mr. Doherty are invalid.

9           Paragraph 4 on pages 5-6 restates opinions of Mr. Decoulos that the release to the  
10    brook "appears historic" and that vegetation there "appeared stressed for at least ten  
11    years." While Mr. Doherty restates what Mr. Decoulos stated, he renders no opinion  
12    about their validity. Mr. Decoulos's observations of the vegetation are not science-based  
13    or supported. Visual observation is not a substitute for collecting adequate samples from  
14    the outfall and the Eagle Gas property to support his assertion that there was no  
15    connection between the release at the Eagle Gas station and the release at the outfall.

16          Paragraph 5 on page 6 of Mr. Doherty's testimony discusses storage and  
17    operating practices at Eagle Gas as supporting the conclusion that surface sources were  
18    the likely causes of the outfall impacts. He states that such practices were documented by  
19    site photographs taken in 1997. This conclusion is inadequate to support Mr. Decoulos's  
20    opinions because looking at photographs from 1997 is not a substitute for collecting  
21    samples from the site in 2003-2005 to support his assertions that surface runoff from the  
22    Eagle Gas station was a primary source of the contamination at the outfall.

1 In Paragraph 6 on page 6, Mr. Doherty compares elevated concentrations of EPH  
2 fractions at the outfall with significantly lower EPH concentrations in samples from the  
3 manhole closest to the diesel release area, and states, “The lack of equal or higher EPH  
4 concentrations in ...upstream locations is another indication that the outfall impacts did  
5 not originate from the diesel remote fill line release.” This is not a valid conclusion from  
6 the data discussed as Mr. Doherty is comparing June 2003 EPH data from the outfall with  
7 data collected almost two years later (April 2005) from water in the storm drain manhole.  
8 Until December 2004, Mr. Decoulos did not determine whether the groundwater and  
9 LNAPL could be in contact with that pipe during seasonal high groundwater, which  
10 might cause a sheen if LNAPL infiltrated the pipe. Correspondingly, if groundwater was  
11 low and LNAPL was therefore out of contact with the pipe when he made his visual  
12 observations, there would be no sheen at that time. This reinforces the need to collect  
13 samples and measurements at the site over time. The absence of directly comparable data  
14 from 2003 and 2005 reaffirms that Mr. Decoulos did not meet his responsibility to  
15 adequately assess the migration pathways and how the high concentrations of diesel  
16 contaminants were getting to the outfall.

17 By comparing the concentrations at the outfall to only one upgradient sample, Mr.  
18 Decoulos and Mr. Doherty ignore the release itself, which was the only location where  
19 concentrations were higher than the outfall.

20  
21 **Q. On page 7 of his testimony, Mr. Doherty states, “In my opinion the**  
22 **appearance of separate-phase petroleum at DCW-1 long after its installation**  
23 **indicates that diesel oil from the remote fill line release was migrating slowly...If**

1 **diesel oil from the remote fill line had been the actual source of the impacts at the**  
2 **outfall, one would expect that separate-phase petroleum would have been detected**  
3 **at DCW-1 upon its installation in June 2003, which was several weeks after the**  
4 **detection at the outfall.” Does this testimony influence your opinion?**

5 A. No. Diesel oil LNAPL from the release at Eagle Gas could have  
6 been the source of the impacts at the outfall without appearing at DCW-1 in the first  
7 sampling in June 2003 as the diesel oil could have come into contact with the storm drain  
8 pipe at another location. Mr. Decoulos had not determined how the diesel release was  
9 migrating. In addition, as noted previously, although LNAPL did not appear in DCW-1  
10 in June 2003, the soils in the DCW-1 boring indicated evidence of contamination (field  
11 screening of vapor headspace of 51 ppm and 270 ppm at depths of three and six feet,  
12 respectively). Soil samples from that boring were not submitted for laboratory analysis.  
13 At the more downgradient wells DCW-2 and DCW-3, from which soil samples were  
14 submitted, the highest soil headspace was 15 ppm. See Exhibit B-30 Appendix K, boring  
15 logs for DCF/DCW-1, DCG/DCW-2, and DCH/DCW-3.

16  
17 **Q. On page 8 of his testimony, Mr. Doherty discusses Mr. Decoulos’s**  
18 **justification for differing with MassDEP’s requirement of active LNAPL recovery.**  
19 **Does his testimony influence your opinion?**

20 A. No. The discussion of the evolving state of knowledge about the mobility  
21 and recoverability of separate-phase petroleum is not germane because at this site active  
22 recovery is documented to have successfully recovered LNAPL. Mr. Decoulos began  
23 active recovery of LNAPL in December 2004, when he conducted a pilot pump test of



1 the interceptor trench constructed in the Main Street right of way. Pumping tests  
2 continued in early February 2005, and LNAPL recovery continued on several dates in  
3 February, March, and April, 2005. IRA Status Report, May 5, 2005, Exhibit B-49, p. 18.  
4 After Eagle Gas ended its engagement of Mr. Decoulos and retained Daniel Felten of  
5 ECS as its LSP, ECS conducted several rounds of active recovery and recovered over  
6 13,000 gallons of diesel fuel and groundwater. November 2006 Phase II report, Exhibit  
7 B-53, pp. 10-11.

8

9 **Q. On pages 9-10 of his testimony, Mr. Doherty discusses Mr. Decoulos's**  
10 **justification for differing with MassDEP's requirement that Mr. Decoulos delineate**  
11 **the extent of contamination. Does this testimony influence your opinion?**

12 A. No. Although I credit Mr. Doherty's statement that "expending valuable  
13 time and resources on locating the fringes of a separate-phase petroleum plume is less  
14 important from a recovery perspective than [locating an oil recovery system as close as  
15 practical to the release point]," I also believe that more information is needed when  
16 designing an active LNAPL recovery system than a passive one. MassDEP was requiring  
17 an active LNAPL recovery system, and as I have testified, I believe the site-specific data  
18 supported that requirement. An active LNAPL recovery system changes the migration  
19 patterns and flow patterns, therefore an LSP needs to know where the plume is in order to  
20 direct it to a location from which it may be recovered without aggravating its migration  
21 toward preferred pathways or sensitive receptors.

22

1           **Q.     On pages 10-11 of his testimony, Mr. Doherty states that he does not**  
2 **agree that Mr. Decoulos failed to evaluate potential Imminent Hazards, Conditions**  
3 **of Substantial Release Migration, and Critical Exposure Pathways in a timely**  
4 **manner. Does his testimony influence your opinion?**

5           A.     No. The potential threat to the environment posed by LNAPL in  
6 close proximity to the storm drain pipe required an Imminent Hazard Evaluation and an  
7 IHE report within 60 days. 310 CMR 40.0426(2) and (3). Mr. Decoulos did not submit  
8 an Imminent Hazard Evaluation until January 13, 2005, despite the fact that MassDEP  
9 requested it on multiple occasions beginning with the April 5, 2004 Request for IRA Plan  
10 Modification, Exhibit B-28. His report did not meet the standards for the quantitative  
11 analysis of exposures required by the MCP at 310 CMR 40.0953 and 40.0954. For  
12 example, Mr. Decoulos did not correctly evaluate the conditions of critical exposure  
13 pathways (CEP) present at the Eagle Gas site, because EPH compounds had been  
14 detected in the private drinking water supply well at the Holmes residence and Mr.  
15 Decoulos stated only that the concentrations were below MassDEP's Method 1 risk  
16 characterization standards. The detection of the EPH in a drinking water well is a CEP  
17 regardless of the concentrations detected. In my opinion, Mr. Decoulos did not act with  
18 reasonable care and diligence or apply the knowledge and skill ordinarily exercised by  
19 LSPs in good standing in conducting the Imminent Hazard Evaluation.

20  
21           **Q.     Does this conclude your testimony?**

22           A.     Yes.