

STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
625 BROADWAY
ALBANY, NEW YORK 12233-1010

In the Matter

- of -

the Petition for
Reclassification of
Site ID No. 0633009 on
the New York State Registry
of Inactive Hazardous
Waste Disposal Sites

- by -

**UNIVERSAL WASTE, INC. and
CLEARVIEW ACRES LTD.,**

Petitioners.

DEC OHMS No. 2003J165

DECISION OF THE COMMISSIONER

October 15, 2011

DECISION OF THE COMMISSIONER

Pursuant to former section 375-1.9¹ of title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR), Universal Waste, Inc. and Clearview Acres, Ltd. (collectively, Universal Waste) petitioned the New York State Department of Environmental Conservation (Department) to reclassify an inactive hazardous waste site located at Leland and Wurz Avenues in Utica, New York (site), on the New York State registry of inactive hazardous waste sites from class "2" to class "3" (see Environmental Conservation Law [ECL] § 27-1305[2][b][2] and [3]; 6 NYCRR former 375-1.8[a][2][ii] and [iii]). The hazardous wastes primarily at issue in this proceeding are polychlorinated biphenyls (PCBs).²

Department staff denied the petition and Universal Waste requested an adjudicatory hearing on the denial pursuant to former section 375-1.9(d). The matter was assigned to Administrative Law Judge (ALJ) Maria E. Villa.

Following an adjudicatory hearing, ALJ Villa prepared the attached recommended decision and hearing report (Recommended Decision), in which she held that:

¹ Effective December 14, 2006, the 6 NYCRR part 375 (Part 375) regulations governing the Department's hazardous waste remedial program were substantially amended. The specific regulations applicable to significant threat and registry determinations, as well as the procedures for site reclassification and delisting, are now set forth in 6 NYCRR 375-2.7.

As part of the regulatory revisions undertaken in 2006, the soil clean-up objectives (SCOs) for polychlorinated biphenyls (PCBs), among other hazardous substances, were revised based upon a September 2006 technical support document and included in the regulations (see 6 NYCRR subpart 375-6; see also NY State Brownfield Cleanup Program, Development of Soil Cleanup Objectives, Technical Support Document [Sept. 2006], available at www.dec.gov/chemical/34189.html [accessed May 11, 2011]).

² A "hazardous waste" is defined as "a waste which appears on the list or satisfies the characteristics promulgated by the commissioner pursuant to section 27-0903 of this article and any substance which appears on the list promulgated pursuant to section 37-0103" of the ECL (see ECL 27-1301[1]).

PCBs are a listed hazardous waste pursuant to 6 NYCRR 371.4(e). PCBs also appear on the list of hazardous substances in Table 1 of 6 NYCRR 597.2 (see also 40 CFR part 761).

- the site does not constitute a significant threat to the environment as defined by the applicable regulations; and

- the site should be reclassified as class "3" to reflect that, while PCBs are present at the site, the site does not pose a significant threat to the environment currently or in the foreseeable future.

The ALJ's Recommended Decision thoroughly analyzes the issues raised in this proceeding. However, based upon my review of the record, I disagree with some of the ALJ's findings of fact and her conclusion that Universal Waste carried its burden of establishing that the site does not constitute a significant threat to the environment. Accordingly, for the reasons that follow, Universal Waste's petition to reclassify the site from class "2" to class "3" is denied.

I. PROCEDURAL BACKGROUND

The site that is the subject of this proceeding is located at Leland and Wurz Avenues, Utica, Oneida County, New York. It is located on the southern bank of the Mohawk River, and east and north of Leland Avenue.³ The site consists of approximately 21 acres, and lies within the flood plain of the River.

A wetland area, referred to as the "backwater," is located to the east of the site. The wetland area is also a part of the Mohawk River. The Mohawk River in the vicinity of the site is designated as a class C water body (see 6 NYCRR 876.4, item 15).

The site was previously part of a larger property that was listed in the registry as a class "2" site⁴ until approximately 1999, when it was subdivided, at Universal Waste's

³ The site location map attached to the Recommended Decision incorrectly locates the site west of Leland Avenue. The actual location of the site is to the east of Leland Avenue (see, e.g., Site Location Map, Preliminary Site Assessment [PSA], Exh 3-5, Figure 1-1).

⁴ A class "2" site is a site at which hazardous waste constitutes a "[s]ignificant threat to the public health or environment -- action required" (ECL 27-1305[2][b][2]; see also 6 NYCRR former 375-1.8[a][2][ii]; 6 NYCRR current 375-2.7[b][3][ii]).

request, into two sites: the Utica Alloys site and the Universal Waste site, the latter of which is the subject of this proceeding. The Utica Alloys parcel remained a class "2" site, while the Universal Waste parcel was reclassified by staff of the Department's Division of Environmental Remediation, Bureau of Hazardous Site Control, to class "2a" pending the completion of a Preliminary Site Assessment (PSA) by Universal Waste pursuant to a May 2000 order on consent with the Department.⁵

Following Universal Waste's submission of a draft PSA in January 2001, Department staff reclassified the Universal Waste site from class "2a" to class "2" in the Registry in July 2002 (see ECL 27-1305). The basis for staff's change in classification was "evidence of PCB hazardous waste at the site and the offsite migration of PCBs from the site" (Letter from John B. Swartout, Section Chief, to Michael B. Gerrard, Esq. [4-26-02], Exh 3-6; see also Letter from Dennis F. Farrar, Chief, Site Control Section, to Universal Waste, Inc. [7-24-02], Exh 3-1; Universal Waste, Inc. Site Record [Site Code 633009], Environmental Site Remediation Database, available at www.dec.ny.gov/cfm/EXTAPPS/DEREXTERNAL/INDEX.CFM [accessed 5/17/11]).

In January 2003 (later corrected in June 2003), Universal Waste petitioned to: (i) delete the site from the Registry, or (ii) reclassify the site from class "2" to class "3" in the Registry (see former 6 NYCRR 375-1.9).⁶ Based upon information contained in its submission, Universal Waste asserted that it had made a prima facie showing that PCB contamination at the site did not present a "significant threat to the environment" as described in 6 NYCRR former 375-1.4 (now 6 NYCRR 375-2.7[a]), and that delisting or reclassification was therefore warranted.

⁵ Class "2a" is a "temporary classification which indicates that further investigation is required to determine whether conditions at the Site constitute a significant threat to the public health or the environment" (see Matter of Universal Waste, Inc., Order on Consent [5/9/00], Exhibit [Exh] 3-4, at 1, para. 3).

⁶ A class "3" site is a site at which hazardous waste "[d]oes not presently constitute a significant threat to the environment -- action may be deferred" (ECL 27-1305[2][b][3]; see also 6 NYCRR former 375-1.8[a][2][iii]; 6 NYCRR current 375-2.7[b][3][iii]).

In July 2003, the Department's Director of the Division of Environmental Remediation summarily denied the delisting petition (see 6 NYCRR former 375-1.9[d][1][i]).⁷ In a September 2003 letter clarifying the summary denial, the Director stated that:

"The Department has determined that, even if it were concluded that the site does not pose a significant threat based upon the Section 375-1.4(a)(1) criteria, the provisions of Section 375-1.4(a)(2) require the Department to find the contamination of soils, sediments and groundwater by PCBs related to the site, when evaluated in accordance with the factors set forth in Section 375-1.4(b), presents a significant threat to the environment"

(see Letter from Dale A. Desnoyers, Director, to Michael B. Gerrard, Esq. [9-5-03], Exh 4).

Universal Waste sought judicial review of staff's summary denial pursuant to article 78 of the Civil Practice Law and Rules. In May 2004, Supreme Court, Oneida County (Julian, J.), vacated the Department's summary denial of the delisting petition as being contrary to the Department's regulations, and ordered an administrative hearing be held pursuant to 6 NYCRR part 624 and 6 NYCRR former 375-1.9. In its decision, the court noted:

"there is plainly sharp disagreement amongst the parties concerning disputed scientific facts and conclusions (like whether and where PCBs are migrating) as well as legal facts (like whether the environmental threat posed by PCBs on the Petitioners' site is 'significant').

. . . .

"DEC asserts that this site is contributing to the presence of PCBs in the [Mohawk] river, resulting in limitations on

⁷ Pursuant to Department Organization and Delegation Memorandum No. 95-24, dated September 12, 1995, the Commissioner delegated authority to render decisions on registry petitions to the Director of the Division of Environmental Remediation. This authority is now delegated to the Assistant Director pursuant to 6 NYCRR current 375-2.7(f)(5)(ii)(b).

fishing and implied health risks. A DEC memo reveals the suspicion of pollution from this site as early as 1977. The site has been the subject of litigation since at least 1986, with apparently huge gaps between periods of activity concerning the site. DEC claims that a 1996 PISCES study found incriminatory PCBs at twice the level in the river otherwise, just east of this site, causing DEC to conclude that this site is the source of the pollution. Yet another six or so years went by before the site was listed by DEC as a proposed class 2 hazardous waste site. This site is either polluting the Mohawk River or it is not"

(Matter of Universal Waste, Inc. v New York State Dept. of Env'tl. Conservation, Supreme Court, Oneida County, Index No. CA-2003-002781, at 8 and 10).

The court-ordered adjudicatory hearing in this matter took place on October 26 and 27, 2004, and February 2, 2005. The parties agreed that the sole issue for determination was whether the site presents a significant threat to the environment, such that listing on the Registry as a class "2" site is warranted (see Matter of Universal Waste Hazardous Waste Site, ALJ Issues Ruling and Scheduling Order, Oct. 7, 2004).⁸ At the commencement of the hearing, Universal Waste noted that due to the presence of PCBs at the site, the site would appropriately be listed as a class "3" site (see Transcript [10-26-04], at 8, 10). However, Universal Waste disputed whether the site posed a "significant threat to the environment" sufficient to support a class "2" listing.

Following the conclusion of the adjudicatory hearing, the parties submitted post-hearing briefs and reply briefs, and requested that ALJ Villa's hearing report be released as a recommended decision pursuant to 6 NYCRR 624.13(a)(2)(ii). That request was granted by the Commissioner.

On April 5, 2006, ALJ Villa circulated her Recommended Decision in this matter, in which she recommended that the Commissioner determine that the site does not constitute a significant threat to the environment and, as such, should be re-classified from class "2" to class "3" on the Department's registry. After ALJ Villa's Recommended Decision was issued,

⁸ The only parties to this proceeding were Universal Waste and Department staff.

the parties submitted written comments and replies to the Commissioner in accordance with 6 NYCRR 624.13(a)(3).⁹

II. STATUTORY AND REGULATORY FRAMEWORK

A. Significant Threat Determinations

In order to support a class "2" listing on the registry, contamination at the site must present a significant threat to public health or the environment, such that action is required (see ECL 27-1305[2][b][2]). If the hazardous waste at a site "[d]oes not present a significant threat to the public health or environment," the site will be listed as a class "3" site (see ECL 27-1305[2][b][3]).

The significant threat determination is a preliminary step in the evaluation of an inactive hazardous waste disposal site. A preliminary investigation, which in 2001 was referred to as a preliminary site assessment, gathers information sufficient to determine if a site should be listed on the registry and if it poses a significant threat to the environment (see Fact Sheet: Preliminary Site Assessment [PSA], Exh 53A). Following the Department's determination to list a site on the registry as a significant threat, a thorough investigation is conducted during the remedial investigation and feasibility study (RI/FS) stage of the remedial process (see Fact Sheet: Remedial Investigation/Feasibility Study, Exh 53B).

Although the statute does not define the term "significant threat," 6 NYCRR former 375-1.4(a)(1) provided that hazardous waste disposed of at a site may constitute a significant threat "if, after reviewing the available evidence and considering the factors the commissioner deems relevant set forth in subdivision 375-1.4(b) of this part, the commissioner determines that the hazardous waste disposed at the site or coming from the site results in, or is reasonably foreseeable to result in," any of six enumerated conditions, including:

(i) a significant adverse impact upon endangered species, threatened species, or species of concern; or

⁹ The written submissions consist of Department staff's comments dated June 29, 2006; Universal Waste's one-page letter dated June 30, 2006; Universal Waste's response to staff's comments dated September 6, 2006; and Department staff's one-page response letter dated September 4, 2006.

(ii) a significant adverse impact upon protected streams, tidal wetlands, freshwater wetlands or significant fish and wildlife habitat areas; or

(iii) a bioaccumulation of contaminants in flora or fauna to a level that causes, or that materially contributes to, significant adverse ecotoxicological effects in flora or fauna or leads, or materially contributes, to the need to recommend that human consumption be limited; or

(iv) contaminant levels that cause significant adverse acute or chronic effects to fish, shellfish, crustacea, and wildlife; or

(v) a significant adverse impact to the environment due to a fire, spill, explosion, or similar incident or a reaction that generates toxic gases, vapors, fumes, mists, or dusts; or

(vi) where the site is near private residences, recreational facilities, public buildings or property, school facilities, places of work or worship, or other areas where individuals or water supplies may be present, the New York State Department of Health or the Agency for Toxic Substances and Disease Registry has determined that the presence of hazardous waste on a site poses a significantly increased risk to the public health

(see 6 NYCRR former 375-1.4[a][1][i]-[vi],¹⁰ now 6 NYCRR 375-2.7[a][1][i]-[vi]).

In addition, 6 NYCRR former 375-1.4(a)(2) provided that the Commissioner may find that hazardous waste disposed at a site constitutes a significant threat to the environment "if, after reviewing the available evidence and considering the factors the commissioner deems relevant set forth in subdivision 375-1.4(b) of this part, the commissioner determines that the hazardous waste disposed at the site or coming from the site results in, or is reasonably foreseeable to result in,

¹⁰ It was undisputed that subsections (v) and (vi) are not under consideration in this proceeding.

significant environmental damage.”¹¹ The mere presence of hazardous waste at a site or in the environment is not a sufficient basis for a “significant threat” finding (see 6 NYCRR former 375-1.4[c], now 6 NYCRR 375-2.7[a][4]).

Pursuant to 6 NYCRR former 375-1.4(b), in making a finding as to whether a “significant threat” to the environment exists under either subdivision (1) or (2) of former 375-1.4(a), the Commissioner may take into account any or all of thirteen enumerated factors “as may be appropriate under the circumstances of the particular situation.” Those factors include:

- (1) the duration, areal extent, or magnitude of severity of the environmental damage that may result from a release of hazardous waste;
- (2) type, mobility, toxicity, quantity, bioaccumulation, and persistence of hazardous waste present at the site;
- (3) manner of disposal of the hazardous waste;
- (4) nature of soils and bedrock at and near the site;
- (5) groundwater hydrology at and near the site;
- (6) location, nature and size of surface waters at and near the site;
- (7) levels of contaminants in groundwater, surface water, air and soils at and near the site and areas known to be directly affected or contaminated by waste from the site, including but not limited to contravention of ambient surface water and groundwater standards, and drinking water standards;
- (8) proximity of the site to private residences, recreational facilities, public buildings or property, school facilities, places of work or worship, and other areas where individuals may be present;

¹¹ “Environmental damage” means “any impairment of use by flora or fauna of, or any injury to, the environment; and any adverse health impact” (see 6 NYCRR former 375-1.3[h], now 6 NYCRR 375-2.2[e]).

(9) the extent to which hazardous waste and/or hazardous waste constituents have migrated or are reasonably anticipated to migrate from the site;

(10) the proximity of the site to areas of critical environmental concern, such as wetlands or aquifers;

(11) the potential for wildlife or aquatic life exposure that could cause an increase in morbidity or mortality of same;

(12) the integrity of the mechanism, if any, that may be containing the hazardous waste to assess the probability of a release of the hazardous waste into the environment; and

(13) the climatic and weather conditions at and in the vicinity of the site

(see 6 NYCRR former 375-1.4[b][1]-[13], now 6 NYCRR 375-2.7[a][3][ii]-[xiv]).

With respect to the relationship between the specific examples of significant threats enumerated under former section 375-1.4(a)(1) and the "catch all" significant environmental damage provision of former section 375-1.4(a)(2), Department staff argues that the ALJ erred in accepting Universal Waste's construction of the two subsections. I agree. Under Universal Waste's view, if an alleged environmental impact is specifically addressed in one of the section 375-1.4(a)(1) categories, and the impact does not satisfy the criteria provided by the categories, the impact may not be used as a basis for finding significant environmental harm under the section 375-1.4(a)(2) catch-all provision. However, Universal Waste misconstrues the structure and intent of section 375-1.4(a). The specific instances of significant threat enumerated in subsections (i) through (iv) of section 375-1.4(a)(1) were intended to provide a non-exhaustive, non-exclusive list of impacts likely to constitute a significant threat. As explained in the response to comments on the 1992 amendments to Part 375, the section 375-1.4(a)(2) catch-all provision was intended to cover all other impacts that "do not neatly fit within any of the preceding categories" (6 NYCRR Part 375 Inactive Hazardous Waste Disposal Site Remedial Program, Hearing Report; Responsiveness Summary; and Revision to Draft Regulatory Impact Statement, March 1992,

at II-9 [excerpt attached to DEC Staff Reply Brief, Exh A] [Responsiveness Summary]).

Contrary to Universal Waste's contention, simply because an alleged impact from a site does not fall squarely within one of the enumerated categories, it does not necessarily follow that, after considering the factors enunciated under section 375-1.4(b), the impact cannot nonetheless constitute "significant environmental damage" under section 375-1.4(a)(2). For example, simply because a site containing hazardous waste does not impact a protected stream under section 375-1.4(a)(1)(ii) does not mean that impacts to streams not defined as protected cannot constitute significant environmental damage and, thus, a significant threat. Similarly, simply because a site is not having an impact on endangered species under section 375-1.4(a)(1)(i), or contaminant levels are not causing acute or chronic effects to wildlife under section 375-1.4(a)(1)(iv), it does not necessarily follow that adverse impacts to wildlife cannot constitute significant environmental damage and, thus, constitute a significant threat. To the extent the ALJ accepted this construction of the regulations, the construction is rejected.

B. Violation of Environmental Quality Standards and Guidance Values

In her recommended decision, the ALJ concluded that the contravention of environmental quality standards, such as the State's groundwater standards, "without more, is insufficient to establish the existence of a significant threat to the environment" (Recommended Decision [Rec Dec], at 23). This conclusion, taken outside the context of the significant threat analysis of which it is a part, is misleading and requires further elaboration.

A significant threat determination involves a three step process. The first step is to identify and define the characteristics of the contamination at the site. This involves analyzing the nature, such as toxicity, mobility, persistence, tendency to bioaccumulate, and biodegradability, of the contaminants involved. Also preliminarily identified are the media, such as soils, groundwater, surface water, sediments, soil vapors, and so on, currently impacted, and the current areas and volumes of contaminated media. Projections of the

areas and volumes of media that are reasonably foreseeable to be contaminated in the future are also estimated, with a special focus on areas of special environmental concern such as wetlands, aquifers, and so on.

Once the nature and extent of contamination at a site are identified, defined, and projected to the extent possible, the current or reasonably foreseeable impacts of the contamination are identified. Impacts to be identified include the specific impacts enumerated in section 375-1.4(a)(1) (now section 375-2.7[a][1]), as well as all other instances of environmental damage not covered by section 375-1.4(a)(1) (see former section 375-1.4[a][2], now section 375-2.7[a][2]). When evaluating the current or reasonably foreseeable impacts of the contamination, the qualitative and quantitative factors enumerated under section 375-1.4(b) (now section 375-2.7[a][3]) are considered.

After the nature, extent, and impacts of contamination have been defined to the extent possible, the significance of the adverse impacts, or reasonably foreseeable impacts, to public health or the environment is evaluated. Factors that tend to increase the potential for a significant threat determination include higher contaminant toxicity, to either biota or public health; higher contaminant mobility, persistence, or tendency to bioaccumulate; and higher contaminant concentrations or significant exceedances of environmental quality standards, such as soil clean-up objective standards, State water quality standards, and other officially-promulgated standards, criteria and guidances. Other factors that tend to increase the potential for a significant threat determination include impacts on high value resources, such as sole-source aquifers, wetlands, and significant habitat, and impacts on sensitive receptors, such as biota or public health.

Applying this analysis, once the concentration of a contaminant at a site has reached or exceeded a risk-based environmental quality standard,¹² the contaminant is no longer "merely present" at the site, but has reached the level of environmental damage (see Responsiveness Summary, at II-9 to II-

¹² As noted in the 1992 Responsiveness Summary for Part 375, not all environmental quality standards are based upon public health concerns (see Responsiveness Summary, at II-11 n 15). The environmental quality standards for PCB contamination at issue in this case, however, are health based standards.

12). Whether that environmental damage is significant depends upon consideration of the former section 375-1.4(b) factors. Thus, where a contaminant is highly toxic, persistent, and bioaccumulative, such as is the case with PCBs, the "more" referred to by the ALJ is satisfied, and a finding of "significant" environmental damage and, thus, a finding of "significant threat," is supported under former section 375-1.4(a)(2). In other words, depending on the nature of the contaminant, a significant threat determination may be based without more upon exceedances of environmental quality standards adopted to protect human health and the environment.

With respect to groundwater standards in particular, contrary to the ALJ's suggestion (see Rec Dec, at 23), nothing in Matter of George A. Robinson & Co., Inc. v Marsh (227 AD2d 953 [4th Dept 1996]) supports the conclusion that the violation of a groundwater standard, without more, is insufficient to establish the existence of a significant threat. In Matter of Robinson, although high concentrations of trichloroethylene (TCE) were identified in on-site surface soils, TCE was not identified in subsurface soils or in groundwater, which was present about 25 feet below the surface of the site (see Decision and Order of the Commissioner, March 2, 1994, at 7-8). The Appellate Division held that the Commissioner's determination that the threat to groundwater posed a significant threat to the environment was not supported by substantial evidence (see 227 AD2d, at 953). That holding, however, does not support the proposition that the exceedance of groundwater standards, without more, cannot support a significant threat determination. To the extent the ALJ so holds, that holding is rejected.

Similarly, nothing in Matter of New York State Superfund Coalition, Inc. v New York State Dept. of Env'tl. Conservation (75 NY2d 88 [1989]) supports the conclusion that the exceedance of environmental standards without more cannot constitute a significant threat. In that case, the Court struck a prior version of 6 NYCRR 375.5(c) on the ground that it allowed the Commissioner to make a significant threat finding based only upon the "mere presence" of hazardous wastes (see id. at 93). However, the Court struck the former regulation based upon language that allowed a significant threat determination based upon wastes that "potentially . . . [posed] a hazard to human health or the environment" or wastes that "potentially" caused listed environmental harms (id.). The Court's holding

was not based on the regulatory language allowing a significant threat determination based upon actual violations of any State environmental quality standard (see id. at 92). Thus, Matter of New York State Superfund Coalition did not equate violations of environmental quality standards with the "mere presence" of hazardous wastes and does not support the conclusion that violations of environmental standards without more cannot constitute a significant threat.

To the contrary, violations of groundwater standards have been held to constitute a significant threat to the environment, depending on the contaminant involved (see, e.g., Matter of Syracuse Die-Casting & Mfg. Co., Inc., Decision and Order of the Commissioner, March 10, 1988, at 2 [PCBs far in excess of groundwater, surface water, and food chain standards constituted significant threat]¹³; Matter of Estate of Lasdon, [Interim] Order of the Executive Deputy Commissioner, March 1, 1994 [benzene at 17,000 times the groundwater standard constituted a significant threat]). Contamination in excess of groundwater standards has been found to constitute a significant threat to the environment, even when the groundwater at issue is not being presently used (see Matter of Syracuse Die-Casting). In New York, the best use of groundwater is for drinking water or irrigation (see Matter of Estate of Lasdon). Thus, contamination of groundwater at levels that exceed health-based standards pose a threat to present or potential future users of that groundwater and, thus, may constitute a significant threat (see Responsiveness Summary, at II-12).

C. Procedural Considerations; Burdens of Proof; Review of Recommended Decisions

Department staff argues that the ALJ misapplied the applicable burdens of proof in this case. For its part, Universal Waste argues that staff failed to "prove" significant effects from the contamination at the site, and failed to articulate or provide notice concerning the basis for its significant threat determination. Universal Waste also argues

¹³ The ALJ held that because Matter of Syracuse Die-Casting was decided under an earlier version of the Part 375 regulations, the case is not controlling here (see Recommended Decision, at 45). This was error. As the Commissioner noted in Matter of Syracuse Die-Casting, that case was decided under the statute, not the regulations. Thus, its holding is authoritative.

that the Commissioner must give deference to the ALJ's findings in this case. To address these assertions, a review of the statutorily imposed procedures and burdens is warranted.

Under ECL 27-1305, the Department is charged with developing and maintaining the registry of inactive hazardous waste disposal sites within the State and certain information concerning those sites (see ECL 27-1305[1]). A site is placed on the registry and classified based upon information derived from the Department's investigation of a site and any new information received (see ECL 27-1305[2]). No hearing is required prior to listing or classifying a site. Thus, the Department's determination to list and classify a site need only be rational, based upon the information available to the Department. The Department is under no further burden, unless the Department affirmatively institutes an enforcement proceeding.¹⁴

A site owner initiating a challenge to a site classification determination, in contrast, carries a statutorily-imposed evidentiary burden. Under ECL 27-1305(c), a site owner seeking the deletion of a site from the registry, or modification of the site classification, must petition the Department. The petition triggers an adjudicatory hearing on notice to the petitioner and limited to a record as defined in the State Administrative Procedure Act (see ECL 27-1305[c][2], [3]; 6 NYCRR former 375-1.9[d][2]; see also State Administrative Procedure Act [SAPA] § 302 [description of the record in an adjudicatory proceeding]). By statute, the petitioner carries the ultimate burden of proof at the hearing (see ECL 27-1305[c][2]).

Thus, during a site owner initiated deletion or classification modification hearing, it is the petitioner that carries the burden of proving, by a preponderance of the record evidence, that the site should be deleted from the registry, or its classification modified (see 6 NYCRR 624.9[c]). In the context here, to modify the site's classification from class 2 to class 3, Universal Waste has the burden of proving by a preponderance of the record evidence that its site does not

¹⁴ If the Department initiates an enforcement proceeding, Department staff would bear the burden of proving at any adjudicatory hearing that the site constitutes a significant threat (see 6 NYCRR 622.11[b][1]; see also State Administrative Procedure Act [SAPA] § 306[1] [burden of proof is on the party initiating the adjudicatory proceeding]).

present a significant threat to the public health or the environment (see ECL 27-1305[2][b][3]). Although Department staff might carry a burden of production at the hearing to produce evidence in rebuttal to petitioner's case, staff does not carry the ultimate burden of proving that the site constitutes a significant threat to the environment, as argued by Universal Waste. Instead, ECL 27-1305(2)(c)(2) places the burden of proving the site does not pose a significant threat to the environment squarely upon Universal Waste.

With respect to administrative review of the ALJ's recommended decision, the Commissioner's review is de novo, with application of the preponderance of evidence standard for resolving factual issues (see Matter of Karta Corp., Decision of Executive Deputy Commissioner, April 20, 2006, at 6; Matter of Athens Generating Co., LP, Interim Decision of the Commissioner, June 2, 2000, at 12; see also Matter of Sil-Tone Collision, Inc., 63 NY2d 406, 411 [1984]; Matter of Simpson v Wolansky, 38 NY2d 391, 394 [1975]). The deferential standard of review applied by reviewing courts to a final agency determination, as urged by Universal Waste (see Matter of Berenhaus v Ward, 70 NY2d 436, 443-444 [1987]), is not applicable to a Commissioner's administrative review of an ALJ's proposed findings.

III. Department Staff's Significant Threat Determination; Adequacy of Notice to Universal Waste

Contrary to Universal Waste's assertion, Department staff did not fail to provide Universal Waste with sufficient notice of the basis for its classification determination. For hazardous waste sites listed on the State registry, the Department is required to maintain and make available for public inspection a description of the site consisting of the type and quality of hazardous wastes disposed of at a site; levels of contamination, if any, in groundwater, surface water, air and soils at and near the site resulting from hazardous wastes; a site environmental assessment; and a site health assessment, among other things (see ECL 27-1305[1]). In addition, under 6 NYCRR former 375-1.8(d) (now 6 NYCRR 375-2.7[b][6][i]), when the Department makes a site classification decision, it provides notice to the site owner. Finally, when the Department determines to summarily deny a reclassification petition, it is required to provide a statement of reasons for the denial (see 6 NYCRR former 375-1.9[d][1], now 6 NYCRR 375-2.6[f][5][ii][a]).

Generally, to satisfy due process concerns, notice in the context of an administrative adjudicatory proceeding is that notice "reasonably specific, in light of all the relevant circumstances," to apprise the party whose rights are being determined of the Department's conclusions and to allow for the preparation of an adequate case (see Matter of Block v Ambach, 73 NY2d 323, 333 [1989]; Matter of Bio-Tech Mills, Inc. v Williams, 105 AD2d 301, 305 [3d Dept], affd for the reasons stated in opn by Main, J. 65 NY2d 855 [1985]). Here, a review of the record, as amply summarized by the ALJ (see Rec Dec at 11-16), reveals that the Department's pre-hearing communications with Universal Waste and its representatives concerning the class 2 determination were more than sufficient to place Universal Waste on notice of the Department's conclusions and allow Universal Waste to prepare its case. In its communications at the time of the class 2 determination, staff noted that PCBs, a known toxic, bioaccumulative, and persistent hazardous substance, were present at the site in soils, sediments, surface water and groundwater in levels that exceeded applicable groundwater and surface water standards (see, e.g., Exh 3-1). In addition, those communications noted that the PCBs were potentially migrating off-site into the adjacent wetland area and the Mohawk River (see, e.g., id.).

In addition, when Department staff sought to summarily deny Universal Waste's delisting petition, its letter to Universal Waste stated that "even if it were concluded that the site does not pose a significant threat based upon the Section 375-1.4(a)(1) criteria, the provisions of Section 375-1.4(a)(2) require the Department to find that the contamination of soils, sediments and groundwater by PCBs related to the site, when evaluated in accordance with the factors set forth in Section 375-1.4(b), presents a significant threat to the environment" (Letter from Dale A. Desnoyers, Director, to Michael B. Gerrard, Esq. [9-5-03], Exh 4). Department staff also noted that in making the determination, it considered all of the information generated to date with respect to the site, including the information provided in the delisting petition (see id.).

Finally, review of the record fails to reveal any surprise to Universal Waste or any prejudice suffered in the presentation of its case. Thus, taken as a whole, Department staff's pre-hearing communications provided Universal Waste with

sufficient notice of the legal and factual bases for its class 2 determination to allow Universal Waste to prepare its case.

IV. Classification Modification Hearing Record; Weight of Evidence Review

Contrary to the ALJ's conclusions, I conclude that Universal Waste failed to carry its burden of proving that the site does not present a significant threat to the environment. Universal Waste's case consisted primarily of a critique of the available evidence concerning the site, much of which came from its own consultants, with very little additional evidence presented for the record. Universal Waste's presentation was insufficient to overcome the weight of the record evidence, which, in consideration of the factors provided at 6 NYCRR former 375-1.4(b), supports that conclusion that the site poses a significant threat to the environment. Accordingly, for the reasons that follow, the class 2 determination is upheld and Universal Waste's petition to modify the classification is denied.

A. Site Location and Characteristics

Considering the location and nature of surface waters and wetlands at and near the site (see 6 NYCRR former 375-1.4[b][6], [10]), as noted above, the site is located on the southern shore and in the flood plain of the Mohawk River, a freshwater river that is designated a class C water body in the vicinity of the site (see Finding of Fact [FF] 1, Rec Dec, at 97). The site is prone to flooding, during which times it is hydraulically connected to the River (see 6 NYCRR former 375-1.4[b][13]). In addition, a wetland area is located immediately to the east of the site. The wetland is part of, and hydraulically connected to, the River as well (see FF 11, Rec Dec, at 98; 6 NYCRR 876.2[f], Map Ref. No. 32).

The site is located in an industrial area in the northeast portion of the City of Utica. The main portion of the City, including Union Station and several schools, are south of the site and separated from the site by a railroad yard (see 6 NYCRR former 375-1.4[b][8]; Exh 3-5, at 1 & Figure 1-1). The site is only partially fenced, with access by the public available from a walk way along the shore of the Mohawk River.

The material underlying the site is fill material consisting of fine to medium gravel, silt, sand, brick fragments, glass fragments and oil sheens (see 6 NYCRR former 375-1.4[b][4]; see, e.g., Exh 3-5, at 8; Exh 3-7, at 2). Groundwater is located at a depth of between three and five feet across the site (see 6 NYCRR former 375-1.4[b][5]; see also Exh 3-5, at 8). Groundwater flows generally northeast across the site and towards the River and wetland (see Exh 3-5, at 8).

An active storm sewer and abandoned sanitary sewer run beneath the site (see FF 11, Rec Dec at 98-99). The storm sewer drains into a channel that leads into the wetland area.

B. Nature of Contamination of Concern

The specific contamination of concern at the site are PCBs, particularly Aroclor 1254 and, to some extent, Aroclor 1260 (see 6 NYCRR former 375-1.4[b][2]).¹⁵ The parties did not dispute that, as noted above, PCBs are highly toxic. PCBs have been shown to cause cancer in animals and are a probable human carcinogen. They have also been shown to cause a number of non-cancer health effects in animals, including effects on the immune system, reproductive system, nervous system, and endocrine system. Studies indicate that these other health effects may also affect humans.

The heavier PCBs such as Aroclor 1254 and 1260 are very persistent, very slow to degrade, and can remain in the environment for a very long time. In addition, PCBs tend to bioaccumulate, that is, accumulate in the fatty tissues of animals. PCBs tend to biomagnify through the food chain, resulting in higher concentrations of these toxic chemicals in consumers at the top of the food chain, including fish, humans, and other mammals.

¹⁵ PCBs, or polychlorinated biphenyls, are a group of chemicals consisting of 209 individual compounds known as "congeners" (see, e.g., Rec Dec, at 14 n 7). Each congener compound may have between one and 10 chlorine atoms located at various positions on the PCB molecule. "Aroclors" are industrial mixtures of PCB congeners, each with a different average chlorine content. In the 1200 series of Aroclors, the final two digits in the Aroclor's name indicate the percentage of chlorine in the mixture by weight. Thus, Aroclor 1254 is composed of a mixture of congeners that together contain an average of 54 percent chlorine by weight.

Although PCBs, a class of dense non-aqueous phase liquids (DNAPL), display relatively low mobility in soils when compared to other DNAPLs -- a characteristic Universal Waste focused on almost to the exclusion of the other characteristics of PCBs -- they can nevertheless migrate through soils through a variety of mechanisms, albeit slowly. Moreover, as testified to by the Department's witnesses and corroborated by studies cited by Universal Waste's own witness, even relatively immobile PCBs can be a continuing and long-term source of groundwater contamination (see, e.g., Cohen & Mercer, DNAPL Site Evaluation, EPA/600/R-93/022, Feb. 1993, at 5-7 to 5-12, 5-32, 5-36 to 5-40).

Due to the significant human health risks associated with PCB exposure, including the risks posed to humans by the consumption of PCB-contaminated fish, the health-based standards applicable to PCBs are among the strictest in the State. Since amendments to ECL 27-1301(1) promulgated in 2003, PCBs in any concentration are classified as hazardous wastes (see ECL 27-1301[1]; 6 NYCRR 597.2). Included as "hazardous waste" is any "substance" that appears on the list of hazardous substances promulgated pursuant to ECL 37-0103 (see ECL 27-1301[1]). The PCB Aroclors, including Aroclor 1254, appear on the hazardous substance list promulgated pursuant to ECL 37-0103, and found in Table 1 under 6 NYCRR 597.2.

With respect to water quality standards applicable to class C fresh surface waters, such as the Mohawk River in the vicinity of the site, the standard for PCBs is 1×10^{-6} micrograms per liter (ug/L) or 1×10^{-6} parts per billion (ppb) (see 6 NYCRR 703.5[f], Table 1). This standard, which applies to the sum of all PCBs, is a health-based standard based on human consumption of fish (see 6 NYCRR 703.5[b]).

Fresh groundwater in New York State is designated as Class GA groundwater, the best usage of which is as a source of potable water supply (see 6 NYCRR 701.15; 6 NYCRR 701.18). The applicable water quality standard of 0.09 ug/L (or ppb) is also a health based standard designed to protect groundwater as a fresh water supply source.

Prior to the 2006 amendments to the State's brownfield cleanup program regulations, soil cleanup goals were contained in Department guidance, namely "Division Technical and Administrative Guidance Memorandum [TAGM] 4046" (revised

1/24/94). Pursuant to TAGM 4046, the recommended clean up level for PCBs in surface soils was 1 part per million (ppm) (see TAGM 4046, Appdx A, Table 3).

To protect groundwater, the recommended clean up level for PCBs in subsurface soils was 10 ppm. The TAGM warns, however, that the subsurface clean up value must be used with caution (see TAGM, at 4). The value contains a correction factor of 100, which assumes that the contaminated soil is in the unsaturated zone above the water table. The TAGM expressly states that "[i]f the contaminated soil is very close (<3'-5') to the groundwater table or in the groundwater, extreme caution should be exercise when using the correction fact of 100 (one hundred) as this may not give conservative cleanup objections" (id.). If the correction factor is not used (assuming the contaminated soil is in contact with groundwater), the soil cleanup objective for PCBs would be 0.1 ppm under the TAGM (see id., Appdx A, Table 3; see also TAGM, at 2).

In 2006, soil cleanup objectives (SCOs) applicable to remedial programs for inactive hazardous waste disposal sites undertaken after December 14, 2006, were adopted into regulation (see 6 NYCRR current 375-1.1). The unrestricted use¹⁶ SCO for PCBs is now 0.1 ppm (see 6 NYCRR 375-6.8[a]). The restricted use SCO for the protection of groundwater is now 3.2 ppm (see 6 NYCRR 375-6.8[b]). The revised groundwater protection SCO is based, in part, on the Department's successful experience in remediating contaminated sites and, again, assumes a separation between contaminated soils and groundwater (see Technical Support Document, at 258-264).

C. On-Site Impacts

The ALJ found, as do I, a long history of the indiscriminate and uncontained discharge of massive quantities of PCBs onto the ground at the site (see 6 NYCRR former 375-

¹⁶ "Unrestricted use" is a use without imposed restrictions, such as environmental easements or other land use controls (see 6 NYCRR 375-1.8[g][1][i]). "Restricted use" is a use with imposed restrictions, such as environmental easements, which as part of a remedy selected for a site require a site management plan that relies on institutional controls or engineering controls to manage exposure to contamination remaining at a site (see 6 NYCRR 375-1.8[g][1][ii]).

1.4[b][3], [12]; FF 8-9, Rec Dec, at 98; id. at 32-34).¹⁷ As noted by the ALJ, at least 25.7 tons of PCB-containing materials were received from Special Metals alone and disposed of at the site between 1957 and 1978 (see id. at 32-33). Universal Waste offered no evidence to suggest that the PCBs disposed at the site were ever removed or otherwise remediated. Accordingly, it is fair to conclude that the massive quantities of PCBs discharged at the site either remain at the site or have migrated off-site onto adjoining parcels, the wetland and the Mohawk River.

Surface and shallow subsurface soil sampling conducted at the site confirms the presence of PCBs at levels significantly above the applicable soil cleanup levels. Soil sampling conducted in the 1970s revealed PCB levels as high as 51,200 ppm and, in the 1980s, as high as 36,000 ppm (see FF 9-10, id. at 98; id. at 34-35). Sampling conducted prior to Universal Waste's trommelling operation also showed soil samples exceeding the 1 ppm surface soil cleanup level (see FF 14, id. at 99; id. at 37-39).

Even after Universal Waste conducted its trommelling operation, which had the effect of mixing contaminated soils with uncontaminated soils and spreading the resulting mixture across a greater area around the site, soil sampling conducted in 2000 continued to show PCBs in soils at significant levels. Of the twenty-four surface (0-6" depth) soil samples taken in

¹⁷ In evaluating the history of the site, the ALJ discounted the 1981 testimony of James Williams, a former employee of Universal Waste, who reported to the Department concerning Universal Waste's activities in dumping hazardous wastes at the site. The ALJ discounted the testimony on the ground that Mr. Williams was later convicted in the early 1990s and 2000s for possession of stolen property and burglary, respectively.

I disagree with the ALJ's conclusions regarding the weight of Mr. Williams's 1981 testimony. The convictions significantly post-date the testimony and, thus, have little bearing on Mr. Williams's credibility, veracity, or honesty at the time of the testimony (see People v Sandoval, 34 NY2d 371, 376-377 [1974]). Moreover, the 1981 testimony is largely corroborated by other evidence. Thus, I conclude that Mr. Williams's testimony should be given the weight accorded a whistleblower reporting on significant environmental violations by an employer.

I further note that Universal Waste offered no testimony of company employees challenging the factual assertions contained in Mr. Williams's testimony or otherwise denying that massive quantities of PCBs were indiscriminately disposed at the site.

2000, all but one showed total PCB levels above the 1 ppm surface soil cleanup standard (see FF 19, id. at 100¹⁸; id. at 40-41; see also Stearns & Wheler, LLC, Preliminary Site Assessment [dated 2000] [PSA], Exh 3-5, Tables 1 and 2). Eight samples showed total PCB levels at more than 10 times over the surface soil cleanup level, and another three samples were more than 100 times the surface soil cleanup level.

Shallow subsurface (12-18" depth) soil samples also revealed significant exceedances of the 10 ppm subsurface soil standard. Of the six shallow subsurface samples taken, five were above the 10 ppm standard, and one of those samples was 180 ppm total PCBs.

When the current SCO for groundwater protection is taken into account, of the thirty surface and shallow subsurface soil samples taken in 2000, twenty-two show an exceedance of the 3.2 ppm CSO for PCBs.

The only deep subsurface soil investigation conducted at the site focused on the east-central portion of the site. That investigation, conducted in 2002, revealed significant levels of PCBs in a plume at depths at and below the water

¹⁸ The ALJ's finding of fact no. 19 contains an inaccurate description of the sampling reported in the PSA. Based upon the PSA, finding of fact no. 19 is modified as follows:

"The S&W Report indicated that elevated levels of PCBs on the Site have been found in the east-central portion of the Site, near the outfall channel, and in the southern portion of the Site near the railroad tracks. In the east-central area, concentrations ranged from 26 to 120 parts per million. The surface sample concentrations ranged from 42 to 120 ppm, and at a depth of 12 to 18 inches in the subsurface, PCB concentrations ranged from 26 to 60 ppm. In the southern portion of the Site, shallow subsurface sampling revealed 180 ppm PCBs. Other locations showing significantly elevated PCB levels include soil sample location ID (SS)-9 (70 ppm), SS-22 (48.7 ppm total PCBs), SS-25 (16 ppm total PCBs), and SS-26 (77 ppm total PCBs). [Over the remainder of the Site, PCB concentrations were generally below 50 ppm, and in most cases, below 10 ppm.] The results of groundwater sampling were non-detect for PCBs, with one exception at 0.34 parts per billion"

(new findings emphasized; omitted material in brackets).

In addition, the ALJ's discussion of the PSA report suggests that the results of all thirty samples taken were off by a factor of 1,000 (see Rec Dec, at 43). In fact, only one result was off by a factor of 1,000 -- the result for Aroclor-1260 at SS-7 (see PSA, Exh 3-5, Table 2). The remaining results were correctly reported.

table. Boring MW-3 showed 19.6 ppm total PCBs at the depth of between four and six feet (see FF 21, Rec Dec, at 100; id. at 42-43; see also, S&W Supplemental PCB Sampling, Exh 3-7, Fig 2). With groundwater at five feet in the same location, PCBs at almost twice the TAGM 4046 subsurface level of 10 ppm are in contact with groundwater. Moreover, because the PCBs are in contact with the groundwater, under the TAGM, the correction factor should not be used, resulting in PCB levels well over the 0.1 ppm level established for groundwater protection.

In addition, when the proximity of PCB contamination to the ground water is taken into account, all four borings conducted during the 2002 investigation showed levels above 0.1 ppm. When the current SCO for groundwater protection is taken into account, all four borings also show significant exceedances of the 3.2 ppm standard.

The record contains no other evidence of subsurface investigations at depths below 18 inches. This includes other areas of the site exhibiting surface and shallow subsurface PCB levels comparable to or exceeding the levels found in the east-central portion of the site. Thus, Universal Waste has not established that these other areas do not show degrees of subsurface PCB contamination similar to or worse than that found in the east-central area.

Although the more recent evidence is conflicting, record evidence also reveals significant impacts to groundwater at the site. Groundwater sampling reported in the 1983 Clayton Report from wells located down gradient from the site showed PCB levels between 17 and 100 ppb. Groundwater sampling conducted in 2000 in the east-central portion of the site revealed 0.34 ppb PCBs (see FF 19, Rec Dec, at 100). All of these results are well above the health-based 0.09 ppb groundwater standard for PCBs. The presence of PCBs in groundwater at these concentrations is indicative of the presence of large amounts of PCBs on-site migrating through the subsurface into groundwater (see Farrar Rebuttal Pre-Filed Testimony [12-10-04], at 9).

In making findings concerning groundwater impacts, the ALJ ignored the evidence of groundwater contamination from the 1983 Clayton Report. The ALJ did so based upon a misapplication of issue preclusion principles. Citing Matter of Universal

Waste, Inc.¹⁹ (Rulings of Administrative Law Judge, Jan. 16, 1987), the ALJ concluded that because it had previously been determined in a Departmental proceeding that the data and conclusions presented in the Clayton Report were insufficient to establish as a matter of law that the site presented a significant threat to the environment, under the doctrine of issue preclusion, "the Clayton Report, standing alone, cannot provide the basis for Department Staff's listing decision in this proceeding" (Rec Dec, at 27). This was in error on several grounds.

First, the ALJ's 1987 ruling, and the Commissioner's 1989 affirmance on other grounds (see Matter of Universal Waste, Inc., Second Interim Decision of the Commissioner, Aug. 16, 1989), did not finally determine the proceeding. The ruling arose in the context of an administrative enforcement proceeding, in which Department staff moved for a summary order, that is, for summary judgment. The holding that staff failed to establish its entitlement to judgment as a matter of law, and that a hearing was required to determine whether the site constituted a significant threat, left the entire adjudication pending. Accordingly, the issue was not finally determined on the merits (see Ryan v New York Telephone Co., 62 NY2d 494, 499-500 [1984]).

¹⁹ In her recommended decision, the ALJ used the case name Matter of Utica Alloys (see Rec Dec, at 27). This had the effect of confusing two different decisions. The ALJ ruling cited involved three parties -- Universal Waste, Inc., Utica Alloys, Inc., and Clearview Acres, Ltd. -- and denied a motion for summary judgment on the issue whether TCE and PCBs on site constituted a significant threat to the environment. That ruling was not affirmed by a Commissioner decision and order issued on January 16, 1987, as stated by the ALJ. Rather, the ALJ ruling concerning the three parties was affirmed in a Second Interim Decision issued by the Commissioner on August 16, 1989 (see Matter of Universal Waste, Inc., Second Interim Decision of the Commissioner, Aug. 16, 1989).

The January 16, 1987, Commissioner decision and order was issued in a matter involving only Utica Alloys, Inc., and the allegation that it was in violation of the waste generator regulations at 6 NYCRR part 373 (see Matter of Utica Alloys, Inc., Decision and Order of the Commissioner, Jan. 16, 1987, and attached Report by ALJ). The confusion apparently stems from reliance on Westlaw, which mistakenly combined the Commissioner's decision and order, and ALJ report in the Utica Alloys matter with the ALJ ruling in the Universal Waste et al. matter (see 1987 WL 55369). To avoid confusion, this decision refers to the matter involving Universal Waste, Utica Alloys, and Clearview Acres as Matter of Universal Waste, Inc.

Second, the 1987 ruling does not preclude consideration of the data and conclusions contained in the Clayton Report in this proceeding. The denial of a summary judgment motion is generally preclusive "of nothing except that summary judgment was not warranted" (Puro v Puro, 79 AD2d 925, 925 [1st Dept 1981]). The conclusion that the Report alone did not warrant summary judgment does not preclude considering the evidence in the report, along with the other record evidence presented in this case, when weighing the evidence and determining the facts in this proceeding. Thus, the ALJ incorrectly failed to consider the data in the Clayton Report in her recommended decision.²⁰

For its part, Universal Waste challenges the weight of the groundwater test results. In essence, Universal Waste argues that all tests that showed a positive result for PCB contamination were conducted incorrectly. I do not find this credible. The record reveals that all groundwater tests showing positive results for PCBs were conducted following standard procedures, including pumping out the wells before taking samples. Universal Waste concedes that this is the proper procedure, but asserts that the procedure was incorrectly conducted. This later assertion, however, is uncorroborated.

Moreover, to the extent Universal Waste relies on the results published in the 2000 PSA that showed no PCBs in some wells, it is not clear that those wells were down gradient of any areas of significant PCB contamination (compare PSA, Exh 3-5, Figure 2, with PSA, Exh 3-5, Appdx C, Organic Analysis, Pesticide Organic Analysis Data Summary Worksheet and id. Appdx D, NYSDEC Test Pit Groundwater Results). To the extent Universal Waste relies on the results of the 2002 supplemental investigation, the report does not indicate how the sampling was

²⁰ Accordingly, finding of fact no. 10 is modified as follows:

"In 1983, Universal Waste hired Clayton Environmental Consultants to investigate potential contamination on the Site. Clayton Environmental submitted a field investigation report dated 1984 to Department Staff. That report was never approved by the Department. The Site was listed as a Class 2 in 1986 based in part upon information contained in the Clayton Report, which noted that PCBs were detected in surface and subsurface soils and groundwater at the Site. With respect to groundwater, samples from three wells located down gradient from the site revealed PCBs levels of 17 parts per billion ("ppb"), 22.6 ppb, and 100 ppb, respectively"

(new findings emphasized).

conducted beyond stating that three wells were completed, developed and sampled. Universal Waste's own consultant indicated that it is important to consider whether proper sampling protocols are followed to assess the weight of the sample results. This cannot be done with respect to the 2002 report. Thus, the evidence supporting groundwater impacts outweighs the evidence against.

Universal Waste argues, and the ALJ apparently accepted, that these on-site impacts are not significant. I disagree with Universal Waste's conclusory statements. To the contrary, fairly weighing the relevant factors under former subdivision 375-1.4(b) of 6 NYCRR, I conclude that the impacts to on-site soil and groundwater rise to the level of significant environmental damage under former section 375-1.4(a)(2) and, thus, support the Department's class 2 determination for the site. As noted above, the site was used for the indiscriminate and uncontained disposal of literally tons of PCBs, a highly toxic, bioaccumulative, persistent hazardous waste. Much of the PCB-contaminated waste has not been accounted for. The limited studies that have been conducted reveal wide-spread contamination of surface and shallow subsurface soils at levels often well above the State clean up standards established for the protection of the health of workers and other members of the public that come into contact with the site. In addition, substantial record evidence reveals contamination of deeper subsurface soils and ground water, again at levels well above the State's standards for the protection of ground water, an important natural resource of the State. The standards involved are ones established for the protection of human health, the violations of which are particularly significant. And due to the persistence of PCB contamination, the significant impacts to site soils and groundwater can be expected to continue, thereby posing a significant threat well into the future.

Universal Waste's challenge to the evidence on this record fails to establish that these impacts are not occurring or that they are insignificant. In addition, Universal Waste has failed to account for all of the PCBs disposed at the site, or otherwise establish that those PCBs are not having a significant impact on site soils and groundwater.²¹ In sum,

²¹ Universal Waste argues that the Department is attempting to require it to conduct a full remedial investigation before it makes a significant threat determination. Universal Waste confuses the issue. Department staff has made its significant threat determination and the record in this case is

Universal Waste has failed to carry its burden of proof on this record that the site does not pose a significant threat to the environment.

D. Off-Site Impacts

Although the on-site impacts of PCB contamination at the site are sufficient in and of themselves to support the Department's Class 2 determination, the actual and potential impacts to off-site resources from the on-site contamination further support the Department's determination.

It is undisputed that the stretch of the Mohawk River adjacent to the site is polluted with PCBs at levels warranting the imposition of a fish consumption advisory (see FF 25, Rec Dec, at 101). It is also undisputed that Aroclor 1254, the predominant Aroclor on site, is also found in surface waters and sediments of the Mohawk River in the vicinity of the site.

Although the parties dispute the levels, the wetland area adjacent to the site, which is part of the Mohawk River, is also polluted with PCBs. The ALJ found PCB levels, including Aroclor 1254, of between 1.1 ppm and 6 ppm in the sewer outfall channel in the wetland (see FF 22, Rec Dec, at 100-101). The ALJ also found the presence of PCBs in the wetland in the area identified as Station 70 (see FF 28, id. at 102).

With respect to effects on invertebrates in the wetland area, I disagree with the ALJ's weighing of the evidence (see Rec Dec, at 84). Department staff's witness provided competent and credible evidence concerning the effects of the pollution in the wetland area, including the fact that the sparse invertebrate community in the wetland area is limited mostly to organic-pollutant tolerant species. Universal Waste's attempt to discredit staff's testimony is unconvincing. Universal Waste, the party with the burden of proof in this case, offered no evidence tending to establish a healthy

sufficient to support that determination. To the extent further evidence is required to establish that all the PCBs disposed of at the site do not pose a significant threat, it was Universal Waste's burden to produce that evidence in this proceeding challenging the class 2 determination, not the Department's. This is not a case of the Department requiring Universal Waste to conduct a remedial investigation prior to making a significant threat determination.

ecosystem in the wetland area. Thus, the only record evidence on the issue supports a finding that the pollution in the wetland area, including PCB pollution, has caused significant adverse acute or chronic effects to wildlife in the wetland area.²²

The issue is whether the site is contributing, or is reasonably anticipated to contribute, to the pollution in the wetland area and the main stem of the Mohawk River in the vicinity of the site. Contrary to the ALJ's conclusions, the weight of the record evidence supports the conclusion that it is.

Department staff provided ample evidence of multiple migration pathways through which the on-site PCB contamination was, is, and potentially continues to migrate off-site and into the Mohawk River and associated wetland (see 6 NYCRR former 375-1.4[b][9]). Those pathways include surface water run off, particularly during flooding events, and migration through subsurface soils and groundwater. Staff experts further identified forcing mechanisms for PCB migration, including flooding and rain events. Finally, it is undisputed that the predominant Aroclor identified at the site -- Aroclor 1254 -- is found in the Mohawk River and associated wetland, further supporting the conclusion that the site is and will continue to contribute to the PCB contamination in those areas.

Universal Waste hypothesized that PCB contamination is not migrating into subsurface soils. Universal Waste's consultant argued that in order for PCBs to migrate, they would have to leave behind very high levels of residual saturation. Universal Waste's hypothesis, however, does not comport with what little evidence exists on this issue. The deeper subsurface investigation conducted in 2002 in the east-central portion of the site reveals several PCBs plumes at depths approaching and in the groundwater (see Supplemental PCB Investigation, Exh 3-7, Figs 1 and 2). The results show higher concentrations at lower depths than shallower depths, and residual concentrations well below the high levels estimated by Universal Waste's consultant. Thus, the physical evidence supports the conclusion that PCB contamination has migrated and

²² Accordingly, finding of fact no. 28 is modified to add the following sentence: "Observations at the time the sampler was deployed revealed that the sparse invertebrate community in the backwater area was limited mostly to organic-pollution tolerant red-midge larvae (blood worms), *Chironomus sp.*"

potentially will continue to migrate into subsurface soil and groundwater. Moreover, even relatively immobile PCB contamination can continue to be a long-term source of groundwater contamination.

In addition, the greatest penetration of PCB contamination into the subsurface soils identified by the 2002 study is found in the vicinity of the sewer line (see id., MW-3 Results). This supports staff's expert's assertion that the bedding of the sewer line is a potential preferential pathway. The 2002 investigation also revealed higher concentrations of PCB contamination at depths of between two to four feet in the berm than in shallower soils (see id., MW-1 Results). This evidence significantly undermines Universal Waste's assertion that the berm is effectively preventing PCBs from leaving the site.

Further, as noted above, PCBs have been identified in the groundwater, which is flowing towards the Mohawk River and associated wetland. Moreover, Universal Waste's assertion that the site is "net-depositional" during flooding events does not preclude the exchange of PCB contaminated soils into the River during such events. Thus, Universal Waste's conclusory assertion that the PCB contamination is essentially contained and not migrating off-site is not supported by the weight of the evidence.²³

Citing chromatograms analyzing soil and sediment samples on-site, in the wetland area, and the Mohawk River, Universal Waste asserts that PCB congener "fingerprinting" forecloses the site as a source of PCBs in the wetland area. Careful consideration of the chromatograms reveals, however,

²³ Accordingly, based upon the weight of the credible record evidence, finding of fact no. 24 is modified as follows:

"Groundwater is encountered across the Site at a depth of three to five feet. It is likely [unlikely] that significant amounts of PCBs [dissolved in groundwater] are migrating from the Site through groundwater. It is also likely [unlikely] that PCBs are migrating through the subsurface soil or leaving the Site through surface runoff or NAPL transport. Contaminated soil encountered as a result of a leaking underground diesel storage tank is not associated with off-Site PCB contamination. The sanitary and storm sewers are potentially [not] migration pathways for significant amounts of PCBs."

(new findings emphasized; omitted findings in brackets).

that the physical evidence does not support Universal Waste's assertions.

The chromatograms referred to by Universal Waste are the results of running PCB contaminated samples through a capillary column gas chromatograph. The resulting chromatograms show a series of peaks, each peak representing a specific PCB congener. To identify a specific Aroclor in the sample, the series of peak are compared against an Aroclor standard run on the same chromatograph. To identify a specific PCB congener in the sample, the series of peaks are compared against PCB congener standards run on the same machine.

In evaluating the data and testimony concerning the chromatograms, the ALJ discounted the testimony of the Department's expert. I see no reason to give that witness's testimony less weight, however. The Department's expert correctly pointed out that when chromatographic analyses are conducted without congener standards, as in this case, any conclusions at the congener level are highly subjective. Indeed, Universal Waste's consultant agreed that interpretation of the chromatograms as Aroclors is highly subjective. The process involves comparing the sample chromatogram to that of the most similar Aroclor standard. As the EPA-approved methodology points out, choices must be made about which Aroclor is the most similar to that of the sample and whether the Aroclor standard is "truly representative of the PCBs in the sample" (Method 8082, Polychlorinated Biphenyls [PCBs] by Gas Chromatography, Revision, Dec. 1996, section 7.9, at 14).

As the Department's expert competently testified, both the on-site and off-site chromatograms are roughly comparable, with all key peaks matching up. This supports the conclusion that the same mixture of PCB congeners identified on-site is found off-site in the wetland and River sediments. Thus, it is just as likely as not that the site is a source of the PCB contamination in the Mohawk River and associated wetland.²⁴

²⁴ One of the bases cited by the ALJ for discounting the Department's witness was her lack of expertise in PCB fate and transport. I find this to be an irrelevant consideration. The witness did not attempt to offer any opinion regarding fate and transport. Indeed, Universal Waste's consultant indicated that the claimed differences among the chromatograms were not due to fate and transport issues. Thus, this provided no ground for discounting the witness's testimony. To the contrary, the Department's expert was well qualified for the task of interpreting the chromatograms. Thus, I decline to discount her testimony.

Universal Waste's consultant does not materially dispute staff's observations. Examined carefully, the consultant's conclusion that the site is not a source of PCBs in the wetland is based upon the observation that some PCB congeners that appear in the wetland samples do not appear in the on-site samples (see Hennet Pre-Filed Rebuttal Testimony, at 2). This observation does not foreclose the site as a possible source of the PCBs in the wetland, however. First, as staff's expert amply pointed out, without comparing the chromatograms against individual congener standards, as per EPA's methodology, it cannot be confirmed that the peaks relied upon by Universal Waste's consultant in fact represent PCB congeners. In any event, given that PCBs are a mixture of congeners, and accepting Universal Waste's assertion that the PCBs found in the wetland may have come from a number of different sources, it is likely that the specific PCB congeners identified by the consultant came from a source other than the Universal Waste site. Because the remaining PCB congeners are found in both the on-site and wetland samples, the site is just as likely as not to be a source, at least in part, of the remaining congeners in the wetland.

Contrary to Universal Waste's logic, to support the argument that the site is not a source for the PCBs found in the wetland would require, at the very least, that certain individual congeners appear in the on-site samples and not in the wetland samples. Universal Waste's consultant did not establish this. Thus, the chromatograms do not provide convincing evidence that the site is not a source of the PCB congeners in the Mohawk River and associated wetland.²⁵

²⁵ Accordingly, finding of fact no. 23 is modified as follows:

"Chromatograms of samples taken from the Site, the backwater, and the River indicate that the PCB contamination associated with Aroclor 1254 in samples taken upriver and downriver from the backwater [differ from] are substantially similar to samples on-Site and from the backwater. Samples taken from the backwater [differ from] are similar in all relevant respects to those taken on the Site. The possible existence of PCB congeners in the backwater that are not present on Site does not foreclose the Site as the source of the remaining PCB congeners found in the backwater.

(new findings emphasized; omitted findings in brackets).

In the alternative, Universal Waste asserts that even if the site is contributing to pollution off-site, such contribution is minimal and, thus, in its view, insignificant. The ALJ apparently accepted Universal Waste's conclusory assertions in this regard. Again, based on the weight of the evidence, I disagree with Universal Waste's assertion. First, Universal Waste's consultants have significantly underestimated the contribution the PCB contamination on-site is having off site, as a result of their unsupported conclusions concerning the contamination's mobility through surface run off and erosion, subsurface soils, and groundwater. Their conclusions are further undermined given the failure of Universal Waste to account for all of the PCBs disposed at the site and their associated impacts.

Moreover, Universal Waste overstates the degree to which its site must contribute to pollution off site to be considered a significant threat. Universal Waste essentially argues that in order to constitute a significant threat, the site must make a major contribution to impacts off site. By comparing the potential contribution of PCBs to the River from the site to the total PCB load in the River, Universal Waste is essentially arguing that the River is too polluted to pollute. This constitutes a misinterpretation of the law. Nothing in the ECL requires that a site be the predominant or even a major contributor to off-site pollution to constitute a significant threat. Even small contributions are sufficient so long as they are material (see, e.g., 6 NYCRR former 375-1.4[a][1][iii] [contamination that "materially contributes" to the need to recommend that human consumption of flora or fauna be limited]). To conclude otherwise would result in the inability to clean up a resource like the Mohawk River, which is subject to many sources of pollution, both major and minor. Until all sources of PCBs to the River, including minor ones, are removed from the watershed, the fish consumption advisory will remain in place. The Legislature could not have intended to leave unaddressed those sites with small impacts, the cumulative effects of which result in the violation of environmental standards in a resource like the Mohawk River.

In this case, the weight of evidence supports the conclusion that the site is making, and will continue to make well into the future, a material contribution to PCB contamination in the Mohawk River and associated wetland. The PCB contamination at the site is contributing to the fish

consumption advisory in River (see 6 NYCRR former 375-1.4[a][1][iii]). It is also contributing to adverse impacts on aquatic life in wetland area (see 6 NYCRR former 375-1.4[a][1][iv], [b][11]). Thus, in addition to the on-site impacts of the PCB contamination, the off-site impacts further support the Department's Class 2 determination, either under former section 375-1.4(a)(1) or (2).

V. FINDINGS OF FACT

The findings of fact as found by the ALJ and as modified by this decision are attached as Appendix A.

VI. CONCLUSION

Universal Waste has failed to carry its burden of proving by a preponderance of the record evidence that its site does not present a significant threat to the public health or the environment (see ECL 27-1305[2][b][3]). To the contrary, the record supports the conclusion that the PCBs disposed of at the site constitute a significant threat to public health and the environment. Accordingly, Universal Waste's petition to modify the site's Class 2 classification is denied.

For the New York State Department
of Environmental Conservation

By: _____/s/_____
Joseph J. Martens
Commissioner

Dated: Albany, New York
October 15, 2011

Universal Waste, Inc. and Clearview Acres, Ltd.
Delisting Petition
DEC OHMS No. 2003J165
Site ID No. 0633009

APPENDIX A --

The following are the findings of fact in the above referenced matter, as found in the April 5, 2006, recommended decision and hearing report of the Administrative Law Judge, and as modified by the attached decision of the Commissioner.

FINDINGS OF FACT

1. The Site is located at Leland and Wurz Avenues, Utica, Oneida County, New York, on the southern bank of the Mohawk River, and east and north of Leland Avenue. The Site consists of approximately 21 acres, and lies within the flood plain of the River. A wetland area (the "backwater") lies to the east of the Site.
2. The property where the Site is located was listed in the Registry as a Class 2 site until approximately 1999, when the property was subdivided, at Petitioners' request, into the Utica Alloys and Universal Waste sites, respectively.
3. The Utica Alloys parcel remained as a Class 2 site, and the Universal Waste parcel was reclassified 2a, until Petitioners undertook a Preliminary Site Assessment ("PSA") pursuant to a May 2000 Order on Consent.
4. Following the submission of the PSA, Department staff notified Petitioners by letter dated July 24, 2002 of the Universal Waste parcel's reclassification as a Class 2 site.
5. In a submission dated January 8, 2003, Universal Waste, Inc. and Clearview Acres, Ltd. petitioned to delist the Site or for reclassification of the Site as a Class 3. Petitioners filed a corrected petition on June 23, 2003.
6. Department Staff denied the petition by letter dated July 8, 2003. Department Staff reiterated the denial in a letter dated September 5, 2003.
7. Hazardous waste is present at the Site. Specifically, the Site is contaminated with polychlorinated biphenyls ("PCBs"). Aroclor 1254 is the predominant PCB Aroclor at the Site.

8. Since approximately 1957, Universal Waste operated a salvage yard for scrap iron, copper and stainless steel. As part of those operations, PCB contaminated oils from capacitors and transformers received from Special Metals, Inc. and Niagara Mohawk were disposed of on the Site.

9. Sampling performed in 1977 found PCBs at a level of 51,200 parts per million ("ppm") in a sample taken from soil next to a pile of capacitors. In 1984, PCBs were detected in composite surface soil sampled at levels up to 36,000 ppm.

10. In 1983, Universal Waste hired Clayton Environmental Consultants to investigate potential contamination on the Site. Clayton Environmental submitted a field investigation report dated 1984 to Department Staff. That report was never approved by the Department. The Site was listed as a Class 2 in 1986 based in part upon information contained in the Clayton Report, which noted that PCBs were detected in surface and subsurface soils and groundwater at the Site. With respect to groundwater, samples from three wells located down gradient from the site revealed PCBs levels of 17 parts per billion ("ppb"), 22.6 ppb, and 100 ppb, respectively.

11. A storm sewer line passes under the Site and empties into the backwater area, which is hydraulically connected to the Mohawk River at times. An October 1993 report by William F. Cosulich Associates describes an abandoned sanitary sewer line that at one time ran parallel to the storm sewer line beneath the Site. According to the Cosulich Report, the sanitary sewer flowed into an earthen settling pond, and then drained into a twelve inch pipe to the Mohawk River. The Cosulich Report indicated that the sanitary sewer served industrial facilities on Wurz Avenue, including the oil storage facilities.

12. In 1996, Department Staff contracted with Camp Dresser & McKee ("CDM") to perform a preliminary site assessment. In a report dated August 1996, CDM described sampling of Site soils and the storm and sanitary sewers. The report concluded that the sampling indicated that PCBs in the soils in the Site do not appear to be coming from an offsite and upgradient source, by way of the sewer system onto the Site. No groundwater sampling was undertaken as part of the work done by CDM.

13. In 1997, Universal Waste undertook a process called "trommelling" at the Site. Trommelling involved feeding soil from the Site into an apparatus to remove metals, fluff and other pieces of debris. By letter dated May 7, 1997, Universal Waste notified the Department that it intended to undertake trommelling at the Site.

14. On April 22, 1997, Stearns & Wheler took six samples from soil piles at the Site. PCBs were detected in five of the six samples. The highest level reported in a composite sample was 19 mg/kg.

15. Universal Waste contracted with Stearns & Wheler to perform a preliminary site assessment ("PSA") pursuant to the May 2000 order on consent. A PSA is used to determine whether a site meets the State's definition of an inactive hazardous waste disposal site by confirming or denying the presence of hazardous waste and determining whether the site poses a significant threat to the environment.

16. Stearns & Wheler was tasked with investigating the Site's surface and shallow subsurface soils, the Site groundwater, the sewer line bedding, off-Site surface water, and sediment conditions in the sewer outfall channel.

17. In January 2001, Stearns & Wheler submitted a report in draft form (dated January 2000) (the "S&W Report") that was never finalized by the consultants or approved by the Department.

18. Although three test pits were dug along the active storm sewer line and the abandoned sewer line, Stearns & Wheler did not investigate the sewer line bedding due to the depth of the sewers, which Stearns & Wheler indicated were at a depth of 20 feet in the eastern portion of the Site.

19. The S&W Report indicated that elevated levels of PCBs on the Site have been found in the east-central portion of the Site, near the outfall channel, and in the southern portion of the Site near the railroad tracks. In the east-central area, concentrations ranged from 26 to 120 parts per million. The surface sample concentrations ranged from 42 to 120 ppm, and at a depth of 12 to 18 inches in the subsurface, PCB concentrations ranged from 26 to 60 ppm. In the southern portion of the Site, shallow subsurface sampling revealed 180 ppm PCBs. Other

locations showing significantly elevated PCB levels include soil sample location ID (SS)-9 (70 ppm), SS-22 (48.7 ppm total PCBs), SS-25 (16 ppm total PCBs), and SS-26 (77 ppm total PCBs). The results of groundwater sampling were non-detect for PCBs, with one exception at 0.34 parts per billion.

20. Department Staff provided comments on the S&W Report by letter dated April 26, 2002. In that letter, Department Staff stated that the greatest risk in terms of access and exposure to Site-related contaminants appeared to be to biota due to PCBs entering the aquatic ecosystem.

21. Stearns & Wheler conducted additional work at the Site, and by letter dated December 19, 2002, Stearns & Wheler provided the results of supplemental sampling at the Site. Four soil borings were installed in the east central portion of the Site, and three of those borings were completed as monitoring wells. Results for total PCBs from the soil borings were below 10 parts per million, with the exception of one sample at a depth of between four and six feet which contained 19.6 ppm. In all samples at and below a depth of 8-10 feet in all borings, the total PCB concentration was under 1 ppm. No PCBs were detected in groundwater samples.

22. Analysis of samples taken in the City sewer outfall channel (backwater) as part of the PSA showed total PCBs in concentrations of approximately 6 mg/kg next to the sewer outfall. This laboratory indicated that this level might not have been accurate, although Aroclor 1254 was positively identified in that sample. PCBs at a level of 1.4 mg/kg were detected twenty feet from the outfall. The Clayton Report found PCBs at a level of 1.1 mg/kg in the channel of the outfall.

23. Chromatograms of samples taken from the Site, the backwater, and the River indicate that the PCB contamination associated with Aroclor 1254 in samples taken upriver and downriver from the backwater are substantially similar to samples on-Site and from the backwater. Samples taken from the backwater are similar in all relevant respects to those taken on the Site. The possible existence of PCB congeners in the backwater that are not present on Site does not foreclose the Site as the source of the remaining PCB congeners found in the backwater.

24. Groundwater is encountered across the Site at a depth of three to five feet. It is likely that significant amounts of PCBs are migrating from the Site through groundwater. It is also likely that PCBs are migrating through the subsurface soil or leaving the Site through surface runoff or NAPL transport. Contaminated soil encountered as a result of a leaking underground diesel storage tank is not associated with off-Site PCB contamination. The sanitary and storm sewers are potentially migration pathways for significant amounts of PCBs.

25. The portion of the Mohawk River in the vicinity of the Site is designated a Class "C" water body. A fish consumption advisory is in effect for the stretch of the Mohawk River where the Site is located. Aroclor 1254 is the type of Aroclor typically found in fish that are contaminated with PCBs.

26. In 1996, PCB sampling was conducted in the Mohawk River upstream and downstream of the Site, as well as in a backwater area to the east of the Site. The upstream sampling location is Station 63. The downstream sampling location is Station 60. The backwater sampling location is Station 70.

27. The samples were taken using a Passive In-situ Chemical Extraction Sampler ("PISCES") developed by a Department biologist, Simon Litten, Ph.D., who also testified at the hearing. The results of PISCES sampling is semi-quantitative, and orders of magnitude differences less than a factor of ten are not significant.

28. On October 9, 1996, a PISCES sampler was deployed at Station 70. The sampler was retrieved on October 30, 1996. PCBs are present at Station 70, and the manner of the sampler's deployment and retrieval resulted in an artificially high reading (an uptake rate of 1,032 ug/day) for the sample taken at Station 70. Observations at the time the sampler was deployed revealed that the sparse invertebrate community in the backwater area was limited mostly to organic-pollution tolerant red-midge larvae (blood worms), *Chironomus sp.*

29. The CSO and the Utica City Dump are not likely sources of PCB contamination in the backwater. Discharges of oil from Empire Recycling were released to the sewer line that runs beneath the Site.

STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

In the Matter
of the
Delisting Petition for the
UNIVERSAL WASTE, INC.
INACTIVE HAZARDOUS WASTE DISPOSAL SITE

(Site ID No. 0633009)

**Recommended Decision
and
Hearing Report**

_____/s/_____
Maria E. Villa
Administrative Law Judge

April 5, 2006

Matter of Universal Waste, Inc.
Inactive Hazardous Waste Disposal Site

Hearing Report
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Appendix (Site Map)

PROCEEDINGS

In a submission dated January 8, 2003, Universal Waste, Inc. and Clearview Acres, Ltd. (collectively referred to herein as "Petitioners"), petitioned the New York State Department of Environmental Conservation ("Department") to delete an inactive hazardous waste site, Universal Waste, Inc., located at Leland and Wurz Avenues, Utica, New York 13503 (the "Site") from the New York State Registry of Inactive Hazardous Waste Sites (the "Registry"). Petitioners sought to delist the Site pursuant to section 375-1.9 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York ("6 NYCRR"). In the alternative, Petitioners sought reclassification of the Site from Class 2 to Class 3.¹ Petitioners filed a corrected petition on June 23, 2003.

The property where the Site is located was listed in the Registry as a Class 2 site until approximately 1999, when the property was subdivided, at Petitioners' request, into the Utica Alloys and Universal Waste sites, respectively. The Utica Alloys parcel remained as a Class 2 site, and the Universal Waste parcel was reclassified 2a, until Petitioners undertook a Preliminary Site Assessment ("PSA") pursuant to a May 2000 Order on Consent.²

Following the submission of the PSA, Department Staff notified Petitioners by letter dated July 24, 2002 of the Universal Waste parcel's reclassification to Class 2.

In their delisting petition, Petitioners asserted that the contamination at the Site, specifically, the presence of

1

The site classifications, in pertinent part, are set forth in 6 NYCRR Section 375-1.8 as follows:

(a) (2) In so maintaining the Registry, to the extent possible with available information, the department will classify sites according to the following criteria:

. . . (ii) A class "2" site is a site at which hazardous waste constitutes a significant threat to the environment, as described in section 375-1.4 of this Subpart.

. . . (iii) A class "3" site is a site at which hazardous waste does not presently constitute a significant threat to the environment, as described in section 375-1.4 of this Subpart.

2

According to the Order on Consent, Class "2a" is "a temporary classification which indicates that further investigation is required to determine whether conditions at the Site constitute a significant threat to the public health or the environment." Exhibit 3-4, Paragraph 3.

polychlorinated biphenyls ("PCBs"³), does not present a significant threat to the environment, and that delisting or reclassification is therefore warranted. According to Petitioners, Department Staff made no showing that PCBs had migrated from the Site to a sewer outfall channel (the "backwater") connecting to the Upper Mohawk River, or that the PCBs in the backwater are causing or materially contributing to a significant environmental effect, or that it was reasonably foreseeable that those contaminants would do so. As a result, Petitioners argued that the Department could not conclude that the Site constitutes a significant environmental threat, warranting the Site's listing as Class 2 on the Registry.

Department Staff denied the petition by letter dated July 8, 2003. By letter dated July 17, 2003, Petitioners requested that the Department's Office of Hearings and Mediation Services "reconvene the adjudicatory hearing" concerning the status of the Site. Department Staff objected. The matter was assigned to administrative law judge ("ALJ") Maria E. Villa, and in a ruling dated November 3, 2003, the Petitioners' request was denied. See Matter of Universal Waste Hazardous Waste Site, ALJ Ruling at 3-4, 2003 WL 22668212, *3.

Petitioners sought judicial review, pursuant to Article 78 of the New York Civil Practice Law and Rules, of Department Staff's summary denial. In a decision dated May 26, 2004, and entered June 3, 2004, Supreme Court, Oneida County, vacated the Department's summary denial, and ordered that an administrative hearing be held, "consistent with 6 NYCRR §375-1.9 and 6 NYCRR §624.1 et seq."⁴ (see Matter of Universal Waste, Inc. v. New York

3

Polychlorinated biphenyls are a family of man-made chemicals that have varying amounts of chlorine attached to carbon atoms that are arranged in two rings joined together to form a biphenyl frame. Prefiled Testimony of Remy Jean-Claude Hennem (hereinafter "Hennem Prefiled") at 4. The term "polychlorinated" refers to the multiple chlorine atoms bonded to the carbon atoms in the attached carbon rings. Id. The more chlorine atoms a PCB molecule contains, the heavier it becomes. Id.

Pursuant to ECL Section 27-1301(1), a "hazardous waste" is defined as a waste that appears on the list promulgated by the Commissioner or satisfies certain characteristics. PCBs are a listed hazardous waste pursuant to Section 371.4(e) of 6 NYCRR, and also appear on the list of hazardous substances in Table 1 of Section 597.2 of the regulations. PCBs are regulated under federal law pursuant to 40 Code of Federal Regulations ("CFR") Part 761.

4

Section 375-1.9(d)(2)(ii) states that "the procedures of Part 624 of this Title may be used for adjudicatory hearings other than permit matters, and such procedures shall be utilized in any hearing held pursuant to this section except to the extent that any provision of such Part is contrary to the statute implemented by this section, in which event the statutory provision controls . . ."

State Dept. of Envntl. Conservation, Julian, J., Index No. CA-2003-002781, at 10).

Notice of the hearing was published on July 21, 2004 in the Department's electronic *Environmental Notice Bulletin*, and in the July 27, 2004 edition of the *Utica Observer Dispatch*. On August 31, 2004, the legislative hearing was held at the State Office Building in Utica, New York. On September 22, 2004, the issues conference was held at the same location. The hearing notice set a deadline of September 17, 2004 for receipt of petitions for party status. No petitions for party status were received.

Although Department Staff and Petitioners agreed that the issue to be adjudicated was whether the Site poses a significant environmental threat and therefore should be listed on the Registry as a Class 2 site, the parties disputed the scope of discovery. On October 7, 2004, the ALJ issued a ruling with respect to that discovery dispute, confirming the issue for adjudication, and scheduling further proceedings. See Matter of Universal Waste Inactive Hazardous Waste Disposal Site, ALJ Ruling, 2004 WL 2296585 (Oct. 7, 2004).

The adjudicatory hearing began on October 26, 2004, and continued on October 27, 2004. During this portion of the hearing, Petitioners and Department Staff presented their direct cases. Petitioners were represented by Michael B. Gerrard, Esq., and Richard Webster, Esq., of the law firm of Arnold & Porter, LLP. Paul D. Boehm, Ph.D., a vice president and principal scientist with Exponent, a scientific consulting firm, and Remy Jean-Claude Hennet, Ph.D., a consulting geochemist employed by S. S. Papadopoulos & Associates, Inc., a specialty environmental consulting firm, testified on Petitioners' behalf. Department Staff was represented by Dolores Tuohy, Esq. and Sonia K. Meyer, Esq., and offered the testimony of the following Department employees: John Iannotti, P.E.; Simon Litten, Research Scientist 1; Timothy Preddice, Aquatic Biologist 1; James Ludlam, P.E.; and John B. Swartout, Chief of Section C, Bureau A of the Department's Division of Environmental Remediation.

The hearing continued on February 2, 2005. At that time, the parties presented rebuttal testimony through Petitioners' witnesses, Dr. Hennet and Bret Copple, an employee of Utica Alloys, Inc., and Department Staff witnesses Mr. Swartout, Kevin Farrar, Engineering Geologist II, Faye L. Harris, Environmental Chemist, and David A. Tromp, P.E., Environmental Engineer I.

The parties submitted post-hearing briefs and reply briefs, and during a conference call on November 10, 2005, requested that

the ALJ prepare a recommended decision in this matter, pursuant to Section 624.13(a)(2)(ii). The Commissioner agreed to this request, and directed that this hearing report be issued as a recommended decision.

POSITIONS OF THE PARTIES

Summary of Petitioners' Arguments

According to Petitioners, Department Staff failed to establish that the contamination at the Site, as well as contamination in the adjacent backwater area, "are affecting, or will foreseeably affect, any environmental resource to a significant extent." Petitioners' Brief, at 2. Specifically, according to Petitioners, Department Staff "has not alleged that the Site and the backwater area make, or will foreseeably make, a material contribution to the fish consumption advisory that is in place for the Mohawk River for many miles both upstream and downstream of the Site." *Id.* Petitioners emphasized that the regulations and caselaw have established that the mere presence of hazardous waste at a site or in the environment is not a sufficient basis for a significant threat finding, and went on to assert that Department Staff "is urging that insignificant or immaterial effects should be used to list the Site as Class 2." Transcript (hereinafter "Tr.") at 8-9; Petitioners' Reply Brief at 1.

Petitioners contended that the "significant environmental effects" of potential concern at the Site are "significant adverse effects on protected streams, waters, wetlands or other habitat;" "bioaccumulation of contaminants in flora or fauna to a level that causes or materially contributes to significant ecotoxicological effects, or leads or materially contributes to the need to recommend that human consumption be limited;" and "significant adverse, acute or chronic effects to fish, shellfish, crustacea and wildlife." Tr. at 10-11. Petitioners also cited to the general, "catch-all" provision of Section 375-1.4(a)(2), and the factors set forth in Section 375-1.4(b)(1) through (13). As discussed below, Section 375-1.4(a)(2) provides that a Site may be listed as a significant threat if hazardous waste present at the Site "is causing or will foreseeably cause significant environmental damage."

Petitioners maintained that PCBs are not leaving the Site in any significant quantity, if at all, and that PCBs "coming from the overall area are not causing any significant environmental damage or one of the enumerated effects on the Mohawk River." Tr. at 13. The witnesses offered by Petitioners focused on two

points: first, that PCBs are not migrating off the Universal Waste Site in any significant amount, and second, that even if such migration were occurring, there has been no significant environmental effect within the meaning of the regulations as a result. Petitioners' witnesses also testified that such migration, and any associated environmental effects, were not reasonably foreseeable.

Summary of Department Staff's Arguments

Department Staff argued that its determination to list the Site as Class 2 on the Registry, and its denial of the petition to delist, were appropriate. According to Department Staff, the PCBs disposed of at the Site constitute a significant threat in and of themselves, and moreover, contamination from the Site has migrated into the backwater area and the main stem of the Mohawk River. Department Staff contended that this contamination impacts the areas where PCBs have migrated, and that PCBs have the potential to migrate further in the future and result in additional impacts, including impacts to the food chain and bioaccumulation of PCBs in wildlife.

Department Staff pointed to the history of disposal of significant quantities of PCB-containing materials at the Site, noting that PCBs were found in subsurface soils at depths of 14 to 16 feet. According to Department Staff, this refutes Petitioners' contentions concerning the highly immobile nature of PCBs in soil. Tr. at 29. Department Staff asserted that PCBs could be leaving the Site via several migration pathways, including: (1) stormwater runoff, either directly into the sewer in the street immediately adjacent to the Site, around the manmade earthen berm, or directly into the backwater prior to the berm's construction; or (2) through the soil. Tr. at 30.

Department Staff maintained that flooding at the Site would allow PCBs to be transported off-site by receding floodwaters, and also asserted that a preferential pathway for contaminant migration exists via the sewer line and the sewer line bedding beneath the Site. Tr. at 31. Department Staff argued further that sampling undertaken in 1996 in the backwater adjacent to the Site revealed the presence of PCBs of the same type as those found on the Site. Tr. at 32. With respect to Petitioners' arguments concerning the deficiencies surrounding the sampling undertaken in the backwater, Department Staff asserted that, if anything, the sampling results in question underestimated the level of PCB contamination at that location. Tr. at 32-33. Department Staff concluded that "[n]o additional input of PCB

contamination into the river or backwater area itself is acceptable nor can it be tolerated." Tr. at 33.

SUMMARY OF RECOMMENDATION

Based upon this record, the Commissioner should determine that the Site does not constitute a significant threat to the environment. Petitioners have met their burden to establish by a preponderance of the evidence that PCB contamination either on the Site or potentially migrating off-Site does not pose a significant threat. Moreover, the record demonstrates that it is not reasonably foreseeable that such PCB contamination will pose a significant threat in the future. Accordingly, the Site should be re-classified as Class 3, to reflect that while hazardous wastes in the form of PCBs are present, the Site does not present a significant threat to the environment.

APPLICABLE STATUTE AND REGULATIONS

Section 27-1305(1) of the New York State Environmental Conservation Law ("ECL") requires the Department to maintain a registry of all of the known inactive hazardous waste disposal sites⁵ in the State. The statute further requires the Department to conduct investigations of the listed sites. ECL § 27-1305(2)(a). The purpose of these investigations is to develop information required by the statute, including, among other things, a general description of the site; the time period during which the site was used for the disposal of hazardous waste; the type and quantity of hazardous waste disposed of; the nature of the soils at the site, and the depth of the water table; direction of present and historic groundwater flows at the site; location, nature and size of all surface waters at and near the site; and levels of contaminants in groundwater, surface water, air and soils at and near the site resulting from hazardous wastes disposed of at the site or from any other cause and areas known to be directly affected or contaminated by wastes from the site. ECL § 27-1305(1)(a), (c), (f), (g), (h), (i), (k), (l) and (m).

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An "inactive hazardous waste disposal site" is defined, in pertinent part, as "any area or structure used for the long term storage or final placement of hazardous waste including, but not limited to, dumps, landfills, lagoons and artificial treatment ponds, as to which area or structure no permit or authorization issued by the department or a federal agency for the disposal of hazardous waste was in effect after the effective date of this title and any inactive area or structure on the National Priorities List established under the authority of 42 U.S.C.A. Section 9605." ECL Section 27-1301(2).

The statute requires the Department, in cooperation with the New York State Department of Health ("DOH"), to assess "the relative need for action at each site to remedy environmental and health problems resulting from the presence of hazardous wastes at such sites." ECL § 27-1305(2)(b). In making its assessments, the Department is required to place every site in one of the classifications enumerated in Section 27-1305(b)(1) through (5).

As noted earlier, a Class 2 site is one that presents a significant threat to public health or the environment, such that action is required. ECL § 27-1305(2)(b)(2). Pursuant to the statute, the Department is required to reassess a Site's classification, in cooperation with DOH and based upon new information, by March 31st of each year. ECL § 27-1305(2)(b).

If the Commissioner finds that hazardous wastes at an inactive hazardous waste disposal site constitute a significant threat to the environment, the Commissioner:

"may order the owner of such site and/or any person responsible for the disposal of hazardous wastes at such site (i) to develop an inactive hazardous waste disposal site remedial program, subject to the approval of the department, at such site, and (ii) to implement such program within reasonable time limits specified in the order."

ECL § 27-1313(3)(a).

The statute's implementing regulations are found in Part 375 of 6 NYCRR. Pursuant to Section 375-1.9(b)(1) through (3), the only relief a petitioner may seek is deletion of a site from the Registry, reclassification, or modification of any information concerning the site. In this case, although the petition requested delisting or, in the alternative, reclassification as a Class 3 site, at the hearing Petitioners acknowledged that hazardous waste is present at the Site, and therefore that delisting would not be appropriate. Tr. at 8. Accordingly, this recommended decision addresses Petitioners' request that the Site's classification be changed to a Class 3.

The regulations provide that the procedures of Part 624 of 6 NYCRR are to be used in any hearing held in connection with a petition to re-classify a Registry site. Section 375-1.9(d)(2)(ii). The regulation goes on to state that "the petitioner bears the burden of proof in any such hearing," and provides further that "any reference in Part 624 of this Title to an 'applicant' shall be construed to be a reference to a

petitioner for purposes of the applicability of such Part.” Section 375-1.9(d)(2)(iii). Section 624.9(b) contains a similar provision stating that the petitioner has the burden of proof.

Accordingly, in this proceeding, Petitioners have the burden of demonstrating that the Site is not a significant threat to the environment. Petitioners are therefore obliged, under the circumstances of this case, to establish by a preponderance of the evidence that any significant threat to the environment at the Site, in the backwater, or in the River is not attributable to the hazardous waste that Petitioners acknowledge is present on the Universal Waste Site.

If Petitioners meet their burden of production, the burden of coming forward with probative evidence to refute Petitioners' contentions shifts to Department Staff. See Matter of Peckham Materials Corp., Second Interim Decision at 4, 1993 WL 113776, * 3 (Mar. 15, 1993) (noting that the applicant had both the burden of proof and burden of going forward with respect to an issue to be adjudicated); Matter of St. Lawrence Cement Co., LLC, Second Interim Decision at 126, 2004 WL 2026420, * 53 (Sept. 8, 2004) (stating that ALJs' holdings were “consistent with the ordinary shifting of the burden to produce evidence - as distinct from the non-shifting ultimate burden of proof established by section 624.9 - common to all evidentiary hearings, including those conducted pursuant to Part 624”) (citations omitted).⁶ Nevertheless, to the extent the evidence on a particular factual question is weighted equally between Petitioners and Department Staff, the question must be decided in Department Staff's favor because the ultimate burden of persuasion always remains with Petitioners.

Although the statute does not define a “significant threat to the environment,” the Department's regulation at 6 NYCRR Section 375-1.4 provides a detailed definition. Section 375-1.4(a)(1) allows the Commissioner to find that hazardous waste disposed of at a site constitutes a significant threat to the environment “if, after reviewing the available evidence and considering the factors the commissioner deems relevant set forth in subdivision (b) of this section, the commissioner determines that the hazardous waste disposed at the site or coming from the

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See also Director, Office of Workers' Compensation Programs, Dept. of Labor v. Greenwich Collieries, 512 U.S. 267, 275 (1994) (burden of production, or burden of coming forward, refers to the duty of one party or another to produce evidence, and is distinct from the duty or obligation to convince the trier of fact as to the ultimate issue).

site results in, or is reasonably foreseeable to result in," any of six situations, including:

- a significant adverse impact upon endangered species, threatened species, or species of concern (Section 375-1.4(a)(1)(i));
- a significant adverse impact upon protected streams or freshwater wetlands (Section 375-1.4(a)(1)(ii));
- "a bioaccumulation of contaminants in flora or fauna to a level that causes, or that materially contributes to, significant adverse ecotoxicological effects in flora or fauna or leads, or materially contributes, to the need to recommend that human consumption be limited" (Section 375-1.4(a)(1)(iii));
- "contaminant levels that cause significant adverse, acute or chronic effects to fish, shellfish, crustacea, or wildlife" (Section 375-1.4(a)(1)(iv));
- a significant adverse impact to the environment due to a fire, spill, explosion, or similar incident or a reaction that generates toxic gases, vapors, fumes, mists, or dusts (Section 375-1.4(a)(1)(v)); or
- "where the site is near private residences, recreational facilities, public buildings or property, school facilities, places of work or worship, or other areas where individuals or water supplies may be present, the New York State Department of Health or the Agency for Toxic Substances and Disease Registry has determined that the presence of hazardous waste on a site poses a significantly increased risk to the public health" (Section 375-1.4(a)(1)(vi)).

It is undisputed that Subsections (v) and (vi) are not under consideration in this proceeding. Department Staff's Brief at 13-14 (listing regulatory criteria at issue in the hearing).

Subdivision (b) of Section 375-1.4 provides that in making a finding as to whether a significant threat exists, the Commissioner may take into account several factors enumerated in 6 NYCRR Section 375-1.4(b)(1)-(13), "as may be appropriate under the circumstances of the particular situation." Those factors include:

the duration, areal extent, or magnitude of severity of the environmental damage that may

result from a release of hazardous waste
(Section 375-1.4(b)(1));

the type, mobility, toxicity, quantity,
bioaccumulation, and persistence of hazardous
waste present at the site (Section 375-
1.4(b)(2));

the manner of disposal of the hazardous waste
(Section 375-1.4(b)(3));

the nature of soils and bedrock at and near
the site (Section 375-1.4(b)(4));

groundwater hydrology at and near the site
(Section 375-1.4(b)(5));

location, nature and size of surface waters
at and near the site (Section 375-1.4(b)(6));

levels of contaminants in groundwater,
surface water, air and soils at and near the
site and areas known to be directly affected
or contaminated by waste from the site,
including but not limited to contravention of
ambient surface water and groundwater
standards, and drinking water standards
(Section 375-1.4(b)(7));

proximity of the site to private residences,
recreational facilities, public buildings or
property, school facilities, places of work
or worship, and other areas where individuals
may be present (Section 375-1.4(b)(8));

the extent to which hazardous waste and/or
hazardous waste constituents have migrated or
are reasonably anticipated to migrate from
the site (Section 375-1.4(b)(9));

the proximity of the site to areas of
critical environmental concern, such as
wetlands (Section 375-1.4(b)(10));

the potential for wildlife or aquatic life
exposure that could cause an increase in
morbidity or mortality of same (Section 375-
1.4(b)(11));

the integrity of the mechanism, if any, that may be containing the hazardous waste to assess the probability of a release of the hazardous waste into the environment (Section 375-1.4(b)(12)); and

the climatic and weather conditions at and in the vicinity of the site (Section 375-1.4(b)(13)).

In addition, Section 375-1.4(a)(2) allows the Commissioner to find that hazardous waste disposed of at a site constitutes a significant threat to the environment "if, after reviewing the available evidence and considering the factors the commissioner deems relevant set forth in subdivision (b) of this section, the commissioner determines that the hazardous waste disposed at the site or coming from the site results in, or is reasonably foreseeable to result in, significant environmental damage." "Environmental damage" is defined at 6 NYCRR Section 375-1.3(h) to mean "any impairment of use by flora or fauna of, or any injury to, the environment; and any adverse health impact."

DEPARTMENT STAFF'S BASIS FOR SITE LISTING

As noted above, by letter dated July 24, 2002, Department Staff notified Petitioners of the Site's Class 2 listing. Exh. 3-1. The reason for the change in classification from a Class 2a to Class 2 was set forth as follows:

"Hazardous waste in the form of polychlorinated biphenyls (PCBs) was identified in site soils during two preliminary site investigations. One of the PCB contaminated areas is adjacent to the sewer outfall channel. PCBs were also discovered in the sediment of this channel at levels of concern to the Division of Fish and Wildlife, and Marine Resources (DFWMR). This channel discharges to the Mohawk River in an area where the DEC has identified PCBs as a contaminant of concern. In fact, a March 1998 DEC report [the "PISCES Report"] identified the ditch behind Universal Waste as one of the two "HOT" spots which had been identified during sampling conducted during 1996.

The report states: "Further downstream at Station 60, PCB levels rise again, influenced by the extremely high levels present in the ditch behind Utica Alloys ("Universal Waste"), Station 70."

The PCBs disposed at the Universal Waste site

present a significant threat to the environment. Remedial Action is necessary. Universal Waste has proposed capping a one acre area with asphalt as an Interim Remedial Measure ("IRM") to mitigate potential risks associated with the PCB contaminated soils."

Exh. 3-1 at 1.

By letter dated April 26, 2002, John B. Swartout, one of the Department's witnesses in this proceeding, commented on the PSA. Exh. 3 at 7; Exh. 3-6. That letter was addressed to counsel for Petitioners, and stated that "[t]he PCB contamination on the other hand, seems to be more likely site related since the sewer discharge channel is located adjacent to the primary area of PCB contamination at the Universal Waste Site." Exh. 3-6 at 2. The letter indicated that "[w]e have recommended that this site be categorized as a class 2 inactive hazardous waste site because of the evidence of PCB hazardous waste at this site and the offsite migration of PCBs from the site." Id. at 1.

As noted above, Department Staff summarily denied the petition to delist by letter dated July 8, 2003. By letter dated September 5, 2003, Department Staff reiterated its summary denial, stating that "[t]he Department has determined that the factual allegations made within the delisting petition, even if accepted as true by the Department, are insufficient to support the Department's either deleting the site from the Registry of Inactive Hazardous Waste Disposal Sites or reclassifying the site as a 'Class 3' site." Exh. 4 at 1. The letter went on to state that even if the Site did not pose a significant threat based upon the criteria in Section 375-1.4(a)(1), "the provisions of Section 375-1.4(a)(2) require the Department to find that the contamination of soils, sediments and groundwaters by PCBs related to the site, when evaluated in accordance with the factors set forth in Section 375-1.4(b), presents a significant threat to the environment." Id. at 2.

In prefiled testimony and at the hearing, Mr. Swartout maintained that the Site is a significant threat to the environment, and that hazardous waste at the Site has resulted in significant environmental impacts. Swartout Prefiled at 26. Referring to the factors enumerated in Section 375-1.4(b), the witness stated that PCBs are toxic, bioaccumulate, and persist in the environment, where they are mobile in soils and groundwater. Id. at 22. He went on to testify that uncontrolled dumping of materials containing PCBs took place at the Site, and that the groundwater flow is directly towards the Mohawk River. Id. Mr.

Swartout stated that the Mohawk River is significant, within the meaning of the regulation, because it is a Class C waterbody and is immediately adjacent to the Site. Id.

Mr. Swartout testified that sampling performed in 1984 found PCBs in composite surface soil samples at levels up to 36,000 parts per million ("ppm"), and that in 1977, PCBs at a level of 51,200 ppm were detected in a sample taken from soil next to a pile of capacitors. Id. at 23. The witness testified further that sampling in 2000 revealed PCBs in shallow and surface soils at levels up to 1302 ppm, and that only three of the thirty soil samples taken at that time showed levels of contamination below 1 ppm, which is the unrestricted surface soil guidance level. Id.

As discussed below, Mr. Swartout later acknowledged on cross-examination that the 1302 ppm result was an error, and the actual level was much lower. The witness also stated that sampling of sediments at the sewer discharge channel revealed levels of PCBs and other contaminants "that exceeded the standards, criteria or guidance as defined in the regulations." Id. at 22-23.

In discussing the Site's proximity to areas where individuals may be present, Mr. Swartout contended that the Site is actively in business, that workers are present at the Site, and an active rail line runs through the property. Id. The witness pointed out that the Site is separated from the Mohawk River only by a public right of way that leads to a river level control structure located just downstream. Id. According to Mr. Swartout, "[t]here is ready access to this right of way from Leland Avenue and no fence between this right of way and the Site." Id. Mr. Swartout testified that PCBs from the sewer discharge channel have migrated into and have impacted the Mohawk River, stating that

"[i]t has been the Department's position that PCBs entered the sewer discharge channel by way of a combination of mechanisms, including: erosion of PCB contaminated surface soils on the Site by storm water (I'll note, Universal Waste, Inc., does not have a stormwater control program in effect); discharge of PCB contaminated sewage from the former sanitary sewer settling pond on what is now Universal Waste property; discharge of contaminated groundwater moving through the bedding along the existing storm sewer line; and discharge of contaminated storm water from the storm sewer line."

Id. at 23-24. According to the witness, "migration is likely to continue to occur by way of transport of contaminated surface soils into the adjacent wetland and thus the Mohawk River through storm water runoff and the continued leaching of contamination from the contaminated Site soils and from the former sanitary sewer settling pond into the storm sewer or the adjacent bedding material." Id. at 24.

Mr. Swartout testified that the Site is located in the River's flood plain and that in the past, portions of the Site have been flooded at depths of up to three feet. Id. As a result, Mr. Swartout concluded that "the past flood events are likely to have transported PCBs from the Site to the Mohawk River and may continue to do so during future flooding." Id. With respect to the Site's proximity to areas of critical environmental concern, Mr. Swartout testified that "storm water runoff from the Site directly impacts the adjacent wetland." Id.

The witness went on to testify concerning the potential for wildlife or aquatic life exposure that could cause an increase in death or disease, stating that highly bioaccumulative PCB Aroclors,⁷ specifically Aroclor 1254 and 1260, have been found in the backwater area just east of the Site. Id. at 24. According to Mr. Swartout, the same Aroclors have been found in soils on-Site, and oil, which facilitates PCB migration, has migrated from the Site and been found in the backwater area sediments. Id. Mr. Swartout stated further that "fish in the area of the Site are contaminated with PCBs, which has resulted in a health advisory from the Department of Health." Id. at 24-25.

Mr. Swartout noted further that both the United States Environmental Protection Agency ("EPA") and the Department have documented the detrimental effects of PCBs on wildlife and

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Each PCB variant is called a congener, and there are 209 distinct possible congeners, each with its own specific physical and chemical properties. Hennet Prefiled at 4. A congener is "[a] chemical substance that is related to another substance, such as a derivative of a compound or an element belonging to the same family as another element in the periodic table." McGraw-Hill *Dictionary of Scientific and Technical Terms* (6th Ed. 2003) at 463.

PCBs were last produced in 1977. Litten Prefiled at 5-6. When PCBs were manufactured, they were sold not as individual congeners, but as trademarked industrial mixtures of congeners with varying average chlorine content under the trade name "Aroclor." Id.; Hennet Prefiled at 4. In the 1200 Aroclor series, the last two digits designate the percentage of chlorine in the mixture by weight. Hennet Prefiled at 4. Aroclor 1254 is composed of a mixture of congeners that together contain an average 54% chlorine by weight. Id. Aroclor 1016 does not follow this pattern, and actually contains 42% chlorine by weight, because it was a refined product that replaced Aroclor 1242. Id.

aquatic life in general. Id. at 25. Mr. Swartout stated that the concentrations of PCBs found downgradient of the Site consist predominantly of bioaccumulative Aroclors 1254 and 1260, the same Aroclors found at the Site. Id. With respect to the probability of releases of hazardous waste into the environment, the witness stated that there is no containment at the Site, and PCBs continue to be released into the environment. Id.

On cross-examination, Mr. Swartout was asked to summarize the ways which, in Department Staff's view, the Site constitutes a significant threat to the environment. Tr. at 446. He responded that

"[t]here are large quantities of PCBs on the site. The same types of PCBs are found in the sewer discharge channel that's immediately adjacent to the site. The quantities of PCBs that are on the site are such that we would expect that there would be migration into the river, because the river is immediately adjacent, through, you know, various migration routes, pathways. Basically, the PCBs were found in all of the environmental media on the site. They're also found in the discharge channel next to the site. They're also found in the river. The PISCES sampling work that was done in the river indicated that the discharge channel there was one of the locations where there was a significant input of PCBs to the river."

Tr. at 446-47.

The witness stated that in his opinion the Site is having a significant effect on the environment, because of the presence of PCBs "that are in exceedance of the standards and are at levels of concern to fish and wildlife in a backwater of the river which is interconnected with a wetland area." Tr. at 448. Mr. Swartout went on to testify that Department Staff has determined that the Site poses a significant threat to the environment, based upon the likelihood of a significant environmental effect on health or the environment in the future. Tr. at 447. According to Mr. Swartout, "[w]e have not necessarily stated there's a significant effect right now, although the information from the PISCES tends to point in that direction, but for us to find that a site presents a significant threat and requires a

remedial investigation to be done, we don't actually have to find there is a current threat or current impact." Tr. at 447-48.

As Mr. Swartout noted, a fish consumption advisory with respect to the portion of the Mohawk River where the Universal Waste Site is located has been in effect since 1994, when the New York State Department of Health ("DOH") warned the public not to consume carp caught in the upper Mohawk River from the mouth of Oriskany Creek, Oriskany, to approximately twenty-two miles downstream to the mouth of the West Canada Creek in Herkimer. Preddice Prefiled at 4. The mouth of the Oriskany Creek is approximately eight miles upstream of the Site, and the mouth of West Canada Creek is approximately fourteen miles downstream. Id. The 1994 health advisory was based upon PCB contamination detected in the River, and in 1998 DOH issued a further health advisory with respect to consumption of largemouth bass or tiger muskellunge, for the same reason. Id. The health advisories go on to caution that women of childbearing age and children under fifteen years of age should not consume any fish from this reach of the River or its tributaries up to the first barrier impassable to fish. Id.

Department Staff offered testimony with respect to the effects of PCB contamination on fish and wildlife. Timothy Preddice, a Department biologist, stated that PCBs "are a group of very slowly degrading organic compounds that can bio-accumulate greatly in highly lipophilic (fatty) tissues." Preddice Prefiled at 12. He testified further that biological and toxicological effects attributable to PCBs include birth defects, reproductive failure, liver damage, tumors, a wasting syndrome, and death. Id. Mr. Preddice went on to state that PCBs "tend to magnify through the food chain," resulting in consumption of significant amounts of this toxic chemical by fish, mammals, and humans. Id. at 12-13. The witness stated that highly chlorinated Aroclors, such as Aroclor 1254, are not easily degraded. Preddice Prefiled at 10. Mr. Preddice and Petitioners' witness, Dr. Boehm, agreed that Aroclor 1254 is the type found in fish. Preddice Prefiled at 8; Tr. at 106.

Mr. Preddice asserted that PCBs from the Site are flowing from the backwater adjacent to the Site into the River, "particularly during receding high water levels." Preddice Prefiled at 13. The witness testified that PCBs contained in oil, adsorbed to organic material, and in water which flows from the backwater area near the Site into wetlands and the River contribute "to a situation which has resulted in restrictions on human use of the fishery resource." Id.

POST-HEARING BRIEFING

Sections 375-1.4(a)(1) and (a)(2)

In their brief, Petitioners stated that the Commissioner may find a site to be a significant threat based upon the six situations enumerated in Section 375-1.4(a)(1), and may also make such a finding pursuant to Section 375-1.4(a)(2) after reviewing the available evidence and considering the Section (b) criteria. Petitioners' Brief at 40. Department Staff responded that Petitioners had mischaracterized the scope of the Commissioner's inquiry under the regulations, arguing that Petitioners improperly indicated that the Section (b) criteria do not apply to significant threat determinations pursuant to the six specific categories set forth in Section 375-1.4(a)(1). Department Staff's Reply Brief at 8.

While it would be a misreading of the regulation to contend that the Section (b) criteria are only applicable to significant threat determinations made pursuant to Section (a)(2), it does not appear that Petitioners are in fact making such an assertion in this case. In any event, it is clear from the express language of the regulation that a significant threat finding under either Section (a)(1) or Section (a)(2) is to be based upon the Commissioner's review of the available evidence, and consideration of the criteria set forth in Section 375-1.4(b).

Petitioners also contended that the "catch-all" provision in Section 375-1.4(a)(2) is intended to complement the specifically enumerated impacts "and is designed to cover significant effects that are not enumerated in Section 375-1.4(a)(1)." Petitioners' Brief at 41. In their reply brief, Petitioners maintained that the "catch-all" provision "is not an invitation for DEC to side-step the requirements imposed by the other more specific provisions of the regulations." Petitioners' Reply Brief at 21. According to Petitioners, the provision "should only be employed where an effect does not come within the coverage of a more specific provision." Id.

Department Staff took the position that Petitioners mistakenly asserted that the broader "significant environmental damage" provision in Section 375-1.4(a)(2) is intended to address only those effects not enumerated in Section 375-1.4(a)(1). Department Staff's Reply Brief at 8-9. Department Staff argued that Petitioners' interpretation is contradicted by the statute's plain meaning, contending that

"[s]ince an evaluation of the same set of underlying facts, including the § 375-1.4(b) factors, provides the basis for making a significant threat determination pursuant to § 375-1.4(a)(1) and the 'significant environmental damage' provision of § 375-1.4(a)(2), it is clear that the regulation provides that information regarding the matters addressed by the six criteria set forth in § 375-1.4(a)(1) are relevant in making a 'significant environmental damage' determination."

Department Staff's Reply Brief at 9. Department Staff argued further that any determination as to the significance or materiality of the threat posed by the Site is committed to the Commissioner's discretion, based upon the evidence and testimony adduced at the hearing. Tr. at 34, 242.

As part of its reply brief, Department Staff included an excerpt from the Department's March 1992 "Hearing Report; Responsiveness Summary; and Revision to Draft Regulatory Impact Statement" for the revised Part 375 regulations (the "Responsiveness Summary"). That document states that the Section (a)(2) "catch-all" provision is "designed to provide standards and criteria to assist us in evaluating the presence of a significant threat to the environment posed by hazardous waste at a particular site under circumstances that do not neatly fit within any of the preceding categories." Responsiveness Summary, at II-9. The document goes on to note that "[w]e cannot be expected to articulate every single circumstance in which hazardous waste at an inactive hazardous waste disposal site constitutes a significant threat to the environment; nor should we be required to do so." Id.

The thrust of Petitioners' argument with respect to this point appears to be that to the extent a Section 375-1.4(a)(1) subsection establishes a specific standard for a demonstration of significance (for example, a "material contribution" to the need to limit human consumption of biota due to bioaccumulation, pursuant to Section 375-1.4(a)(1)(iii)), Department Staff cannot invoke the "catch-all" provision of Section 375-1.4(a)(2) to make such a demonstration based upon a lesser standard.

Petitioners' assertion that Department Staff cannot "bootstrap" a finding pursuant to Section (a)(1) to also establish that significant environmental damage has occurred within the meaning of Section (a)(2) is supported by the language

of the regulation. As noted, both Section 375-1.4(a)(1) and 375-1.4(a)(2) state that the Commissioner's determination that a significant threat exists as a result of hazardous waste disposal is to be based upon a review of the available evidence and the Section 375-1.4(b) factors. Because this language appears in both Sections (a)(1) and (a)(2), and because Section (a)(2) does not state that the six situations enumerated in Section 375-1.4(a)(1)(i) through (vi) are to be considered in making a significant threat finding, it is clear that the subsection (b) criteria and the available evidence are to be used in making any findings pursuant to Section (a)(2).

This is likewise consistent with the language of the Responsiveness Summary, as well as principles of statutory construction. See diLeo v. Greenfield, 541 F.2d 949, 954 (2d Cir. 1976) ("A saving construction is especially appropriate . . . where a myriad of un contemplated situations may arise and it is not reasonable to require a legislature to elucidate in advance every act that requires sanction. Some general "catchall" phrase may be incorporated to ensure that the legislature's inability to detail all matters meant to be proscribed does not permit clearly improper conduct to go uncorrected.")

Moreover, because both Section(a)(1) and Section(a)(2) require a threshold determination of significance in order to support a listing decision, Petitioners' reading of the regulation to foreclose application of a lesser standard under Section(a)(2) than Section(a)(1) is consistent with the regulatory language. There is further support for this interpretation in Section 375-1.4(c), which provides that the mere presence of hazardous waste at a site or in the environment is not a sufficient basis to find that a significant threat exists.

In addition, while the Responsiveness Summary states that it would be within the Department's authority to "adopt a regulatory standard by which a 'significant threat to the environment' might be found based on any environmental damage, however slight, attributable to the hazardous waste," the Responsiveness Summary goes on to note that "[I]t is important to observe, however, that the proposal does not so provide: the Department is adopting a standard by which a 'significant threat to the environment' premised on environmental damage may only be found based on an a [sic] significant level of environmental damage attributable to the hazardous waste." Responsiveness Summary at II-8 to II-9.

Nevertheless, Department Staff is correct that the underlying facts or information considered under subsection (b)

that are relevant to the Section 375-1.4(a)(1) factors may also be taken into account in determining whether "significant environmental damage" has occurred within the meaning of the regulation, and that therefore hazardous waste at a site poses a significant threat. "Where general terms in a statute follow an enumeration of terms with specific meaning, the general terms can be expected to apply to matters similar to those specified." diLeo, 541 F.2d at 954 (citations omitted). For example, the "type, mobility, toxicity, quantity, bioaccumulation, and persistence of hazardous waste present at the site," as articulated in Section 375-1.4(b)(2), may be a factor the Commissioner relies upon in finding a significant threat under both subsection 375-1.4(a)(1)(iii) and Section 375-1.4(a)(2). The same facts or information may therefore be relevant to a significant threat determination under more than one section of the regulation.

Exceedances of Standards and Guidance Values

The regulation goes on to state that "[t]he mere presence of hazardous waste at a site or in the environment is not a sufficient basis for a finding that hazardous waste disposed at a site constitutes a significant threat to the environment." Section 375-1.4(c). The parties presented arguments as to the correct interpretation of this provision, particularly with respect to the presence of PCB contamination in environmental media, such as groundwater and soils at the Site, in excess of regulatory standards.

Pursuant to its authority under ECL Section 17-0301, the Department has classified the State's water bodies based upon their best usage and degree of purity. These are referred to as use-based standards, as opposed to standards based upon an identified impact to public health. Section 701.15 of 6 NYCRR designates fresh groundwater of the State as "Class GA fresh groundwaters." The regulation provides further that Class GA fresh groundwaters' best usage is as a source of potable water supply. Id. Pursuant to Section 703.5(f), the maximum allowable concentration of PCBs in fresh groundwater of the State is 0.09 micrograms per liter (0.09 parts per billion).

The Division of Water's Technical and Operational Guidance Series ("TOGS") 1.1.1 provides a compilation of ambient water quality standards and guidance values and groundwater effluent limitations. Exh. 27. That document tracks the regulation, and provides that the groundwater standard for PCBs is 0.09 micrograms per liter or parts per billion, which would apply to the sum of all Aroclors. Exh. 27; Tr. at 488. The surface water

standard articulated in the TOGS for a Class C water body such as the Mohawk River is 1×10^{-6} micrograms per liter (parts per billion). Id.

With respect to soils, the Department's Division of Environmental Remediation Technical and Administrative Guidance Memorandum ("TAGM") 4046 ("Determination of Soil Cleanup Objectives and Cleanup Levels", revised Jan. 24, 1994) indicates that the cleanup level for PCBs in surface soils is 1 part per million, and the cleanup level for subsurface soils is 10 parts per million. According to Department Staff, "[t]here is no standard or widely used guidance value for maximum allowable concentration levels in sediments. The Department makes a determination regarding the appropriate level of cleanup required for sediments on a case-by-case basis based on factors such as the biota that would be in contact with the sediment." Department Staff's Brief at 30.

At the hearing and in post-hearing briefing, Department Staff pointed out that PCBs found in environmental media at the Site and in the vicinity of the Site, including groundwater, have in some instances exceeded these values. Department Staff observed that "[i]n the Universal Waste case, there is not merely the existence of a violation of groundwater standards for PCBs at the Site, it is beyond dispute that PCBs disposed at the Universal Waste Site are the cause of the violation." Department Staff's Reply Brief, at 15.

Petitioners countered that such exceedances, standing alone, are insufficient to demonstrate that the Site is a significant threat within the meaning of the statute and regulations. Petitioners' Reply Brief, at 23. Petitioners went on to assert that "even if exceedances of environmental standards alone could be the basis of a significant threat listing, the violations are insignificant." Id. at 24. Petitioners pointed out that the single groundwater standard exceedance is minimal, that there are no drinking water wells that would be affected, and that the dissolved PCBs in the groundwater are "highly immobile due to their high retardation factor." Id. With respect to any water quality violations in the River, Petitioners noted that Department Staff's witness, Dr. Litten, stated at the hearing that the contribution of the Universal Waste Site to PCB levels in the Mohawk River is "not great." Id. at 24; Tr. at 169.

Both parties cited to the recommended decision in Matter of Gruner, which was adopted by the Commissioner on December 10, 1998. Decision and Order, at 1, 1998 WL 939492, *1. In that proceeding, the ALJ determined that in the context of the Part

364 regulations, contravention of a standard amounted to a significant adverse environmental impact, and found that such an impact existed, within the meaning of ECL Section 17-0501 and Part 364. Id. at 7, * 6. While the ALJ observed that because the nearest drinking water well was "a distance away," the applicant "may be correct that the site does not present a 'threat,' at least in the Part 375 sense," he went on to state that he could not "appropriately rely" on Part 375 to make that determination. Id. at 6-7, * 5-6. The ALJ reasoned that Part 375 addresses situations where cleanup at a site is necessary because damage has already been done, whereas the standards of Part 364 are intended to prevent damage before it occurs. Id. at 7, * 6. Because Matter of Gruner construed a different regulatory provision, it is not dispositive with respect to the precise issue presented here.

An earlier decision considered the regulations then applicable to inactive hazardous waste sites. In Matter of George A. Robinson & Co., Inc., the ALJ considered whether hazardous waste disposed of at a site constituted a "significant threat" within the meaning of ECL Section 27-1305. ALJ's Hearing Report at 32, 1994 WL 114901, * 34 (Mar. 2, 1994).⁸ At the time of the hearing in Matter of Robinson, an earlier version of the Part 375 regulations at issue in this proceeding had been declared invalid by the New York State Court of Appeals in Matter of New York State Superfund Coalition, Inc. v. New York State Dept. of Env'tl. Conservation, 75 N.Y.2d 88 (1989) (holding that the mere presence of hazardous waste was not enough to support a legal determination that a site posed a significant threat). Matter of Robinson was therefore decided with reference to the statute alone. Matter of Robinson, Commissioner's Decision and Order, at 1, 1994 WL 114901, * 1.

In Matter of Robinson, the ALJ concluded that the record was "insufficient to support a conclusion that hazardous waste on the Site constitutes a significant threat to the environment because the potential for wastes on-Site to contaminate ground water to a degree that would impair the water's usefulness as a current or future water supply, or to cause an adverse effect on an actual or reasonably foreseeable environmental receptor (via any route) was not established." Hearing Report at 32, * 34. The ALJ noted that "too little [was] known about the amount and mobility of

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Matter of Robinson was an enforcement action in which Department Staff, rather than Petitioners as is the case here, bore the burden of proving their case by a preponderance of the evidence. Nevertheless, the ALJ's discussion of the meaning of the term "significant threat" is instructive.

wastes on-Site, and their relationship to potential environmental receptors, to draw any conclusion on their potential to cause environmental harm," and concluded that Department Staff "cannot argue that a particular concern is a 'significant threat' without at least demonstrating that the applicable criteria could be exceeded." Id.

The Commissioner disagreed, concluding that there was sufficient evidence in the record to sustain a finding that the site constituted a significant threat, in light of the hazard to groundwater. Matter of Robinson, Commissioner's Decision and Order, at 6-7, 1994 WL 114901, *5-6 (Mar. 2, 1994). According to the Commissioner, "[t]he fact that a particular segment of groundwater is not actively being used does not negate its status as an environmental resource. Because of the natural protections from pollution that groundwater enjoys, the law views groundwater as a potential source of potable water." Id. at 7, * 6. On a petition pursuant to CPLR Article 78, the Appellate Division, Fourth Department annulled the Commissioner's determination, stating that "under the circumstances of this case, we conclude that respondent's determination is not supported by substantial evidence in the record." Matter of George A. Robinson & Co., Inc. v. Marsh, 227 A.D.2d 953, 953 (4th Dept. 1996).

Matter of Robinson describes two potential bases for a significant threat finding, by showing a potential for hazardous wastes on-site to contaminate groundwater to a degree that: (1) would impair the water's usefulness as a current or future water supply, or (2) to cause an adverse effect on an actual or reasonably foreseeable environmental receptor. It does not, however, state that the exceedance of a groundwater standard, without more, is sufficient to demonstrate the existence of a significant threat as that term is defined in the regulations.

The Department's guidance is consistent with this determination. While the Responsiveness Summary indicates that "contravention of an environmental quality standard may establish a present injury to the environment, even absent an immediate danger to human health," it also states that "[w]e believe that there can be instances where the violation of an ambient groundwater quality standard does not constitute a 'significant threat.'" Responsiveness Summary, at 11-16, 11-15. Accordingly, the contravention of groundwater standards, without more, is insufficient to establish the existence of a significant threat to the environment at this Site.

Consideration of Past Effects

In post-hearing briefing, Petitioners also maintained that "a significant threat listing is forward looking and cannot be based on past effects." Petitioners' Brief at 58-59. In support of this argument, Petitioners cited Matter of Lashins Arcade Co. v. Jorling, 221 A.D.2d 533 (2nd Dept. 1995), in which the court affirmed the lower court's grant of a petition pursuant to CPLR Article 78 seeking to annul the Commissioner's determination directing petitioners to commence remediation of contaminated groundwater, without first affording petitioners a hearing. Because the decision in Matter of Lashins considered a different provision of the statute than that at issue here, it is of limited utility in construing the term "significant threat" in this proceeding.

Matter of Lashins dealt with the provisions of ECL Section 27-1313(b) (i)-(iii), where the Commissioner, after investigation and determining that hazardous waste at a site poses a significant threat, and "that such threat is causing or presents an imminent danger of causing irreversible or irreparable damage to the environment," may proceed without a hearing to develop and implement a remedial program for the site. The regulatory subsection at issue in Matter of Lashins tracks the language of Section 375-1.4(f) of 6 NYCRR, which addresses situations where the Commissioner must evaluate whether a significant threat to the environment "posed by hazardous waste disposed at a site makes it prejudicial to the public interest to delay action until a proceeding can be held pursuant to ECL article 27, title 13."

In affirming the lower court, the Appellate Division stated that "the record fails to support the conclusion that further environmental damage reasonably is anticipated to result during the period necessary to hold a hearing. The investigations sponsored by the DEC showed that while environmental damage had already occurred, there was no potential for further damage." Matter of Lashins, 221 A.D.2d 535. The court held that the Department's conclusion that the threat posed by the site made it prejudicial to the public interest to delay action pending a hearing was not supported by the evidence indicating that the overall level of groundwater contamination at the site was decreasing and the contaminant plume was not migrating. Id.

In light of the statutory scheme upon which it was decided, Matter of Lashins provides only scant support for Petitioners' position. Moreover, Matter of Lashins demonstrates the distinction between a finding that a significant threat exists currently merely because such an effect may have existed in the

past, which is not consistent with the statute, as opposed to a finding based upon record evidence that such a threat is reasonably foreseeable given the disposal history or other information developed in the time before a site owner petitions for delisting. As Department Staff points out, the current regulations allow the Commissioner to consider the history of disposal at a site in making a significant threat finding. ECL Section 27-1305(1); Section 375-1.4(b)(3). Moreover, such information is relevant here in assessing the adverse impacts potentially attributable to the Site. Department Staff's witness, Mr. Farrar, testified that "migration of contaminants off the site in the past could lead to conditions which give rise to significant threat at the present day or in the future," and that knowledge of past levels of contamination "helps inform one's interpretation of what could have happened, what migration may have happened and what the impacts of that migration have been." Tr. at 743.

Nevertheless, the language of the regulation expressly states that a site constitutes a significant threat to the environment where "hazardous waste disposed at the site or coming from the site results in, or is reasonably foreseeable to result in," any of a series of enumerated adverse impacts. Section 375-1.4(a)(1). At the hearing, Department Staff's witness Mr. Swartout testified that "[w]e have not necessarily stated there's a significant effect right now," and that it was not necessary "to find there is a current threat or current impact." Tr. at 447-48. This is consistent with the wording of the regulation, which employs the present tense or in the alternative the future tense, and does not use the term "resulted in." Thus, the inquiry in this proceeding should focus on the impacts presently occurring at the Site, as well as those reasonably foreseeable to occur, taking into account that evidence of past effects could be relevant in assessing whether the hazardous waste at the Site currently results in, or is reasonably foreseeable to result in, a significant threat to the environment.

Res Judicata

In their post-hearing brief, Petitioners argued that a prior determination with respect to this Site establishes, by virtue of the doctrine of *res judicata*, a preclusive determination that the Site is not a significant threat to the environment. Specifically, Petitioners contended that ALJ Robert O'Connor reached this conclusion in a 1987 ruling on a motion for summary order. Petitioners' Brief, at 45 (citing Matter of Utica Alloys, Inc., Decision and Order, Hearing Report, and Ruling, 1987 WL 55369 (January 16, 1987)).

Petitioners maintained that “[s]ince that decision was taken, no new PCB waste has been deposited on the Site. Thus, unless DEC can point to information that has been generated since the previous ruling showing a significant impact that was not considered, or was underestimated, the Site cannot be classed as a significant threat.” Petitioners’ Reply Brief at 2. Petitioners went on to note that “as would be expected, measurements have confirmed that the Site is now having even less effect than it did at the time of the previous hearing.” Id. According to Petitioners, the earlier ruling precludes Department Staff from using the same evidence it used or could have used to support a determination that the Site poses or will pose a significant threat.

“Under *res judicata* or claim preclusion, a valid final judgment bars future actions between the same parties on the same cause of action.” Parker v. Blauvelt Volunteer Fire Co., Inc., 93 N.Y.2d 343, 347 (1999) (citations omitted). As Department Staff correctly points out, the language of the ruling does not support Petitioners’ argument. In Matter of Utica Alloys, the ALJ ruled that “the question of significant threat to the environment will require further adjudication,” and went on to bifurcate the proceeding to consider this question in the first phase of the hearing, as well as other threshold factual inquiries, before considering the issue of liability, if any. Matter of Utica Alloys, Inc., ALJ Ruling at 4, 6, 1987 WL 55369, *7, *9. The adjudication did not take place.⁹ Given this procedural posture, the doctrine of *res judicata* does not foreclose further inquiry in this proceeding into the question whether the Site poses a significant threat to the environment.

Petitioners also argued that the doctrine of *res judicata* should likewise attach to ALJ O’Connor’s ruling that certain findings in a report prepared for Universal Waste in 1983 by Clayton Environmental Consultants, Inc. (the “Clayton Report”) were insufficient to demonstrate the presence of a significant threat to the environment as a matter of law. In Matter of Utica Alloys, the ALJ noted that Department Staff’s assertions that the presence of PCBs at the Site “in relatively high concentrations

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Department Staff appealed the ALJ’s ruling, and Petitioners moved for joinder of several additional parties. Matter of Universal Waste, Inc., Second Interim Decision, 1989 WL 162822, * 1 (Aug. 16, 1989). The Commissioner reserved ruling on the motion for summary order and addressed only the joinder issue. Id. On July 10, 1992, the ALJ issued an order noting that there had been no adjudication yet, and stating that “[w]hile I will not grant an indefinite suspension of the proceeding, neither will I order that the prosecution of the case go forward at this point.” Matter of Universal Waste, Inc., ALJ Ruling at 1-2.

in the surficial soils” and in groundwater in excess of standards were based upon the Clayton Report. Id. at 3, * 7. According to the ALJ, “[t]hese assertions fail to establish the nature of the effect of these conditions on either the environment or public health.” Id.

Petitioners maintained that Department Staff's attempts to use the Clayton Report findings as evidence to support its significant threat determination in this proceeding are foreclosed by the doctrine of *res judicata*, asserting that this evidence “was considered and rejected by ALJ O'Connor is [sic] his decision.” Petitioners' Brief at 46. As discussed above, *res judicata* does not apply here because no final determination was rendered.

Nevertheless, the doctrine of issue preclusion supports Petitioners' position. Issue preclusion prevents a party from relitigating in a subsequent action or proceeding an issue that was clearly raised in a prior action or proceeding and decided against that party. Parker, supra, 93 N.Y.2d at 349 (citations omitted). Issue preclusion applies even if the tribunals or causes of action are not the same, as long as the issue in the second action “is identical to an issue which was raised, necessarily decided and material in the first action, and the plaintiff had a full and fair opportunity to litigate the issue in the earlier action.” Id. (citations omitted).

In Matter of Utica Alloys the ALJ found that the data and conclusions drawn in the Clayton Report (i.e., that PCBs were present in the surficial soils in relatively high concentrations, and in the groundwater above the standards established in 6 NYCRR Part 703) were insufficient to establish that the Site presents a significant threat to the environment. ALJ Ruling at 3, * 7. The Commissioner's decision and order adopted the ALJ's findings and conclusions. Decision and Order, at 1, * 1. Therefore, due to the doctrine of issue preclusion, the Clayton Report, standing alone, cannot provide the basis for Department Staff's listing decision in this proceeding.

Effects on Species of Special Concern

In post-hearing briefing, Department Staff asserted that PCB contamination attributable to the Site has had a significant adverse impact on wildlife species of special concern, within the meaning of Section 375-1.4(a)(1)(i), specifically the Cooper's hawk, the common nighthawk, and the vesper sparrow. Department Staff's Brief at 61-62. In support of these arguments, Department Staff contended that

"[e]cological surveys undertaken in the vicinity of the Utica City Dump Site identified one species of special concern, the Cooper's hawk (6 NYCRR §182.6(c)), which was actually observed at the Utica City Dump site. Two other species listed in 6 NYCRR §182.6(c) the common nighthawk and the vesper sparrow, were said to be identified in the New York State Breeding Atlas Program (1980-1985) as two of 106 species of breeding birds identified in the vicinity of the landfill. Although the two species were not actually observed, the author of the Remedial Investigation/Feasibility Study noted that they could occur on site."

Id. at 62 (citation omitted). Department Staff went on to argue that because the Dump and the Site are in close proximity, "it is likely that these birds which are listed as species of special concern are located in the immediate vicinity of the Universal Waste Site." Id. Department Staff asserted that because PCBS tend to biomagnify, significant adverse impacts upon consumers at the top of the food chain, including the bird species in question, are reasonably foreseeable due to the contamination at the Site. Id. at 63.

Petitioners objected to the introduction of these arguments in post-hearing briefing, pointing out that neither the prefiled testimony nor any witnesses offered by Department Staff at the hearing discussed any alleged effects of the contamination at the Site on birds. Petitioners' Reply Brief at 12-13. According to Petitioners, Department Staff was attempting impermissibly to introduce an environmental effect that was not the subject of the hearing and then to shift the burden to Petitioners to demonstrate that the effect was not occurring. Id. at 13. Petitioners asserted that "[b]efore the burden shifts to Petitioners, DEC must first raise the issue at the appropriate time and then meet its burden of going forward by producing evidence to support its allegations of a significant effect." Id.

Petitioners went on to note that the ecological assessment in the Remedial Investigation/Feasibility Study ("RI/FS") for the Dump concluded that PCBs at that site did not pose a significant ecological risk in the terrestrial environment, and only a minor risk to birds that eat fish and birds that eat invertebrates. Exh. 31 at 5-34, 5-46 to 5-47. According to Petitioners, because the Cooper's hawk feeds on birds and small mammals, the nighthawk

feeds on flying insects, and the vesper sparrow feeds on insects and seeds, none are aquatic species that are most at risk from PCB contamination. Petitioners' Reply Brief, at 14.

In addition, Petitioners discussed the differences in habitat between the Site and the Utica City Dump, pointing out that the former is sparsely vegetated, in contrast to the Dump site, and does not provide suitable habitat or foraging areas for these bird species. With respect to the backwater, Petitioners noted that even assuming contamination at that location could be attributed to the Site, the PCB levels (8 mg/kg) are lower than those reported in the RI/FS for the Utica City Dump site (20 mg/kg). Petitioners' Reply Brief at 14-15. According to Petitioners, because the consultant that prepared the RI/FS found that there would be insignificant adverse effects from PCB contamination at the Dump site even on those species most at risk, the species identified by Department Staff, "which are not those most at risk, would experience even lesser effects, if any." Petitioners' Reply Brief at 14.

Department Staff's arguments with respect to the potential for significant effects on species of concern are untimely, and even if timely made, those arguments are not persuasive. No evidence was offered at the hearing as to the effects of PCB contamination attributable to the Site on the specific bird species in question. Moreover, there is insufficient evidence in the record to support Department Staff's contentions, inasmuch as none of the birds were observed on the Site, and only the Cooper's hawk was seen at the Utica City Dump.

The RI/FS for the Dump discusses the effects of contamination on the great blue heron and spotted sandpiper, and assumed that the former feeds only on fish, and the latter on 50% crayfish and 50% mussels. Exh. 31 at 5-37 to 5-39. The RI/FS concluded that the risks from PCB contamination were relatively low for fish-eating birds, and a moderate risk for birds eating primarily invertebrates. Exh. 31 at 5-46, 5-47. As Petitioners point out, the birds identified by Department Staff in its brief rely on other food sources than fish and invertebrates, and prefer a habitat different from that found at the Site. The record supports Petitioners' contention that no significant effect on these species is occurring or is reasonably foreseeable to occur, both because their presence at the Site or at areas potentially influenced by contamination at the Site is questionable, and even if such birds are present, the likelihood of any significant impact is minimal. Without more, Department Staff's arguments on this point are speculative.

Effects on Protected Streams

Department Staff contended further in its post-hearing brief that the Site poses a significant threat pursuant to Section 375-1.4(a)(1)(ii) because of impacts or potential impacts on a protected stream, pursuant to Section 608.1 of 6 NYCRR. Section 608.1(p) defines a protected stream as "any stream or particular portion of a stream" for which certain classifications have been adopted, including, in the case of the Mohawk River, A, A(t),¹⁰ B, and C(t). The portion of the Mohawk River in the vicinity of the Site is designated Class C. Tr. at 488.

Department Staff noted that some areas of the Mohawk downstream of the Site are classified as protected pursuant to Section 608.1. Department Staff maintained that:

"[t]he Division of Environmental Remediation interprets a significant adverse impact upon a protected to stream to mean a significant adverse impact upon any stream *for which all or part of the stream* is defined as a protected stream. The rationale for this interpretation is that an impact to a protected moving water body, such as a river or other stream, are [sic] not confined to the point of contact with the water body. Since the stream is in continuous motion, and the fish and many other life forms within it are not stationery [sic], the impact to the stream can extend far beyond the area of immediate impact to the stream. This is particularly true with a contaminant like PCBs which is persistent and bioaccumulable."

Department Staff's Brief at 63-64 (emphasis added). According to Department Staff, the backwater area is part of the Mohawk River, and both are encompassed within the regulatory definition of a "protected stream" because of their influence on protected areas of the River.

Petitioners responded that any alleged effects on such areas were insignificant, and also took issue with Department Staff's characterization of the area near the Site as a protected stream. Petitioners pointed out that the Site is located within the reach

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The "(t)" designation refers to streams designated "trout," as well as those more specifically designated "(ts)," or "trout spawning." Section 608.1(p).

of the Mohawk River that is designated "C," and that "the nearest stretch of the Mohawk River that is a 'protected stream' is ten miles downstream." Petitioners' Reply Brief at 16. Petitioners argued that "the Site and the backwater together are having no measurable effects on the Mohawk River at its nearest points and will not foreseeably have any such effects." Id. According to Petitioners, in light of this, as well as the existence of other, more significant sources upstream and downstream, Department Staff cannot list the Site as a significant threat based on an impact on a protected stream.

Petitioners observed that Department Staff did not cite to any other instances when it employed this interpretation of the regulation, and that Petitioners found no prior decisions consistent with Department Staff's view. Petitioners argued further that it was not clear that the backwater was even included within the regulatory map Department Staff relied upon in contending that the backwater is part of the River, and that in any event, the PCBs in the backwater are immobile and therefore do not affect the main part of the River.

As discussed below, Petitioners met their burden to show that PCBs disposed of at the Site do not pose a significant threat to the backwater or the River itself. Petitioners' witness, Dr. Boehm, testified that PCBs from the backwater area are not influencing the mass of PCBs in the River. Tr. at 51. Moreover, Department Staff's witness, Dr. Litten, testified that the influence of the backwater on PCBs in the River is "not great," and acknowledged that there is no significant increase in PCB readings downstream of the Site. Tr. at 169.

This testimony was corroborated by Dr. Hennessey, who concluded that the results of sediment sampling showed that there was no measurable input of PCB contaminated sediments from the Universal Waste Site to the River. Tr. at 341. Accordingly, the record does not support a finding that the Site poses a significant threat because of an existing significant adverse impact or a reasonably foreseeable significant adverse impact on a "protected stream" as that term is defined under Section 608.1(p). In this case, any such impact of the Site on the portion of the Mohawk River that is classified as C(t) would result from an impact on the backwater or the portion of the River, designated as a Class C, in the vicinity of the Site.

Moreover, Department Staff's contention that Section 375-1.4(a)(1)(ii) extends to impacts or reasonably foreseeable impacts "upon any stream for which all or part of the stream is defined as a protected stream" is not supported by the express

language of Section 608.1(p). Research has not revealed support for this reading of the regulation, which would essentially nullify the phrase "or particular portion of a stream" and render it superfluous. Such a reading of the regulatory language is not consistent with a basic principle of statutory construction. See Matter of Scoglio v. County of Suffolk, 85 N.Y.2d 709, 713 (1995) (construction that rendered preceding general provision of law surplusage violated settled tenet of statutory construction that effect and meaning must be given, if possible, to every part and word of a statute) (citing Sanders v. Winship, 57 N.Y.2d 391, 396 (1982), McKinney's Cons. Laws of N.Y., Book 1, Statutes § 98).

While Department Staff's rationale for its interpretation, generally speaking, is not without some foundation in light of the potential for an adverse effect on a designated protected stream portion as a result of contamination flowing from another area of the water body that is not so designated, in this case that rationale cannot support a reading of the regulation contrary to its express language. Accordingly, the record does not support a finding that a significant adverse effect on a protected stream within the meaning of Section 375-1.4(a)(1)(ii) is occurring, or that such an effect is reasonably foreseeable.

DISCUSSION

On-Site PCB Contamination

Petitioners took the position that Department Staff's listing determination was legally deficient because that determination was based upon a finding that a significant threat exists due to the mere presence of hazardous waste on-Site. Department Staff asserted that the PCB levels on the Site itself are sufficient to support a determination that the contamination poses a significant threat to the environment, apart from any effects attributable to off-Site PCB migration. The subsections of this hearing report that follow discuss the Site's disposal history and the investigations undertaken at the Site to determine the nature and extent of PCB contamination.

Disposal History

In its direct case, Department Staff offered testimony that since approximately 1957, Universal Waste operated a salvage yard for scrap iron, copper and stainless steel. Swartout Prefiled at 5. As part of those operations, PCB contaminated oils from capacitors and transformers received from Special Metals, Inc. and Niagara Mohawk were disposed of on the Site. Swartout Prefiled, at 5; Exh. 15, at 2-3; Exh. 50, at 2. Department Staff

estimated that the total amount of PCB-containing materials disposed of at the Site from Special Metals alone between 1957 to 1978 was 25.7 tons. Department Staff's Brief at 16-17; Exh. 50.

At the hearing, John Iannotti, P.E., the Department's Manager of Environmental Auditing and Compliance, Division of Operations, offered testimony concerning a transcript of proceedings that took place on April 29, 1981 as part of the Department's investigation of the Site. In that transcript, James Williams, a former employee of Universal Waste, described disposal of hazardous waste, including PCBs, that occurred during Site operations. Exh. 7. Mr. Williams was not produced for cross-examination in this proceeding, and Mr. Iannotti acknowledged on cross-examination that he had no personal knowledge of the activities described by Mr. Williams. Tr. at 41.

Petitioners objected to the receipt of the transcript of Mr. Williams's testimony, asserting that Mr. Williams's credibility was suspect, that in the absence of a witness with personal knowledge of the alleged activities, the testimony was hearsay, and that in any event, the testimony was of questionable relevance. Tr. at 38, 41. Petitioners raised similar objections with respect to Exhibit 12, a September 6, 1979 memorandum authored by a Department employee memorializing an interview with a former Universal Waste employee. Tr. at 40.

Department Staff argued that the transcript was qualified through foundational questions in Mr. Iannotti's prefiled testimony, and that the document is a record maintained by the Department and therefore admissible under the State Administrative Procedure Act ("SAPA") Section 306(2). Tr. at 38-39. The statute provides in pertinent part that "[a]ll evidence, including records and documents in the possession of the agency of which it desires to avail itself, shall be offered and made a part of the record." The ALJ received the exhibits into evidence, ruling that the Petitioners' objections went to weight.

At the hearing on rebuttal, Bert Copple, a Utica Alloys employee, testified as to Mr. Williams' criminal record which includes convictions for possession of stolen property and burglary. Copple Prefiled at 2. Petitioners also provided a copy of Mr. Williams's criminal record. Copple Prefiled at 2; Exh. 29.

In light of the complete record of the hearing, Mr. Williams's testimony is of doubtful reliability and should be accorded little weight. Petitioners had no opportunity to cross-

examine Mr. Williams in this proceeding, and the transcript of his testimony indicates that with respect to some points for which that testimony was offered his knowledge was limited or contradicted by other testimony, and thus did not constitute probative evidence. Specifically, Mr. Williams testified as to the presence of floor drains in the buildings at the Site, and appeared to indicate that all but one of the drains discharged directly to the ground. Exh. 7 at 26-27. According to Mr. Williams, the remaining drain located in the main building at the Site was connected to the sewer. Id. at 27. Nevertheless, in response to a question concerning any blockages in the drains, Mr. Williams stated that "I think we usually got an overflow from the Mohawk River inside the building so other than that, I don't know how the drains work." Id. at 26.

In addition, as discussed below, Department Staff offered evidence concerning periodic flooding at the Site. Mr. Williams stated that the Mohawk River "[b]acked up three times in the ten years I was there. And it would go in some places three foot high." Id. at 37. This testimony is duplicated in other, more reliable evidence in the record that the water on the Site was three feet deep during a flood. Exh. 11.

In any event, it is undisputed that PCBs were released to the environment as a result of Site operations, and are present at the Site today. Moreover, ALJ O'Connor found no triable issue of fact in Matter of Utica Alloys, Inc. where it was undisputed that PCBs "are present in the surficial soils and groundwater on and under portions of the Site, respectively." ALJ's Ruling at 3, 1987 WL 55369, * 6 (Jan. 16, 1987). As discussed above, the inquiry in this proceeding should focus on the whether a significant threat presently exists or is reasonably foreseeable as a result of contamination attributable to the Site.

Sampling in 1977, the Clayton Report (1983) and the CDM Report (1993)

In his testimony, Mr. Swartout referred to an April 5, 1979 memorandum from Berton Mead, a regional engineer in the Department's Region 6 office, to Charles Goddard, of the Bureau of Hazardous Waste. Swartout Prefiled at 7; Exh. 10. According to the memorandum, seven earth and sediment samples taken in 1977 were analyzed for PCBs. Id. Six of the surface samples, taken at a depth of six inches, were taken from the Universal Waste Site. Id. One sample was taken from ditch sediment off-site. Id. According to the memorandum,

[s]amples #1, 2, 3, and 4 were taken generally as background samples, Sample #5 was taken next to a pile of old capacitors and sample #6 was taken next to a pile of old barrels. Sample #5 had an accumulation value of + 50,000 ppm [parts per million] PCB and #6 had a value of + 30,000 ppm PCB. Sample #7, taken from the open ditch sediment off site, had an accumulation value of + 68 ppm PCB.

Id.

Mr. Swartout testified that in 1983 Universal Waste hired Clayton Environmental Consultants to conduct an investigation of potential contamination at the Site. Swartout Prefiled at 11. A field investigation report dated March 21, 1984 (the "Clayton Report") was submitted to Department Staff, but the report was never approved by the Department. Id. at 11-12; Exh. 3-8; Tr. at 490. Mr. Swartout testified that the Site was listed as a Class 2 site in 1986 based upon technical information in the Clayton Report, "as well as earlier information obtained by the Department." Swartout Prefiled at 13.

The Clayton Report states that PCBs were found in surficial and subsurface soils at the Site. Swartout Prefiled at 12; Exh. 3-8, at 8, 15. The results of analysis of one sample showed PCBs up to 36,000 parts per million ("ppm"). Swartout Prefiled at 12; Exh. 3-8, at 16. PCBs were also detected in all groundwater samples, and PCB levels in samples taken downgradient were one to two orders of magnitude greater than levels in samples obtained from upgradient wells. Id.

Although only PCB Aroclor 1254 was found on the surface of the property, the Clayton Report indicates that both 1254 and 1262 were detected in the groundwater at the Site. Exh. 3-8, at 16. On cross-examination, Mr. Swartout was questioned concerning this section of the Clayton Report, which goes on to state that the presence of both 1254 and 1262 in groundwater, coupled with the fact that PCBs were detected in upgradient wells, indicated that "offsite sources may be contributing to this contamination." Exh. 3-8 at 16-17, Tr. at 452.

Mr. Swartout was also asked to refer to the discussion and findings section of the Clayton Report, which concludes that "[t]he degree to which the Utica Alloys operations have contributed to this contamination can not be determined at this time because wells determined to be upgradient (based on water

level measurements taken during periods of high and low water levels) of the operations were also contaminated with these same compounds." Exh. 3-8 at 23; Tr. at 452. According to the Clayton Report, "[d]ata indicate a significant contribution from offsite sources, which should be investigated further." Id.

Mr. Swartout went on to discuss an August 1996 report prepared by Camp, Dresser & McGee (the "CDM Report") as part of a preliminary site assessment ("PSA"). Swartout Prefiled at 15; Exh. 3-11. The CDM Report described sampling of Site soils and the storm and sanitary sewers, as well as a video inspection of those sewers. Swartout Prefiled at 15; Exh. 3-11 at 2-4, 2-5. According to the CDM Report, samples collected from the soils and storm and sanitary sewers indicated that PCBs in the soils at the Site "do not appear to be coming from an offsite and upgradient source, by way of the sewer system" onto the Site. Swartout Prefiled at 16; Exh. 3-11 at 5-1.

Although no groundwater samples were collected off-site and upgradient due to a clay layer that was encountered, the CDM Report stated that PCBs were only detected in the soils in close proximity to or in front of [the] property and in the storm sewer manholes at the intersection of Wurz and Leland Avenues." Id. The CDM Report concluded that "[b]ased upon the data collected during this PSA, a review of available records and PRP investigation, no further investigation of potential off-site sources is required at this time." Id.

Mr. Swartout testified at the hearing concerning the subsurface soil and groundwater investigation described in the Clayton Report. Tr. at 429. The witness stated that monitoring well B-5 was downgradient of well B-6, and noted that the levels of Aroclor 1254 in those wells were 0.10 and 0.018, respectively. Tr. at 431-32; Exh. 3-8 at 12 and Table F. Mr. Swartout went on to testify that the area where PCBs were historically disposed of at the Site is in the general vicinity of well B-6. Tr. at 433.

On cross-examination, after reviewing other documents in the record, Mr. Swartout acknowledged that he did not know whether groundwater migrated from well B-6 to B-5. Tr. at 479. He stated that "[i]t may be that the source of the groundwater coming into B5 would be further to the north and west of the B6 location, which would be over closer to the main building facilities of Universal Waste rather than the area out near the ditch." Tr. at 479-80.

The Clayton Report concluded that "[t]he groundwater under the property is contaminated with PCBs and various toxic

contaminants, and is therefore in violation of Class GA water quality criteria." Exh. 3-8, at 23. The Clayton Report noted that groundwater at the Site was not being consumed by humans, and thus did not pose an immediate health hazard, but stated that the groundwater discharge to the Mohawk River could reach human receptors. Swartout Prefiled at 12-13; Exh. 3-8 at 23.

As noted above, ALJ O'Connor determined that the data and conclusions in the Clayton Report were insufficient to establish that conditions on the Site presented a significant threat. The testimony of Department Staff's witness provides no basis to disturb that determination, and therefore that determination should be afforded preclusive effect. While Department Staff may rely upon the Clayton Report as part of its case, the Clayton Report, standing alone, does not provide a basis to conclude that on-Site contamination constitutes a significant threat to the environment.

Similarly, the CDM Report does not establish the existence of a significant threat. The investigation undertaken by CDM was intended to identify potential off-site sources. The CDM Report does not discuss potential significant effects due to contamination on-Site, and no groundwater was sampled as part of the investigation. Moreover, the sampling locations selected for that investigation were primarily in the western portion of the Site, and do not provide information concerning levels of PCBs migrating from the Site itself into the backwater. As discussed further in this hearing report, Petitioners met their burden to demonstrate that to the extent any migration of PCBs from the Site is occurring, any effect on environmental resources is insignificant, and no significant threat is reasonably foreseeable.

"Trommelling"

Department Staff's witness, James Ludlam, P.E., testified concerning a soil treatment program undertaken at the Site in or around the summer of 1997. Mr. Ludlam stated that he attended a meeting on February 11, 1998 where representatives of Universal Waste indicated that a process called "trommelling," where Site soils were fed into an apparatus to remove metals, fluff and other pieces of debris, had taken place. Ludlam Prefiled at 2-3.

According to Mr. Ludlam, trommelling results in more highly contaminated soils being mixed with less contaminated soils, "thereby homogenizing the Site's soils and causing PCB contamination to affect a greater quantity of soils than had previously been the case." Id. Mr. Ludlam testified further

that while an analysis of individual soil samples would show lower levels of contamination, the contamination at the site would be more widespread, and PCBs in areas of higher concentration would be diluted by mixing with less contaminated soils. Id. at 3-4.

In his prefiled testimony, Mr. Ludlam indicated that Universal Waste did not seek Department approval before the soil trommelling operation took place, and that the Department did not learn of this activity until the February 1998 meeting. Id. at 3. At the hearing, Petitioners introduced documents demonstrating that Department Staff had in fact been notified by letter dated May 7, 1997 that Universal Waste intended to undertake the trommelling operation, and that upon receiving that notification, Department Staff advised Universal Waste to "proceed with caution." Tr. at 417-19; Exhs. 23 and 24. The May 7, 1997 letter stated that the trommelling operation was not intended as a remediation measure, and that Universal Waste would avoid disturbing locations where high levels of PCBs had been found. Tr. at 418; Exh. 23.

On rebuttal, Bert Copple, control and compliance manager for Utica Alloys, testified that analyses by Universal Waste's consultant, Stearns & Wheler, of samples of the soil piles to be processed in the trommelling operation showed PCB levels ranging from non-detect to 19 mg/kg. Copple Rebuttal at 1; Exh. 28. In a letter dated April 29, 1997, reporting those results, Stearns & Wheler noted that PCBs were detected in five of the six samples "and therefore should be considered generally present in the soils." Exh. 28 at 1. The letter went on to state that "[t]he levels do exceed NYSDEC clean up goals of 1 ppm for surface soils but are not at levels that constitute hazardous waste." Id.

Although Mr. Copple testified on cross-examination that the samples were taken after the trommelling operation took place, the exchange of correspondence appears to indicate otherwise. Tr. at 530, 533. The May 7, 1997 letter from Universal Waste advised that the trommelling operation was planned for the summer. Exh. 23. The sampling results reported were attached to the April 19, 1997 letter from Stearns & Wheler, which indicated that "[o]n April 22, 1997 we collected soil samples from various scrap piles around the Universal Empire [sic] property." Exh. 28.

Mr. Copple testified that the samples analyzed were created by compositing a number of soil samples. Tr. at 534. The witness acknowledged that this procedure could indicate that for a particular sample with a level of 19 parts per million, one or

more of the discrete samples contained PCBs at a higher level. Tr. at 535. As Department Staff's witness Mr. Farrar testified, ECL Section 27-1301(1) was amended in 2003. Farrar Prefiled Rebuttal at 15. That amendment expanded the definition of "hazardous waste" to include the Department's list of hazardous substances set forth at Part 597 of 6 NYCRR. Id. Aroclor 1254 is included on that list, and as a result, Aroclor 1254 at any concentration level is a hazardous waste, regardless of the concentration of PCBs. Id.

In its brief, Department Staff pointed out that PCBs in four of the six soil samples exceeded the 1 ppm cleanup level for PCBs in surface soils, as set forth in TAGM 4046. Department Staff's Brief at 21. Department Staff argued that "[t]he 1997 sampling results must be read with caution, because each sample analyzed was created by the compositing of an unknown number of discreet [sic] samples." Id. at 22. As noted, according to Department Staff, as a result of the trommelling, PCB contamination would be more widespread, even if individual soil samples showed lower levels of contamination.

In light of the chronology discussed above, it is not clear that the sampling was performed after the trommelling operation took place. In addition, Mr. Copple stated that he did not know if the samples were taken from locations where soil was removed for trommelling, or whether the material was trommelled and returned to the soil pile and thus remained in essentially the same location. Tr. at 532. Based upon this record, the effect of the trommelling operation on PCB contamination on-Site has not been established.

Preliminary Site Assessment ("PSA")

On rebuttal, Mr. Swartout testified concerning a declaratory ruling issued by the Department's General Counsel on February 11, 1994. Swartout Prefiled Rebuttal at 6-7. The declaratory ruling indicated that

"[t]here has been an exchange of correspondence between Mr. Gerrard and Department staff, and I take official notice of that correspondence. As a result of that correspondence, staff have agreed that 'a supplemental investigation of both the Universal Waste Site as well as off-site sewers, groundwater and surface water, rather than an RI/FS is called for under the current circumstances.'"

Matter of Universal Waste, Inc., and Utica Alloys, Inc. and Clearview Acres, Ltd., Declaratory Ruling, DEC 27-28, at 2 (Feb. 11, 1994) (emphasis in original).

In May of 2000, Universal Waste agreed to conduct a PSA at the Site. Swartout Prefiled at 16. Universal Waste retained Stearns & Wheler to conduct the PSA, which Mr. Swartout testified was intended "to collect additional data to assist in determining whether the conditions at the Universal Waste site constituted a significant threat to human health or the environment." Id. In its brief, Department Staff noted that a PSA is used "to determine whether a site meets the State's definition of an inactive hazardous waste disposal site by confirming or denying the presence of hazardous waste and determining whether the site poses a significant threat to the environment." Department Staff's Brief at 10; Exh. 53A at 1; Tr. at 774-75.

Specifically, Stearns & Wheler was charged with investigating the Site's surface and shallow sub-surface soils, the Site groundwater, the sewer line bedding, off-Site surface water, and sediment conditions in the sewer outfall channel. Swartout Prefiled at 16. Mr. Swartout stated that the "[p]ipe bedding material along the storm sewer that runs underneath the Site was to be sampled and analyzed to determine if the sewer could be a source of actual impact or if the bedding could be a preferred pathway of migration of the contaminants." Id. at 16-17.

In January 2001, Stearns & Wheler submitted a report (dated January 2000) in draft form (the "S&W Report") that was never finalized by the consultants or approved by the Department. Id. at 17; Exh. 3-5. According to Mr. Swartout, Stearns & Wheler did not investigate the sewer line bedding, and although three test pits were dug along the active storm sewer line and the abandoned sewer line, the sewer bedding could not be located due to the depth of the sewers. Swartout Prefiled at 17. The witness went on to note that shallow groundwater was encountered during the excavation of the test pits. Id.

Mr. Swartout testified that the S&W Report demonstrated "the continued presence of PCBs in the surficial and also subsurficial soils, despite the fact that spillages and disposal had presumably ceased several decades ago on the Site." Id. He asserted that although on-site PCB "hot spots" had allegedly been removed several years before the PSA was conducted, no documentation was provided regarding the removal of that contamination, and the subsequent S&W Report reflected that PCBs

were still detected at elevated levels on the Site. Id. at 17-18.

At the hearing, Mr. Swartout noted that Aroclor 1254 was detected in all of the soil samples taken at the Site. Tr. at 425-26; Exh. 3-5, Table 2. The S&W Report indicated that elevated levels of PCBs on the Site have been found in the east-central part of the Site, near the outfall channel, and in the southern portion of the Site near the railroad tracks. Exh. 3-5 at 8. In the east-central area, concentrations ranged from 26 to 120 parts per million. Id. The surface sample concentrations ranged from 42 to 120 ppm, and at a depth of 12 to 18 inches in the subsurface, PCB concentrations in samples ranged from 26 to 60 ppm. Id. The S&W Report noted that “[o]ver the remainder of the Site, PCB concentrations were generally below 50 ppm, and in most cases, below 10 ppm.” Id. at 9.

Mr. Swartout testified concerning a letter he prepared in April 26, 2002, commenting on the S&W Report. Swartout Prefiled at 18; Exh. 3-6. In that letter, Mr. Swartout observed that PCB levels in the sewer outfall channel exceeded those in Mohawk River sediment. Swartout Prefiled at 18; Exh. 3-6 at 2. Specifically, the highest level of 8.1 ppm was detected in a sample taken adjacent to the sewer outfall pipe, which the witness noted was within 150 feet of the largest area of PCB contaminated soil found on the Site. Swartout Prefiled at 18-19; Exh. 3-6 at 2. As discussed below, however, on cross-examination Mr. Swartout acknowledged that this result was qualified. Tr. at 460-63.

In the letter, Mr. Swartout stated that PCB contamination at the outfall “seems to be more likely site related since the sewer discharge channel is located adjacent to the primary area of PCB contamination at the Universal Waste site.” Swartout Prefiled at 19; Exh. 3-6 at 2. The letter noted further that “[i]n terms of access and exposure to site-related contaminants, the greatest risk under current conditions appears to be biota due to the PCBs which are entering the aquatic ecosystem.” Id. According to the letter, an asphalt cap would inhibit stormwater runoff from washing PCBs from surface soils into adjacent waterways, but should not be placed over the contaminated area without first taking into consideration removal of contaminated soils. Id. The letter concluded that a remedial investigation/feasibility study (“RI/FS”) “is needed to give proper consideration to this matter, as well as others such as remediation of the sewer discharge channel.” Id. Mr. Swartout testified that Stearns & Wheler did not address these comments, and that the S&W Report was never finalized. Swartout Prefiled at 20.

The witness stated that Stearns & Wheler conducted further work at the Site, and that he learned of this additional work after reviewing exhibits provided as part of the delisting petition. Swartout Prefiled at 20; Exh. 3-7. He testified concerning a supplement to the S&W Report, by letter dated December 19, 2002 (the "Letter Report"), which discussed additional sampling for PCBs on the Site. Exh. 3-7.

Four soil borings, three of which were completed as monitoring wells, were installed along the sewer route, where soil samples were taken at various depths. Swartout Prefiled at 20; Exh. 3-7 at 1. According to the Letter Report, the borings were advanced to fifteen feet, and encountered artificial fill material consisting of silt, sand, gravel, and brick and wood fragments. Tr. at 428; Exh. 3-7 at 2.

PCB levels were detected at all four locations and in every soil sample but one, and concentrations ranged from 4 to 20 ppm. Swartout Prefiled at 20-21; Exh. 3-7 at Table 1 and Figure 2. In three out of the four bore holes, PCBs were detected at a depth of 14-16 feet. Tr. at 428-29; Exh. 3-7, Figure 2. The highest level of PCBs detected (19.6 ppm) was from a sample taken 4 to 6 feet below grade in the vicinity of the former settling pond. Swartout Prefiled at 21; Exh. 3-7 at 2, Table 1 and Figure 2; Tr. at 427. The witness noted that this location was in the same general area where a pile of capacitors was reported in 1977, and where a soil sample taken at that time showed PCB levels of 51,200 ppm. Swartout Prefiled at 21. Based on this information, Mr. Swartout concluded that PCB contamination on-site "extends deeper than was discerned from prior sampling," and that PCBs were being leached out of the soil by groundwater. Id.

Mr. Swartout testified that the information provided by Stearns & Wheler indicates that PCBs have migrated downward and are in the saturated soils near the storm sewer. Id. at 25. The witness also concluded that this downward migration of PCBs indicates that it is likely that

"the sewer or bedding surrounding the sewer or both are preferential migration pathways for the contamination moving off the Site. The Petition included results that showed elevated concentrations of PCBs in the unsaturated soils and that concentrations of PCBs are present at all of the depths tested in the vicinity of the sewer and storm sewer bedding. It is likely that lower PCB concentrations in the deeper soils are a

result of the contaminants continually being transported offsite via the sewer and or [sic] groundwater discharge."

Id. at 26. This conclusion is at odds with the Letter Report, which indicated that subsurface migration was not occurring, and that PCBs were not being transported through groundwater or sediment transport in the storm sewer or the sewer bedding. Exh. 3-7 at 3.

The S&W Report stated that at the Department's request, a surface water sample was taken from the sewer outfall area. Exh. 3-5 at 11. No PCBs were detected in that sample at levels that exceeded the method detection limits. Id. at 12, 13. The S&W Report noted that PCBs were present in the sediment at the outfall, but at levels under 10 ppm. Id. at 13. Four sediment samples were collected, one from sixty feet upstream of the backwater and one fifty feet downstream. Id. at 7. Two sediment samples were taken in the backwater, one twenty feet downstream, and one adjacent to the storm sewer outfall. Id.

According to the S&W Report, PCBs were found in surface soils and shallow subsurface soils at depths from 12 to 18 inches, up to 1302 ppm. Swartout Prefiled at 18, Exh. 3-5 at Table 2. Thirty samples were taken, of which three had PCB levels below the unrestricted surface soil level of 1 ppm. Id. On cross-examination, Mr. Swartout acknowledged that the results in Table 2 were in error by a factor of 1,000, so that rather than 1302, the number should read 1.3. Tr. at 458-59. The witness noted that this result was also coded with the letter "J," which indicated that "analyte was positively identified. Reported value may not be accurate or precise." Tr. at 458, Exh. 3-5, Glossary of Data Qualifiers.

Mr. Swartout noted that the letter "R" following a sample result indicated that the result was unusable, and that "the presence or absence of this analyte cannot be verified. Supporting data necessary to confirm result." Tr. at 460, Exh. 3-5, Glossary of Data Qualifiers. He acknowledged that the results for one of the sediment sampling points adjacent to the outflow pipe in the backwater where PCBs were detected at high levels were qualified with a "J" and an "R." Tr. at 462. The witness also acknowledged that sampling results from the point twenty feet from the outfall pipe were considerably lower, and were not qualified. Tr. at 462-63. Mr. Swartout testified further on cross-examination that the cleanup level for PCBs in subsurface soils is 10 parts per million, and that only one of 28

soil boring samples taken at the site exceeded the cleanup level. Tr. at 463-64.

Mr. Swartout acknowledged that the PSA found low levels of groundwater contamination, but pointed out that while the levels were low in absolute terms, groundwater standards were exceeded. Tr. at 453. He also acknowledged that the groundwater results were non-detect for PCBs, with one exception at 0.34 micrograms per liter (parts per billion). Tr. at 454. According to Petitioners' witness Dr. Hennet, levels of this magnitude would make an infinitesimal contribution to PCBs flowing from the Site into the River. Tr. at 358. Dr. Hennet also argued that the 0.34 ppb result may not be representative of actual Site conditions, because the sample in question was taken from a test pit and not a monitoring well, and in consequence may have been contaminated by PCBs in sediment. Tr. at 352-54.

In post-hearing briefing, Department Staff correctly maintained that hazardous waste need not migrate from the Universal Waste Site in order for the Site to present a significant threat to the environment, and pointed out that "[l]imited sampling undertaken by the Department in 1977 showed PCB 'hot spots' at levels as high as 50,000 parts per million (ppm) or 5% PCB." Department Staff's Brief at 7. Department Staff went on to note that "[n]o evidence has been provided to the Department that PCBs have been removed from the Site, other than through the processes of migration." Id. Department Staff observed that analytical testing undertaken after the trommelling operation shows widespread contamination, "but lacks the areas of extremely high concentrations identified in both sampling events which occurred prior to trommelling." Id. at 32. As noted above, however, it is not clear that the analytical testing took place before the trommelling process occurred.

Petitioners countered that Department Staff had not alleged that contamination at the Site was significantly affecting any environmental resource, or that any such significant effect was reasonably foreseeable. Petitioners argued that Department Staff had alleged only that PCBs were present on the Site, and that this allegation was insufficient to establish the existence of a significant threat within the meaning of the statute and the regulations.

Petitioners pointed out that the TAGM 4046 cleanup guideline levels are 1 ppm for surface soils and 10 ppm for subsurface, fifty to five times less than the 50 ppm that constituted hazardous waste under the regulations in effect at the time of the decision in Matter of New York State Superfund Coalition,

Inc. v. New York State Dept. of Env'tl. Conservation, supra, where the Court of Appeals invalidated the former Part 375 regulations. Petitioners' Reply Brief at 22. The court held that "more than the mere presence of hazardous waste - which is always potentially hazardous - must be proven before a 'significant threat' declaration under this regulatory scheme can be justified." 75 N.Y.2d 88, 92 (1989).

Petitioners went on to note that ALJ O'Connor reached the same conclusion in Matter of Utica Alloys, and argued that Department Staff could not rely upon the mere presence of PCBs higher than the cleanup level, "which is far below the former hazardous waste level, to show that the Site is a significant threat." Petitioners' Reply Brief at 22-23. With respect to migration, according to Petitioners, Department Staff's comments on the PSA in a letter dated April 26, 2002 (Exh. 3-6) "indicate[] that the conclusion that the PCBs on the Universal Waste Site are migrating off-site is based solely on the spatial proximity between the PCBs in the sewer discharge channel and those on the Universal Waste Site." Exh. 3 at 7-8.

Department Staff asserted that "the plain language of the regulations and a prior administrative ruling indicate that on-site impacts are sufficient to support a determination that hazardous waste disposed at a site constitute [sic] a significant threat to the environment," citing to Matter of Syracuse Die-Casting and Manuf. Co., Inc., Commissioner's Decision and Order, 1988 WL 158303 (Mar. 10, 1988). In that Decision, the Commissioner held that a significant threat existed where PCBs on the site of a former die-casting facility were detected at levels as high as 46,700 parts per million. Id. at 7, * 8. After some contamination was removed, PCBs were still found at levels up to 1200 parts per million. Id. The Commissioner concluded that the PCB concentrations in soils were sufficient to warrant implementation of a remedial plan. Id. at 2, * 2.

While Department Staff is correct that the regulations clearly do not require that contamination migrate off-site in order to establish a significant threat, Matter of Syracuse Die is not controlling in this case. The ALJ noted in his hearing report that at the time the proceeding took place, the Part 375 regulations had not yet been promulgated, and went on to conclude that even the regulations ultimately promulgated on April 16, 1987 were "not directly applicable to this proceeding as they were not expressly given retroactive application." Id. at 3, * 4. Matter of Syracuse Die was an enforcement action that was decided under the earlier version of the Part 375 regulations, and is therefore distinguishable from this proceeding.

Moreover, the ALJ rejected Department Staff's contention that "since the Site is one of uncontrolled improper disposal of hazardous wastes, it constitutes a *per se* significant threat to the environment," and observed that "[a]ccording to the statute a logical construction requires finding that the mere presence of improperly disposed of hazardous wastes at a site does not, as a matter of law, require a finding that the site constitutes a significant threat to the environment." *Id.* at 10, * 9-10. The ALJ did not reach any conclusion as to whether the PCBs present on the site constituted a significant threat to the environment, stating that "[i]t is within the discretion and expertise of the Commissioner to make that determination." *Id.* at 10, * 10. As discussed above, the Commissioner in fact determined that the site posed a significant threat, based upon the PCB levels in soils.

Nevertheless, as the ALJ noted in Matter of Robinson, *supra*, the precedential value of Matter of Syracuse Die

is limited to the factual record of that case - a record which may or may not have been as detailed and probing of the significance of particular pieces of information as that here, and a record which involved a different environmental contaminant. That Decision did not intend to define "significant threat" in broad terms, but, rather, found a "significant threat" based on that particular record.

Hearing Report, at 33, 1994 WL 114901, * 35. The same reasoning applies here, because a determination of "significant threat" is necessarily site-specific, and based on the unique facts of each case.

As Petitioners pointed out, while PCB levels on-Site in some cases exceed regulatory standards or guidance, in this case those exceedances do not amount to a significant threat, which is required for a listing determination according to the language of the statute and the regulations. Although it is undisputed that sampling results showed levels of PCB contamination in the groundwater at the Site above the standard of 0.09 micrograms per liter in some instances, the highest level detected was 0.34 micrograms per liter. There is no evidence in the record that this groundwater is being used, or will be used, as a water supply. This proceeding is therefore distinguishable from Pall Corp. v. New York State Dept. of Env'tl. Conservation, Index No.

23617/97 (Sup. Ct. Nassau Cty. 1998), where the court upheld the Commissioner's decision that contamination on the site in question was a significant threat, in part because the site was located on top of the sole source drinking water aquifer on Long Island. Pall Corp. at 4.

Petitioners' arguments regarding a lack of any significant threat or material impact on the environment due to contamination attributable to the Site were persuasive, in light of the relatively low levels of PCBs detected in samples taken during the PSA and in the subsequent round of sampling. Moreover, although Stearns & Wheler's letter of April 29, 1997 transmitting the results of sampling at the scrap piles stated that workers should take precautions, including wearing gloves and air filters or respirators and exercising caution with regard to accidental ingestion, that letter also indicated that "PCB concentrations are not significantly high." Exh. 28 at 1. The evidence offered by Department Staff in rebuttal did not establish the existence of any of the significant adverse impacts listed in Section 375-1.4(a)(1)(i) through (vi). Department Staff did not establish a link between conditions at the Site and a significant threat within the meaning of the regulations, other than to argue generally that on-site impacts are sufficient to support a determination that such a threat exists, nor did Department Staff identify the nature or extent of the existing or reasonably foreseeable significant environmental impacts on-Site.

Moreover, consideration of the Section 375-1.4(b) criteria does not lead to the conclusion that the on-Site contamination is resulting in, or is reasonably foreseeable to result in, significant environmental damage within the meaning of Section 375-1.4(a)(2). A number of those criteria address instances where contamination may migrate off-Site, and those alleged impacts are discussed below.

With respect to on-Site impacts, Department Staff asserted that such impacts existed because it is an area where individuals may be present (Section 375-1.4(b)(8)). In this regard, Department Staff stated that an active business is present on-Site, that workers are present at the Site, and an active rail line runs through the property. Department Staff also offered testimony that the Site is separated from the Mohawk River only by a public right of way that leads to a river level control structure located just downstream. Id. According to Mr. Swartout, "[t]here is ready access to this right of way from Leland Avenue and no fence between this right of way and the Site." Id. Department Staff acknowledged that Universal Waste has no employees at present, but argued that "one or more

employees of Utica Alloys, Inc. do enter the Site, and the possibility exists that Universal Waste or another commercial enterprise will have employees working at the Site in the future." Department Staff's Brief at 53; Tr. at 527.

Nevertheless, other than general statements that PCBs are toxic, bioaccumulable, and persist in the environment, Department Staff did not establish a link between the on-Site PCBs and any significant threat or environmental damage sufficient to overcome Petitioners' arguments to the contrary. As a result, Petitioners' assertions that PCB levels in soils and groundwater on the Site itself are not causing or will not foreseeably cause significant environmental damage are more persuasive than Department Staff's counter arguments. Accordingly, the Commissioner should determine that, with respect to on-Site conditions, no significant threat exists within the meaning of the statute and regulations.

Off-Site Contaminant Migration

Petitioners argued that contamination from the Site was having, at most, a minimal effect on any off-Site area, specifically the backwater and the Mohawk River. Petitioners asserted that there are no pathways for significant amounts of PCBs to migrate from the Site to the backwater area or the Mohawk River.

Department Staff asserted that groundwater flow from the Site is directly toward the backwater area, and the main stem of the River. As a result, according to Department Staff, the backwater area is contaminated with significant quantities of PCBs, and this contamination migrates further into the main stem of the Mohawk River. Moreover, Department Staff pointed out that the Site lies in the River's flood plain, and regular flooding occurs which transports contamination off-site.

According to Department Staff, a number of pathways exist which allow PCBs to move from the Site, including flooding; a preferential pathway through the sewer that runs beneath the Site and the bedding associated with the sewer pipe; migration through the subsurface dissolved in groundwater; and migration through the subsurface in non-aqueous phase liquid ("NAPL") form.

With respect to effects on the backwater, the parties disputed the reliability of sampling undertaken in the backwater area, as well as the conclusions to be drawn from the results of analyses of samples obtained at stations in the backwater and the River.

PCB "Fingerprinting"

Petitioners argued that the composition of the PCBs found on-Site differed from PCBs in sediment samples taken for the PSA. Petitioners' witness, Dr. Hennet, testified as to the fate and transport of PCBs at the Site, and stated that analysis of chromatograms¹¹ of the PCBs obtained through sampling showed a difference between PCB contamination on-Site and off-Site. According to Petitioners, analysis of these chromatograms at the congener level demonstrates that the type of PCB (Aroclor 1254) detected in the samples taken in the backwater and in the River is not the same as the Aroclor 1254 found on the Site.

Dr. Hennet analyzed chromatograms from Site soils, the sewer outfall channel, and samples taken upstream and downstream of the sewer outfall channel in the backwater, and concluded that the chromatograms from the upstream and downstream samples were very similar. Hennet Prefiled at 8. Dr. Hennet testified further that chromatograms from samples taken on the Site were different from chromatograms of samples taken in the sewer outfall channel, in a manner that cannot be explained by transport or decay of PCB molecules. Hennet Supplemental Rebuttal at 5. This analysis, according to Petitioners, shows that contamination from Universal Waste was not and is not an important source of PCBs in the Mohawk River, and that as a result PCB contamination attributable to the Site cannot be deemed a significant threat.

In his prefiled testimony, Dr. Hennet asserted that "[b]ecause commercial PCBs were a complex mixture of individual compounds with varying degrees of chlorination, careful study of the composition of the PCBs can yield useful information about the origin of environmental PCBs." Hennet Prefiled Testimony at 4. Dr. Hennet testified that

"[w]hen a laboratory analyzes a PCB mixture it uses capillary column gas chromatography to separate out the different PCB molecules and then quantifies the amount of each

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Chromatography is a method of separating and analyzing mixtures of chemical substances by chromatographic adsorption. McGraw-Hill *Dictionary of Scientific and Technical Terms* (6th Ed. 2003) at 389. "Chromatographic adsorption" is defined as "[p]referential adsorption of chemical compounds (gases or liquids) in an ascending molecular weight sequence onto a solid adsorbent material, such as activated carbon, alumina, or silica gel; used for analysis and separation of chemical mixtures." *Id.* The results of this analysis are presented on a chromatogram, which consists of the pattern formed by zones of separated pigments and colorless substances. *Id.*

separated PCB peak using a sensitive detector, for example an electron capture detector. The result is a chromatogram that shows varying peaks containing different PCB congeners. However, because interpreting this type of chromatogram down to the congener level is time consuming, laboratories commonly report results for PCBs as Aroclor mixture equivalents by comparison with standard mixtures of Aroclors. That is what was done for the results that are available in this case.”

Id. (citation omitted). Dr. Hennet went on to testify that

“[t]he pattern of PCB peaks in a chromatogram is a fingerprint for the analyzed sample. Two samples with characteristically different fingerprints most likely did not originate from the same source; conversely, samples showing similar fingerprints at locations connected by a physical pathway most likely originated from the same source or release. When a fingerprint is preponderant or ubiquitous at the regional scale, as is the case for the Aroclor 1254 pattern in the Utica-Mohawk River area, this particular fingerprint is not useful to evaluate specific sources of contamination. In this situation, it is the differences between fingerprints that contain useful information.”

Id.

The chromatograms at issue were generated as part of the PSA, and included a set from the sampling on-Site (SS-5 and SS-16), a set from sampling in the channel below the sewer outfall (CSOSED 3 and CSOSED 4), and a set from two samples taken from the River bank (CSOSED 1 and CSOSED 2). Exhs. 5-2 and 5-3. As noted, based upon his review of the chromatograms, Dr. Hennet concluded that the chromatograms associated with the samples from the River bank upriver and downriver from the point where the backwater connects to the River’s main stem are similar. Exh. 5 at 11. As a result, Dr. Hennet concluded that the discharge from the backwater does not significantly affect the type of PCBs present in the River. Id. at 12. Dr. Hennet noted further that the PCB concentrations from the sampling station downriver were

lower than those upriver, and argued that this demonstrated that the backwater is not having a significant impact on the River. Id. at 8-9.

In his prefiled testimony, Dr. Hennes stated that the samples taken below the sewer outfall had a different fingerprint than those from the River bank samples. Exh. 5 at 11-12. Dr. Hennes testified at the hearing that this difference could not be attributed to transport or decay through weathering. Tr. at 551.

According to Dr. Hennes, this confirms that the backwater is not contributing a significant amount of PCBs, if any, to the River, because the material found at the outfall or backwater area is not associated with the material found in the River. Tr. at 558.

Finally, the witness compared the chromatograms from the samples taken on-Site to those from the backwater samples. According to Dr. Hennes, the on-Site sample chromatograms were all similar. Hennes Supplemental Rebuttal at 10. Dr. Hennes concluded that the on-Site samples differed from those from the backwater samples, and further, that these differences could not be explained by decay or transport processes. Hennes Supplemental Rebuttal at 11; Tr. at 327-330.

Department Staff countered that the chromatograms of sediment samples provided to the Department by Universal Waste showed similarities between samples taken in the backwater and samples taken in the main stem of the Mohawk River. On rebuttal, Department Staff offered the testimony of Faye Harris, an environmental chemist employed by the Department. Harris Prefiled at 2. Ms. Harris disagreed with Dr. Hennes's testimony concerning the similarities between the on-Site sample chromatograms and the chromatograms from samples taken in the outfall channel. Id. at 5.

Ms. Harris testified that the chromatograms from these two locations "show different Aroclors in the PCB fingerprint." Id.

Ms. Harris referred to the PSA, which found Aroclor 1260 and Aroclor 1248 in on-Site samples. Harris Prefiled at 7; Exh. 3-5.

She testified that these Aroclors would produce a distinctly different fingerprint from the two chromatograms selected and provided by Dr. Hennes. Harris Prefiled at 7. The witness contended that while sixty chromatograms would have been produced as part of the PSA undertaken by Stearns & Wheeler, only two chromatograms accompanied Dr. Hennes's testimony. Id. at 6. Dr. Hennes's supplemental rebuttal testimony, however, pointed out that Department Staff had never requested all of the available chromatograms, and provided the remaining chromatograms as an

exhibit to that testimony. Hennet Supplemental Rebuttal at 9-10; Exh. 49.

According to Department Staff, "in order to accurately interpret a chromatogram, one has to have available the standard that the laboratory ran when the samples to be interpreted were analyzed." Department Staff's Reply Brief at 23. Ms. Harris contended that a reliable identification could not be made without such a standard, and noted that Universal Waste did not task its consultant with analyzing the samples at the congener level. Tr. at 667-68, 703, 716. Nevertheless, as noted above, Dr. Hennet's prefiled testimony stated that such a comparison was made in this instance ("laboratories commonly report results for PCBs as Aroclor mixture equivalents by comparison with standard mixtures of Aroclors. That is what was done for the results that are available in this case."). Hennet Prefiled at 4.

Moreover, if Ms. Harris were correct that analysis at the congener level cannot be done based on the chromatograms offered in evidence, her ability to interpret those chromatograms, as well as Dr. Hennet's, would be compromised. Although Dr. Hennet testified that the laboratory did not interpret the chromatograms down to the congener level, and instead reported the results by comparison with standard mixtures, he did not state that a qualified witness would be unable to analyze the chromatograms and draw conclusions based upon similarities or differences that were observed. In fact, the testimony offered by Ms. Harris also attempted to draw distinctions between the chromatograms.

On rebuttal, Dr. Hennet reiterated that the PCB congener patterns in the contaminated soils in the outfall area were distinctly different from the patterns found in the Mohawk River, and are also different from patterns found in contaminated soil on the Site. Hennet Supplemental Rebuttal at 5. Dr. Hennet testified that the predominance of Aroclor 1254 on the Site, in the backwater, and in the River was "not an adequate marker to distinguish between sources since it is present at all locations of interest." Id. He went on to state that "[i]t is necessary to use the raw chromatographic data to make a scientific comparison of the PCB fingerprints; such a comparison cannot be based on the Aroclor 1254 label only." Id. Dr. Hennet testified that he examined the chromatograms and PCB congener patterns "and concluded that the congener pattern at the sewer outfall is different and therefore that the PCBs at the sewer outfall did not originate from the Universal Waste Site." Id.

As part of his testimony at the rebuttal hearing, Dr. Hennet discussed his evaluation of the chromatograms, including the

differences he observed based upon retention times and the use of two fixed compounds that are added to the samples before analysis to ensure accuracy. Tr. at 641. The two compounds are TCMX, a chlorinated xylene compound (tetra-chloro-meta-xylene), and DCB, or decachlorobiphenyl, which Dr. Hennes testified is a fully chlorinated DCB. Tr. at 642. Based upon the reference points established using these two compounds, other unknown compounds may be identified.

Ms. Harris confirmed this testimony, testifying that TCMX and DCB are surrogates which enable the laboratory to identify PCBs in a particular sample. Tr. at 667-68. Nevertheless, Ms. Harris disputed Dr. Hennes's interpretation of the chromatogram for a sample taken at CSOSED-4, asserting that peaks occurring before the TCMX surrogate on the chromatogram for CSOSED-4 were not relevant to identifying PCBs. Tr. at 694.

On cross-examination, however, Ms. Harris indicated that PCB peaks could occur prior to the TCMX marker, and also acknowledged that she was essentially looking at only five peaks on the chromatogram in making her comparisons, and that "I'm not sure which five because . . . I can't identify which ones they are. It's kind of subjective, I realize." Tr. at 700-701; 710. Ms. Harris also testified that while she believed that a similar Aroclor pattern existed in the CSOSED-4 chromatogram and the SS-3 chromatogram, she could not say that those chromatograms were the same "peak for peak." Tr. at 721-22.

In some instances, the testimony offered by these two witnesses was directly contradictory. At the hearing, Ms. Harris's testimony with respect to chromatogram comparison was internally inconsistent at points and therefore unpersuasive. In addition, Ms. Harris acknowledged that she was "not into" fate and transport, and "I can't tell you on fate and transport." Tr. at 716. Under the circumstances, greater weight is given to Dr. Hennes's testimony, because his prefiled and live testimony was more convincing than Department Staff's witness with respect to the fingerprinting issue, and also because that testimony was supported by more extensive and relevant education and experience. Moreover, although Ms. Harris testified that the use of different machines to generate the chromatograms could produce variations which would make comparisons inaccurate (Tr. at 697), Dr. Hennes's rebuttal testimony stated that the chromatograms came from two of the same type of machine, and that this did not affect his conclusions. Hennes Rebuttal at 1. Ms. Harris's remaining concerns with respect to the lack of matrix spikes or the lack of quality control/quality assurance information was conjectural. Tr. at 697-98.

With respect to the effect of weathering, Dr. Hennes's testimony was more credible, because of his credentials which were not challenged by Department Staff, as well as Ms. Harris's admitted lack of expertise in this regard. According to EPA Method 8082, *Polychlorinated Biphenyls (PCBs) by Gas Chromatography*, (Revision 0, Dec. 1996):

"Aroclors are multi-component mixtures. When samples contain more than one Aroclor, a higher level of analyst expertise is required to attain acceptable levels of qualitative and quantitative analysis. The same is true of Aroclors that have been subjected to environmental degradation ("weathering") or degradation by treatment technologies. Such weathered multi-component mixtures may have significant differences in peak patterns than those of Aroclor standards."

Dr. Hennes testified that he considered whether weathering of PCBs through physical or biological processes could have produced the fingerprint differences he observed. He testified that "[p]hysical processes are quite predictable and both volatilization and dissolution preferentially remove the lightest congeners in accordance with their physical properties." Hennes Supplemental Rebuttal at 11. Dr. Hennes went on to state that "[b]iodegradation processes can degrade the lighter PCB congeners (biodegradation under aerobic conditions) or partially dechlorinate the heaviest congeners (biodegradation under anaerobic conditions)." *Id.* He concluded that "[n]one of the physical or biological transformation processes can transform the chromatographic fingerprints observed in the soil samples from the Universal Waste Site into the fingerprints observed at the City Sewer outfall (CSOSED-3 and CSOSED-4)." *Id.* Department Staff did not effectively challenge this testimony.

In her prefiled testimony, Ms. Harris stated that weathering must be taken into account in evaluating differences in fingerprints. Harris Prefiled at 8. Ms. Harris testified further that because "weathering changes the shape of fingerprints on chromatograms," she would expect chromatograms of soil and sediment samples that had been transported from the Universal Waste Site to the backwater or the River to exhibit different fingerprints from those on-Site. Harris Prefiled at 9. Nevertheless, on cross-examination, Ms. Harris testified that "I don't know that much about weathering, the effect of weathering." Tr. at 718.

Given the disparity between the two witnesses' experience and training, and Ms. Harris's admitted unfamiliarity with fate and transport and weathering, her testimony cannot be afforded as much weight as that offered by Dr. Hennes. According to his *curriculum vitae*, Dr. Hennes has a Ph.D. in geochemistry from Princeton University, and is a certified professional geological scientist. Exh. 5, Appendix A. He has over eighteen years of research and field experience "investigating the origin, fate and transport of organic and inorganic chemicals in natural and man-made environments." Id. Department Staff did not provide a *curriculum vitae* for Ms. Harris. In prefiled rebuttal testimony, she indicated that she has a bachelor's degree in chemistry and taught high school science. Harris Prefiled Rebuttal at 2-3. There was no dispute as to Dr. Hennes's credentials or his qualifications as an expert witness. Under the circumstances, Dr. Hennes's testimony is more persuasive than Ms. Harris's.

In addition, with respect to this topic, Department Staff's witness, Mr. Preddice, testified that the PCBs in the backwater area are "unlike the total PCB burden at other nearby Mohawk River locations" because the contamination in the backwater is predominantly Aroclors 1254 and 1260, which Mr. Preddice stated were found in soils on the Site, rather than lighter Aroclor 1016. Preddice Prefiled at 13. Nevertheless, Mr. Preddice went on to assert that PCBs from the backwater area have not been obstructed from moving into the Mohawk River, where that contamination contributes to the existing fish health advisories. Id. at 14. This testimony is internally inconsistent, as it appears that the witness concluded that PCBs from the backwater are influencing the River, despite his testimony that on-Site and backwater PCBs consist of different Aroclors than those found in "nearby Mohawk River locations." Id. at 13.

In a submission dated June 9, 2005, Department Staff moved to strike Exhibit B to Petitioners' post-hearing brief. Department Staff cited to Section 624.8(a)(6), which sets forth the requirements for post-hearing briefing. That subsection provides that "[a] party must give specific reference to the portions of the record, whether transcript or otherwise, relied upon in support of the respective statements of fact made throughout the brief. Briefs will be considered only as argument and must not refer to or contain any evidentiary material outside of the record." Notice of Motion at 2.

By letter dated June 16, 2005, Petitioners opposed the motion, arguing that the exhibit in question, an extract from a reference document posted on the EPA's website, should be considered because the document was not offered to demonstrate

"anything about the specific issues" regarding the Site, but rather was intended to show that Department Staff's witness was mistaken with respect to testimony she offered concerning the proper interpretation of PCB analyses. Petitioners' Opposition at 1. Petitioners noted that they were unable to rebut this witness's statements because the assertions were not made in her prefiled testimony, but instead arose for the first time during Ms. Harris's direct examination at the rebuttal hearing. Id. Petitioners cited to Section 624.9(a)(6), which provides that the ALJ or the Commissioner

may take official notice of all facts of which judicial notice could be taken and of other facts within the specialized knowledge of the department. When official notice is taken of a material fact not appearing in the evidence in the record and of which judicial notice could not be taken, every party must be given notice thereof, and, on timely request, be afforded an opportunity, prior to decision, to dispute the fact or its materiality.

Department Staff responded to Petitioners' arguments in a letter dated June 23, 2005. Department Staff pointed out that the exhibit was part of a document prepared by a consultant for General Electric, in connection with PCB sampling undertaken as part of the company's investigation and remediation of contamination in the Hudson River. According to Department Staff, the information in the exhibit was not within the specialized knowledge of the Department, nor was it appropriately the subject of official notice in this proceeding. Department Staff took the position that if the document were incorporated into the record, the entire document should be admitted, and argued further that the exhibit underscored the importance of comparisons to standards in any attempt to identify PCBs.

The proffered exhibit will not be incorporated into the record. As Department Staff notes, the information contained within Exhibit B is not within the specialized knowledge of the Department. Moreover, Exhibit B is not appropriately the subject of official notice in this proceeding. Judicial notice, which is the concept fundamental to the official notice provided for in the Department's regulations, "is that mode of ascertainment by judicial authority of matters of universal knowledge without having such matters established by evidence in the individual case." Murray v. Donlon, 77 A.D.2d 337, 348 (2nd Dept. 1980), appeal dismissed, 52 N.Y.2d 1071 (1981). A tribunal "may only

apply judicial notice to matters of common and general knowledge which are well established and authoritatively settled, and are not doubtful or uncertain. The test is whether sufficient notoriety attaches to the fact to make it proper to assume its existence without proof." Dollas v. W.R. Grace and Co., 225 A.D.2d 319, 320 (1st Dept. 1996); see Crater Club, Inc. v. Adirondack Park Agency, 86 A.D.2d 714, 715 (3rd Dept. 1982), aff'd, 57 N.Y.2d 900 (1982) (finding that judicial notice of letter proffered by petitioner was improper because contents of letter "are neither of common knowledge or determinable 'by resort to . . . sources of indisputable accuracy'" (citing Richardson on Evidence, 10th Ed., ¶ 9, p. 6)). "The test is whether the fact rests upon knowledge or sources so widely accepted and unimpeachable that it need not be evidentiarily proven." Ptasznik v. Schultz, 247 A.D.2d 197, 198 (2nd Dept. 1998).

Exhibit B cannot satisfy this standard. The title of the document ("Project Specific PCB Aroclor Analytical Method (GEHR8082)") indicates that it was prepared for a particular project, and the text indicates that the standard operating procedure ("SOP") detailed in the document "is based substantially on internal method SOPs provided by Northeast Analytical, Inc. of Schenectady, New York." Exhibit B, at 1. Under the section entitled "Scope," the document goes on to state that "[t]his SOP is applicable to the determination and quantification of PCBs as outlined in EPA SW-846 Method 8082 for the GE Hudson River Design Support Sediment Sampling and Analysis Program. It is applicable to the sediment/solid samples."

While it may be possible that the information and the methodology contained in Exhibit B are applicable to the analysis of the chromatograms at issue in this proceeding, Petitioners did not establish this connection, and absent an appropriate foundation and an opportunity for cross-examination, Exhibit B's relevance and reliability are questionable. Under the circumstances, the information in the document cannot be said to be "of common knowledge" or "well established." Department Staff's motion to strike is granted.

PCB Migration in Water and Soils

According to Dr. Hennet, there were two ways that PCBs could potentially be transported from the Universal Waste Site to the backwater. Hennet Prefiled at 5. The first potential mechanism was by dissolution and transport in water. Id. The second potential mechanism was by surface movement of soil particles to

which PCBs were bound. Id. at 7. The witness testified that neither pathway was viable.

Department Staff argued that PCBs could be leaving the Site dissolved in stormwater runoff, either directly into the sewer in the street next to the property, or running around an earthen berm located on the eastern portion of the Site. Department Staff argued further that the bedding surrounding the storm sewer is a preferential pathway for PCBs leaving the Site, because that bedding is less compacted than undisturbed soils.

Petitioners pointed out that analysis of groundwater samples taken during the PSA performed in 2000 did not reveal the presence of significant levels of PCBs in groundwater at the Site. Petitioners' expert, Dr. Hennet, opined that it would take approximately 100 years for PCBs dissolved in water to travel from the Site to the River. Exh. 5 at 9. Dr. Hennet testified that the quantity of PCBs that would reach the River would be several orders of magnitude less than current levels of PCBs in the Mohawk, and concluded that the Site is not having any effect on the backwater or the River. Hennet Prefiled at 6; Tr. at 412-13. Petitioners' evidence with respect to certain potential migration pathways identified by Department Staff, including NAPL transport, flooding, the sanitary sewer, and the storm sewer, is discussed further below.

Dr. Hennet contended that "even under conservative assumptions, the amount of PCBs that could be leaving the Universal Waste site [dissolved in water] is minimal, because the solubility in water of Aroclor 1254, the main type of PCB on the site, is very small." Hennet Prefiled at 6. Dr. Hennet went on to testify that the effective solubility of Aroclor residuals at the Site, which are not pure Aroclor products, is calculated based on total solubility and the amount of PCBs in the organic fraction of the soil. Id. The witness stated that a calculation of effective solubility based on site conditions takes into account the fact that the Aroclor residuals are present at low concentrations and are most likely mixed with and bound to the organic fraction of the soils. Id.

Dr. Hennet assumed that the total organic carbon content of the Site soils was 1 percent, and that the average concentration of Aroclor residuals was approximately 34 mg/kg (milligrams per kilogram) or 0.034 g/Kg (grams per kilogram). Id. The witness stated that Aroclor 1254 has a total solubility of 43 $\mu\text{g/L}$ (micrograms per liter). Id. According to Dr. Hennet, the effective solubility of the Aroclor 1254 on the Site is approximately 0.07 $\mu\text{g/L}$, and in his evaluation he considered "a

rounded effective solubility of $0.1\mu\text{g/L}$ to estimate the mass of PCBs that could dissolve in infiltrating water migrating downward to the sewer or groundwater at the Universal Waste site." Id.

Dr. Hennes used precipitation records to estimate the amount of water migrating downwards through infiltration, and concluded that the amount would be approximately 10 inches out of a total average precipitation of 45 inches. Id. According to Dr. Hennes, this is equivalent to approximately 270,000 gallons, or 1 million liters, of water per acre per year. Id. Dr. Hennes testified that "[m]ultiplying the amount of water in gallons per acre by the effective solubility yields a mass flux from each acre of the Universal Waste site," and concluded that "the mass of dissolved PCBs that could potentially be leaving the Universal Waste site on is around 0.1 g/yr." Id.

The witness testified that this is an insignificant amount compared with the total estimated current flux of dissolved PCBs in the River, which the Department has calculated to be on average 33 g/hr (289,080 g/yr) at the junction of the Mohawk and Hudson Rivers. Id. Dr. Hennes concluded that the "minuscule" potential dissolved PCB mass flux from the Site "would not be significant, and would be beyond measurement, and well within the uncertainty of the data for the Mohawk River." Id.

Dr. Hennes went on to testify that "[i]n addition, because dissolved Aroclor 1254 tends to sorb (bind) onto soil particles, the PCBs travel much more slowly than the water they are dissolved in, by a factor of 6,000 or more. This means that dissolved PCBs would actually take at least a century to travel from the Universal Waste site to the City sewer below the site, and much longer to reach the Mohawk River." Id. at 7.

As part of its rebuttal case, Department Staff offered the testimony of Kevin Farrar, who is employed by the Department as an Engineering Geologist II. Farrar Rebuttal at 2.¹² Mr. Farrar testified that since 1988, he has worked on a number of projects that involve the origin, fate and transport of PCB contamination. Id. Mr. Farrar testified that if Dr. Hennes's calculations as to the amount of groundwater infiltrating the Site were correct, the flow would be approximately 10 gallons per minute for groundwater flow Site-wide. Farrar Rebuttal at 14. Mr. Farrar concluded that if this is so, "tens of gallons of groundwater flow through

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Mr. Farrar provided rebuttal testimony dated December 10, 2004 (referred to herein as "Farrar Rebuttal") as well as additional rebuttal testimony by cover letter dated January 7, 2005 (referred to herein as "Farrar Supplemental Rebuttal").

the sewer outfall would represent the most significant groundwater flow pathway at the Site." Id.

In response, Dr. Hennes testified that the tens of gallons per minute coming from the sewer represented total volume from the entire watershed of the sewer, not just the Site. Hennes Supplemental Rebuttal at 9. Dr. Hennes pointed out that the sewer watershed is much larger than the Site, and would include any upstream discharges to the sewer system. Id. According to Dr. Hennes, Mr. Farrar's calculation shows that Dr. Hennes's worst case assumption that all the infiltration from the contaminated area drained into the sewer was overly conservative, "because the drainage from the sewer would be larger than I observed if all the water that infiltrates into the site area were to collect in the sewer." Id.

Mr. Farrar also asserted that Dr. Hennes's calculations as to the total organic carbon content in the soil did not take into account the fact that "the material that underlies the site is a fine to medium gravel, silt, sand, brick fragments, glass fragments and oil sheens." Farrar Rebuttal at 10. Mr. Farrar testified that it is very unlikely that this material contains a significant percentage of organic carbon. Id.

Mr. Farrar maintained that as a result, Dr. Hennes overestimated the amount of organic carbon in the soil at the Site. Tr. at 759. According to Mr. Farrar, the S&W Report indicates that at Boring B-3R, the top four feet of the shallow subsurface soil consists of medium dense fine to medium gravel and silt, trace fine to coarse sand, brick fragments and metal sheen. Tr. at 760; Exh. 3-5 (Boring/Well ID No. B-3R). He testified further that the next two feet of material at that location is described in the S&W Report as "saturated dark brown loose fine to medium sand and silt, sheen." Id.

With respect to monitoring well ("MW") 8, the witness stated that the top four feet of material is described as dark gray to black moist, medium dense fine to medium gravel and silt, trace fine coarse sand, brick fragments and metal, and sheen, and that three feet below that level the material encountered was described as wet brown silt with little fine gravel. Tr. at 760-61; Exh. 3-5, MW-8.

Mr. Farrar testified that the boring log for MW 6R indicates that the top three feet of material consisted of damp brown silt and clay, some glass fragments, and immediately beneath that layer a layer of brown silt and clay with some glass fragments. Tr. at 761; Exh. 3-5, MW6R. He testified further that the next

four feet of material consisted of wet black silt and fill. Id. Mr. Farrar stated that Dr. Hennes's assumption of one percent of black organic carbon content "may be high," and that an analysis of samples of sub-surface material would be necessary in order to determine the actual carbon content level. Tr. at 762.

On rebuttal, Dr. Hennes contended that his calculation of total organic carbon was reasonable, because part of the soil material at the Site is derived from River sediments, which "typically contain several percent of organic carbon." Hennes Supplemental Rebuttal at 6. According to Dr. Hennes, "[d]ebris, gravel, etc. may contain less organic carbon, but they only account for a fraction of the soil. Therefore, the mixture of River sediments, topsoil, and other materials probably contains around 1 per cent organic carbon or more." Id. While Dr. Hennes acknowledged that his testimony as to the organic carbon content was an assumption (Tr. at 562), the PSA boring logs show that the soil layers include silt, and as discussed below, Mr. Farrar agreed that sediments from the backwater area would be deposited on the Site during times when the water is high. Moreover, the report prepared for the PSA concluded that "[t]he site is underlain by low permeability . . . silts and sands intermixed with other fill material, such as brick fragments and building materials, as well as buried scrap." Exh. 3-5 at 12. Accordingly, Dr. Hennes's conclusions as to this point are supported by other evidence in the record.

On cross-examination, Mr. Farrar acknowledged that all of the groundwater samples taken during the supplemental sampling in 2002 were non-detect for PCBs. Tr. at 788-89. Mr. Farrar testified further that the earlier, higher groundwater results were set forth in data obtained in the early 1980s, as set forth in the Clayton Report, and that the highest level of PCBs detected in sampling conducted as part of the PSA in 2000 was 0.34 micrograms per liter. Tr. at 789-90. Based upon these readings, Petitioners argued that the levels of PCBs in groundwater are low, and are decreasing with time.

At the hearing, Mr. Swartout acknowledged that he did not know if dissolved Aroclor 1254 moves through the soil at the same rate that water does. Tr. at 450. Department Staff's witness, Mr. Farrar, acknowledged that PCBs tend to bind to the soil, and that PCBs dissolved in groundwater would typically not move through soil at the same rate as groundwater that did not contain PCBs. Tr. at 776-77. Moreover, while Mr. Farrar offered calculations of the total volume of groundwater leaving the Site, he did not attempt to quantify the amount of PCBs that would be transported via that mechanism. Under the circumstances, the

evidence offered by Petitioners on this point was not effectively rebutted by Department Staff, and thus is given greater weight than the testimony of Department Staff's witnesses.

With respect to PCBs in soils, Dr. Hennes stated that an earthen berm constructed at the eastern portion of the Site along the property line in approximately 1972 effectively prevents the migration of such contamination from the Site. Hennes Prefiled at 7. Dr. Hennes testified that because PCBs bind readily to soil, while surface water might travel through the berm, any PCBs in that surface water would be retained in soil that could not pass through the earthen barrier. Tr. at 373-74.

Mr. Swartout testified that the berm does not prevent contaminants from leaving the Site. Swartout Prefiled at 25. The witness observed that all of the water that enters the Site must leave the Site, some through surface water runoff, some through evaporation, and some through infiltration to groundwater. Id. Mr. Swartout pointed out that there is no stormwater control program at the Site, and therefore, runoff and infiltration are the most likely mechanism for contaminants in water to leave the Site. Id. Moreover, the witness noted that the berm does not extend all the way to the River, "thus allowing overland flow directly into the wetland." Id.; Tr. at 503. Mr. Swartout contended that because the berm is not impervious, contaminated stormwater may leach through it, and contended that "soil contaminants can leave the Site via particulates that are on or in equipment, airborne dust or carried away in water that leaves the Site." Id.

Department Staff contended further that PCBs could have migrated from the Site in stormwater runoff before the berm was constructed in 1972. Mr. Farrar testified that "for example, the surface water pathway would be more prevalent if there wasn't any berm to be in the way of the migration." Tr. at 741. As Petitioners note, however, this is speculative. There is no data to support Department Staff's conclusion in this regard.

On cross-examination, Mr. Swartout was questioned as to the evidence he relied upon to conclude that contaminant migration into the backwater and the River was likely through storm water runoff, as well as contaminant leaching from Site soils, the former sanitary sewer settling pond into the storm sewer or the sewer's bedding material. Tr. at 469-470. Mr. Swartout replied that "I guess in my opinion it's pretty self evident, that if you have PCBs in a sewer discharge channel that flows into the Mohawk River, that if they're in a discharge channel, they then move from there into the river . . . that's how hydraulics works. If

you have contamination in water and that water is connected to another water body, it moves in a down gradient direction from one location to another location." Tr. at 470.

Mr. Swartout stated that he could not say whether significant amounts of PCBs dissolved in water were leaving the Site, and that he was not aware that the Department had ever quantified that amount. Tr. at 475. He indicated further that "[t]hat's not something that's part of our significant threat determination. . . . Calculation of quantities leaving in dissolved forms is not part of it, no. It's a more qualitative analysis of what the threat of the site is to the environment and the surroundings." Tr. at 475-76.

When asked whether sediment samples showed any downstream impact in the River from the backwater, the witness acknowledged that "there is not an order of magnitude type of increase [in PCB levels in sediment] immediately adjacent to where that backwater area is." Tr. at 473. Mr. Swartout confirmed that the results of sampling at the location identified as SED-11, which is downstream of the Site, shows PCBs at levels at less than an order of magnitude from levels detected further upstream. Id. Although Mr. Farrar testified that two sediment samples are not sufficient to determine whether the Site has impacted the River (Tr. at 768), Dr. Litten, Department Staff's witness, acknowledged on cross-examination that the impact of the Site on the River was "not great." Tr. at 169.

The proof offered by Department Staff is not sufficient to rebut Petitioners' evidence to the contrary, and as discussed further below, does not establish a link between PCBs on-Site and contamination in the backwater and from thence to the River. Petitioners' witness, Dr. Boehm, acknowledged that the backwater area is hydraulically connected to the Mohawk River, at times. Tr. at 58. Nevertheless, Petitioners offered persuasive evidence that PCBs are either contained on the Site, or are not leaving the Site in amounts that would constitute a significant threat.

Dr. Hennet stated that the data indicate that contamination at the Site is limited to surface soils. Hennet Prefiled at 7. He testified that "Aroclors are viscous oils that do not flow easily and are not expected to penetrate deep into the subsurface absent a forcing mechanism or the presence of large openings in the soil or fill that could serve as conduits." Id. Dr. Hennet testified further that no such forcing mechanism exists on the Site, nor is there any data to indicate that openings in the fill or soil materials served as conduits for migration. Id. Dr. Hennet concluded that "[r]esults from soil borings and pit

excavations have provided no evidence that downward migration of PCBs is occurring. In the absence of such evidence, general considerations of PCB properties and the physical state of the site show there is no scientifically reasonable way this could be happening.” Id.

Petitioners asserted that the storm sewer was not a viable contaminant pathway, although Dr. Hennet acknowledged on cross-examination that some groundwater from the Site would infiltrate the sewer. Tr. at 609. Dr. Hennet testified that the movement of oils containing PCBs into the subsurface and groundwater at the Site would be governed by both the amount of force brought to bear on the oil as it passes through the soil, and also by residual saturation. Tr. at 361.

According to Dr. Hennet, residual saturation is typically on the order of 10 to 20 percent of the porosity of the soil. Tr. at 362-63. That porosity is the space between the grains of soil. Tr. at 363. Once residual saturation is achieved, when the soil has absorbed all of the oil possible, that oil will not migrate further unless additional oil is added. Tr. at 363. Dr. Hennet testified that oil migration generally occurs close to or at the time when spills occur, when the oil is most fluid and viscous. Tr. at 364. He stated that the process is complete in a period of time that is “certainly shorter than a decade.” Id. Dr. Hennet referred to a table of residual saturation values for a variety of oils in soils set forth in a reference text entitled “DNAPL Site Evaluation,” by Robert M. Cohen and James W. Mercer. Tr. at 365-66. The witness testified that this is a standard reference text that he uses in his work. Tr. at 366.

On rebuttal, in response to Department Staff’s contention that PCBs were leaving the Site as a non-aqueous phase liquid, or NAPL, Dr. Hennet testified that for NAPL to migrate downward under its own weight, “it must leave its residual saturation behind.” Hennet Supplemental Rebuttal at 3. He defined residual saturation as “the significant portion of the NAPL that is retained by capillary forces in the soil matrix,” and went on to testify that “[a] NAPL is not mobile when its presence in a porous media is less than residual saturation.” Id. According to Dr. Hennet, residual saturation will limit the possible extent of migration by depleting and eventually exhausting the mobile NAPL phase. Id. Dr. Hennet referred to the Cohen and Mercer text, testifying that “[f]or viscous oils such as PCB Aroclors in soil materials, the residual saturation is typically in excess of 15%.” Id.

Dr. Hennes went on to calculate the residual concentration for PCBs at the Site using a 15% residual saturation, and concluded that "the residual concentration is calculated to be around 50,000 mg/kg." Id. Dr. Hennes pointed out that the PCB concentrations observed in the soil profile at the Site were "at most thousands of times less than this residual concentration." Id. Dr. Hennes testified that the oil that was released impacted the surface soil, but little vertical migration took place and that migration is not continuing at present. Tr. at 364-65. The witness testified that application of these principles supports the conclusion that any movement of oil through the soil at the Site would be restricted, and the oil would ultimately be immobilized. Tr. at 364. Dr. Hennes went on to testify that the results of on-Site soil sampling showed a one acre area of surface soils with a median concentration of 18 milligrams per kilogram, which the witness characterized as relatively low. Tr. at 375-77.

Dr. Hennes took the position that PCB-containing oils do not migrate easily in soil, and also testified that once the oil encountered groundwater its movement would be further restricted. Tr. at 368-369. The witness noted that the sewer line at the Site is below the water table, and that at the sewer depth, concentrations of PCBs are very low (less than one milligram per kilogram). Tr. at 370, 377. Dr. Hennes concluded that given the amount of time that had passed since PCB containing oils were first disposed of at the Site, PCBs are no longer migrating downward. Tr. at 371.

On rebuttal, Mr. Farrar responded to Dr. Hennes's testimony by stating that "[t]here is only residual contamination present if the soils had been saturated with NAPLs at some point in the past. This clearly means that volumes of oil had been migrating from source areas at the site. The current location of these NAPLs or oils is unknown." Farrar Prefiled at 11-12. Dr. Hennes pointed out that he discussed the concept of "residual saturation," not "residual contamination." Hennes Supplemental Rebuttal at 7. Dr. Hennes testified that "[i]f NAPL migration of PCB oil through the soil matrix is occurring one would expect to see PCB concentrations in the soil at or above the residual saturation concentration, which is in the tens of thousands for PCB oil." Id. The witness observed that "this is far beyond the concentrations present on the site," and that the maximum concentration measured during the PSA was 180 mg/kg. Id.; Tr. at 459. Dr. Hennes testified that absent additional releases of PCB oils at the Site, which are not taking place, NAPL migration of PCB oil through the soil "is not and cannot be occurring." Hennes Supplemental Rebuttal at 7.

Mr. Farrar stated that he did not disagree with Dr. Hennes's analysis of the residual concentration of PCB oil, but rather suggested that transformer oil containing approximately 10% PCBs would have a much lower residual concentration, and thus greater mobility. Tr. at 757-58. In response, Petitioners countered that Mr. Farrar failed to compare the range of residual concentrations to the subsurface PCB concentrations found at the Site, and that he did not dispute Dr. Hennes's calculation of residual concentration of approximately 50,000 mg/kg. Petitioners' Brief at 24-25.

Petitioners went on to observe that the residual concentration of a 10% Aroclor PCB oil would be reduced "in proportion to the reduction in PCB content of the oil and the change in the specific gravity of the oil, if the viscosities were similar." Petitioners' Brief at 25; Hennes Supplemental Rebuttal at 3. According to Petitioners, the residual saturation would be approximately 5,000 mg/kg in that case, depending upon the variation of the specific gravity and the viscosity. Tr. at 619. Dr. Hennes testified that oils containing less than 100% PCBs would not lead to significant variation in viscosity. Tr. at 621-23. Moreover, Petitioners pointed out that Mr. Farrar acknowledged that specific gravity would only vary from approximately 0.8 to 2.0, and that pure Aroclor 1254 has a specific gravity of 1.5. Tr. at 782. Given the range of specific gravity, according to Petitioners, the residual concentration would vary from approximately 2,600 mg/kg to 6,600 mg/kg, which Petitioners pointed out were far above the maximum subsurface PCB concentrations observed at the Site. Petitioners' Brief at 25.

Mr. Farrar testified that the disposal of large volumes of oil would act as a forcing mechanism aiding subsurface migration. Farrar Rebuttal at 11. According to Mr. Farrar, "concentrations of PCB found in the past groundwater data could likely indicate the presence of PCB oil in the sample. In my experience, if one finds concentrations of contaminant [sic] at a significant fraction of the contaminants' solubility, it is an indication of the likely presence of the contaminant as a NAPL." Id. Mr. Farrar pointed out that boring logs taken during the PSA reported an oil sheen in one boring and wet, odorous black gravel at a depth of ten feet in another. Id.

He concluded that "[i]n my opinion, this is the most significant migration pathway of PCBs from the disposal area to the backwater area of the Mohawk River and the Mohawk River proper, since there is evidence that the migration is occurring and only a small amount of oil can contaminate a large amount of

groundwater or surface water above the applicable standards.” Id. Mr. Farrar went on to state that NAPL in the residual phase would be an ongoing contaminant source to groundwater for the foreseeable future, and would continue to act as a contaminant source to the backwater and the River. Id. at 12.

On cross-examination, Mr. Farrar acknowledged that although the boring logs included a place to indicate the presence of NAPL, there was no such notation on any of the logs. Tr. at 772. Petitioners pointed out that Mr. Farrar was equating a sheen to a NAPL, and observed that “[t]his unorthodox reasoning is inadequate at this Site, because the Site adjoins a former oil tank farm which could be the source of the oil causing the sheens.” Petitioners’ Brief at 26. Petitioners went on to note that the results of sampling taken during the PSA from wells where sheen was observed were non-detect for PCBs at the 1 $\mu\text{g}/\text{L}$ level. Id. According to Petitioners, “[t]his would be unlikely if the observed oil sheen had been PCB contaminated, because even a small amount of PCBs in an oil that gets into a water sample can cause high groundwater readings at the microgram per liter level.” Id.; Exh. 6 at 12-13.

Petitioners argued that the site soil data and the most recent groundwater results were did not support the conclusion that PCBs migrated from the Site in the past via NAPL transport. Petitioners’ Brief at 26-27. Dr. Hennes testified that “some NAPL transport into the shallow surface soil probably occurred when PCB oils were initially released,” but concluded that any such migration “has long since ceased.” Hennes Supplemental Rebuttal at 8. He pointed out that the most recent groundwater results show that no NAPL is present, and went on to assert that the concentrations observed in soil samples are all below residual saturation. Id. Dr. Hennes testified further that a NAPL has not been visually observed in the sub-surface, and concluded that “these data rule out NAPL transport as an on-going process at this site.” Id.

Dr. Hennes testified that the results of the most recent round of groundwater sampling in 2000 showed undetectable levels of PCBs in groundwater in all but one sample. Hennes Supplemental Rebuttal at 7. Dr. Hennes argued that these more recent results are more reflective of current conditions at the Site, and that the results confirm that NAPL migration is not taking place. Id. According to Dr. Hennes, the boring logs Mr. Farrar referred to did not indicate that any NAPL layer was encountered. Id. Rather, the boring logs refer to an oil sheen in two of the monitoring wells located close to the northern boundary of the property. Id. Fuel storage operations took

place in this location, and Dr. Hennet pointed out that the area is upgradient of the area where elevated PCB levels were detected. Id. Dr. Hennet concluded that the oil in sheens reported in these locations "probably originated from operations that took place off-site." Id. Dr. Hennet opined that NAPL transport is not occurring, and will not foreseeably occur in the future at the Site. Id.

On cross-examination at the rebuttal hearing, Dr. Hennet acknowledged that PCB oils in capacitors and transformers was typically less than 100 percent PCBs, but testified that "residual saturation itself is not that much dependent upon the exact formulation of the product" in light of the PCB oils' viscosity. Tr. at 611-15. Dr. Hennet stated that the residual saturation of such oils would still be within approximately the same range. Tr. at 623-24.

Department Staff argued that given the quantity of PCBs disposed of at Universal Waste during the years of active operations, it is unlikely that PCBs did not migrate off-site. Department Staff pointed out that samples taken in subsurface soils at depths of 14 to 16 feet detected PCBs, contrary to Petitioners' contention that PCBs are not highly mobile in soil. However, this assertion is contradicted by the investigation undertaken by Stearns & Wheler, which concluded that "[m]uch of the data collected in the course of investigations suggests that the PCBs present in the east central section of the Universal Waste site are not migrating off the site," and that "[t]he supplemental investigation concludes that even though there are PCBs in the shallow soils on the Universal Waste property, PCBs are not present in groundwater and PCBs are not present at a depth exceeding 10 feet." Exh. 3-7 at 1, 3. The Letter Report went on to state that "there is no probable means by which sediments that contain PCBs could be migrating off-site through the storm sewer or the associated bedding or that PCBs are being transported by flowing groundwater. We maintain our earlier conclusion that PCBs migrating with sediment through the storm sewer and into the swale are likely derived from other source areas drained by the sewer." Exh. 3-7 at 3. These conclusions support the evidence offered by Petitioners with respect to migration through soil and groundwater. Petitioners' arguments with respect to this point are persuasive, and such migration, if any, is insufficient to establish the existence of a significant threat.

Finally, Department Staff offered Mr. Farrar's testimony in response to Dr. Hennet's statement that he found no evidence that oil had migrated from the Universal Waste Site to the backwater

area. Tr. at 330. On rebuttal, Mr. Farrar referred to a July 12, 1994 letter to Universal Waste from Jack Marsch, a Department engineer, recommending that a groundwater investigation be undertaken to determine the extent of contamination following excavation of contaminated soil from the top of a 4,000 gallon underground diesel storage tank at the Site. Farrar Supplemental Rebuttal at 2-3; Exh. 45. Mr. Farrar also referred to a tank closure report dated January 5, 1995. Farrar Supplemental Rebuttal at 3; Exh. 46. According to the tank closure report, free product was noted in the bottom of the excavation, as well as petroleum odors. Id. Approximately 30-35 cubic yards of contaminated soil was encountered. Exh. 46.

Mr. Farrar went on to testify concerning a July 30, 1996 internal Department memorandum noting that a recently submitted supplemental investigation report identified groundwater contamination in a monitoring well adjacent to the former location of the underground storage tank. Farrar Supplemental Prefiled at 4; Exh. 47. The supplemental investigation report dated July 31, 1998 detailed the results of analysis of samples taken by Stearns & Wheler as part of the investigation of that contamination. Exh. 48.

In response, Dr. Hennet testified that samples taken during the investigation revealed diesel fuel contamination in only one soil boring, and noted that the backwater area is some distance to the east of the sampling locations. Tr. at 548. According to Dr. Hennet, diesel fuel would not find its way into the sewer, because diesel fuel is lighter than water and cannot penetrate into the water table. Tr. at 545-46. Dr. Hennet testified that none of the information concerning the diesel fuel contamination and investigation had any bearing on whether PCBs had migrated from the Site to the backwater. Tr. at 548. This testimony is credible, in light of the lack of any evidence of significant migration of the diesel fuel from the underground storage tank.

Flooding and Surface Water Runoff

Dr. Hennet testified that the portion of the Site where PCB contamination is present "is flat and dead ending as far as runoff is concerned." Tr. at 341. Dr. Hennet asserted that based upon his observations there was no evidence of erosion due to flooding at the Site, and that in fact sediment would be accumulated on the Site during such an event. Tr. at 342. Dr. Hennet testified further that PCBs were not being redistributed by flood waters, because water would pond on the Site and thus would not be moving at a high speed. Tr. at 345, 396. According to Dr. Hennet, the PCB contamination on the Site is not widely

dispersed, but instead is found in an area slightly less than one acre, shaped like a boomerang. Tr. at 343-44. The witness asserted that this is consistent with his observations and conclusions that flood water would not redistribute the on-Site PCBs. Tr. at 344-45.

Department Staff asserted that PCBs migrate off-Site when the River floods, and noted that such flooding occurs periodically. According to a memorandum authored in 1977 by an employee of the New York State Department of Health, the Site lies in a floodplain and “[d]uring the most recent flood, a portion of the site was under approximately 3 feet of water.” Swartout Prefiled at 8; Exh. 11. Mr. Swartout testified that flooding in the past was likely to have transported PCBs from the Site to the River. Swartout Prefiled at 24. The witness stated further that future floods may carry contaminants from the Site to the backwater. Id.

Mr. Swartout noted that a wetland lies to the east of the Site, and that an active storm sewer runs beneath the Site. Swartout Prefiled at 5. The witness stated that an abandoned sanitary sewer runs parallel to the storm sewer, and that “[t]he storm sewer drains into a channel that leads to a backwater area, which is hydraulically connected to the Mohawk River.” Id. Mr. Farrar testified that during significant flooding, the backwater is submerged beneath the waters of the main stem of the River. Id. Department Staff’s witness, Mr. Preddice, testified that high water levels increase the hydraulic connection and mobilize PCBs in the backwater which in turn flow into the River. Preddice Prefiled at 8; Tr. at 141.

Prefiled testimony by Department Staff’s witness, Mr. Farrar, stated that flood waters would cover the Site on a regular basis, and that “[v]irtually all of these flood waters will migrate back into the river via surface and groundwater flow.” Farrar Prefiled at 13. Nevertheless, when questioned at the hearing concerning Dr. Hennet’s statement that the backwater is depositional and that sediments would accumulate rather than erode, Mr. Farrar observed that “[h]e’s possibly right most of the time. I believe that area would be net depositional where, over the course of a long period of time, sediment would accumulate.” Tr. at 762.

Mr. Farrar went on to testify that “[t]here may be some flood or storm events where there could be scour, where there could be sediment which is moved, but they would be driven by the high flow events or storm events.” Tr. at 762-63. He then stated that the area’s net depositional character did not

indicate that materials could not leave the area. Tr. at 763. This conclusory statement does not effectively rebut the more specific testimony offered by Dr. Hennes. In addition, Mr. Farrar's testimony does not persuasively describe a migration pathway for PCBs leaving the Site based on Site topography or other factors, nor did this witness address the degree of contamination that would potentially migrate off-Site during floods. As a result, the evidence does not support a finding of significant impact due to this migration mechanism.

Sanitary Sewer

Mr. Swartout testified concerning a report prepared by William F. Cosulich Associates in October 1993 (the "Cosulich Report"). Swartout Prefiled at 14; Exh. 3-10. According to Mr. Swartout, the Cosulich Report described an abandoned sanitary sewer line that at one time ran parallel to the storm sewer line beneath the Site. Swartout Prefiled at 14; Exh. 3-10 at 3-3. The Cosulich Report noted that an old sanitary sewer line ran from Wurz Avenue beneath the Site to a settling basin. Exh. 3-10 at 4-2. According to the Cosulich Report, "[t]he sanitary sewer served industrial facilities on Wurz Avenue, including the oil storage facilities," and that "[p]ossible transport of waste oils, including PCBs, could have occurred along this route." Id.

The sanitary sewer flowed into an earthen settling pond on the Site, and following settling, the waste water drained through a 12-inch pipe to the Mohawk River. Swartout Prefiled at 14; Exh. 3-10 at 3-3. Mr. Swartout went on to note that the Cosulich Report included a drawing indicating the location of the settling pond, which was in the same general area as a pile of capacitors where a soil sample taken in 1977 showed high levels of PCBs. Swartout Prefiled at 15. The Cosulich Report stated further that sewer water may also have leaked through joints or cracks in the line, and that small slopes in the line itself "may have contributed to the flow of water out of the line due to ponding and sedimentation within the line." Exh. 3-10 at 4-2.

Petitioners' witness, Dr. Hennes, testified that the settling basin and sanitary sewer did not provide a viable pathway for PCBs to migrate off-Site. Tr. at 345-46. Dr. Hennes pointed out that "I haven't seen any allegation, even from DEC or anybody else, that PCB would have been discharged into that sanitary sewer." Tr. at 346. Dr. Hennes went on to observe that given the nature of the operations at Universal Waste and the number of employees, it was unlikely that there was any significant release into the sewer, nor was there any allegation of such a release. Tr. at 346-47.

With respect to the potential flow of groundwater through the sanitary sewer, Dr. Hennes noted that the Clayton Report indicated that the flow rate in the sewer was "not significantly affected by the rainstorm which occurred during the field investigation." Exh. 3-8 at 4; Tr. at 347. Dr. Hennes pointed out that the Clayton Report stated that the sewer outfall was blocked by broken brick and was discharging primarily groundwater. Exh. 3-8 at 3-4; Tr. at 348. Dr. Hennes testified that during his site visit, he looked at the location where a settling basin was identified in the Cosulich Report, and that he did not see such a basin there. Tr. at 348.

The witness went on to testify that he did not believe that contaminated groundwater could be flowing rapidly along the sewer bank. Tr. at 349. Dr. Hennes based this conclusion on the fact that there was no depletion of the water table where the sewer drain is located, and that there is "not much" groundwater discharging at the sewer outfall. Tr. at 350. Dr. Hennes noted that groundwater at the Site is encountered across the Site at depths of three to five feet. Exh. 3-5 at 8; Tr. at 351.

While Department Staff argued that the Cosulich Report's statement that waste water from the settling pond drained via a 12 inch pipe into the River compels the conclusion that "the backwater area of the Mohawk River and the main stem of the river were indistinguishable from each other at the time the observation was made," (Department Staff's Brief at 27) this statement is not supported by the map that accompanied the report. The scale of the map is indicated as 1" = 350' and appears to depict the settling basin at a distance of about 150 feet from any backwater area, and at least 700 feet from the main stem of the River. No witness testified with respect to the features depicted on the map. In addition, although Mr. Swartout's prefiled testimony and Department Staff's brief stated that the Cosulich Report indicated that the pipe in question drained "into" the River, the Cosulich Report in fact states only that the pipe drained "to" the River. Department Staff's Brief at 27; Swartout Prefiled at 14; Exh. 3-10 at 3-3.

Dr. Hennes's testimony concerning the sanitary sewer was essentially unrebutted by Department Staff, and is therefore accorded greater weight than Department Staff's evidence, which did not demonstrate that PCBs in any significant quantity were discharged into the sanitary sewer system. The disparity between the testimony offered by Department Staff and the information in the Cosulich Report casts doubt on Department Staff's conclusions with respect to this potential pathway. Accordingly, Petitioners' evidence meets the preponderance standard with

respect to this point, and establishes that the sanitary sewer is not a likely pathway for PCB migration off-Site.

Storm Sewer

Department Staff argued that the storm sewer running beneath the Universal Waste property provided a preferential pathway for PCB migration off-Site into the backwater area. The Cosulich Report stated that the storm sewer is constructed of vitrified clay pipe, with a bell at one end, and that the type of bedding material, if any, was unknown. Swartout Prefiled at 14; Exh. 3-10 at 3-2. The pipe was installed by placing the narrow end of one piece of the bell into the other end, and the connection between the pipes was packed with oakum or similar packing material. Id. According to the Cosulich Report, these connections are susceptible to separation and groundwater infiltration due to soil sloughing or compaction. Swartout Prefiled at 14-15; Exh. 3-10 at 3-2. Mr. Swartout testified that based upon these facts, Department Staff "has concluded that it is likely that the sewer and/or the bedding around the sewer have been and continue to be migration pathways for contaminants found at the Site." Swartout Prefiled at 15.

On redirect examination, Mr. Swartout stated that two different investigations were performed to ascertain whether there were any upgradient sources of oil or PCB contamination entering the storm sewer. Tr. at 484. According to Mr. Swartout, neither investigation identified any upgradient source. Id. Department Staff contended that results from the borings taken in the supplemental sampling round performed by Stearns & Wheler in 2002 indicate that PCBs are migrating downward through the soils toward the sewer.

Nevertheless, the supplemental sampling report by Stearns & Wheler dated December 19, 2002 concluded that "[t]he groundwater data, which is consistent with prior investigations at the site, demonstrates that PCBs are not dissolving into groundwater and being transported [via the storm sewer or the storm sewer bedding]." Exh. 3-7 at 3. That document went on to state that the supplemental investigation "provided further evidence that sediments containing PCBs are not reaching the storm sewer." Id.

As discussed above, Dr. Hennet testified credibly that the movement of PCBs through the subsurface soils at the Site would be restricted, and that NAPL migration was not a viable means of transport. According to Dr. Hennet, "[t]he data indicate that Aroclor contamination is limited to surface soils and Aroclor levels below eight feet are less than 0.2 mg/kg." Hennet

Prefiled at 7. Dr. Hennes asserted that "there is no forcing mechanism documented or alleged for the forced migration of Aroclor products from the Universal Waste site into the City sewer drains, and there are no data that indicate that openings in the fill or soil materials served as conduits for the migration of Aroclor from the site to the City sewer." Id. Dr. Hennes concluded that "[i]n the absence of such evidence, general considerations of PCB properties and the physical state of the site show there is no scientifically reasonable way this could be happening." Id.

The S&W Report stated that test pits could not be dug along the sewer lines on the east side of the property because groundwater was encountered within five feet of the surface, obscuring visibility below that point. Exh. 3-5 at 6. The S&W Report went on to state that "[a]dditionally, it was determined that on that side of the site, the sewers were as deep as 20 feet." Id. Although PCBs were detected in the subsurface soils, the supplemental PCB sampling showed that the highest levels (19.6 ppm) were found at a depth of between four to six feet in MW-3. Exh. 3-7 at 2. The Letter Report went on to note that "[i]n all samples at and below a depth of 8-10 feet in all borings, the total PCB concentration was under 1 ppm. . . . No PCBs were detected in the three groundwater samples." Id. The Letter Report concluded that "[i]f PCBs are not present below a depth of 10 feet, it can be reasonably concluded that elevated PCB levels are not present at a depth of 20 feet." Id. at 3. This is consistent with Dr. Hennes's testimony with respect to this potential migration pathway.

At the hearing, Mr. Swartout testified concerning a manhole (MH-7) located in the street on Leland Avenue, immediately to the west of the Site. Tr. at 433; Exh. 3-11 at Figure 2-2. Mr. Swartout testified that PCBs were detected at levels of 820 parts per billion ("ppb") in a sediment sample collected in MH-7. Tr. at 436. Mr. Swartout noted further that the data was qualified, and when asked if it would be possible for stormwater runoff from the Universal Waste Site to make its way into or near MH-7, the witness responded "I don't have direct knowledge, but based on having done site walkovers of the location and just looking at the general topography there, it would appear that at least portions of the Universal Waste property could very conceivably have storm water runoff run out towards the street." Tr. at 437. Mr. Swartout noted the presence of "two or three catch basins shown in the street there that would either connect to manhole 7 or be at locations up gradient on the storm sewer line from manhole 7. So it's certainly conceivable some storm water runoff

could run off the site into the street and enter those catch basins and end up going through manhole 7." Tr. at 437-38.

On rebuttal, Petitioners' witness Mr. Copple testified that it was not likely that site soils could be carried by stormwater from the Site into the drains along Leland Avenue, because that area of the Site "is heavily vegetated and slopes gently down, away from the road." Copple Rebuttal at 1. In light of this testimony, Mr. Swartout's assertion that it is conceivable that storm water runoff might make its way into MH-7 fails to outweigh Petitioners' evidence with respect to this potential pathway.

Moreover, in light of the low levels of PCBs detected in groundwater at the Site, the site soil data, and the expert testimony offered by Petitioners' witness, the preponderance of record evidence indicates that further migration of PCBs at the Site is unlikely to occur through the sewer and sewer bedding. Thus, these are not viable pathways for migration of PCB contamination from the Site.

Sampling at Station 70 (Backwater)

Petitioners maintained that Department Staff's decision to list the Site as a Class 2 on the Registry was based upon data taken from three sampling stations on one occasion in 1996, as part of a Department study that was not specific to the Universal Waste Site. Petitioners argued that the results of sampling undertaken at Station 70, located in the backwater adjacent to the Universal Waste property, showed artificially high readings of Aroclor 1254, because the sampling methodology was flawed. Department Staff disputed these assertions.

At the hearing, Mr. Swartout was questioned as to why the Department has not listed the backwater on the Registry. Tr. at 442. Mr. Swartout responded that the backwater area is considered to be an impacted environmental area, rather than an actual disposal area, and that the Department lists only the latter. Tr. at 442-43. According to Mr. Swartout, any contamination currently in the backwater area came from the storm sewer or the sanitary sewer that previously emptied into that area, or reached the backwater via overland flow. Tr. at 443.

Timothy Preddice, the Department biologist who performed the sampling, testified that in 1994 he participated in contaminant trackdown survey work in the upper Mohawk River. Preddice Prefiled at 5. Mr. Preddice stated that another Department employee, Joseph Spodaryk, now retired, also took part in the sampling effort. Id. The witness testified that in 1995, he and

Mr. Spodaryk performed further sampling, concentrating on the main stream of the River upstream and downstream of Utica. Id. According to Mr. Preddice, the sampling locations in 1995 "were chosen based upon the results of the initial sampling plus the need to focus on other downstream upper Mohawk River tributaries and on elevated PCB levels in the Mohawk River." Id. at 7.

Mr. Preddice testified that this same rationale was the basis for the selection of sampling locations for the results of analyses at issue in this proceeding. Id. He testified that during the summer and fall of 1996, PISCES samplers were deployed at the following locations:

1. Station 20 (Mohawk River): River Mile 104, downstream of the Site, upstream of the Oneida County Sewer District Pollution Control Plant discharge.
2. Station 60 (Mohawk River): River Mile 105, downstream of Station 70 and two to three hundred feet upstream of the combined sewer overflow (Tr. at 200), just below the backwater area;
3. Station 61 (Mohawk River); River Mile 107, almost two miles upstream of Site; also upstream of Utica Harbor;
4. Station 63 (Mohawk River): River Mile 105.3, north of the Site, just upstream of dam;
5. Station 70 (Mohawk River): River Mile 105.1, backwater area east of the Site;
6. Station 71 (Ballou Creek): storm drain between River Stations 20 and 60;
7. Station 62 East (Utica Harbor);
8. Station 62 West (Utica Harbor);
9. Station 69 (Utica Harbor).

Id. at 6.

PISCES Samplers

The samples at issue in this proceeding were taken using a Passive In-situ Chemical Extraction Sampler ("PISCES") developed by a Department biologist, Simon Litten, Ph. D., who also testified at the hearing. According to a document entitled

"PISCES Contaminant Trackdown Studies, Mohawk River 1994"¹³ (the "Study") authored by Department Staff, PISCES samplers "are intended to mimic the direct uptake of chemicals from water by fish." Exh. UW-15 at 2. The PISCES samplers used in the Study consisted of a small brass or copper cylinder with a polyethylene membrane. Id.; Litten Prefiled at 4.

The samplers are filled with hexane and attached to floats that suspend the sampler in water for a period of time, typically two weeks. Litten Prefiled at 4. Compounds with a strong affinity for hexane, including PCBs, diffuse through the membrane into the hexane solvent, and are retained there until analyzed. Exh. UW-15 at 2. As Dr. Litten explained at the hearing, while PCBs dissolve very poorly in water, they dissolve well in hexane, and pass through the membrane and are sequestered in the sample. Tr. at 178-79. Once the sampler is retrieved, the solvent is emptied into a chemically clean sample jar. Preddice Prefiled at 4. At the laboratory, the solvent is filtered, evaporated to known volume and analyzed via gas chromatography. Id.

According to the Study, a number of factors, including water temperature, pressure, biofouling of the sample membrane, water velocity, turbulence, exposure period, and the concentration and physico-chemical properties of specific contaminants can all affect uptake by a PISCES sampler. Exh. UW-15 at 2. On cross-examination, Dr. Litten confirmed that a number of variables can affect PISCES results, including temperature, membrane area, duration of exposure, concentration of PCB in the environment, and turbulence at the water/membrane interface. Tr. at 151. The Study notes that, "[u]ntil more is learned about how these variables affect contaminant uptake by PISCES, it is to be understood that data are semi-quantitative at best." Exh. UW-15 at 2.

It was undisputed at the hearing that PISCES is a semi-quantitative sampling method, and according to Dr. Litten, "we can tell ten times difference or maybe a little better with them, but they're not certainly highly quantitative samplers." Tr. at 133. On cross-examination, Dr. Litten stated that an order of magnitude difference in Aroclor patterns would lead him to conclude that "something is happening," while a difference less than that would not. Tr. at 151. Dr. Litten's testimony on this point is in accord with Dr. Boehm's assertion that "if results from different stations do not differ by a factor of ten, they are probably not significantly different." Boehm Prefiled at 7.

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The sampling results that are directly relevant to this proceeding were obtained in October 1996.

Dr. Litten testified that PISCES sampling results can be used to track down sources of PCBs. Litten Prefiled at 5. According to Dr. Litten, “[b]y comparing recovered PCB masses and/or semi-quantitative concentration levels of PCBs from various PISCES sampling locations, scientists can identify which sampling points are affected by a PCB source or sources.” Id. The witness stated that typically, two or more rounds of sampling take place during a trackdown study, with study locations in later rounds refined based upon information obtained during the initial round of sampling. Id. Mr. Preddice testified that “[g]enerally, in subsequent studies, additional samples are retrieved upstream and downstream from locations where significant ‘hits’ of PCBs occur until the source is located.” Preddice Prefiled at 4.

Dr. Litten testified further that chemical fingerprinting “has also proven useful in identifying sources in conditions where several sources are impacting a water body.” Litten Prefiled at 5. According to the witness, one method of fingerprinting is through comparison of different PCB Aroclors. Id. Dr. Litten testified that by examining the ratios of concentration of different Aroclors detected at each sampling point, a distinctive fingerprint for the PCBs at that point can be identified. Litten Prefiled at 6. According to Dr. Litten, “[a] source of PCB to a river will typically show an increased amount and a fingerprint different from upstream samples.” Id.

Petitioners’ witness, Dr. Boehm, testified that the PISCES sampling method undertaken in this case “is not a widely used, nationally accepted means of tracking down sources of PCB pollution.” Boehm Prefiled, at 5. Dr. Boehm contended that PISCES samplers “have now been superceded by standard devices, based on the same principles,” and testified further that the PISCES sampling method is not standard, “and the variability of the method is not well known.” Id. Dr. Boehm asserted that while the PISCES method is useful for screening for potential PCB sources, it is necessary to examine other data before valid conclusions as to environmental effects can be drawn. Id.

Dr. Boehm testified that PISCES results are not a direct indication of the amount of dissolved PCBs at a particular point. Boehm Prefiled at 5. Rather, the witness stated that the samplers “roughly reflect the amount of PCBs in the water that passes by and comes in contact with the PISCES membrane rather than the concentration at a given location or point.” Id. He went on to testify that PISCES results cannot demonstrate whether an environmental effect is taking place, but rather that field deployment of samplers “can shed light on the relative amounts of

PCBs that are passing particular locations." Id. at 5-6. According to the witness, any potential for bioaccumulation must be confirmed by direct measurements in biota. Id.

On cross-examination, Dr. Boehm stated that the standard devices he referred to are semipermeable membrane devices, or "SPMDs," developed by the United States Geological Survey and in use nationwide in a number of programs. Tr. at 75. When asked whether SPMDs are semi-quantitative, Dr. Boehm replied that in his opinion, the devices are much more thoroughly investigated and their variability has been tested repeatedly. Tr. at 75-76. According to Dr. Boehm, SPMDs are "less subject to variability of all types than the PISCES sampler, just because of the amount of research that's been done on their standardization, on their use." Tr. at 76.

The testimony offered by Department Staff as to the use of PISCES samplers was not to the contrary. Dr. Litten testified that the Department has used PISCES samplers, and that a United States Geological Survey study for PCB trackdown used PISCES samplers in Massachusetts. Litten Prefiled at 4. Dr. Litten went on to state that "passive samplers have been used in 134 studies world-wide to look for PCBs," and that the United States Environmental Protection Agency office in Las Vegas "is currently evaluating competing passive sampler designs to determine which ones are best for trackdown." Id.

Dr. Litten pointed out that the SPMD samplers are also semi-quantitative and produce results analogous to those obtained through the use of PISCES samplers. Tr. at 125. According to Dr. Litten, Department Staff prefers to use PISCES samplers because these samplers use hexane as the solvent, and therefore biofouling on the sampler membrane does not occur. Tr. at 126. While Dr. Boehm agreed that biofouling would not be a concern on the interior of the sampler, he took the position that it could occur on the exterior. Tr. at 112. In addition, according to Dr. Litten, the PISCES samplers are less expensive, and have a better defined membrane which allows for rough estimates of PCBs in the water. Id. With respect to the reliability of the results of studies using PISCES, Dr. Litten testified that recent studies done in Lake Ontario confirmed PISCES results from samples taken there in the early 1990s. Id.

Dr. Boehm took the position that at the time the PISCES samplers were employed in the River studies, the samplers were still in a research and development phase. Tr. at 78. He testified that because the samplers were being modified and evaluated during the studies, it was not appropriate to use

information generated in reaching a decision on site listing. Tr. at 79-80. Dr. Boehm testified further that the PISCES sampler was not standardized at the time the studies at issue in this proceeding were undertaken. Boehm Prefiled, at 4. According to Dr. Boehm, Department Staff used the PISCES samplers for the trackdown studies prior to standardizing the sampler, validating the method, and finalizing standard operating protocols ("SOPs") for the samplers. Id.

In his prefiled testimony, Dr. Boehm indicated that three basic types of samplers were used, and that the sampler design and the methods of using the samplers were modified as the studies progressed. Id. The witness concluded that the results obtained in different sampling rounds using different methods are not directly comparable. Id. On cross-examination, Dr. Boehm acknowledged that the same type of PISCES sampler (a Hassett sampler) was used during the 1996 sampling round. Tr. at 80-82. In addition, Dr. Litten testified that the use of three different samplers would not affect the results obtained, because two of the samplers are "essentially identical," and the bag type sampler was used in only a few situations. Tr. at 132.

Mr. Preddice stated that he followed a standard operating procedure ("SOP") at the time he undertook the PISCES study, and that the SOP was based upon a protocol developed by Dr. Litten and modified in an attempt to improve the sampling technique. Tr. at 185-86. According to Mr. Preddice, the SOP he followed at the time of the initial sampling differed from a later SOP only to the extent that the use of a new bag sampler occasioned some revisions in 1999. Tr. at 187. Mr. Preddice went on to note that the current SOP provides that a formal quality assurance plan must be used if the data developed are to be used in litigation, which was not the case at the time of the sampling at Station 70. Id. Rather, the witness testified that the samplers were used "strictly as a simple screening tool to locate sources of PCBs that were causing or contributed to fish consumption advisories in the upper Mohawk River." Tr. at 188. On cross-examination, Dr. Litten testified that he did not know if there was a quality assurance plan for the 1996 PISCES study. Tr. at 170.

The testimony offered by Department Staff effectively rebuts Dr. Boehm's statements concerning variability and resulting unreliability of the results obtained during the PISCES sampling due to lack of standardization and the absence of a quality assurance plan. However, Dr. Litten's statements do not rebut Dr. Boehm's testimony that PISCES samplers in particular have not been commonly employed in PCB trackdown studies outside New York

State, nor does Dr. Litten's testimony support the conclusion that PISCES samplers provide a means of measuring precisely the PCB contamination at a sampling station. As noted, the parties acknowledge that PISCES samplers are semi-quantitative, and that the results of any sampling must be viewed in that light. Contrary to Petitioners' position, the record does not support the conclusion that the results obtained at Station 70 are suspect due to these factors. Nevertheless, the evidence does demonstrate that the manner in which the sampler was deployed and retrieved resulted in an artificially high reading which is not consistent with other evidence in this proceeding.

Observations at Station 70

Mr. Preddice stated that he chose the sampling location in the backwater (Station 70) after searching for an upstream source of a notable amount of oil that he observed on a grapple hook while retrieving samplers at Station 60, downstream of the Site. Id. at 7; Tr. at 189. Mr. Preddice testified that because the River was high following recent heavy rains, the samplers at Station 60 were underwater and were difficult to retrieve. Id. at 11; Tr. at 189. During several false casts to retrieve the samplers, the grapple hook and rope dragged along the River bottom and became coated with oil. Id. at 11. Mr. Preddice testified that the retrieve anchor was also coated with oil, and that the oil was not observed upstream at Station 63 a few days later. Id.

According to Mr. Preddice, during his search, he observed an oil sheen "on the surface of two backwater flows leading to behind Universal Waste." Id. at 7. The witness testified that he also observed oil coming from the river bank further upstream, but below the nearby dam. Id. Mr. Preddice reiterated that these observations were made at a time when the River was high, "following two to three days of rain and thunderstorms" in July 1996. Id. Mr. Preddice maintained that these observations "suggest that oil (and likely other contaminants) are flushing from the Universal Waste Site, especially during receding high water events." Id. at 11. The witness pointed out that oil facilitates the migration of other contaminants, including PCBs. Id.

Mr. Preddice went on to state that later that summer he inspected the property behind Universal Waste, in particular the backwater, where he "noticed much oil and smelled solvent when I stepped into this backwater area and disturbed the sediment." Id.; Tr. at 190. Mr. Preddice testified that he walked into the Universal Waste property east of the on-site buildings and

located a "ponded area in the back. Very disgusting looking orange surface film, dark water, quite a bit of muck on the bottom." Tr. at 190-91. Based upon these observations, Mr. Preddice determined that the location should be sampled, and he set PISCES samplers at Station 70 in October of 1996. Preddice Prefiled at 11; Tr. at 191.

The witness stated that "[t]here's really only one backwater area in theory, behind Universal Waste." Tr. at 191. Mr. Preddice went on to testify that at the time he performed the PISCES study, it was clear that the backwater area discharged to the Mohawk River, although he acknowledged that "it may not do it all the time. It's dependent on the water level in the river. When it's high and receding, it will discharge from Station 70 to the river." Tr. at 193-94. He described the backwater as

"a long ponded area, I'll guess three or four hundred feet long, 300 feet long, probably 50 to 60 feet wide across the area in the transit across from where I set the PISCES sampler. The water was dark and the surface was orange. It had an iron precipitate kind of material right at the surface, very, very rusty orange.

Under that the water was dark, the bottom was soft for maybe six inches. Underlining that was fairly hard, I was able to walk out into the pond area because of that. When I did that, I disturbed a very heavy oil slick and solvent odors were also very obvious. They were there not only when I set the PISCES but when I returned and retrieved the PISCES. I also noted that the water levels in that area had been even higher. Then on the land surrounding the pond, there was an oil slick left on the higher ground that was maybe a foot, 15 inches, 18 inches higher earlier that left a oil slick line where the oil had been previous."

Tr. at 194-95.

Mr. Preddice testified that he did not focus on the Site as a major contributor of PCBs to the River in 1994, when the trackdown study began, but that based upon his field observations and the analysis of samples, he concluded that the backwater area has PCB levels significantly higher than results of samples at nearby stations. Preddice Prefiled at 8. The witness asserted that much of the PCB contamination present in the backwater "is the heavier Aroclor 1254/1260 which accumulates in biota." Id. According to Mr. Preddice, when PISCES results show a predominance of Aroclor 1254/1260, it is very likely that the levels of these same Aroclors in fish in the area "will be even

higher" than the levels shown by PISCES sampling. Id. at 11. Mr. Preddice concluded that the backwater "is connected to the River, especially during times of high river levels and is contributing PCBs to the river where PCB-driven fish consumption advisories exist." Id.

Effects on Invertebrates

Mr. Preddice testified that during the deployment of the PISCES sampler at Station 70 on October 9, 1996, he examined the bottom sediment and the bottom-dwelling, or benthic, macroinvertebrates at several locations in the backwater. Preddice Prefiled at 12. According to the witness, "[t]he blackish muck bottom material had much orange-colored iron precipitate and smelled strongly of oil and solvent." Id. Mr. Preddice went on to state that "[t]he sparse invertebrate community in the backwater area was limited mostly to organic-pollution tolerant red-midge larvae (blood worms), *Chironomus* sp." Id.

Mr. Preddice testified that the PISCES samplers "had no sign of aquatic life on them and were stained a dark color often a sign of reducing conditions, i.e., decay in the absence of oxygen. In my experience, the blood worms would have been much more abundant had low dissolved oxygen conditions been the only problem." Id. At the hearing, the witness stated that "[o]bservations of the invertebrate community would tell me that there were conditions such in that backwater that only very tolerant organic pollution-tolerant organisms could live there. The fact that there were very few of them told me there was likely a toxicity there as well." Tr. at 204. Mr. Preddice indicated that his observations were not "an elaborate study, it was a quick, qualitative look here, look there, looked a couple other places, that was it." Id. On cross-examination, Petitioners questioned Mr. Preddice concerning his observations. Tr. at 224-228. The witness acknowledged that he did not perform a biological survey, and that the observations he made were not recorded in his field notes. Tr. at 224, 226, 228, 249.

Dr. Boehm asserted that Mr. Preddice's testimony that the backwater area had a sparse invertebrate community was anecdotal, and was not founded on systematic observations or sampling. Tr. at 46; Preddice Prefiled at 12. According to Dr. Boehm, Mr. Preddice's conclusions were not based on a thorough ecological survey, which would have included a data list of species and their abundance, as well as environmental conditions obtained and reported in a systematic manner. Id. Mr. Preddice was unable to find any references to his observations in his field notes or in

the PISCES Report, and acknowledged that the most recent data about conditions in the backwater were from 1996, and that his recollections were also almost ten years old. Tr. at 229, 249-250.

Dr. Boehm testified further that the same conditions in the backwater noted by Mr. Preddice would be observed if oil uncontaminated by PCBs had been discharged from the city sewer to the backwater area. Tr. at 47. According to Dr. Boehm, PCBs at Station 70 are "likely to be tied up in the sediment and not at all mobile." Tr. at 48. He concluded that PCBs appear in the samples because of sampling artifacts, and that sediments disturbed when the sampling occurred would release small amounts of PCBs that would in turn have contaminated the sampling. Tr. at 48-49.

In addition, Dr. Hennet testified concerning documented releases of oil to the backwater area. Tr. at 317. Dr. Hennet referred to a "relatively large oil spill that occurred from the Empire Recycling site," relying upon a May 6, 1977 Department memorandum, as well as observations recorded in the Clayton Report. Tr. at 317-18; Exh. UW-10; Exh. 3-8. The Department used a dye tracer to trace the release through the storm sewer underlying the Universal Waste property, and then into the backwater. Tr. at 318; Exh. UW-10; Exh. 11. Dr. Hennet testified that a large "pulse of oil" in the storm sewer would not be expected to originate on the Site, because there was no pathway from the Site to the storm sewer other than through the surface soil. Tr. at 320. According to Dr. Hennet, "that pathway is not amenable to migration of pulses of oil" that were described in the Clayton Report. Tr. at 320-321.

Based upon this record, the undocumented observations and conclusions drawn by Mr. Preddice as to effects on invertebrates cannot be afforded significant weight. Those observations were made nearly a decade before the hearing took place, and were not recorded in field notes. Moreover, the witness acknowledged that his conclusions were not based upon a systematic assessment, and Petitioners offered expert testimony that the effects observed were consistent with contamination from releases of oil via the storm sewer pathway. Based on this record, any adverse effects on invertebrates due to PCB contamination in the backwater have not been established.

Sampling Results at Station 70

Dr. Litten testified that the PISCES Report is "a well-designed and well-executed PISCES contaminant trackdown study

which was successful in identifying sources of PCB contamination impacting the upper Mohawk River.” Litten Prefiled at 6. According to Dr. Litten, the PISCES Report “produced definitive results which show that there are two very prominent inputs of PCBs into the upper Mohawk River in the vicinity of Utica,” one of which is Station 70, at River mile 105.1. Id. It is undisputed that one of the inputs, at Station 39 (Nail Creek) is unrelated to the contamination detected at Station 70.

Mr. Preddice testified that “[f]or comparative purposes, analytical results in the PISCES study are summarized and presented as an uptake rate in nanograms (ng) per day.” Preddice Prefiled at 9. Those results appear in the March 1998 Department report authored by Mr. Preddice, Mr. Spodaryk, and Samuel J. Jackling, Associate Analytical Chemist, entitled “PISCES Contaminant Trackdown Studies: Upper Mohawk River, 1995-1996,” (the “PISCES Report”). Exh. 3-13; Preddice Prefiled at 9.

Table 2 of the PISCES Report indicates that the backwater area sampling station, Station 70, had an uptake rate of 1,032 ng/day. Id. Station 20, downstream of the Site, had an uptake rate of 20.1 ng/day, slightly higher than the upstream rate at Station 61, which was 17.2 (first exposure) and 2.6 ng/day (second exposure). Id. At Station 63, north of the Site, PCB uptake rates were 14.8 and 6.3 ng/day for the first and second exposures, respectively. Id. The PISCES report states that “the source of the PCBs between Stations 60 and 63 appears to be the ditch/slough behind Utica Alloys (Universal Waste).” PISCES Report, Nov. 24, 1997 Memorandum from J. Spodaryk to P. Waite; Preddice Prefiled at 9. Station 60 is downstream of the Site, just below the backwater area, where the uptake rate was 43.0 ng/day (first exposure) and 20.8 ng/day (second exposure).

Mr. Preddice testified that based upon data in Tables 8, 9 and 10 in the PISCES Report, about 72% of the total PCB in the backwater area was calculated to be the heavier Aroclor 1254/1260. Preddice Prefiled at 10. Mr. Preddice noted that at other sampling stations, “the lighter Aroclor 1016 was about equal to or up to two to three times more abundant than Aroclor 1254/1260.” Id. According to Mr. Preddice, this is significant because Aroclor 1254/1260 was identified in on-site soil samples taken during a PSA. Id. The witness went on to state that these heavier Aroclors are not easily degraded and may persist for a long period of time. Preddice Prefiled at 10.

Mr. Preddice concluded that there is a source of PCBs in the immediate vicinity of Station 70, where the total PCB uptake rate was two orders of magnitude greater than at other nearby sampling

locations. Preddice Prefiled at 9-10. The witness went on to assert that a much greater percentage of the total PCB composition at Station 70 consisted of the heavier, more persistent Aroclor 1254/1260. Id. at 8, 10. Based upon this, Mr. Preddice took the position that both the greater uptake rate and the presence of Aroclor 1254/1260 indicate the area at Station 70 "to be a different PCB source, separate from that affecting the upstream Mohawk River Stations 63, 21 and the Utica Harbor locations (69, 62E and W)." Id. at 10.

In his prefiled testimony, Dr. Litten agreed with the PISCES Report's conclusion that the Station 70 location is highly contaminated and is contributing PCBs to the River. Litten Prefiled at 7. The witness provided two graphs, one showing a spike in contaminant levels at Station 70, and the other depicting a spike in the Aroclor ratio at that location. Id. at 8-11, Figures 1 and 2. According to Dr. Litten, he calculated the Aroclor ratio for each sampling point to obtain information on the relative quantities of heavier Aroclors. Id. at 9. The witness went on to state that "it is well established that the Aroclor ratio plotted on this graph will increase as the impact of spilled PCB transformer oil increases." Id. at 11.

Dr. Boehm took the position that "the presence of Aroclor 1254 in sediment at Station 70, even if established, would not provide any information about the origin of the PCBs at that station." Boehm Prefiled at 10. Department Staff's witness, Mr. Preddice, acknowledged that he did not know whether the contamination at Station 70 came from the Universal Waste site, noting that "PISCES cannot do that." Tr. at 235.

According to Dr. Boehm, because PCBs have low solubility in water, and because PISCES samplers measure dissolved PCBs, in a reliable sampling round the levels of heavy PCBs such as Aroclor 1254 detected should be lower than levels of lighter, more soluble PCBs. Id.; Tr. at 56. Dr. Boehm pointed out that instead "the results at Stations 70 and 39 showed an anomalous predominance of Aroclor 1254." Id. Dr. Boehm took the position that these results were not indicative of PCBs dissolved in water, but rather that the samplers had been contaminated by sediments or other PCB sources. Id.

In response, Dr. Litten testified concerning a trackdown study of the New York City wastewater treatment plants in which PISCES samplers were used. Tr. at 134. The witness testified that in that study, which also employed highly quantitative sampling equipment, none of the Aroclors detected through PISCES sampling were the heavier Aroclors. Tr. at 134-35.

Dr. Litten testified that if in fact the PISCES sampler at Station 70 was contaminated during deployment and retrieval, this would indicate that the sediments at that location were heavily contaminated with PCBs. Tr. at 136. On cross-examination, however, Dr. Litten indicated that he had not been intending to infer that if sediment was disturbed and oil was released that PCBs were present. Tr. at 166. On redirect, the witness clarified that if sediment containing oil was disturbed and PCBs were released into water and detected through a sampling device, the sediment would of necessity have been contaminated with PCBs. Tr. at 177-78.

Dr. Litten went on to testify that even if there were no further inputs of PCBs at Station 70 since the time the samples were taken in 1996, that location would still be significantly contaminated today. Tr. at 140. The witness stated further that "I think what the PISCES results have demonstrated is that there's PCB there at that site. Whether . . . it's in the water column, how much is in the oil, how much is bound to the sediment, these are questions we don't have a very good handle on, but somehow or other this site has become contaminated with PCB, . . . and that's what the PISCES is telling us." Tr. at 174.

The witness stated that the water quality standard for PCBs for human consumption in fish is one picogram per liter, and "it's unlikely that we're anywhere near that in the Mohawk River. We're quite a bit above it. And I say that based on a lot of experience of measuring PCBs using quantitative techniques, not just PISCES. So if we're seeing PCBs at all, given the detection limits of that system, they are above the water quality standards." Tr. at 168.

When asked what the contribution of the Universal Waste Site is to the levels of PCBs in the Mohawk River, Dr. Litten responded "[i]n my opinion, it's probably not great, because I didn't see a big tail coming out of that station going downstream." Tr. at 169. Dr. Litten went on to state that he was not qualified to render an opinion as to the extent that the backwater area is contributing to PCB levels in the River. Tr. at 175. According to Dr. Litten, the PISCES Report does not quantify an impact by PCBs at Station 70, but rather demonstrates that there are PCBs at Station 70 in high concentrations. Tr. at 180.

Petitioners acknowledged that PCB levels at the upstream sampling point (Station 63) were lower than at the downstream sampling point (Station 60), and that the result in the backwater

area adjacent to the Site (Station 70) showed particularly high levels of contamination. Petitioners contended that the difference in PCB levels between the upstream and downstream sampling stations is not statistically significant, because of the margin of error inherent in the use of the samplers themselves, asserting that "a real effect is shown only if there are order of magnitude differences between stations." Petitioners' Brief at 18; Tr. at 150-51. Petitioners pointed out that the upstream levels of PCB contamination differed from downstream levels by a factor of three, not a factor of ten. Petitioners' Brief at 18. On cross-examination, Dr. Litten acknowledged that while the PCB levels at Station 70 were two orders of magnitude over background, orders of magnitude less than 10 were not significant in the context of PISCES sampling generally. Tr. at 169.

Petitioners pointed out that sediment sampling undertaken as part of the PSA showed higher levels of PCBs upstream of the main discharge point of the backwater area than downstream. Petitioners' Brief at 10; Exh. 3 at 10. Petitioners noted further that other sediment sampling undertaken as part of the remedial investigation for the Utica City Dump showed levels of PCB contamination on the south/southwest side of the River below the backwater in the same range as the results of samples taken upriver. Petitioners' Brief at 10; Exh. 5 Figure 1. According to Petitioners, these results show that the Site and the backwater are not affecting PCB levels in sediments in the Mohawk River. Both Dr. Hennes and Dr. Boehm concluded that the data showed no measurable impact or significant effect on the River due to discharges from the backwater. Exh. 5 at 3; Boehm Prefiled at 3.

Dr. Boehm testified that the results of the 1996 sampling at Stations 70 and 39 (Nail Creek, approximately two miles up the Mohawk River from the Universal Waste Site) were not representative of actual conditions at that time. Boehm Prefiled at 8. Dr. Boehm pointed out that the sample at Station 70 was taken in a backwater area with very little flow. Boehm Prefiled at 9. He contended that it is difficult to interpret results obtained from such a sampling event, because the samplers are designed to be placed in flowing water. Tr. at 115. The witness stated that this made it difficult to compare the data obtained to results from other sampling locations where there was flow. Id.

Petitioners pointed out that the high reading was not verified, because Department Staff did not return to Station 70 to re-sample and confirm the earlier results. When questioned as

to why further sampling was not undertaken at Station 70, Mr. Preddice, Department Staff's witness, stated that the reason was "[j]ust a time factor, basically. We felt we identified the site in 1996, that the Department engineers and remediation could pursue further testing at station 70 to see if, in fact, it was the problem we indicated." Tr. at 202.

Petitioners argued further that the manner in which the samples were taken contaminated the PISCES sampler at Station 70, resulting in an artificially high reading of PCB contamination at that location. Dr. Boehm opined that during the sampling, an oily sheen was released when Mr. Preddice walked through the sediments, contaminating the sampler and resulting in an artificially high reading, both when the sampler was deployed and when it was retrieved. Tr. at 48-49; Boehm Prefiled at 9.

As noted, Mr. Preddice conducted the sampling on October 9, 1996. Preddice Prefiled at 11. Mr. Preddice testified that he was wearing chest waders, and carrying the PISCES sampler with its attached float and anchor weight. Tr. at 183. The witness stated that he waded out and threw the sampler into the water as far as he could. Id. Mr. Preddice testified that the sampler was deployed in an area where boat access was not possible, nor could he have dropped the sampler from a bridge. Tr. at 184.

According to Mr. Preddice, as he waded into the backwater area to deploy the sampler he "disturbed the mucky bottom sediment releasing much oil which floated to the surface causing a sheen," and that it would have been impossible to place the sampler in the appropriate location without disturbing the bottom sediments. Preddice Prefiled at 11; Tr. at 184. The witness stated further that the length of time that the sediments would have been disturbed was short relative to the total PISCES exposure "of approximately two weeks," and noted that he threw the sampler as far away from the disturbed area as he could. Tr. at 184. He testified that the sampler was placed in the water column, and could not have touched the bottom unless the river had dropped considerably. Tr. at 195.

Mr. Preddice testified further that he "detected a strong oil and solvent odor," and that he observed the same conditions when he returned to retrieve the sampler on October 30, 1996. Id. at 11-12. The witness stated that when he returned, the water was somewhat deeper than when the sampler was deployed. Tr. at 184. He testified that he brought with him a six foot long boat hook which he used to reach the float on top of the sampler and retrieve it. Tr. at 185. Mr. Preddice stated that

sediment and oil were disturbed both when the sampler was deployed and when he returned to retrieve it. Tr. at 214.

On cross-examination, Department Staff's witness, Dr. Litten, agreed that there was "a good chance" that the method of deployment described by Mr. Preddice would release oil from the bottom sediments that would contact the membrane of the PISCES sampler, and if that oil were contaminated with PCBs, this "could definitely increase the amount of PCB that it [the sampler] would see." Tr. at 148-49. Dr. Litten testified further that he would recommend that care be taken not to disturb the bottom sediments when deploying a PISCES sampler. Tr. at 150.

Dr. Boehm pointed out that Department Staff acknowledged that the results of PISCES sampling are "semi-quantitative," and testified further that the samplers "are very sensitive to contamination from improper sampling technique, which can introduce considerable sampling variability and make measurements invalid." Boehm Prefiled at 2. As noted above, Dr. Boehm testified further that the PISCES results by themselves cannot comprise evidence of an environmental effect, and while the results obtained through PISCES sampling are useful to screen for sources of dissolved PCBs or to indicate bioaccumulation "potential," this potential must be confirmed by direct measurements in biota. Id. at 5-6. He testified that the 1996 PISCES results probably do not reflect current conditions in the River, because those results were eight years old. Boehm Prefiled at 14, Tr. at 96. Nevertheless, the witness acknowledged that he had no data with respect to current PCB levels at Station 70. Tr. at 96-97.

Dr. Boehm testified further that the laboratory analyses for the samples taken in 1996 were subject to high variability due to variations in recovery of spiked materials that were used to track accuracy. Boehm Prefiled at 11. Dr. Boehm testified further that Department Staff's estimate of standard deviation in assessing variability was too low, and that Department Staff's "selective use of data to artificially reduce the estimates of variability" was an unacceptable practice. Id. at 12.

Department Staff's witness, Dr. Litten, indicated that in attempting to ascertain whether PCBs entering the Mohawk River were having an environmental effect, the Department's Division of Water would "look for exceedances of water quality standards where we have linked concentrations to damage." Tr. at 130. Dr. Litten testified that the most stringent standard for PCB contamination is based on human consumption of fish, and that in

the case of the Mohawk River, those standards are being exceeded.
Id.

Dr. Boehm disputed Dr. Litten's conclusions, arguing that the high results obtained at Station 39 and Station 70 are not River sites, because they are sewer or backwater sites, and that moreover, the sampling results show no influence from these higher readings on the downstream samples in the River. Tr. at 51. Dr. Boehm concluded that the contamination found in these downstream areas "is quite unrelated to anything happening related to Station 70." Id. Dr. Boehm testified further that the ratio of Aroclor 1254 to other Aroclors as depicted in Dr. Litten's prefiled testimony also supports this conclusion for the same reason, specifically, the decrease to baseline below Station 70 with an increase further downstream. Tr. at 51-52. The witness stated that "there are potential masses of PCBs in kind of obscure backwater or inaccessible locations, but neither of them are having influence on the river in terms of massive PCBs or, in fact, fingerprint or type of PCBs in the river." Tr. at 52-53.

Dr. Boehm testified that the lower levels in downstream samples could not be explained by dilution due to flow from the River, because "[i]f dilution were occurring, you'd expect to see it starting high and decreasing as you go downstream. It wouldn't go back to baseline immediately. This shows me there is really no influence of these samples on the river, just not even a tenth of a mile, very, very close to this backwater sample." Tr. at 53.

On redirect, Dr. Boehm stated that while Station 70 was a "hot spot" due to high readings of PCBs, in order for the backwater area to be a source of contamination in the River it would be necessary to show "a significant migration of material contribution from that hot spot to the river." Tr. at 113. Dr. Boehm went on to testify that the data do not show such migration from Station 70. Id. According to Dr. Boehm, a significant level of contribution would be on the order of several thousands of nanograms, such as were found at sampling locations further downstream. Tr. at 113-14.

Dr. Boehm testified that PISCES samplers should not be placed in stagnant water, and that Station 70 is such a location. Boehm Prefiled at 9, Tr. at 87, 114. Dr. Boehm based this conclusion on a 1993 memorandum authored by Dr. Litten, which states "do not place PISCES in stagnant water." UW-4, at 3. Dr. Boehm went on to testify that PISCES samplers "are intended to measure a flux of PCBs in moving water, and to compare one

sampler to another, you have to have moving water. You wouldn't want to place it in stagnant water. It's just not a representative type of sample." Tr. at 87. Dr. Boehm stated that the SOPs do not specify any minimum flow rate, but that it is difficult to compare samples taken at different locations unless the flow rate is controlled, and thus, flow rates add variability to the evaluation. Tr. at 105.

According to Dr. Boehm, even if the sample taken at Station 70 in 1996 had not been contaminated, the data from the River indicate that there is not a material contribution from the Site or from Station 70 to the River. Tr. at 105-06. With respect to Station 70, Dr. Boehm stated that "the connectivity and connection to the River is nil. There's no evidence to that effect." Tr. at 106.

Dr. Litten testified that his statement with respect to avoiding placement of PISCES samplers in stagnant water reflected his concern about the possibility of undersampling for PCBs as opposed to samplers placed in flowing water. Tr. at 124. On redirect, Dr. Litten stated that under identical conditions of temperature, membrane area, and PCB concentration, PISCES samplers placed in stagnant water or water with low flow would potentially underestimate PCB levels, as opposed to PISCES samplers placed in moving water. Tr. at 179.

Department Staff relied upon Dr. Litten's testimony, arguing that "the PISCES Report produced definitive results which show that there is a prominent input of PCBs into the upper Mohawk River in the vicinity of Utica at Station 70." Staff's Brief at 39 (citing Litten Prefiled, at 6). Department Staff acknowledged that the PISCES sampling results are "semi-quantitative," but argued that order of magnitude variations between sampling results at different stations represent statistically valid differences. *Id.*, Tr. at 133. According to Department Staff, if anything, the PISCES sampling results at Station 70 underestimated the amount of PCBs present in the backwater area. Nevertheless, as noted above, on cross-examination Dr. Litten indicated that the contribution of the Site to PCB contamination in the Mohawk River is not great. Tr. at 169.

Petitioners argued that because there are numerous sources of Aroclor 1254 up and down the River, the presence of such contamination at the Site does not establish Universal Waste as a source or a significant threat. With respect to fish advisories, Petitioners pointed out that fish swim up and down the River, where there are a number of other sources of PCB contamination,

and asserted that it is therefore impossible to tie PCBs in fish to any particular source.

Petitioners went on to discuss sampling undertaken in the backwater, close to the sewer outfall, as part of the PSA. Petitioners' Reply Brief at 5-6. Petitioners pointed out that the analysis of the sample closest to the outfall showed a level of approximately 8 mg/kg of PCBs, but that according to the laboratory that performed the analysis, part of the result was too unreliable to be used, and the other part was not accurate. Id.; Exh. 5, Figure 2 (Exh. 2). Petitioners went on to note that another sample, taken approximately 20 feet from the outfall shows a level of "just under 1 mg/kg, which is below the TAGM 4046 cleanup level." Id. A third sample taken in 1983 during a study by Clayton Environmental Consultants indicated a level of 1.1 mg/kg near the sewer outfall. Id.

According to Petitioners, in light of these results, PCB contamination in the outfall area is insignificant, because the area of contamination is small, PCB concentrations are not very high, and PCBs are effectively prevented from leaving the backwater by the ponded area at that location. Petitioners' Reply Brief at 6. Petitioners went on to point out that the Record of Decision for the Utica City Dump "did not propose to remove sediments on the bank of the main River around station SED-4, even though the PCB levels measured at this station were up to 3.6 mg/kg." Id.; Exh. UW-11, Figures 3 and 7.

It is undisputed that PCBs are present at Station 70. Tr. at 48, 52. Nevertheless, the evidence indicates that the reliability of the PISCES sampling that took place at Station 70 is questionable, and that it is therefore probable that the results of that sampling are not representative of conditions at this location. The evidence reflects that the PISCES sampler at Station 70 was deployed in stagnant water in the backwater area to the east of the Site, and the placement of the sampler led to an artificially high result. Moreover, as Dr. Litten acknowledged, the PISCES samplers "are not certainly highly quantitative samplers." Tr. at 133. Only one sample was taken at this location, and no further sampling at that location has been undertaken since the study in 1996. Tr. at 161, 229.

Moreover, the evidence does not establish that Universal Waste is the source of the PCB contamination at Station 70. The PISCES Report indicated only that "[t]he source of PCBs between Stations 60 and 63 appears to be the ditch/slough behind Utica Alloys (Universal Waste)." Exh. 3-13, Appendix 1; Tr. at 222. Department Staff's witness, Dr. Litten, testified that "there are

a lot of ways in which PCBs can be moved into quiescent areas and then desorbed from them at a later time. So it can be difficult to attribute an environment observation to a point, given that these things can be moved in bulk during an event and leave sediment into the water column at a later date." Tr. at 155-56.

Mr. Preddice acknowledged that the PISCES results did not establish that the contamination in the backwater came from the Site. Tr. at 235. In addition, as discussed above, evidence and testimony offered by Petitioners' witness, Dr. Hennes, concerning the "fingerprint" of the PCBs found at Station 70 indicates that the Aroclor 1254 detected in the backwater is different from the Aroclor 1254 in PCBs on the Site.

Other Sources

At the hearing, Petitioners' expert, Dr. Boehm, testified that the PCBs present on the Site are not migrating to the River.

Tr. at 106. According to this witness, the results of analysis of samples indicate that there is no evidence that PCBs from the Site are contributing to contamination in the River. Id. Dr. Boehm testified that the fish in the River absorb PCBs through water, and that there are a number of other sources of PCBs in this area of the River. Tr. at 107.

Combined Sewer Overflow

Dr. Boehm testified that the combined sewer overflow ("CSO") is a potential source of PCB contamination into the River. Boehm Prefiled at 13. The CSO is located in the vicinity of Station 60, and Dr. Boehm asserted that "county records indicate that this overflow regularly discharges to the River." Id. According to Dr. Boehm, PCB contamination is common in Utica sewers, and therefore, the CSO could be a source affecting the PISCES results obtained at Station 60. Id.

Department Staff's witness, Mr. Preddice, stated that he had no data with respect to the CSO, noting that while he was sampling the entire eight to ten foot diameter gate on the CSO was closed, and there was "just a minute trickle coming out the bottom." Tr. at 198. He stated that he walked near the CSO and that there was no evidence of oil at that point. Id.

The testimony offered by Dr. Boehm with respect to the CSO is conjectural, and is not sufficient to establish that the CSO is the source of the high PCB readings at Station 60. On cross examination, Dr. Boehm testified that he did not have any direct data indicating that PCB contamination from the CSO caused PCBs to make their way to the Station 70 area. Tr. at 64. Although

on redirect, the witness stated that he had seen data from many CSOs in many different municipalities, all indicating the presence of PCBs, this testimony is speculative and not specific to the Site. Tr. at 109. Under the circumstances, Petitioners have not shown a connection between the CSO and PCB contamination detected during the PISCES sampling.

Utica City Dump

Dr. Boehm testified that “[t]he 1998 PISCES Report erroneously based its conclusions about the backwater area on the assumption [sic] the Utica City Dump, located across the Mohawk River from the discharges from the backwater area, was not a source of PCBs.” Boehm Prefiled at 3. Relying upon sediment sampling performed as part of the remedial investigation at the Dump, he asserted that upstream PCB levels are higher than the samples taken downstream of Station 70 on the Universal Waste side of the River. Id. at 13. According to Dr. Boehm, the data indicate elevated downstream levels of PCBs on the north side of the River, next to the Dump. Id. Dr. Boehm noted that the remedial investigation concluded that the Dump was a likely source of PCBs to the River, and argued that “[t]his alone could account for the slight elevation at Station 60, because part of the dump lies on the opposite bank of the River to station 70 between stations 63 and 60.” Id. On cross-examination, Dr. Boehm testified that the Dump is not responsible for PCB contamination at Station 70.

Mr. Preddice contended that the Dump was not a source of PCB contamination to the River in the vicinity of Station 60 or Station 70. Tr. at 199. According to the witness, leachate at the Dump flows to the east and to another, different backwater area of the River “which would have been downstream slightly from where the sewage treatment plant or POTW discharge from the Oneida County sewer plant joins the river.” Id. Mr. Preddice testified that Department Staff set PISCES samplers in the Dump backwater, and that PCBs were detected. Id. Mr. Preddice stated further that the source of PCBs at this location was probably the Dump, not the River, and that moreover, the levels of contamination were low. Id. As a result, he concluded that any input from the Dump had not caused the spikes in PCB levels in the River that Department Staff was attempting to track down, noting further that the potential input was downriver of the Site. Tr. at 199-200.

As part of its rebuttal case, Department Staff offered the testimony of David A. Tromp, P.E., who served as the DEC project manager for the Utica Dump site from August of 1998 to August of

2003, when the Department issued a Record of Decision setting forth a remedy for the site. Tromp Prefiled at 3. Mr. Tromp testified that as part of the Utica Dump site remedial investigation/feasibility study, sampling was undertaken on the opposite side of the Mohawk River from the Dump (the same side of the river as the Site). Tromp Prefiled at 9. According to Mr. Tromp, the results of that sampling indicated that there was no impact by the Utica Dump site on the other side of the River. Tromp Prefiled at 10.

Department Staff's witness, Mr. Farrar, testified that the Dump is across the River, but downstream of the Site. Farrar Rebuttal Prefiled at 4. According to Mr. Farrar, "[t]he area of the Mohawk River determined to be impacted by the Utica City Dump Site is a significant distance downstream and on the opposite side of the River from the Universal Waste Site." Id. Mr. Farrar concluded that the contamination from the Dump could not be affecting the Universal Waste Site or the backwater. Id. Although Dr. Hennet testified on rebuttal that the Dump is directly across the River from the backwater, he acknowledged that the Dump was not the cause of the contamination observed in the backwater area. Hennet Supplemental Rebuttal at 1.

Given this testimony, Petitioners' arguments that the Dump is the source of elevated PCB levels on the southern bank of the River are not persuasive.

Empire Recycling

Petitioners took the position that the source of oil in the backwater area could be traced to Empire Recycling. Petitioners pointed to tracer studies undertaken by the Department that were discussed in two Department memoranda, one from 1977 and one from 1979. Ex. UW-10. Those documents indicated that Empire Recycling discharged oil to the sewer line that runs beneath the Site. Id. According to Petitioners, this evidence shows that the PCB contamination in the backwater was probably attributable to steel turnings salvaged from the Chicago Pneumatic facility, one of Empire Recycling's customers, at another site that is contaminated primarily with Aroclor 1254, and to a lesser extent with Aroclor 1260. Exh. UW-10; Exh. UW-9, at 52. Petitioners pointed out that the results of samples taken near the sewer outfall in the backwater reflect the same Aroclors in similar proportions. Exh. 3-5, Table 12.

In response, Department Staff characterized Petitioners' arguments as speculation, and asserted further that there is no requirement in the statute or regulations that other sources of

contamination be evaluated or considered in determining whether hazardous wastes disposed of at a site constitute a significant threat to the environment. Department Staff asserted that documents in the record indicated that PCB disposal was not an issue at Empire Recycling, because inspection and soil analysis revealed no PCB contamination at that location. Exh. 51.

Petitioners' witness, Dr. Hennessey, testified that the pulses of oil observed in the backwater could not have originated from the Site, because there is no direct pathway from the Site to the sewer. Tr. at 320. According to Petitioners, Department memoranda "actually show that pulses of oil flowed from the Empire Recycling facility through the sewer under the Site and to the River, where they caused frequent oil slicks and minor fish distress." Petitioners' Reply Brief at 11; Exh. UW-10.

The evidence favors Petitioners' position that oil from Empire Recycling is the source of the oil in the backwater. Nevertheless, the record does not indicate that to the extent such oil was discharged, it was a likely source of PCBs. Although Petitioners argued that the investigation at Empire Recycling focused on disposal on the ground, not into the sewer, Petitioners have not established a link between PCBs at that Site and the backwater area. This is not fatal to Petitioners' case, however, because of the dissimilarity between the fingerprints of the on-Site and off-site Aroclors, as Dr. Hennessey testified to with respect to the chromatograms of sampling results.

FINDINGS OF FACT

1. The Site is located at Leland and Wurz Avenues, Utica, Oneida County, New York, on the southern bank of the Mohawk River, and east and north of Leland Avenue. The Site consists of approximately 21 acres, and lies within the flood plain of the River. A wetland area (the "backwater") lies to the east of the Site.
2. The property where the Site is located was listed in the Registry as a Class 2 site until approximately 1999, when the property was subdivided, at Petitioners' request, into the Utica Alloys and Universal Waste sites, respectively.
3. The Utica Alloys parcel remained as a Class 2 site, and the Universal Waste parcel was reclassified 2a, until Petitioners undertook a Preliminary Site Assessment ("PSA") pursuant to a May 2000 Order on Consent.

4. Following the submission of the PSA, Department staff notified Petitioners by letter dated July 24, 2002 of the Universal Waste parcel's reclassification as a Class 2 site.
5. In a submission dated January 8, 2003, Universal Waste, Inc. and Clearview Acres, Ltd. petitioned to delist the Site or for reclassification of the Site as a Class 3. Petitioners filed a corrected petition on June 23, 2003.
6. Department Staff denied the petition by letter dated July 8, 2003. Department Staff reiterated the denial in a letter dated September 5, 2003.
7. Hazardous waste is present at the Site. Specifically, the Site is contaminated with polychlorinated biphenyls ("PCBs"). Aroclor 1254 is the predominant PCB Aroclor at the Site.
8. Since approximately 1957, Universal Waste operated a salvage yard for scrap iron, copper and stainless steel. As part of those operations, PCB contaminated oils from capacitors and transformers received from Special Metals, Inc. and Niagara Mohawk were disposed of on the Site.
9. Sampling performed in 1977 found PCBs at a level of 51,200 parts per million ("ppm") in a sample taken from soil next to a pile of capacitors. In 1984, PCBs were detected in composite surface soil sampled at levels up to 36,000 ppm.
10. In 1983, Universal Waste hired Clayton Environmental Consultants to investigate potential contamination on the Site. Clayton Environmental submitted a field investigation report to Department Staff. That report was never approved by the Department. The Site was listed as a Class 2 in 1986 based in part upon information contained in the Clayton Report, which noted that PCBs were detected in surface and subsurface soils and groundwater at the Site.
11. A storm sewer line passes under the Site and empties into the backwater area, which is hydraulically connected to the Mohawk River at times. An October 1993 report by William F. Cosulich Associates describes an abandoned sanitary sewer line that at one time ran

parallel to the storm sewer line beneath the Site. According to the Cosulich Report, the sanitary sewer flowed into an earthen settling pond, and then drained into a twelve inch pipe to the Mohawk River. The Cosulich Report indicated that the sanitary sewer served industrial facilities on Wurz Avenue, including the oil storage facilities.

12. In 1996, Department Staff contracted with Camp Dresser & McKee ("CDM") to perform a preliminary site assessment. In a report dated August 1996, CDM described sampling of Site soils and the storm and sanitary sewers. The report concluded that the sampling indicated that PCBs in the soils in the Site do not appear to be coming from an offsite and upgradient source, by way of the sewer system onto the Site. No groundwater sampling was undertaken as part of the work done by CDM.
13. In 1997, Universal Waste undertook a process called "trommelling" at the Site. Trommelling involved feeding soil from the Site into an apparatus to remove metals, fluff and other pieces of debris. By letter dated May 7, 1997, Universal Waste notified the Department that it intended to undertake trommelling at the Site.
14. On April 22, 1997, Stearns & Wheler took six samples from soil piles at the Site. PCBs were detected in five of the six samples. The highest level reported in a composite sample was 19 mg/kg.
15. Universal Waste contracted with Stearns & Wheler to perform a preliminary site assessment ("PSA") pursuant to the May 2000 order on consent. A PSA is used to determine whether a site meets the State's definition of an inactive hazardous waste disposal site by confirming or denying the presence of hazardous waste and determining whether the site poses a significant threat to the environment.
16. Stearns & Wheler was tasked with investigating the Site's surface and shallow subsurface soils, the Site groundwater, the sewer line bedding, off-Site surface water, and sediment conditions in the sewer outfall channel.
17. In January 2001, Stearns & Wheler submitted a report in draft form (dated January 2000) (the "S&W Report") that

was never finalized by the consultants or approved by the Department.

18. Although three test pits were dug along the active storm sewer line and the abandoned sewer line, Stearns & Wheler did not investigate the sewer line bedding due to the depth of the sewers, which Stearns & Wheler indicated were at a depth of 20 feet in the eastern portion of the Site.
19. The S&W Report indicated that elevated levels of PCBs on the Site have been found in the east-central portion of the Site, near the outfall channel, and in the southern portion of the Site near the railroad tracks. In the east-central area, concentrations ranged from 26 to 120 parts per million. The surface sample concentrations ranged from 42 to 120 ppm, and at a depth of 12 to 18 inches in the subsurface, PCB concentrations ranged from 26 to 60 ppm. Over the remainder of the Site, PCB concentrations were generally below 50 ppm, and in most cases, below 10 ppm. The results of groundwater sampling were non-detect for PCBs, with one exception at 0.34 parts per billion.
20. Department Staff provided comments on the S&W Report by letter dated April 26, 2002. In that letter, Department Staff stated that the greatest risk in terms of access and exposure to Site-related contaminants appeared to be to biota due to PCBs entering the aquatic ecosystem.
21. Stearns & Wheler conducted additional work at the Site, and by letter dated December 19, 2002, Stearns & Wheler provided the results of supplemental sampling at the Site. Four soil borings were installed in the east central portion of the Site, and three of those borings were completed as monitoring wells. Results for total PCBs from the soil borings were below 10 parts per million, with the exception of one sample at a depth of between four and six feet which contained 19.6 ppm. In all samples at and below a depth of 8-10 feet in all borings, the total PCB concentration was under 1 ppm. No PCBs were detected in groundwater samples.
22. Analysis of samples taken in the City sewer outfall channel (backwater) as part of the PSA showed total PCBs in concentrations of approximately 6 mg/kg next to

the sewer outfall. This laboratory indicated that this level might not have been accurate, although Aroclor 1254 was positively identified in that sample. PCBs at a level of 1.4 mg/kg were detected twenty feet from the outfall. The Clayton Report found PCBs at a level of 1.1 mg/kg in the channel of the outfall.

23. Chromatograms of samples taken from the Site, the backwater, and the River indicate that the PCB contamination associated with Aroclor 1254 in samples taken upriver and downriver from the backwater differs from samples on-Site and from the backwater. Samples taken from the backwater differ from those taken on the Site.
24. Groundwater is encountered across the Site at a depth of three to five feet. It is unlikely that significant amounts of PCBs dissolved in groundwater are migrating from the Site. It is also unlikely that PCBs are migrating through the subsurface soil or leaving the Site through surface runoff or NAPL transport. Contaminated soil encountered as a result of a leaking underground diesel storage tank is not associated with off-Site contamination. The sanitary and storm sewers are not migration pathways for significant amounts of PCBs.
25. The portion of the Mohawk River in the vicinity of the Site is designated a Class "C" water body. A fish consumption advisory is in effect for the stretch of the Mohawk River where the Site is located. Aroclor 1254 is the type of Aroclor typically found in fish that are contaminated with PCBs.
26. In 1996, PCB sampling was conducted in the Mohawk River upstream and downstream of the Site, as well as in a backwater area to the east of the Site. The upstream sampling location is Station 63. The downstream sampling location is Station 60. The backwater sampling location is Station 70.
27. The samples were taken using a Passive In-situ Chemical Extraction Sampler ("PISCES") developed by a Department biologist, Simon Litten, Ph.D., who also testified at the hearing. The results of PISCES sampling is semi-quantitative, and orders of magnitude differences less than a factor of ten are not significant.

28. On October 9, 1996, a PISCES sampler was deployed at Station 70. The sampler was retrieved on October 30, 1996. PCBs are present at Station 70, and the manner of the sampler's deployment and retrieval resulted in an artificially high reading (an uptake rate of 1,032 ng/day) for the sample taken at Station 70.
29. The CSO and the Utica City Dump are not likely sources of PCB contamination in the backwater. Discharges of oil from Empire Recycling were released to the sewer line that runs beneath the Site.

CONCLUSION

Pursuant to Section 624.13(a)(2)(ii) of 6 NYCRR, the hearing report may be circulated to the parties as a recommended decision at the Commissioner's direction. Accordingly, as requested by the parties, and at the Commissioner's direction, this hearing report is issued as a recommended decision. Section 624.13(a)(3) provides that all parties have fourteen days after receipt of the recommended decision to submit comments to the Commissioner. In order to provide the parties with a reasonable opportunity to review this recommended decision, and in light of the complexity of the hearing, the deadline to provide comments is modified as follows: comments on the recommended decision are to be received by 4:00 p.m. on Friday, May 5, 2006. Responses to comments are authorized, and must be received by 4:00 p.m. on Monday, June 5, 2006.

As the parties are aware, revisions to the Department's regulations at 6 NYCRR Part 375 are presently under consideration. To the extent the parties believe those proposed revisions may be relevant to the Commissioner's determination with respect to this petition, the parties should incorporate any such comments in their submissions.

Send one copy of any submission to Commissioner Denise M. Sheehan, c/o Louis A. Alexander, Assistant Commissioner for Hearings and Mediation Services, New York State Department of Environmental Conservation, 625 Broadway, 14th Floor, Albany, New York 12233-1010, and one copy of any submission to opposing counsel at the same time and in the same manner as transmittal is made to the Commissioner. The Commissioner will not accept submissions by electronic mail, or via telefacsimile. Send two copies of any submission to the ALJ, and one copy of any submission to James T. McClymonds, Chief Administrative Law Judge, Office of Hearings and Mediation Services, 625 Broadway, First Floor, Albany, New York 12233-1550.